

SINUMERIK

SINUMERIK 840D sl, SINAMICS S120 Machine data and parameters

List Manual

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Valid for:
Control
SINUMERIK 840D sl / 840DE sl

Software
CNC software, version 4.95
SINAMICS S120, version 5.2 SP3

Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

DANGER

indicates that death or severe personal injury will result if proper precautions are not taken.

WARNING

indicates that death or severe personal injury may result if proper precautions are not taken.

CAUTION

indicates that minor personal injury can result if proper precautions are not taken.

NOTICE

indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

WARNING

Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

All names identified by ® are registered trademarks of Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Introduction

1.1 About SINUMERIK

From simple, standardized CNC machines to premium modular machine designs – the SINUMERIK CNCs offer the right solution for all machine concepts. Whether for individual parts or mass production, simple or complex workpieces – SINUMERIK is the highly dynamic automation solution, integrated for all areas of production. From prototype construction and tool design to mold making, all the way to large-scale series production.

Visit our website for more information SINUMERIK (<https://www.siemens.com/sinumerik>).

1.2 About this documentation

Content

This List Manual contains descriptions and settings of all display, NC, cycle, machine and setting data of the SINUMERIK controller as well as parameters of the drives of SINAMICS S120.

Target group

This documentation is intended for project engineers, commissioning engineers, machine operators and service and maintenance personnel.

Benefits

The intended target group can use the List Manual to test and commission the system or the plant professionally and safely.

Standard scope

This documentation only describes the functionality of the standard version. This may differ from the scope of the functionality of the system that is actually supplied. Please refer to the ordering documentation only for the functionality of the supplied drive system.

It may be possible to execute other functions in the system which are not described in this documentation. This does not, however, represent an obligation to supply such functions with a new control or when servicing.

For reasons of clarity, this documentation cannot include all of the detailed information on all product types. Further, this documentation cannot take into consideration every conceivable type of installation, operation and service/maintenance.

The machine manufacturer must document any additions or modifications they make to the product themselves.

Websites of third-party companies

This document may contain hyperlinks to third-party websites. Siemens is not responsible for and shall not be liable for these websites and their content. Siemens has no control over the information which appears on these websites and is not responsible for the content and information provided there. The user bears the risk for their use.

1.3 Documentation on the internet

1.3.1 Documentation overview SINUMERIK 840D sl

You will find extensive documentation on the functions of SINUMERIK 840D sl from version 4.8 SP4 at 840D sl documentation overview (<https://support.industry.siemens.com/cs/ww/en/view/109766213>).



You can display documents or download them in PDF and HTML5 format.

The documentation is divided into the following categories:

- User: Operating
- User: Programming
- Manufacturer/Service: Functions
- Manufacturer/Service: Hardware
- Manufacturer/Service: Configuration/Setup
- Manufacturer/Service: Safety Integrated
- Manufacturer/Service: SINUMERIK Integrate/MindApp
- Information and training
- Manufacturer/Service: SINAMICS

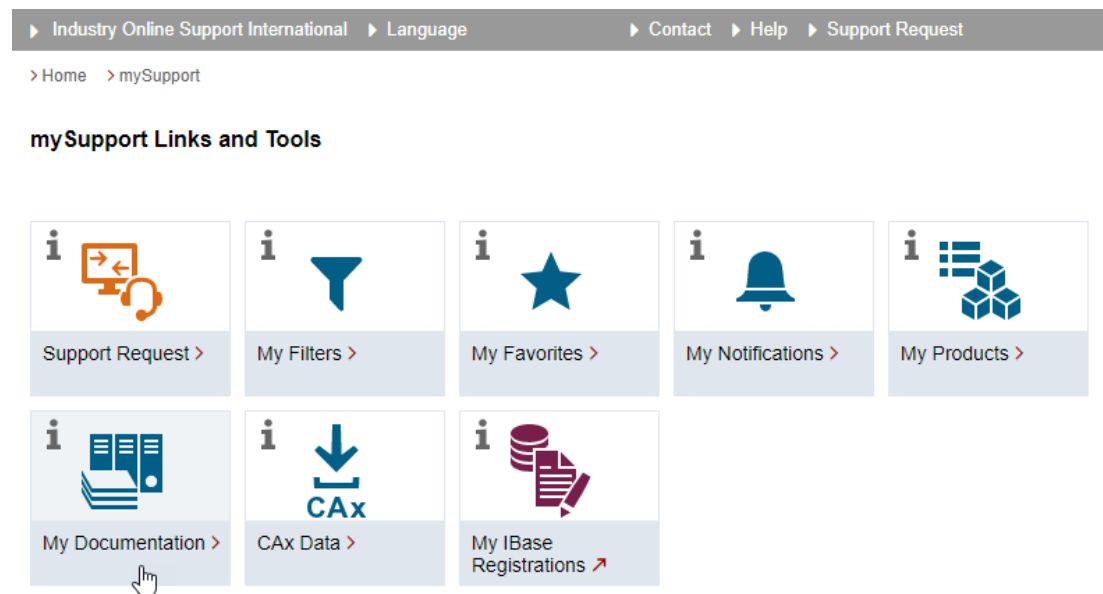
1.4 Feedback on the technical documentation

If you have any questions, suggestions or corrections regarding the technical documentation which is published in the Siemens Industry Online Support, use the link "Send feedback" link which appears at the end of the entry.

1.5 mySupport documentation

With the "mySupport documentation" web-based system you can compile your own individual documentation based on Siemens content, and adapt it for your own machine documentation.

To start the application, click on the "My Documentation" tile on the mySupport homepage (<https://support.industry.siemens.com/cs/ww/en/my>):



The configured manual can be exported in RTF, PDF or XML format.

Note

Siemens content that supports the mySupport documentation application can be identified by the presence of the "Configure" link.

1.6 Service and Support

Product support

You can find more information about products on the internet:

Product support (<https://support.industry.siemens.com/cs/ww/en/>)

The following is provided at this address:

- Up-to-date product information (product announcements)
- FAQs (frequently asked questions)
- Manuals
- Downloads
- Newsletters with the latest information about your products
- Global forum for information and best practice sharing between users and specialists
- Local contact persons via our Contacts at Siemens database (→ "Contact")
- Information about field services, repairs, spare parts, and much more (→ "Field Service")

Technical support

Country-specific telephone numbers for technical support are provided on the internet at address (<https://support.industry.siemens.com/cs/ww/en/sc/4868>) in the "Contact" area.

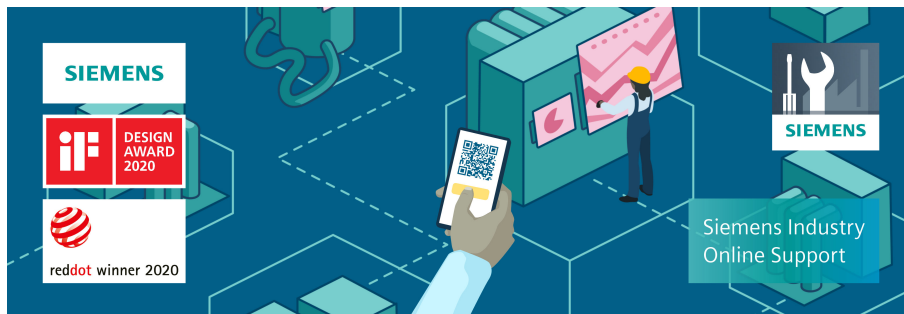
If you have any technical questions, please use the online form in the "Support Request" area.

Training

You can find information on SITRAIN at the following address (<https://www.siemens.com/sitrain>).

SITRAIN offers training courses for automation and drives products, systems and solutions from Siemens.

Siemens support on the go



With the award-winning "Siemens Industry Online Support" app, you can access more than 300,000 documents for Siemens Industry products – any time and from anywhere. The app can support you in areas including:

- Resolving problems when implementing a project
- Troubleshooting when faults develop
- Expanding a system or planning a new system

Furthermore, you have access to the Technical Forum and other articles from our experts:

- FAQs
- Application examples
- Manuals
- Certificates
- Product announcements and much more

The "Siemens Industry Online Support" app is available for Apple iOS and Android.

Data matrix code on the nameplate

The data matrix code on the nameplate contains the specific device data. This code can be read with a smartphone and technical information about the device displayed via the "Industry Online Support" mobile app.

1.7 Important product information

Using OpenSSL

This product can contain the following software:

- Software developed by the OpenSSL project for use in the OpenSSL toolkit
- Cryptographic software created by Eric Young.
- Software developed by Eric Young

You can find more information on the internet:

- OpenSSL (<https://www.openssl.org>)
- Cryptsoft (<https://www.cryptsoft.com>)

Compliance with the General Data Protection Regulation

Siemens observes standard data protection principles, in particular the data minimization rules (privacy by design).

For this product, this means:

The product does not process or store any personal data, only technical function data (e.g. time stamps). If the user links this data with other data (e.g. shift plans) or if he/she stores person-related data on the same data medium (e.g. hard disk), thus personalizing this data, he/she must ensure compliance with the applicable data protection stipulations.

Fundamental safety instructions

2.1 General safety instructions

 WARNING
Danger to life if the safety instructions and residual risks are not observed If the safety instructions and residual risks in the associated hardware documentation are not observed, accidents involving severe injuries or death can occur. • Observe the safety instructions given in the hardware documentation. • Consider the residual risks for the risk evaluation.

 WARNING
Malfunctions of the machine as a result of incorrect or changed parameter settings As a result of incorrect or changed parameterization, machines can malfunction, which in turn can lead to injuries or death. • Protect the parameterization against unauthorized access. • Handle possible malfunctions by taking suitable measures, e.g. emergency stop or emergency off.

2.2 Warranty and liability for application examples

Application examples are not binding and do not claim to be complete regarding configuration, equipment or any eventuality which may arise. Application examples do not represent specific customer solutions, but are only intended to provide support for typical tasks.

As the user you yourself are responsible for ensuring that the products described are operated correctly. Application examples do not relieve you of your responsibility for safe handling when using, installing, operating and maintaining the equipment.

2.3 Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to

2.3 Security information

an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit

<https://www.siemens.com/industrialsecurity> (<https://www.siemens.com/industrialsecurity>).

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under

<https://www.siemens.com/industrialsecurity> (<https://new.siemens.com/global/en/products/services/cert.html#Subscriptions>).

Further information is provided on the Internet:

Industrial Security Configuration Manual (<https://support.industry.siemens.com/cs/ww/en/view/108862708>)



WARNING

Unsafe operating states resulting from software manipulation

Software manipulations, e.g. viruses, Trojans, or worms, can cause unsafe operating states in your system that may lead to death, serious injury, and property damage.

- Keep the software up to date.
- Incorporate the automation and drive components into a holistic, state-of-the-art industrial security concept for the installation or machine.
- Make sure that you include all installed products into the holistic industrial security concept.
- Protect files stored on exchangeable storage media from malicious software by with suitable protection measures, e.g. virus scanners.
- On completion of commissioning, check all security-related settings.

SINUMERIK machine and setting data

3.1 Explanation of the machine/setting data

3.1.1 Information about the data tables

This List Manual provides information on all the machine and setting data.

A functional description of the data is provided in the Function Manual indicated in the cross reference.

For additional descriptions

Further detailed information is available directly through the online help of the control system.

3.1.2 Structure of the data tables

Standard table

The standard table contains all the important information about a SINUMERIK machine data.

MD number	Identifier			Display filter	Reference	
Unit	Name			Data type	Activation	
Attributes						
System	Dimension	Default value (LIN/RED)	Minimum value (LIN/RED)	Maximum value (LIN/RED)	Protection	Class

Expanded table

The expanded table includes data from the standard table plus additional rows with system-specific values.

MD number	Identifier			Display filter	Reference	
Unit	Name			Data type	Activation	
Attributes						
-	Dimension	Default value (LIN/RED)	Minimum value (LIN/RED)	Maximum value (LIN/RED)	Protection	Class
<System 1>	-	-	-	-	-/-	
<System 2>	-	-	-	-	-1/-	

A minus sign "-" in a field means that the same value as for <System 1> applies for the specified system.

3.1 Explanation of the machine/setting data

The entry "-/-" in the "Protection" field means that the machine data is not available for the specified system.

Example:

19102	NUM_ADD_AXES_IN_SYSTEM			N01	-	
-	Additionally 1 position axis/auxiliary spindle			BYTE	POWER ON	
-						
840dsl-71	-	-	0	8	3/3	I
840dsl-72	-	3	0	31	3/3	I
840dsl-73	-	3	0	31	3/3	I
840dsl-711	-	-	0	8	3/3	I
840dsl-721	-	0	0	31	3/3	I
840dsl-731	-	0	0	31	3/3	I

3.1.3 Meaning of table fields

MD number

The "MD number" field contains the machine data number. This number is displayed in the data lists on the user interface of the control.

Identifier

The "Identifier" field contains the unique alphanumeric identifier of the machine data. The machine data is, for example, addressed by means of this identifier (with an additional label) for programming in the part program.

This identifier is displayed in the data lists on the user interface of the control.

Reference

The "Reference" field contains a short code designation of the corresponding chapter of a function manual or of a manual as a cross-reference to the functional description of the data.

Reference is made to the following chapters or manuals:

- Function Manual Basic Functions, Chapter: A2, A4, B1, H2, K1, K2, K5, K7, K10, N2, S7, V2, TE7
- Function Manual Axes and Spindles, Chapter: B2, F1, G1, G2, H1, M3, N3, P1, P2, P5, R1, R2, R3, S1, S3, S9, T1, T4, T5, T6, V1
- Function Manual Technologies, Chapter: M5, N4, R3, T3, TE01, TE02, TE1, TE3, TE4, TE6, TE7, TE8
- Function Manual Tools, Chapter: W1, W4, W5
- Function Manual Transformations, Chapter: F2, K12, M1

- Function Manual Monitoring and Compensating, Chapter: A3, A5, K3, K8, K9, K11, TE1, TE9
- Safety Integrated Commissioning Manual, FBSI
- Function Manual Tool Management, FBWsl
- Function Manual Synchronous Actions, FBSY
- Description of Functions, ISO Dialects for SINUMERIK, FBFA
- Programming Manual, PG
- Programming Manual Job Planning, PGA

Unit / system of units

Depending on MD10240 \$MN_SCALING_SYSTEM_IS_METRIC, the physical units differ as follows:

MD10240=1 Metric	MD10240=0 inch
mm	inch
mm/min	inch/min
m/s ²	inch/s ²
m/s ³	inch/s ³
mm/rev.	inch/rev.

If the machine data is not based on any physical unit, the field is marked with "-".

Note

The default setting is MD10240 \$MN_SCALING_SYSTEM_IS_METRIC = 1 (metric)

Name

The "Name" field contains the name of the data in plain text.

Activation

The "Activation" field contains the action that must be performed by the user in order for a change in the data to be activated.

Activation		User action
po	POWER ON	Alternatively: "Reset (po)" softkey - Switch voltage off/on
cf	NEW_CONF	Alternatively: - Softkey: "Activate MD" Note: Axis-specific machine data A changed value will not be activated until all the channels of the mode group to which the axis belongs to are in the "Reset" state. - Command: <code>NEWCONF</code> Note: Axes/spindles On axes and position-controlled spindles, a changed value is not activated until the respective axis/spindle is stopped. On spindles that are not position-controlled a changed value is activated immediately.
re	RESET	Alternatively: "Reset (po)" softkey - Channel reset - Mode group reset - Program end reset (M02/M30)
so	IMMEDIATELY	After entering the value

The activation levels are listed according to their priority.

- po = highest priority
- so = lowest priority

Protection

The "Protection" field contains the access levels for reading or writing a data item:

Reading/writing.

The first parameter specifies the access level for reading.

The second parameter specifies the access level for writing.

Example:

"ReadOnly" in the table field means:

Reading with access level "Manufacturer" is possible/ **writing** with access level "Manufacturer" is not possible.

Access level	Type
0	System - ReadOnly
1	Manufacturer

Access level	Type
2	Service
3	User
4	Key-operated switch position 3
5	Key-operated switch position 2
6	Key-operated switch position 1
7	Key-operated switch position 0

Class

The "Class" field contains the data class to which the control-relevant data is assigned.

The data class attributes of machine, setting and option data are normally derived from the write rights of the corresponding data.

The data is divided into the following four data classes:

Data class	Access right
S (System)	Access level 0 = ReadOnly
M (Manufacturer)	Access levels 1 and 2 and ReadOnly (password: Service)
I (Individual) Note: Individual machine data is grouped in this data class, e.g. the leadscrew error compensation values. Depending on the contents, these are accessible via different access levels.	Access levels 1 and 2 (password: Service) or Access level 3 (password: User)
U (User)	Access level 3 (password: User) Access levels 4 and 7 (key-operated switch)

Display filter

The "Display filter" field contains the identifier of the data filter setting that enables the data to be displayed. Using the filter setting, the exact data areas required at a given time can be selected for display.

ID	Data area
EXP	Expert mode
Drive-specific machine data	
D00	Display signals
D01	Controller data
D02	Monitoring/limiting functions
D03	Message data
D04	Status data
D05	Motor / power unit
D06	Measuring system

3.1 Explanation of the machine/setting data

ID	Data area
D07	Safety Integrated
D08	Standard machine
General machine data	
N01	Configuration/scaling
N02	Memory configuration
N03	PLC machine data
N04	Drive control
N05	Status data / diagnostics
N06	Monitoring/limiting functions
N07	Auxiliary functions
N08	Corrections/compensations
N09	Technological functions
N10	I/O configuration
N11	Standard machine
A12	NC language, ISO dialect
Channel-specific machine data	
C01	Configuration
C02	Memory configuration
C03	Initial states
C04	Auxiliary functions
C05	Velocities
C06	Monitoring/limiting functions
C07	Transformations
C08	Corrections/compensations
C09	Technological functions
C10	Standard machine
C11	NC language, ISO dialect
Axis-specific machine data	
A01	Configuration (including memory)
A02	Measuring system
A03	Machine geometry
A04	Velocities/accelerations
A05	Monitoring/limiting functions
A06	Spindle
A07	Controller data
A08	Status data
A09	Corrections/compensations
A10	Technological functions
A11	Standard machine
A12	NC language, ISO dialect
Display-specific machine data	
H01	ShopMill
H02	ShopTurn

ID	Data area
H03	ManualTurn
H04	Access levels
H05	Standard machine

System

Depending on the technology used, a preset value is stated in the "system" field. If the presetting is identical for all technologies, only one value is stated.

840dsl-71	NCU710
840dsl-72	NCU720
840dsl-73	NCU730
840dsl-711	NCU710.3B
840dsl-721	NCU720.3B
840dsl-731	NCU730.3B

Dimension

The "Dimension" field contains the number of elements of a data field.

Default value

The "Default value" field contains the value that is used to preset the machine data.

Some machine data is preset with different default values, depending on the NCU that is used.

Note

When input via the user interface, this is limited to ten digits plus comma and sign.

In the bracket "LIN/RED" the linear axis or rotary axis value is specified.

Range of values

The "Minimum value" and "Maximum value" fields contain the lower limit and upper limit, respectively, of the permissible data range.

If the "Minimum value" and "Maximum value" fields contain the string " *** ", an explicit range is not defined for this data. In this case, the range is determined by the specified data type.

SINUMERIK data types

The "Data type" field contains the following data types:

Data type	Range of values
BOOLEAN	false, true
BYTE	-128 to +127

3.1 Explanation of the machine/setting data

Data type	Range of values
UBYTE	0 to +255
DWORD	-2,147,483,648 to +2,147,483,647
UDWORD	0 to +4,294,967,295
DOUBLE	$-1.7 \cdot 10^{308}$ to $+1.7 \cdot 10^{308}$
STRING	Sequence of characters (→ UBYTE) with any arbitrary/specified length.

Attributes

The "Attributes" field contains additional attributes of the data:

Attribute	Description	
NBUP	No Back UP:	The data is not backed up as part of the data backup.
ODLD	Only DownLoaD:	The data can only be written to via an ini file, archive, or from the part program.
NDLD	No DownLoaD:	The data can only be written to via the user interface.
SFCO	SaFety COnfigura- tion:	Component of the "Safety Integrated" function.
SCAL	SCaling ALarm:	Scaling data; when changed, alarm 4070 is displayed.
LINK	LINK description:	The data describes a link cluster, component of the "NCU Link" function
CTEQ	ConTainer EQual:	The data must be the same for all axes of an axis container, component of the "Axis container" function
CTDE	ConTainer DEscrip- tion:	The data describes an axis container, component of the "Axis container" function

3.1.4 Overview of the data

Number ranges SINUMERIK

The machine and setting data are divided into number ranges.

The identifier specified in the data description is displayed on the user interface. However, if the data is addressed in the part program, for example, the identifier of the relevant data area must precede the data identifier.

Data area		Identifier	Description
From	to		
9000	9999	\$MM_	Display machine data
10000	18999	\$MN_	General NC machine data and general machine data for Safety Integrated
19000	19999	\$ON_	Option data
20000	28999	\$MC_	Channel-specific machine data
29000	29999	\$OC_	Channel-specific option data

Data area		Identifier	Description
From	to		
30000	38999	\$MA_	Axis-specific machine data and axis-specific machine data for Safety Integrated
39000	39999		Reserved
41000	41999	\$SN_	General setting data
42000	42999	\$SC_	Channel-specific setting data
43000	43999	\$SA_	Axis-specific setting data
51000	51299	\$MNS_	General configuration machine data
51300	51999		General cycle machine data
52000	52299	\$MCS_	Channel-specific configuration machine data
52300	52999		Channel-specific cycle machine data
53000	53299	\$MAS_	Axis-specific configuration machine data
53300	53999		Axis-specific cycle machine data
54000	54299	\$SNS_	General configuration setting data
54300	54999		General cycle setting data
55000	55299	\$SCS_	Channel-specific configuration setting data
55300	55999		Channel-specific cycle setting data
56000	56299	\$SAS_	Axis-specific configuration setting data
56300	56999		Axis-specific cycle setting data

Data Identifiers

Characters	Meanings
\$	System variables
M	Machine data (first letter)
S	Setting data (first letter)
O	Option data (first letter)
M, N, C, A	Subarea (second letter)
S	Siemens data (third letter)

Note

Axis-specific data can also be addressed with the axis name as an index. The internal axis identifier (AX1, AX2, AX3, etc.) or the identifier specified in MD10000 \$MN_AXCONF_MACHAX_NAME_TAB can be used as the axis name.

Example:

\$MC_JOG_VELO[Y1]=2000

The JOG velocity of axis Y1 is 2000 mm/min.

Example:

\$MA_FIX_POINT_POS[0,X1]=500.000

The value 500 is assigned to the first fixed point position on axis 1.

3.2 Display machine data

Examples:

```
$MN_AUXFU_GROUP_SPEC[2]='H41'
```

If the content of a machine data is a STRING (e.g. Y1) or a hexadecimal value (e.g. H41) the contents must lie between "'" (e.g. 'H41').

Output instant in time of the auxiliary functions of the 3rd auxiliary function group.

```
$MN_AXCONF_MACHAX_NAME_TAB[0]='X1'
```

String "X1" is assigned as name for the first machine axis.

```
$MA_REFP_SET_POS[0,X1]=100.00000
```

A value of 100 mm is assigned to the first reference point of axis X1.

Examples:

Assignment to channel-specific machine data:

CHANDATA(1)	; Selection of the first channel
\$MC_CHAN_NAME='CHAN1'	; Name of the first channel
\$MC_AXCONF_GEOAX_NAME_TAB[1]='Y'	; Name of the 2nd geometry axis
	; of the first channel 'Y'
R10=33.75	; R10 of the first channel

3.2 Display machine data

9006	DISPLAY_SWITCH_OFF_INTERVAL	-	-
-	Time for screen saver	DWORD	PowerOn
-			
-	-	60	0
		180	7/3
			M

Description: This machine data specifies the duration in minutes after which the screen automatically switches to dark if no key has been pressed on the keyboard in the meantime.

The value 0 disables automatic light/dark switching.

Note:

The screen is only switched light/dark automatically if the NC/PLC interface signal DB19, ... DBX0.1 (screen dark) = 0.

9009	KEYBOARD_STATE	-	-
-	Keyboard shift behavior at booting	BYTE	PowerOn
-			
-	-	0	0
		2	7/3
			M

Description: This machine data defines the Shift behavior (SW-CAPSLOCK) of the keyboard.

Basic configuration of the Shift behavior of the keyboard

0: SW-CAPSLOCK OFF

2: SW-CAPSLOCK ON

Description: Pointer, with offset, to a PLC data block. This is required to report HMI monitor information to the PLC, e.g active HMI task.

Format: PLC-specific format for specifying a data block with byte offset, e.g. DB60.DBB10 for data block 60, byte 10.

The monitor information reported by the HMI has a maximum length of 8 bytes.

Description: Rotation cycle time in the alarm display:

- <500: no rotation in the alarm line
- 500 - 10000: cycle duration of alarm rotation in milliseconds

If a valid cycle time has been set, all alarms are displayed in the alarm line one after the other.

Each alarm is displayed for the specified time until it is replaced by the next alarm.

If no alarm is present, cycle alarms or program messages are displayed, if required.

However, these do not rotate.

Description: 0: The program messages of all channels are displayed in the alarm/message line. With multiple NCUs, the alarms and messages of all NCUs are displayed by default. The display can be restricted to the current NCU by the setting `ServerModeEnabled=false` in `slaesvcconf.xml`.

1: Only the program messages of the current channel of the current NCU are displayed.

Description: Language selection mode is defined:

- 1 = directly via selection list
- 2 = via setting of the 1st and 2nd language

Description:	If the MD has been set to 1, tooltips will be displayed.

3.2 Display machine data

9103	TOOLTIP_TIME_DELAY	-	-
s	Time delay tooltip display	BYTE	Immediately
-			
-	-	1	0
		60	7/3
			U

Description: Time delay for display of the tooltips in seconds.

9104	ANIMATION_TIME_DELAY	-	-
s	Time delay before animation of help screens	BYTE	Immediately
-			
-	-	10	5
		60	7/3
			U

Description: Time delay until the start of animation of help screens in seconds.
The setting is not active for help screens that are exclusively animated.

9105	HMI_WIDE_SCREEN	-	-
-	Display of the HMI as wide screen with OEM area always visible	BYTE	PowerOn
-			
-	-	0	0
		1	7/2
			M

Description: Display of the HMI as wide screen. Above the HMI there is a separate application field that is designed by the machine manufacturer.

9106	SERVE_EXTCALL_PROGRAMS	-	-
-	Process EXTCALL calls	BYTE	PowerOn
-			
-	-	1	0
		3	7/3
			M

Description: 0-3: Type of processing of external programs
0: HMI ignores EXTCALL instructions and selection via PLC.
1: HMI processes EXTCALL instructions and selection via PLC.
2: HMI processes EXTCALL instructions and ignores selection via PLC.
3: HMI ignores EXTCALL instructions and processes selection via PLC.

9107	DRV_DIAG_DO_AND_COMP_NAMES	-	-
-	Expanded drive diagnostics: DO and components	BYTE	Immediately
-			
-	-	3	0
		3	7/3
			I

Description: 0: DO and component type names
1: Real DO names and component type names
2: DO type names and real component names
3: Reale DO names and real component names

9108	SINUMERIK_INTEGRATE	-	-
-	Activating SINUMERIK Integrate products	BYTE	Immediately
-			
-	-	0	0
		1	7/3
			M

Description: If the machine data has been set to 1, the SINUMERIK Integrate softkey appears as the operating area.

9110	ACCESS_HMI_EXIT	-	-
-	Protection level of exit softkey	BYTE	PowerOn
-			
-	-	1	0
-	-	7	7/2
-	-	M	

Description: Protection level for the exit softkey (HMI restart) in the operating area menu

9111	HMI_MEM_LIMIT_USER	-	-
-	Size of the user storage space in GB	BYTE	PowerOn
-			
-	-	0	0
-	-	6	7/1
-	-	M	

Description: Size of the additional storage space for the user on the CF card if the option is set.
The rest of the available 6 GB are left for manufacturer data.

9112	HMI_SKIN	-	-
-	Design of the operator panel (skin)	DWORD	PowerOn
-			
-	-	1	0
-	-	10000	7/1
-	-	M	

Description: Design of the operator panel. The number of the skin is stated.
0 = Skin 0 (traditional)
1 = Skin 1 (new)
2 = Skin 2 (SINUMERIK ONE)

9113	EASY_XML_DIAGNOSE	-	-
-	EasyXML diagnostics mode	DWORD	Immediately
-			
-	-	0	0
-	-	-	7/2
-	-	M	

Description: Diagnostics and correction support for easyXML scripts
0 = No diagnostics active
1 = Syntax check active

9114	SIDESCREEN	-	-
-	SINUMERIK Operate display layout	BYTE	PowerOn
-			
-	-	3	0
-	-	10	7/1
-	-	M	

Description: SINUMERIK Operate display layout
0 = SINUMERIK OPERATE full screen
1 = SINUMERIK OPERATE Sidescreen activated
2 = SINUMERIK Operate Display Manager activated
3 = SINUMERIK Operate navigation menu activated

9115	SAVE_CREDENTIALS	-	-
-	Back up access authorizations for network drives	BYTE	Immediately
-			
-	-	0	0
-	-	2	7/1
-	-	M	

Description: Back up access authorizations for network drives when archiving
0 = Dialog hidden
1 = No dialog, access authorizations are not backed up
2 = No dialog, access authorizations are always backed up

3.2 Display machine data

9116	PANEL_CLEAN_MODE_TIME	-	-
s	Duration of cleaning mode	BYTE	Immediately
-			
-	-	30	10
-	-	60	7/3
-	-	M	

Description: This machine data specifies the duration of the cleaning mode in seconds. Within this time window, the user can clean the display without the risk of triggering unwanted functions.

9117	DLG_DRV_DEV_CFG_FSIZE	-	-
-	Font size in the Drive device – Configuration dialog	BYTE	Immediately
-			
-	-	1	1
-	-	2	7/3
-	-	U	

Description: Setting the font size used in the "Commissioning – Drive system – Drive device – Configuration" dialog
 1 = Standard font size
 2 = Large font size

9118	DLG_DRV_DEV_TOPO_FSIZE	-	-
-	Font size in the Drive device – Topology dialog	BYTE	Immediately
-			
-	-	1	1
-	-	2	7/3
-	-	U	

Description: Setting the font size used in the "Commissioning – Drive system – Drive device – Topology" dialog
 1 = Standard font size
 2 = Large font size

9119	ENABLE_AUTO_SAVE_DATA_ARCHIVE	-	-
-	Activation of automatic data backup archives	BYTE	PowerOn
-			
-	-	1	0
-	-	1	3/1
-	-	M	

Description: If the machine data is set to 1, the "Configure data backup" softkey appears in the Setup – Setup archives area.
 The system will automatically create a data backup archive during setup and at the intervals defined by the user.

9900	MD_TEXT_SWITCH	-	-
-	Plaintexts instead of MD identifier	BOOLEAN	Immediately
-			
-	-	0	-
-	-	-	7/3
-	-	U	

Description: If the MD has been set to 1, clear text is displayed on the operator panel instead of the machine data identifiers.

9990	SW_OPTIONS	-	-
-	Enable HMI software options	DWORD	Immediately
-			
-	-	0	-
-	-	-	1/1
-	-	I	

Description: Here you can enable the HMI software options

3.3 NC machine data

3.3.1 General machine data

10000	AXCONF_MACHAX_NAME_TAB				N01, N11	K2, F1, G2, F2, K5, M1	
-	Machine axis name				STRING	PowerOn	
-							
-	31	X1, Y1, Z1, A1, B1, C1, U1, V1	-	-	7/2	M	

Description:

List of the machine axis identifiers

The name of the machine axis is entered in this MD.

In addition to the fixed, defined machine axis identifiers "AX1", "AX2" ..., user-defined identifiers for the machine axes can also be assigned in this data.

The identifiers defined here can be used parallel to the fixed, defined identifiers for addressing axial data (e.g. MD) and machine axis-related NC functions (reference point approach, axial measurement, travel to fixed stop).

Special cases:

- The input machine axis name must not conflict with the names and assignments of the geometry axes (MD20060 \$MC_AXCONF_GEOAX_NAME_TAB, MD20050 \$MC_AXCONF_GEOAX_ASSIGN_TAB) and channel axes (MD20080 \$MC_AXCONF_CHANAX_NAME_TAB, MD20070 \$MC_AXCONF_MACHAX_USED).

The input machine axis name must not conflict with

Names for Euler angles (MD10620 \$MN_EULER_ANGLE_NAME_TAB)

Names for path-relevant orientations (MD10624 \$MN_ORIPATH_LIFT_VECTOR_TAB)

Names for normal vectors (MD10630 \$MN_NORMAL_VECTOR_NAME_TAB)

Names for direction vectors (MD10640 \$MN_DIR_VECTOR_NAME_TAB)

Names for rotation vectors (MD10642 \$MN_ROT_VECTOR_NAME_TAB)

Names for intermediate vector components (MD10644 \$MN_INTER_VECTOR_NAME_TAB)

Names for intermediate circle point coordinates for CIP (MD10660 \$MN_INTERMEDIATE_POINT_NAME_TAB)

Names for interpolation parameters (MD10650 \$MN_IPO_PARAM_NAME_TAB).

- The input machine axis name must not include any of the following reserved address letters:

D Tool offset	(D function)	E Reserved
F V Feedrate	(F function)	G Path condition
H Auxiliary function	(H function)	L Subroutine call
M Miscellaneous function	(M function)	N Subblock
P Subroutine number of passes		R Arithmetic parameters
S Spindle speed	(S function)	T Tool (T function)

The name must not include any keywords (e.g. DEF, SPOS etc.) or pre-defined identifiers (e.g. ASPLINE, SOFT).

The use of an axis identifier consisting of a valid address letter (A, B, C, I, J, K, Q, U, V, W, X, Y, Z), followed by an optional numerical extension (1-99) gives slightly better block change times than a general identifier.

If no identifier is assigned to a machine axis, the predefined name ("AXn") applies to the nth machine axis).

Related to....

MD20060 \$MC_AXCONF_GEOAX_NAME_TAB (geometry axis name in the channel [GEOAxisno.]

3.3 NC machine data

MD20080 \$MC_AXCONF_CHANAX_NAME_TAB (channel axis name in the channel [Channelaxisno.]

10002	AXCONF_LOGIC_MACHAX_TAB			N01	B3, K2	
-	Logical NCK machine axis image			STRING	PowerOn	
-						
-	31	AX1, AX2, AX3, AX4, AX5, AX6, AX7, AX8...	-	-	3/2	M

Description:

List of machine axes available on an NCU. (Logical NCK machine axis image)

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB creates another NCK global, logical layer between the channel axis layer and the machine axes in an NCU or NCU grouping. This layer is called the "Logic NckMachineAxImage", abbreviation: LAI).

Axes can only be assigned between different NCUs via this new intermediate layer!

The entry MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB[n] = NCj_AXi assigns the machine axis i on the NCU j to the axis index "n" in the LAI.

This makes the following assignments possible:

1. Local axes (default setting: AX1, AX2 ... AX31)

The entry MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB[n] = AX3 assigns the local axis AX3 to axis index n. (Default setting AX3 is present for n = 3 . Thus there is compatibility in software version 5 for MD blocks for software versions up to 4).

2. Link axes (axes that are physically connected to another NCU). The entry MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB[n] = NCj_AXi assigns axis AXi (link axis) on NCU j to axis index n.

Limits:

n Machine axis address (of the local NCU) 1 ... 31

j NCU number 1 ... 16

i Machine axis address (of the local/remote NCU) 1 ... 31

3. Axis container in which there are once again either local or link axes. The entry MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB[n] = CTr_SLs assigns container r and slot s to axis index n.

Limits:

n Machine axis address (of the local NCU) 1 ... 31

r Container number 1 ... 16

s Slot number (location) in the container 1 ... 32

The channel layer is formed via the related machine data \$MD20070

\$MC_AXCONF_MACHAX_USED and no longer points (small P5) directly to the machine axes but to the new LAI layer.

MD20070 \$MC_AXCONF_MACHAX_USED [k]=n assigns the LAI axis number "n" to the axis index "k" in the channel layer.

The machine axis and the corresponding NCK can then be determined from the LAI axis number.

If a number of NCUs point to the same machine axis in the cluster as a result of

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB, then the axial machine data MD30554

\$MA_AXCONF_ASSIGN_MASTER_NCU must define which NCU generates the master NCU and the setpoint values for the position controller after startup.

Related to:

MD12... \$MN_AXCT_AXCONF_ASSIGN_TABi (make entries in containers i)

10010	ASSIGN_CHAN_TO_MODE_GROUP			N01, N02, N11	K1, K5	
-	Channel valid in mode group			DWORD	PowerOn	
-						
-	10	1, 0, 0, 0, 0, 0, 0, 0...	0	10	7/2	M

Description:

This MD assigns the channel to a mode group

Entry value 1 => Assigned to 1st mode group

Entry value 2 => Assigned to 2nd mode group

etc.

From software version 4, it is permissible not to assign a mode group number to individual channels.

Channel gaps are allowed, in order to favor uniform configuration in similar types of machines. In this case, the number 0 is assigned to the channel instead of assigning a mode group number equal to or greater than 1. The channel is not activated, however it is handled like an active channel when counting the channels.

E.g.

```
ASSIGN_CHAN_TO_MODE_GROUP[0] = 1
ASSIGN_CHAN_TO_MODE_GROUP[1] = 1
ASSIGN_CHAN_TO_MODE_GROUP[2] = 0    ; gap
ASSIGN_CHAN_TO_MODE_GROUP[3] = 1
```

Application example:

Select desired channel via HMI and enter with MD10010 \$MN_ASSIGN_CHAN_TO_MODE_GROUP = 1.

Note:

This MD must still be entered even when only one mode group is present.

10050	SYSCLOCK_CYCLE_TIME			N01, N05, N11	G3, G2, R1	
s	System clock cycle			DOUBLE	PowerOn	
SFCO						
-	-	0.002	0.0005	0.008	7/2	M

Description:

Basic cycle time of the system software

The cycle time settings of cyclical tasks (position controller/IPO) are multiples of this basic cycle.

For PROFIBUS/PROFINET this MD corresponds to the PROFIBUS/PROFINET cycle time (DP cycle). This time is read from the PROFIBUS/PROFINET configuration during startup and written to the MD.

Note:

Reducing this MD can result in an automatic correction of

MD10062 \$MN_POSCTRL_CYCLE_DELAY

MD10064 \$MN_POSCTRL_CYCLE_DESVAL_DELAY

that cannot be undone by a subsequent increase!

Details:

The basic cycle is incremented in multiples of units of the measured value sampling cycle. When the system powers up, the entered value is automatically rounded to a multiple of this incrementation.

Note:

Discrete timer division ratios can give rise to the entered value producing a value that is not an integer after a Power OFF/ON.

For example:

```
Input                                =0.005s
                                   after power OFF/ON  =0.00499840
                                   or
Input                                =0.006s
                                   after power OFF/ON  =0.0060032
```

3.3 NC machine data

10061	POSCTRL_CYCLE_TIME			N01, N05	G3	
s	Position control cycle			DOUBLE	PowerOn	
-						
-	-	0.0	-1.0E+301	1.0E+301	ReadOnly	S

Description: Position controller cycle time:
Display of the position controller cycle time

10062	POSCTRL_CYCLE_DELAY			N01, N05	G3	
s	Position control cycle offset			DOUBLE	PowerOn	
-						
-	-	0.0	0.000	0.008	7/2	M

Description: For PROFIdrive only:
Only relevant to operation with PROFIdrive drives.
Position controller cycle offset in relation to the PROFIBUS/PROFINET cycle.
Offsets that exceed the set DP cycle or are smaller than the maximum Tdx, are automatically corrected to a substitute value half the size of the DP cycle.
MD10062 \$MN_POSCTRL_CYCLE_DELAY > 0: Default for position controller offset
MD10062 \$MN_POSCTRL_CYCLE_DELAY = 0: Automatic determination of the position controller offset based on the maximum Tdx from the PROFIBUS/PROFINET configuration
The maximum Tdx is determined through all equidistant buses.
The actually active offset value is displayed in MD 10063[1]
\$MN_POSCTRL_CYCLE_DIAGNOSIS.
Note:
MD10062 \$MN_POSCTRL_CYCLE_DELAY > 0 can reduce MD10050 \$MN_SYSCLOCK_CYCLE_TIME to the automatic correction of this MD that cannot be undone by a subsequent increase.
Recommendation:
In this case set the original value or default value once again.

10063	POSCTRL_CYCLE_DIAGNOSIS			EXP, N01, N05	-	
s	Active timing			DOUBLE	PowerOn	
-						
-	6	0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	ReadOnly	M

Description: Diagnostic data related to the PROFIBUS/PROFINET cycle.
[0]: Latest time at which the actual values should be available (Tdx)
[1]: Actually active position controller cycle offset (Tm)
[2]: Latest time at which the setpoints were output by the position controller
[3]: Time at which the setpoint transfer to the drive via DMA was started for SOC-based modules
[4]: Time at which the setpoint transfer to the drive via DMA was finished for SOC-based modules.
[5]: 'Worst case' time since voltage on, at which the setpoint transfer to the drive via DMA was finished for SOC-based modules.
Diagnostic data are initialized with ZERO with each NCK power up

10064	POSCTRL_CYCLE_DESVAL_DELAY			N01, N05	G3	
s	Clock skew of the DMA for the setpoints			DOUBLE	PowerOn	
-						
-	-	0.0	0.000	0.008	7/2	M

Description: For SINAMICS-Integrated only:

Only relevant to operation with SINAMICS-Integrated drives on SOC modules.

Offset of the output of the setpoints via DMA in relation to the PROFIBUS/PROFINET cycle.

Modification of MD10064 POSCTRL_CYCLE_DESVAL_DELAY requires a warm restart of the NCK and drive.

Offsets that exceed the set DP cycle are automatically corrected to a substitute value.

MD10062 \$MN_POSCTRL_CYCLE_DESVAL_DELAY > 0: Default setpoint offset

MD10062 \$MN_POSCTRL_CYCLE_DESVAL_DELAY = 0: Automatic determination of the setpoint offset on the basis of the hardware transfer rates

The actually active offset value is displayed in MD10063

\$MN_POSCTRL_CYCLE_DIAGNOSIS[4].

Note:

MD10064 \$MN_POSCTRL_CYCLE_DESVAL_DELAY > 0 can reduce MD10050 \$MN_SYSCLOCK_CYCLE_TIME to the automatic correction of this MD, which cannot be undone by a subsequent increase.

Recommendation:

In this case, set the original value or default value again.

10070	IPO_SYSCLOCK_TIME_RATIO			N01, N05, N11	G3, R1	
-	Factor for interpolation cycle			DWORD	PowerOn	
SFCO						
-	-	4	1	100	7/2	M

Description: The interpolator cycle is stated as a multiple of the time units of the system basic cycle MD10050 \$MN_SYSCLOCK_CYCLE_TIME.

Only integer multiples of the position control cycle can be set. Values that are not an integer multiple of the position control cycle are automatically increased to the next integer multiple of the position control cycle before they become active (on next power up).

This is accompanied by alarm 4110 "IPO cycle changed to [] ms".

10071	IPO_CYCLE_TIME				N01, N05, N11	G3	
s	Interpolator cycle				DOUBLE	PowerOn	
-							
-	-	0.0	-1.0E+301	1.0E+301	ReadOnly	S	

Description: Interpolation time
Display of the interpolator cycle time

10072	COM_IPO_TIME_RATIO			N01, N05	-	
-	Division ratio between IPO and communication task			DOUBLE	PowerOn	
-						
-	-	1.0	0.0	100.0	7/2	M

Description: Division ratio between IPO and communication tasks. A value of 2 means, e.g., that the communication task is only processed in every second IPO cycle. This makes more time available for the other tasks. Overlarge values slow down the communication between the HMI and NCK.

Numerical values less than 1 downscale the IPO cycle. This value is adjusted so that only runtimes that are a multiple of the position controller time are possible for the communication task. A call period of about 10 ms is practical for the communication task.

3.3 NC machine data

10088	REBOOT_DELAY_TIME			EXP	K3	
s	Reboot delay			DOUBLE	Immediately	
-						
-	-	0.2	0.0	1.0	2/2	M

Description: The reboot following PI "_N_IBN_SS" is delayed by the time MD10088 \$MN_REBOOT_DELAY_TIME.

The suppressable NOREADY alarm 2900 is triggered immediately by PI "_N_IBN_SS".

If MD10088 \$MN_REBOOT_DELAY_TIME falls below the MD36620 \$MA_SERVO_DISABLE_DELAY_TIME value of an axis, the axis is decelerated during MD10088 \$MN_REBOOT_DELAY_TIME. The servo enable is then disabled. That is, the full MD36620 \$MA_SERVO_DISABLE_DELAY_TIME is NOT waited.

Alarm 2900 does not become active if MD10088 \$MN_REBOOT_DELAY_TIME = 0.0, and there is no reboot delay.

The NCK waits beyond the stated delay time until the PI has been able to be acknowledged to the HMI. The total delay time may be as much as 2 s.

10089	SAFE_PULSE_DIS_TIME_BUSFAIL			N01, N06	FBSI	
s	Delay time pulse suppr. for bus failure			DOUBLE	PowerOn	
-						
-	-	0.0	0	0.8	7/2	M

Description: Time after a communication failure with the drive at which safe pulse disable takes place. The drive can still respond autonomously to the bus failure during this time (see extended stop and retract)

In the following cases, this time is not allowed to elapse before disabling pulses:

- On selection of an external Stop A or a test stop
- If SBH is active or on selection of SBH
- If an SG level is active or on selection of an SG level for which an immediate pulse disable is parameterized in MD36961 \$MA_SAFE_VELO_STOP_MODE or MD36963 \$MA_SAFE_VELO_STOP_REACTION.

Note:

This value is transferred to the drive parameter p9580 with the copy function of the SI-MD and compared in the data cross-check. This general machine data is contained in the axis-specific checksum calculation of the safety-related machine data (MD36998 \$MA_SAFE_ACT_CHECKSUM, MD36999 \$MA_SAFE_DES_CHECKSUM).

10090	SAFETY_SYSCLOCK_TIME_RATIO			N01, N06	FBSI	
-	Factor for monitoring cycle			DWORD	PowerOn	
SFCO						
-	-	3	1	50	7/1	M

Description: Ratio between the monitoring cycle and the system clock cycle. The monitoring cycle is the product of this data and MD10050 \$MN_SYSCLOCK_CYCLE_TIME.

The monitoring cycle is checked during power on:

- It must be an integer multiple of the position-control cycle
- It must be < 25 ms

The factor is rounded down to the next possible value if the conditions are not fulfilled. The actual set monitoring cycle is displayed by MD10091 \$MN_INFO_SAFETY_CYCLE_TIME.

A new value is also generated for the cross-check cycle, which is displayed by data MD10092 \$MN_INFO_CROSSCHECK_CYCLE_TIME.

Note:

The monitoring cycle defines the monitoring response time. It must be noted that the CPU load increases as the monitoring cycle becomes shorter.

Related to:

MD10050: \$MN_SYSCLOCK_CYCLE_TIME

MD10091: \$MN_INFO_SAFETY_CYCLE_TIME

MD10092: \$MN_INFO_CROSSCHECK_CYCLE_TIME

10091	INFO_SAFETY_CYCLE_TIME			N01, N06, N05	FBSI	
s	Display of monitoring cycle time			DOUBLE	PowerOn	
-						
-	-	0.0	-	-	ReadOnly	S

Description: Display data:
Set monitoring cycle time in seconds.
Derived from MD10050 \$MN_SYSCLOCK_CYCLE_TIME and MD10090 \$MN_SAFETY_SYSCLOCK_TIME_RATIO.
The data value is recalculated as soon as one of the following data are changed:
MD10090 \$MN_SAFETY_SYSCLOCK_TIME_RATIO,
MD10060 \$MN_POSCTRL_SYSCLOCK_TIME_RATIO,
MD10050 \$MN_SYSCLOCK_CYCLE_TIME
The new value does not become active until after the next power-on.
Related to:
MD10090: \$MN_SAFETY_SYSCLOCK_TIME_RATIO

10092	INFO_CROSSCHECK_CYCLE_TIME			N01, N06, N05	FBSI	
s	Display of cycle time for cross-checking			DOUBLE	PowerOn	
-						
-	-	0.0	-	-	ReadOnly	S

Description: Display data:
Maximum cross-check cycle in seconds.
Derived from MD10091 \$MN_INFO_SAFETY_CYCLE_TIME and the number of data to be cross-checked. (This may vary depending on the enabled functionality of the individual axes.)
The data value is recalculated as soon as one of the following data are changed:
MD10090 \$MN_SAFETY_SYSCLOCK_TIME_RATIO,
MD10060 \$MN_POSCTRL_SYSCLOCK_TIME_RATIO,
MD10050 \$MN_SYSCLOCK_CYCLE_TIME
The new value does not become active until after the next power-on.
Related to:
MD10090: \$MN_SAFETY_SYSCLOCK_TIME_RATIO
MD36992: \$MA_SAFE_CROSSCHECK_CYCLE

10094	SAFE_ALARM_SUPPRESS_LEVEL			EXP, N06, N05	FBSI	
-	Alarm suppress level			BYTE	PowerOn	
-						
-	-	2	0	113	7/2	M

Description: Affects the display of safety alarms. The monitoring channels NCK and drive or NCK and PLC display alarms with the same meaning in several situations.
To reduce the volume of the alarm display, this MD is set to define whether safety alarms with the same meaning are to be hidden or not. This does not affect the dual-channel stop response.
0 = Dual-channel triggered alarms are displayed in full

3.3 NC machine data

- Dual-channel display of all axis-specific safety alarms
- Alarm 27001, error code 0 is displayed
- Alarms 27090, 27091, 27092, 27093, and 27095 are dual-channel and are displayed several times.

1 = Alarms with the same meaning are only displayed once.

The following alarms can be affected by this:

27010 = C01707

27011 = C01714

27012 = C01715

27013 = C01706

27020 = C01710

27021 = C01709

27022 = C01708

27023 = C01701

27024 = C01700

In the case of these alarms, only one of the alarms listed (270xx or C01xxx) is triggered.

The alarm of the monitoring channel that triggers the alarm with the same meaning at a later time is no longer displayed.

Furthermore, alarm 27001 with error code 0 is suppressed. This alarm is triggered as a result of drive alarm C01711. In this case, drive parameters r9710[0,1], r9711[0,1], r9735[0,1], r9736[0,1], r9737[0,1], r9738[0,1], r9739[0,1] provide further information about the cause of the error.

2 = Default setting

In addition to the functionality with MD value = 1, the alarms from SPL processing (27090, 27091, 27092, 27093, and 27095) are displayed in one channel and only once. This also applies to the alarms for PROFIsafe communication (27250 and following).

3 = Axis-specific alarms 27000 and A01797 are replaced by alarm message 27100 for all axes / drives. Alarm 27040 is replaced by alarm 27140 for all axes/ drives.

12 = The alarms are prioritized beyond the functionality with MD value = 2. Obvious subsequent alarms are no longer displayed or are automatically cleared from the display.

The following alarms can be affected by this:

27001, 27004, 27020, 27021, 27022, 27023, 27024, 27091,

27101, 27102, 27103, 27104, 27105, 27106, 27107

13 = The alarms are prioritized beyond the functionality with MD value = 3 (as with MD value 12).

1xx (100 digit set) = Axis-specific checksum alarms of the NCK (27032, 27035, and 27060) are displayed in SPL setup mode (MD11500 \$MN_PREVENT_SYNACT_LOCK[0,1] = 0) by alarm 27135 for all axes.

This machine data must be set to 0 to create an acceptance log, so that the triggering of all alarms can be logged.

10095	SAFE_MODE_MASK			EXP, N06	FBSI	
-	'Safety Integrated' operating modes			UDWORD	PowerOn	
-						
-	-	0	0x00000000	0x0000001E	7/2	M

Description:

Bit 1 = 0: The "Modular PROFIsafe I/O connection" function is not active.

Bit 1 = 1: The "Modular PROFIsafe I/O connection" function is active.

Bit 2 = 0: The reduced language scope for SAFE.SPF is only activated during run-up in the case of automatic startup (MD20108 \$MC_PROG_EVENT_MASK bit 5)

Bit 2 = 1: The reduced language scope for SAFE.SPF is also activated if the CALL command is used to call SAFE.SPF.

Bit 3 = 0: All PROFIsafe drivers in one IPO cycle

Bit 3 = 1: PROFIsafe drivers distributed over a number of IPO cycles

Bit 4 = 0: In "SINUMERIK Safety Integrated (SPL)" safety mode, NC axes cannot be linked to the drive monitoring functions via SIC/SCC

Bit 4 = 1: In "SINUMERIK Safety Integrated (SPL)" safety mode, NC axes can be linked to the drive monitoring functions via SIC/SCC

Related to:

Bit 1:

MD13302: \$MN_PROFISAFE_IN_ENABLE_MASK

MD13303: \$MN_PROFISAFE_OUT_ENABLE_MASK

Bit 2:

MD20108: \$MC_PROG_EVENT_MASK, Bit 5

10096	SAFE_DIAGNOSIS_MASK			EXP, N06, N05	FBSI	
-	'Safety Integrated' diagnostics functions			UDWORD	NEW CONF	
-						
-	-	1	0	0x000F	7/2	M

Description:

Bit 0 = 0:

SGE differences between NCK and drive monitoring channels are not displayed

Bit 0 = 1:

Default setting: SGE differences between NCK and drive monitoring channels are displayed. Differences between the following SGEs are displayed (the bit numbers stated refer to the axis-specific map of the SGEs; they correspond to the assignment of the axis-specific VDI interface:

Bit 0: DB31, ... DBX22.0 (SBH/SG deselection)

Bit 1: DB31, ... DBX22.1 (SBH deselection)

Bit 3: DB31, ... DBX22.3 (SG selection: Bit 0)

Bit 4: DB31, ... DBX22.4 (SG selection: bit 1)

Bit 12: DB31, ... DBX23.4 (activate SE 2)

Bit 28: DB31, ... DBX33.4 (SG correction: bit 0)

Bit 29: DB31, ... DBX33.5 (SG correction: bit 1)

Bit 30: DB31, ... DBX33.6 (SG correction: bit 2)

Bit 31: DB31, ... DBX33.7 (SG correction: bit 3)

The differences are displayed by message alarm 27004.

Bit 1 = 0: Default setting: Display of a non-executed SPL start after expiration of the time set in MD13310 \$MN_SAFE_SPL_START_TIMEOUT with alarm 27097

Bit 1 = 1: Display of alarm 27097 is suppressed

Alarm 27097 indicates that despite the SPL configuration an SPL start has not been executed after expiration of the time set in MD13310 \$MN_SAFE_SPL_START_TIMEOUT. Alarm description 27097 explains why.

Bit 2 = 0: Default setting: Communication errors are displayed with SFC error codes in alarm 27354

Bit 2 = 1: Display of alarm 27354 is suppressed

Bit 3 = 0: Default setting: alarm 27038 is displayed if an unknown bit is set in drive parameter r474.

Bit 3 = 1: Display of alarm 27038 is suppressed

10097	SAFE_SPL_STOP_MODE			N01, N06	FBSI	
-	Stop reaction for SPL errors			BYTE	PowerOn	
-						
-	-	3	3	4	7/2	M

3.3 NC machine data

Description: Selection of the stop response when errors are detected in the NCK / PLC SPL cross-check.

3: Stop D

4: Stop E

Entering the value 4 in this MD (Stop E), without external Stop E being enabled in all axes with SI function enable (MD36901 \$MA_SAFE_FUNCTION_ENABLE not equal to 0), results in alarm 27033 with a reference to this MD.

As a remedy, either Stop D must be parameterized again, or bits 4 and 6 must be set in MD36901 \$MA_SAFE_FUNCTION_ENABLE for all affected axes.

If this MD is set to 4, the PLC signal DB18 DBX36.1 (Stop E) must also be set to 1 to make this parameterization known to the PLC. Different parameterization results in alarm 27090.

10098	PROFISAFE_IPO_TIME_RATIO			N01, N10	FBSI	
-	Factor for PROFIsafe communication			DWORD	PowerOn	
SFCO						
-	-	1	1	25	7/1	M

Description: Ratio between PROFIsafe communication and interpolator cycle. The actual PROFIsafe communication cycle is the product of this data and MD10071 \$MN_IPO_CYCLE_TIME, and is displayed in MD10099 \$MN_INFO_PROFISAFE_CYCLE_TIME. The OB40 on the PLC side is triggered from the NCK side in this cycle to run the communication between F master and F slaves.

The PROFIsafe communication must not exceed 25 ms.

10099	INFO_PROFISAFE_CYCLE_TIME			N01, N10, N05	FBSI	
s	PROFIsafe communication cycle time			DOUBLE	PowerOn	
-						
-	-	0.0	-	-	ReadOnly	S

Description: Display data:

Displays the maximum time frame within which communication is performed between the F master and F slave. In this time frame, PROFIsafe communication is operated on the PLC via OB40.

The value is derived from the interpolator cycle and MD10098 \$MN_PROFISAFE_IPO_TIME_RATIO.

If the selected communication cycle is exceeded in cyclic operation, this is also displayed here.

In the case of a parameterization error (communication cycle exceeds the maximum value of 25.0 ms), the maximum value that can be set is displayed.

10100	PLC_CYCLIC_TIMEOUT			EXP, N01, N06	P3	
s	Maximum PLC cycle time			DOUBLE	PowerOn	
-						
-	-	0.1	0.0	1.0E+301	7/2	M

Description: Cyclical PLC monitoring time.

This machine data specifies the maximum monitoring time after which the PLC must have incremented its sign of life. Incrementing takes place within the interpolation cycles.

10110	PLC_CYCLE_TIME_AVERAGE			N01, N07	B1	
s	Average PLC acknowledgment time			DOUBLE	PowerOn	
-						
-	-	0.05	0.0	1.0E+301	7/2	M

Description: Time information for the CNC about the OBI cycle time. During this cycle time, it is guaranteed that the auxiliary functions will be acknowledged.

By means of the MD, the status transitions:

"channel operates/ channel in RESET/ channel failure --> channel interrupted" can be delayed for the PLC in case of a RESET. With the output "channel interrupted", the NCK waits at least the time indicated in the MD + 1 IPO cycle.

With the time indication, the path feedrate during path control operation in case of an auxiliary function output during motion is controlled in a way to ensure that the minimum travel time corresponds to the time information. This ensures a uniform velocity behavior which is not disturbed by waiting for the PLC acknowledgment. The internal incrementation is performed in the interpolation cycle.

For the auxiliary function output in the continuous-path mode, the MD is also relevant for the FM357 and 802/802s systems. With SW 5.1 and higher, the other systems are parameterized directly via the PLC.

10120	PLC_RUNNINGUP_TIMEOUT	EXP, N01, N06	H2
s	Monitoring time for PLC power up	DOUBLE	PowerOn
-			
-	-	50.0	0.0
		1.0E+301	7/2
			M

Description: Power up PLC monitoring time

This machine data specifies the maximum monitoring time within which the PLC must report its first sign of life to the NCK. During the power up routine, the monitoring function has the task of verifying that the PLC has properly assumed cyclic operation. If the PLC does not issue a message within this time, the NC issues an alarm message when it powers up; NC-READY is not set. The incrementing takes place within the interpolation cycles.

10125	EES_NC_NAME	EXP	-
-	NCU name for the generation of unique NC program names in EES mode	STRING	PowerOn
-			
-	-	-	-
			7/2
			M

Description: The user can assign a unique NCU name to each NCU with MD10125 \$MN_EES_NC_NAME. Similarly to \$P_CHANNO, this can then be used to generate unique NCU program names in EES mode.

Example: \$MN_EES_NC_NAME="NC1"

```
DEF STRING[31] FILENAME
FILENAME = "MYFILE_" << $MN_EES_NC_NAME << "_" << $P_CHANNO << ".SPF"
```

The variable FILENAME is then given the value "MYFILE_NC1_1.SPF" in the first channel on the NCU "NC1".

Background:

In EES mode, the part program memory can be located on a network drive which is accessed by multiple NCUs. Conflicts could be generated with the part program commands WRITE and DELETE if unique file names are not used. The generation of unique NCU program names in the user program is supported by MD10125 \$MN_EES_NC_NAME.

10127	EES_MOUNT_FILE	EXP	-
-	Path and name of the file with the mounted drives	STRING	PowerOn
-			
-	-	/user/sinumerik/mnt/ devices.lst	-
			ReadOnly
			S

Description: File name with path name under which the list of mounted drives is stored.

3.3 NC machine data

10128	EES_MAX_MOUNT_TIME	N05	-
s	Maximum time for mounting the drives	DOUBLE	PowerOn
-			
-	-	0	0
		3600	1/1
			M

Description: MD10128 \$MN_EES_MAX_MOUNT_TIME is used to configure the maximum waiting time in seconds for mounting the drives.

\$MN_EES_MAX_MOUNT_TIME > 0:
If the time in seconds is insufficient, then the drives are not detected, and the control powers up with alarm 6694 "Drives could not be mounted".

\$MN_EES_MAX_MOUNT_TIME = 0:
If the drives could not be mounted during control power on, then the control powers up without an alarm. The mounted drives are then declared to the control at each part program start.

Condition: The function "Execution from External Storage" is active.

10131	SUPPRESS_SCREEN_REFRESH	EXP	A2
-	Screen refresh response under overload	BYTE	PowerOn
-			
-	-	0	0
		2	7/2
			M

Description: There are part programs in which the main run (HL) has to wait until the pre-processing (VL) makes new blocks available.

The pre-processing and display update compete for NC computing time. The MD defines how the NC is to respond when the pre-processing is too slow.

0: When the VL of a channel is too slow, the updating of the display is suppressed in all channels.

1: When the VL of a channel is too slow, the updating of the display is suppressed only in the time-critical channels in order to gain time for the pre-processing.

2: The updating of the display is never suppressed.

10132	MMC_CMD_TIMEOUT	EXP, N01, N06	PA, M4
s	Monitoring time for HMI command in the part program	DOUBLE	PowerOn
-			
-	-	3.0	0.0
		100.0	7/2
			M

Description: Monitoring time in seconds until the HMI acknowledges a command from the part program. The following times are monitored:

- In the case of an HMI command without acknowledgment: time from triggering the transfer of the command string until successful transmission to the HMI
- In the case of an HMI command with synchronous and asynchronous acknowledgment: time from triggering the transfer of the command strings until receipt of the acceptance acknowledgment from the HMI
- For EXTCALL command and execution from external drives: time between the transmission triggering of the command string and the successful sending to the HMI.

10133	START_LOCK_TIMEOUT	EXP	-
s	Monitoring time for channel-specific start disable and WRITE lock	DOUBLE	PowerOn
-			
-	-	2.0	0.5
		3.0	ReadOnly
			S

Description: MD10133 \$MN_START_LOCK_TIMEOUT is evaluated in two situations:

1. If an NC channel is started in AUTO mode (NC Start key) with channel-specific start disable set (not program-specific start disable), then the start is executed if the start disable is reset within the waiting time configured in MD10133 \$MN_START_LOCK_TIMEOUT.

2. If an NC program, for which a Write lock has been set (e.g. by the HMI Editor), is to be processed in EES mode (Execution from External Storage), then the processing is stopped with alarm 14007 after expiry of the waiting time configured by MD10133 \$MN_START_LOCK_TIMEOUT.

10134	MM_NUM_MMC_UNITS			EXP, N01, N02	B3	
-	Possible number of simultaneous HMI communication partners			DWORD	PowerOn	
-						
-	-	6	1	10	2/2	M

Description: Possible number of simultaneous HMI communication partners with which the NCU can exchange data.

This value affects then number of communication orders that the NCK can manage. The higher the value, the more HMIs that can be simultaneously connected to the NCK without leading to communication problems.

DRAM is made available for this function in the NCU corresponding to the input in the machine data. The inputs for changing the memory areas have to be taken into account. The unit of MD10134 \$MN_MM_NUM_MMC_UNITS is a "resource unit".

A standard HMI needs 1 resource unit, an HMI100/103 needs 2. OEM variants may need more or less resources.

- If the value is set lower than would be needed for the number of connected HMIs, this is not inevitably problematical. Actions may not function sporadically during multiple, simultaneous, communication-intensive operations (e.g. loading a program): Alarm 5000 is displayed. The operation then has to be repeated.
- If the value is set higher, more dynamic memory is occupied than necessary. The value should be reduced appropriately if the memory is required for other purposes.

References: /FB/, S7, "Memory Configuration"

10136	DISPLAY_MODE_POSITION			N01	-	
-	Display mode for actual position in the Work			DWORD	Reset	
-						
-	-	0	0	1	7/1	M

Description: Defines how the position and the distance to go are displayed in the Work.

0: Display as in software version 5 and earlier

1: At end of block, the actual value display is in principle the same as the programmed end point, irrespective of where the machine actually is (e.g. as a result of the tool radius compensation). The distance to go is the same as the actual distance to be traversed. This means that the displayed actual position has to be the same as the displayed end position minus the distance to go, irrespective of the actual machine position. If the block end points are changed by chamfers, radii, contour definitions, splines or SAR in comparison to the NC program, then these changes are reflected in the display as if they had been programmed. This does not apply to changes resulting from tool radius compensation or smoothing.

10140	TIME_LIMIT_NETTO_DRIVE_TASK			EXP, N01	ECO	
s	Runtime limit of drive communications sub-task			DOUBLE	PowerOn	
-						
-	-	0.02	.001	.5	7/1	M

Description: Net runtime limit of the drive communication sub-task

The preprocessing and the communications tasks (drive communication and domain service) share the time that is not used up by the cyclical tasks.

3.3 NC machine data

10150	PREP_DRIVE_TASK_CYCLE_RATIO			EXP, N01	ECO	
-	Factor for communication with drive			DWORD	PowerOn	
-						
-	-	2	1	50	7/1	M

Description: This machine data specifies the division ratio used for activation of the drive communication task in the non-cyclic time level. This allows the time share of preparation in the non-cyclic time level to be increased, which reduces block change times. This slows down communication with the digital drives, especially during program execution.

10156	TASK_SLEEP_TIME			EXP	-	
-	Average time transfer per cycle			DWORD	Immediately	
NBUP						
-	-	0	0	10000	7/2	M

Description: Only relevant to simulation systems

The unit of the machine data is the microsecond.

In the simulation environment, a machining run designates execution of the tasks Server, IPO, and PREP, which are not interrupted

This machine data now specifies the average time that is allocated to the operating system of the simulation host system per machining run.

As it is not usually possible to allocate times in the microsecond range in the operating system of the simulation host system, the times are calculated over multiple cycles, and then the default time set by the operating system (typically between 10 - 15 milliseconds) is allocated. A number of cycles are therefore run without delay, and there is a correspondingly longer wait later, so that the time set in the MD is allocated as an overall average. The value 0 deactivates the time allocation.

E.g.: If MD10156 \$MN_TASK_SLEEP_TIME is set to the value 50 (microseconds), and the minimum allocated time defined by the operating system is 10 milliseconds (= 10000 microseconds), there will be a delay of 10 milliseconds every 200 cycles (10000/50).

10160	PREP_COM_TASK_CYCLE_RATIO			EXP, N01	ECO	
-	Factor for communication with HMI			DWORD	PowerOn	
-						
-	-	3	1	50	7/1	M

Description: This machine data specifies the division ratio used for activating the communication task in the non-cyclic time level. This allows the time share of preparation in the non-cyclic time level to be increased, which reduces block change times. This slows down external communication (file transfer), especially during program execution (group-by-group reload).

10185	NCK_PCOS_TIME_RATIO			EXP, N01	-	
%	CPU time share of the NCK			DOUBLE	PowerOn	
-						
-	-	90.0	90.0	95.0	7/2	M

Description: This machine data defines the maximum proportion of CPU time in percent given to the NC kernel in the entire system. The division specified by the user is implemented as far as possible.

When implementing the specification, the system takes into account limiting values for the absolute proportion of CPU time that must not be exceeded or undershot. Adaptations are made without generating an alarm.

10190	TOOL_CHANGE_TIME			N01	BA	
s	Tool changing time for simulation			DOUBLE	PowerOn	
-						
-	-	0.	-1.0E+301	1.0E+301	7/2	M

Description: This data defines how much time is estimated for a tool change (only relevant for a simulation).

Note:

The time entered here replaces only the times for tool change which do not occur in the simulation on principle, such as waiting times for PLC commands, such as M206. Any traversing commands or similar which the tool change cycle also issues in the simulation are added to the estimated time in addition to the value entered here.

If the value of the MD is to be added to the estimated time as the total time of the tool change, then the following must be programmed at the start of the tool change cycle:

```
IF $MN_SIM_ENVIRONMENT B_AND 'B100' M206 ; see MD22560 $MC_TOOL_CHANGE_M_CODE
RET
ENDIF
```

10192	GEAR_CHANGE_WAIT_TIME			N01	S1	
s	Gear stage change waiting time			DOUBLE	PowerOn	
-						
-	-	10.0	0.0	1.0e5	7/2	M

Description: External events which trigger reorganization, wait for the end of a gear stage change. GEAR_CHANGE_WAIT_TIME now determines the waiting time for the gear stage change. Time unit in seconds.

When this time expires without the gear stage change having been terminated, the NCK reacts with an alarm.

Among others, the following events will cause reorganization:

- User ASUB
- Mode change
- Delete distance-to-go
- Axis replacement
- Activate user data

10200	INT_INCR_PER_MM			N01	G2, K3	
-	Calculation resolution for linear positions			DOUBLE	PowerOn	
LINK						
-	-	1000.	1.0	1.0e7	7/2	M

Description: This MD defines the number of internal increments per millimeter.

The accuracy of the input of linear positions is limited to the calculation accuracy by rounding the product of the programmed value and the calculation accuracy to an integer.

In order to keep the executed rounding easily understandable it is useful to use powers of 10 for the calculation accuracy.

10210	INT_INCR_PER_DEG			N01	G2, K3, R2	
-	Calculation resolution for angular positions			DOUBLE	PowerOn	
LINK						
-	-	1000.0	1.0	1.0e9	7/2	M

Description: This MD defines the number of internal increments per degree.

3.3 NC machine data

The accuracy of the input of angular positions is limited to the calculation accuracy by rounding the product of the programmed value and the calculation accuracy to an integer.

In order to keep the executed rounding easily understandable it is useful to use powers of 10 for the calculation accuracy.

10220	SCALING_USER_DEF_MASK			EXP, N01	G2	
-	Activation of scaling factors			UDWORD	PowerOn	
SCAL						
-	-	0x200	0	0x7FFF	7/2	M

Description:

Bit mask for selecting the base values for the data (e.g. machine and setting data) that have a physical unit, they are interpreted in the default units shown below according to the basic system (metric/inch). If other input/output units are to be selected for individual physical units then these are activated with the scale factors associated with this machine data (entered in MD10230 \$MN_SCALING_FACTORS_USER_DEF[n]).

\$MN_SCALING_FACTORS_USER_DEF[n]).

This does not affect the programming of geometry and feed values.

Bit set:

Data of the assigned physical variable (see list) are scaled to the unit defined by MD10230 \$MN_SCALING_FACTORS_USER_DEF[n].

Bit not set:

Data of the assigned physical variable are scaled to the default unit shown below.

Assigned physical variable Default units for:

MD10240 \$MN_SCALING_SYSTEM_IS_METRIC

Bit no.	1 = METRIC	0 = INCH
(Stated as hex value)		
0 Linear position	1 mm	1 inch
1 Angular position	1 degree	1 degree
2 Linear velocity	1 mm/min	1 inch/min
3 Angular speed	1 rpm	1 rpm
4 Linear acceleration	1 m/s ²	1 inch/s ²
5 Angular acceleration	1 rev/s ²	1 rev/s ²
6 Linear jerk	1 m/s ³	1 inch/s ³
7 Angular jerk	1 rev/s ³	1 rev/s ³
8 Time	1 s	1 s
9 Position-controller servo gain	1/s	1/s
10 Revolutionary feedrate	1 mm/rev	1 mm/rev
11 Compensation value linear pos.	1 mm	1 mm
12 Compensation value angular pos.	1 degree	1 degree
13 Cutting speed	1 m/min	1 feet/min

Example:

SCALING_USER_DEF_MASK =?H3?; (Bit nos. 0 and 1 as hex values)

The scale factor defined in the associated MD10230 \$MN_SCALING_FACTORS_USER_DEF[n] is activated for linear and angular positions.

If this machine data is changed, a power on is required as otherwise the associated machine data that have physical units would be incorrectly scaled.

Proceed as follows:

- MD changed manually
First start up and then enter the associated machine data with physical units.
- MD changed via machine data file
First start up and then reload the machine data file so that the new physical units are taken into account.

If the machine data are altered, alarm 4070 "Scaling machine data altered" is output.

Application example: Input/output of linear velocities is to be in cm/min:

SCALING_USER_DEF_MASK = 0x4 (bit no. 2 as hex value)

SCALING_FACTORS_USER_DEF[2] = 0.1666666667 (10/60)

[Related to:

MD10230 \$MN_SCALING_FACTORS_USER_DEF[n] (scaling factors of the physical variables)

10230	SCALING_FACTORS_USER_DEF			EXP, N01	G2	
-	Scaling factors of physical variables			DOUBLE	PowerOn	
	[0]	Linear position 1 mm				
	[1]	Angular position 1 degree				
	[2]	Linear velocity 1 mm/s				
	[3]	Angular speed 1 degree/s				
	[4]	Linear acceleration 1 mm/s ²				
	[5]	Angular acceleration 1 degree/s ²				
	[6]	Linear jerk 1 mm/s ³				
	[7]	Angular jerk 1 degree/s ³				
	[8]	Time 1 s				
	[9]	Position controller loop gain 1/s				
	[10]	Revolutional feedrate 1 mm/degree				
	[11]	Compensation value linear position 1 mm				
	[12]	Compensation value angular position 1 degree				
	[13]	Cutting speed 1 mm/s				
SCAL						
-	15	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0...	1e-9	1.0E+301	7/2	M

Description:

The scaling factor of a physical variable that has a unit other than the default unit setting (set bit in MD10220 \$MN_SCALING_USER_DEF_MASK) is entered in this MD. The factor must refer to the unit used internally for the physical variable in question.

The scaling factor is assigned to the physical variable using the index [0...12]. If this machine data is changed, a startup is required because otherwise the associated machine data that have physical units would be incorrectly scaled.

Proceed as follows:

- MD changed manually
First start up and then enter the associated machine data with physical units.
- MD changed via machine data file
First start up and then reload the machine data file so that the new physical units are taken into account.

If the machine data are altered, alarm 4070 "Scaling machine data altered" is output.

Application example(s):

Input/output of angular speeds is to be in new degree/min: MD10220

\$MN_SCALING_USER_DEF_MASK = 'H8'; (bit no. 3 as hex value) MD10230

\$MN_SCALING_FACTORS_USER_DEF[3] = 0.01851852; (400/360/60)

[3]: Index for angular speed.

Related to:

MD10220 \$MN_SCALING_USER_DEF_MASK (activation of scaling factors).

10240	SCALING_SYSTEM_IS_METRIC			N01	G2, K3, A3, S1	
-	Basic system metric			BOOLEAN	PowerOn	
SCAL						
-	-	TRUE	FALSE	TRUE	7/2	M

3.3 NC machine data

Description:

The MD defines the basic system used by the control for scaling length-dependent physical variables for data input/output.

All corresponding data are stored internally in the basic units of 1 mm, 1 degree and 1 sec.

In the case of access from the interpreter (part program and download), from the operator panel (variable service) or through external communication, scaling takes place in the following units:

MD10240 \$MN_SCALING_SYSTEM_IS_METRIC = 1: scaled in:

mm, mm/min, m/s², m/s³, mm/rev.

MD10240 \$MN_SCALING_SYSTEM_IS_METRIC = 0: scaled in:

inch, inch/min, inch/s², inch/s³, inch/rev.

The selection of the basic system also defines the interpretation of the programmed F value for linear axes:

	metric	inch
G94	mm/min	inch/min
G95	mm/rev.	inch/rev.

If this machine data is changed, a startup is required because otherwise the associated machine data that have physical units would be incorrectly scaled.

Proceed as follows:

- MD changed manually

First start up and then enter the associated machine data with physical units.

- MD changed via machine data file

First start up and then reload the machine data file so that the new physical units are taken into account.

If the machine data are altered, alarm 4070 "Scaling machine data altered" is output.

Note: This MD is documented and published with a PowerOn effectiveness criterion.

In connection with MD10260 \$MN_CONVERT_SCALING_SYSTEM and the "online switch-over" of the system of units, this data is already effective for reset and PI scale

Application example(s):

Setup is in the metric system and then changed over to the inch system.

Special cases:

10260	CONVERT_SCALING_SYSTEM			EXP	-, G2, B3, K3, N3	
-	Enable basic system conversion			BOOLEAN	PowerOn	
LINK						
-	-	FALSE	FALSE	TRUE	1/1	M

Description:

Determines the handling of MD10240 \$MN_SCALING_SYSTEM_IS_METRIC.

0: Inch/metric behavior conforms to SW1-SW4

1: Inch/metric behavior from SW5

Inch/metric functionality of SW5:

1. Switch over the systems of units with HMI softkey
2. New G codes G700/G710
3. Data backup with system of unit recognition INCH/METRIC
4. Automatic data conversion on change of system of units

- All zero point offsets
- Compensation data (EEC, QEC)
- Tool offsets
- etc.

The change from MD10260 \$MN_CONVERT_SCALING_SYSTEM leads to alarm 4070!

This alarm is designed to indicate that data which remain active after a POWERON are not subjected to automatic conversion from SW1-SW4 and SW5 formats.

10270	POS_TAB_SCALING_SYSTEM			N01, N09	T1, N3, G2	
-	System of units of position tables			BYTE	Reset	
-						
-	-	0	0	1	7/2	M

Description: Defines the measuring system for the positional data for the following machine data

MD10910 \$MN_INDEX_AX_POS_TAB_1
MD10930 \$MN_INDEX_AX_POS_TAB_2
SD41500 \$SN_SW_CAM_MINUS_POS_TAB_1
SD41501 \$SN_SW_CAM_PLUS_POS_TAB_1
SD41502 \$SN_SW_CAM_MINUS_POS_TAB_2
SD41503 \$SN_SW_CAM_PLUS_POS_TAB_2
SD41504 \$SN_SW_CAM_MINUS_POS_TAB_3
SD41505 \$SN_SW_CAM_PLUS_POS_TAB_3
SD41506 \$SN_SW_CAM_MINUS_POS_TAB_4
SD41507 \$SN_SW_CAM_PLUS_POS_TAB_4

0: metric

1: inch

This machine data is only evaluated for MD10260 \$MN_CONVERT_SCALING_SYSTEM = 1.

Related to:

MD10260 \$MN_CONVERT_SCALING_SYSTEM
MD10910 \$MN_INDEX_AX_POS_TAB_1
MD10930 \$MN_INDEX_AX_POS_TAB_2
SD41500 \$SN_SW_CAM_MINUS_POS_TAB_1
SD41501 \$SN_SW_CAM_PLUS_POS_TAB_1
SD41502 \$SN_SW_CAM_MINUS_POS_TAB_2
SD41503 \$SN_SW_CAM_PLUS_POS_TAB_2
SD41504 \$SN_SW_CAM_MINUS_POS_TAB_3
SD41505 \$SN_SW_CAM_PLUS_POS_TAB_3
SD41506 \$SN_SW_CAM_MINUS_POS_TAB_4
SD41507 \$SN_SW_CAM_PLUS_POS_TAB_4

10280	PROG_FUNCTION_MASK			EXP, N01	K1	
-	Bit mask to parameterize various part program commands			UDWORD	PowerOn	
-						
-	-	0x0	0	0x1F	7/2	M

Description: Bit mask to parameterize various part program commands

Bit Hexadec. Meaning with bit set

Value

0: 0x1 Comparison commands ">" and "<" are processed as with SINUMERIK 840D:

Part program data of the type REAL are mapped internally in the IEEE 64 bit format. This mode maps decimal numbers inaccurately if this format's 52-bit wide mantissa is inadequate to map the number in binary notation. To solve this problem, all comparison commands (==, <>, >=, <=, > and <) are checked for relative equality of 1E-12.

This procedure is deactivated for greater than (>) and less than (<) comparisons by setting bit 0. (Compatibility setting for SINUMERIK 840D)

1: 0x2 Programming the channel names from machine data MD20000 \$MC_CHAN_NAME

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By setting bit 1, the channel name stored in machine data MD20000 \$MC_CHAN_NAME can be programmed in the part program. The channel name can thus also be programmed instead of a numerical value for the channel number in programming coordination commands such as (START(), INIT(), WAIT() etc.)

2: 0x4 Reserved

3: 0x8 Convert illegal ASCII characters into blanks

By setting bit3, the previous behavior is activated when interpreting a part program block. This means that all invalid ASCII characters in a part program block are handled internally as blank.

4: 0x10 The wait time G4 F<wait time> is rounded off as a multiple integer of an IPO cycle.

This means that a G4 F0.001 only takes one cycle, for an IPO cycle of 1 msec.

10284	DISPLAY_FUNCTION_MASK			EXP, N01	-	
-	Behavior of various display variables			UDWORD	PowerOn	
-						
-	-	0x0	0	0x7FFFFFFF	7/2	M

Description: Bit mask for parameterizing various display variables:

BitNo. Hexadec. Meaning with bit set
value

Bit0: 0x1

Parameters are assigned to the OPI variable lastBlockNoStr in the SPARP and SPARPP blocks.

Bit1: 0x2

Concerns the OPI variable cmdSpeed in the SPARPP block. If the bit is set, the variable returns the programmed speed even if the spindle is at a standstill or in another mode (positioning mode, axis mode).

Bit2 0x4

Concerns the OPI variable cmdSpeed in the SPARPP block. (reserved for constant cutting speed)

Bit8: 0x100

Servotrace manages larger numerical values internally. Overruns in data format are avoided. The accuracy may be reduced with large numerical values.

10285	TASK_TIME_AVERAGE_CONFIG			EXP, N01	-	
-	Period for task runtime mean value generation			DOUBLE	PowerOn	
-						
-	-	1.0	0	86400	7/2	M

Description: Period in seconds for which the respective mean value of the task runtimes is generated.

For the value 0, the current actual value is provided as mean value.

This mean value can be read via the OPI variable aveCycleTimeNet.

10290	CC_TDA_PARAM_UNIT			N09	G2	
-	Physical units of tool data for compile cycles			DWORD	PowerOn	
-						
-	64	0, 0, 0, 0, 0, 0, 0, 0...	0	9	2/2	M

Description: Physical units for the user-defined tool-specific data:

0 ;No unit

1 ;Linear position [mm ; inch]

2 ;Angular position [degree ; degree]

3 ;Linear velocity [mm/min ; inch/min]
 4 ;Angular speed [rpm ; rpm]
 5 ;Linear acceleration [m/s² ; inch/s²]
 6 ;Angular acceleration. [rev/s² ; rev/s²]
 7 ;Linear jerk [m/s³ ; inch/s³]
 8 ;Angular jerk [rev/s³ ; rev/s³]
 9 ;Revolutional feedrate [mm/rev ; inch/rev]
 Only available if bit 2 (0x4) is set in MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK

10291	CCS_TDA_PARAM_UNIT			N09	-	
-	Physical units of SIEMENS-OEM tool data			DWORD	PowerOn	
-						
-	10	0, 0, 0, 0, 0, 0, 0, 0...	0	9	2/2	M

Description: Physical units for application-specific tool-specific data:

0: No unit
 1: Linear position [mm; inch]
 2: Angular position [degree ; degree]
 3: Linear velocity [mm/min ; inch/min]
 4: Angular speed [rpm ; rpm]
 5: Linear acceleration [m/s² ; inch/s²]
 6: Angular acceleration [rev/s² ; rev/s²]
 7: Linear jerk [m/s³ ; inch/s³]
 8: Angular jerk [rev/s³ ; rev/s³]
 9: Feedrate per revolution [mm/rev; inch/rev]
 Only available if Bit 2 (0x4) is set in MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK.
 Related to:
 MD18204 \$MN_MM_NUM_CCS_TDA_PARAM

10292	CC_TOA_PARAM_UNIT			N09	G2	
-	Physical units of cutting edge data for compile cycles			DWORD	PowerOn	
-						
-	64	0, 0, 0, 0, 0, 0, 0, 0...	0	9	2/2	M

Description: Physical units for the user-defined cutting edge data:

0 ;No unit
 1 ;Linear position [mm ; inch]
 2 ;Angular position [degree ; degree]
 3 ;Linear velocity [mm/min ; inch/min]
 4 ;Angular speed [rpm ; rpm]
 5 ;Linear acceleration [m/s² ; inch/s²]
 6 ;Angular acceleration. [rev/s² ; rev/s²]
 7 ;Linear jerk [m/s³ ; inch/s³]
 8 ;Angular jerk [rev/s³ ; rev/s³]
 9 ;Revolutional feedrate [mm/rev ; inch/rev]
 Only available if bit 2 (0x4) is set in MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK

10293	CCS_TOA_PARAM_UNIT			N09	-	
-	Physical units of SIEMENS-OEM cutting edge data			DWORD	PowerOn	
-						
-	10	0, 0, 0, 0, 0, 0, 0, 0...	0	9	2/2	M

3.3 NC machine data

Description: Physical units for application-specific cutting data:

0 : No unit

1 : Linear position [mm ; inch]

2 : Angular position [degree ; degree]

3 : Linear velocity [mm/min ; inch/min]

4 : Angular speed [rpm ; rpm]

5 : Linear acceleration [m/s² ; inch/s²]

6 : Angular acceleration [rev/s² ; rev/s²]

7 : Linear jerk [m/s³ ; inch/s³]

8 : Angular jerk [rev/s³ ; rev/s³]

9 : Feedrate per revolution [mm/rev; inch/rev]

Only available if Bit 2 (0x4) is set in MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK.

Related to:

MD18206 \$MN_MM_NUM_CCS_TOA_PARAM

10300	FASTIO_ANA_NUM_INPUTS			N10	A4, TE1	
-	Number of active analog NC inputs			BYTE	PowerOn	
-						
-	-	0	0	8	7/2	M

Description: This machine data defines the number of usable analog NC inputs on the control.

Only these analog NC inputs can be addressed by the NC part program or assigned by NC functions.

If more analog NC inputs are defined with the machine data than are available in the hardware of the control, the binary analog actual value is set to zero in the control for the inputs that do not exist in the hardware. The NCK value can be altered by the PLC.

Note:

CPU computing time on the interpolation level is required for processing the digital and analog NC I/Os. The number of active NC I/Os should therefore be limited to the demands of the machine so that the interpolation cycle time is not unnecessarily loaded.

10310	FASTIO_ANA_NUM_OUTPUTS			N10	A4	
-	Number of active analog NC outputs			BYTE	PowerOn	
-						
-	-	0	0	8	7/2	M

Description: This machine data defines the number of usable analog NC outputs on the control.

Only these analog NC outputs can be addressed by the NC part program or assigned by NC functions.

If more analog NC outputs are defined with the machine data than are available in the hardware of the control, no alarm is triggered. The analog values specified by the part program can be read by the PLC.

Note:

CPU computing time on the interpolation level is required for processing the digital and analog NC I/Os. The number of active NC I/Os should therefore be limited to the demands of the machine so that the interpolation cycle time is not unnecessarily loaded.

10320	FASTIO_ANA_INPUT_WEIGHT			N10	A4	
-	Weighting factor for analog NC inputs			DWORD	PowerOn	
-						
-	8	10000, 10000, 10000, 10000, 10000, 10000, 10000, 10000	1	10000000	7/2	M

Description: A weighting factor can be defined with this MD for each analog NC input [n] to enable adaptation to the various analog-to-digital converters (depending on the I/O module). The value to be entered in this machine data is the value that is to be read in the part program with the command `x = $A_INA[n]` if the associated analog input [n] is set to the maximum value or the value +32767 is defined for this input via the PLC interface.

The value read from the analog-to-digital converter or the PLC interface is multiplied by the factor $(\text{FASTIO\_ANA\_INPUT\_WEIGHT} / 32767)$ before it can be read in the part program with the system variable `$A_INA[n]`.

Use of the weighting factor for "Analog NC inputs without hardware": with a weighting factor of 32767, the values defined by the part program and the PLC are numerically identical (1:1 communication between part program and PLC). This is advantageous when the analog NC inputs/outputs are used purely as PLC inputs/outputs without analog hardware.

Note:

The comparator threshold values SD41600 `$SN_COMPAR_THRESHOLD_1` and SD41601 `$SN_COMPAR_THRESHOLD_2` are also normalized to MD10320 `$MN_FASTIO_ANA_INPUT_WEIGHT` corresponding to their assignment to an analog input.

The CC access to analog values is not affected by `FASTIO_ANA_INPUT_WEIGHT`.

Related to:

NC/PLC interface signal DB10, DBB148 - 163 (PLC setting value for analog NC inputs)

10330	FASTIO_ANA_OUTPUT_WEIGHT			N10	A4	
-	Weighting factor for analog NC outputs			DWORD	PowerOn	
-						
-	8	10000, 10000, 10000, 10000, 10000, 10000, 10000, 10000	1	10000000	7/2	M

Description: A weighting factor can be defined with this MD for each analog NC output [n] to enable adaptation to the various digital-to-analog converters (depending on the I/O module used).

[hw] = Index (0 to 7) for addressing the external analog outputs

The value x to be entered in this machine data is the value that is to effect the maximum set value of the associated analog output [n] when programming `$A_OUTA[n] = x` in the part program or is to generate the value +32767 in the PLC interface for this output.

Use of the weighting factor for "Analog NC outputs without hardware": With a weighting factor of 32767, the values defined by the part program and the PLC are numerically identical (1:1 communication between part program and PLC). This is advantageous when the analog NC outputs are used purely as PLC outputs without analog hardware.

Related to:

NC/PLC interface signal DB10, DBB170 - 185 (PLC setting value for analog NC outputs)

NC/PLC interface signal DB10, DBB210 - 225 (Setpoint for analog NC outputs)

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10350	FASTIO_DIG_NUM_INPUTS			N10	A4, TE1	
-	Number of active digital NC input bytes			BYTE	PowerOn	
-						
-	-	1	0	5	7/2	M

Description:

The number of bytes of the digital NC inputs that can be used on the control are defined in this machine data.

These digital NC inputs can be read directly by the part program. Moreover, the signal state at the HW inputs can also be changed by the PLC.

If more digital NC inputs are defined in the machine data than are available in the control hardware, a signal status of 0 is set in the control for the inputs that do not exist in the hardware. The NCK value can be altered by the PLC.

Related to:

NC/PLC interface signal DB10 DBB0 (Disable the digital NC inputs 1-8);

NC/PLC interface signal DB10 DBB122,124,126,128 (Disable the external digital inputs 9-40)

NC/PLC interface signal DB10 DBB1 (PLC setting for digital NC inputs 1-9)

NC/PLC interface signal DB10 DBB123,125,127,129 (PLC values for external digital inputs 9-40)

NC/PLC interface signal DB10, DBB60, DBB186 (Actual value for digital NC inputs)

10360	FASTIO_DIG_NUM_OUTPUTS			N10	A4, TE8	
-	Number of active digital NC output bytes			BYTE	PowerOn	
-						
-	-	0	0	5	7/2	M

Description:

The number of bytes for digital NC outputs that can be used on the control are defined in this machine data.

These digital NC outputs can be set directly by the part program. The PLC is able to

- set the digital outputs to "0" in a defined way with NC/PLC interface signal DB10, DBB4, DBB130 (Disable the digital NC outputs).
- alter the NCK value with NC/PLC interface signal DB10, DBB5, DBB131 (Overwrite mask for digital NC outputs).
- specify a PLC value with NC/PLC interface signal DB10, DBB7, DBB133 (Setting mask for digital NC outputs).

If more digital NC outputs are defined in the machine data than are available in the control hardware, no alarm is triggered. The signal states specified by the part program can be read by the PLC.

Special cases:

Digital NC outputs 5 to 8 can be processed only by the PLC (no hardware outputs).

Related to:

NC/PLC interface signal DB10, DBB4, DBB130 (Disable the digital NC outputs)

NC/PLC interface signal DB10, DBB5, DBB131 (Overwrite mask for digital NC outputs)

NC/PLC interface signal DB10, DBB6, DBB132 (PLC setting value for digital NC outputs)

NC/PLC interface signal DB10, DBB7, DBB133 (Setting mask for digital NC outputs)

NC/PLC interface signal DB10, DBB64, DBB190 (Setpoint for digital NC outputs)

10361	FASTIO_DIG_SHORT_CIRCUIT			N10	A4	
-	Short circuit of digital inputs and outputs			UDWORD	PowerOn	
-						
-	10	0, 0, 0, 0, 0, 0, 0, 0...	0	0x7FFFFFFF	7/2	M

Description:

Defined short circuits between digital output and input signals of the high-speed NC I/Os are realized by linking the signals read in from the high-speed NC I/Os or the PLC interface to defined output signals.

The output signals always remain unchanged by the link, the inputs that have to be taken into account internally arise from the read inputs and the link. If a plurality of output bits are specified for one input bit in overwrite mode, the last defined assignment in the list determines the result.

The definition of non-existent or non-activated inputs/outputs is ignored without an alarm.

Bits 0-7: Number of the input byte to be written (1 - 5)

Bits 8-15: Bit number within the input byte (1 - 8)

Link:

The type of link is selected by adding a hexadecimal number to the input bit number:

00 Overwrite input identically to output

A0 Input is AND-gated to the read input with the status of the stated output

B0 Input is OR-gated to the read input with the status of the stated output

Bits 16-23: Number of the output byte to be used (1 - 5)

Bits 24-31: Bit number within the output byte (1 - 8)

Example:

MD10361 \$MN_FASTIO_DIG_SHORT_CIRCUIT[0] = 0x04010302

Input: 3rd bit of the 2nd byte

Output: 4th bit of the 1st byte (= 4th onboard NCU output)

The input status is overwritten by the specified output

MD10361 \$MN_FASTIO_DIG_SHORT_CIRCUIT[1] = 0x0705A201

Input: 2nd bit of the 1st byte (= 2nd onboard NCU input)

Output: 7th bit of the 5th byte

The input status is AND-gated with the specified output

MD10361 \$MN_FASTIO_DIG_SHORT_CIRCUIT[2] = 0x0103B502

Input: 5th bit of the 2nd byte

Output: 1st bit of the 3rd byte

The input status is OR-gated with the specified output

Related to:

MD10350 \$MN_FASTIO_DIG_NUM_INPUTS,

MD10360 \$MN_FASTIO_DIG_NUM_OUTPUTS.

References: /FB/, A4, "Digital and Analog NC I/Os"

10362	HW_ASSIGN_ANA_FASTIN			N10	A4, TE1	
-	Hardware assignment of the fast analog NC inputs			UDWORD	PowerOn	
-						
-	8	0x01000000, 0x01000000, 0x01000000, 0x01000000, 0x01000000, 0x01...	0x01000000	0x060003FF	7/2	M

Description:

For PROFIBUS/PROFINET:

1st + 2nd byte indicate the logical start address of the I/O slot on the PROFIBUS/PROFINET:

Value 0000 means NO active slot

Values 0001..0100 are reserved for the PLC process image (the value of input slots can be read by the NCK without errors, but output slots are forbidden in this range, and cause an alarm on power up)

1st byte = LowByte of the logical start address

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2nd byte = HighByte of the logical start address

3rd byte = 0 = without meaning

4th byte = 5 = segment no. for PROFIBUS/PROFINET

The individual bytes are explained in MD10366 \$MN_HW_ASSIGN_DIG_FASTIN.

[hw] = Index (0 to 7) for addressing the external analog inputs

Related to:

MD10366 \$MN_HW_ASSIGN_DIG_FASTIN

MD10368 \$MN_HW_ASSIGN_DIG_FASTOUT

MD10364 \$MN_HW_ASSIGN_ANA_FASTOUT

10364	HW_ASSIGN_ANA_FASTOUT			N10	A4, TE3	
-	Hardware assignment of external analog NC outputs			UDWORD	PowerOn	
-						
-	8	0x01000000, 0x01000000, 0x01000000, 0x01000000, 0x01000000, 0x01...	0x01000000	0x060003FF	7/2	M

Description:

For PROFIBUS/PROFINET:

1st + 2nd byte indicate the logical start address of the I/O slot on the PROFIBUS/PROFINET:

Value 0000 means NO active slot

Values 0001..0100 are reserved for the PLC process image (the value of input slots can be read by the NCK without errors; however, output slots are forbidden in this range, and cause an alarm on power up)

1st byte = LowByte of the logical start address

2nd byte = HighByte of the logical start address

3rd byte = 0 = without meaning

4th byte = 5 = segment no. for PROFIBUS/PROFINET

The individual bytes are explained in MD10366 \$MN_HW_ASSIGN_DIG_FASTIN.

Related to:

MD10366 \$MN_HW_ASSIGN_DIG_FASTIN

MD10368 \$MN_HW_ASSIGN_DIG_FASTOUT

MD10362 \$MN_HW_ASSIGN_ANA_FASTIN

10366	HW_ASSIGN_DIG_FASTIN			N10	A4, TE1	
-	Hardware assignment of external digital NC inputs			UDWORD	PowerOn	
-						
-	10	0x01000000, 0x01000000, 0x01000000, 0x01000000, 0x01000000, 0x01...	0x01000000	0x060003FF	7/2	M

Description:

For PROFIBUS/PROFINET:

1st + 2nd bytes indicate the logical basis address of the I/O slot on the PROFIBUS/PROFINET:

Value 0000 means NO active slot

Values 0001..0100 are reserved for the PLC process image (the value of input slots can be read by the NCK without errors; however, output slots are forbidden in this range, and cause an alarm when powering up)

1st byte = LowByte of the logical basis address

2nd byte = HighByte of the logical basis address

3rd byte = 0 = without meaning

4th byte = 5 = segment no. for PROFIBUS/PROFINET

Example:

HW_ASSIGN_DIGITAL_FASTIN[3] = '05000302'

1st + 2nd byte: 0302 (hex) = logical basis address 770 (decimal)

3rd byte: 00 = no significance

4th byte: 05 = ID for PROFIBUS/PROFINET

Corresponds with:

MD10368 \$MN_HW_ASSIGN_DIG_FASTOUT

MD10362 \$MN_HW_ASSIGN_ANA_FASTIN

MD10364 \$MN_HW_ASSIGN_ANA_FASTOUT

10368	HW_ASSIGN_DIG_FASTOUT			N10	A4	
-	Hardware assignment of external digital NC outputs			UDWORD	PowerOn	
-						
-	4	0x01000000, 0x01000000, 0x01000000, 0x01000000, 0x01000000, 0x01...	0x01000000	0x060003FF	7/2	M

Description:

For PROFIBUS/PROFINET:

1st + 2nd byte indicate the logical start address of the I/O slot on the PROFIBUS/PROFINET:

Value 0000 means NO active slot

Values 0001..0100 are reserved for the PLC process image (the value of input slots can be read by the NCK without errors; however, output slots are forbidden in this range, and cause an alarm on power up)

1st byte = LowByte of the logical start address

2nd byte = HighByte of the logical start address

3rd byte = 0 = without meaning

4th byte = 5 = segment no. for PROFIBUS/PROFINET

The individual bytes are explained under MD10366 \$MN_HW_ASSIGN_DIG_FASTIN.

[hw] = Index (0 to 3) for addressing the external digital output bytes

Related to:

MD10366 \$MN_HW_ASSIGN_DIG_FASTIN

MD10362 \$MN_HW_ASSIGN_ANA_FASTIN

MD10364 \$MN_HW_ASSIGN_ANA_FASTOUT

10385	PROFISAFE_MASTER_ADDRESS			N01, N10	FBSI	
-	PROFI-safe address master module			UDWORD	PowerOn	
-						
-	3	0, 0, 0	0	0x0500FA7D	7/2	M

Description:

Definition of the PROFIsafe address of the F master NCK/PLC. Used for unique assignment between F master and F slave. This parameter must be entered in accordance with the parameter "F_source_address" set in S7-ES for the F slaves. An attempt to establish communication is only made with F slaves for which this address has been entered.

Format: 0s 00 aaaa

s: Bus segment (5 = I/O connection on the PLC side)

aaaa: Hexadecimal PROFIsafe address of the F master

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10386	PROFISAFE_IN_ADDRESS			N01, N10	FBSI	
-	PROFI-safe address input module			UDWORD	PowerOn	
-						
-	48	0, 0, 0, 0, 0, 0, 0, 0...	0	0x0502FFFF	7/2	M

Description: PROFIsafe destination address of an input module
Format: 0s 0x aaaa
s: Bus segment (5 = I/O connection on the PLC side)
x: Sub-slot address
Value range: 0...2
x = 0 addresses the F user data signals 1...32
x = 1 addresses the F user data signals 33...64
x = 2 addresses the F user data signals 65...96
aaaa: Hexadecimal PROFIsafe address of the F module

10387	PROFISAFE_OUT_ADDRESS			N01, N10	FBSI	
-	PROFIsafe-address output module			UDWORD	PowerOn	
-						
-	48	0, 0, 0, 0, 0, 0, 0, 0...	0	0x0502FFFF	7/2	M

Description: PROFIsafe destination address of an output module
Format: 0s 0x aaaa
s: Bus segment (5 = I/O connection on the PLC side)
x: Sub-slot address
Value range: 0...2
x = 0 addresses the F user data signals 1...32
x = 1 addresses the F user data signals 33...64
x = 2 addresses the F user data signals 65...96
aaaa: Hexadecimal PROFIsafe address of the F module

10388	PROFISAFE_IN_ASSIGN			N01, N10	FBSI	
-	Input.assignment \$A_INSE to PROFIsafe module			DWORD	PowerOn	
-						
-	48	0, 0, 0, 0, 0, 0, 0, 0...	0	192192	7/2	M

Description: Assignment between external SPL interface \$A_INSE and PROFIsafe input module
The PLC area is specified in decimals in aaa bbb format
where aaa = area limit 1, SPL signal \$A_INSE[aaa]
bbb = area limit 2. SPL signal \$A_INSE[bbb]
Example:
\$MN_PROFISAFE_IN_ASSIGN[0] = 001 004 or alternatively 004 001:
The system variables \$A_INSE[1...4] are assigned the state of the input terminals of the PROFIsafe module that was parameterized in MD10386 \$MN_PROFISAFE_IN_ADDRESS[0] and selected in MD13300 \$MN_PROFISAFE_IN_FILTER[0].

10389	PROFISAFE_OUT_ASSIGN			N01, N10	FBSI	
-	Outp.assignment \$A_OUTSE to PROFIsafe module			DWORD	PowerOn	
-						
-	48	0, 0, 0, 0, 0, 0, 0, 0...	0	192192	7/2	M

Description: Assignment between external SPL interface \$A_OUTSE and PROFIsafe output module
The SPL area is specified in decimals in aaa bbb format

where aaa = area limit 1. SPL signal \$A_OUTSE[aaa]

bbb = area limit 2. SPL signal \$A_OUTSE[bbb]

Example:

PROFISAFE_OUT_ASSIGN[0] = 064 061 or alternatively 061 064:

The states of the system variables \$A_OUTSE[61...64] are assigned to the output terminals selected in MD13301 \$MN_PROFISAFE_OUT_FILTER[0] of the PROFIsafe module specified in MD10387 \$MN_PROFISAFE_OUT_ADDRESS[0].

10393	SAFE_DRIVE_LOGIC_ADDRESS			N01, N04	-	
-	Logical drive addresses SI			DWORD	PowerOn	
-						
-	31	6700, 6724, 6748, 6772, 6796, 6820, 6844, 6868...	258	16383	7/2	M

Description: Logical I/O addresses of the SI message frames of the drives on the PROFIBUS.
One address is assigned to one drive.

10394	PLCIO_NUM_BYTES_IN			N10	A4	
-	Number of directly readable input bytes of the PLC I/Os			BYTE	PowerOn	
-						
-	-	0	0	32	7/2	M

Description: The number of PLC I/O input bytes that can be read directly by the NC.
These bytes are not transmitted by the PLC user program but via an interrupt of the PLC operating system.
The access delay is less than 0.5 ms.
The bytes can be read by the part program and from synchronized actions with the system variables:
\$A_PBB_IN,
\$A_PBW_IN,
\$A_PBD_IN,
\$A_PBR_IN
.
Notice:
The machine data MD10394 \$MN_PLCIO_NUM_BYTES_IN and MD10395 \$MN_PLCIO_LOGIC_ADDRESS_IN must be consistent with the PLC-side configuration.
Related to:
MD10395 \$MN_PLCIO_LOGIC_ADDRESS_IN

10395	PLCIO_LOGIC_ADDRESS_IN			N10	A4	
-	Start addr. of the directly readable input bytes of the PLC I/Os			DWORD	PowerOn	
-						
-	-	0	0	16383	7/2	M

Description: Starting from this address, the PLC hardware must configure a number of bytes in MD10394 \$MN_PLCIO_NUM_BYTES_IN for direct use by the NC. These bytes are not transmitted by the PLC user program, but directly via an interrupt of the PLC operating system. The access delay is less than 0.5 ms. The bytes can be read by the part program and from synchronized actions with the system variables:
\$A_PBB_IN,
\$A_PBW_IN,
\$A_PBD_IN,
\$A_PBR_IN

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.

Notice:

The machine data MD10394 \$MN_PLCIO_NUM_BYTES_IN and MD10395 \$MN_PLCIO_LOGIC_ADDRESS_IN must be consistent with the PLC-side configuration.

Related to:

MD10394 \$MN_PLCIO_NUM_BYTES_IN

10396	PLCIO_NUM_BYTES_OUT			N10	A4	
-	Number of directly writable output bytes of the PLC I/Os			BYTE	PowerOn	
-						
-	-	0	0	32	7/2	M

Description:

The number of PLC I/O output bytes that can be written directly by the NC.

These bytes are not transmitted by the PLC user program but via an interrupt of the PLC operating system.

The access delay is less than 0.5 ms.

The bytes can be written by the part program and from synchronized actions with the system variables:

\$A_PBB_OUT,

\$A_PBW_OUT,

\$A_PBD_OUT,

\$A_PBR_OUT

on the NC side.

Attention:

The machine data MD10396 \$MN_PLCIO_NUM_BYTES_OUT and MD10397

\$MN_PLCIO_LOGIC_ADDRESS_OUT must be consistent with the configuration by the PLC, otherwise other PLC output signals will be overwritten.

10397	PLCIO_LOGIC_ADDRESS_OUT			N10	A4	
-	Start addr. of the directly writable output bytes of PLC I/O			DWORD	PowerOn	
-						
-	-	0	0	16383	7/2	M

Description:

Starting from this address, the PLC hardware must configure a number of MD10396 \$MN_PLCIO_NUM_BYTES_OUT for direct use by the NC.

These bytes are not transmitted by the PLC user program, but directly via an interrupt of the PLC operating system.

The access delay is less than 0.5 ms.

The bytes can be written by the part program and from synchronized actions with the system variables:

\$A_PBB_OUT,

\$A_PBW_OUT,

\$A_PBD_OUT,

\$A_PBR_OUT

.

Notice:

The machine data MD10396 \$MN_PLCIO_NUM_BYTES_OUT and MD10397

\$MN_PLCIO_LOGIC_ADDRESS_OUT must be consistent with the PLC-side configuration.

Related to:

MD10396 \$MN_PLCIO_NUM_BYTES_OUT

10398	PLCIO_IN_UPDATE_TIME			N10	A4	
s	Update time for PLCIO input cycle			DOUBLE	PowerOn	
-						
-	-	0.0	0	10000	7/2	M

Description: Specification of the time span during which the data of the PLC I/Os directly readable via \$A_PBx_IN system variables are updated.
This time span is rounded up internally to the next-higher multiple of the time predefined by the IPO cycle.

10399	PLCIO_TYPE_REPRESENTATION			N10	A4	
-	Little/Big Endian for PLCIO			BYTE	PowerOn	
-						
-	-	0	0	1	7/2	M

Description: Little/big-Endian format representation of the \$A_PBx_OUT, \$A_PBx_IN system variable for PLC I/Os directly controllable by NCK.
Value = 0 ; the system variable is represented in the little-Endian format
Value = 1 ; the system variable is represented in the big-Endian format
As a rule, the PLC I/Os must always be controlled in the big-Endian format (value = 1). For compatibility reasons, however, the default setting is the little-Endian format (value = 0).

10400	CC_VDI_IN_DATA			EXP, N02	OEM	
-	Number of input bytes for compile cycles			DWORD	PowerOn	
-						
-	-	0	0	1024	7/1	M

Description: The compile cycle user can freely define data within a data block on the PLC user interface. As the user, he determines the size of the interface from PLC to NCK. This machine data describes the length of the area on the VDI interface in bytes which defines the NCK input interface. The sum of this and MD10410 \$MN_CC_VDI_OUT_DATA must not exceed 400 for software version 1.

10410	CC_VDI_OUT_DATA			EXP, N02	OEM	
-	Number of output bytes for compile cycles			DWORD	PowerOn	
-						
-	-	0	0	1024	7/1	M

Description: The compile cycle user can freely define data within a data block on the PLC user interface. The user determines the size of the interface from NCK to PLC. This machine data describes the length of the area on the VDI interface in bytes which defines the NCK output interface. The sum of this and MD10400 \$MN_CC_VDI_IN_DATA must not exceed 400.

10420	CC_ASSIGN_FASTOUT_MASK			EXP, N10	OEM	
-	Reservation of external outputs for compile cycles			UDWORD	PowerOn	
-						
-	-	0	0	0x7FFFFFFF	7/2	M

Description: Reservation of high-speed hardware outputs for CC applications
Bit 0 (LSB)-14: Mask of the digital output bytes reserved for the CC application
Bits 16-30: Mask of the analog outputs reserved for the CC application
The hardware outputs reserved here are included in the multiple assignment monitoring routine when the system is powered up. We recommend that you register all the hardware outputs used by CC applications here.

3.3 NC machine data

Bit 15: Suppresses power-up alarm 4275 (multiple assignment of digital output)

Bit 31: Suppresses power-up alarm 4275 (multiple assignment of analog output)

10430	CC_HW_DEBUG_MASK			EXP	OEM	
-	Hardware debug mask for compile cycles			UDWORD	PowerOn	
NBUP, NDLD						
-	-	0	0	0x7FFFFFFF	7/1	M

Description:

Setting of special responses to peripheral HW interfaces for NCK debug

For practical debugging of NCK software, among other things, the response of peripheral units to the loss of the NCK sign of life must be suppressed when the NCK software has run to a breakpoint.

Bit 0 (LSB)–3:

For practical debugging of NCK software, among other things, the response of peripheral units to the loss of the NCK sign of life must be suppressed when the NCK software has run to a breakpoint.

Meaning of set bits:

Bit 0:

Drive modules ignore the loss of the NCK sign of life

Bit 1:

Terminal blocks ignore the loss of the NCK sign of life

Bit 3:

PLC ignores the loss of the NCK sign of life

Bit 4:

Recording of internal and external control commands. Recording the control sequences and storing them in a file in the passive file system. One can trace the exact sequence between the incoming hardware signals of the PLC interface and the internal sequences with the aid of the recording file.

Bit 5:

Servotrace: Enable physical addresses without access control

Bit10:

Test for measuring function. If this bit is set, one can use the GUD variables CHAN INT MEA_TASK and CHAN INT MEA_COUNTER to transfer the inverse transformation of the measured values into cyclical and non-cyclical tasks.

Bit11:

No EMERGENCY STOP alarm on loss of PLC sign of life. If the PLC sign of life is not obtained within the time defined in MD10100 \$MN_PLC_CYCLIC_TIMEOUT, an alarm is not issued, merely the axis releases are withdrawn. (Application case: debugging the PLC user program)

Bit15:

Reserved for gantry setup help.

10450	SW_CAM_ASSIGN_TAB			N09	N3	
-	Assignment of software cams to machine axes			BYTE	PowerOn	
-						
-	32	0, 0, 0, 0, 0, 0, 0, 0...	0	31	7/2	M

Description:

This machine data allows one machine axis to be assigned to each of the 16 possible cam pairs (each is comprised of one minus and one plus cam).

If a "0" is entered, the corresponding cam is not processed.

The cam signal output is activated via the axial NC/PLC interface signal DB31, ... DBX2.0 (Cam activation)

Index [n] of the machine data addresses the cam pair: n = 0, 1, ... , 15 correspond to cam pairs 1, 2, ... , 16

Related to:

NC/PLC interface signal DB31, ... DBX2.0 (Cam activation)

Example:

Cam pair 1 is to be assigned to machine axis 3, and cam pair 3 to machine axis 4. Cam pair 2 is not to be assigned to an axis.

MD10450 \$MN_SW_CAM_ASSIGN_TAB[0]= 3

MD10450 \$MN_SW_CAM_ASSIGN_TAB[1]= 0

MD10450 \$MN_SW_CAM_ASSIGN_TAB[2]= 4

10460	SW_CAM_MINUS_LEAD_TIME			N09	N3	
s	Lead or delay time at minus cams 1-16			DOUBLE	PowerOn	
-						
-	32	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/2	M

Description: A lead or delay time can be assigned in this machine data to each minus cam 1-16 to compensate for delay times.

The switching edge of the associated cam signal is advanced or delayed by the time value entered.

Positive value: --> Lead time

Negative value: --> Delay time

Serves to compensate for the constant proportion of the internal delay time between actual value acquisition and signal output.

Index [n] of the machine data addresses the cam pair:

n = 0, 1, ... , 15 correspond to cam pairs 1, 2, ... , 16

This machine data is added to the setting data SD41520 \$SN_SW_CAM_MINUS_TIME_TAB_1[n] and SD41522 \$SN_SW_CAM_MINUS_TIME_TAB_2[n].

Related to:

SD41520 \$SN_SW_CAM_MINUS_TIME_TAB_1[n] (lead or delay time on minus cams 1 - 8)

SD41522 \$SN_SW_CAM_MINUS_TIME_TAB_2[n] (lead or delay time on minus cams 9 - 16)

10461	SW_CAM_PLUS_LEAD_TIME			N09	N3	
s	Lead or delay time at plus cams 1-16			DOUBLE	PowerOn	
-						
-	32	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/2	M

Description: A lead or delay time can be assigned in this machine data to each plus cam 1-16 to compensate for delay times.

The switching edge of the associated cam signal is advanced or delayed by the time value entered.

Positive value: --> Lead time

Negative value: --> Delay time

Serves to compensate for the constant proportion of the internal delay time between actual value acquisition and signal output.

Index [n] of the machine data addresses the cam pair:

n = 0, 1, ... , 15 correspond to cam pairs 1, 2, ... , 16

This machine data is added to the setting data SD41521 \$SN_SW_CAM_PLUS_TIME_TAB_1[n] and SD41523 \$SN_SW_CAM_PLUS_TIME_TAB_2[n].

Related to:

SD41521 \$SN_SW_CAM_PLUS_TIME_TAB_1[n] (lead or delay time on plus cams 1 - 8)

SD41523 \$SN_SW_CAM_PLUS_TIME_TAB_2[n] (lead or delay time on plus cams 9 - 16)

3.3 NC machine data

10470	SW_CAM_ASSIGN_FASTOUT_1			N09	N3	
-	Hardware assignment for output of cams 1-8 to NC I/Os			UDWORD	PowerOn	
-						
-	-	0	0	0x7FFFFFFF	7/2	M

Description:

The cam signal status can be output to the NC I/Os as well as to the PLC.

The hardware assignment of the minus and plus cam signals to the digital output bytes used for the NC I/Os is made in this machine data for cam pairs 1 - 8.

The assigned output signals can also be inverted with this machine data.

The MD is coded as follows:

Bits 0-7: No. of 1st HW byte used with digital outputs

Bits 8-15: No. of 2nd HW byte used with digital outputs

Bits 16-23: Inversion mask for writing 1st HW byte used

Bits 24-31: Inversion mask for writing 2nd HW byte used

Bit=0: Do not invert

Bit=1: Invert

If both HW bytes are specified, the 1st byte contains the minus cam signals and the 2nd byte the plus cam signals.

If the 2nd byte is not specified (= "0"), then the 8 cams are output as an AND operation of the minus and plus cam signals via the 1st HW byte using the 1st inversion mask.

The status of the non-inverted output signal for linear axes and for rotary axes with "plus cam - minus cam < 180 degrees" is:

"1" between minus and plus cams

"0" outside this range

The status of the non-inverted output signal for rotary axes with "plus cam - minus cam >= 180 degrees" is:

"0" between minus and plus cams

"1" outside this range

The following must be specified as the byte address for the digital outputs:

1: for on-board byte

2 - 5: for external bytes

10471	SW_CAM_ASSIGN_FASTOUT_2			N09	N3	
-	Hardware assignment for output of cams 9-16 to NC I/Os			UDWORD	PowerOn	
-						
-	-	0	0	0x7FFFFFFF	7/2	M

Description:

The cam signal status can be output to the NC I/Os as well as to the PLC.

The hardware assignment of the minus and plus cam signals to the digital output bytes used for the NC I/Os can be made in this machine data for cam pairs 9 - 16.

The assigned output signals can also be inverted with this machine data.

The MD is coded as follows:

Bits 0-7: No. of 1st HW byte used with digital outputs

Bits 8-15: No. of 2nd HW byte used with digital outputs

Bits 16-23: Inversion mask for writing 1st HW byte used

Bits 24-31: Inversion mask for writing 2nd HW byte used

Bit=0: Do not invert

Bit=1: Invert

If both HW bytes are specified, the 1st byte contains the minus cam signals and the 2nd byte the plus cam signals.

If the 2nd byte is not specified (= "0"), then the 8 cams are output as an AND operation of the minus and plus cam signals via the 1st HW byte using the 1st inversion mask.

The status of the non-inverted output signal for linear axes and for rotary axes with "plus cam - minus cam < 180 degrees" is:

"1" between minus and plus cams

"0" outside this range

The status of the non-inverted output signal for rotary axes with "plus cam - minus cam >= 180 degrees" is:

"0" between minus and plus cams

"1" outside this range

The following must be specified as the byte address for the digital outputs:

1: for on-board byte

2 - 5: for external bytes

10472	SW_CAM_ASSIGN_FASTOUT_3			N09	N3	
-	Hardware assignment for output of cams 17-24 to NC I/Os			UDWORD	PowerOn	
-						
-	-	0	0	0x7FFFFFFF	7/2	M

Description:

The cam signal status can be output to the NC I/Os as well as to the PLC.

The hardware assignment of the minus and plus cam signals to the digital output bytes of the NC I/Os used can be made in this machine data for cam pairs 17 - 24.

The assigned output signals can also be inverted with this machine data.

The MD is coded as follows:

Bits 0-7: Number of 1st HW byte used with digital outputs

Bits 8-15: Number of 2nd HW byte used with digital outputs

Bits 16-23: Inversion mask for writing 1st HW byte used

Bits 24-31: Inversion mask for writing 2nd HW byte used

Bit=0: Do not invert

Bit=1: Invert

If both HW bytes are specified, the 1st byte contains the minus cam signals and the 2nd byte the plus cam signals.

If the 2nd byte is not specified (= "0"), then the 8 cams are output as an AND operation of the minus and plus cam signals via the 1st HW byte using the 1st inversion mask.

The status of the non-inverted output signal for linear axes and for rotary axes with "plus cam - minus cam < 180 degrees" is:

"1" between minus and plus cams

"0" outside this range

The status of the non-inverted output signal for rotary axes with "plus cam - minus cam >= 180 degrees" is:

"0" between minus and plus cams

"1" outside this range

The following must be specified as the byte address for the digital outputs:

1: for on-board byte

2 - 5: for external bytes

10473	SW_CAM_ASSIGN_FASTOUT_4			N09	N3	
-	Hardware assignment for output of cams 25-32 to NC I/Os			UDWORD	PowerOn	
-						
-	-	0	0	0x7FFFFFFF	7/2	M

3.3 NC machine data

Description:

The cam signal status can be output to the NC I/Os as well as to the PLC

The hardware assignment of the minus and plus cam signals to the digital output bytes of the NC I/Os used can be made in this machine data for cam pairs 25 - 32.

The assigned output signals can also be inverted with this machine data.

The MD is coded as follows:

Bits 0-7: Number of 1st HW byte used with digital outputs

Bits 8-15: Number of 2nd HW byte used with digital outputs

Bits 16-23: Inversion mask for writing 1st HW byte used

Bits 24-31: Inversion mask for writing 2nd HW byte used

 Bit=0: Do not invert

 Bit=1: Invert

If both HW bytes are specified, the 1st byte contains the minus cam signals and the 2nd byte the plus cam signals.

If the 2nd byte is not specified (= "0"), then the 8 cams are output as an AND operation of the minus and plus cam signals via the 1st HW byte using the 1st inversion mask.

The status of the non-inverted output signal for linear axes and for rotary axes with "plus cam - minus cam < 180 degrees" is:

 "1" between minus and plus cams

 "0" outside this range

The status of the non-inverted output signal for rotary axes with "plus cam - minus cam >= 180 degrees" is:

 "0" between minus and plus cams

 "1" outside this range

The following must be specified as the byte address for the digital outputs:

1: for on-board byte

2 - 5: for external bytes

10480	SW_CAM_TIMER_FASTOUT_MASK			N09	N3	
-	Mask for output of cam signals via timer interr. to NCU			UDWORD	PowerOn	
-						
-	-	0	0	0x7FFFFFFF	7/2	M

Description:

A timer-controlled output to the 4 on-board outputs of the NC I/Os can be selected in this machine data for 4 cam pairs.

In this case, the minus and plus signals of a cam pair are "EXCLUSIVE OR'd" for output as one signal.

Meaning for set bit:

Associated cam (minus and plus cam signals "EXCLUSIVE OR'd") is output via a timer interrupt at one of the 4 on-board outputs of the NCU.

The on-board outputs are assigned in order of increasing machine axis numbers (with assigned cam pairs).

Example:

Machine axis 3 = cam pair 1 --> on-board output 3

Machine axis 1 = cam pair 2 --> on-board output 1

Machine axis 7 = cam pair 3 --> on-board output 4

Machine axis 2 = cam pair 4 --> on-board output 2

If a plurality of cam pairs are set for one machine axis, then this axis is assigned in ascending order of the cam pairs.

Example:

Machine axis 3 = cam pair 1 --> on-board output 2

Machine axis 3 = cam pair 2 --> on-board output 3

Machine axis 7 = cam pair 3 --> on-board output 4

Machine axis 2 = cam pair 4 --> on-board output 1

This function works independently of the assignment set in MD10470 \$MN_SW_CAM_ASSIGN_FASTOUT_1 or MD10471 \$MN_SW_CAM_ASSIGN_FASTOUT_2.

Note:

The on-board byte must not be used more than once.

If there is more than one signal change in the IPO cycle for the cam pairs specified in the MD, then the cam pair with the lowest number determines the instant of output. The other signals change at the same time.

10485	SW_CAM_MODE			N09	N3	
-	Behavior of SW cams			UDWORD	PowerOn	
-						
-	-	0	0	0x7FFFFFFF	7/2	M

Description:

Meaning of the individual bits:

Bit 0 (LSB) = 0:

If more than 1 signal change per interpolation cycle is due for the cams specified in MD10480 \$MN_SW_CAM_TIMER_FASTOUT_MASK, the cam having the lowest number will determine the output instant. The other signals change at the same instant. That is, a maximum of one interrupt-controlled output is effected per interpolation cycle.

Bit 0 (LSB) = 1:

Each cam specified in MD10480 \$MN_SW_CAM_TIMER_FASTOUT_MASK will be output precisely at the time of the interpolation cycle. There is no output priority of the cams. A maximum of 8 interrupt-controlled outputs can be performed per interpolation cycle.

Bit 1 = 0:

Inversion of signal behavior from plus cam, where plus cam - minus cam $\geq$ 180 degr.

Bit 1 = 1:

No inversion of signal behavior from plus cam, where plus cam - minus cam $\geq$ 180 degr.

Signal behavior on-board output:

Overtravelling:

Minus cam plus cam

Traversing direction:

positive 0->1 1->0

negative 1->0 0->1

Bit 2 = 0:

No path-time cam

Bit 2 = 1:

Path-time cam for cams where minus position = plus position. The lead/delay time applied is independent of:

- velocity of the axis
- position of the axis
- reversal of traversing direction

The cam is only activated on overtravelling of the cam position. A lead/delay time applied to the minus cam is active and leads to a shift of the whole cam.

Bit 3 = 0:

No alignment signal in case of measurement area selection.

Bit 3 = 1:

Output of an alignment signal for measurement area selection (FM only). On-board output 8 is used permanently.

On-board output 8 = 1: Measurement possible (active range enabled)

On-board output 8 = 0: Measurement not possible

Bit 4 = 0:

3.3 NC machine data

and following free

10490	SW_CAM_COMP_NCK_JITTER			N09	-	
s	Cam jitter compensation			DOUBLE	NEW CONF	
-						
-	-	0	0.0	0.0001	7/2	M

Description: The compensation value reduces system-related time inaccuracies during output of highly precise cam signals. The default time encumbers the cyclic time level of the control, and should therefore be selected as short as possible. We recommend that you return a cam signal to a measuring input of the control and increase the compensation value until the scatter of the measured positions cannot be reduced any further.
Currently only active when MD10485 \$MN_SW_CAM_MODE Bit0 = 0.

10500	DPIO_LOGIC_ADDRESS_IN			N10	A4	
-	Logical slot address of the PROFIBUS/PROFINET I/Os			DWORD	PowerOn	
-						
-	32	0, 0, 0, 0, 0, 0, 0, 0...	0	16383	7/2	M

Description: Logical slot address of the PROFIBUS/PROFINET I/Os usable by the NCK.

10501	DPIO_RANGE_LENGTH_IN			N10	A4	
-	Length of the PROFIBUS/PROFINET I/O range			DWORD	PowerOn	
-						
-	32	0, 0, 0, 0, 0, 0, 0, 0...	0	128	7/2	M

Description: Length of the PROFIBUS/PROFINET I/O range accessible by the NCK in bytes.
0: Only the first data slot is used.
x: Length of the PROFIBUS/PROFINET I/O range in bytes
Note: in PROFINET, it is not possible to combine several slots in one area.

10502	DPIO_RANGE_ATTRIBUTE_IN			N10	A4	
-	Attributes of the PROFIBUS/PROFINET I/Os			UDWORD	PowerOn	
-						
-	32	0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x01...	0	0xFFFFFFFF	7/2	M

Description: Attributes of the PROFIBUS/PROFINET I/Os
Bit 0: Little/Big Endian format of the system variable \$A_DPx_IN[n,m]
0: Little Endian format
1: Big Endian format
Bit 1: (reserved)
Bit 2: Read input data
0: Read possible through system variable and CC binding (increased performance requirements)
1: Read only possible for CC binding (low performance requirements)
Bit 3: Slot sign-of-life alarms
0: Slot sign-of-life alarms are output
1: Slot sign-of-life alarms are suppressed
Bit 4...7: (Reserved for expansions)
Bit 8...31: Reserved for the assignment to compile cycle functions (see documentation of the CC function)

10510	DPIO_LOGIC_ADDRESS_OUT			N10	A4	
-	Logical slot address of the PROFIBUS/PROFINET I/Os			DWORD	PowerOn	
-						
-	32	0, 0, 0, 0, 0, 0, 0, 0...	0	16383	7/2	M

Description: Logical slot address of the PROFIBUS/PROFINET I/Os usable by the NCK.
Note: the logical slot address must lie outside the PLC process image.

10511	DPIO_RANGE_LENGTH_OUT			N10	A4	
-	Length of the PROFIBUS/PROFINET range			DWORD	PowerOn	
-						
-	32	0, 0, 0, 0, 0, 0, 0, 0...	0	128	7/2	M

Description: Length of the PROFIBUS/PROFINET I/O range accessible by the NCK in bytes.
0: Only the first data slot is used.
x: Length of the PROFIBUS/PROFINET I/O range in bytes
Note: in PROFINET, it is not possible to combine several slots in one area.

10512	DPIO_RANGE_ATTRIBUTE_OUT			N10	A4	
-	Attributes of the PROFIBUS/PROFINET I/Os			UDWORD	PowerOn	
-						
-	32	0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x01...	0	0xFFFFFFFF	7/2	M

Description: Attributes of the PROFIBUS/PROFINET I/Os
Bit 0: Little/Big Endian format of system variable \$A_DPx_OUT[n,m]
0: Little Endian format
1: Big Endian format
Bit 1: Write output data
0: Write only through system variable
1: Write only through CC binding
Bit 2: (reserved)
Bit 3: Slot sign-of-life alarms
0: Slot sign-of-life alarms are output
1: Slot sign-of-life alarms are suppressed
Bit 4...7: (Reserved for expansions)
Bit 8...31: Reserved for the assignment to compile cycle functions (see documentation of the CC function)

10520	PLCINTERN_LOGIC_ADDRESS_IN			N10	-	
-	Logical basis address for HW-PLC access to input slots internal PROFIBUS			DWORD	PowerOn	
-						
-	64	0, 0, 0, 0, 0, 0, 0, 0...	0	16383	7/2	M

Description: Logical basis address of the PROFIBUS I/O available with the PLC hardware at the internal PROFIBUS. Only relevant for HW-PLC.

3.3 NC machine data

10525	PLCINTERN_LOGIC_ADDRESS_OUT			N10	-	
-	Logical basis address for HW-PLC access to output slots internal PROFIBUS			DWORD	PowerOn	
-						
-	64	0, 0, 0, 0, 0, 0, 0, 0...	0	16383	7/2	M

Description: Logical basis address of the PROFIBUS I/O available with the PLC hardware at the internal PROFIBUS. Only relevant for HW-PLC.

10530	COMPAR_ASSIGN_ANA_INPUT_1			N10	A4	
-	Hardware assignment of analog inputs for comparator byte 1			BYTE	PowerOn	
-						
-	8	0, 0, 0, 0, 0, 0, 0, 0	-	-	7/2	M

Description: This MD assigns analog inputs 1 to 8 to a bit number of comparator byte 1. This input bit of the comparator is set to "1" if the comparison between the applied analog value and the associated threshold value (SD41600 \$SN_COMPAR_THRESHOLD_1 fulfills the condition parameterized in (MD10540 \$MN_COMPAR_TYPE_1).

An analog input can be assigned to a plurality of comparator input bits.

The following generally applies to comparator byte 1:

COMPAR_ASSIGN_ANA_INPUT_1 [b] = n

with index: b = number of comparator input bit (0 to 7)

n = number of analog input (1 to 8)

Example:

```
COMPAR_ASSIGN_ANA_INPUT_1[0] = 1
COMPAR_ASSIGN_ANA_INPUT_1[1] = 2
COMPAR_ASSIGN_ANA_INPUT_1[2] = 1
COMPAR_ASSIGN_ANA_INPUT_1[3] = 3
COMPAR_ASSIGN_ANA_INPUT_1[4] = 3
COMPAR_ASSIGN_ANA_INPUT_1[5] = 1
COMPAR_ASSIGN_ANA_INPUT_1[6] = 1
COMPAR_ASSIGN_ANA_INPUT_1[7] = 1
```

Analog input 1 affects input bits 0, 2, 5, 6 and 7 of comparator byte 1

Analog input 2 affects input bit 1 of comparator byte 1

Analog input 3 affects input bits 3 and 4 of comparator byte 1

Related to:

MD10540 \$MN_COMPAR_TYPE_1

MD10541 \$MN_COMPAR_TYPE_2

10531	COMPAR_ASSIGN_ANA_INPUT_2			N10	A4	
-	Hardware assignment of analog inputs for comparator byte 2			BYTE	PowerOn	
-						
-	8	0, 0, 0, 0, 0, 0, 0, 0	-	-	7/2	M

Description: This MD assigns analog inputs 1 to 8 to a bit number of comparator byte 2. This input bit of the comparator is set to "1" if the comparison between the applied analog value and the associated threshold value (SD41601 \$SN_COMPAR_THRESHOLD_2 fulfills the condition parameterized in (MD10541 \$MN_COMPAR_TYPE_2).

An analog input can be assigned to a plurality of comparator input bits.

The following generally applies to comparator byte 2:

COMPAR_ASSIGN_ANA_INPUT_2 [b] = n

with index: b = number of comparator input bit (0 to 7)

n = number of analog input (1 to 8)

Example:

```

COMPAR_ASSIGN_ANA_INPUT_2[0] = 1
COMPAR_ASSIGN_ANA_INPUT_2[1] = 2
COMPAR_ASSIGN_ANA_INPUT_2[2] = 1
COMPAR_ASSIGN_ANA_INPUT_2[3] = 3
COMPAR_ASSIGN_ANA_INPUT_2[4] = 3
COMPAR_ASSIGN_ANA_INPUT_2[5] = 1
COMPAR_ASSIGN_ANA_INPUT_2[6] = 1
COMPAR_ASSIGN_ANA_INPUT_2[7] = 1
Analog input 1 affects input bits 0, 2 , 5, 6 and 7 of comparator byte 2
Analog input 2 affects input bit 1 of comparator byte 2
Analog input 3 affects input bits 3 and 4 of comparator byte 2
Related to:
MD10540 $MN_COMPAR_TYPE_1
MD10541 $MN_COMPAR_TYPE_2

```

10540	COMPAR_TYPE_1			N10	A4	
-	Parameterization for comparator byte 1			UDWORD	PowerOn	
-						
-	-	0	0	0x7FFFFFFF	7/2	M

Description:

This MD can be used to make the following settings for the individual output bits (0 to 7) of comparator byte 1:

- Bits 0 to 7: Comparison type mask (for comparator output bits 0 to 7)
 - Bit = 1: output bit = 1 if analog value $\geq$ threshold value
 - Bit = 0: output bit = 1 if analog value $<$ threshold value
(Threshold value defined by SD41600 \$SN_COMPAR_THRESHOLD_1)
- Bits 8 to 15: Not used (defined to be set to 0)
- Bits 16 to 23: Assignment of a HW output byte for outputting the comparator states (statement of the byte address)
 - Byte = 0: No output via digital NC outputs
 - Byte = 1: Output via digital onboard NC outputs (1 to 4)
 - Byte = 2: Output via external digital NC outputs 9 to 16
 - Byte = 3: Output via external digital NC outputs 17 to 24
 - Byte = 4: Output via external digital NC outputs 25 to 32
 - Byte = 5: Output via external digital NC outputs 33 to 40
- Bits 24 to 31: Inversion mask for the output of the comparator states (bits 0 to 7)
 - Bit = 0: Output bit is not inverted
 - Bit = 1: Output bit is inverted

Related to:

```

MD10530 $MN_COMPAR_ASSIGN_ANA_INPUT_1
MD10531 $MN_COMPAR_ASSIGN_ANA_INPUT_2
SD41600 $SN_COMPAR_THRESHOLD_1
SD41601 $SN_COMPAR_THRESHOLD_2
MD10360 $MN_FASTIO_DIG_NUM_OUTPUTS

```

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10541	COMPAR_TYPE_2			N10	A4	
-	Parameterization of comparator byte 2			UDWORD	PowerOn	
-						
-	-	0	0	0x7FFFFFFF	7/2	M

Description: This MD can be used to make the following settings for the individual output bits (0 to 7) of comparator byte 2:

- Bits 0 to 7: Comparison type mask (for comparator output bits 0 to 7)
 - Bit = 1: output bit = 1 if analog value $\geq$ threshold value
 - Bit = 0: output bit = 1 if analog value $<$ threshold value
(Threshold value defined by SD41601 \$SN_COMPAR_THRESHOLD_2)
- Bits 8 to 15: not used (defined to be set to 0)
- Bits 16 to 23: Assignment of a HW output byte for outputting the comparator states (statement of the byte address)
- Byte = 0: no output via digital NC outputs
 - Byte = 1: output via digital onboard NC outputs (1 to 4)
 - Byte = 2: output via external digital NC outputs 9 to 16
 - Byte = 3: output via external digital NC outputs 17 to 24
 - Byte = 4: output via external digital NC outputs 25 to 32
 - Byte = 5: output via external digital NC outputs 33 to 40
- Bits 24 to 31: Inversion mask for the output of the comparator states (bits 0 to 7)
 - Bit = 0: Output bit is not inverted
 - Bit = 1: Output bit is inverted

Related to:

MD10530 \$MN_COMPAR_ASSIGN_ANA_INPUT_1

MD10531 \$MN_COMPAR_ASSIGN_ANA_INPUT_2

SD41600 \$SN_COMPAR_THRESHOLD_1

SD41601 \$SN_COMPAR_THRESHOLD_2

MD10360 \$MN_FASTIO_DIG_NUM_OUTPUTS

10600	FRAME_ANGLE_INPUT_MODE			EXP, N01, N09	K2	
-	Sequence of rotation in FRAME			BYTE	PowerOn	
-						
-	-	1	1	2	7/2	M

Description: FRAME_ANGLE_INPUT_MODE sets how the rotations (ROT and AROT) around the three geometry axes are defined if more than one rotation is programmed in a block. The order in which these rotations are programmed within the block is irrelevant.

The rotations can be set to be calculated according to:

- Euler angle with FRAME_ANGLE_INPUT_MODE = 2
The rotations are calculated according to the Euler angle in the following order:
 1. Rotation around Z
 2. Rotation around X
 3. Rotation around Y
- RPY with FRAME_ANGLE_INPUT_MODE = 1
The rotations are calculated according to the Euler angle in the following order:
 1. Rotation around Z
 2. Rotation around Y
 3. Rotation around X

10602	FRAME_GEOAX_CHANGE_MODE			EXP, N01, N09	K2	
-	Frames when changing geometry axes			BYTE	PowerOn	
-						
-	-	0	0	5	7/2	M

Description:

Geometry axes can be switched over in the following states:

- Selection and deselection of transformations
- Switchable geometry axes GEOAX()

The current total frame is then defined as follows:

0: The current total frame is canceled.

1: The current total frame is recalculated when geometry axes are switched over. Translations, scaling and mirroring for the new geometry axes become active. The rotations of the old geometry axes still apply.

2: The current total frame is recalculated when geometry axes are switched over. Translations, scaling and mirroring for the new geometry axes become active. If rotations were active before switching over to the current base frames, current settable frame or programmable frame, switchover is canceled with an alarm.

3: The current total frame is deleted when selecting and deselecting transformations. When the GEOAX() command is entered, the frame is recalculated and transaction, scaling and mirroring for the new geometry axes become active. The rotations of the old geometry axes still apply.

10604	WALIM_GEOAX_CHANGE_MODE			EXP, N01, N09	A3	
-	Working area limitation by changing geometry axes			BYTE	PowerOn	
-						
-	-	0	0	1	7/2	M

Description:

This machine data specifies whether a potentially active working area limitation will remain active after geo axis replacement, or whether it will be deactivated.

Meaning of the MD values:

= 0 Working area limitation will be deactivated when replacing geo axis.

= 1 Working area limitation will remain activated when replacing geo axis.

10610	MIRROR_REF_AX			EXP, N01, N09	K2	
-	Reference axis for mirroring			BYTE	PowerOn	
-						
-	-	0	0	3	7/2	M

Description:

0: Mirroring always takes place in the stated axis, without scaling.

The mirroring of a geometry axis can always be related to a defined reference axis.

1: x is the reference axis

Mirroring of the x axis is unique.

Mirroring of the y axis is mapped on:

a mirroring of the x axis and

a rotation of the z axis through 180 degrees.

Mirroring of the z axis is mapped on:

a mirroring of the x axis and

a rotation of the x axis through 180 degrees and

a rotation of the z axis through 180 degrees

2: y is the reference axis

Mirroring of the x axis is mapped on:

a mirroring of the y axis and

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a rotation of the z axis through 180 degrees.
 Mirroring of the y axis is unique.
 Mirroring of the z axis is mapped on:
 a mirroring of the y axis and
 a rotation of the x axis through 180 degrees
 3: z is the reference axis
 Mirroring of the x axis is mapped on:
 a mirroring of the z axis and
 a rotation of the z axis through 180 degrees and
 a rotation of the x axis through 180 degrees
 Mirroring of the y axis is mapped on:
 a mirroring of the z axis and
 a rotation of the x axis through 180 degrees.
 Mirroring of the z axis is unique.

10612	MIRROR_TOGGLE			EXP, N01, N09	K2	
-	Mirror toggle			BYTE	PowerOn	
-						
-	-	1	0	1	7/2	M

Description: Mirror toggle function.
 1: Programmed axis values are not evaluated. Toggle switching behavior.
 0: Programmed axis values are evaluated.
 The axes are mirrored in the case of values not equal to 0 if they are not already mirrored. Mirroring is disabled if the value is 0.

10613	NCBFRAME_RESET_MASK			EXP	K2	
-	Active NCU global base frames after reset			UDWORD	Reset	
-						
-	-	0xFFFF	0	0xFFFF	7/2	M

Description: Bit mask for the reset setting of the NCU global base frames which are included in the channel.
 The following applies:
 When MD20110 \$MC_RESET_MODE_MASK bit0 = 1 and bit14 = 1
 The entire base frame is derived on reset from the linking of the NCU global base frame field elements whose bit in the bit mask is 1.
 When MD20110 \$MC_RESET_MODE_MASK bit0 = 1 and bit14 = 0
 The entire base frame is deselected on reset.

10615	NCBFRAME_POWERON_MASK			EXP, N12	K2	
-	Reset global base frames after power on			UDWORD	PowerOn	
-						
-	-	0	0	0xFFFF	7/2	M

Description: This machine data defines whether global base frames are reset in the data management on Power On.
 That is

- Offsets are set to 0,
- Scalings are set to 1.
- Mirroring is disabled.

The individual base frames can be selected separately.
 Bit 0 means base frame 0, bit 1 base frame 1 etc.

Value=0: Base frame is retained on Power On

Value=1: Base frame is reset in the data management on Power On.

Related to:

MD24004 \$MC_CHBFRAME_POWERON_MASK

10616	MAPPED_FRAME_MASK			N01	-	
-	Enable frame mapping			UDWORD	PowerOn	
-						
-	-	0x3001	0	0x00007FFF	7/2	M

Description: Bit mask for channel-specific data management frames, the axial frames of which can be mapped onto other axial frames.

The mapping takes place via MD32075 \$MA_MAPPED_FRAME[AXn] = "AXm".

Bit 0: \$P_SETFR System frame for actual value setting and scratching

Bit 1: \$P_EXTFR System frame for external work offset

Bit 2: \$P_PARTFR System frame for TCARR and PAROT

Bit 3: \$P_TOOLFR System frame for TOROT and TOFRAME

Bit 4: \$P_WPFR System frame for workpiece reference points

Bit 5: \$P_CYCFR System frame for cycles

Bit 6: \$P_TRAFR System frame for transformations

Bit 7: \$P_ISO1FR System frame for ISO G51.1 Mirror

Bit 8: \$P_ISO2FR System frame for ISO G68 2DROT

Bit 9: \$P_ISO3FR System frame for ISO G68 3DROT

Bit 10: \$P_ISO4FR System frame for ISO G51 Scale

Bit 11: \$P_RELFR System frame for relative coordinate systems

Bit12: \$P_CHBFR Channel-specific basic frames

MD28081 \$MC_MM_NUM_BASE_FRAMES must be set identically in all affected channels

Bit13: \$P_UIFR Settable frames

MD28080 \$MC_MM_NUM_USER_FRAMES must be set identically in all affected channels

Bit14: \$P_GFR Grinding frames

MD28079 \$MC_MM_NUM_G_FRAMES must be set identically in all affected channels

10617	FRAME_SAVE_MASK			EXP	K2	
-	Behavior of frames in SAVE subroutines			UDWORD	PowerOn	
-						
-	-	0	0	0x7	7/2	M

Description: This machine data is used to define which frames are restored with SAVE attribute at return from a subprogram.

Bit 0: Settable frames G54 through G599

Value = 0:

If the same G code is active at subprogram return and subprogram call, the active settable frame is maintained. If not, the settable frame is reactivated when the subprogram is called.

Value = 1:

At subprogram return, the settable frame is reactivated when the subprogram is called.

Bit 1: Basic frame

Value = 0:

The active basic frame is not changed at subprogram return. This is also the case if a basic frame change is carried out in the subprogram by an operation or by an implicit frame deselection (possibly through TRAFOOF).

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Value = 1:

At subprogram return, the basic frame is reactivated when the subprogram is called.

Bit 2: Grinding frames GFRAME0 through GFRAME100

Value = 0:

If the same G code is active at subprogram return and subprogram call, the active grinding frame is retained. If not, the grinding frame is reactivated when the subprogram is called.

Value = 1:

At subprogram return, the grinding frame is reactivated when the subprogram is called.

10618	PROTAREA_GEOAX_CHANGE_MODE			EXP, N01, N09	A3	
-	Protection range on change of geometry axes			UBYTE	PowerOn	
-						
-	-	0x0	0x0	0x3	7/2	M

Description:

This machine data is used to define whether any active protection zones will remain active after a transformation change or geo axis replacement, or whether they will be deactivated.

The machine data is bit-coded with the following meanings:

Bit 0 = 0

Protection zones deactivated on transformation change.

Bit 0 = 1

Active protection zones remain active after transformation change.

Bit 1 = 0

Protection zones deactivated on geo axis replacement.

Bit 1 = 1

Active protection zones remain active after geo axis replacement.

10619	COLLISION_TOLERANCE			EXP	-	
mm	Tolerance for collision check			DOUBLE	NEW CONF	
-						
-	-	1	0.001	1000.0	7/3	M

Description:

This parameter is used to set the required collision check accuracy. This means: If the distance between two protection zones is smaller than this value, a collision of those two protection zones may be signalled. But: Two protection zones that overlap by less than this value cannot be classified as colliding.

10620	EULER_ANGLE_NAME_TAB			N01, N09	F2, TE4	
-	Name of Euler angle			STRING	PowerOn	
-						
-	3	A2, B2, C2	-	-	7/2	M

Description:

- The name entered must not conflict with the designation and assignment of machine and geometry axis names.
- The name entered must not conflict with channel axis names in the channel (MD20080 \$MC_AXCONF_CHANAX_NAME_TAB), names for directional vectors (MD10640 \$MN_DIR_VECTOR_NAME_TAB), names for intermediate point coordinates for CIP (MD10660 \$MN_INTERMEDIATE_POINT_NAME_TAB) or the names for interpolation parameters (MD10650 \$MN_IPO_PARAM_NAME_TAB).
- The name entered must not contain the following reserved address letters:
 - D Tool offset (D function)
 - E Reserved
 - F Feedrate (F function)
 - G Preparatory function

- H Auxiliary function (H function)
- L Subprogram call
- M Special function (M function)
- N Subblock
- P Number of subroutine repetitions
- R Arithmetic parameter
- S Spindle speed (S function)
- T Tool (T function)
- Nor are keywords (e.g. DEF, SPOS etc.) or predefined identifiers (e.g. ASPLINE, SOFT) allowed.
- An angle identifier consists of a valid address letter (A, B, C, I, J, K, Q, U, V, W, X, Y, Z), followed by an optional numerical extension (1-99).

10621	COLLISION_PREP_CALC_TIME			EXP	-	
s	Maximum computation time of the preparative collision check.			DOUBLE	NEW CONF	
-						
-	-	0.5	0.0	10.0	1/1	M

Description: The maximum computing time of the preparatory collision check is set with this machine data.

>0: After the set time, the preparatory collision check of the current block is interrupted. That makes computing time available to the external communication.

0: The preparatory collision check is not interrupted. That does not make any computing time available to the external communication during the collision check.

A communication failure may occur between HMI and NCK in extreme cases.

A value of 0.5 s is recommended.

10622	COLLISION_SAFETY_DIST			EXP	-	
mm	Safety distance for collision check			DOUBLE	NEW CONF	
-						
-	-	0.0	0.000	1000.0	7/3	M

Description: If the distance between two protection zones becomes smaller than this safety distance, this is regarded as a collision. This machine data is globally effective for protective zone pairs for which no special safety distance was specified (s. function COLLCHECK).

10624	ORIPATH_LIFT_VECTOR_TAB			N01, N09	-	
-	Name of retraction vector for path-relative orientation.			STRING	PowerOn	
-						
-	3	A8, B8, C8	-	-	7/2	M

Description: List of identifiers for components of the retraction vector during reorientations for path relative interpolation of the tool orientation.

The rules for axis identifiers as described in MD20080 \$MC_AXCONF_CHANAX_NAME_TAB apply to the selection of identifiers. The identifiers must be selected so that they do not cause any conflicts with other identifiers (axes, normal vectors, direction vectors, conical interpolation vectors, interpolation parameters, intermediate point coordinates).

10626	ORIPATH_LIFT_FACTOR_NAME			N01, N09	-	
-	Name of relative safety clearance with ORIPATH			STRING	PowerOn	
-						
-	-	ORIPLF	-	-	7/2	M

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Description: Identifier for relative factor for determining a safety clearance for the retracting movement during reorientations for path relative interpolation of the tool orientation.

The rules for axis identifiers as described in MD20080 \$MC_AXCONF_CHANAX_NAME_TAB apply to the selection of identifiers. The identifiers must be selected so that they do not cause any conflicts with other identifiers (axes, normal vectors, direction vectors, conical interpolation vectors, interpolation parameters, intermediate point coordinates).

10630	NORMAL_VECTOR_NAME_TAB			N01, N09	F2	
-	Name of normal vectors			STRING	PowerOn	
-						
-	6	A4, B4, C4, A5, B5, C5	-	-	7/2	M

Description: Normal vector programming from software version 3.2
List of identifiers for the normal vector components at the beginning and end of the block.
The rules for axis identifiers described in MD20080 \$MC_AXCONF_CHANAX_NAME_TAB apply to the selection of identifiers.
The identifiers must be selected so that they do not cause any conflicts with other identifiers (axes, Euler angles, direction vectors, interpolation parameters, intermediate point coordinates).

10640	DIR_VECTOR_NAME_TAB			N01, N09	F2, TE4	
-	Name of direction vectors			STRING	PowerOn	
-						
-	6	A3, B3, C3, AN3, BN3, CN3	-	-	7/2	M

Description: List of identifiers for the direction vector components. (A3 to C3)
List of identifiers for the vector components perpendicular to the direction vector (AN3 to CN3)
The rules for axis identifiers described in MD20080 \$MC_AXCONF_CHANAX_NAME_TAB apply to the selection of identifiers.
The identifiers must be selected so that they do not cause any conflicts with other identifiers (axes, Euler angles, normal vectors, interpolation parameters, intermediate point coordinates).

10642	ROT_VECTOR_NAME_TAB			N01, N09	F2	
-	Name of rotation vectors			STRING	PowerOn	
-						
-	3	A6, B6, C6	-	-	7/2	M

Description: List of identifiers for the rotation vector components in taper direction
The rules for axis identifiers as described in MD20080 \$MC_AXCONF_CHANAX_NAME_TAB apply to the selection of identifiers.
The identifiers must be selected so that they do not cause any conflicts with other identifiers (axes, Euler angles, normal vectors, interpolation parameters, intermediate point coordinates).

10644	INTER_VECTOR_NAME_TAB			N01, N09	F2	
-	Name of intermediate vector components			STRING	PowerOn	
-						
-	3	A7, B7, C7	-	-	7/2	M

Description: List of identifiers for the intermediate vector components

The rules for axis identifiers described in MD20080 \$MC_AXCONF_CHANAX_NAME_TAB apply to the selection of identifiers.

The identifiers must be selected so that they do not cause any conflicts with other identifiers (axes, Euler angles, normal vectors, interpolation parameters, intermediate point coordinates).

10646	ORIENTATION_NAME_TAB			N01, N09	F2	
-	Identifiers for programming a 2nd orientation path			STRING	PowerOn	
-						
-	3	XH, YH, ZH	-	-	7/2	M

Description: List of identifiers for programming of the 2nd space curve for tool orientation
The rules for axis identifiers as described in MD20080 \$MC_AXCONF_CHANAX_NAME_TAB apply to the selection of identifiers.
The identifiers must be selected so that they do not cause any conflicts with other identifiers (axes, Euler angles, normal vectors, interpolation parameters, intermediate point coordinates).

10648	NUTATION_ANGLE_NAME			N01, N09	F2	
-	Name of aperture angle			STRING	PowerOn	
-						
-	-	NUT	-	-	7/2	M

Description: Identifier for the opening angle for orientation interpolation
The rules for axis identifiers as described in MD20080 \$MC_AXCONF_CHANAX_NAME_TAB apply to the selection of identifiers.
The identifiers must be selected so that they do not cause any conflicts with other identifiers (axes, Euler angles, normal vectors, direction vectors, intermediate point coordinates).

10650	IPO_PARAM_NAME_TAB			EXP, N01	K2	
-	Name of interpolation parameters			STRING	PowerOn	
-						
-	3	I, J, K	-	-	7/2	M

Description: List of identifiers for the interpolation parameters
The rules for axis identifiers described in MD20080 \$MC_AXCONF_CHANAX_NAME_TAB apply to the selection of identifiers.
The identifiers must be selected so that they do not cause any conflicts with other identifiers (axes, Euler angles, normal vectors, direction vectors, intermediate point coordinates).
Corresponds with:
MD10651 \$MN_IPO_PARAM_THREAD_NAME_TAB
MD10660 \$MN_INTERMEDIATE_POINT_NAME_TAB
References: /PA/, Programming Guide: Fundamentals"

10651	IPO_PARAM_THREAD_NAME_TAB			EXP, N01	K2	
-	Name of the interpolation parameter for convex thread			STRING	PowerOn	
-						
-	3	IR, JR, KR	-	-	7/2	M

Description: Identifier list of interpolation parameters for convex threads
When selecting identifiers, the rules for axis identifiers described in MD20080 \$MC_AXCONF_CHANAX_NAME_TAB apply.
The identifiers must be selected so that there is no conflict with other identifiers (axes, Euler angle, normal vector, direction vector, intermediate point coordinate).

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Corresponds with:

MD10650 \$MN_IPO_PARAM_NAME_TAB

MD10660 \$MN_INTERMEDIATE_POINT_NAME_TAB

10660	INTERMEDIATE_POINT_NAME_TAB			EXP, N01	K2	
-	Name of interpolation point coordinates for G2/G3			STRING	PowerOn	
-						
-	3	I1, J1, K1	-	-	7/2	M

Description:

List of identifiers for the intermediate point coordinates

The rules for axis identifiers described in MD20080 \$MC_AXCONF_CHANAX_NAME_TAB apply to the selection of identifiers. The identifiers must be selected so that they do not cause any conflicts with other identifiers (axes, Euler angles, normal vectors, direction vectors, intermediate point coordinates).

Related to:

MD10650 \$MN_IPO_PARAM_NAME_TAB

MD10651 \$MN_IPO_PARAM_THREAD_NAME_TAB

References: /PG/, Programming Guide: Fundamentals

10670	STAT_NAME			N01, N09	F2	
-	Name of state information			STRING	PowerOn	
-						
-	-	STAT	-	-	7/2	M

Description:

Identifier for position information for solving ambiguities in Cartesian PTP travel.

An identifier must be chosen that does not conflict with other identifiers (e.g. axes, Euler angles, normal vectors, direction vectors, intermediate point coordinates).

10672	TU_NAME			N01, N09	F2	
-	Name of state information of axes			STRING	PowerOn	
-						
-	-	TU	-	-	7/2	M

Description:

Identifier for position information of axes for solving ambiguities in Cartesian PTP travel.

An identifier must be chosen that does not conflict with other identifiers (e.g. axes, Euler angles, normal vectors, direction vectors, intermediate point coordinates).

10674	PO_WITHOUT_POLY			N01	F2	
-	Polynomial programming programmable without G function POLY			BOOLEAN	PowerOn	
-						
-	-	FALSE	FALSE	TRUE	7/2	M

Description:

Until now, the G function POLY has always had to be active during polynomial programming with PO[xx] = (xx), otherwise an alarm was output.

If MD10674 \$MN_PO_WITHOUT_POLY is set to TRUE, no alarm is output with POLY inactive during polynomial programming. The end point of the polynomial is then approached with the linear interpolation G1.

There is no polynomial interpolation if POLY is inactive.

10682	CONTOUR_SAMPLING_FACTOR			N01, EXP	-	
-	Contour sampling factor			DOUBLE	Reset	
-						
-	-	1.0	0.0	1.0E+301	1/1	M

Description: This factor defines the maximum time interval in which a curved contour is sampled in the interpolator.

The maximum sampling time results from the set interpolation cycle (see MD10071 \$MN_IPO_CYCLE_TIME), the factor set with this data, and the tolerance set for the geometry axes in MD33100 \$MA_COMPRESS_POS_TOL[].

10700	PREPROCESSING_LEVEL			N01, N02	V2, K1	
-	Program preprocessing level			UBYTE	PowerOn	
-						
-	-	0x25	0	0x7F	2/2	M

Description: Bit 0= 0:
No preprocessing
Bit 0= 1:
The call description of the cycles is formed during control power on. All the programs in the directories _N_CUS_DIR, _N_CMA_DIR and _N_CST_DIR can be called in the part program without EXTERNAL declaration. If the parameter interface of a cycle is changed in the control, then this change does not become active until after Power On.

Bit 1=1:
During control power on, all cycles in the directories _N_CUS_DIR, _N_CMA_DIR and _N_CST_DIR are preprocessed to form a process-optimizing compilation. These cycles are then processed more quickly. Changes to the cycle programs do not become active until after the next Power On.

Bit 2=1:
During control power on, the Siemens cycles in the directory _N_CST_DIR are preprocessed to form a process-optimizing compilation (from SW 3.5).

Bit 3=1:
During control power on, the user cycles in the directory _N_CUS_DIR are preprocessed to form a process-optimizing compilation (from SW 3.5).

Bit 4=1:
Preprocessing the user cycles in the directory _N_CMA_DIR

Bit 5=1:
All files marked with PREPRO in the PROG statement line are preprocessed (from SW 6.4)

Bit 5=0:
During control power on, all cycles in the directories activated by bits 1 to 4 are preprocessed. This also applies to programs that are not marked with PREPRO.

Bit 6=1:
The compilation is stored in SRAM if there is inadequate space in DRAM (from SW 7.1).
Memory space is required for preprocessing cycles. Better utilization of memory can be achieved by selective setting of the preprocessing:
The runtime-critical cycles are brought together in one directory. The remaining cycles are in the other directory.

References:
/PG/, "Programming Guide Fundamentals" (EXTERNAL declaration)

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10702	IGNORE_SINGLEBLOCK_MASK			N01	K1, Z1	
-	Prevents stopping at specific blocks in single block mode			UDWORD	PowerOn	
-						
-	-	0	0	0x1FFFF	7/2	M

Description:

This machine data prevents stopping at certain blocks with single block.

Single block stop can be prevented with the following bits of the mask:

Bit0 = 1

Means that there is no stop in any internal ASUB block. Exception: The single block stop has been explicitly activated by the SBLON command.

There are three different internal ASUBs that are triggered by different events.

- Repos: In the case of the events: change of operating mode to a manual mode (JOG, JOGREF, etc.) unless MODESWITCH_MASK is not set, switch skip block on and off, activate machine data, switch-on overstore, axis replacement, subroutine level cancelation, switch-on single block, switch dry run feedrate on and off, alarm with compensation block.

- Return: Delete distance-to-go, switchover after TEACH-IN (if available), or deselection of MDI with corresponding MODESWITCH_MASK.

- _N_PROG_EVENT_SPF: Parameterizing MD 20108 \$MC_PROG_EVENT_MASK parameterizes the events whereby _N_PROG_EVENT_SPF is executed.

Bit1 = 1

Means that there is no stop in any user ASUB block. Exception: The single block stop has been explicitly activated via the SBLON command.

User ASUBs are linked to an interrupt by the part program command SETINT or via the PI- _N_ASUP_. The interrupt is then activated via PLC or the high-speed inputs, and the user ASUBs are retracted.

This disables machine data MD20117 \$MC_IGNORE_SINGLEBLOCK_ASUP. The NCK behavior corresponds to the machine data assignment MD20117 \$MC_IGNORE_SINGLEBLOCK_ASUP=FFFFFFFF.

Bit2 = 1

Means that there is no stop in any intermediate block. Intermediate blocks are generated at, among other events, tool change, ADIS and complicated geometry.

Bit3 = 1

Means that there is no stop in the block search pickup block. The block search pickup block is the 1st block that is loaded into the main run at the start after the search target has been found in the program.

Bit4 = 1

Means that there is no stop in the INIT blocks. INIT blocks are generated from reset immediately after a part program start.

Bit5 = 1

Means that there is no stop in any subprogram block with the parameter DISPLOF.

Bit6 = 1

Means that there is no stop in any block in which the NCK cannot reorganize.

Reorganize is an internal procedure that is needed for mode change after JOG/ JOGREF..., switch skip block on and off, activate machine data, axis replacement, switch on overstore, switch on single block, switch dry run feedrate on and off, subroutine level cancelation, user ASUBs delete distance-to-go, switchover after TEACH-IN (if available). Reorganize is never needed in Reset state.

Example blocks in which reorganize is impossible:

- Tool change
- 1st block after the Repos procedure
- Block after an ASUB from JOG/canceled

Bit7 = 1

Means that there cannot be a stop in any block in which repositioning is impossible. Reposition is an internal procedure that is needed for mode change after JOG/ JOGREF..., switch skip block on and off, activate machine data, axis replacement, switch on overstore, switch on single block, switch dry run feedrate on and off, subroutine level cancelation, and possibly user ASUBs. Reposition is never needed in Reset state.

Example blocks in which reposition is impossible:

- G33 + blocks in which reorganize is impossible.

Bit8 = 1

Means that there is no stop in a residual block that does not contain traversing information.

Bit9 = 1

Means that there is no stop in a run in/main run synchronization block (e.g. STOPRE, \$Variable) that is repeated because of an interruption with Reorg (e.g. mode change).

Bit10= 1

Means that there is no stop in a "tool selection block". "Tool selection block" only occurs with tool management (magazine management or TMMG) active. This block gives the corresponding tool change command to the PLC.

This block is generally generated by T programming from the part program.

Example block "N1010 T="Drill" M6 D1"

Depending on machine data, the "tool selection block" can be held in the interpolator until the PLC has acknowledged the corresponding tool change (see MD20310 \$MC_TOOL_MANAGEMENT_MASK). However the program status remains in "run".

Bit11= 1

The control has to automatically generate implicit GET blocks for the axis replacement function (axis replacement: 2 or more channels control one axis alternately) if no explicit GET(D) has been programmed and the following block wants to traverse the axis. (The other channel had previously used this axis).

An explicitly programmed GET may appear as follows "getd(x1,y1,z1) or get(x1,y1,z1)".

There is no stop at explicit or implicit GET blocks in the single block with this bit 11.

Bit12= 1

There is no stop in the single block type 2 in the SBLON block.

Bit13= 1

If an axis is pulled out in the middle of a block and possibly assigned to another channel, then there is no stop at the PREMATURE end of this block. This block follows a REPOSA in order to traverse it to the end, there is no stop until this end has been reached.

Bit14=1

In a part program line, in which a substitution subroutine is called due to NC language replacement, only one stop is performed under the condition that the subroutine includes PROC attribute SBLOF. It is irrelevant whether the subroutine is called at block start and/or end or whether it is exited with M17 or RET.

Bit15=1

Means that there is no stop in any user ASUB block. Exception: The single block stop has been explicitly activated via the SBLON command.

There are three different internal ASUBs that are triggered by different events.

- Repos: In the case of the events: change of operating mode to a manual mode (JOG, JOGREF,...) unless MODESWITCH_MASK is not set, switch skip block on and off, activate machine data, switch-on overstore, axis replacement, subroutine level cancelation, switch-on single block, switch dry run feedrate on and off, alarm with compensation block.

- Return: Delete distance-to-go, switchover after TEACH-IN (if available), or deselection of MDI with corresponding MODESWITCH_MASK.

3.3 NC machine data

Bit16=1

Activating SERUPRO (search run via prog test) prevents stopping at single blocks.

Related to:

MD20117 \$MC_IGNORE_SINGLEBLOCK_ASUP

10703	IGNORE_CFG_STOP_MASK			N01	?	
-	Prevent configured stop			UDWORD	PowerOn	
-						
-	-	0x3	0	0xFFFFFFFF	7/2	M

Description:

This machine data specifies whether the stop function is ignored in certain NC blocks.

The following bits of the mask can prevent the configured stop:

Some of the bits have the same meaning for the configured stop as IGNORE_SINGLEBLOCK_MASK for a single block.

Bit0 = 1

Means that a stop in an SBLOF or SBLON is prevented.

Bit1 = 1

Means that a stop in a residual block not containing any traversing information is prevented.

Bit2 = 1

Means that a stop in a block search pickup block is triggered. The block search pickup block is the 1st block that is loaded into the main run at the start after the search target has been found in the program.

Bit3 = 1

Means that a stop by a program event is prevented

There are three different internal ASUBs that are triggered by different events.

- Repos: In the case of the events Change to a manual mode (JOG, JOGREF, etc.) unless MODESWITCH_MASK is not set, Switch skip block on and off, Activate machine data, Switch on overstore, Axis replacement, Subprogram level cancelation, Switch on single block, Switch dry run feedrate on and off, Alarm with compensation block.

- Return: Delete distance-to-go, switchover after TEACH-IN (if available), or deselect MDI with corresponding MODESWITCH_MASK.

- _N_PROG_EVENT_SPF: Parameterizing MD 20108 \$MC_PROG_EVENT_MASK parameterizes the events for which _N_PROG_EVENT_SPF is executed.

Bit4 = 1

Means that a stop by a user ASUB is triggered.

User ASUBs are linked to an interrupt by the part program command SETINT or via the PI- _N_ASUP__. The interrupt is then activated via PLC or the high-speed inputs, and the user ASUBs are retracted.

Bit5 = 1

Means a stop by an internal ASUB is prevented.

There are three different internal ASUBs that are triggered by different events.

- Repos: In the case of the events Change to a manual mode (JOG, JOGREF, etc.) unless MODESWITCH_MASK is not set, Switch skip block on and off, Activate machine data, Switch on overstore, Axis replacement, Subprogram level cancelation, Switch on single block, Switch dry run feedrate on and off, Alarm with compensation block.

- Return: Delete distance-to-go, switchover after TEACH-IN (if available), or deselect MDI with corresponding MODESWITCH_MASK.

Related to:

SD42220 \$SC_CFG_STOP_ARRAY, SD42222 \$SC_CFG_STOP_MASK, SD42224 \$SC_CFG_STOP_ARRAY_MASK

10704	DRYRUN_MASK			N01	V1	
-	Dry run feedrate activation			BYTE	PowerOn	
-						
-	-	0	0	2	7/2	M

Description: DRYRUN_MASK == 0
 Dryrun can only be switched on or off at the end of the block.
 When DRYRUN_MASK = 1 is set, the dry run feedrate can also be activated during program execution (in the part program block).
 NOTICE!
 After activating dry run feedrate, the axes are stopped for the duration of the reorganization process.
 DRYRUN_MASK == 2
 Dryrun can be switched on or off in every phase and the axes are not stopped.
 NOTICE:
 However, the function does not become active until a "later" block in the program execution and this is with the next (implicit) StopRe block.
 Related to:
 SD42100 \$SC_DRY_RUN_FEED

10706	SLASH_MASK			N01	PG, A2	
-	Activation of block skip			BYTE	PowerOn	
-						
-	-	0	0	2	7/2	M

Description: If SLASH_MASK = 0, skip block can only be activated when stopped at the end of the block
 If SLASH_MASK = 1, skip block can also be activated during program execution.
 NOTICE!
 After activating skip block, the axes are stopped for the duration of the reorganization process.
 If SLASH_MASK = 2, skip block can be activated in every phase.
 Notice!
 However, the function does not become active until a "later" block in the program execution, and this is with the next (implicit) StopRe block.

10707	PROG_TEST_MASK			N01	K1	
-	Program test mode			UDWORD	PowerOn	
-						
-	-	0x11	0	0x1F	7/2	M

Description: Bit-coded mask for program test
 Bit 0 == 1 No function.
 Bit 1 == 1 Enable to activate the program test using the PI command _N_NCKMOD
 Bit 2 == 1 Activation of program test with accelerated feed in normal program processing. If the bit is set, the program test is active in all channels with accelerated feed via the VDI signal in the first channel. The VDI signal has no effect in all other channels as long as the bit is set. The value in \$MC_SERUPRO_SPEED_FACTOR of the first channel is used as the feed. Only released for test purposes.
 Bit 3 == 1 Activation of program test with accelerated feed in the simulation.
 Bit 4 == 1 Activation of accelerated program test takes place in synchronized multi-channel mode.
 Bit 5..31 As yet unused.

3.3 NC machine data

Program test with normal processing is always activated via the VDI interface.

Program test in simulation is always activated via the NCKMode PI.

Program test block search is always activated via the Find-Pi.

10708	SERUPRO_MASK			N01	K1	
-	Block search modes			UDWORD	PowerOn	
-						
-	-	0	0	0x3f	7/2	M

Description:

Bit-coded mask for block search via program test (abbr. SERUPRO).

SERUPRO block search is activated with the PI service `_N_FINDBL` mode parameter == 5.

SERUPRO means `SEarchRUN` by `PROgram` test; in other words, proceed under program test from start of program to search target. Note: Program test does not move any axes.

Bit 0 == 0

There is a stop at M0 during the search phase.

Bit 0 == 1

There is no stop at M0 during the search phase.

Bit 1 == 0

Alarm 16942 cancels the search phase on part program command `START`.

Bit 1 == 1

Alarm 16942 is switched off.

NOTICE:

A start program command might actually start the other channel!

Bit 2 == 0

Switches the function "Group SERUPRO" off

Bit 2 == 1

Switches the function "Group SERUPRO" on.

"Group SERUPRO" enables a search routine in which the start part program command is changed into a search routine for the other channel.

Bit 3 == 0

Forces all channels that have started SERUPRO to end SERUPRO simultaneously unless they are canceled via `Reset` or the channel reaches M30 without finding the search target. In other words, all channels that find the search target (including self-acting SERUPRO) terminate SERUPRO simultaneously.

Bit 3 == 1

Switches this function off

Bit 4 == 0

Take external override into account in SERUPRO.

Bit 4 == 1

An external override (sent via PLC signal or MCP) is ignored during SERUPRO.

Bit 5 == 0

With SERUPRO, complex path calculations are made.

Bit 5 == 1

With SERUPRO, calculation is made with simple, computing-time-optimized algorithms.

Bit 6 .. 31

As yet unused.

10709	PROG_SD_POWERON_INIT_TAB				EXP, N01	K1	
-	Setting data to be initialized				DWORD	PowerOn	
-							
-	30	43200, 43202, 0, 0, 0, 0, 0, 0...	-	-	7/2	M	

Description:

Setting data to be initialized:

The values of the programmable SD indicated in this MD are set to their initial values on control power up.

Only the setting data listed in the table below, however, can be initialized. If invalid setting data numbers are configured, then the alarm 4009 is output at the next run-up of the control. The alarm shows the index used for configuring the invalid setting data. The alarm can only be eliminated by changing the invalid setting data, i.e. by entering either a valid number or zero!

	(GCODE)
SD42000 \$SC_THREAD_START_ANGLE	SF
SD42010 \$SC_THREAD_RAMP_DISP	DITS/DITE
SD42125 \$SC_SERUPRO_SYNC_MASK	
SD42400 \$SC_PUNCH_DWELLTIME	PDELAYON
SD42402 \$SC_NIBPUNCH_PRE_START_TIME	
SD42404 \$SC_MINTIME_BETWEEN_STROKES	
SD42800 \$SC_SPIND_ASSIGN_TAB	SETMS
SD43200 \$SA_SPIND_S	S wih G94,G95,G97,G971,G972
SD43202 \$SA_SPIND_CONSTCUT_S	S with G96,G961,G962
SD43210 \$SA_SPIND_MIN_VELO_G25	G25 S
SD43220 \$SA_SPIND_MAX_VELO_G26	G26 S
SD43230 \$SA_SPIND_MAX_VELO_LIMS	LIMS
SD43235 \$SA_SPIND_USER_VELO_LIMIT	
SD43300 \$SA_ASSIGN_FEED_PER_REV_SOURCE	FPRAON
SD43350 \$SA_AA_OFF_LIMIT	
SD43420 \$SA_WORKAREA_LIMIT_PLUS	G26
SD43430 \$SA_WORKAREA_LIMIT_MINUS	G25
SD43600 \$SA_IPOBRAKE_BLOCK_EXCHANGE	
SD43610 \$SA_ADISPOSA_VALUE	
SD43700 \$SA_OSCILL_REVERSE_POS1	OSP1
SD43710 \$SA_OSCILL_REVERSE_POS2	OSP2
SD43720 \$SA_OSCILL_DWELL_TIME1	OST1
SD43730 \$SA_OSCILL_DWELL_TIME2	OST2
SD43740 \$SA_OSCILL_VELO	FA
SD43750 \$SA_OSCILL_NUM_SPARK_CYCLES	OSNSC
SD43760 \$SA_OSCILL_END_POS	OSE
SD43770 \$SA_OSCILL_CTRL_MASK	OSCTRL
SD43780 \$SA_OSCILL_IS_ACTIVE	OS
SD43790 \$SA_OSCILL_START_POS	

10710	PROG_SD_RESET_SAVE_TAB			EXP, N01	A3, V1	
-	Setting data to be updated			DWORD	PowerOn	
-						
-	30	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/2	M

Description:

Setting data to be backed up

3.3 NC machine data

The values of the SDs listed in this table are stored in non-volatile memory, i.e. they remain valid after power ON. The setting data whose HMI numbers were entered in the backup list are written into the (buffered) active file system after the description of the part program on reset.

Programmable setting data are:

		(GCODE)
SD 42000	\$SC_THREAD_START_ANGLE	SF
SD 42010:	\$SC_THREAD_RAMP_DISP	DITS/DITE
SD 42400	\$SC_PUNCH_DWELLTIME	PDELAYON
SD 42800	\$SC_SPIND_ASSIGN_TAB	SETMS
SD 43200:	\$SA_SPIND_S	S with G94,G95,G97,G971,G972
SD 43202:	\$SA_SPIND_CONSTCUT_S	S with G96,G961,G962
SD 43210	\$SA_SPIND_MIN_VELO_G25	G25S
SD 43220	\$SA_SPIND_MAX_VELO_G26	G26 S
SD 43230	\$SA_SPIND_MAX_VELO_LIMS	LIMS
SD 43300	\$SA_ASSIGN_FEED_PER_REV_SOURCE	FPRAON
SD 43420	\$SA_WORKAREA_LIMIT_PLUS	G26
SD 43430	\$SA_WORKAREA_LIMIT_MINUS	G25
SD 43700	\$SA_OSCILL_REVERSE_POS1	OSP1
SD 43710	\$SA_OSCILL_REVERSE_POS2	OSP2
SD 43720	\$SA_OSCILL_DWELL_TIME1	OST1
SD 43730	\$SA_OSCILL_DWELL_TIME2	OST2
SD 43740	\$SA_OSCILL_VELO	FA
SD 43750	\$SA_OSCILL_NUM_SPARK_CYCLES	OSNSC
SD 43760	\$SA_OSCILL_END_POS	OSE
SD 43770	\$SA_OSCILL_CTRL_MASK	OSCTRL
SD 43780	\$SA_OSCILL_IS_ACTIVE	OS

The values of D43420 \$SA_WORKAREA_LIMIT_PLUS (working area limitation plus) and SD43430 \$SA_WORKAREA_LIMIT_MINUS (working area limitation minus) are to be stored in the buffered RAM after every RESET, M02, M30 or M17.

--> PROG_SD_RESET_SAVE_TAB[0] = 43420

--> PROG_SD_RESET_SAVE_TAB[1] = 43430

See also: 'REDEF: change attributes of NC language elements', setting data/PRLOC

10712	NC_USER_CODE_CONF_NAME_TAB			EXP, N01, N12	TE1, B1	
-	List of reconfigured NC codes			STRING	PowerOn	
-						
-	200	-	-	-	2/2	M

Description:

List of identifiers of the NC codes reconfigured by the user.

The list is to be structured as follows:

Even address: Identifier to be changed

Subsequent odd address: New identifier

The following three types of NC codes can be reconfigured:

1. G codes e.g.: G02, G64, ASPLINE...
2. NC addresses e.g.: RND, CHF, ...
3. Pre-defined subprograms e.g.: CONTPRON, ...

10713	M_NO_FCT_STOPRE			EXP, N12, N07	H2	
-	M function with preprocessing stop			DWORD	PowerOn	
-						
-	15	-1, -1, -1, -1, -1, -1, -1, -1...	-	-	7/2	M

Description: The M functions defined by MD10713 \$MN_M_NO_FCT_STOPRE perform an implicit preprocessing stop.

That is, the interpretation of the next part program line will be stopped until the block with the M function defined in that way has been processed completely (PLC acknowledgment, motion, etc.).

10714	M_NO_FCT_EOP			EXP, N07	K1, H2	
-	M function for spindle active after reset			DWORD	PowerOn	
-						
-	-	-1	-	-	7/2	M

Description: For spindles where a '2' is configured in MD35040 \$MA_SPIND_ACTIVE_AFTER_RESET, no spindle reset is enabled with this M function when the part program is terminated. The spindle therefore remains active after the end of the part program.

Proposal: M32

Restrictions: see MD10715 \$MN_M_NO_FCT_CYCLE

Related to:

MD35040 \$MA_SPIND_ACTIVE_AFTER_RESET
MD10714 \$MN_M_NO_FCT_EOP,
MD10715 \$MN_M_NO_FCT_CYCLE,
MD20094 \$MC_SPIND_RIGID_TAPPING_M_NR,
MD22254 \$MC_AUXFU_ASSOC_M0_VALUE
MD10814 \$MN_EXTERN_M_NO_MAC_CYCLE,
MD10804 \$MN_EXTERN_M_NO_SET_INT
MD10806 \$MN_EXTERN_M_NO_DISABLE_INT,
MD10800 \$MN_EXTERN_CHAN_SYNC_M_NO_MIN,
MD10802 \$MN_EXTERN_CHAN_SYNC_M_NO_MAX
MD20095 \$MC_EXTERN_RIGID_TAPPING_M_NR
MD26008 \$MC_NIBBLE_PUNCH_CODE

10715	M_NO_FCT_CYCLE			EXP, N12, N07	H2, K1	
-	M function to be replaced by a subroutine			DWORD	PowerOn	
-						
-	30	-1, -1, -1, -1, -1, -1, -1, -1...	-	-	7/2	M

Description: M number with which a subprogram is called.

The name of the subprogram is stated in MD10716 \$MN_M_NO_FCT_CYCLE_NAME[n]. If the M function defined in MD10715 \$MN_M_NO_FCT_CYCLE[n] is programmed in a part program block, the subprogram defined in MD10716 \$MN_NO_FCT_CYCLE_NAME[n] will be started at the end of the block. If the M function is programmed again in the subprogram, no further substitution is performed by a subprogram call. Other substitutions configured in MD10715 \$MN_M_NO_FCT_CYCLE are not performed in the subprogram either. MD10715 \$MN_M_NO_FCT_CYCLE[n] is effective both in Siemens mode G290 and in external language mode G291.

3.3 NC machine data

The subprograms configured with MD10716 \$MN_M_NO_FCT_CYCLE_NAME[n] and MD10717 \$MN_T_NO_FCT_CYCLE_NAME must not be active simultaneously in one block (line of a part program). This means that no more than one M/T function replacement can be active in any one block. Neither an M98 nor a modal subprogram call may be programmed in a block with the M function replacement.

Subprogram return and end of part program are also not permitted. Alarm 14016 is output in the event of a conflict.

Restrictions:

M functions with a fixed meaning and configurable M functions are checked for conflicting settings. A conflict is reported with an alarm.

The following M functions are checked:

- M0 to M5,
- M17, M30,
- M19,
- M40 to M45,
- M function for spindle/axis mode switchover according to MD20094 \$MC_SPIND_RIGID_TAPPING_M_NR (default: M70),
- M functions for nibbling/punching as configured in MD26008 \$MC_NIBBLE_PUNCH_CODE if activated by MD26012 \$MC_PUNCHNIB_ACTIVATION.
- M19, M96-M99 for applied external language (MD18800 \$MN_MM_EXTERN_LANGUAGE).

Exception: The M functions for the tool change defined by MD22560 \$MC_TOOL_CHANGE_M_CODE.

10716	M_NO_FCT_CYCLE_NAME			EXP, N12, N07	K1	
-	Subroutine name for M function replacement			STRING	PowerOn	
-						
-	30	-	-	-	7/2	M

Description:

The machine data contains the name of the cycle. This cycle is called if the M function has been programmed from MD10715 \$MN_M_NO_FCT_CYCLE.

If the M function is programmed in a motion block, the cycle is executed after the motion.

MD10715 \$MN_M_NO_FCT_CYCLE is active in both Siemens mode G290 and in external language mode G291.

If a T number is programmed in the call block, then the programmed T number can be polled in the cycle under the variable \$P_TOOL.

M and T function replacements must not be programmed simultaneously in one block. This means that not more than one M or T function replacement may be active in any one block.

Neither an M98 nor a modal subprogram call may be programmed in a block with M function replacement.

Moreover, neither subprogram return nor part program end are allowed.

Alarm 14016 is issued if there is a conflict.

Related to:

MD10715 \$MN_M_NO_FCT_CYCLE,

MD10717 \$MN_T_NO_FCT_CYCLE_NAME

10717	T_NO_FCT_CYCLE_NAME			EXP, N12, N07	K1	
-	Name of tool-changing cycle for T function replacement			STRING	PowerOn	
-						
-	-	-	-	-	7/2	M

Description:

Cycle name for tool change routine on call-up with a T function.

If a T function is programmed in a part program block, the subprogram defined in T_NO_FCT_CYCLE_NAME is called at the end of the block.

The T number programmed can be polled in the cycle via system variables \$C_T / \$C_T_PROG as a decimal value and via \$C_TS / \$C_TS_PROG as a string (only with tool management). MD10717 \$MN_T_NO_FCT_CYCLE_NAME is active both in Siemens mode G290 and in external language mode G291.

MD10716 \$MN_M_NO_FCT_CYCLE_NAME and MD10717 \$MN_T_NO_FCT_CYCLE_NAME must not be active in one block at the same time, i.e. no more than one M/T function replacement can be active per block. Neither an M98 nor a modal subprogram call can be programmed in a block with a T function replacement. Furthermore, neither subprogram return nor part program end are allowed.

Alarm 14016 is output in the event of a conflict.

Related to:

MD10715 \$MN_M_NO_FCT_CYCLE,

MD10716 \$MN_M_NO_FCT_CYCLE_NAME

10718	M_NO_FCT_CYCLE_PAR			EXP, N12, N07	K1	
-	M function replacement with parameters			DWORD	PowerOn	
-						
-	-	-1	-	-	7/2	M

Description: If an M function replacement was configured with MD10715 \$MN_M_NO_FCT_CYCLE[n] / MD10716 \$MN_M_NO_FCT_CYCLE_NAME[n], a parameter transfer via system variable can be specified for one of these M functions using MD10718 \$MN_M_NO_FCT_CYCLE_PAR, in the same way as T function replacement. The parameters stored in the system variables always refer to the part program line where the M function to be replaced was programmed.

The following system variables are available:

\$C_ME : Address extension of the replaced M function
 \$C_T_PROG : TRUE if address T was programmed
 \$C_T : Value of address T (Integer)
 \$C_TE : Address extension of address T
 \$C_TS_PROG : TRUE if address TS was programmed
 \$C_TS : Value of address TS (string, only with tool management)
 \$C_D_PROG : TRUE if address D was programmed
 \$C_D : Value of address D
 \$C_DL_PROG : TRUE if address DL was programmed
 \$C_DL : Value of address DL

10719	T_NO_FCT_CYCLE_MODE			EXP, N12, N07	K1	
-	Setting of T function substitution			UDWORD	PowerOn	
-						
-	-	0	0	0x7	7/2	M

Description: This machine data parameterizes the execution of the replacement subprogram for the tool and tool offset selection.

Bit 0 = 0:

D or DL number is transferred to the replacement subprogram (default value)

Bit 0 = 1:

The D or DL number is not transferred to the replacement subprogram if the following conditions are fulfilled: MD22550 \$MC_TOOL_CHANGE_MODE = 1 Programming D/DL with T or M function with which the tool change cycle is called, in a part program line.

Bit 1 = 0

Execution of the replacement subprogram at end of block (default value)

Bit 1 = 1

Execution of the replacement subprogram at block start

3.3 NC machine data

Bit 2 = 0:

Execution of the replacement subprogram according to the setting of bit 1

Bit 2 = 1:

Execution of the replacement subprogram at block start and at end of block.

10720	OPERATING_MODE_DEFAULT			N01	H2	
-	Setting of mode after power ON			BYTE	PowerOn	
-						
-	10	7, 7, 7, 7, 7, 7, 7...	0	12	7/2	M

Description:

Default modes of the mode groups after power ON.

If no mode is selected by the PLC, all the channels associated with mode group n are in the mode preset by OPERATING_MODE_DEFAULT[n -1] after power ON:

0 = Automatic mode

1 = Automatic mode, submode REPOS

2 = MDI mode

3 = MDI mode, submode REPOS

4 = MDI mode, submode Teach In

5 = MDI mode, submode Reference point approach

6 = JOG mode

7 = JOG mode, submode Reference point approach

8 = AUTO mode, submode Teach In

9 = AUTO mode, submode Teach In, submode Reference point approach

10 = AUTO mode, submode Teach In, submode Repos

11 = MDI mode, submode Teach In, submode Reference point approach

12 = MDI mode, submode Teach In, submode Repos

NOTICE! Depending on the machine data MD10721 \$MN_OPERATING_MODE_EXTENDED, the mode set here might not be adopted after power ON

10721	OPERATING_MODE_EXTENDED			N01	H2	
-	Extended setting of mode after power ON			BYTE	PowerOn	
-						
-	10	0, 0, 0, 0, 0, 0, 0, 0...	0	1	7/2	M

Description:

Extended setting of an operating mode of the operating mode groups after power on:

0 = Selection of the operating mode according to MD10720 \$MN_OPERATING_MODE_DEFAULT

1 = Selection of the JOG mode if the PLC signal "Retract data available" (DB21-30 DBX377.5) is set in at least one channel of the operating mode group

10722	AXCHANGE_MASK			EXP, N01	K5	
-	Parameterization for axis replacement behavior			UDWORD	PowerOn	
-						
-	-	0	0	0xFFFF	7/2	M

Description:

The axis replacement behavior can be changed with this machine data.

Bit0 = 1

Means that there is an automatic axis replacement via channels even if the axis has been brought into a neutral state by Waitp.

Bit1 = 1

Means that an AXCTSWE fetches all the axis container axes that can be assigned to the channel by means of implicit GET or GETD, and an axis replacement is not permitted again until after the axis container rotation.

Bit2 = 1

Means that, in the case of a GET, an intermediate block without preprocessing stop is generated, and whether a reorganization is needed is not checked until main run.

Bit3 = 1 means, that the NC carries out an axis replacement request for the VDI interface only for:

- an axis exclusively controlled by the PLC (MD30460 \$MA_BASE_FUNCTION_MASK

Bit 4 == 1)

- a permanently assigned PLC axis (MD30460 \$MA_BASE_FUNCTION_MASK Bit 5 == 1)

For such axes, the VDI interface signal 'Axis replacement possible' is always 1.

For all other axes, the VDI interface signal 'Axis replacement possible' is always 0.

For permanently assigned PLC axes, an axis replacement is possible only from neutral axis to PLC axis

or from PLC axis to neutral axis.

Bit3 = 0 means that an axis replacement can be requested by the PLC for each axis.

For permanently assigned PLC axes, an axis replacement is only possible from neutral axis to PLC axis

or from PLC axis to neutral axis.

10724	NC_SYS_CODE_CONF_NAME_TAB			EXP, N01	TE1, B1	
-	List of reconfigured NC codes			STRING	PowerOn	
-						
-	20	-	-	-	ReadOnly	S

Description: Identifier list of internal NC codes
Reserved for internal applications

10735	JOG_MODE_MASK			EXP, N01	K1	
-	Settings for JOG mode			UDWORD	PowerOn	
-						
-	-	0	0	0x1ff	7/2	M

Description: Bit 0:
Enables JOG in automatic.
JOG is enabled in automatic when all channels in the mode group are in the RESET state and no channel of the DRF mode group has been selected. The mode group changes internally to JOG with the +/- key and the handwheel, and the axis moves. After the JOG motion has ended, a change back to AUTO is also made internally.

Bit 1:
Position with AxFrame.
The function 'JOG to position' considers all axial frames and, in the case of an axis configured as geometry axis, the tool length offset.

Bit 2:
Travel in opposite direction.
The functions 'JOG to position' and 'Approach machine fixed point manually' allow travel in opposite direction, i.e. away from the specified position.

Bit 3:
Tool radius offset.
MD21020 \$MC_WORKAREA_WITH_TOOL_RADIUS is active with JOG motions of the geometry axes.

Bit 4:
Alarm suppression operating range limit in the basic coordinate system in JOG.
Alarms that would be output in JOG when an operating range limit is reached in the basic coordinate system, are suppressed.

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Bit 5:

Alarm suppression operating range limit in the workpiece coordinate system in JOG. Alarms that would be output in JOG when an operating range limit is reached in the workpiece coordinate system, are suppressed.

Bit 6, 7:

JOG of circles:

Bit 7 and bit 6 = 0: traversing the 2nd geometry axis of the active plane to PLUS for radius increase, traversing to MINUS for radius decrease independently of inner or outer machining being active.

Bit 7 = 1 and bit 6 = 0: traversing the 2nd geometry axis of the active plane to PLUS always travels in the direction of the limiting circle. This means that the radius is increased on inner machining and decreased on outer machining.

Bit 7 = 1 and bit 6 = 1: traversing the 2nd geometry axis of the active plane to MINUS always travels in the direction of the limiting circle. This means that the radius is increased on inner machining and decreased on outer machining.

Bit 8:

Bit 8 = 0 If there is a JOG retract movement, the retraction axis can only be jogged in the plus direction.

Bit 8 = 1 If there is a JOG retract movement, the retraction axis can only be jogged in the plus and minus direction.

Bits 9-31:

Currently unassigned.

10750	SPRINT_FORMAT_P_CODE			N12	PGA	
-	String coding of the SPRINT format %P			DWORD	PowerOn	
-						
-	-	0	0	2	7/2	1

Description:

Description:

Specification of the character or punched tape code used to code the string which the SPRINT command generates with format control character %P:

0: ASCII

1: ISO (DIN66024)

2: EIA (RS-244)

10751	SPRINT_FORMAT_P_DECIMAL			N12	PGA	
-	Parameterization of the SPRINT format %P			DWORD	PowerOn	
-						
-	-	0	0	1	7/2	1

Description:

Description:

Parameterization of the format description %n.mP of the SPRINT command

Value range:

0: The format specification %n.mP generates a string from a transfer parameter of type REAL or INT consisting of an integer with n + m places. The first n places represent the integer places and the following m places the decimal places of the transfer parameter. Missing decimal places are filled with 0. If there are more than m decimal places, the number is rounded. Missing integer places are filled with spaces.

1: The format specification %n.mP generates a string from a transfer parameter of type REAL or INT that consists of a decimal number with up to n integer places, the decimal point and m decimal places, which are filled with 0 or rounded as necessary.

10760	G53_TOOLCORR			N12	FBFA	
-	Method of operation of G53, G153 and SUPA			UDWORD	NEW CONF	
-						
-	-	0	0	0x3	7/2	M

Description: With this MD you define whether tool length offset and tool radius offset are also to be suppressed with language commands G53, G153 and SUPA

The machine data is bit-coded.

Bit 0 = 0: G53, G153 and SUPA cause block-by-block suppression of work offsets. The active tool length offset and tool radius offset remain active.

Bit 0 = 1: G53, G153 and SUPA cause block-by-block suppression of work offsets, active tool length offset and tool radius offset. The tool length behavior can be modified with bit 1.

Bit 1 is only evaluated, if the value of bit 0 is 1.

Bit1 = 0: with bit 0 set, the tool length is always suppressed with G53, G153 and SUPA.

Bit1 = 1: with bit 0 set the tool length is only suppressed with G53, G153 and SUPA, if a cutting edge is not selected in the same block (this can also be the cutting edge that is already active).

10800	EXTERN_CHAN_SYNC_M_NO_MIN			EXP, N12	H2	
-	1st M function for channel synchronization			DWORD	PowerOn	
-						
-	-	-1	-	-	7/2	M

Description: M number of the first M function which can be used to perform a channel (program) synchronization in ISO2/3 mode.

To avoid conflicts with standard M functions the lowest permissible value is 100. If you enter a value between 0 and 99, alarm 4170 will be issued.

10802	EXTERN_CHAN_SYNC_M_NO_MAX			EXP, N12	H2	
-	Last M function for channel synchronization			DWORD	PowerOn	
-						
-	-	-1	-	-	7/2	M

Description: M number of the last M function which can be used to perform a channel (program) synchronization in ISO2/3 mode.

In combination with MD10800 \$MN_EXTERN_CHAN_SYNC_M_NO_MIN, the machine data defines an M number range reserved for channel synchronization. This range may be a maximum of 10 times the number of channels as only 10 WAIT marks may be set for each channel.

Alarm 4170 is output if a value is entered between 0 and 99 or less than MD10800 \$MN_EXTERN_CHAN_SYNC_M_NO_MIN.

10804	EXTERN_M_NO_SET_INT			EXP, N12	H2, K1	
-	M function to activate ASUB			DWORD	PowerOn	
-						
-	-	96	-	-	7/2	M

Description: M function number used to activate an interrupt program (ASUB) in ISO2/3 mode. The interrupt program is always started by the 1st high-speed input of the numerical control.

The M number defined in the machine data replaces M96 in external language mode.

Restrictions: Refer to MD10715 \$MN_M_NO_FCT_CYCLE

Related to:

MD10714 \$MN_M_NO_FCT_EOP,

MD10715 \$MN_M_NO_FCT_CYCLE,

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MD20094 \$MC_SPIND_RIGID_TAPPING_M_NR,
MD22254 \$MC_AUXFU_ASSOC_M0_VALUE
MD10814 \$MN_EXTERN_M_NO_MAC_CYCLE,
MD10804 \$MN_EXTERN_M_NO_SET_INT
MD10806 \$MN_EXTERN_M_NO_DISABLE_INT,
MD10800 \$MN_EXTERN_CHAN_SYNC_M_NO_MIN,
MD10802 \$MN_EXTERN_CHAN_SYNC_M_NO_MAX
MD20095 \$MC_EXTERN_RIGID_TAPPING_M_NR
MD26008 \$MC_NIBBLE_PUNCH_CODE

10806	EXTERN_M_NO_DISABLE_INT	EXP, N12	H2, K1
-	M function to deactivate ASUB	DWORD	PowerOn
-			
-	-	97	-

Description: M function number used to deactivate an interrupt program (ASUB) in ISO2/3 mode.
The M number defined in the machine data replaces M97 in external language mode.

Restrictions: refer to MD10715 \$MN_M_NO_FCT_CYCLE

MD10714 \$MN_M_NO_FCT_EOP,
MD10715 \$MN_M_NO_FCT_CYCLE,
MD20094 \$MC_SPIND_RIGID_TAPPING_M_NR,
MD22254 \$MC_AUXFU_ASSOC_M0_VALUE
MD10814 \$MN_EXTERN_M_NO_MAC_CYCLE,
MD10804 \$MN_EXTERN_M_NO_SET_INT
MD10806 \$MN_EXTERN_M_NO_DISABLE_INT,
MD10800 \$MN_EXTERN_CHAN_SYNC_M_NO_MIN,
MD10802 \$MN_EXTERN_CHAN_SYNC_M_NO_MAX
MD20095 \$MC_EXTERN_RIGID_TAPPING_M_NR
MD26008 \$MC_NIBBLE_PUNCH_CODE

10808	EXTERN_INTERRUPT_BITS_M96	EXP, N12	FBFA
-	Activate interrupt program (ASUB)	UDWORD	PowerOn
-			
-	-	0	0

Description: Setting the various bits can influence the processing of the interrupt routine activated by M96 P...

Bit 0 = 0,

No interrupt program possible, M96/M97 are normal M functions

Bit 0 = 1,

Using M96/M97 to activate an interrupt program is allowed

Bit 1 = 0,

Continue processing part program at the final position of the next block after the interrupt block

Bit 1 = 1,

Continue processing part program from interrupt position

Bit 2 = 0,

The interrupt signal immediately interrupts the current block and starts the interrupt routine

Bit 2 = 1,

The interrupt routine will not be started until the end of the block

Bit 3 = 0,
 Interrupt machining cycle at an interrupt signal
 Bit 3 = 1,
 Do not start interrupt program until the end of a machining cycle.

10810	EXTERN_MEAS_G31_P_SIGNAL			EXP, N12	FBFA	
-	Config. of measuring inputs for G31 P..			UBYTE	PowerOn	
-						
-	4	1, 1, 1, 1	0	0x3	7/2	M

Description: This machine data defines the assignment of measurement inputs 1 and 2 to the P numbers programmed with G31 P1 (- P4). The machine data is bit-coded. Only bits 0 and 1 are evaluated. For example, if bit 0 = 1 in MD10810 \$MN_EXTERN_MEAS_G31_P_SIGNAL[1], the 1st measurement input is activated with G31 P2. If MD10810 \$MN_EXTERN_MEAS_G31_P_SIGNAL[3]=2, the 2nd measurement input is activated with G31 P4.

Bit 0: = 0, Do not evaluate measurement input 1 with G31 P1 (- P4)
 Bit 0: = 1, Activate measurement input 1 with G31 P1 (- P4)
 Bit 1: = 0, Do not evaluate measurement input 2 with G31 P1 (- P4)
 Bit 1: = 1, Activate measurement input 2 with G31 P1 (- P4)

10812	EXTERN_DOUBLE_TURRET_ON			EXP, N12	FBFA	
-	Double turret with G68			BOOLEAN	PowerOn	
-						
-	-	FALSE	FALSE	TRUE	7/2	M

Description: This machine data is used to determine whether double-slide machining (channel synchronization for 1st and 2nd channel) is to be started using G68 or whether the second tool of a double turret (= two closely-linked tools at a distance defined in the MD42162 SC_EXTERN_DOUBLE_TURRET_DIST) is to be activated.

FALSE:
 Channel synchronization for double-slide machining

TRUE:
 Load 2nd tool of a double turret (that is, activate
 \$SC_EXTERN_DOUBLE_TURRET_DISTANCE as additive work offset and mirroring around Z axis)

10814	EXTERN_M_NO_MAC_CYCLE			EXP, N12	H2, K1	
-	Macro call via M function			DWORD	PowerOn	
-						
-	30	-1, -1, -1, -1, -1, -1, -1, -1...	-	-	7/2	M

Description: A macro is called with this M number.

The name of the subprogram is stated in MD10815 \$MN_EXTERN_M_NO_MAC_CYCLE_NAME[n].

If the M function specified with MD10814 \$MN_EXTERN_M_NO_MAC_CYCLE[n] is programmed in a part program block, the subprogram defined in MD10815 \$MN_EXTERN_M_NO_MAC_CYCLE_NAME[n] is started. All addresses programmed in the block are written into the corresponding variables.

If the M function is programmed again in the subprogram, there is no longer a replacement by a subprogram call.

MD10814 \$MN_EXTERN_M_NO_MAC_CYCLE[n] is only active in the external language mode G291.

The subprograms configured with MD10815 \$MN_EXTERN_M_NO_MAC_CYCLE_NAME[n] must not be active simultaneously in a block (part program line), i.e. only one M function replacement can become active in any one block. Neither an M98 nor a modal subprogram call may be programmed in the block with the M function replacement.

3.3 NC machine data

Subprogram return and the part program end are also not permitted. Alarm 14016 is issued in case of a conflict. Restrictions: see MD10715 \$MN_M_NO_FCT_CYCLE

Related to:

MD10714 \$MN_M_NO_FCT_EOP,
MD10715 \$MN_M_NO_FCT_CYCLE,
MD20094 \$MC_SPIND_RIGID_TAPPING_M_NR,
MD22254 \$MC_AUXFU_ASSOC_M0_VALUE
MD10814 \$MN_EXTERN_M_NO_MAC_CYCLE,
MD10804 \$MN_EXTERN_M_NO_SET_INT
MD10806 \$MN_EXTERN_M_NO_DISABLE_INT,
MD10800 \$MN_EXTERN_CHAN_SYNC_M_NO_MIN,
MD10802 \$MN_EXTERN_CHAN_SYNC_M_NO_MAX
MD20095 \$MC_EXTERN_RIGID_TAPPING_M_NR
MD26008 \$MC_NIBBLE_PUNCH_CODE

10815	EXTERN_M_NO_MAC_CYCLE_NAME	EXP, N12	H2
-	Name of subroutine for M function macro call	STRING	PowerOn
-			
-	30	-	-
		7/2	M

Description: Name of the subprogram started by a call via the M function defined by MD10814 \$MN_EXTERN_M_NO_MAC_CYCLE[n].

10816	EXTERN_G_NO_MAC_CYCLE	EXP, N12	FBFA
-	Macro call via G function	DOUBLE	PowerOn
-			
-	50	-1., -1., -1., -1., -1., -1., -1.0E+301	1.0E+301
		7/2	M

Description: G number for calling a macro.

The name of the subprogram is stated in MD10817 \$MN_EXTERN_G_NO_MAC_CYCLE_NAME[n].

If the G function specified with MD10816 \$MN_EXTERN_G_NO_MAC_CYCLE[n] is programmed in a part program block, the subprogram defined in MD10817 \$MN_EXTERN_M_NO_MAC_CYCLE_NAME[n] is started. All addresses programmed in the block are written in the corresponding \$C_xx variables.

No subprogram call is executed if a subprogram call is already active via an M/G macro or an M replacement. If a standard G function is programmed in this case, this code is executed. Otherwise, alarm 12470 is issued.

MD10816 \$MN_EXTERN_G_NO_MAC_CYCLE[n] is only active in the external language mode G291.

Only a single subprogram call may be included in any one block. This means that only a single M/G function replacement may be programmed in a block, and no additional subprogram (M98) or cycle call may be included in the block.

Furthermore, a subprogram return and a part program end are not permitted in the same block.

Alarm 14016 is issued in case of a conflict.

10817	EXTERN_G_NO_MAC_CYCLE_NAME	EXP, N12	FBFA
-	Name of subroutine for G function macro call	STRING	PowerOn
-			
-	50	-	-
		7/2	M

Description: Name of the subprogram started by call via the G function defined by MD10816 \$MN_EXTERN_G_NO_MAC_CYCLE[n].

10818	EXTERN_INTERRUPT_NUM_ASUP			EXP, N12	FBFA	
-	Interrupt number for ASUB start (M96)			BYTE	PowerOn	
-						
-	-	1	1	8	7/2	M

Description: Number of the interrupt input starting an asynchronous subprogram activated in ISO mode. (M96 <program number>)

10820	EXTERN_INTERRUPT_NUM_RETRAC			EXP, N12	FBFA	
-	Interrupt number for rapid retraction (G10.6)			BYTE	PowerOn	
-						
-	-	2	1	8	7/2	M

Description: Number of the interrupt input triggering rapid retraction to the position programmed with G10.6 in ISO mode.

10830	EXTERN_PRINT_DEVICE			EXP, N12	FBFA	
-	Output device for ISOPRINT			STRING	PowerOn	
-						
-	-	-	-	-	7/2	I

Description: Path of output device for ISOPRINT

10831	EXTERN_PRINT_MODE			EXP, N12	FBFA	
-	Parameterize output device for ISOPRINT			UDWORD	PowerOn	
-						
-	-	0	0	0x3f	7/2	I

Description: Parameterize output device for ISOPRINT
 Bit 0: 0= Synchronous output
 1= Asynchronous output
 Bit 1: 0= Exclusive assignment
 1= Shared assignment
 Bit 2: Output of DC2 (H12) on opening
 Bit 3: Output of DC4 (H14) on closing
 Bit 4: Output string concluded with LF
 Bit 5: Output string concluded with CR + LF

10850	MM_EXTERN_MAXNUM_OEM_GCODES			EXP, N01, N12	-	
-	Maximum number of OEM G codes			DWORD	PowerOn	
-						
-	-	0	0	1000	1/1	M

Description: This machine data is used to define the number of G codes implemented for an external language via an OEM application.

10880	MM_EXTERN_CNC_SYSTEM			N01, N12	FBFA	
-	Definition of the control system to be adapted			DWORD	PowerOn	
-						
-	-	1	1	3	7/2	M

Description: Definition of the external CNC system whose part programs are to be executed on the SINUMERIK control in addition to SINUMERIK code (ISO_1):
 1: ISO_21: System Fanuc0 milling (5.1 and higher)
 2: ISO_31: System Fanuc0 turning (P5.2 and higher)

5: ISO_32: System Fanuc0 Turning (P7 and higher)

Value = 2 : ISO 3: Code system C

Only G codes can be reconfigured, e.g.: G20, G71.

MD10886 \$MN EXTERN INCREMENT SYSTEM

Related to:

MD10884 \$MN_EXTERN_FLOATINGPOINT_PROG

10888	EXTERN_DIGITS_TOOL_NO			N12	FBFA	
-	Digits for T number in ISO mode			BYTE	PowerOn	
-						
-	-	2	0	8	7/2	M

Description: This machine data is only active when MD10880 \$MN_MM_EXTERN_CNC_SYSTEM == 2.
Number of digits of the tool number in the programmed T word.
From the programmed T word, the number of leading digits specified in MD10888 \$MN_EXTERN_DIGITS_TOOL_NO are interpreted as the tool number.
The following digits address the offset memory.
Entering a value > 0 in MD10889 \$MN_EXTERN_DIGITS_OFFSET_NO renders MD10888 \$MN_EXTERN_DIGITS_TOOL_NO ineffective.
MD10889 \$MN_EXTERN_DIGITS_OFFSET_NO has priority over MD10888 \$MN_EXTERN_DIGITS_TOOL_NO.

10889	EXTERN_DIGITS_OFFSET_NO			N12	FBFA	
-	Digits for offset number in ISO mode			BYTE	PowerOn	
-						
-	-	0	0	8	7/2	M

Description: This machine data is only active when MD10880 \$MN_MM_EXTERN_CNC_SYSTEM == 2.
Number of digits of the offset number in the programmed T word.
From the programmed T word, the number of leading digits specified in MD10889 \$MN_EXTERN_DIGITS_OFFSET_NO are interpreted as the offset number.
The following digits address the tool number.

10890	EXTERN_TOOLPROG_MODE			N12	FBFA	
-	Tool change programming for external language			UDWORD	PowerOn	
-						
-	-	0x0	0	0x7FFFFFFF	7/2	M

Description: Configuration for programming the tool change in an external programming language:
Bit0=0:
Only active for the ISO mode turning: The tool number and offset number are programmed in the T word. \$MN_DIGITS_TOOLNO defines the number of leading digits, which form the tool number.
Example:
\$MN_DIGITS_TOOLNO = 2
T=1234 ; tool number 12,
; offset number 34
Bit0=1:
Only active in the ISO mode turning: Only the tool number is programmed in the T word. Offset number == tool number. \$MN_DIGITS_TOOLNO is irrelevant.
Example:
T=12 ; tool number 12
; offset number 12
Bit1=0:
Only active in the ISO mode turning:
If the number of digits programmed in the T word is the same as the number defined in MD10888 \$MN_EXTERN_DIGITS_TOOL_NO, then leading 0s are added
Bit1=1:
Is only active for the ISO mode turning:

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If the number of digits programmed in the T word is the same as the number of digits specified in MD10888 \$MN_EXTERN_DIGITS_TOOL_NO, the programmed number is the offset number and tool number

Bit2=0:

Is only active for the ISO mode turning: ISO T offset selection only with D (Siemens cutting edge number)

Bit2=1:

Is only active for the ISO mode turning: ISO T offset selection only with H (\$TC_DPH[t,d])

Bit6=0:

The offset memories for the tool length and tool radius are linked so that tool length and tool radius are always selected when either H or D is programmed.

Bit6=1:

The offset memories for the tool length and tool radius are not linked, so that the number of the tool length value is selected when H is programmed, and the number of the tool radius value is selected when D is programmed.

Bit7=0:

Is only active for the ISO mode turning. If T substitution (MD10717 \$MN_T_NO_FCT_CYCLE_NAME) is active, the H number programmed in the T word is transferred to the cycle in the variable \$C_D.

Bit7=1:

Is only active in the ISO mode turning. If T substitution (MD10717 \$MN_T_NO_FCT_CYCLE_NAME) is active, the Siemens cutting edge number D corresponding to the H number programmed in the T word is transferred to the cycle in the variable \$C_D.

10900	INDEX_AX_LENGTH_POS_TAB_1			N09	T1	
-	Number of positions for indexing axis table 1			DWORD	Reset	
-						
-	-	0	0	60	7/2	M

Description:

The indexing position table is used to assign the axis positions in the valid unit of measurement (mm, inches or degrees) to the indexing positions [n] on the indexing axis. The number of indexing positions used in table 1 is defined by MD10900 \$MN_INDEX_AX_LENGTH_POS_TAB_1.

These indexing positions must be assigned valid values in table 1. Any indexing positions in the table above the number specified in the machine data are ignored. Up to 60 indexing positions (0 to 59) can be entered in the table.

Table length = 0 means that the table is not evaluated. If the length is not equal to 0, then the table must be assigned to an axis with MD30500 \$MA_INDEX_AX_ASSIGN_POS_TAB.

If the indexing axis is defined as a rotary axis (MD30300 \$MA_IS_ROT_AX = "1") with modulo 360° (MD30310 \$MA_ROT_IS_MODULO = "1"), the machine data defines the last indexing position after which, with a further traversing movement in the positive direction, the indexing positions begin again at 1.

Special cases:

Alarm 17090 "Value violates upper limit" if values over 60 are entered in MD10900 \$MN_INDEX_AX_LENGTH_POS_TAB_1.

Related to:

MD30500 \$MA_INDEX_AX_ASSIGN_POS_TAB (axis is an indexing axis)

MD10910 \$MN_INDEX_AX_POS_TAB_1 (indexing position table 1)

MD30300 \$MA_IS_ROT_AX (rotary axis)

MD30310 \$MA_ROT_IS_MODULO (modulo conversion for rotary axis)

10910	INDEX_AX_POS_TAB_1			N09	T1	
mm/inch, degrees	Indexing position table 1			DOUBLE	Reset	
-						
-	60	0., 0., 0., 0., 0., 0., 0., 0., 0....	-1.0E+301	1.0E+301	7/2	M

Description:

The indexing position table is used to assign the axis positions in the valid unit of measurement (mm, inches or degrees) to the indexing positions [n] on the indexing axis.
[n] = indexing for the entry of the indexing positions in the indexing position table.

Range: 0 y n x 59, where 0 corresponds to the 1st indexing position and 59 to the 60th indexing position.

Note.

Programming with the absolute indexing position (e.g. CAC) starts with indexing position 1. This corresponds to the indexing position with indexing n = 0 in the indexing position table.

The following should be noted when entering the indexing positions:

- Up to 60 different indexing positions can be stored in the table.
- The 1st entry in the table corresponds to indexing position 1; the nth entry corresponds to indexing position n.
- The indexing positions must be entered in the table in ascending order (starting with the negative and going to the positive traversing range) with no gaps between the entries. Consecutive position values must not be identical.
- If the indexing axis is defined as a rotary axis (MD30300 \$MA_IS_ROT_AX = "1") with modulo 360° (MD30310 \$MA_ROT_IS_MODULO = "1"), then the position values are limited to a range of 0° x pos. < 360°.

The number of indexing positions used in the table is defined by MD10900

\$MN_INDEX_AX_LENGTH_POS_TAB_1.

Entering the value 1 in axial MD30500 \$MA_INDEX_AX_ASSIGN_POS_TAB assigns indexing position table 1 to the current axis.

Special cases:

Alarm 17020 "Illegal array index" if over 60 positions are entered in the table.

Related to:

MD30500 \$MA_INDEX_AX_ASSIGN_POS_TAB (axis is an indexing axis)

MD10900 \$MN_INDEX_AX_LENGTH_POS_TAB_1 (number of indexing positions used in table 1)

MD30300 \$MA_IS_ROT_AX (rotary axis)

MD30310 \$MA_ROT_IS_MODULO (modulo conversion for rotary axis)

10920	INDEX_AX_LENGTH_POS_TAB_2			N09	T1	
-	Number of positions for indexing axis table 2			DWORD	Reset	
-						
-	-	0	0	60	7/2	M

Description:

The indexing position table is used to assign the axis positions in the valid unit of measurement (mm, inches or degrees) to the indexing positions [n] on the indexing axis. The number of indexing positions used in table 2 is defined by MD10920 \$MN_INDEX_AX_LENGTH_POS_TAB_2.

These indexing positions in table 2 must be assigned valid values. Any indexing positions in the table above the number specified in the machine data are ignored.

Up to 60 indexing positions (0 to 59) can be entered in the table.

Table length = 0 means that the table is not evaluated. If the length is not equal to 0, the table must be assigned to an axis with MD30500 \$MA_INDEX_AX_ASSIGN_POS_TAB.

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If the indexing axis is defined as a rotary axis (MD30300 \$MA_IS_ROT_AX = "1") with modulo 360° (MD30310 \$MA_ROT_IS_MODULO = "1"), the machine data defines the last indexing position after which, with a further traversing movement in the positive direction, the indexing positions begin again at 1.

Not relevant for tool magazines (turrets, chain magazines)

Special cases:

Alarm 17090 "Value violates upper limit" if a value over 60 is entered in MD10920 \$MN_INDEX_AX_LENGTH_POS_TAB_2.

Related to:

MD30500 \$MA_INDEX_AX_ASSIGN_POS_TAB (axis is an indexing axis)

MD10930 \$MN_INDEX_AX_POS_TAB_2 (indexing position table 2)

MD30300 \$MA_IS_ROT_AX (rotary axis)

MD30310 \$MA_ROT_IS_MODULO (modulo conversion for rotary axis)

10930	INDEX_AX_POS_TAB_2			N09	T1	
mm/inch, degrees	Indexing position table 2			DOUBLE	Reset	
-						
-	60	0., 0., 0., 0., 0., 0., 0., 0....	-1.0E+301	1.0E+301	7/2	M

Description:

The indexing position table is used to assign the axis positions in the valid unit of measurement (mm, inches or degrees) to the indexing positions [n] on the indexing axis. [n] = indexing for the entry of the indexing positions in the indexing position table.

Range: 0 y n x 59, where 0 corresponds to the 1st indexing position and 59 to the 60th indexing position.

Note:

Programming with the absolute indexing position (e.g. CAC) starts with indexing position 1. This corresponds to the indexing position with indexing n = 0 in the table.

The following should be noted when entering the indexing positions:

- Up to 60 different indexing positions can be stored in the table.
- The 1st entry in the table corresponds to indexing position 1; the nth entry corresponds to indexing position n.
- The indexing positions should be entered in the table in ascending order (starting with the negative and going to the positive traversing range) with no gaps between the entries. Consecutive position values must not be identical.
- If the indexing axis is defined as a rotary axis (MD30300 \$MA_IS_ROT_AX = "1") with modulo 360° (MD30310 \$MA_ROT_IS_MODULO = "1"), then the position values are limited to a range of 0° x pos. < 360°.

The number of indexing positions used in the table is defined by MD10920 \$MN_INDEX_AX_LENGTH_POS_TAB_2.

Entering the value 1 in axial MD30500 \$MA_INDEX_AX_ASSIGN_POS_TAB assigns indexing position table 1 to the current axis.

Special cases:

Alarm 17020 "Illegal array index" if over 60 positions are entered in the table.

Related to:

MD30500 \$MA_INDEX_AX_ASSIGN_POS_TAB (axis is an indexing axis)

MD10920 \$MN_INDEX_AX_LENGTH_POS_TAB_2 (number of indexing positions used in table 2)

MD30300 \$MA_IS_ROT_AX (rotary axis)

MD30310 \$MA_ROT_IS_MODULO (modulo conversion for rotary axis)

10940	INDEX_AX_MODE			EXP	T1	
-	Settings for indexing position			UDWORD	PowerOn	
-						
-	-	0	0	0x1	7/2	M

Description: Affects the display of indexing positions (AA_ACT_INDEX_AX_POS_NO and aaActIndexAxPosNo).

Bit 0 = 0:
Indexing position display changes on reaching/passing the indexing position (indexing range lies between the indexing positions, compatible behavior).

Bit 0 = 1:
Indexing position display changes on passing the half indexing axis position (indexing range lies quasi symmetrically round the indexing position)

11100	AUXFU_MAXNUM_GROUP_ASSIGN			N01, N07, N02	H2	
-	Number of auxiliary functions distr. amongst aux. fct. groups			DWORD	PowerOn	
-						
-	-	1	1	255	7/2	M

Description: The maximum number of auxiliary functions that can be assigned to a group by AUXFU_ASSIGN_TYPE, AUXFU_ASSIGN_EXTENTION, AUXFU_ASSIGN_VALUE and AUXFU_ASSIGN_GROUP.

This number includes only the user-defined auxiliary functions, not the predefined auxiliary functions.

Related to:
MD22010 \$MC_AUXFU_ASSIGN_TYPE[n].

11110	AUXFU_GROUP_SPEC			N07	H2	
-	Auxiliary function group specification			UDWORD	PowerOn	
-						
-	168	0x81, 0x21, 0x41, 0x41, 0x41, 0x41, 0x41, 0x41...	0	0x7FFFFFFF	7/2	M

Description: Defines the output options for the auxiliary functions belonging to a group. However, the output option of an auxiliary function configured by MD22080 \$MC_AUXFU_PREDEF_SPEC[preIndex] or MD22035 \$MC_AUXFU_ASSIGN_SPEC[auxIndex] has a higher priority.

Bit 0=1 "Normal" acknowledgment after an OB1 cycle

Bit 1=1 "Quick" acknowledgment with OB40

Bit 2=1 No predefined auxiliary function

Bit 3=1 No output to PLC

Bit 4=1 Spindle response after acknowledgment by the PLC

Bit 5=1 Output prior to motion

Bit 6=1 Output during motion

Bit 7=1 Output at end of block

Bit 8=1 No output after block search types 1, 2, 4

Bit 9=1 Collection during block search type 5 (SERUPRO)

Bit 10 = 1 No output during block search type 5 (SERUPRO)

Bit 11 = 1 Cross-channel auxiliary function during block search type 5 (SERUPRO)

Bit 12 = 1 Output via synchronized action

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Bit 13 = 1 Implicit auxiliary function

Bit 14 = 1 Active M01

Bit 15 = 1 No output during running-in test

Bit 16 = 1 Nibbling off

Bit 17 = 1 Nibbling on

Bit 18 = 1 Nibbling

The MD must be defined for each existing auxiliary function group.

The index [n] corresponds to the auxiliary function group index: 0...63

The assignment of individual auxiliary functions to specific groups is defined in channel-specific machine data (AUXFU_PREDEF_TYPE, AUXFU_PREDEF_EXTENTION, AUXFU_PREDEF_VALUE, AUXFU_PREDEF_GROUP, AUXFU_ASSIGN_TYPE, AUXFU_ASSIGN_EXTENTION, AUXFU_ASSIGN_VALUE, AUXFU_ASSIGN_GROUP).

M0, M1, M2, M17 and M30 are assigned to group 1 by default.

The specification of this group (0x81: output duration 1 OB1 pass, output at end of block) must not be changed.

All spindle-specific auxiliary functions (M3, M4, M5, M19, M70) are assigned to group 2 by default.

If several auxiliary functions with different output types (before / during / at end of motion) are programmed in one motion block, then the output of the individual auxiliary functions corresponds to their output types.

All auxiliary functions are output simultaneously in a block without motion.

Default setting:

AUXFU_GROUP_SPEC[0]=81H

AUXFU_GROUP_SPEC[1]=21H

AUXFU_GROUP_SPEC[2]=41H

...

AUXFU_GROUP_SPEC[n]=41H

11120	LUD_EXTENDED_SCOPE			N01	PG	
-	Function "program global user data (PUD)" is active			BOOLEAN	PowerOn	
-						
-	-	FALSE	0	-	7/2	M

Description: Activate function "Program-global user data (PUD)":
MD = 0: User data of the main program level are only active on this level.
MD = 1: User data of the main program level are also visible in the subprogram levels.

11140	GUD_AREA_SAVE_TAB			N01	-	
-	Additional saving for GUD modules			UDWORD	Immediately	
-						
-	9	0, 0, 0, 0, 0, 0, 0, 0...	0	0x1	7/2	M

Description: This data indicates in which area the contents of the GUD module are also saved.

MD11140 \$MN_GUD_AREA_SAVE_TAB[0] : SGUD_DEF

MD11140 \$MN_GUD_AREA_SAVE_TAB[1] : MGUD_DEF

MD11140 \$MN_GUD_AREA_SAVE_TAB[2] : UGUD_DEF

MD11140 \$MN_GUD_AREA_SAVE_TAB[3] : GUD4_DEF

MD11140 \$MN_GUD_AREA_SAVE_TAB[4] : GUD5_DEF

MD11140 \$MN_GUD_AREA_SAVE_TAB[5] : GUD6_DEF

MD11140 \$MN_GUD_AREA_SAVE_TAB[6] : GUD7_DEF

MD11140 \$MN_GUD_AREA_SAVE_TAB[7] : GUD8_DEF

MD11140 \$MN_GUD_AREA_SAVE_TAB[8] : GUD9_DEF

BitNo. Hexadec. Meaning when bit is set
 Value
 0 (LSB) 0x00000001 TOA area

11160	ACCESS_EXEC_CST	N01	-
-	Execution right for /_N_CST_DIR	BYTE	PowerOn
-			
-	-	7	1
-	-	7	7/2
-	-	7	M

Description: Execution right assigned to the program stored in directory /_N_CST_DIR :
 Value 1: Machine OEM password
 Value 2: Password of setup engineer, service
 Value 3: End user password
 Value 4: Keyswitch position 3
 Value 5: Keyswitch position 2
 Value 6: Keyswitch position 1
 Value 7: Keyswitch position 0
 Machine data can only be written with value 1 if the password for machine OEM is also active.

11161	ACCESS_EXEC_CMA	N01	-
-	Execution right for /_N_CMA_DIR	BYTE	PowerOn
-			
-	-	7	1
-	-	7	7/2
-	-	7	M

Description: Execution right assigned to the programs stored in directory /_N_CMA_DIR :
 Value 1: Machine OEM password
 Value 2: Password of setup engineer, service
 Value 3: End user password
 Value 4: Keyswitch position 3
 Value 5: Keyswitch position 2
 Value 6: Keyswitch position 1
 Value 7: Keyswitch position 0
 Machine data can only be written with value 1 if the password for machine OEM is also active.

11162	ACCESS_EXEC_CUS	N01	-
-	Execution right for /_N_CUS_DIR	BYTE	PowerOn
-			
-	-	7	1
-	-	7	7/3
-	-	7	U

Description: Execution right assigned to the programs stored in directory /_N_CUS_DIR :
 Value 1: Machine OEM password
 Value 2: Password of setup engineer, service
 Value 3: End user password
 Value 4: Keyswitch position 3
 Value 5: Keyswitch position 2
 Value 6: Keyswitch position 1
 Value 7: Keyswitch position 0
 Machine data can only be written with values 1 or 2 if the password for machine OEM or commissioning/service is also active.

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11165	ACCESS_WRITE_CST			N01	-	
-	Write protection for directory /_N_CST_DIR			DWORD	PowerOn	
-						
-	-	-1	-1	7	7/2	M

Description: Set write protection for cycle directory /_N_CST_DIR:

Assigned to the programs:

- Value -1: Keep the value currently set
- Value 1: Machine OEM password
- Value 2: Password of setup engineer, service
- Value 3: End user password
- Value 4: Keyswitch position 3
- Value 5: Keyswitch position 2
- Value 6: Keyswitch position 1
- Value 7: Keyswitch position 0

The machine data can only be written with value 1 if the password for machine OEM is also active. The value 0 is not permissible.

11166	ACCESS_WRITE_CMA			N01	-	
-	Write protection for directory /_N_CMA_DIR			DWORD	PowerOn	
-						
-	-	-1	-1	7	7/2	M

Description: Set write protection for cycle directory /_N_CMA_DIR:

Assigned to the programs:

- Value -1: Keep the value currently set
- Value 1: Machine OEM password
- Value 2: Password of setup engineer, service
- Value 3: End user password
- Value 4: Keyswitch position 3
- Value 5: Keyswitch position 2
- Value 6: Keyswitch position 1
- Value 7: Keyswitch position 0

The machine data can only be written with value 1 if the password for machine OEM is also active. The value 0 is not permissible.

11167	ACCESS_WRITE_CUS			N01	-	
-	Write protection for directory /_N_CUS_DIR			DWORD	PowerOn	
-						
-	-	-1	-1	7	7/3	U

Description: Set write protection for cycle directory /_N_CUS_DIR:

Assigned to the programs:

- Value -1: Keep the value currently set
- Value 1: Machine OEM password
- Value 2: Password of setup engineer, service
- Value 3: End user password
- Value 4: Keyswitch position 3
- Value 5: Keyswitch position 2
- Value 6: Keyswitch position 1
- Value 7: Keyswitch position 0

The machine data can only be written with values 1 or 2 if the password for machine OEM or commissioning/service is also active. The value 0 is not permissible.

11170	ACCESS_WRITE_SACCESS			N01	-	
-	Write protection for _N_SACCESS_DEF			BYTE	PowerOn	
-						
-	-	7	1	7	7/2	M

Description: Set write protection for definition file /_N_DEF_DIR/_N_SACCESS_DEF:

Value 1: Machine OEM password
Value 2: Password of setup engineer, service
Value 3: End user password
Value 4: Keyswitch position 3
Value 5: Keyswitch position 2
Value 6: Keyswitch position 1
Value 7: Keyswitch position 0

The machine data can only be written with value 1 if the corresponding password for machine OEM is also active.

11171	ACCESS_WRITE_MACCESS			N01	-	
-	Write protection for _N_MACCESS_DEF			BYTE	PowerOn	
-						
-	-	7	1	7	7/2	M

Description: Set write protection for definition file /_N_DEF_DIR/_N_MACCESS_DEF:

Value 1: Machine OEM password
Value 2: Password of setup engineer, service
Value 3: End user password
Value 4: Keyswitch position 3
Value 5: Keyswitch position 2
Value 6: Keyswitch position 1
Value 7: Keyswitch position 0

The machine data can only be written with value 1 if the password for machine OEM is also active.

11172	ACCESS_WRITE_UACCESS			N01	-	
-	Write protection for _N_UACCESS_DEF			BYTE	PowerOn	
-						
-	-	7	1	7	7/3	U

Description: Set write protection for definition file /_N_DEF_DIR/_N_UACCESS_DEF:

Value 1: Machine OEM password
Value 2: Password of setup engineer, service
Value 3: End user password
Value 4: Keyswitch position 3
Value 5: Keyswitch position 2
Value 6: Keyswitch position 1
Value 7: Keyswitch position 0

The machine data can only be written with values 1 or 2 if the machine OEM or commissioning/service password is also active.

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11200	INIT_MD			EXP, N01	IAF, IA	
-	Standard machine data loaded at next Power On			UBYTE	PowerOn	
-						
-	-	0	0	0x3f	7/2	M

Description:

A power on must be triggered after setting MD11200 \$MN_INIT_MD. The function is executed and the MD reset to "0" at power on.

Meaning of the input:

Bit 0 set:

All machine data (with the exception of the memory-configuring data) will be overwritten with the compiled values at the next NCK power on.

Bit 1 set:

All memory-configuring machine data will be overwritten with the compiled values at the next NCK power on.

Bit 2 set:

The OEM machine data and the SIEMENS cycle machine data brought in by compile cycles will be deleted from the buffered memory at the next power on.

Bit 3 set:

All setting data will be overwritten with the compiled values at the next power on.

Bit 4 set:

All option data will be overwritten with the compiled values at the next power on.

Bit 5 set:

The passive file system (including PowerFail log file) will be deleted at the next power on of the NCK.

INIT_MD is automatically set to 0 at power on.

Memory configuring MDs are:

- MD10010 \$MN_ASSIGN_CHAN_TO_MODE_GROUP
- All machine data starting with "MM_"
MD 18000 - 18999 (general MD)
MD 28000 - 28999 (channel-specific MD)
MD 38000 - 38999 (axis-specific MD)

11202	MD_MODE_MASK			EXP, N01	IA	
-	Behavior of machine data changes			UBYTE	PowerOn	
-						
-	-	0	0	-	7/2	M

Description:

Behavior of machine data changes

Bit 0 (LSB): When configuring linear/rotary axes, do not load initial values for axis type-dependent MDs

Due to the existence of one plausible default value each for a linear axis or rotary axis, axial machine data can facilitate setup for the user. With the switchover process (Lin -> Rot, or Rot -> Lin), the respectively configured default values become active as actual values at the next warm restart of the controller.

11210	UPLOAD_MD_CHANGES_ONLY			N01, N05	-	
-	Machine data backup of changed machine data only			UBYTE	Immediately	
-						
-	-	0xFF	0	-	7/3	M

Description:

Either all data or only those data which differ from the default setting can be set to be output when creating standard archives (ARC) and copying 'NC active data'.

Bit0(LSB) Effectiveness of the differential upload with INI/TEA files

0: All data are output

1: Only those MDs that have changed in comparison to the compiled values are output
 Bit1 is reserved and acts like bit 0
 Bit2 Change to an array element
 0: Complete arrays are output
 1: Only those elements of an array that have changed are output
 Bit3 R variables (only for INI files)
 0: All R variables are output
 1: Only R variables not equal to '0' are output
 Bit4 Frames (only for INI files)
 0: All frames are output
 1: Only those frames that are not zero frames are output.
 Bit5 Tool data (cutting edge parameters) (only for INI files)
 0: All tool data are output
 1: Only those tool data not equal to '0' are output.
 Bit6 Buffered system variables (\$AC_MARKER[], \$AC_PARAM[] only for INI files)
 0: All system variables are output
 1: Only those system variables not equal to '0' are output
 Bit7 Synchronized actions GUD (for INI files only)
 0: All Syna GUD are output
 1: Only those Syna GUD not equal to '0' are output
 Active: The change in the data becomes active on the start of the upload for the next range.
 The settings are only active, if MD11212 \$MN_UPLOAD_CHANGES_ONLY=FALSE.

11212	UPLOAD_CHANGES_ONLY	N01, N05	-
-	Data backup type for an active file system.	BOOLEAN	Immediately
-			
-	-	TRUE	-

Description:

For the creation of standard archives (ARC) and copying 'NC-active data', only values of the selected file of the active file system that deviate from the default setting are backed up.

TRUE = only the values of the selected file of the active file system that deviate from the standard setting are backed up (a differential data backup)

The value of MD11210 \$MN_UPLOAD_MD_CHANGES_ONLY then has no effect.

FALSE = all values of the selected file of the active file system are backed up.

Same significance as MD11210 \$MN_UPLOAD_MD_CHANGES_ONLY=0.

However, if MD11210 \$MN_UPLOAD_MD_CHANGES_ONLY is not equal to 0, this setting is active.

11220	INI_FILE_MODE	N01, N05	G2
-	Error response to INI file errors	BYTE	Reset
-			
-	-	1	0

Description:

If, while reading machine data files (INI files) into controls, data are read in

- that are faulty or
- do not agree with the check sum

then alarms are generated and the reading in may be canceled. The following control behaviors can be selected via machine data

settings:

0: Output of an alarm, cancelation on detection of 1st error. (As SW versions 1 and 2).

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1: Output of an alarm, continuation of execution. An alarm with the number of errors is output at the end of execution.

2: Execution continues despite possible errors. An alarm with the number of errors is output at the end of execution.

11230	MD_FILE_STYLE			N01, N05	-	
-	Structure of machine data backup files			UBYTE	Immediately	
LINK, -						
-	-	0x3	0	-	7/3	M

Description: Appearance of a machine data file at 'upload'

Bit 0 (LSB): Line check sum is generated

Bit 1:
MD numbers are generated

Bit 2:
Channel axis name as field index with axis-MD in the TEA file

Bit 3:
With an NCU-link, the MDs of the LINK axes are also output.

Bit 4:
All local axes are output (even when they are not activated by MD20070 \$MC_AXCONF_MACHAX_USED)

Active:
The change in the data becomes active on the start of the upload for the next area.

Default setting:
The line check sums and MD numbers are generated, but not channel names as field index with axis-MD.

11250	PROFIBUS_SHUTDOWN_TYPE			EXP, N01	G3, FBU	
-	PROFIBUS/PROFINET shutdown handling			BYTE	PowerOn	
-						
-	-	0	0	2	7/2	M

Description: For PROFIBUS/PROFINET only:

Handling of PROFIBUS/PROFINET when shutting down NCK (NCK reset)

Value 0:
The bus is shut down directly from cyclic operation, without 'prewarning'

Value 1:
When shutting down NCK, the bus is changed to the CLEAR state for at least 20 cycles. Then, it is shut down. If this is not possible on the hardware side, the procedure described for value 2 is used instead.

Value 2:
When shutting down NCK, the bus is changed to a state where all drives are sent a zero word as control word1 and control word2 (pseudoclear) for at least 20 cycles. The bus itself remains in the Operate status.

11280	WPD_INI_MODE			N01	-	
-	Handling of INI files in workpiece directory			BYTE	PowerOn	
-						
-	-	0	0	1	7/2	M

Description: Processing mode of INI files in the workpiece directory:

Value = 0:
An INI file with the name of the workpiece and stored in the workpiece directory is executed on the first NC start after workpiece selection.

Value = 1:

INI files with the names of the selected part program and extensions are executed on the first NC start after workpiece selection

SEA,
GUD,
RPA,
UFR,
PRO,
TOA,
TMA and
CEC
.

11285	MACH_MODEL_MODE			EXP	-	
-	Type of file with machine model			BYTE	Immediately	
-						
-	-	0	0	1	3/3	U

Description: If 3D protection zones have been defined, creation of a machine model can be requested with this machine data.

Value 0: No model is created.

Value 1: After each change (including activation) of the 3D protection zones, a machine model is created in user directory /_N_VRML_DIR with the name _N_VRMLMODEL_WRL.

11294	SIEM_TRACEFILES_CONFIG			EXP	-	
-	Configuration of the SIEM* trace file			UDWORD	PowerOn	
-						
-	-	0	0	0x7FFFFFFF	2/2	M

Description: Configuration of the SIEM* trace files

Bit0:

Additional information about the PDUs sent will be entered in _N_SIEMDOMAINSEQ_MPF during download

Bit1:

Additional information about the PDUs received will be entered in _N_SIEMDOMAINSEQ_MPF during download

Bit2:

Trace of warm start and connection cancelation in _N_SIEMDOMAINSEQ_MPF

Bit4:

Additional information about the PDUs sent will be entered in _N_SIEMDOMAINSEQ_MPF during upload

Bit5:

Additional information about the PDUs received will be entered in _N_SIEMDOMAINSEQ_MPF during upload

11297	PROTOK_IPOCYCLE_CONTROL			N01	-	
-	Prevent overrun of IPO time level			BYTE	PowerOn	
-						
-	10	1, 1, 1, 1, 1, 1, 1...	0	1	1/1	M

Description: Setting whether an overflow of the time level is to be prevented during the recording of data in the time level of the IPO.

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If applicable, data sets are discarded when the function is active, and are not entered in the log file in order to prevent an impending overflow of the IPO time level.

This may mean that data sets are also then lost if a level overflow would not yet have occurred with the function inactive.

The individual values apply to the users of the logging function, which are assigned the following functions:

0: Reserved for system functions: simultaneous recording, simulation, synchronized action analysis

1: Reserved for system functions: determining program runtimes, multi-step editor

2: Reserved for OEM applications

3: Reserved for OEM applications

4: Reserved for OEM applications

5: Reserved for system functions: trace

6: Reserved for system functions: trace

7: Reserved for system functions: trace

8: Reserved for system functions: trace

9: Reserved for system functions: action log

11298	PROTOK_PREPTIME_CONTROL			N01	-	
-	Interruption time prep time level in seconds.			DOUBLE	PowerOn	
-						
-	10	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0...	-1.0E+301	1.0E+301	1/1	M

Description:

Time in seconds, for which the prep time level may be blocked. If the PREP does not manage to pass through within the set time, the cyclic events are not logged. It is thus ensured that operation cannot be completely blocked by data recording.

The individual values apply to the users of the logging function, which are assigned the following functions:

0: Reserved for system functions: simultaneous recording, simulation, synchronized action analysis

1: Reserved for system functions: determining program runtimes, multi-step editor

2: Reserved for OEM applications

3: Reserved for OEM applications

4: Reserved for OEM applications

5: Reserved for system functions: trace

6: Reserved for system functions: trace

7: Reserved for system functions: trace

8: Reserved for system functions: trace

9: Reserved for system functions: action log

11300	JOG_INC_MODE_LEVELTRIGGRD			N01	H1, R1	
-	INC and REF in jog mode			BOOLEAN	PowerOn	
-						
-	-	TRUE	0	-	7/2	M

Description:

1: Jog mode for JOG-INC and reference point approach

JOG-INC:

When the traversing key is pressed in the required direction (e.g. +), the axis begins to traverse the set increment. If the key is released before the increment has been completely traversed, the movement is interrupted and the axis stops. If the same key is pressed again, the axis completes the remaining distance-to-go until this is 0.

0: Continuous operation for JOG-INC and reference point approach

JOG-INC:

When the traversing key is pressed (first rising edge) the axis travels the whole set increment. If the same key is pressed again (second rising edge) before the axis has completed traversing the increment, the movement is canceled, i.e. not completed.

The differences in axis travel behavior between the jog mode and continuous operation in incremental traversing are described in detail in the relevant chapters.

For travel behavior in reference point approach see

References: /FB/, R1, "Reference Point Approach"

MD irrelevant for:

Continuous traversing (JOG continuous)

11310	HANDWH_REVERSE			N09	H1	
-	Threshold for direction change handwheel			BYTE	PowerOn	
-						
-	-	2	0	-	7/2	M

Description:

Handwheel travel:

Value = 0:

No immediate travel in the opposite direction

Value > 0:

Immediate travel in the opposite direction if the handwheel is turned at least the stated number of pulses in the opposite direction.

Whether this machine data is also active for handwheel travel with DRF depends on bit10 of MD20624 \$MC_HANDWH_CHAN_STOP_COND.

11320	HANDWH_IMP_PER_LATCH				N09	H1	
-	Handwheel pulses per detent position				DOUBLE	PowerOn	
-							
-	6	1., 1., 1., 1., 1., 1.	-1.0E+301	1.0E+301	7/2	M	

Description:

The connected handwheels are adapted to the control in MD11320

\$MN_HANDWH_IMP_PER_LATCH.

The number of pulses generated by the handwheel for each handwheel detent position has to be entered. The handwheel pulse weighting must be defined separately for each connected handwheel (1 to 3). With this adaptation, each handwheel detent position has the same effect as one press of the traversing key in incremental traversal.

Entering a negative value reverses the direction of rotation of the handwheel.

Related to:

MD31090 \$MA_JOG_INCR_WEIGHT

(weighting of an increment of a machine axis for
INC/manual).

11322	CONTOURHANDWH_IMP_PER_LATCH				N09	H1	
-	Contour handwheel pulses per detent position				DOUBLE	PowerOn	
-							
-	6	1., 1., 1., 1., 1., 1.	-1.0E+301	1.0E+301	7/2	M	

Description:

Adaptation factor to the hardware of the contour handwheel:

Enter the number of pulses issued per detent position by the contour handwheel.

Because of this normalization, a detent position of the contour handwheel corresponds to one press of a key with incremental jog processes.

Sign reversal reverses the direction of evaluation.

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11324	HANDWH_VDI_REPRESENTATION			N01	OEM	
-	Display of handwheel number in VDI Interface			DWORD	PowerOn	
-						
-	-	0	0	1	7/2	M

Description: The number of the handwheel is displayed in the channel/axis-specific signals of the VDI interface:
Value = 0 :
Bit coded (1 of 3, only 3 handwheels can be displayed)
Value = 1 :
Binary coded (6 handwheels can be displayed)

11330	JOG_INCR_SIZE_TAB			EXP, N09	H1	
-	Increment size for INC/handwheel			DOUBLE	PowerOn	
-						
-	5	1., 10., 100., 1000., 10000.	0.0	1.0E+301	7/2	M

Description: In incremental traversal or handwheel travel, the number of increments to be traversed by the axis can be defined by the user, e.g. via the machine control panel.
In addition to the variable increment size (INCvar), 5 fixed increment sizes (INC...) can also be set.
The increment size for each of these 5 fixed increments is defined collectively for all axes by entering values in JOG_INCR_SIZE_TAB [n]. The default setting is INC1, INC10, INC100, INC1000 and INC10000.
The entered increment sizes are also active for DRF.
The size of the variable increment is defined in SD41010 \$SN_JOG_VAR_INCR_SIZE.
Related to:

MD31090 \$MA_JOG_INCR_WEIGHT (weighting of an increment for INC/manual)
NC/PLC interface signal DB21-30 DBX41.0-.4, DBX47.0-.4, DBX53.0-.4
(Geometry axis 1-3 active machine function: INC1; ...; INC10000)
NC/PLC interface signal DB31, ... DBB65.0 - .5
(active machine function: INC1; ...; INC10000).

11342	ENC_HANDWHEEL_MODULE_NR			N01	H1	
-	3rd handwheel: drive number / measuring circuit number			BYTE	PowerOn	
-						
-	-	0	0	31	7/2	M

Description: Only for test purposes for PROFIBUS/PROFINET:
Number of the module within a segment (MD11340 \$MN_ENC_HANDWHEEL_SEGMENT_NR), used to address the 3rd handwheel.
= 0: The configuration of a 3rd handwheel is deactivated, in this case the setting of MD11340 \$MN_ENC_HANDWHEEL_SEGMENT_NR and MD11344 \$MN_ENC_HANDWHEEL_INPUT_NR are irrelevant.
Corresponds with MD11340 \$MN_ENC_HANDWHEEL_SEGMENT_NR
MD11344 \$MN_ENC_HANDWHEEL_INPUT_NR

11344	ENC_HANDWHEEL_INPUT_NR			N01	H1	
-	3rd handwheel: Input to module/meas. circ. Board			BYTE	PowerOn	
-						
-	-	1	1	2	7/2	M

Description: Only for test purposes for PROFIBUS/PROFINET:
 Number of the input on a module used to address the 3rd handwheel.
 840D: 1/2 = upper/lower actual value input
 Corresponds with MD11340 \$MN_ENC_HANDWHEEL_SEGMENT_NR
 MD11342 \$MN_ENC_HANDWHEEL_MODULE_NR

11346	HANDWH_TRUE_DISTANCE			N01	H1, P1, W1	
-	Handwheel default path or velocity			BYTE	PowerOn	
-						
-	-	1	0	7	7/2	M

Description: Setting the behavior for traversing with the handwheel, contour handwheel and with FDA=0:
 Value = 1: (default value)
 The default settings of the handwheel are path inputs. No pulses are lost. Residual axis motions occur as a result of the limitation to a maximal permissible velocity.
 Value = 0:
 The default settings of the handwheel are velocity inputs. The axes stop as soon as the handwheel stops. The motion is immediately braked if no pulses come from the handwheel in an interpolation cycle. Therefore, only a short residual motion of the axes can occur as a result of the braking ramp. The handwheel pulses do not supply a path default.
 Value = 2:
 The default settings of the handwheel are velocity inputs. The axes are intended to stop as soon as the handwheel stops. The motion is immediately braked if no pulses come from the handwheel in an interpolation cycle. However, in contrast to value = 0, braking is not along the shortest possible path but to the next possible point in an intended grid.
 Each increment in the grid corresponds to a distance which the selected axis travels per handwheel grid position (see MD31090 \$MA_JOG_INCR_WEIGHT and see MD31090 \$MA_JOG_INCR_WEIGHT and, MD11330 \$MN_JOG_INCR_SIZE_TAB, MD20620 \$MC_HANDWH_GEOAX_MAX_INCR_SIZE). MD32080 \$MA_HANDWH_MAX_INCR_SIZE
 The start of the traversing movement is taken as the zero point of the grid.
 Value = 3:
 The default settings of the handwheel are path inputs. If premature braking is required on account of settings in other machine data MD11310 \$MN_HANDWH_REVERSE != 0 MD20624 \$MC_HANDWH_CHAN_STOP_COND MD32084 \$MA_HANDWH_STOP_COND
 then in contrast to value = 1 braking is not along the shortest possible path, but to the next possible point in an intentional grid (see value = 2).
 Value = 6:
 Same as value = 2, but travel does not stop at the last possible grid position in front of a limit, but at the limit.
 Value = 7:
 Same as value = 3, but travel does not stop at the last possible grid position in front of a limit, but at the limit.

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11350	HANDWHEEL_SEGMENT			N09	H1	
-	Handwheel segment			DWORD	PowerOn	
-						
-	6	0, 0, 0, 0, 0, 0	0	255	7/2	M

Description: Machine data defines which hardware segment the handwheel is connected to:

- 0 = No handwheel
- 5 = Connection to PB/PN-connected operator component (MCP PN, etc.)
- 7 = Direct connection via IE-connected operator component (MCP IE, HTx)

11351	HANDWHEEL_MODULE			N09	H1	
-	Handwheel module			BYTE	PowerOn	
-						
-	6	0, 0, 0, 0, 0, 0	0	6	7/2	M

Description: Machine data specifies the hardware module to which the handwheel is connected.
(Content dependent on MD11350 \$MN_HANDWHEEL_SEGMENT):

- 0 = no handwheel configured
- MD11351 \$MN_HANDWHEEL_MODUL =
- 1 ;SEGMENT_840D_HW
- 1 ;SEGMENT_8xxD_HW; 828D s1, 808D -HW
- 1..6 ;SEGMENT_PROFIBUS/PROFINET ;index for MD11353
- \$MN_HANDWHEEL_LOGIC_ADDRESS[(x-1)]
- 1 ;SEGMENT_ETHERNET

11352	HANDWHEEL_INPUT			N09	H1	
-	Handwheel connection			BYTE	PowerOn	
-						
-	6	0, 0, 0, 0, 0, 0	0	6	7/2	M

Description: Machine data which is intended to select the handwheels connected to a hardware module:

- 0 = No handwheel configured
- 1..6 = Handwheel connection to HW module/Ethernet interface

11353	HANDWHEEL_LOGIC_ADDRESS			N04, N10	H1	
-	Logical handwheel slot addresses			DWORD	PowerOn	
-						
-	6	0, 0, 0, 0, 0, 0	0	16383	7/2	M

Description: For PROFIBUS/PROFINET only:
Logical start address of the hand wheel slots if handwheels are connected by PROFIBUS/PROFINET (MD11340 \$MN_HANDWHEEL_SEGMENT = 5)

11354	HANDWHEEL_FILTER_TIME			N09	-	
s	Filter time for handwheel pulses			DOUBLE	PowerOn	
-						
-	6	0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0	2.0	7/2	M

Description:

The filter time indicates the time during which the pulses from the handwheel are output to the interpolator. The values are incremented internally in interpolation cycles.

In the case of a filter time setting = 0.0, the pulses from the handwheel are output to the interpolator within a single interpolation cycle. This can cause the controlled axis to exhibit jerk during traversing.

Machine data is valid for the following types of handwheel (see 11350 \$MN_HANDWHEEL_SEGMENT):

SEGMENT_ETHERNET:

- Recommended filter time: 0.2 - 0.5 s

11398	AXIS_VAR_SERVER_SENSITIVE			EXP	B3	
-	Axis-Var server response			UBYTE	PowerOn	
-						
-	-	0	0	-	7/2	M

Description:

The axis-variable server supplies the data for the OPI blocks SMA/SEMA, SGA/SEGA and SSP.

If no value can be supplied for an axis (e.g. because the axis is a link axis) then a default value (usually 0) is returned.

For debugging purposes, this machine data can be used to set the axis-var-server to sensitive so that an error message is returned instead of a default value.

0: default value

1: error message

11410	SUPPRESS_ALARM_MASK			EXP, N06	D1, M3, K3, S1, V1, W1	
-	Mask for support of special alarm outputs			UDWORD	PowerOn	
-						
-	-	0x100080	0	0xFFFFFFFF	7/2	M

Description:

Mask for suppressing special alarm outputs

Bit set: The corresponding alarm (warning) is NOT triggered.

Bit 0:

Alarm 15110 "Channel %1 block %2 REORG not possible"

Bit 1:

Alarm 10763 "Channel %1 block %2. The path component of the block in the contour plane is zero"

Bit 2:

Alarm 16924 "Channel %1 Caution: Program testing can modify tool/magazine data"

--> Note: The alarm is only a message alarm

Bit 3:

Alarm 22010 "Channel %1 spindle %2 block %3. Actual gear stage does not correspond to set gear stage"

Bit 4:

Alarm 17188 "Channel %1 D number %2 with tool T nos. %3 and %4 defined"

Alarm 17189 "Channel %1 D number %2 of the tools in magazines/magazine locations %3 and %4 defined". The two alarms are of equal status and are only message alarms.

Bit 5:

Alarm 22071 "TO unit %1 tool %2 duplo no. %3 is active but not in the active wear grouping." The alarm is only a message alarm.

Bit 6:

Alarm 4027 "NOTICE! MD %1 was also changed for the other axes in the axis container %2"

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Alarm 4028 "NOTICE! The axial MDs in the axis container will be aligned on the next runup "

Bit 7:

Alarm 22070 "TO unit %1 please change tool T= %2 to magazine. Repeat data backup". The alarm is only a message alarm.

Bit 8:

Alarm 6411 "Channel %1 tool %2 with duplo no. %3 has reached tool prewarning limit"

Alarm 6413 "Channel %1 tool %2 with duplo no. %3 has reached tool monitoring limit."

The two alarms are only message alarms. They occur during program execution.

Bit 9:

Alarm 6410 "TO unit %1 tool %2 with duplo no. %3 has reached tool prewarning limit ."

Alarm 6412 "TO unit %1 tool %2 with duplo no. %3 has reached tool monitoring limit ". The two alarms are only message alarms. They occur as a result of an operator action.

Bit10:

Alarm 10604 "channel %1 block %2 "Thread lead increase too high"

Alarm 10605 "channel %1 block %2 "Thread lead decrease too high"

Bit 11:

Alarm 14088 "Channel 51 block %2 axis %3 doubtful position".

Bit 12:

obsolete (Alarm 10607)"

Bit13:

Alarm 10704 " channel %1 block %2 Protection area monitoring is not
guaranteed."

Bit14:

Alarm 21701 "Measuring reactivated too soon (<2 IPO cycles)"

Bit15:

Alarm 5000 "Communication order cannot be executed"

Bit16:

Alarm 21600 "Monitoring active for ESR"

Bit17:

Alarm 16945 "Channel %1 action %2<ALNX> is delayed until block end"

Note: The alarm is only a message alarm.

Bit18:

Alarm 10750 "Channel %1 block %2 Activation of the tool radius compensation without tool number"

Bit19:

Alarm 17193 "Channel %1 block %2 The active tool ist no longer at tool holder no./spindle no. %3, program %4"

Bit20:

Alarm 2900 "Reboot is delayed"

Bit21:

Alarm 22012 "Channel %1 block %2. Leading axis %3 is in simulation mode"

Alarm 22013 "Channel %1 block %2. Following axis %3 is in simulation mode"

Alarm 22014 "Channel %1 block %2. The dynamics of leading axis %3 and following axis %4 are very different"

Alarm 22040 "Channel%1 Block %3 Spindle %2 not referenced with zero mark" is no longer checked (cyclically) with
Bit21 set after power ON of the closed loop position control.

Bit22:

Alarm 26080 "Channel %1 retraction position of axis %2 not programmed or invalid"

Alarm 26081 "Channel %1 single axis trigger axis %2 is triggered, but axis is not PLC controlled"

Bit23:

Alarm 16949 "Correspondence between marks of channel %1 and channel %2 is invalid"

Bit24:

Alarm 16950 "Channel %1 search run with holding block"

Bit25:

Alarm 22016 "Channel %1 block %2 following spindle %3 in range of reduced acceleration capacity"

Bit26:

Alarm 22015 "Channel %1 block %2 following spindle %3 no dynamic response for additional motion"

Bit27:

Alarms 16112 and 22030 "Channel %1 block %2 following spindle %3 impermissible programming"

Bit28:

Alarm 26083 "Channel %1 ESR for PLC controlled axis %2 was triggered"

Bit29:

Alarm 16772 "Channel %1 block %2 axis %3 is following axis, coupling is opened"

Bit30:

Alarm 16600 "Channel %1 block %2 spindle %3 gear stage change not possible"

Bit31:

Alarm 16774 "Channel %1 axis %2 synchronization canceled"

11411	ENABLE_ALARM_MASK			EXP	D1, K1	
-	Activation of warnings			UDWORD	Reset	
-						
-	-	0x0	0	0x7FFFFFFF	7/2	M

Description: Screenform for generating alarms that are normally suppressed.

Bit set: Alarms of this alarm group are output.

Bit not set: Alarms of this alarm group are not output.

Bit Hex. Meaning

value

=====

0: 0x1 Alarms that have SHOWALARMAUTO as the alarm response are output.

1: 0x2 Alarms that have SHOWWARNING as the alarm response are output.

2: 0x4 Alarm 22280 "Thread power up path too short" is output.

3: 0x8 Alarms that are triggered by the NCU LINK MODULE are switched on.

4: 0x10 Alarm 10883 "Chamfer or rounding must be shortened" allowed.

5: 0x20 Alarm 20096 "Brake test canceled" is output.

6: 0x40 Alarm 16956 "Program cannot be started because of global start disable" is output.

Alarm 14005 "Program cannot be started because of program-specific start disable" is output. Alarm can only be switched on in channel status RESET, in all other channel states it is output without conditions.

7: 0x80 Alarm 16957 "Stop delay range is suppressed" is output.

8: 0x100 Alarm 1011 fine coding 150019 or 150020 "Incorrect axis number in the LINK".

9: 0x200 Alarm 22033 Diagnostics 1 to 6 for "Track synchronism" (linkages).

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- 10: 0x400 Alarm 15122 "PowerOn after Powerfail: %1 data were restored, thereof %2 machine data, %3 errors" is output.
- 11: 0x800 Alarms 10722, 10723, 10732 or 10733 are output instead of alarms 10720, 10721, 10730 or 10731.
- 12: 0x1000 Alarm 22033 diagnostics greater than or equal to 7 for "Track synchronism" (linkages)
- 13: 0x2000 All alarms that refer to the rejection of an ASUB start are also output.
- 14: 0x4000 All alarms that refer to the rejection of a PI service are also output.
- 15: 0x8000 Alarm 14004 "channel-specific start disable is set" is output on an NC start. The alarm always appears with block search, irrespective of bit 15..
- 16: 0x10000 When the alarm 10763 "The path component of the block in the compensation plane is zero" is output, the machining is also stopped.

11412	ALARM_REACTION_CHAN_NOREADY			EXP, N01	D1	
-	Alarm response CHAN_NOREADY permitted			BOOLEAN	PowerOn	
-						
-	-	FALSE	0	-	7/2	M

Description: This MD is used for compatibility with the PLC systems older than SW4.1.
 If this MD is not set, the behavior implemented before SW4.1 (configured alarm reaction) is set
 With SW 4.1 and higher, it is possible to set signal CHANNEL_NOREADY on the PLC in response to alarms.
 If this MD is not set, then the alarm handler internally re-configures BAG_NOREADY into CHAN_NOREADY.

11414	ALARM_CLR_NCSTART_W_CANCEL			EXP, N01	D1	
-	Clear NCSTART alarms with CANCEL			BOOLEAN	PowerOn	
-						
-	-	FALSE	0	-	7/2	M

Description: If this MD is set, then alarms that have ClearInfo=NCSTART are cleared by the Alarm Cancel button as well as by NC-Start.
 If this MD is not set, then NCSTART alarms are not cleared by Cancel.
 The purpose of this MD is to provide compatibility with system behavior.

11415	SUPPRESS_ALARM_MASK_2			EXP, N06	-	
-	Masking of alarm outputs			UDWORD	PowerOn	
-						
-	-	0x400000	0	0x7FFFFFFF	7/2	M

Description: Mask for suppressing special alarm outputs
 Bit set: Corresponding alarm (warning) is NOT triggered.
 Bit Hex. Meaning
 Value
 =====
 0: 0x1 16773 "Channel %1 axis %3 is slave axis. The axis/spindle disables for the master axes differ."
 1: 0x2 2100 "NCK battery warning level reached"
 2101 "NCK battery alarm"
 2102 "NCK battery alarm"
 2: 0x4 2120 "NCK fan alarm" (ineffective on modules that require a fan due to their design)

```

3:   0x8    15120 "PowerFail: Show buffer overflow"
4:   0x10   15187 "Error during execution of PROGEVENT file"
5:   0x20   15188 "Error during execution of ASUB file"
6:   0x40   26120 "$AA_ESR_ENABLE = 1 and axis is to become neutral"
    26121 "Axis is neutral and $AA_ESR_ENABLE =1 is to be set"
    26123 "$AA_ESR_ENABLE = 1 is to be set, but MD37500 $MA_ESR_REACTION is not set"
    26124 "$AC_TRIGGER triggered, but axis is neutral, ESR ignores this axis"
7:   0x80:   10724 "Software limit violated at start of block"
    10734 "Operating range limit violated at start of block"
    10737 "Work (WCS) operating range limit violated at start of block"
8:   0x100:  14008 "WRITE command in /_N_EXT_DIR"
    10734 "Operating range limit violated at start of block"
    10737 "Work (WCS) operating range limit violated at start of block"
9:   0x200   14006 "Invalid program name"
10:  0x400:   4006 "Maximum number of axes that can be activated exceeded"
11:  0x800   16017 "LIFTFAST ignores this axis, as it cannot be used for the current
axis type"
12:  0x1000  22025 "Channel %1 Block %2 Slave axis/spindle %3 Synchronism (2): Fine
tolerance exceeded"
    - Exception: Alarm is generated if CPMALARM[FAx] bit 8 = 0 is programmed
for the corresponding slave axis/spindle.
    22026 "Channel %1 Block %2 Slave axis/spindle %3 Synchronism (2): Coarse tolerance
exceeded"
    - Exception: Alarm is generated if CPMALARM[FAx] bit 9 = 0 is programmed
for the corresponding slave axis/spindle.
13:  0x2000   22001 "Braking time %6 [s] longer than Stop D time. Reason: %5"
    22002 "Braking time %6 [s] longer than Stop D time with gear stage %3
Reason: %5"
14:  0x4000   16963 "ASUB start refused."
15:  0x8000   21751,"Limit velocity %2 deg/min on modulo axis %1 exceeded
(defective cam output)"
    21752,"Axis %1 minimum cam width cam %3 undershot at curr. velocity %2 "
16:  0x10000  17212 "Channel %1 Tool management: Load manual tool %3, Duplo no. %2
to spindle/toolholder"
    17214 "Channel %1 Tool management: Unload manual tool %3 from spindle/
toolholder %2"
    17215 "Channel %1 Tool management: Unload manual tool %3 from buffer
location %2"
    17216 "Channel %1 Unload manual tool from toolholder %4 and load manual
tool %3 %2"
17: 0x20000   16771 "Channel %1 Block %3 Slave axis %2 Overlaid motion not enabled"
18: 0x40000   4039 "Channel %1 Axis container %2 Advance not allowed: Channel has no
container axes"
19: 0x80000   7204 "The compile cycle %1 is a preliminary version"
20: 0x100000 This bit is effective at RESET. This means that the SHOWALARM and SETVDI
responses of the following alarms can be suppressed:
    10700 "Channel %1 block %2 NCK protection area %3 in automatic or MDI
violated"
    10701 "Channel %1 block %2 channel-specific protection area %3 in
automatic or MDI violated"
21: 0x200000  26295 "Protection area %1 was only roughly approximated."

```

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22: 0x400000 6030 "Information alarm: Channel/axis activation or storage option (MD19240, 19250) requires more memory than is available"

23: 0x800000 6035 "Information alarm: Less free memory detected during cold start than is defined in MD18050, 18060"

24: 0x1000000 380040 "PROFIBUS/PROFINET: Bus %3, configuration error %1, parameter %2"
PROFINET-device-specific consistency checks for Ti/To are disabled.
The setup engineer or user is thus responsible for ensuring that axes and distributed I/Os work synchronously with one another on the PROFINET, e.g. they can interpolate with one another.

25: 0x2000000 16736/22282 "Information alarms channel %1 Block %2: Prog. thread block is too short %3 to maintain dynamic limit values, %4 is required
Alarms relating to short smoothing blocks and the associated exceeding of the dynamic limit values between thread blocks are disabled.

26: 0x4000000 6710 "Data loss with trace in the diagnostics operating area. The IPO cycle is too short to be able to record all the selected data reliably"
6720 "Data loss with trace in the diagnostics operating area. The preprocessing is too heavily loaded to be able to record all the selected data reliably"
6730 "Data loss with trace in the diagnostics operating area. The value of the machine data \$MN_MM_PROTOCOL_FILE_BUFFER_SIZE[5-8] is too low"
6740 "Data loss with trace in the diagnostics operating area. Communication with the HMI is too heavily loaded to be able to transfer all the selected data"

27: 0x8000000 5020 "Communication job is too extensive"

28: 0x10000000 5030 "Communication job cannot be executed"

29: 0x20000000 26303 "Collision check incomplete"

11416	LINK_DYNMSG_ALARM_MASK			EXP, N06	-	
-	Mask for activating special alarm outputs with NCU-Link			UDWORD	Immediately	
-						
-	-	0x000001	0	0x1FF	7/2	M

Description: This mask is used by developers for diagnostics.
Mask for activating special alarm outputs with NCU-Link if non-cyclic messages cannot be transferred immediately.
Alarm 14764 (NCU-Link cannot immediately transfer all non-cyclic link messages of the stated type) is issued if, for the set type (corresponds to the bits of this MD), the affected message type could not be transferred immediately).

11420	LEN_PROTOCOL_FILE			N01	PGA	
-	Size of protocol files (kB)			DWORD	PowerOn	
-						
-	-	1	1	1000000	7/2	M

Description: Blocks from the part program can be stored in a file in the passive file system with the WRITE command. The length of the log file is limited. If this maximum length is exceeded, the WRITE command returns an error (error code 10).

11422	PROTOCOL_FILE_MODE			EXP, N01	PGA	
-	Setting the behavior of the WRITE command			UDWORD	PowerOn	
-						
-	-	0	0	3	7/2	M

Description: Setting the behavior of the WRITE command for writing to the passive file system
0:

The file created with WRITE is stored persistently in the partition belonging to the directory

The block written with WRITE becomes persistent immediately, i.e. it is stored power failsafe.

With this setting, WRITE is slowed down by the backup.

1:

The file created with WRITE is stored persistently in the partition belonging to the directory

The block written with WRITE becomes persistent after a time delay.

WRITES less than one second old may be lost in the event of a power failure.

WRITE runs faster with this setting.

2-3: Reserved

11450	SEARCH_RUN_MODE			EXP, N01	K1, TE3, N4, H2, Z1	
-	Parameterization for search run			UDWORD	PowerOn	
-						
-	-	0x40	0	0x1FF	7/2	M

Description:

The behavior during the action blocks after block search can be affected by the following bits:

Bit 0 = 0:

Machining is stopped after loading of the last action block after block search, the NC/PLC interface signal DB21-30 DBX32.6 (last action block active) is set and alarm 10208 is output.

Bit 0 = 1:

Machining is stopped with the loading of the last action block after block search, and the NC/PLC interface signal DB21-30 DBX32.6 (last action block active) is set. Alarm 10208 is not output until the PLC requests it by setting the NC/PLC interface signal DB21-30 DBX1.6 (PLC action finished).

Application:

Starting an ASUB from the PLC after block search.

The message to the operator that another NC start is required in order to continue with the program is not to be displayed until after the end of the ASUB.

Bit 1 = 1

Automatic ASUB start after output of the action blocks. Alarm 10208 is not output until the ASUB has finished.

See also MD11620 \$MN_PROG_EVENT_NAME.

Bit 2 = 0:

Spindle: auxiliary functions are output in the action blocks.

Bit 2 = 1:

The output of the auxiliary functions in the action blocks is suppressed. The spindle programming collected by block search can be output at a later point in time (e.g. in an ASUB).

The program data for this are stored in the following system variables:

- \$P_SEARCH_S,
- \$P_SEARCH_SDIR,
- \$P_SEARCH_SGEAR,
- \$P_SEARCH_SPOS,
- \$P_SEARCH_SPOSMODE

Bit 3 = 1:

The cascaded search run is disabled (default setting: release).

Cascaded search run means that the search run is restarted immediately after finding a search target.

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Bit 4: Reserved

Bit 5 = 0:

During block search to a nibbling block, the 1st nibbling stroke is not executed.

Bit 5 = 1:

During block search to a nibbling block, a punching stroke is triggered at block start (1st nibbling stroke).

Bit 6 = 0:

With block search, complex path calculations are made.

Bit 6 = 1:

With block search, calculation is made with simple, computing-time-optimized algorithms.

Bit 7 = 0:

Any adjustment movements that may be necessary on activation of a tangential axis coupling, during or after an SSL, are performed with the feed conditions active in the activation block (G0 or G1 with feedrate). In the case of G1, the feedrate can additionally be set in SD 42121: \$SC_AX_ADJUST_FEED.

Bit 7 = 1:

The adjustment movements necessary on activation of a tangential axis coupling, during or after an SSL, are always performed with rapid traverse feedrate (G0). In this case, the feedrate value in SD 42121: \$SC_AX_ADJUST_FEED is ignored.

Bit 8 = 0:

All CPON, CPOF blocks are collected and handled in action blocks.

Bit 8 = 1:

CPON and CPOF blocks interact during a block search.

11460	OSCILL_MODE_MASK			N09	P5	
-	Mode mask for asynchronous oscillation			UDWORD	PowerOn	
-						
-	-	0x0	0	0xFFFF	7/2	M

Description:

Bit 0

Value 1

In the case of block search, the oscillation movement is started immediately after NC start, i.e. during approach to approach position, provided it has been activated in the program section being processed.

Value 0

(default value)

The oscillation movement is not started until the approach position is reached.

11470	REPOS_MODE_MASK			EXP, N01	K1	
-	Repositioning properties			UDWORD	PowerOn	
-						
-	-	0x8	0	0xFFFF	7/2	M

Description:

This bit mask can be used to set the behavior of the control during repositioning.

Bit no. Meaning when bit set

0 (LSB)

The dwell time is continued in the residual block of the repositioning from where it was interrupted. (If the bit is not set, the dwell time is repeated completely).

1 Reserved

2 When the bit is set, the repositioning of individual axes can be prevented or delayed via the VDI interface.

- 3 When the bit is set, positioning axes are repositioned in the approach block during search run via program test.
- 4 As 3, but after every Repos, not only during search run.
- 5 When the bit is set, changed feeds and spindle speeds already become valid in the residual block, otherwise not until the following block.
- 6 When the bit is set, neutral axes and positioning spindles are repositioned after SERUPRO as command axes in the approach block.
- 7 The bit changes the behavior of the VDI-AXIN interface signal DB31, ...DBX10.0 (Repos Delay). The level of DB31, ...DBX10.0 (Repos Delay) is read if REPOSA is interpreted.

Axes that are neither geo nor orientation axes are then excluded from the REPOS, that is REPOS does NOT move these axes.

Notice: This bit switches off the channel-specific VDI Signal DB21, ...DBX31.0..2 (ReposPathMode) completely.

11480	PLC_OB1_TRACE_DEPTH			EXP, N03, N09	-	
-	Buffer depth of PLC trace data at OB1			DWORD	PowerOn	
-						
-	-	2	2	8	2/2	M

Description: Buffer depth of PLC trace data at OB1.

Multiple values of PLC data are buffered, between the time of collection in the PLC and the time of inspection in NCK. Variables traced at "OB1" are collected once per complete PLC scan, but can only be inspected once per IPO cycle.

The buffer size must accommodate at least one more value than the total number of buffered values to be inspected. This is to prevent NCK from inspecting a value that the PLC is in the process of collecting.

A good value to start with is one more than MD10074 \$MN_PLC_IPO_TIME_RATIO.

The larger the buffer depth, the fewer PLC variables that can be traced, because there is a single, small, fixed pool of data slots for sending data samples from the PLC to NCK (64 data slots). Every PLC variable being traced is allocated as many data slots from the pool as the value of the buffer depth.

This single pool of data slots is shared by data collected at OB1, OB35, and OB40 (even though the buffer depths of OB1, OB35, and OB40 can be configured to be different from one another). It is also shared by all concurrent users of trace, even though the users might have no knowledge of one another.

11481	PLC_OB35_TRACE_DEPTH			EXP, N03, N09	-	
-	Buffer depth of PLC trace data at OB35			DWORD	PowerOn	
-						
-	-	2	2	8	2/2	M

Description: Buffer depth of PLC trace data at OB35.

Multiple values of PLC data are buffered, between the time of collection in the PLC and the time of inspection in NCK. Variables traced at "OB35" are collected every time the PLC timer interrupts, but can only be inspected once per IPO cycle.

The buffer size must accommodate at least one more value than the number of buffered values to be inspected. This is to prevent NCK from inspecting a value that the PLC is in the process of collecting.

A good value to start with is one more than the number of PLC timer interrupts expected to occur every IPO cycle.

The larger the buffer depth, the fewer PLC variables that can be traced, because there is a single, small, fixed pool of data slots for sending data samples from the PLC to NCK (64 data slots). Every PLC variable being traced is allocated as many data slots from the pool as the value of the buffer depth.

3.3 NC machine data

The single pool of data slots is shared by data collected at OB1, OB35, and OB40 (even though the buffer depths of OB1, OB35, and OB40 can be configured to be different from each other). It is also shared by all concurrent users of trace, even though the users might have no knowledge of one another.

11482	PLC_OB40_TRACE_DEPTH			EXP, N03, N09	-	
-	Buffer depth of PLC trace data at OB40			DWORD	PowerOn	
-						
-	-	2	2	8	2/2	M

Description: Buffer depth of PLC trace data at OB40.

Multiple values of PLC data are buffered, between the time of collection in the PLC and the time of inspection in NCK. Variables traced at "OB40" are collected just when the PLC receives the special, programmably initiated OB40 interrupt from NCK, but can only be inspected once per IPO cycle.

The buffer size must accommodate at least one more value than the number of buffered values to be inspected. This is to prevent NCK from inspecting a value that the PLC is in the process of collecting.

If the OB40 interrupt is issued less frequently than once per IPO cycle, then the OB40 buffer depth should be 2. Otherwise it should be one more than the largest number of interrupts expected during any one IPO cycle.

The larger the buffer depth, the fewer PLC variables that can be traced, because there is a single, small, fixed pool of data slots for sending data samples from the PLC to NCK (64 data slots). Every PLC variable being traced is allocated as many data slots from the pool as the value of the buffer depth.

The single pool of data slots is shared by data collected at OB1, OB35, and OB40 (even though the buffer depths of OB1, OB35, and OB40 can be configured to be different from each other). It is also shared by all concurrent users of trace, even though the users might have no knowledge of one another.

11500	PREVENT_SYNACT_LOCK			N01, N09	S5, FBSY	
-	Protected synchronized actions			DWORD	PowerOn	
-						
-	2	0, 0	0	1399	7/2	M

Description: First and last IDs of a protected synchronized action area.

Synchronized actions with ID numbers in the protected area can no longer be

- overwritten
- disabled (CANCEL)
- locked (LOCK)

once they have been defined. Furthermore, protected synchronized actions cannot be locked by the PLC (LOCK). They are shown at the interface to the PLC as non-lockable.

Note:

The protection should be suspended while creating the synchronized actions to be protected, as otherwise a Power On will be necessary after every change in order to be able to redefine the logic. There is no area of protected synchronized actions with 0.0. The function is disabled. The values are read as absolute values, and over and under values can be given in any order.

11510	IPO_MAX_LOAD			N01, N05	-	
%	Max. permitted IPO load			DOUBLE	PowerOn	
-						
-	-	0.00	0.0	100.0	7/2	M

Description: Enable utilization analysis via synchronized actions.

This MD11510 \$MN_IPO_MAX_LOAD sets the IPO computing time (in % of the IPO cycle) after which the variable \$AN_IPO_LOAD_LIMIT is to be set to TRUE. The variable is reset to FALSE if the value falls below this after having once exceeded it.

This diagnostics function is disabled if the machine data is 0.

11550	STOP_MODE_MASK			N01	V1	
-	Defines the stop behavior.			UDWORD	PowerOn	
-						
-	-	0	0	0x1	7/2	M

Description: This MD describes the stop behavior of the NCK under certain conditions:

Bit no. Meaning

Bit 0 == 0 :=

No stop if G codes G331/G332 are active and a path motion or G4 has also been programmed.

Bit 0 == 1 :=

A stop is possible during G331/G332 with interruption of the continuous-path mode (G60 or G4 between G331/G332 blocks interrupt the continuous-path mode).

Bits 1.....15

Not assigned

11600	BAG_MASK			N01	K1, Z1	
-	Defines the mode group behavior			UDWORD	PowerOn	
-						
-	-	0	0	3	7/2	M

Description: The MD describes the effect of the VDI signals on all channels of a mode group (BAG) and the behavior of the internal mode changeover in relation to ASUBs and interrupt routines.

Value = 0: When an interrupt is started in a channel of the mode group, all channels of the mode group respond normally to mode group VDI signals (such as BAG-RESET and BAG-STOP). If the interrupt is started from JOG, all channels of the mode group change internally into AUTO mode. Similarly, the mode group automatically switches back to JOG when the interrupt ends.

Value = 1: If an interrupt is started in a channel of the mode group, this channel no longer responds to mode group VDI signals (such as BAG-RESET and BAG-STOP). If, for example, BAG-STOP is triggered, all channels of the mode group are stopped, but the interrupt continues to run. A channel STOP remains active as before. Furthermore, if an interrupt is started from JOG in a channel of the mode group, only this channel automatically changes the mode to AUTO internally, all other channels of the mode group remain in JOG mode. The automatic switch back of the mode at the end of the interrupt only relates correspondingly to the channel in which the interrupt ran.

Value = 2: If an interrupt is started in a channel of the mode group, all channels of the mode group respond normally to mode group VDI signals (such as BAG-RESET and BAG-STOP). If an interrupt is started from JOG in a channel of the mode group, only this channel automatically changes the mode to AUTO internally. All other channels of the mode group remain in JOG mode. The automatic switch back of the mode at the end of the interrupt naturally only relates to the channel in which the interrupt ran. This behavior is not supported until V4.7 SP4 HF1. This setting was not defined in earlier versions. Furthermore, the functionality "JOG in ASUB" is permitted with this setting (see MD11602 \$MN_ASUP_START_MASK, bit3).

Value = 3: As value = 1. But the functionality "JOG in ASUB" is also permitted (see MD11602 \$MN_ASUP_START_MASK, bit3).

3.3 NC machine data

11602	ASUP_START_MASK			N01	K1, M3, TE3, TE7	
-	Ignore stop conditions for ASUB			UDWORD	PowerOn	
-						
-	-	0	0	0xf	7/2	M

Description:

This machine data defines which stop reasons are to be ignored on an ASUB start. The ASUB is started or the following stop reasons are ignored:

Bit 0:

STOP reason: STOP key, M0 or M01

An ASUB is started immediately if NCK is in RESET status (or JOG mode) (no ASUB can be started in RESET/JOG without this bit).

Bit 1:

Reserved! This bit was replaced by MD20105 \$MC_PROG_EVENT_IGN_REFP_LOCK and MD20115 \$MC_IGNORE_REFP_LOCK_ASUP.

Bit 2:

Start allowed even if a read-in disable is active; in other words, the blocks of the ASUB program are loaded and executed immediately. This therefore disables machine data MD20107 \$MC_PROG_EVENT_IGN_INHIBIT and MD20116 \$MC_IGNORE_INHIBIT_ASUP. The NCK behavior corresponds to the machine data assignment \$MC_PROG_EVENT_IGN_INHIBIT=H3F \$MC_IGNORE_INHIBIT_ASUP=HFFFFFFF.

If the bit is not set:

The assignment of machine data MD20107 \$MC_PROG_EVENT_IGN_INHIBIT and MD20116 \$MC_IGNORE_INHIBIT_ASUP are evaluated.

If the particular bit in \$MC_PROG_EVENT_IGN_INHIBIT or \$MC_IGNORE_INHIBIT_ASUP is 0, then although an ASUB or prog event are immediately internally initiated, the blocks of the ASUB program are only loaded when the read-in inhibit is withdrawn.

The path is decelerated immediately when the ASUB is triggered (except with option BLSYNC).

The read-in disable is set once more in the ASUB program.

Bit 3:

Notice:

The following function can always be activated in single-channel systems. Multi-channel systems require bit1 in MD11600 \$MN_BAG_MASK in addition. The function is active o_n_l_y for those ASUBs that were activated from the cancelation program status (Reset channel status). The function is not active in multi-channel systems without MD11600 \$MN_BAG_MASK bit1.

If an ASUB is started automatically from JOG, the user may stop in the middle of the ASUB program. JOG mode is displayed continuously for the user. With bit 3 set, the user may jog in this situation. This is not possible without bit 3. In this case, mode change is locked with alarm 16927. By pressing the Start key, the user can continue the ASUB program. As long as the ASUB program is running, the user is naturally not able to jog. At the end of the ASUB program, the user may jog again.

Bit 4...15: Reserved

Corresponds with:

MD11604 \$MN_ASUP_START_PRIO_LEVEL

MD20105 \$MC_PROG_EVENT_IGN_REFP_LOCK

MD20107 \$MC_PROG_EVENT_IGN_INHIBIT

MD20115 \$MC_IGNORE_REFP_LOCK_ASUP

MD20116 \$MC_IGNORE_INHIBIT_ASUP

11604	ASUP_START_PRIO_LEVEL			N01	K1, TE3, TE7	
-	Priorities from which 'ASUP_START_MASK' is effective			DWORD	PowerOn	
-						
-	-	0	0	128	7/2	M

Description: This machine data defines the ASUB priority from which MD11602 \$MN_ASUP_START_MASK is to be applied. MD11602 \$MN_ASUP_START_MASK is applied from the level specified here up to the highest ASUB priority level 1.

Related to:

MD11602 \$MN_ASUP_START_MASK

11610	ASUP_EDITABLE			N01	K1	
-	Activation of a user-specific ASUB program			UDWORD	PowerOn	
-						
-	-	0	0	0x7	7/2	M

Description: This MD determines whether user-specific routine: `_N_ASUP_SPF` stored in directory `_N_CUS_DIR/` `_N_CMA_DIR` is to be used to process RET and REPOS. The user ASUB is searched for first in `_N_CUS_DIR`.

Value: Meaning:

0 Routine `_N_ASUP_SPF` is not activated for either RET or REPOS.

Bit0 = 1 User-specific routine `_N_ASUP_SPF` is executed for RET, the routine supplied by the system is executed for REPOS.

Bit1 = 1 User-specific routine `_N_ASUP_SPF` is executed for REPOS, the routine supplied by the system is executed for RET

Bit0= + bit1 = 3 User-specific routine `_N_ASUP_SPF` is executed for both RET and REPOS

Bit2 = 1 User ASUB `_N_ASUP_SPF` is searched for first in `_N_CMA_DIR`

Related to:

MD11612 \$MN_ASUP_EDIT_PROTECTION_LEVEL

11612	ASUP_EDIT_PROTECTION_LEVEL			N01	K1	
-	Protection level of the user-specific ASUB program			DWORD	PowerOn	
-						
-	-	2	0	7	7/2	M

Description: Protection level of the user-specific ASUB program for RET and/or REPOS
The data is active only if MD11610 \$MN_ASUP_EDITABLE is set to a value other than 0.
This machine data defines the protection level of the program `_N_ASU_CUS`.

MD irrelevant for:

MD11610 \$MN_ASUP_EDITABLE set to 0

Related to:

MD11610 \$MN_ASUP_EDITABLE

11620	PROG_EVENT_NAME				EXP, N12	K1	
-	Program name for PROG_EVENT				STRING	PowerOn	
-							
-	-	-	-	-	7/2	M	

Description: Name of the user program called by the "event-driven program calls" and "automatic ASUB start after block search" functions (MD11450 \$MN_SEARCH_RUN_MODE, bit 1). `_N_PROG_EVENT_SPF` is the default setting.

The default setting is activated if MD11620 \$MN_PROG_EVENT_NAME includes a blank string.

3.3 NC machine data

If the machine data does not contain a blank string, then the syntax of the string is checked as in the case of a subprogram identifier. This means that the first two characters must be letters (not numbers) or underscores. If this is not the case, alarm 4010 is output during ramp-up.

The program must be located in a cycle directory. When it is called, the search runs through the cycle directories in accordance with the setting of MD11622 \$MN_PROG_EVENT_PATH.

The prefix (_N_) and the suffix (_SPF) of the program name are added automatically if they have not been specified.

11622	PROG_EVENT_PATH	N01	-
-	Call path for PROG_EVENT	BYTE	PowerOn
-			
-	-	3	0

Description: Path on which the user program set with MD11620 \$MN_PROG_EVENT_NAME is called in response to an event-driven program call configured with MD20108 \$MC_PROG_EVENT_MASK:

0: /_N_CMA_DIR
1: /_N_CUS_DIR
2: /_N_CST_DIR
3: Search path in the sequence /_N_CUS_DIR, /_N_CMA_DIR, and /_N_CST_DIR

11625	FILE_ONLY_WITH_EXTENSION	N01	-
-	On program call, only search for files with an extension	BYTE	Reset
-			
-	-	0	0

Description: This machine data can be used to set whether the file system is to be searched for files without an extension on a subprogram call. The search for files without an extension can be disabled to speed up the search for a program in the various paths in the file system, e.g. when using EES.

0: On subprogram calls, the search also includes files without an extension
1: On subprogram calls, the search is restricted to files with an extension (e.g. SPF, MPF etc.)

11626	CYCLES_ONLY_IN_CYCDIR	N01	-
-	Search for subprograms with PROC instruction in the cycle directories only	BYTE	Reset
-			
-	-	0	0

Description: This machine data can be set to limit the search for subprograms that have a PROC instruction and have been stored in the cycle directories (CUS, CMA, CST), to just these directories. The PROC instructions are read in during a warm restart. The function therefore only applies to subprograms that were in the cycle directories at the time of the warm restart.

Use: this setting prevents unnecessary accesses to the external storage during program execution by the function "Execution from External Storage EES" and therefore speeds up calling SIEMENS cycles, for example.

0: On subprogram calls, the NC program is searched for in all program directories in the search path
1: On subprogram calls, the NC program is searched for only in the cycle directories CUS, CMA, and CST
2: On subprogram calls, the NC program is searched for in the directory defined by the CALLPATH instruction, and then in the cycle directories CUS, CMA and CST

11640	ENABLE_CHAN_AX_GAP			N01, N11	K2	
-	Allow channel axis gaps in AXCONF_MACHAX_USED			UDWORD	PowerOn	
-						
-	-	0x0	0	0x1	2/2	M

Description: Bit0 = 1
Machine data allows configuration of channel axis gaps in the MD20070 \$MC_AXCONF_MACHAX_USED.
Permits following MD assignment:
\$AXCONF_MACHAX_USED[0] = 1 ; 1st MA is 1st axis in channel
\$AXCONF_MACHAX_USED[1] = 2 ; 2nd MA is 2nd axis in channel
\$AXCONF_MACHAX_USED[2] = 0 ; Channel axis gap
\$AXCONF_MACHAX_USED[3] = 3 ; 3rd MA is 3rd axis in channel
\$AXCONF_MACHAX_USED[4] = 0
C A U T I O N:
(BIT0 set with MD20070 \$MC_AXCONF_MACHAX_USED):
If a geo axis is placed in a channel axis gap with MD20050 \$MC_AXCONF_GEOAX_ASSIGN_TAB[1]= 3, the control responds as with MD20050 \$MC_AXCONF_GEOAX_ASSIGN_TAB[1]= 0. This eliminates the geo axis!
Transformation machine data must not be assigned a channel axis number specified as a gap.
BIT1 - BIT31: not used.
Related to:
MD20080 \$MC_AXCONF_CHANAX_NAME_TAB,
MD20050 \$MC_AXCONF_GEOAX_ASSIGN_TAB,
MD20060 \$MC_AXCONF_GEOAX_NAME_TAB
MD20070 \$MC_AXCONF_MACHAX_USED
MD24... \$MC_TRAFO_AXES_IN...
MD24... \$MC_TRAFO_GEOAX_ASSIGN_TAB...

11717	D_NO_FCT_CYCLE_NAME			EXP, N12, N07	K1	
-	Subroutine name for D function replacement			STRING	PowerOn	
-						
-	-	-	-	-	7/2	M

Description: Cycle name for replacement routine of the D function.
If a D function is programmed in a part program block, then, depending on machine data MD10717 \$MN_T_NO_FCT_CYCLE_NAME, MD10719 \$MN_T_NO_FCT_CYCLE_MODE and MD10718 \$MN_M_NO_FCT_CYCLE_PAR, the MD subprogram defined in MD11717 \$MN_D_NO_FCT_CYCLE_NAME is called.
The programmed D number can be polled in the cycle via system variable \$C_D / \$C_D_PROG.
MD11717 \$MN_D_NO_FCT_CYCLE_NAME is only active in Siemens mode (G290).
No more than one M/T/D function replacement can be active per part program line.
A modal subprogram call must not be programmed in the block with the D function replacement. Furthermore, neither subprogram return nor part program end are allowed.
In the event of a conflict alarm 14016 is output.

11750	NCK_LEAD_FUNCTION_MASK			N09	-	
-	Functions for master value coupling			UDWORD	NEW CONF	
-						
-	-	0x00	0	0x10	1/1	M

3.3 NC machine data

Description: Special functions of the master value coupling are set with this MD.
The MD is bit-coded, the following bits are assigned:
Bits 0-3:
reserved
Bit 4 == 0:
the following axis of a master value coupling decelerates independently on NC or mode group stop or channel-specific feed disable
Bit 4 == 1:
the following axis of a master value coupling does not decelerate independently on NC or mode group stop or channel-specific feed disable
Bits 5-31:
reserved

11752	NCK_TRAIL_FUNCTION_MASK			N09	-	
-	Functions for coupled motion			UDWORD	NEW CONF	
-						
-	-	0x0	0	0x10	1/1	M

Description: Special functions for coupled motions are set with this MD.
The MD is bit-coded; the following bits are assigned:
Bits 0-3:
reserved
Bit 4 = 0:
the following axis of a coupled axis grouping activated by a synchronized action decelerates independently on NC or mode group stop or channel-specific feed disable
Bit 4 = 1:
the following axis of a coupled axis grouping activated by a synchronized action does not decelerate independently on NC or mode group stop or channel-specific feed disable
Bit 5-31:
reserved

11756	NCK_EG_FUNCTION_MASK			N09	-	
-	Functions for Electronic Gear			UDWORD	NEW CONF	
-						
-	-	0x0	0	0x2F	1/1	M

Description: This MD is used to set special functions of Electronic Gear (EG).
The MD is bit-coded, the following bits are occupied:
Bit 0 - 4:
reserved
Bit 5 = 0:
Positions indicated in EGONSYN and EGONSYNE are evaluated according to setting G700 or G710 inch or metric that is valid in the currently machined part program block.
Bit 5 = 1
Positions indicated in EGONSYN and EGONSYNE are evaluated in the basic system involved.
Bit 6 - 31:
reserved

12000	OVR_AX_IS_GRAY_CODE			EXP, N10	V1, Z1	
-	Axis feedrate override switch Gray-coded			BOOLEAN	PowerOn	
-						
-	-	TRUE	0	-	7/2	M

Description: This machine data is used to adapt the axis feed override switch to the interface coding of the PLC interface.

1: The 5 low-order bits of the PLC interface signal DB31, ... DBB0 (Feed override A-H) are interpreted as a Gray code. The value which is read corresponds to a switch setting. It is used as an index for selecting the correct override factor from the table of MD12010 \$MN_OVR_FACTOR_AX_SPEED [n].

0: The feed override byte of the PLC interface is interpreted as a binary representation of the override value in percent (limit 200 percent).

Related to:

NC/PLC interface signal DB31, ... DBB0 (Feed override A-H), (axis-specific)

MD12010 \$MN_OVR_FACTOR_AX_SPEED [n]

(Evaluation of the axis feed override switch)

12010	OVR_FACTOR_AX_SPEED			EXP, N10	V1, Z1	
-	Evaluation of axis feedrate override switch			DOUBLE	PowerOn	
-						
-	31	0.00, 0.01, 0.02, 0.04, 0.06, 0.08, 0.10, 0.20...	0.00	2.00	7/2	M

Description: Evaluation of the axis velocity override switch with gray-coded interface.

Not relevant with:

MD12000 \$MN_OVR_AX_IS_GRAY_CODE = 0

Related to:

NC/PLC interface signal DB31, ... DBB0 (Feed override A-H), (axis-specific)

12020	OVR_FEED_IS_GRAY_CODE			EXP, N10	V1, Z1	
-	Path feedrate override switch Gray-coded			BOOLEAN	PowerOn	
-						
-	-	TRUE	0	-	7/2	M

Description: This machine data is used to adapt the path feed override switch to the interface coding of the PLC interface.

1: The 5 low-order bits of the NC/PLC interface signal DB31, ... DBB0 (Feed override A-H) are interpreted as a Gray code. The value which is read corresponds to a switch setting. It is used as an index for selecting the correct override factor from the table of MD12030 \$MN_OVR_FACTOR_FEEDRATE [n].

0: The feed override byte of the PLC interface is interpreted as a binary representation of the override value in percent (limit 200 percent).

Related to:

NC/PLC interface signal DB31, ... DBB0 (Feed override A-H)

MD12030 \$MN_OVR_FACTOR_FEEDRATE [n]

(Evaluation of the path feed override switch)

12030	OVR_FACTOR_FEEDRATE			EXP, N10	V1, B1, Z1	
-	Evaluation of path feedrate override switch			DOUBLE	PowerOn	
-						
-	31	0.00, 0.01, 0.02, 0.04, 0.06, 0.08, 0.10, 0.20...	0.00	2.00	7/2	M

3.3 NC machine data

Description: Evaluation of the feedrate override switch with gray-coded interface.
 Special function of the 31st value for the velocity control:
 The setting of the 31st override value defines the dynamic reserves which take the velocity control to be an excessive increase in the path feed. The setting should correspond to the highest override factor actually used.
 The function of the 31st value is thus identical to the effect of MD12100 \$MN_OVR_FACTOR_LIMIT_BIN when using the binary-coded interface.
 Not relevant with:
 MD12020 \$MN_OVR_FEED_IS_GRAY_CODE = 0
 Related to:
 NC/PLC interface signal DB31, ... DBB0 (Feed override A-H)

12040	OVR_RAPID_IS_GRAY_CODE			EXP, N10	V1, Z1	
-	Rapid traverse override switch Gray-coded			BOOLEAN	PowerOn	
-						
-	-	TRUE	0	-	7/2	M

Description: This machine data is used to adapt the rapid traverse override switch to the interface coding of the PLC interface.
 1: The 5 low-order bits of the PLC interface signal DB21-30 DBB5 (Rapid traverse override A-H) are interpreted as a Gray code. The value which is read corresponds to a switch setting.
 It is used as an index for selecting the correct override factor from the table of MD12050 \$MN_OVR_FACTOR_RAPID_TRA[n].
 0: The rapid traverse override byte of the PLC interface is interpreted as a binary representation of the override value in percent (limit 200 percent).
 Related to:
 NC/PLC interface signal DB21-30 DBB5 (Rapid traverse override A-H)
 MD12050 \$MN_OVR_FACTOR_RAPID_TRA[n]
 (Evaluation of the rapid traverse override switch)

12050	OVR_FACTOR_RAPID_TRA			EXP, N10	V1, Z1	
-	Evaluation of rapid traverse override switch			DOUBLE	PowerOn	
-						
-	31	0.00, 0.01, 0.02, 0.04, 0.06, 0.08, 0.10, 0.20...	0.00	1.00	7/2	M

Description: Evaluation of the rapid traverse override switch with gray-coded interface.
 Not relevant with:
 MD12040 \$MN_OVR_RAPID_IS_GRAY_CODE = 0
 Related to:
 NC/PLC interface signal DB21-30 DBB5 (Rapid traverse override A-H)

12060	OVR_SPIND_IS_GRAY_CODE			EXP, N10	V1, Z1	
-	Spindle override switch Gray-coded			BOOLEAN	PowerOn	
-						
-	-	TRUE	0	-	7/2	M

Description: This machine data is used to adapt the spindle speed override switch to the interface coding of the PLC interface.
 1: The 5 low-order bits of the "spindle speed override" PLC interface signal are interpreted as a Gray code. The value which is read corresponds to a switch setting.
 It is used as an index for selecting the correct override factor from the table of MD12070 \$MN_OVR_FACTOR_SPIND_SPEED [n].

0: The spindle speed override byte of the PLC interface is interpreted as a binary representation of the override value in percent (limit 200 percent).

Related to:

NC/PLC interface signal DB31, ... DBB19 (Spindle speed override)

MD12070 \$MN_OVR_FACTOR_SPIND_SPEED[n]

(Evaluation of the spindle speed override switch)

12070	OVR_FACTOR_SPIND_SPEED			EXP, N10	V1, Z1	
-	Evaluation of spindle override switch			DOUBLE	PowerOn	
-						
-	31	0.5, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85...	0.00	2.00	7/2	M

Description: Evaluation of the spindle-specific override switch with Gray-coded interface.
Special function of the 31st value for the velocity control:
The setting of the 31st override value defines the dynamic reserves which take the velocity control to be an excessive increase in the spindle feed. The setting should correspond to the highest override factor actually used.
The function of the 31st value is thus identical to the effect of MD12100 \$MN_OVR_FACTOR_LIMIT_BIN when using the binary-coded interface.
Not relevant for:
MD12060 \$MN_OVR_SPIND_IS_GRAY_CODE = 0
Related to:
NC/PLC interface signal DB31, ... DBB19 (Spindle speed override)

12080	OVR_REFERENCE_IS_PROG_FEED			N10, N09	V1	
-	Override reference speed			BOOLEAN	PowerOn	
-						
-	-	TRUE	0	-	7/2	M

Description: The entry in this MD specifies whether the spindle override given by the IS refers to the speed limited by MD/SD or to the programmed speed.
1: Spindle override acts with reference to the programmed speed
(programmed speed _ spindle override 100%)
0: Spindle override acts on the speed limited by MD or SD
(speed limited by MD/SD _ spindle override 100%)
Related machine data:
A speed limitation is effected by the following MDs or SDs:
MD35100 \$MA_SPIND_VELO_LIMIT Maximum spindle speed
MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT Maximum speed of gear stage
MD35160 \$MA_SPIND_EXTERN_VELO_LIMIT Spindle speed limitation by PLC
SD43220 \$SA_SPIND_MAX_VELO_G26 Maximum spindle speed
SD43230 \$SA_SPIND_MAX_VELO_LIMS Spindle speed limitation with G96

12082	OVR_REFERENCE_IS_MIN_FEED			N10, N09	V1	
-	Specification of the reference of the path override			BOOLEAN	PowerOn	
-						
-	-	FALSE	0	-	7/2	M

Description: The reference speed for the path feed override specified via the machine control panel can be set differently from the standard.
0: Standard:
The override is relative to the programmed feed.

3.3 NC machine data

1: Special case:

The override is relative to the programmed feed or to the path feed limit, depending on which resulting value is lower. In this way, even for a great feed reduction (due to the permissible axis dynamics), the effect of the override value (in the range 0 to 100%) is always visible.

12090	OVR_FUNCTION_MASK			N01, N10, N09	-	
-	Selection of override specifications			UDWORD	Reset	
-						
-	-	0	0	0x01	7/2	M

Description: The functionality of the override switches can be affected by the bits.

Bit 0: = 0,

Standard: Spindle override active with G331/G332

= 1,

Path override is active instead of spindle override with G331/G332

(Tapping without compensating chuck)

12100	OVR_FACTOR_LIMIT_BIN			EXP, N10	V1, B1, Z1	
-	Limitation for binary-coded override switch			DOUBLE	PowerOn	
-						
-	-	1.2	0.0	2.0	7/2	M

Description: This machine data can be used as an additional limit for the override factor when using the binary-coded interface for path, axis and spindle feeds.

In this case, the maximum values

- 200% for channel-specific feed override
- 100% for channel-specific rapid traverse override
- 200% for axis-specific feed override
- 200% for spindle override

are replaced with the limit value entered in MD: OVR_FACTOR_LIMIT_BIN when this value is lower.

Example: OVR_FACTOR_LIMIT_BIN = 1.20

--> maximum override factor for

- channel-specific feed override =120%
- channel-specific rapid traverse override =100%
- axis-specific feed override =120%
- spindle override =120%

This value also defines the dynamic reserves maintained by the speed control for increasing the path and spindle feedrates.

References:

/FB/, B1, "Continuous Path Mode, Exact Stop and Look Ahead"

12200	RUN_OVERRIDE_0			N01, N09	FBMA, V1, Z1	
-	Traversing response with override 0			BOOLEAN	PowerOn	
-						
-	-	FALSE	0	-	7/2	M

Description: = 0

Override 0 is active and means deceleration (JOG mode, safety function).

Bits 0 and 1 in MD32084 \$MA_HANDWH_STOP_COND for hand wheels and in MD20624

\$MC_HANDWH_CHAN_STOP_COND for machine axes define whether the pulses are collected for geometry axes and contour handwheel.

= 1

Traversing with handwheels and in JOG mode with fixed feedrates is also possible with a 0 % override.

Related to:

MD32084 \$MA_HANDWH_STOP_COND

MD20624 \$MC_HANDWH_CHAN_STOP_COND

12202	PERMANENT_FEED	N01, N09	Z1, V1
mm/min	Fixed feedrates for linear axes	DOUBLE	Reset
-			
-	4	0., 0., 0., 0.	0.0 1.0E+301 7/2 M

Description:

In AUTOMATIC mode:

After activating a fixed feedrate via an interface signal, traversing is done with a fixed feedrate instead of the programmed feedrate.

Note:

The fixed feedrate is also evaluated in continuous-path mode in order to optimize the overhead for the Look Ahead calculation. Unnecessarily high values should therefore be avoided. Enter zero if a fixed feedrate is not wanted

In JOG mode:

After activating a fixed feedrate via an interface signal, and traversing the linear axis with a traversing key, traversing proceeds in the selected direction with the fixed feedrate.

n = 0, 1, 2, 3 mean fixed feedrates 1, 2, 3, 4. The values must be entered in ascending order.

Special cases, errors, ...

The maximum velocity defined by MD32000 \$MA_MAX_AX_VELO is active.

An override setting of 100 % is assumed. MD12200 \$MN_RUN_OVERRIDE_0 is active if the override is 0.

Related to:

MD12200 \$MN_RUN_OVERRIDE_0

12204	PERMANENT_ROT_AX_FEED	N01, N09	V1
rev/min	Fixed feedrates for rotary axes	DOUBLE	Reset
-			
-	4	0., 0., 0., 0.	0.0 1.0E+301 7/2 M

Description:

Fixed feedrate values:

In AUTOMATIC mode:

After activating a fixed feedrate via an interface signal, traversing is done with a fixed feedrate instead of the programmed feedrate.

Note: PERMANENT_ROT_AX_FEED is used instead of PERMANENT_FEED for the path motion if all synchronously traversed axes in the current block are rotary axes. PERMANENT_FEED applies if linear and rotary axes are to be synchronously traversed together.

The fixed feedrate is also evaluated in continuous-path mode in order to optimize the overhead for the Look Ahead calculation. Unnecessarily high values should therefore be avoided. Enter zero if a fixed feedrate is not wanted

In JOG mode:

After activating a fixed feedrate via an interface signal, and traversing the rotary axis with a traversing key, traversing proceeds in the selected direction with the fixed feedrate.

n = 0, 1, 2, 3 mean fixed feedrates 1, 2, 3, 4.

Special cases, errors, ...

The maximum velocity defined by MD32000 \$MA_MAX_AX_VELO is active.

3.3 NC machine data

An override setting of 100 % is assumed. MD12200 \$MN_RUN_OVERRIDE_0 is active if the override is 0.

Related to:

MD12200 \$MN_RUN_OVERRIDE_0

12205	PERMANENT_SPINDLE_FEED			N01, N09	FBMA	
rev/min	Fixed feedrates for spindles			DOUBLE	Reset	
-						
-	4	0., 0., 0., 0.	0.0	1.0E+301	7/2	M

Description:

Fixed feedrate values:

JOG: A spindle is traversed with a fixed feedrate by activating the traversing keys and activating the appropriate signals in the PLC interface.

The override is not active.

Depending upon MD12200 \$MN_RUN_OVERRIDE_0, traversing also takes place with override 0.

The value defined by MD32000 \$MA_MAX_AX_VELO is taken as the upper limit. If the fixed feedrate has a larger value, the aforementioned limiting value applies.

12300	CENTRAL_LUBRICATION			N01, N09	-	
-	Central lubrication active			BOOLEAN	PowerOn	
-						
-	-	FALSE	0	-	7/2	M

Description:

When a settable axial path has been exceeded, the axial VDI signals request a lubrication pulse from the PLC (compare MD33050 \$MA_LUBRICATION_DIST). These axial pulses act (by default) independently of each other.

If the machine construction requires a central lubrication, i.e. the lubrication pulse of any axis is acting on all axes, the corresponding path monitoring of all axes must be restarted after lubrication pulse output. This start synchronization of the monitoring is executed via MD12300 \$MN_CENTRAL_LUBRICATION=TRUE.

12510	NCU_LINKNO			N01	B3	
-	NCU number in an NCU cluster			UDWORD	PowerOn	
-						
-	-	1	1	16	7/2	M

Description:

Number or name for identifying an NCU within an NCU grouping.

In an NCU grouping (NCU cluster), the NCUs are connected to one another by a link bus.

Related to:

MD18780 \$MN_MM_NCU_LINK_MASK

12520	LINK_TERMINATION			N01	B3	
-	NCU numbers for which bus termination resistances are activated			BYTE	PowerOn	
LINK, -						
-	2	0, 1	0	15	3/2	M

Description:

LINK_TERMINATION defines with which NCUs the bus termination resistances for the timing circuit must be switched in through the link module.

Related to:

MD18780 \$MN_MM_NCU_LINK_MASK

12540	LINK_BAUDRATE_SWITCH	N01	B3
-	Link bus baud rate	DWORD	PowerOn
LINK, -			
-	-	9	0

Description: The assigned baud rate for the link communication is defined by the values entered:

Set value	Rate
0	9,600 kBd
1	19,200 kBd
2	45,450 kBd
3	93,750 kBd
4	187,000 kBd
5	500,000 kBd
6	1,500 MBd
7	3,000 MBd
8	6,000 MBd
9	12,000 MBd

Not relevant for:

Systems without link modules

Related to:

MD18780 \$MN_MM_NCU_LINK_MASK

12550	LINK_RETRY_CTR	N01	B3
-	Maximum number of message frame transmission retries	DWORD	PowerOn
LINK, -			
-	-	4	1

Description: Maximum retry limit in cases of error.

Not relevant for:

Systems without link modules

Related to:

MD18780 \$MN_MM_NCU_LINK_MASK

12701	AXCT_AXCONF_ASSIGN_TAB1	N01	B3
-	Assignment of an axis container location	STRING	PowerOn
CTDE			
-	32	-	-

Description: Assignment of an axis container location (slot s) to a machine axis or link axis. A maximum of 32 locations can be assigned axes in an axis container.

Structure of entries:

NCm_AXn with NCU number m: 1..16
 and machine axis address n: 1... 31

Example:

NC2_AX1 ; The axis is on the NCU2 and is the
 ; 1st machine axis there.

AX5 ; local axis 5 only with one NCU
 ; the axis container mechanism is only used by
 ; several channels of one NCU.

The reference to an axis container location of a channel is defined by the definitions in MD20070 \$MC_AXCONF_MACHAX_USED and MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB.

3.3 NC machine data

The actually assigned axis at a specific time is dependent upon the container rotation status. All channels that access an axis container use the same axis entries stored there. If channels of various NCUs access this container, then inter-NCU consistency must be ensured.

Example:

CHANDATA(1)

\$MC_MACHAX_USED[4]=9 MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB[8]=CL1_SL1

MD12701 \$MN_AXCT_AXCONF_ASSIGN_TAB1[0]="NC1_AX1" MD12701

\$MN_AXCT_AXCONF_ASSIGN_TAB1[1]="NC2_AX1"

This machine data is distributed via NCU-link.

Related to:

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB

12702	AXCT_AXCONF_ASSIGN_TAB2			N01	B3	
-	Assignment of an axis container location			STRING	PowerOn	
CTDE						
-	32	-	-	-	3/2	M

Description: Assignment of an axis container location (slot s) to a machine axis or link axis. A maximum of 32 locations can be assigned axes in an axis container.

Structure of entries:

NCm_AXn with NCU number m: 1..16
and machine axis address n: 1... 31

Example:

NC2_AX1 ; The axis is on the NCU2 and is the
; 1st machine axis there.

AX5 ; local axis 5 only with one NCU
; the axis container mechanism is only used by
; several channels of one NCU.

The reference to an axis container location of a channel is defined by the definitions in MD20070 \$MC_AXCONF_MACHAX_USED and MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB.

The actually assigned axis at a specific time is dependent upon the container rotation status. All channels that access an axis container use the same axis entries stored there. If channels of various NCUs access this container, then inter-NCU consistency must be ensured.

Example:

CHANDATA(1)

\$MC_MACHAX_USED[4]=9

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB[8]=CL1_SL1

MD12701 \$MN_AXCT_AXCONF_ASSIGN_TAB1[0]="NC1_AX1"

MD12701 \$MN_AXCT_AXCONF_ASSIGN_TAB1[1]="NC2_AX1"

This machine data is distributed via NCU-link.

Related to:

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB

12703	AXCT_AXCONF_ASSIGN_TAB3			N01	B3	
-	Assignment of an axis container location			STRING	PowerOn	
CTDE						
-	32	-	-	-	3/2	M

Description: Assignment of an axis container location (slot s) to a machine axis or link axis. A maximum of 32 locations can be assigned axes in an axis container.

Method of writing entries:

NCm_AXn with NCU number m: 1..16
 and machine axis address n: 1... 31

Example:

NC2_AX1 ; The axis is on the NCU2 and is the
 ; 1st machine axis there
 AX5 ; local axis 5, with only one NCU
 ; the axis container mechanism is only used by
 ; several channels of one NCU.

The reference to an axis container location of a channel is determined by the definitions in

MD20070 \$MC_AXCONF_MACHAX_USED and MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB.

The axis actually assigned at a given time is dependent upon the container rotation status. All channels that access an axis container use the same axis entries stored there. If channels from various NCUs access this container, ensure that there is consistency between the NCUs.

Example:

CHANDATA(1)
 \$MC_MACHAX_USED[4]=9 MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB[8]=CL1_SL1
 MD12701 \$MN_AXCT_AXCONF_ASSIGN_TAB1[0]="NC1_AX1" MD12701
 \$MN_AXCT_AXCONF_ASSIGN_TAB1[1]="NC2_AX1"

This machine data is distributed over the NCU-link.

Related to:

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB

12704	AXCT_AXCONF_ASSIGN_TAB4	N01	B3
-	Assignment of an axis container location	STRING	PowerOn
CTDE			
-	32	-	-
		-	3/2
			M

Description: Assignment of an axis container location (slot s) to a machine axis or link axis. A maximum of 32 locations can be assigned axes in an axis container. Method of writing entries:

NCm_AXn with NCU number m: 1..16
 and machine axis address n: 1... 31

Example:

NC2_AX1 ; The axis is on the NCU2 and is the
 ; 1st machine axis there
 AX5 ; local axis 5, with only one NCU
 ; the axis container mechanism is only used by
 ; several channels from one NCU.

The reference to an axis container location of a channel is determined by the definitions in MD20070 \$MC_AXCONF_MACHAX_USED and MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB.

The axis actually assigned at a given time is dependent upon the container rotation status. All channels that access an axis container use the same axis entries stored there. If channels from various NCUs access this container, ensure that there is consistency between the NCUs!

Example:

CHANDATA(1)
 \$MC_MACHAX_USED[4]=9 MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB[8]=CL1_SL1 MD12701
 \$MN_AXCT_AXCONF_ASSIGN_TAB1[0]="NC1_AX1" MD12701
 \$MN_AXCT_AXCONF_ASSIGN_TAB1[1]="NC2_AX1"

This machine data is distributed over the NCU-link.

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB

MD10002 \$MN AXCONF LOGIC MACHAX TAB

```
NC2_AX1      ; The axis is on the NCU2 and is the
              ; 1st machine axis there
AX5          ; local axis 5, with only one NCU
              ; the axis container mechanism is only used by
              ; several channels from one NCU.
```

The reference to an axis container location of a channel is determined by the definitions in MD20070 \$MC_AXCONF_MACHAX_USED and MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB.

The axis actually assigned at a given time is dependent upon the container rotation status. All channels that access an axis container use the same axis entries stored there. If channels from various NCUs access this container, ensure that there is consistency between the NCUs!

Example:

CHANDATA(1)

```
$MC_MACHAX_USED[4]=9      MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB[8]=CL1_SL1      MD12701
$MN_AXCT_AXCONF_ASSIGN_TAB1[0]="NC1_AX1"      MD12701
$MN_AXCT_AXCONF_ASSIGN_TAB1[1]="NC2_AX1"
```

This machine data is distributed over the NCU-link.

Related to:

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB

12707	AXCT_AXCONF_ASSIGN_TAB7			N01	B3	
-	Assignment of an axis container location			STRING	PowerOn	
CTDE						
-	32	-	-	-	3/2	M

Description: Assignment of an axis container location (slot s) to a machine axis or link axis. A maximum of 32 locations can be assigned axes in an axis container.

Method of writing entries:

NCm_AXn with NCU number m: 1..16
 and machine axis address n: 1... 31

Example:

```
NC2_AX1                      ; The axis is on the NCU2 and is the
                                    ; 1st machine axis there

AX5                           ; local axis 5, with only one NCU
                                    ; the axis container mechanism is only used by
                                    ; several channels from one NCU.
```

The reference to an axis container location of a channel is determined by the definitions in MD20070 \$MC_AXCONF_MACHAX_USED and MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB.

The axis actually assigned at a given time is dependent upon the container rotation status. All channels that access an axis container use the same axis entries stored there. If channels from various NCUs access this container, ensure that there is consistency between the NCUs!

Example:

CHANDATA(1)

```
$MC_MACHAX_USED[4]=9      MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB[8]=CL1_SL1      MD12701
$MN_AXCT_AXCONF_ASSIGN_TAB1[0]="NC1_AX1"      MD12701
$MN_AXCT_AXCONF_ASSIGN_TAB1[1]="NC2_AX1"
```

This machine data is distributed over the NCU-link.

Related to:

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB

12708	AXCT_AXCONF_ASSIGN_TAB8			N01	B3	
-	Assignment of an axis container location			STRING	PowerOn	
CTDE						
-	32	-	-	-	3/2	M

3.3 NC machine data

Description: Assignment of an axis container location (slot s) to a machine axis or link axis. A maximum of 32 locations can be assigned axes in an axis container.

Method of writing entries:

NCm_AXn with NCU number m: 1..16
 and machine axis address n: 1... 31

Example:

```
NC2_AX1                      ; The axis is on the NCU2 and is the
                             ; 1st machine axis there

AX5                          ; local axis 5, with only one NCU
                             ; the axis container mechanism is only used by
                             ; several channels from one NCU.
```

The reference to an axis container location of a channel is determined by the definitions in MD20070 \$MC_AXCONF_MACHAX_USED and MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB.

The axis actually assigned at a given time is dependent upon the container rotation status. All channels that access an axis container use the same axis entries stored there. If channels from various NCUs access this container, ensure that there is consistency between the NCUs!

Example:

```
CHANDATA(1)

$MC_MACHAX_USED[4]=9       MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB[8]=CL1_SL1
MD12701 $MN_AXCT_AXCONF_ASSIGN_TAB1[0]="NC1_AX1"       MD12701
$MN_AXCT_AXCONF_ASSIGN_TAB1[1]="NC2_AX1"
```

This machine data is distributed over the NCU-link.

Related to:

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB

12709	AXCT_AXCONF_ASSIGN_TAB9	N01	B3
-	Assignment of an axis container location	STRING	PowerOn
CTDE			
-	32	-	-

Description: Assignment of an axis container location (slot s) to a machine axis or link axis. A maximum of 32 locations can be assigned axes in an axis container.

Method of writing entries:

NCm_AXn with NCU number m: 1..16
 and machine axis address n: 1... 31

Example:

```
NC2_AX1                      ; The axis is on the NCU2 and is the
                             ; 1st machine axis there

AX5                          ; local axis 5, with only one NCU
                             ; the axis container mechanism is only used by
                             ; several channels from one NCU.
```

The reference to an axis container location of a channel is determined by the definitions in MD20070 \$MC_AXCONF_MACHAX_USED and MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB.

The axis actually assigned at a given time is dependent upon the container rotation status. All channels that access an axis container use the same axis entries stored there. If channels from various NCUs access this container, ensure that there is consistency between the NCUs!

Example:

```
CHANDATA(1)
```

```
$MC_MACHAX_USED[4]=9      MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB[8]=CL1_SL1      MD12701
$MN_AXCT_AXCONF_ASSIGN_TAB1[0]="NC1_AX1"      MD12701
$MN_AXCT_AXCONF_ASSIGN_TAB1[1]="NC2_AX1"
```

This machine data is distributed over the NCU-link.

Related to:

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB

12710	AXCT_AXCONF_ASSIGN_TAB10	N01	B3
-	Assignment of an axis container location	STRING	PowerOn
CTDE			
-	32	-	M

Description: Assignment of an axis container location (slot s) to a machine axis or link axis. A maximum of 32 locations can be assigned axes in an axis container.

Method of writing entries:

NCm_AXn with NCU number m: 1..16
 and machine axis address n: 1... 31

Example:

```
NC2_AX1      ; The axis is on the NCU2 and is the
              ; 1st machine axis there

AX5          ; local axis 5, with only one NCU
              ; the axis container mechanism is only used by
              ; several channels from one NCU.
```

The reference to an axis container location of a channel is determined by the definitions in MD20070 \$MC_AXCONF_MACHAX_USED and MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB.

The axis actually assigned at a given time is dependent upon the container rotation status. All channels that access an axis container use the same axis entries stored there. If channels from various NCUs access this container, ensure that there is consistency between the NCUs!

Example:

```
CHANDATA(1)
$MC_MACHAX_USED[4]=9      MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB[8]=CL1_SL1
MD12701 $MN_AXCT_AXCONF_ASSIGN_TAB1[0]="NC1_AX1"      MD12701
$MN_AXCT_AXCONF_ASSIGN_TAB1[1]="NC2_AX1"
```

This machine data is distributed over the NCU-link.

Related to:

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB

12711	AXCT_AXCONF_ASSIGN_TAB11	N01	B3
-	Assignment of an axis container location	STRING	PowerOn
CTDE			
-	32	-	M

Description: Assignment of an axis container location (slot s) to a machine axis or link axis. A maximum of 32 locations can be assigned axes in an axis container.

Method of writing entries:

NCm_AXn with NCU number m: 1..16
 and machine axis address n: 1... 31

Example:

```
NC2_AX1      ; The axis is on the NCU2 and is the
              ; 1st machine axis there

AX5          ; local axis 5, with only one NCU
```

3.3 NC machine data

; the axis container mechanism is only used by
; several channels from one NCU.

The reference to an axis container location of a channel is determined by the definitions in MD20070 \$MC_AXCONF_MACHAX_USED and MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB.

The axis actually assigned at a given time is dependent upon the container rotation status. All channels that access an axis container use the same axis entries stored there. If channels from various NCUs access this container, ensure that there is consistency between the NCUs!

Example:

CHANDATA(1)

\$MC_MACHAX_USED[4]=9 MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB[8]=CL1_SL1 MD12701

\$MN_AXCT_AXCONF_ASSIGN_TAB1[0]="NC1_AX1" MD12701

\$MN_AXCT_AXCONF_ASSIGN_TAB1[1]="NC2_AX1"

This machine data is distributed over the NCU-link.

Related to:

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB

12712	AXCT_AXCONF_ASSIGN_TAB12	N01	B3
-	Assignment of an axis container location	STRING	PowerOn
CTDE			
-	32	-	-
		-	3/2
			M

Description:

Assignment of an axis container location (slot s) to a machine axis or link axis. A maximum of 32 locations can be assigned axes in an axis container.

Method of writing entries:

NCm_AXn with NCU number m: 1..16
and machine axis address n: 1... 31

Example:

NC2_AX1 ; The axis is on the NCU2 and is the
; 1st machine axis there

AX5 ; local axis 5, with only one NCU
; the axis container mechanism is only used by
; several channels from one NCU.

The reference to an axis container location of a channel is determined by the definitions in MD20070 \$MC_AXCONF_MACHAX_USED and MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB.

The axis actually assigned at a given time is dependent upon the container rotation status. All channels that access an axis container use the same axis entries stored there. If channels from various NCUs access this container, ensure that there is consistency between the NCUs!

Example:

CHANDATA(1)

\$MC_MACHAX_USED[4]=9 MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB[8]=CL1_SL1 MD12701

\$MN_AXCT_AXCONF_ASSIGN_TAB1[0]="NC1_AX1" MD12701

\$MN_AXCT_AXCONF_ASSIGN_TAB1[1]="NC2_AX1"

This machine data is distributed over the NCU-link.

Related to:

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB

12713	AXCT_AXCONF_ASSIGN_TAB13			N01	B3	
-	Assignment of an axis container location			STRING	PowerOn	
CTDE						
-	32	-	-	-	3/2	M

Description: Assignment of an axis container location (slot s) to a machine axis or link axis. A maximum of 32 locations can be assigned axes in an axis container.

Method of writing entries:

NCm_AXn with NCU number m: 1..16
 and machine axis address n: 1... 31

Example:

NC2_AX1 ; The axis is on the NCU2 and is the
 ; 1st machine axis there

 AX5 ; local axis 5, with only one NCU
 ; the axis container mechanism is only used by
 ; several channels from one NCU.

The reference to an axis container location of a channel is determined by the definitions in

MD20070 \$MC_AXCONF_MACHAX_USED and MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB.

The axis actually assigned at a given time is dependent upon the container rotation status. All channels that access an axis container use the same axis entries stored there. If channels from various NCUs access this container, ensure that there is consistency between the NCUs!

Example:

CHANDATA(1)

\$MC_MACHAX_USED[4]=9 MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB[8]=CL1_SL1 MD12701
 \$MN_AXCT_AXCONF_ASSIGN_TAB1[0]="NC1_AX1" MD12701
 \$MN_AXCT_AXCONF_ASSIGN_TAB1[1]="NC2_AX1"

This machine data is distributed over the NCU-link.

Related to:

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB

12714	AXCT_AXCONF_ASSIGN_TAB14				N01	B3	
-	Assignment of an axis container location				STRING	PowerOn	
CTDE							
-	32	-	-	-	3/2	M	

Description: Assignment of an axis container location (slot s) to a machine axis or link axis. A maximum of 32 locations can be assigned axes in an axis container.

Method of writing entries:

NCm_AXn with NCU number m: 1..16
 and machine axis address n: 1... 31

Example:

NC2_AX1 ; The axis is on the NCU2 and is the
 ; 1st machine axis there

 AX5 ; local axis 5, with only one NCU
 ; the axis container mechanism is only used by
 ; several channels from one NCU.

The reference to an axis container location of a channel is determined by the definitions in MD20070 \$MC_AXCONF_MACHAX_USED and MD10002

\$MN_AXCONF_LOGIC_MACHAX_TAB.

3.3 NC machine data

The axis actually assigned at a given time is dependent upon the container rotation status. All channels that access an axis container use the same axis entries stored there. If channels from various NCUs access this container, ensure that there is consistency between the NCUs!

Example:

CHANDATA(1)

\$MC_MACHAX_USED[4]=9 MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB[8]=CL1_SL1

MD12701 \$MN_AXCT_AXCONF_ASSIGN_TAB1[0]="NC1_AX1" MD12701

\$MN_AXCT_AXCONF_ASSIGN_TAB1[1]="NC2_AX1"

This machine data is distributed over the NCU-link.

Related to:

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB

12715	AXCT_AXCONF_ASSIGN_TAB15			N01	B3	
-	Assignment of an axis container location			STRING	PowerOn	
CTDE						
-	32	-	-	-	3/2	M

Description: Assignment of an axis container location (slot s) to a machine axis or link axis. A maximum of 32 locations can be assigned axes in an axis container.

Method of writing entries:

NCm_AXn with NCU number m: 1..16
and machine axis address n: 1... 31

Example:

NC2_AX1 ; The axis is on the NCU2 and is the
; 1st machine axis there

AX5 ; local axis 5, with only one NCU
; the axis container mechanism is only used by
; several channels from one NCU.

The reference to an axis container location of a channel is determined by the definitions in MD20070 \$MC_AXCONF_MACHAX_USED and MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB.

The axis actually assigned at a given time is dependent upon the container rotation status. All channels that access an axis container use the same axis entries stored there. If channels from various NCUs access this container, ensure that there is consistency between the NCUs!

Example:

CHANDATA(1)

\$MC_MACHAX_USED[4]=9 MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB[8]=CL1_SL1 MD12701

\$MN_AXCT_AXCONF_ASSIGN_TAB1[0]="NC1_AX1" MD12701

\$MN_AXCT_AXCONF_ASSIGN_TAB1[1]="NC2_AX1"

This machine data is distributed over the NCU-link.

Related to:

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB

12716	AXCT_AXCONF_ASSIGN_TAB16			N01	B3	
-	Assignment of an axis container location			STRING	PowerOn	
CTDE						
-	32	-	-	-	3/2	M

Description: Assignment of an axis container location (slot s) to a machine axis or link axis. A maximum of 32 locations can be assigned axes in an axis container.

Method of writing entries:

NCm_AXn with NCU number m: 1..16

and machine axis address n: 1... 31

Example:

```
NC2_AX1      ; The axis is on the NCU2 and is the
              ; 1st machine axis there

AX5          ; local axis 5, with only one NCU
              ; the axis container mechanism is only used by
              ; several channels from one NCU.
```

The reference to an axis container location of a channel is determined by the definitions in MD20070 \$MC_AXCONF_MACHAX_USED and MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB.

The axis actually assigned at a given time is dependent upon the container rotation status. All channels that access an axis container use the same axis entries stored there. If channels from various NCUs access this container, ensure that there is consistency between the NCUs!

Example:

```
CHANDATA(1)

$MC_MACHAX_USED[4]=9      MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB[8]=CL1_SL1      MD12701
$MN_AXCT_AXCONF_ASSIGN_TAB1[0]="NC1_AX1"      MD12701
$MN_AXCT_AXCONF_ASSIGN_TAB1[1]="NC2_AX1"
```

This machine data is distributed over the NCU-link.

Related to:

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB

12750	AXCT_NAME_TAB			N01	B3	
-	Axis container identifier			STRING	PowerOn	
CTDE						
-	16	CT1, CT2, CT3, CT4, CT5, CT6, CT7, CT8...	-	-	1/1	M

Description: List of axis container identifiers

In addition to the channel identifier of an axis, the axis container identifier, which can be defined by the user here, can also be used as an axis container name for e.g. a rotation of an axis container (AXCTSWE(CT1)).

12760	AXCT_FUNCTION_MASK			N09	-	
-	Functions for the axis container			UDWORD	NEW CONF	
-						
-	-	0x0	0	0x1	1/1	M

Description: This MD is used to set the specific functions for the axis container.

The MD is bit-coded, the following bits are assigned:

Bit 0 = 0: For a direct axis container switch (AXCTSWED), all other channels must be in RESET status.

Bit 0 = 1: For a direct axis container switch (AXCTSWED), only those other channels which have interpolation right on axes of the axis container must be in RESET status.

13050	DRIVE_LOGIC_ADDRESS			N04, N10	G2	
-	Logical drive addresses			DWORD	PowerOn	
-						
-	31	4100, 4140, 4180, 4220, 4260, 4300, 4340, 4380...	0	16383	7/2	M

Description: For PROFIdrive only:

3.3 NC machine data

Logical I/O addresses of the PROFIdrive drives on the PROFIBUS/PROFINET that can be assigned to an axis.

The MD value is the logical I/O address of the drive assigned in the PROFIBUS/PROFINET configuration.

The index n from \$MN_DRIVE_LOGIC_ADDRESS[n] is used for actual value and setpoint assignment:

MD30220 \$MA_ENC_MODULE_NR=n+1, MD30110 \$MA_CTRL_OUT_MODULE_NR=n+1.

13060	DRIVE_TELEGRAM_TYPE			N04, N10	G2	
-	Standard message frame type for PROFIdrive			DWORD	PowerOn	
-						
-	31	116, 116, 116, 116, 116, 116, 116, 116...	0	-	7/2	M

Description:

For PROFIdrive only:

Standard telegram type for PROFIdrive axes:

0 = No standard type, user-defined

(telegram type 103 is then used internally in the NCK,
whereby other process data can be added.)

1... 6 = PROFIdrive type

101...107 = SIEMENS type

116 = SIEMENS type as 106 plus trace data

118 = SIEMENS type as 116, but use of encoders 2+3

136 = SIEMENS type as 116 plus torque feedforward control

138 = SIEMENS type as 136, but use of encoders 2+3

139 = SIEMENS type telegram specifically for Weiss spindle functionality

146 = SIEMENS type as 136 with adaptations and supplementary diagnostics

148 = SIEMENS type as 138 with adaptations and supplementary diagnostics

149 = SIEMENS type as 139 with adaptations and supplementary diagnostics

Notes:

The descriptions of the SIEMENS telegram type can be found in the SINAMICS function plan.

Alarm 26015 is issued with reference to this machine data if the telegram configuration exhibits inconsistencies, in other words if the telegram type selected on the NCK does not match the telegram type set on the drive (see drive parameter p922) and the process data configuration does not match (see drive parameters p923, p915, p916). The check for telegram configuration errors can be disabled using MD DRIVE_FUNCTION_MASK bit 15.

The SIEMENS telegram types 1xx must be operated in the SINUMERIK context in 611U interface mode.

13070	DRIVE_FUNCTION_MASK			N04, N10	G2	
-	PROFIdrive expansion functions			UDWORD	PowerOn	
-						
-	31	2, 2, 2, 2, 2, 2, 2...	0	0x7FFFFFFF	7/2	M

Description:

For PROFIdrive only:

Bit-coded mask for skipping the scope of available functions for PROFIdrive axes expected by the NCK.

Meaning of set bits:

Bit 0: Deactivation of axial drive alarm display

Note: the effect of this bit may be hidden, depending on the
value in MD13140 \$MN_PROFIBUS_ALARM_ACCESS.

Bit 1: Reserved, free (previous deactivation of 611U description file intermediate storage in the NCK)

Bit 2: Deactivation of axial encoder driver parameter accesses

Bit 3: Deactivation of axial output driver parameter accesses

Bit 4: Reserved, free (previous activation of DSC bits)

Bit 5: Deactivation of the 611U-specific drive parking (STW2.7/STA2.7)

Bit 6: Deactivation of the 611U-specific travel to fixed stop (STW2.8/STA2.8)

Bit 7: Deactivation of the 611U-specific motor switching int. (STW2.9 to 2.11)

Bit 8: Deactivation of the 611U-specific ramp block (STW1.11+13)

Bit 9: Deactivation of the 611U-specific function generator bits (STW1.8/STA1.13)

Bit 10: Deactivation of the control of the holding brake (STW1.12 / STA2.5)

Bit 11: Deactivation of the effect of OFF2/OFF3 on DB31, ... DBX93.5 (Drive Ready)

Bit 12: Deactivation of the error/alarm class SINAMICS (STA1.11 to STA1.12)

Bit 13: Drive parking simulation (STA2.7 = STW2.7)

Bit 14: Selection of non-cyclical communication 0 = DPT 1 = DPV1

Bit 15: Deactivation of the consistency check of the PROFIdrive message frame configuration

Configuration of bits 5 - 10 allows adaptation of certain control or status bits that are not standardized in the PROFIdrive profile. The bits may have a different significance and effect in the default setting of third-party drives.

13080	DRIVE_TYPE_DP			EXP	G2	
-	PROFIBUS/PROFINET drive type			BYTE	PowerOn	
-						
-	31	0, 0, 0, 0, 0, 0, 0, 0...	0	5	7/2	M

Description:

MD is relevant to PROFIdrive drives at the PROFIBUS/PROFINET:

Drive type:

- 0: No drive or drive type unknown (default),
software-internally treated as:
- 1: FDD drive (SRM: Synchronous rotary drive)
 - 2: MSD drive (ARM: Asynchronous rotary drive)
 - 3: Linear drive
 - 4: Analog drive (no automatic entry)
 - 5: Hydraulic drive

Note:

In general, the drive type is entered automatically with Siemens drives as soon as the drives start operating.

With non-Siemens drives (at least with linear drives), the value must be entered manually if automatic drive recognition is not possible.

13100	DRIVE_DIAGNOSIS			EXP, N05	-	
-	Diagnostics drive link			UDWORD	PowerOn	
-						
-	9	0, 0, 0, 0, 0, 0, 0, 0...	0	0x7FFFFFFF	7/2	M

Description:

reserved

13110	PROFIBUS_TRACE_ADDRESS			EXP	-	
-	PROFIBUS/PROFINET trace of I/O slots			DWORD	NEW CONF	
-						
-	14	0, 0, 0, 0, 0, 0, 0, 0...	0	-	2/2	M

3.3 NC machine data

Description: For PROFIBUS/PROFINET only:
Logical I/O address that is to be recorded.

13111	PROFIBUS_TRACE_TYPE			EXP	-	
-	PROFIBUS/PROFINET trace settings			DWORD	NEW CONF	
-						
-	-	0	0	3	2/2	M

Description: For PROFIBUS/PROFINET only:
 0: Recording to the part program memory /_N_MPF_DIR/_N_SIEMDPTRC_MPF
 1: Recording to mass storage /user/sinumerik/data/temp/siemdptrc.trc
 2: Recording to the part program memory with runtime measurement
 3: Recording of cyclic PN-NCULINK communication

13112	PROFIBUS_TRACE_FILE_SIZE			EXP	-	
-	Maximum trace file size in kbytes			DWORD	NEW CONF	
-						
-	-	40	-	-	2/2	M

Description: For PROFIBUS/PROFINET only:
 0: Trace without file size limitation
 >0: Trace with file size limitation

13113	PROFIBUS_TRACE_START			EXP	-	
-	Activation of PROFIBUS/PROFINET trace			DWORD	Immediately	
-						
-	-	0	0	1	2/2	M

Description: For PROFIBUS/PROFINET only:
 0: Trace off
 1: Trace on
 MD13112 \$MN_PROFIBUS_TRACE_FILE_SIZE > 0: Trace is automatically disabled when the file size is reached.

13114	PROFIBUS_TRACE_START_EVENT			EXP	-	
-	Trigger conditions for PROFIBUS/PROFINET trace			UDWORD	NEW CONF	
-						
-	14	0, 0, 0, 0, 0, 0, 0, 0...	0x00000000	0x111ffff	2/2	M

Description: For PROFIBUS/PROFINET only:
 The trigger frequency is configured bit-by-bit
 Bits 0-15: 0x0001-0xffff: bit mask
 Bits 16-23: 0x01-0x14: process data number (a maximum of 20 words are permissible)
 Bits 24-27: 0x01: status change 0->1
 0x00: status change 1->0
 Bits 28-31: 0x10: send slot
 0x00: receive slot
 When MD13113 \$MN_PROFIBUS_TRACE_START=1 and MD13114 \$MN_PROFIBUS_TRACE_START_EVENT=0x0 Recording starts immediately
 When MD13113 \$MN_PROFIBUS_TRACE_START=1 and MD13114 \$MN_PROFIBUS_TRACE_START_EVENT=0x1 Recording starts on control power on
 When MD13113 \$MN_PROFIBUS_TRACE_START=1 and MD13114 \$MN_PROFIBUS_TRACE_START_EVENT=0x2 Recording starts on loss of the sign of life

13120	CONTROL_UNIT_LOGIC_ADDRESS				N04, N10	-	
-	Logical address of SINAMICS CU				DWORD	PowerOn	
-							
840dsl-71	9	6500,0,0,0,0,0,0,0...	0	16383	7/2	M	
840dsl-72	13	6500,0,0,0,0,0,0,0...	0	16383	7/2	M	
840dsl-73	15	6500,0,0,0,0,0,0,0...	0	16383	7/2	M	
840dsl-711	9	6500,0,0,0,0,0,0,0...	0	16383	7/2	M	
840dsl-721	13	6500,0,0,0,0,0,0,0...	0	16383	7/2	M	
840dsl-731	15	6500,0,0,0,0,0,0,0...	0	16383	7/2	M	

Description: For PROFIBUS/PROFINET, SINAMICS:
 Logical I/O address of a SINAMICS-CU (Control Unit) on the PROFIBUS/PROFINET.
 The cyclic DP communication with SINAMICS-CU is activated by taking over the associated slot address from the PROFIBUS/PROFINET configuration. The onboard I/Os cannot be accessed until after configuration.

13140	PROFIBUS_ALARM_ACCESS			N04, N10	-	
-	Alarm response of PROFIBUS/PROFINET drives on power up			DWORD	Immediately	
-						
-	-	1	0	2	2/7	M

Description: For PROFIBUS/PROFINET only:
 Specifies the time of activation for evaluation/transmission of PROFIBUS/PROFINET node alarms or warnings (fine diagnostics messages) on the NCK.
 Affects drive alarms or warnings 380500, 380501 (or alarms 200000ff etc. created from these in the HMI) as well as drive safety alarms 27900.
 Meaning of the MD values:
 0 = alarms/warnings are evaluated immediately
 1 = alarms/warnings are not evaluated
 2 = alarms are evaluated only after power up, i.e. as soon as HMI has set value 2 active again (NCK automatically resets the MD value to 1 at every power up; HMI must explicitly articulate its readiness for message processing by setting value 2)
 Note: the MD restricts the range or effectiveness of MD13150 \$MN_SINAMICS_ALARM_MASK
 Default: the display default behavior of the mentioned drive alarms changes with the introduction of this MD. Now the alarms are not transported and displayed by default.
 The previous default behavior can be restored with MD13140 \$MN_PROFIBUS_ALARM_ACCESS=0.

13150	SINAMICS_ALARM_MASK			N04, N05	-	
-	Activate fault and warning buffer output for Sinamics			UDWORD	Immediately	
-						
-	-	0x0909	0	0x7FFFFFFF	7/2	M

Description: For PROFIBUS/PROFINET only, especially SINAMICS:

3.3 NC machine data

Relevant to SINAMICS diagnostics:

Note: the effect of this MD may be hidden independently of
the value of MD13140 \$MN_PROFIBUS_ALARM_ACCESS.

Mask for displaying the SINAMICS DOS fault and warning buffers

Bit set: Alarms in this DO group are output

Bit not set: Alarms in this DO group are not output

Bit Hex. Meaning
value

=====

```

0:    0x1    Output faults of the Control Units
1:    0x2    Reserved
2:    0x4    Output faults of the Drive Controls
3:    0x8    Output faults of the Line Modules
4:    0x10   Output faults of the Terminal Boards
5:    0x20   Output faults of the Terminal Modules
8:    0x100  Output warnings of the Control Units
9:    0x200  Output warnings of the Communication Objects
10:   0x400  Output warnings of the Drive Controls
11:   0x800  Output warnings of the Line Modules
12:   0x1000 Output warnings of the Terminal Boards
13:   0x2000 Output warnings of the Terminal Modules

```

13160	SINAMICS_MAX_SLAVE_ADDRESS			N04, N10	-	
-	Highest SINAMICS slave address			DWORD	PowerOn	
-						
-	4	0, 0, 0, 0	0	-	7/2	M

Description: Highest slave/device address supported per bus
All slaves/devices with an address higher than the address set here are ignored by the NCK
Value 0: No limitation

13200	MEAS_PROBE_LOW_ACTIVE			N10, N09	M5	
-	Polarity reversal of sensor			BOOLEAN	NEW CONF	
-						
-	2	FALSE, FALSE	0	-	7/2	M

Description: This MD defines the electrical polarity of each connected sensor.
Value 0:
(Default setting)
Non-deflected state 0 V
Deflected state 24 V
Value 1:
Non-deflected state 24 V
Deflected state 0 V
The programmed edges of the sensor are independent of the electrical polarity, and are to be regarded as purely mechanical. The programming of a positive edge always means the transition from the non-deflected into the deflected state. The programming of a negative edge always means the transition from the deflected into the non-deflected state.

13210	MEAS_TYPE			N10, N09	M5	
-	Meas. type with decentralized drives			BYTE	PowerOn	
-						
-	-	0	0	1	7/2	M

Description: For PROFIdrive only:
This MD sets the measuring function of decentralized drives.
MEAS_TYPE = 0 defines:
A probe is used that is connected centrally to the NC.
However, as the encoders only provide actual position values in cycles, the actual measuring position is found by interpolation.
MEAS_TYPE = 1 defines:
The probe must be wired decentralized to ALL drives.
The measuring functionality of the drive is then used,
saving the actual encoder values in the hardware at the time of the measuring edge.
This method is more accurate than that with MEAS_TYPE = 0, but it requires a more complex wiring and drives that support this measuring functionality.

13211	MEAS_CENTRAL_SOURCE			N10, N09	-	
-	Data source central measurement with PROFIdrive drives			BYTE	PowerOn	
-						
-	-	3	1	3	7/2	M

Description: For PROFIdrive only:
Sets the method used to obtain the time stamps for central measurement with PROFIdrive drives.
For MEAS_CENTRAL_SOURCE = 1, the following applies:
NRK access operations are used in order to access the onboard measuring register.
For this purpose, the appropriate hardware, which permits this, must be available, e.g. for 840Di with MCI-Extension Board.
For MEAS_CENTRAL_SOURCE = 2, the following applies:
The SINAMICS DO1 telegram is used (telegram types 391 and 395), and more specifically in the "Cyclic measurement" version without handshake.
For this purpose, an integrated SINAMICS must be available, e.g. NCU 710.
For measurement without handshake, two probes must be available in drive parameters p0680 index 0 and 1.
For MEAS_CENTRAL_SOURCE = 3, the following applies:
The SINAMICS DO1 telegram is used (telegram type 391), and more specifically in a version with handshake. This technique is fault-tolerant, however, it only permits a measurement edge every 4 PROFIBUS/PROFINET cycles, i.e. it is therefore significantly slower.
For this purpose, an integrated SINAMICS must be available, e.g. NCU 710.
This MD is only relevant, if MD13210 \$MN_MEAS_TYPE == 0.

13220	MEAS_PROBE_DELAY_TIME			N10, N09	FBA	
s	Delay time between probe deflection and recognition			DOUBLE	NEW CONF	
-						
-	2	0.0, 0.0	0	0.1	7/2	M

Description: For probes with, for example, radio transmission, the probe deflection can be detected in the NC only with delay.
With this MD, the transmission link delay between the probe deflection and its detection is set in the control.

3.3 NC machine data

The measured value is corrected internally by the control by the distance that corresponds to the traversing motion during this time before measuring (modeling). As the modeling does not work with the expected accuracy at higher position control cycles, the delay time is limited independently of the input value to 31 position control cycles).

13230	MEAS_PROBE_SOURCE			N10, N09	-	
-	Probe simulation			BYTE	PowerOn	
-						
-	-	0	0	9	7/2	M

Description: Simulation of the probe only works when all axes are simulated.
Value = 0: the probe is triggered on the programmed end position.
Value = 1-8: the probe is triggered via digital output with the number=value.
Value = 9: reserved

13231	MEAS_PROBE_OFFSET			N10, N09	-	
mm/inch, degrees	Probe offset			DOUBLE	Immediately	
-						
-	-	0.1	-1.0E+301	1.0E+301	7/7	U

Description: The switching position of the probe is offset by the value.
The offset is only active with the simulated probes and MD 13230
\$MN_MEAS_PROBE_SOURCE=0.

13300	PROFISAFE_IN_FILTER			N01, N10	-	
-	Useful F data filter IN			UDWORD	PowerOn	
-						
-	48	0xFFFFFFFF, 0xFFFFFFFF, 0xFFFFFFFF, 0xFFFFFFFF, 0xFFFFFFFF, 0xFF...	0x0	0xFFFFFFFF	7/2	M

Description: Filter between F user data and \$A_INSE variables
This machine data defines which bits are transferred from the F user data interface of the PROFIsafe module to the NCK for further processing.
The filtered F user data bits are compressed internally in the NCK to form a contiguous bit field.
Machine data MD10388 \$MN_PROFISAFE_IN_ASSIGN then also defines the \$A_INSE variables to which the filtered F user data bits are transferred.
Example:
Note:
Only 16 bits are shown for the sake of simplicity.
Parameterization:
\$MN_PROFISAFE_IN_FILTER = 1010100101000100
\$MN_PROFISAFE_IN_ASSIGN = 011006
n = 16 11 6 1
|x|x|x|x|x|1|1|1|0|0|1|x|x|x|x|x|
\$A_INSE[n], x = irrelevant
|0|0|0|0|0|0|0|0|0|0|0|1|1|1|0|0|1|
NCK-internal image of F user data
|1|0|1|0|1|0|0|1|0|0|1|0|0|0|1|0|0|

\$MN_PROFISAFE_IN_FILTER

|1|0|1|0|1|0|0|0|0|0|0|0|1|0|0|

Example value present at F user data interface of the PROFIsafe module

13301	PROFISAFE_OUT_FILTER			N01, N10	-	
-	Useful F data filter OUT			UDWORD	PowerOn	
-						
-	48	0xFFFFFFFF, 0xFFFFFFFF, 0xFFFFFFFF, 0xFFFFFFFF, 0xFFFFFFFF, 0xFF...	0x0	0xFFFFFFFF	7/2	M

Description:

Filter between \$A_OUTSE variables and F user data

This machine data defines to which F user data bits the \$A_OUTSE[n] variables concerned are transferred.

Machine data MD10389 \$MN_PROFISAFE_OUT_ASSIGN defines which \$A_OUTSE[n] variables are transferred to the F user data bits of the PROFIsafe module.

Example:

Note:

Only 16 bits are shown for the sake of simplicity.

Parameterization:

\$MN_PROFISAFE_OUT_FILTER = 1010100101000100

\$MN_PROFISAFE_OUT_ASSIGN = 011006

n = 16 11 6 1
|x|x|x|x|x|1|1|1|1|1|1|x|x|x|x|

Example value present in the \$A_OUTSE variables, x = irrelevant

|0|0|0|0|0|0|0|0|0|0|0|1|1|1|1|1|1|

NCK-internal image of F user data

|1|0|1|0|1|0|0|1|0|1|0|1|0|0|0|1|0|0|

\$MN_PROFISAFE_OUT_FILTER

|1|0|1|0|1|0|0|1|0|1|0|1|0|0|0|1|0|0|

F user data of the PROFIsafe module

13302	PROFISAFE_IN_ENABLE_MASK			N01, N10	-	
-	Enable mask for connections to PROFIsafe input modules.			UDWORD	PowerOn	
-						
-	2	0x0, 0x0	0x0, 0x0	0FFFFFFF, 0x0000FFFF	7/2	M

Description:

The enable mask is used to enable the machine data blocks for the connections to PROFIsafe input modules.

A machine data block comprises the following data:

- MD10386 \$MN_PROFISAFE_IN_ADDRESS[n]
- MD10388 \$MN_PROFISAFE_IN_ASSIGN[n]
- MD13300 \$MN_PROFISAFE_IN_FILTER[n]
- MD13305 \$MN_PROFISAFE_IN_SUBS[n]

Bit n = 0

The machine data block [n] is checked for consistency but not activated.

The PROFIsafe connection [n] or the slot [n] is not active.

Bit n = 1

The machine data block [n] is active.

The PROFIsafe connection [n] or the slot [n] is active.

3.3 NC machine data

Related to:

MD10095: \$MN_SAFE_MODE_MASK, Bit 1

MD13304: \$MN_PROFISAFE_IN_SUBS_ENAB_MASK

13303	PROFISAFE_OUT_ENABLE_MASK			N01, N10	-	
-	Enable mask for connections to PROFIsafe output modules.			UDWORD	PowerOn	
-						
-	2	0x0, 0x0	0x0, 0x0	0xFFFFFFFF, 0x0000FFFF	7/2	M

Description:

The enable mask is used to enable the machine data blocks for the connections to PROFIsafe output modules.

A machine data block comprises the following data:

- MD10387 \$MN_PROFISAFE_OUT_ADDRESS[n]
- MD10389 \$MN_PROFISAFE_OUT_ASSIGN[n]
- MD13301 \$MN_PROFISAFE_OUT_FILTER[n]

Bit n = 0

The machine data block [n] is checked for consistency but not activated.

The PROFIsafe connection [n] or the slot [n] is not active.

Bit n = 1

The machine data block [n] is active.

The PROFIsafe connection [n] or the slot [n] is active.

Related to:

MD10095: \$MN_SAFE_MODE_MASK, Bit 1

13304	PROFISAFE_IN_SUBS_ENAB_MASK			N01, N10	-	
-	Activation of substitute value output for PROFIsafe input modules			UDWORD	PowerOn	
-						
-	2	0x0, 0x0	0x0, 0x0	0xFFFFFFFF, 0x0000FFFF	7/2	M

Description:

The enable mask is used to enable substitute value output for connections to PROFIsafe input modules.

Bit n = 0

The PROFIsafe input module's process data is transferred to the SPL input data for the connection parameterized in machine data block [n].

The PROFIsafe connection [n] or the slot [n] is active.

Bit n = 1

The substitute values from MD13305 \$MN_PROFISAFE_IN_SUBS are transferred to the SPL input data for the connection parameterized in machine data block [n].

The PROFIsafe connection [n] or the slot [n] is passive.

Related to:

MD10095: \$MN_SAFE_MODE_MASK, Bit 1

MD13305: \$MN_PROFISAFE_IN_SUBS

13305	PROFISAFE_IN_SUBS			N01, N10	-	
-	Substitute values for passive connections to PROFIsafe input modules			UDWORD	PowerOn	
-						
-	48	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0x0	0xFFFFFFFF	7/2	M

Description: For passive connections to PROFIsafe input modules, the substitute values parameterized in the machine data are transferred to the SPL inputs (\$A_INSE) parameterized in MD10388 \$MN_PROFISAFE_IN_ASSIGN[n].

If the SPL inputs parameterized in MD10388 \$MN_PROFISAFE_IN_ASSIGN[n] overlap the SPL inputs of an active slot, the control will modify the passive slot's substitute values in order to prevent duplicate assignment of the SPL inputs. Here, the states of the signals from the active slots have priority.

Related to:

MD10095: \$MN_SAFE_MODE_MASK, bit 1

MD13304: \$MN_PROFISAFE_IN_SUBS_ENAB_MASK

13307	PROFISAFE_IPO_RESERVE			N01, N10	FBSI	
-	Number of IPO cycles without PROFIsafe calculations			DWORD	PowerOn	
SFCO						
-	-	0	0	50	7/1	M

Description: The value specifies the number of IPO cycles for each PROFIsafe cycle, in which no PROFIsafe calculations should be made.

This machine data is only active, if machine data MD10095 \$MN_SAFE_MODE_MASK, bit 3 is set.

The number of IPO cycles must be selected less than the value in machine data MD10098 \$MN_PROFISAFE_IPO_TIME_RATIO.

13308	PROFISAFE_IN_NAME			N01, N10	-	
-	Name of the PROFIsafe input module			STRING	PowerOn	
-						
-	48	-	-	-	7/2	M

Description: A symbolic name can be assigned to each PROFIsafe input module.

If a name has been assigned, this will be displayed in the alarm text instead of the PROFIsafe address.

13309	PROFISAFE_OUT_NAME			N01, N10	-	
-	Name of the PROFIsafe output module			STRING	PowerOn	
-						
-	48	-	-	-	7/2	M

Description: A symbolic name can be assigned to each PROFIsafe output module.

If a name has been assigned, this will be displayed in the alarm text instead of the PROFIsafe address.

13310	SAFE_SPL_START_TIMEOUT			N01, N06	FBSI	
s	Delay in display of alarm 27097			DOUBLE	PowerOn	
-						
-	-	20.	1.	60.	7/2	M

Description: After powerup of the control, alarm 27097 is displayed after the time if the SPL start is not carried out.

13312	SAFE_SPL_USER_DATA			N01	FBSI	
-	User data			UDWORD	PowerOn	
SFCO						
-	4	0x0, 0x0, 0x0, 0x0	0x0	0xFFFFFFFF	7/2	M

Description: User data for storing user-specific information.

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These data are monitored for changes by the data cross-check between NCK and PLC. Changes to these data are detected when included in the checksums, and reported by alarm 27071.

The data must agree with the corresponding PLC data (DB18 DBD256,260,264,268). Deviations between NCK and PLC trigger the programmed stop (Stop D or Stop E) and are displayed via alarm 27090.

13316	SAFE_GLOB_CFG_CHANGE_DATE			N01, N05	FBSI	
-	Date/time of last change of SI-NCK MD			STRING	PowerOn	
-						
-	7	-	-	-	ReadOnly	S

Description: Display data for safety functions:
Date and time of the last configuration change to safety-related NCK machine data.
Changes to the machine data included in the calculation of the checksums MD13318 \$MN_SAFE_GLOB_ACT_CHECKSUM are recorded.

13318	SAFE_GLOB_ACT_CHECKSUM			N01, N05	FBSI	
-	Actual checksum NCK			UDWORD	PowerOn	
-						
-	4	0, 0, 0, 0	0	0xFFFFFFFF	ReadOnly	S

Description: Display data:
This data contains the actual checksum calculated across the current values of the safety-related machine data after power-on or on RESET.
Assignment of the field indices:
Index 0: General safety parameterization, parameterization of the SPL-I/O link
Index 1: SPL user data
Index 2: Enable for I/O link (PROFIsafe and F_SEND/F_RECV)
Index 3: PROFIsafe parameter from the S7 configuration

13319	SAFE_GLOB_DES_CHECKSUM			N01, N05	FBSI	
-	Desired (expected) checksum			UDWORD	PowerOn	
-						
-	4	0, 0, 0, 0	0	0xFFFFFFFF	7/1	M

Description: In this data, the set checksum stored at the time of the last machine acceptance overwrites the current values of the safety relevant machine data.
Assignment of the field indices:
Index 0: General safety parameterization, parameterization of the SPL-I/O link
Index 1: SPL user data
Index 2: Enable for I/O link (PROFIsafe and F_SEND/F_RECV)
Index 3: PROFIsafe parameter from the S7 configuration

13320	SAFE_SRDP_IPO_TIME_RATIO			N01, N10	FBSI	
-	Factor F_DP communication cycle			DWORD	PowerOn	
SFCO						
-	-	10	1	65535	7/2	M

Description: Ratio between interpolator cycle and F_DP cycle, in which the F_DP communication is performed. In the resulting time interval the NCK triggers OB40 on the PLC in order to perform the F_DP communication.
The value for the communication cycle resulting from this MD and the set IPO cycle must not exceed 250ms.

13322	INFO_SAFE_SRDP_CYCLE_TIME	N01, N10, N05	FBSI
s	Maximum F_DP communication cycle	DOUBLE	PowerOn
-			
-	-	0.0	-
-	-	-	-
-	-	ReadOnly	S

Description: Display data:
 Displays the maximum time frame in which F_DP communication with the system coupling is performed that is operated on the PLC via OB40.
 The value is obtained from the interpolation cycle and MD13320 \$MN_SAFE_SRDP_IPO_TIME_RATIO.
 If the set communication cycle in cyclic operation is exceeded, this is also displayed here.
 In the case of a parameterization error (communication cycle exceeds the maximum value of 250.0 ms), the maximum value that can be set is displayed.

13330	SAFE_SDP_ENABLE_MASK	N01, N10	FBSI
-	Enable screen F_SENDDP communication relationships	UDWORD	PowerOn
-			
-	-	0x0	0x0
-	-	0xFFFF	7/2
-	-	M	

Description: Enable screen for the individual F_SENDDP communication links and their SPL connections

13331	SAFE_SDP_ID	N01, N10	FBSI
-	ID for F_SENDDP communication relationship	DWORD	PowerOn
-			
-	16	0, 0, 0, 0, 0, 0, 0, 0...	-32768
-	-	32767	7/2
-	-	M	

Description: Any network unique value as ID for F_SENDDP communication relationship.
 SIMATIC module parameter: DP_DP_ID

13332	SAFE_SDP_NAME	N01, N10	FBSI
-	Name of the F_SENDDP communication link	STRING	PowerOn
-			
-	16	-	-
-	-	7/2	M

Description: A name can be assigned to each F_SENDDP communication link.
 If a name was assigned, this name will be displayed in the alarm text instead of DP_DP_ID.

13333	SAFE_SDP_CONNECTION_NR	N01, N10	FBSI
-	Number of the F_SENDDP SPL connection	BYTE	PowerOn
-			
-	16	0, 0, 0, 0, 0, 0, 0, 0...	0
-	-	16	7/2
-	-	M	

Description: This machine data is used to set the number of the F_SENDDP SPL connection that is parameterized with this data record.
 The number of the F_SENDDP SPL connection is also the index for access to the system variables of the user interface of this F_SENDDP SPL connection.
 This applies to the following system variables:
 - \$A_FSDP_ERR_REAC
 - \$A_FSDP_ERROR
 - \$A_FSDP_SUBS_ON
 - \$A_FSDP_DIAG
 Example:

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MD13333 \$MN_SAFE_SDP_CONNECTION_NR[2] = 3 means that the control and status information of the F_SENDDP SPL connection that is parameterized via data record 2 can be found in the system variables with field index 3.

13334	SAFE_SDP_LADDR			N01, N10	FBSI	
-	Log. base address of the input/output data range F_SENDDP			DWORD	PowerOn	
-						
-	16	288, 288, 288, 288, 288, 288, 288, 288...	288	32767	7/2	M

Description: The logical base address of the input and output data range - parameterized in SIMATIC STEP 7 - through which this F_SENDDP connection communicates.
SIMATIC block parameter: LADDR

13335	SAFE_SDP_TIMEOUT			N01, N10	FBSI	
s	Monitoring time F_SENDDP			DOUBLE	PowerOn	
-						
-	16	0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5...	0.0	60.0	7/2	M

Description: The monitoring time is the time in which F_SENDDP must have sent a new F telegram to F_RECVDP or in which F_RECVDP must have acknowledged a new F telegram. When the monitoring time is exceeded, F_RECVDP outputs replacement values to the SPL.
SIMATIC module parameter: TIMEOUT

13336	SAFE_SDP_ASSIGN			N01, N10	FBSI	
-	Output assignment \$A_OUTSE to F_SENDDP user data			DWORD	PowerOn	
-						
-	16	0, 0, 0, 0, 0, 0, 0, 0...	0	192192	7/2	M

Description: The SPL signals \$A_OUTSE to be transmitted into the F_SENDDP useful data can only be selected area by area.
The SPL area is specified in decimals in aaa bbb format
aaa = area limit 1, SPL signal \$A_OUTSE[aaa]
bbb = area limit 2, SPL signal \$A_OUTSE[bbb]
Example:
\$MN_SAFE_SDP_ASSIGN[0] = 001 004 or alternatively 004 001
The SPL signals \$A_OUTSE[1] to \$A_OUTSE[4] are transferred to the F_SENDDP user data selected in MD13337 \$MN_SAFE_SDP_FILTER[0].

13337	SAFE_SDP_FILTER			N01, N10	FBSI	
-	F user data filter between \$A_OUTSE and F_SENDDP			UDWORD	PowerOn	
-						
-	16	0xFFFF, 0xFFFF, 0xFFFF, 0xFFFF, 0xFFFF, 0xFFFF, 0xFFFF, 0xFFFF...	0x0	0xFFFF	7/2	M

Description: The SPL signals selected via MD13336 \$MN_SAFE_SDP_ASSIGN are transmitted to the F_SENDDP user data signals in the order of the FILTER bits set to 1. The lowest-value SPL signal to the bit position of the F_SENDDP user data of the lowest-value filter bit set to 1, etc. for all SPL signals selected.
Bit x = 1: an SPL signal is transmitted to bit position x of the F_SENDDP user data.
Bit x = 0: no SPL signal is transmitted to bit position x of the F_SENDDP user data.

13338	SAFE_SDP_ERR_REAC			N01, N10	FBSI	
-	Fault reaction F_SENDDP			DWORD	PowerOn	
-						
-	16	0, 0, 0, 0, 0, 0, 0, 0...	0	3	7/2	M

Description: In the case of a communication error the fault reaction defined here is triggered. This value is valid as long as no other value is specified from the SPL via system variable \$A_FSDP_ERR_REAC.

Meaning of the values:

- 0 = alarm 27350 + stop D/E
- 1 = alarm 27350
- 2 = alarm 27351 (displayed only; self-extinguishing)
- 3 = no system reaction

13340	SAFE_RDP_ENABLE_MASK			N01, N10	FBSI	
-	Enable screen F_RECVDP communication relationships			UDWORD	PowerOn	
-						
-	-	0x0	0x0	0xFFFF	7/2	M

Description: Enable screen for the individual F_RECVDP communication links and their SPL connections

13341	SAFE_RDP_ID			N01, N10	FBSI	
-	ID for F_RECVDP communication relationships			DWORD	PowerOn	
-						
-	16	0, 0, 0, 0, 0, 0, 0, 0...	-32768	32767	7/2	M

Description: Any network unique value as ID for F_RECVDP communication relationships.
SIMATIC module parameter: DP_DP_ID

13342	SAFE_RDP_NAME			N01, N10	FBSI	
-	Name of the F_RECVDP communication link			STRING	PowerOn	
-						
-	16	-	-	-	7/2	M

Description: A name can be assigned to each F_RECVDP communication link.
If a name was assigned, this name will be displayed in the alarm text instead of DP_DP_ID.

13343	SAFE_RDP_CONNECTION_NR			N01, N10	FBSI	
-	Number of the F_RECVDP-SPL connection			BYTE	PowerOn	
-						
-	16	0, 0, 0, 0, 0, 0, 0, 0...	0	16	7/2	M

Description: This machine data is used to set the number of the F_RECVDP SPL connection that is parameterized with this data record.
The number of the F_RECVDP SPL connection is also the index for access to the system variables of the user interface of this F_RECVDP SPL connection.

This applies to the following system variables:

- \$A_FRDP_SUBS
- \$A_FRDP_ERR_REAC
- \$A_FRDP_ERROR
- \$A_FRDP_SUBS_ON
- \$A_FRDP_ACK_REQ

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- \$A_FRDP_DIAG
- \$A_FRDP_SENDDP

Example:

MD13343 \$MN_SAFE_RDP_CONNECTION_NR[2] = 3 means that the control and status information of the F_RECVDP SPL connection that is parameterized in data record 2 can be found in the system variables with field index 3.

13344	SAFE_RDP_LADDR			N01, N10	FBSI	
-	Log. base address of the input/output data range F_RECVDP			DWORD	PowerOn	
-						
-	16	288, 288, 288, 288, 288, 288, 288, 288...	288	32767	7/2	M

Description: The logical base address of the input and output data range - parameterized in SIMATIC STEP 7 - through which this F_RECVDP connection communicates.
SIMATIC block parameter: LADDR

13345	SAFE_RDP_TIMEOUT			N01, N10	FBSI	
s	Monitoring time F_RECVDP			DOUBLE	PowerOn	
-						
-	16	0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5...	0.0	60.0	7/2	M

Description: The monitoring time is the time in which F_SENDDP must have sent a new F telegram to F_RECVDP or in which F_RECVDP must have acknowledged a new F telegram. When the monitoring time is exceeded, F_RECVDP outputs replacement values to the SPL.
SIMATIC module parameter: TIMEOUT

13346	SAFE_RDP_ASSIGN			N01, N10	FBSI	
-	Input assignment F_RECVDP user data to \$A_INSE			DWORD	PowerOn	
-						
-	16	0, 0, 0, 0, 0, 0, 0, 0...	0	192192	7/2	M

Description: The SPL signals \$A_INSE to be supplied from the F_RECVDP useful data can only be selected area by area.
The SPL area is specified in decimals in aaa bbb format
aaa = area limit 1, SPL signal \$A_INSE[aaa]
bbb = area limit 2, SPL signal \$A_INSE[bbb]
Example:
\$MN_SAFE_RDP_ASSIGN[0] = 001 004 or alternatively 004 001
The F_RECVDP user data selected in MD13347 \$MN_SAFE_RDP_FILTER[0] are transferred to the SPL signals \$A_INSE[1] to \$A_INSE[4].

13347	SAFE_RDP_FILTER			N01, N10	FBSI	
-	F user data filter between F_RECVDP and \$A_INSE			UDWORD	PowerOn	
-						
-	16	0xFFFF, 0xFFFF, 0xFFFF, 0xFFFF, 0xFFFF, 0xFFFF, 0xFFFF, 0xFFFF...	0x0	0xFFFF	7/2	M

Description: The F_RECVDP user data signals the filter bits of which are set to 1 are transmitted to the SPL signals via MD13346 \$MN_SAFE_RDP_ASSIGN. The lowest-value F_RECVDP user data signal to the lowest-value selected SPL signal etc. for all F_RECVDP user data selected.

Bit x = 1: the F_RECVDP user data signal of bit position x is transmitted as SPL signal.

Bit x = 0: the F_RECVDP user data signal of bit position x is not transmitted as SPL signal.

13348	SAFE_RDP_ERR_REAC			N01, N10	FBSI	
-	Fault reaction F_RECVDP			DWORD	PowerOn	
-						
-	16	0, 0, 0, 0, 0, 0, 0, 0...	0	3	7/2	M

Description: In the case of a communication error, the fault reaction defined here is triggered. This value is valid as long as no other value is specified from the SPL via system variable \$A_FRDP_ERR_REAC.

Meaning of the values:

- 0 = alarm 27350 + stop D/E
- 1 = alarm 27350
- 2 = alarm 27351 (displayed only; self-clearing)
- 3 = no system reaction

13349	SAFE_RDP_SUBS			N01, N10	FBSI	
-	Replacement values in case of error			UDWORD	PowerOn	
-						
-	16	0, 0, 0, 0, 0, 0, 0, 0...	0	0xFFFF	7/2	M

Description: In the case of a communication error, the replacement values defined here are activated in the system variables \$A_INSE assigned to this F_RECVDP-SPL connection. This value is valid as long as no other value is specified from the SPL via system variable \$A_FRDP_SUBS.

13370	SAFE_MODE			N01	FBSI	
-	Safety operating mode			UBYTE	PowerOn	
-						
-	-	0	0x00	0x03	7/2	M

Description: MD to make a distinction between the safety operating modes:
 0 = Safety operating mode "SINUMERIK Safety Integrated (SPL)"
 1 = Safety operating mode "SINUMERIK Safety Integrated (Drive Based)"
 2 = Reserved
 3 = Safety operating mode "SINUMERIK Safety Integrated plus (F-PLC)"
 3 = Safety operating mode "SINUMERIK Safety Integrated (F-PLC)"

13372	SAFE_PS_DRIVE_LOGIC_ADDR			N01, N04	-	
-	Logical basis addresses, PROFIsafe drive			DWORD	PowerOn	
-						
-	31	1008, 992, 976, 960, 944, 928, 912, 896...	0	16383	7/2	M

Description: Logical basis addresses for PROFIsafe communication between the F-PLC and drive.

13374	SAFE_INFO_DRIVE_LOGIC_ADDR			N01, N04	-	
-	Logical basis addresses, SIC/SCC			DWORD	PowerOn	
-						
-	31	5800, 5816, 5832, 5848, 5864, 5880, 5896, 5912...	0	16383	7/2	M

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Description: Logical base addresses for SIC/SCC communication between NCK and drive.
The standard values of the logical base addresses correspond to the values from the S7 default configuration.

13376	SAFE_INFO_TELEGRAM_TYPE			N01, N04	-	
-	SIC/SCC telegram type			DWORD	PowerOn	
-						
-	31	701, 701, 701, 701, 701, 701, 701, 701...	0	999	7/2	M

Description: Number of the SIC/SCC telegram type

14504	MAXNUM_USER_DATA_INT			N03	P3	
-	Number of user data (INT)			DWORD	PowerOn	
-						
-	-	0	0	256	7/2	M

Description: Number of NC/PLC user data of type INT

14506	MAXNUM_USER_DATA_HEX			N03	P3	
-	Number of user data (HEX)			DWORD	PowerOn	
-						
-	-	0	0	256	7/2	M

Description: Number of NC/PLC user data (HEX)

14508	MAXNUM_USER_DATA_FLOAT			N03	P3	
-	Number of user data (FLOAT)			DWORD	PowerOn	
-						
-	-	0	0	64	7/2	M

Description: Number of NC/PLC user data of type FLOAT

14510	USER_DATA_INT			N03	P3, "PLC-Maschinendaten", P4, "PLC-Maschinendaten"	
-	User data (INT)			DWORD	PowerOn	
-						
-	256	0, 0, 0, 0, 0, 0, 0, 0...	-32768, -32768, -32768, -32768, -32768, -32768, -32768, -32768...	32767, 32767, 32767, 32767, 32767, 32767, 32767, 32767...	7/2	I

Description: User data can be read from the DB20 (user data block) in the PLC user program.

14512	USER_DATA_HEX			N03	P3, "PLC-Maschinendaten", P4, "PLC-Maschinendaten"	
-	User data (HEX)			UDWORD	PowerOn	
-						
-	256	0, 0, 0, 0, 0, 0, 0, 0...	0	0x0FF	7/2	I

Description: User data can be read from the DB20 (user data block) in the PLC user program.

14514	USER_DATA_FLOAT			N03	P3, "PLC-Maschinendaten", P4, "PLC-Maschinendaten"	
-	User data (FLOAT)			DOUBLE	PowerOn	
-						
-	64	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-3.40e38	3.40e38	7/2	I

Description: User data can be read from the DB20 (user data block) in the PLC user program.

15700	LANG_SUB_NAME			N01	K1	
-	Name for substitution subroutine			STRING	PowerOn	
-						
-	-	-	-	-	7/2	M

Description: Name of the user program called on the basis of a substitution configured by MD30465 \$MA_AXIS_LANG_SUB_MASK.
The user program is called with the path configured by MD15702 \$MN_LANG_SUB_PATH.

15702	LANG_SUB_PATH			N01	K1	
-	Call path for substitution subroutine			BYTE	PowerOn	
-						
-	-	0	0	2	7/2	M

Description: Path with which the user program set by MD15700 \$MN_LANG_SUB_NAME is called on the basis of a substitution configured by MD30465 \$MA_AXIS_LANG_SUB_MASK:

0: /_N_CMA_DIR (default)
1: /_N_CUS_DIR
2: /_N_CST_DIR

15710	TCA_CYCLE_NAME			N09	K1, FBWsl	
-	Program name for replacement of the TCA command			STRING	PowerOn	
-						
-	-	-	-	-	7/2	M

Description: Program name for the replacement program when calling the TCA command.
If the TCA command is programmed in a part program block, then the subprogram defined in MD15710 \$MN_TCA_CYCLE_NAME is called at the end of the block. The programmed tool can be requested in the replacement program via the system variables \$C_TS_PROG / \$C_TS, the Duplo number via \$C_DUPLO_PROG / \$C_DUPLO and the toolholder/spindle number via \$C_THNO_PROG / \$C_THNO. The system variable \$C_TCA returns the value TRUE in the replacement program. Since the replacement takes place at the end of the block, the system variable \$P_SUB_STAT in the replacement program provides the value 2
If MD15710 \$MN_TCA_CYCLE_NAME contains an empty string, the replacement is deactivated (default).

16501	CADAPT_MODE			EXP, N01	-	
-	Activation behavior of the adaptation table			BYTE	PowerOn	
-						
-	100	0, 0, 0, 0, 0, 0, 0, 0...	0	2	1/1	M

Description: Activation detection of the CADAPT adaptation table
Value 0 = Adaptation table is inactive
Value 1 = Adaptation table is permanently active
Value 2 = Adaptation table can be activated and deactivated temporarily by part program

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16502	CADAPT_INPUT	EXP, N01	-
-	Input variable for adaptation table	BYTE	PowerOn
-			
-	100	1, 1, 1, 1, 1, 1, 1, 1...	1 3 1/1 M

Description: Selection of the input variable for the adaptation table
Value 1 = input value (moment of inertia for the mass) for the load adaptation
Value 2 = input value (axis position) for the position adaptation
Value 3 = input value (axis velocity or speed) for the speed adaptation

16503	CADAPT_OUTPUT	EXP, N01	-
-	Output variable for adaptation table	BYTE	PowerOn
-			
-	100	0, 0, 0, 0, 0, 0, 0, 0...	0 36 1/1 M

Description: Selection of the output variable of the adaptation table for dynamic or control parameters
Value 0 = no output variable no adaptation effective
Value 1 = axis acceleration DYNNORM
Value 2 = axis acceleration DYNPOS
Value 3 = axis acceleration DYNROUGH
Value 4 = axis acceleration DYNSEMIFIN
Value 5 = axis acceleration DYNFINISH
Value 6 = axis acceleration DYNPREC
Value 11 = Position controller gain
Value 12 = Moment of inertia or mass of the torque feedforward control
Value 21 = adaptation factor ADAPT1 for drive parameters
Value 22 = adaptation factor ADAPT2 for drive parameters
Value 23 = adaptation factor ADAPT3 for drive parameters
Value 24 = adaptation factor ADAPT4 for drive parameters
Wert 31 = axis jerk DYNNORM
Wert 32 = axis jerk DYNPOS
Wert 33 = axis jerk DYNROUGH
Wert 34 = axis jerk DYNSEMIFIN
Wert 35 = axis jerk DYNFINISH
Wert 36 = axis jerk DYNPREC

16504	CADAPT_INPUT_AX	EXP, N01	-
-	Machine axis number of the input variable	BYTE	PowerOn
-			
-	100	0, 0, 0, 0, 0, 0, 0, 0...	0 31 1/1 M

Description: Value = 0: no machine axis assigned, adaptation table is inactive
Value > 0: machine axis number for the input variable of the adaptation table

16505	CADAPT_OUTPUT_AX	EXP, N01	-
-	Machine axis number of the output variable	BYTE	PowerOn
-			
-	100	0, 0, 0, 0, 0, 0, 0, 0...	0 31 1/1 M

Description: Value = 0: no machine axis assigned, adaptation table is inactive
Value > 0: machine axis number for the output variable of the adaptation table

16506	CADAPT_INPUT_VALUE_1			EXP, N01	-	
-	Input value 1 of the adaptation table			DOUBLE	NEW CONF	
-						
-	100	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	1/1	M

Description: Input value 1 of the adaptation table

16507	CADAPT_INPUT_VALUE_2			EXP, N01	-	
-	Input value 2 of the adaptation table			DOUBLE	NEW CONF	
-						
-	100	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	1/1	M

Description: Input value 2 of the adaptation table

16508	CADAPT_OUTPUT_VALUE_1			EXP, N01	-	
-	Output value 1 of the adaptation table			DOUBLE	NEW CONF	
-						
-	100	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0...	0.0	30.0	1/1	M

Description: Output value 1 of the adaptation table

16509	CADAPT_OUTPUT_VALUE_2			EXP, N01	-	
-	Output value 2 of the adaptation table			DOUBLE	NEW CONF	
-						
-	100	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0...	0.0	30.0	1/1	M

Description: Output value 2 of the adaptation table

16800	ROOT_KIN_ELEM_NAME			EXP, N01	K1	
-	Name of the root chain element			STRING	Reset	
-						
-	-	ROOT	-	-	7/2	M

Description: Specifies the name of the chain element, which, for a machine description using kinematic chains, is the only one that extends from the zero point of the global coordinate system (root chain element).

16900	COLLISION_EXT_FUNCTION_MASK			EXP	-	
-	Parameterization of external collision check			UDWORD	PowerOn	
-						
-	-	0x20	0	0x3F	7/2	M

Description: Bit mask for parameterization of external collision check

16901	COLLISION_EXT_PREVIEW_TIME			EXP	-	
s	Preview time for external collision check			DOUBLE	PowerOn	
-						
-	-	0.0	0.000	100.0	7/2	M

Description: The time applies during operation provided that enough data is available for a prediction. When a movement is started, the movement preview starts at the current position, and returns predictions in the largest possible increments until the preview time is reached.

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16902	COLLISION_EXT_PREVIEW_STEP			EXP	-	
s	Preview time step for external collision check			DOUBLE	PowerOn	
-						
-	-	0.0	0.000	100.0	7/2	M

Description: When a movement is started, the movement preview starts at the current position, and returns predictions in the configured increment until the preview time COLLISION_EXT_PREVIEW_TIME is reached.

16903	COLLISION_EXT_TIMEOUT			EXP	-	
s	Timeout for external collision check			DOUBLE	PowerOn	
-						
-	-	0.0	0.000	100.0	7/2	M

Description: Timeout for communication with an external system to avoid collisions.

16904	COLLISION_EXT_STOP_TIME			EXP	-	
s	Maximum braking time for external collision avoidance			DOUBLE	PowerOn	
-						
-	-	0.0	0.000	100.0	7/2	M

Description: If the external collision avoidance triggers a stop, the machine must come to a standstill within the set time (identical to response to STOP D).

16905	COLLISION_EXT_NUM_PACKETS			EXP	-	
-	Number of preview packages per Ipo cycle			UDWORD	PowerOn	
-						
-	-	1	1	100	7/2	M

Description: For each Ipo cycle, a package with current positions and the configured number of preview packages is created.

16906	COLLISION_EXT_CFG_MASK			EXP	-	
-	Parameterization of external collision check			UDWORD	Reset	
-						
-	-	0x1	0	0x1	7/2	M

Description: Bit mask for parameterization of external collision check

17000	EXTENSIONS_OF_BIN_FILES			EXP	-	
-	Extensions of binary files			STRING	PowerOn	
-						
-	20	JPG, GIF, PNG, BMP, PDF, ICO, HTM, CLC...	-	-	2/2	M

Description: Extensions of files which are saved in the binary format in the passive NCKs file system.
For these files, there are no restrictions regarding the content.
For ASCII content (e.g. HTM) any line length is possible; this is not permissible for NC programs (e.g. MPF, SPF and DEF).
Each extension must comprise precisely three uppercase letters.

17400	OEM_GLOBAL_INFO	A01, A11	-
-	OEM version information	STRING	PowerOn
-			
-	5	-	-

Description: A version information freely available to the user
(is indicated in the version screen)
Note: MD17400 \$MN_OEM_GLOBAL_INFO[0] is used with functions such as logbook,
licensing, etc. to store the machine identity.

17410	RMR_ID_INFO	N05	-
-	RMR version information	STRING	PowerOn
-			
-	10	-	-

Description: RMR version information

17500	MAXNUM_REPLACEMENT_TOOLS	N09	FBWsl
-	Maximal number of tools in a tool group	DWORD	PowerOn
-			
-	-	0	0

Description: Only relevant if the tool management (TMMA) function or the tool monitoring function (TMMO) is active.
Maximum number of tools which have the same value (tool name) for system parameter \$TC_TP2.
0: There is no monitoring, that is there can be any number of tools in a group.
1: There can only be exactly 1 tool with one specific tool name.
2: There can only be exactly 2 tools with one specific tool name, therefore there can be 1 replacement tool.
n: There can only be exactly n tools with one specific tool name, therefore there can be n-1 replacement tools.
Related to:
MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK,
MD20310 \$MC_TOOL_MANAGEMENT_MASK

17504	MAX_TOOLS_PER_MULTITOOL	N02, N09	-
-	Multitool function. Maximum number of tool locations per multitool.	DWORD	PowerOn
-			
-	-	6	2

Description: "Multiple tools in one magazine location" function (multitool). Maximum number of locations / tools per multitool.

17510	TOOL_UNLOAD_MASK	N09	FBWsl
-	Behavior of tool data when unloading	UDWORD	PowerOn
-			
-	-	0	0

Description: When unloading a tool, certain tool data can be set to store fixed values.
Bit no. Bit value HEX Meaning
0 0 Tool status 'active' remains unchanged.
1 0x1 Tool status 'active' is deleted (\$TC_TP8, Bit 0).

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1 0 Tool status 'was in use' remains unchanged.
 1 0x2 Tool status 'was in use' is deleted (\$TC_TP8, Bit 7).
 2 0 Tool parameter \$TC_TP10 remains unchanged.
 1 0x4 Tool parameter \$TC_TP10 is set to zero. That is, the tool replacement change strategy is reset.
 3 0 Tool parameter \$TC_TP11 remains unchanged.
 1 0x8 Tool parameter \$TC_TP11 is set to zero. That is, the assignment to the tool subgroup is resolved.

17515	TOOL_RESETMON_MASK			N09	-	
-	Tool data behavior with RESETMON			UDWORD	PowerOn	
-						
-	-	0x14	0	0x49F	7/2	M

Description:

The 5th parameter of the RESETMON command defines which tool status is to be reset. If the 5th parameter is omitted, it is replaced by the value in this MD. With the PI service "_N_TRESMON", work is always done with this value.

In that case, the bits are always assigned as the bits in the tool status \$TC_TP8[x].

Bit no.: 0 Bit value: 0 hex value: -

Meaning: Tool status "active" remains unchanged

Bit no.: 0 Bit value: 1 hex value: 'H1'

Meaning: Tool status "active" is deleted

Bit no.: 1 Bit value: 0 hex value: -

Meaning: Tool status "released" remains unchanged

Bit no.: 1 Bit value: 1 hex value: 'H2'

Meaning: Tool status "released" is set

Bit no.: 2 Bit value: 0 hex value: -

Meaning: Tool status "locked" remains unchanged

Bit no.: 2 Bit value: 1 hex value: 'H4'

Meaning: Tool status "locked" is deleted, if this is permitted by the monitoring data and the 4th parameter is set correspondingly.

Bit no.: 3 Bit value: 0 hex value: -

Meaning: Tool status "measure" remains unchanged

Bit no.: 3 Bit value: 1 hex value: 'H8'

Meaning: Tool status "measure" is set.

Bit no.: 4 Bit value: 0 hex value: -

Meaning: Tool status "prewarning limit" remains unchanged

Bit no.: 4 Bit value: 1 hex value: 'H10'

Meaning: Tool status "prewarning limit" is deleted, if this is permitted by the monitoring data and the 4th parameter is set.

Bit no.: 5 Not permitted (tool status "tool is being changed")

Bit no.: 6 Not permitted (tool status "tool is fixed-location-coded")

Bit no.: 7 Bit value: 0 hex value: -

Meaning: Tool status "was in use" remains unchanged

Bit no.: 7 Bit value: 1 hex value: 'H80'

Meaning: Tool status "was in use" is deleted

Bit no.: 8 Bit value: 0 Not permitted (tool status "is in retract")

Bit no.: 9 Bit value: 0 hex value: -

Meaning: Tool status "locked is ignored" remains unchanged

Bit no.: 9 Bit value: 1 hex value: 'H200'

Meaning: Tool status "locked is ignored" is deleted

Bit no.: 10 Bit value: 0 hex value: -
 Meaning: Tool status "to unload" remains unchanged
 Bit no.: 10 Bit value: 1 hex value: 'H400'
 Meaning: Tool status "to unload" is deleted
 Bit no.: 11 Not permitted (tool status "to load")
 Bit no.: 12 Bit value: 0 Not permitted (tool status "master tool")
 Bit no.: 13 Not permitted (reserved)
 The default setting corresponds to the previous behavior.
 Impermissible bits are filtered and not displayed in the limit mask.
 Bits not defined here are ignored when writing the machine data.

17520	TOOL_DEFAULT_DATA_MASK			N09	FBWsl	
-	Create new tool: default settings			UDWORD	PowerOn	
-						
-	-	0	0	0x1F	7/2	M

Description:

When defining a tool for the first time (bits 0, 1, 2) or the magazine locations (bit 3) for the first time, certain data of the tool can be set to fixed default values. Bit 4 can couple the magazine location status 'Overlapping allowed' ('H2000') to the value of the magazine location status 'disabled' ('H1'). This can prevent simple applications from dealing with data which do not necessarily have to be assigned individual values.

Bit no.: 0 Bit value: 0 Hex value: -
 Meaning: Default value of tool status (\$TC_TP8), bit1=0 ='not released'

Bit no.: 0 Bit value: 1 Hex value: 'H1'
 Meaning: Default value of tool status (\$TC_TP8), bit1=1 ='released'

Bit no.: 1 Bit value: 0 Hex value: -
 Meaning: Default value of tool status (\$TC_TP8), bit6=0 ='not fixed-location-coded'

Bit no.: 1 Bit value: 1 Hex value: 'H2'
 Meaning: Default value of tool status (\$TC_TP8), bit6=1 ='fixed-location-coded'

Bit no.: 2 Bit value: 0 Hex value: -
 Meaning: The tool is only accepted in the tool group when the explicit write command is used for the tool name. Only then can it be loaded via programming.

Bit no.: 2 Bit value: 1 Hex value: 'H4'
 Meaning: The tool is automatically accepted in the tool group corresponding to the tool name when it is defined for the first time. The tool can then be changed using the default name ("t" = t-No.).

The term 'tool name' (\$TC_TP2) can be hidden from the user. (This only makes sense if you do not use replacement tools or if the tool name is not written explicitly, as this may give rise to data consistency problems.)

Bit no.: 3 Bit value: 0 Only with TMMG: Default value of location type (\$TC_TP7)=9999=not defined

Bit no.: 3 Bit value: 1 Hex value: 'H8'
 Meaning: Only with TMMG: Default value of location type (\$TC_TP7) = 1 and consequently the default value of magazine location type (\$TC_MPP2)=1. This means that all magazine locations can accept all tools.

Bit no.: 4 Bit value: 0 Hex value: -
 Meaning: Only with TMMG + active consider adjacent location: With SET/RESET of the magazine location status 'disabled', the magazine location status 'Overlapping allowed' remains unchanged.

Bit no.: 4 Bit value: 1 Hex value: 'H10'
 Meaning: Only with TMMG + active consider adjacent location: With SET/RESET of the magazine location status 'disabled', the magazine location status 'Overlapping allowed' is automatically SET/RESET.

3.3 NC machine data

17530	TOOL_DATA_CHANGE_COUNTER			EXP, N01	-	
-	Mark tool data change for HMI			UDWORD	PowerOn	
-						
-	-	0x1F	0	0x3F	7/2	M

Description:

HMI display support. This data enables individual data to be explicitly taken into account or not taken into account in the OPI variables (block C/S) toolCounter, toolCounterC, toolCounterM.

Bit no. : 0 Bit value: 0 Hex value: -

Meaning: Changes to the values of the tool status (\$TC_TP8) are not taken into account in toolCounterC

Bit no. : 0 Bit value: 1 Hex value: 'H1'

Meaning: Changes to the values of the tool status (\$TC_TP8) are taken into account in toolCounterC

Bit no. : 1 Bit value: 0 Hex value: -

Meaning: Changes to the values of the remaining number of tools (\$TC_MOP4) are not taken into account in toolCounterC

Bit no. : 1 Bit value: 1 Hex value: 'H2'

Meaning: Changes to the values of the remaining number of tools (\$TC_MOP4) are taken into account in toolCounterC

Bit no. : 2 Bit value: 0 Hex value: -

Meaning: Changes to the values of the tool data are not taken into account in the tool data update service

Bit no. : 2 Bit value: 1 Hex value: 'H4'

Meaning: Changes to the values of the tool data are taken into account in the tool data update service

Bit no. : 3 Bit value: 0 Hex value: -

Meaning: Changes to the values of the magazine data are not taken into account in the tool data update service

Bit no. : 3 Bit value: 1 Hex value: 'H8'

Meaning: Changes to the values of the magazine data are taken into account in the tool data update service.

Bit no. : 4 Bit value: 0 Hex value: -

Meaning: Changes to the values of the ISO tool offset data are not taken into account in the tool data update service

Bit no. : 4 Bit value: 1 Hex value: 'H10' Meaning: Changes to the values of the ISO tool offset data are taken into account in the tool data update service

Bit no.: 5 Bit value: 0 Hex value: -

Meaning: Changes to the value of adapter typel are stated as changes of the T/AD and T/ADN blocks.

Bit no.: 5 Bit value: 1 Hex value: 'H20' Changes to the value of adapter typel are stated as changes of the T/ADN block only..

The statements "Changes to the values of the tool status" and "Changes to the values of the remaining number of tools" refer not only to value changes effected by internal processes in the NC but also to value changes produced by writing the corresponding system variables.

17540	TOOLTYPES_ALLOWED			N09	-	
-	Permitted tool types			UDWORD	PowerOn	
-						
-	-	0x3FF	0	0x3FF	7/2	M

Description:

Definition of the tool types permitted in NCK (see \$TC_DP1) with the tool offset selection. That is, tools of any type may be loaded in the NCK; but only the tool types defined here may be defined in the offset defining tool. A bit value = 1 means that the named tool type range is permitted for the offset selection. A bit value = 0 means that the named tool type range is rejected with an offset-capable alarm in the case of an attempted offset selection of a cutting edge of this type. The special value = 0, 9999 for the tool type means "undefined". Tool offsets with this tool type value generally cannot be selected.

Bit no.: 0 value 0x1 means: Tool types 1 to 99 permitted

Bit no.: 1 value 0x2 means: Tool types 100 to 199 permitted (milling tools)

Bit no.: 2 value 0x4 means: Tool types 200 to 299 permitted (drilling tools)

Bit no.: 3 value 0x8 means: Tool types 300 to 399 permitted

Bit no.: 4 value 0x10 means: Tool types 400 to 499 permitted (grinding tools)

Bit no.: 5 value 0x20 means: Tool types 500 to 599 permitted (turning tools)

Bit no.: 6 value 0x40 means: Tool types 600 to 699 permitted

Bit no.: 7 value 0x80 means: Tool types 700 to 799 permitted

Bit no.: 8 value 0x100 means: Tool types 800 to 899 permitted

Bit no.: 9 value 0x200 means: Tool types 900 to 999 permitted

Related to:

MD18100 \$MN_MM_NUM_CUTTING_EDGES_IN_TOA

17600	DEPTH_OF_LOGFILE_OPT			EXP, N01	-	
-	Depth of log memory optimization in REORG			DWORD	Reset	
-						
-	-	5	0	300	3/3	U

Description:

The depth of memory optimization in the REORG log file

(=search depth to determine if a parameter to be written is already included in the REORG log file).

The value of the machine data can be increased if alarm 15110 occurs during program execution and if this alarm is to be avoided.

(Alternatively, the size of the REORG log file can be increased with MD28000 \$MC_MM_REORG_LOG_FILE_MEM, provided that the operator has the access rights required. This procedure should generally be preferred.)

Value

0 = No optimization,

That is each write operation creates an input into the REORG log file. Writing a variable value is therefore very time-efficient, but requires more memory.

0 < n <= Maximum value

When a new variable value is written, the n previously entered write operations (but maximally up to the previous indicatable block) are checked to determine if the parameter now to be written has already been written in the past. If this is the case, a new entry is not made in the REORG log file.

If this is not the case, an entry is made. A variable value can therefore be written in a very memory-efficient way, but requires more time.

Example:

MD17600 \$MN_DEPTH_OF_LOGFILE_OPT is assumed to be 5 and the following would be a typical program sequence:

```
x10      ; Executable NC block
r1=1     ; The first write command since x10
          ; -> Save old value in log file. 1st entry
r2=1     ; Determine that r2 is not yet included
          ; -> Save old value in log file. 2nd entry
r3=1     ; Determine that r3 is not yet included
```

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```

; -> Save old value in log file. 3rd entry
r4=1 ; Determine that r4 is not yet included
; -> Save old value in log file. 4th entry
r5=1 ; Determine that r5 is not yet included
; -> Save old value in log file. 5th entry
r6=1 ; Determine that r6 is not yet included
; -> Save old value in log file. 6th entry
r2=1 ; Determine that r2 is already included
; (5th oldest entry) -> no renewed saving
r3=1 ; Determine that r3 is already included
; (4th oldest entry) -> no renewed saving
r1=2 ; As MD17600 $MN_DEPTH_OF_LOGFILE_OPT = 5 it is not detected that
; r1 is already included
; (6th oldest entry) -> save old value in log file.
; 7th entry
x20 ; Executable NC block
r1=3 ; The first write command since x20
; -> Save old value in log file. 1st entry
r1=4 ; Determine that r1 is already included
; (Only one entry) -> no renewed saving

```

The setting of the MD is particularly useful if a small number of various parameters are written frequently (e.g. in a loop) and if alarm 15110 occurs for this reason.

17610	DEPTH_OF_LOGFILE_OPT_PF			EXP, N01	-	
-	Depth of the PowerFail log memory optimization			DWORD	Reset	
-						
-	3	100, 10, 30	0	1000	1/1	M

Description:

Depth of the memory optimization in the PowerFail log file (=search depth, to find out whether a parameter to be written is already included in the PowerFail log file).

It is possible to increase the value of the machine data if

alarm 15120 occurs during program processing and if you wish to avoid it.

(Alternatively, you can increase the size of the PowerFail log file itself by means of MD18232 \$MN_MM_ACTFILESYS_LOG_FILE_MEM, if you have the necessary access right

and if the required memory is available.

Value

0 = same effect as value 1.

Writing of a variable value is therefore very time-efficient at the cost of the required memory.

0 < n <= Maximum value

= Writing of a new variable value leads, prior to saving of the new variable value in the PowerFail log file, to the last n write operations which have been being checked to see whether the new parameter to be written has already been written once.

If yes, the new value is not entered again in the PowerFail log file, but the old value is overwritten with the new one.

If no, the new value is entered.

At the cost of the required time, writing of a variable value can therefore be designed very memory-efficiently.

Changing of the data can shorten/increase the time requirement of the present application.

Changing of the data can fill the available log buffers faster/more slowly.

Frequent occurring of alarm 15120 -> Increase values for index=0,1,2.

The value indicating the index to be changed can be deducted from the parameter of alarm 15120:

if it is the value for MD18232 \$MN_MM_ACTFILESYS_LOG_FILE_MEM[0], then increase the value for index 0;

or increase MD18232 \$MN_MM_ACTFILESYS_LOG_FILE_MEM[0] itself.

Index Meaning

0 Search depth in preprocessing buffer

1 Search depth in buffer for data changes within the range of tool change

2 Search depth in buffer for data changes of main processing (especially synchronized actions)

17900	VDI_FUNCTION_MASK			EXP, N09	H1	
-	Setting to VDI signals			UDWORD	PowerOn	
-						
-	-	0x0	0	0x1	7/2	M

Description:

Settings for VDI signals:

Bit 0 == 0:

The VDI signals traverse command + / traverse command - are already issued if there is a traverse request (default).

Bit 0 == 1:

The VDI signals traverse command + / traverse command - are issued only if the axis actually traverses.

Bit 1 == 0:

The VDI interface is written to the NCK at the end of the IPO cycle.

Bit 1 == 1:

The VDI interface is written to the NCK at the start of the IPO cycle.

17950	IS_AUTOMATIC_MEM_RECONFIG			EXP, N02	-	
-	System: automatic memory reconfiguration			BOOLEAN	PowerOn	
-						
-	-	TRUE	-	-	3/1	M

Description:

Value = 0 : If machine data that redefines the buffered memory is modified, then generally the alarm 4400 is output which indicates that the user data will be deleted the next the software is started.

Value = 1 : If machine data that redefines the buffered memory is modified, then generally the alarm 4400 is not output. This means the data is retained the next time the software is started.

The preassigned value is selected model-specifically and generally it must not be changed.

17951	AUTOMATIC_MEM_RECONFIG_FILE			EXP	-	
-	Path and file name for internal data backup			STRING	PowerOn	
-						
-	-	/siemens/sinumerik/ sys_cache/nck/ content.reconfig	-	-	ReadOnly	S

Description:

File name with file path where the data backup file is stored if the persistent memory is reconfigured.

3.3 NC machine data

18030	HW_SERIAL_NUMBER			N05	-	
-	Hardware series number			STRING	PowerOn	
-						
-	1	-	-	-	ReadOnly	M

Description: During power on of the control, a unique hardware serial number is stored in this MD:

- For Powerline series modules this is the serial number of the NCU module
- For Solutionline series modules this is the serial number of the CF card, or the unique number of the MCI module in the case of PC-based systems

This data cannot be written.

18040	VERSION_INFO			N05	-	
-	Version and product information			STRING	PowerOn	
-						
-	9	-	-	-	ReadOnly	M

Description: Version and model information for the system software component NCK

```
[0]:'Software component name[SI version]' - value: "Numeric Control NCK" (can be overwritten as from "trol NCK" with 'SIxxx'. 'SI' stands for Safety Integrated, 'xxx' for the SI version)
[1]:'Version (and date of the NCK installation on the target system)'
[2]:'Date and time of the NCK program generation'
[3]:'Name of the model and submodel' - values: 808d-me42, ... 828d-me42, ... 840DSL731,... 840D732, ...
[4]:'Hardware type' - values for NCK in NCU: IDC, SOC2, ... simulations NCK: PC (Windows), PC (Linux), ... HOST development NCK: HOST development
[5]:'Product type' - values: machine tool, simulation, simulation development
[6]:'Subscaling 1' - values: file name. different variants of a model can have data (properties) deviating from those of the model.
[7]:'Subscaling 2' - values: file name. different variants of a model can have data (properties) deviating from those of the model.
[8]:'Subscaling 3' - values: file name. different variants of a model can have data (properties) deviating from those of the model.
Applies to indices 6,7,8: Prerequisite for a value input is that the file exists when the NCK starts.
Example for 840dsl on NCU hardware:
[0]:"Numeric Control NCK" (without NC-based Safety Integrated)
[0]:"Numeric ControSI112" (with NC-based Safety Integrated)
[1]:"112.00.00 "
[2]:"22/02/16 09:28:03"
[3]:"840DSL731"
[4]:"SOC2"
[5]:"machine tool"
[6]:""
[7]:""
[8]:""
Example for '840d virtual commissioning' (a simulation product) on a Windows computer:
[0]:"Numeric Control NCK" (without Safety Integrated)
[1]:"112.00.00"
[2]:"31/01/16 08:58:43"
```



```
[3]:"840D732"
[4]:"PC (Windows)"
[5]:"simulation"
[6]:"840evoVC_addon"
[7]:""
[8]:""
```

18042	CC_VERSION_INFO			N05	-	
-	Compile cycle version			STRING	PowerOn	
-						
-	10	-	-	-	7/2	M

Description: Version identifiers of the compile cycles

18045	EES_MODE_INFO			N05	-	
-	Mode in which the EES function works.			BYTE	Immediately	
-						
-	-	0	-	-	ReadOnly	M

Description: Mode in which the function "Execution from External Storage" works.

Bit0 (LSB) = 1
CNC user memory expanded (local EES active)

Bit1 = 1
Execution from external memory (global EES is active)

Bit2 = 1
A global part program memory has been set up on an external memory.

See also:

OD19730 \$ON_HMI_FUNCTION_MASK[0] bit 5 "CNC user memory expanded"

OD19334 \$ON_SYSTEM_FUNCTION_MASK bit 9 "Execute from external memory"

OD19334 \$ON_SYSTEM_FUNCTION_MASK bit 12 "Additional HMI user memory on CF card of the NCU"

18050	INFO_FREE_MEM_DYNAMIC			N01, N02, N05	S7	
-	Display data of the free volatile memory (bytes)			DWORD	PowerOn	
-						
840dsl-71	-	12582912	0	36490445	ReadOnly	S
840dsl-72	-	8808039	0	36490445	ReadOnly	S
840dsl-73	-	8808039	0	36490445	ReadOnly	S
840dsl-711	-	48234496	0	36490445	ReadOnly	S
840dsl-721	-	23068672	0	36490445	ReadOnly	S
840dsl-731	-	36490445	0	36490445	ReadOnly	S

Description: The data is used for

a) the manufacturer's presetting of the memory size [bytes] available to the user for each channel after cold restart.

b) displaying the available volatile memory [bytes]

The data cannot be written.

The contents of the data state how much volatile memory is available per channel for increasing the volatile user data storage area via MD.

It is advisable to check whether the available memory is sufficient before increasing, for example, the number of LUDs, number of functional parameters, or the size of the IPO buffer.

If necessary, proceed step by step:

3.3 NC machine data

- increase by 1, note (old) value
- NCK startup (= 'warm start' or NCK reset), read off new value
- memory requirement = new value - old value

On the first NCK startup or cold restart of the control (=deletion of user data), MD18210 \$MN_MM_USER_MEM_DYNAMIC is set by the NCK software so that at least the preset value results for MD18050 \$MN_INFO_FREE_MEM_DYNAMIC.

That is, the value is automatically increased if the initial value of MD18210 \$MN_MM_USER_MEM_DYNAMIC is too low.

The following also applies to multichannel systems:

- The preset value applies to each possible channel. That is, if there are ten possible channels, MD18210 \$MN_MM_USER_MEM_DYNAMIC is set by the NCK SW so that at least the 'preset value* ten' results for MD18050 \$MN_INFO_FREE_MEM_DYNAMIC.
- On activation of a channel, MD18210 \$MN_MM_USER_MEM_DYNAMIC is increased if necessary so that the memory free at the time of activation continues to be free (provided that the memory structure permits this) after the channel has become active.
- The activation of the maximum possible number of axes is ensured by increasing the data MD18210 \$MN_MM_USER_MEM_DYNAMIC if necessary so that memory free at the time of activation continues to be free (provided that the memory structure permits this) after the axis has become active.

'If necessary' in the previous sentences means that the adjustment is automatic if the channel/axis could not be activated with the current values of MD18210 \$MN_MM_USER_MEM_DYNAMIC/\$MN_INFO_FREE_MEM_DYNAMIC.

18060	INFO_FREE_MEM_STATIC			N01, N02, N05	S7	
-	Display data of the free nonvolatile memory			DWORD	PowerOn	
-						
840dsl-71	-	7340032	0	48234496	ReadOnly	S
840dsl-72	-	7340032	0	48234496	ReadOnly	S
840dsl-73	-	7340032	0	48234496	ReadOnly	S
840dsl-711	-	12582912	0	48234496	ReadOnly	S
840dsl-721	-	12582912	0	48234496	ReadOnly	S
840dsl-731	-	12582912	0	48234496	ReadOnly	S

Description:

The preassigned value specifies how many bytes, as a minimum, are free for the user when the NCK runs up with a 'cold restart'.

The contents of the data state how much nonvolatile memory is available during startup for configuration of the active and passive file system and other functions.

e.g. MD18082 \$MN_MM_NUM_TOOL

e.g. MD18150 \$MN_MM_GUD_VALUES_MEM

e.g. MD18352 \$MN_MM_U_FILE_MEM_SIZE

e.g. MD38000 \$MA_MM_ENC_COMP_MAX_POINTS)

On the first NCK power-up or cold restart of the control (=deletion of user data) MD18230 \$MN_MM_USER_MEM_BUFFERED is set by the NCK software so that at least the default value results for MD18060 \$MN_INFO_FREE_MEM_STATIC.

Machine data for configuration of functions that require nonvolatile memory (tools, GUDs, compensations, ...) can be increased until this memory has all been allocated.

18070	INFO_FREE_MEM_DPR			EXP, N01, N02, N05	S7	
-	Display data of free memory in DUAL PORT RAM			DWORD	PowerOn	
-						
-	-	0	-	-	ReadOnly	M

Description:

Output of the available memory in the Dual Port RAM (Bytes).

The data cannot be written.

18074	MM_TOOL_MANAGEMENT_TRACE_SZ			N02, N09	/FBWsl/, "Description of Functions, Tool Management"	
-	Max. size of the tool management diagnostic ring buffers			DWORD	PowerOn	
-						
-	2	25, 25	4	500	7/2	M

Description: The number of entries in the tool management diagnostic ring buffers.
 Index 0 = IPO trace buffer size.
 Index 1 = Prep trace buffer size.
 There are separate IPO trace buffers in each channel, and a Prep trace buffer in channel 1 only.
 The buffers are allocated only if bit 0 (0x0001) is ON at warm start, in both MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK and per-channel MD20310 \$MC_TOOL_MANAGEMENT_MASK.
 Trace data is written to the buffers when bit 13 (0x2000) is ON in per-channel MD20310 \$MC_TOOL_MANAGEMENT_MASK.

18075	MM_NUM_TOOLHOLDERS			N02, N09	/FBWsl/, "Description of Functions, Tool Management"	
-	Max. number of tool holders per TOA			DWORD	PowerOn	
-						
-	-	16	1	20	7/2	M

Description: Max. number of definable tool holders per TO range.
 The address extension e of commands Te=t, Me=6 (*) is the number of the tool holder.
 t=T number/tool name - depending on the function activated in the NCK.
 (*) if: MD22550 \$MC_TOOL_CHANGE_MODE=1 and MD22560 \$MC_TOOL_CHANGE_M_CODE=6 applies
 Normally the tool holder of milling machines is a spindle.
 Also see MD20090 \$MC_SPIND_DEF_MASTER_SPIND.
 For turning machines the tool holder normally is not a spindle axis.
 Also see MD20124 \$MC_TOOL_MANAGEMENT_TOOLHOLDER.
 In this case it should reasonably apply that MD18075 \$MN_MM_NUM_TOOLHOLDERS is larger or equal to MD20090 \$MC_SPIND_DEF_MASTER_SPIND/MD20124 \$MC_TOOL_MANAGEMENT_TOOLHOLDER.
 If bit 0 = 1 in MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK and MD20310 \$MC_TOOL_MANAGEMENT_MASK is set (=magazine management (TOOLMAN))
 it will apply for reasonable values that MD18075 \$MN_MM_NUM_TOOLHOLDERS is smaller or equal to MD18076 \$MN_MM_NUM_LOCS_WITH_DISTANCE.
 A maximum of MD18075 \$MN_MM_NUM_TOOLHOLDERS intermediate memory locations of the type spindle
 (\$TC_MPP1[9998,x]=2) can then be defined.
 Example: TOOLMAN inactive
 MD20090 \$MC_SPIND_DEF_MASTER_SPIND shall be =3, MD18075 \$MN_MM_NUM_TOOLHOLDERS shall be =3.
 Then T1=t, T2=t, T3=t, T=t can be programmed.
 Example: TOOLMAN active, milling machine with Me=6 as tool change command
 MD18075 \$MN_MM_NUM_TOOLHOLDERS shall be = 14, MD18076 \$MN_MM_NUM_LOCS_WITH_DISTANCE=20,
 10 channels shall be active, all channels have TOOLMAN active and have the same tool and magazine data
 (=one TO range for all channels). MD20090 \$MC_SPIND_DEF_MASTER_SPIND=1,.....10 for the channels.

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Then up to 14 locations of the kind 'tool holder'/'spindle' can be defined in the intermediate magazine memory.

Additional 6 grippers or others can be defined.

These 20 locations max. can be linked to magazines.

In the channels T1=t, ... T14=t and Tt, or M1=6,....M14=6 and M6 can be programmed.

The PLC version used can limit the maximum number of tool holders.

18076	MM_NUM_LOCS_WITH_DISTANCE			N02, N09	/FBWsl/, "Description of Functions, Tool Management"	
-	Max. number of magazine locations per TOA with remote connection			DWORD	PowerOn	
-						
-	-	32	1	128	7/2	M

Description:

This machine data is reasonable, if the magazine management function, TOOLMAN, is active

- See MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK, MD20310 \$MC_TOOL_MANAGEMENT_MASK; for each bit 0 = 1.

Max. number of magazine locations (spindles, load locations,...) per TOA, that can have a remote connection to a magazine, defined by \$TC_MDPx[n,m].

Example: TOOLMAN shall be active: MD18076 \$MN_MM_NUM_LOCS_WITH_DISTANCE shall be = 5 and MD18077 \$MN_MM_NUM_DIST_REL_PER_MAGLOC = 2.

Two TO units shall be defined with three tool holders/spindles and two load locations each.

Furthermore, two grippers each shall be defined in each TO unit.

This means that a total of 14 locations shall be defined in the intermediate memory magazine/load magazine for the distances and assignments.

4 magazines shall be defined for TO unit 1, 6 magazines for TO unit 2.

With the value set to MD18076 \$MN_MM_NUM_LOCS_WITH_DISTANCE = 5 each tool holder and each load location

of the two TO units with up to two magazines (MD18077 \$MN_MM_NUM_DIST_REL_PER_MAGLOC = 2) per remote relationship

can be connected; (see \$TC_MDP1 and \$TC_MDP2) and for each tool holder max. two more grippers

(MD18077 \$MN_MM_NUM_DIST_REL_PER_MAGLOC = 2) can be assigned; (see \$TC_MLSR).

One tool holder / one spindle location can subsequently have two tables - one distance table for magazines and

one assignment table for grippers and similar locations.

18077	MM_NUM_DIST_REL_PER_MAGLOC			N02, N09	/FBWsl/, "Description of Functions, Tool Management"	
-	Max. no. of magazines in the distance table of a magazine loc.			DWORD	PowerOn	
-						
-	-	64	0	64	7/2	M

Description:

This machine data will only be active, if the magazine management, TOOLMAN function is active.

• See MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK, MD20310 \$MC_TOOL_MANAGEMENT_MASK.

Two sizes are defined with this magazine data:

1.) Max. number of magazines in the distance table of a magazine location (spindle, load location, ...)

2.) Max. number of locations (gripper, ...) in the connection table of a spindle/tool holder location.

Example: MD18077 \$MN_MM_NUM_DIST_REL_PER_MAGLOC shall be = 3.

Two TO units shall be defined with two tool holder/spindles each and one load location each.

Furthermore four grippers shall be defined in each TO unit.

4 magazines shall be defined for TO unit 1; 6 magazines shall be defined for TO unit 2.

Then, each tool holder can define max. three distances for the magazines (see \$TC_MDP2) and additionally a max. of three relationships to the grippers (\$TC_MLSR).

18078	MM_MAX_NUM_OF_HIERARCHIES			N02, N09	/FBWsl/, "Description of Functions, Tool Management"	
-	The maximum number of hierarchies for magazine location types			DWORD	PowerOn	
-						
-	-	8	0	32	7/2	M

Description: The machine data only has effect if the function 'tool magazine management', TMMG, is activated - see MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK, MD20310 \$MC_TOOL_MANAGEMENT_MASK.
The maximum number of hierarchies for magazine location types.
In variable \$TC_MPTH[n,m], the allowed range of n is from 0 to MD18078 '\$MN_MM_MAX_NUM_OF_HIERARCHIES - 1'.
(The maximum of index m is given by MD18079 \$MN_MM_MAX_HIERARCHY_ENTRIES.)
Value = 0 means that the function 'magazine location type hierchies' is not available.

18079	MM_MAX_HIERARCHY_ENTRIES			N02, N09	/FBWsl/, "Description of Functions, Tool Management"	
-	The max. number of entries in a mag. location type hierarchy.			DWORD	PowerOn	
-						
-	-	8	1	32	7/2	M

Description: The machine data is only effective if the function 'tool magazine management', TMMG, is activated - see MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK, MD20310 \$MC_TOOL_MANAGEMENT_MASK - and if MD18078 \$MN_MM_MAX_NUM_OF_HIERARCHIES is greater than zero.
The maximum number of entries in a magazine location type hierarchy.
The permissible range of the index m of system parameter \$TC_MPTH[n,m] is from 0 to 'MD18079 \$MN_MM_MAX_HIERARCHY_ENTRIES - 1'.
(The maximum of index n is given by MD18078 \$MN_MM_MAX_NUM_OF_HIERARCHIES.)

18080	MM_TOOL_MANAGEMENT_MASK			N02, N09	K1, W1	
-	Step-by-step memory reservation for tool management (SRAM)			UDWORD	PowerOn	
-						
-	-	0x2	0	0xFFFF	7/1	M

Description: Activating the TM memory with "0" means:
The set TM data does not take up any memory space, TM is not available.
Bit 0=1: Memory for TM-specific data is provided, the MDs which reserve memory space have to be set accordingly (MD18086 \$MN_MM_NUM_MAGAZINE_LOCATION, MD18084 \$MN_MM_NUM_MAGAZINE)
Bit 1=1: Memory for monitoring data (WZMO) is provided
Bit 2=1: Memory for user data (CC data) is provided
Bit 3=1: Memory to consider adjacent location is provided
Bit 4=1: Memory and function enable for PI service _N_TSEARC = "Complex search for tools in magazines" is provided.
Bit 5=1: Wear monitoring active
Bit 6=1: Wear grouping available

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Bit 7=1: Reserve memory for adapters for magazine locations

Bit 8=1: Memory for application and/or setup offsets

Bit 9=1: Tools associated with a turret no longer leave their turret location on tool change (display).

Bit 10=1: The multitool function is available

(other MDs can be used to modify the configuration).

Bit 10=0: The multitool function is not available

(the functional scope configured with other MDs is ineffective).

This broken down approach to memory reservation means that memory usage can be optimized in line with the functions used.

Example:

Default memory reservation for TM:

MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK = 3 (bit 0 + 1=1) means that TM and tool monitoring data are provided

MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK = 1 means tool management without tool monitoring function data

18082	MM_NUM_TOOL			N02, N09	FBWsl, S7	
-	Number of tools the NCK can manage (SRAM)			DWORD	PowerOn	
-						
-	-	30	0	1500	7/2	M

Description:

The NC cannot manage more tools than the number entered in the MD. A tool has at least one cutting edge.

Buffered user memory is used.

The maximum possible number of tools is equal to the number of cutting edges. The MD must also be set when TOOLMAN is not used.

The buffered data are lost when the machine data is changed.

Related to:

MD18100 \$MN_MM_NUM_CUTTING_EDGES_IN_TOA

18083	MM_NUM_MULTITool			N02, N09	-	
-	Multitool function. Number of tools the NCK can manage.			DWORD	PowerOn	
-						
-	-	15	0	750	1/1	M

Description:

"Multiple tools in one magazine location" function (multitool). Number of multitools the NCK can manage.

18084	MM_NUM_MAGAZINE			N02, N09	FBWsl	
-	Number of magazines the NCK can manage (SRAM)			DWORD	PowerOn	
-						
-	-	4	0	64	7/2	M

Description:

Tool management (TOOLMAN and TMMG) - only when MD TOOLMAN and option TOOLMAN are set: Number of magazines which the NCK can manage (active and background magazines).

This MD reserves the buffered memory for the magazines.

Important: One loading and one buffer magazine are set up in in the tool management for each TOA unit. These magazines have to be taken into account here.

Value = 0 -The tool management cannot be activated because no data can be created.

Related to:

MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK

MD20310 \$MC_TOOL_MANAGEMENT_MASK

18085	MM_NUM_MULTITool_LOCATIONS			N02, N09	-	
-	Multitool function: Number of multitool locations the NCK can manage.			DWORD	PowerOn	
-						
-	-	30	0	1500	1/1	M

Description: "Multiple tools in one magazine location" function (multitool). Number of multitool locations the NCK can manage.

18086	MM_NUM_MAGAZINE_LOCATION			N02, N09	FBWsl	
-	Number of magazine locations the NCK can manage (SRAM)			DWORD	PowerOn	
-						
840dsl-71	-	30	0	600	7/2	M
840dsl-72	-	30	0	600	7/2	M
840dsl-73	-	30	0	1500	7/2	M
840dsl-711	-	30	0	600	7/2	M
840dsl-721	-	30	0	600	7/2	M
840dsl-731	-	30	0	1500	7/2	M

Description: TMMG - only when MD TOOLMAN and TOOLMAN option are set:
Number of magazine locations which the NCK can manage.
This machine data reserves the buffered memory for the magazine locations.
Important: The number of all buffers and loading points also has to be included in the calculation here.
Value = 0: Tool management cannot be activated because no data can be created.
Related to:
MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK
MD20310 \$MC_TOOL_MANAGEMENT_MASK

18088	MM_NUM_TOOL_CARRIER			N02, N09	W1	
-	Maximum number of definable tool holders			DWORD	PowerOn	
-						
-	-	0	0	600	7/2	M

Description: Maximum number of definable toolholders for orientable tools in the TO area. The value is divided by the number of active TO units. The integer result states how many toolholders can be defined for each TO unit. The data for defining a toolholder are set with the system variables \$TC_CARR1, ... \$TC_CARR14.
The data are stored in battery-backed memory.
Application example(s):
-

18090	MM_NUM_CC_MAGAZINE_PARAM			N02, N09	FBWsl	
-	Number of OEM magazine data (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	64	2/2	M

Description: Number of magazine data (of type Integer) which are available to the user or the compile cycle.
This machine data increases the buffered memory requirement by sizeof(int)*max. number of magazines.
Related to:
MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK

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MD18084 \$MN_MM_NUM_MAGAZINE

18091	MM_TYPE_CC_MAGAZINE_PARAM			N02, N09	-	
-	Type of OEM magazine data (SRAM)			DWORD	PowerOn	
-						
-	64	3, 3, 3, 3, 3, 3, 3...	1	6	2/2	M

Description: Individual types can be assigned to the parameters in this way. Array index n can take values from 0 to that of MD18090 \$MN_MM_NUM_CC_MAGAZINE_PARAM.

Type of magazine-specific user data configured by MD18090
\$MN_MM_NUM_CC_MAGAZINE_PARAM.

Each parameter can be assigned its own type. Permissible types are:

Type Value of machine data

(See types of the NC language)

BOOL	1
CHAR	2
INT	3
REAL	4
STRING	5 (is not allowed, is not supported by the MCP.)
AXIS	6
FRAME	Not defined

Example:

MD18090 \$MN_MM_NUM_CC_MAGAZINE_PARAM=1

MD18091 \$MN_MM_TYPE_CC_MAGAZINE_PARAM=2

Parameter \$TC_MAPC1 = "A" can then be programmed.

Buffered user memory is used. A value change leads to a reconfiguration of the buffered memory.

Related to:

MD18090 \$MN_MM_NUM_CC_MAGAZINE_PARAM

MD18084 \$MN_MM_NUM_MAGAZINE

18092	MM_NUM_CC_MAGLOC_PARAM			N02, N09	FBWsl	
-	Number of OEM magazine location data			DWORD	PowerOn	
-						
-	-	0	0	64	2/2	M

Description: Number of magazine location data parameters (of type Integer) which are available to the user or the compile cycle.

This machine data increases the buffered memory requirement by sizeof(int)*max. number of magazines.

Related to:

MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK

MD18086 \$MN_MM_NUM_MAGAZINE_LOCATION

18093	MM_TYPE_CC_MAGLOC_PARAM			N02, N09	-	
-	Type of OEM magazine location data (SRAM)			DWORD	PowerOn	
-						
-	64	3, 3, 3, 3, 3, 3, 3...	1	6	2/2	M

Description: Individual types can be assigned to the parameters in this way. Array index n can take values from 0 to that of MD18092 \$MN_MM_NUM_CC_MAGLOC_PARAM.

Type of magazine location-specific user data configured by MD18092
\$MN_MM_NUM_CC_MAGLOC_PARAM.

Each parameter can be assigned its own type. Permissible types are:

Type Value of machine data

(See types of the NC language)

```
-----
BOOL          1
CHAR          2
INT           3
REAL          4
-(STRING is explicitly not possible here, the value 5 is treated as the value 2)
AXIS          6
FRAME        Not defined
```

Example:

MD18092 \$MN_MM_NUM_CC_MAGLOC_PARAM=1

MD18093 \$MN_MM_TYPE_CC_MAGLOC_PARAM=2

Parameter \$TC_MPPC1 = "A" can then be programmed.

Buffered user memory is used. A value change leads to a reconfiguration of the buffered memory.

Related to:

MD18092 \$MN_MM_NUM_CC_MAGLOC_PARAM

MD18086 \$MN_MM_NUM_MAGAZINE_LOCATION

18094	MM_NUM_CC_TDA_PARAM			N02, N09	H2	
-	Number of OEM tool data (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	64	2/2	M

Description:

Number of tool-specific data (of type Integer) which can be created per tool, and which are available to the user or the compile cycle.

This machine data increases the buffered memory requirement by sizeof(double)*max. number of tools.

Related to:

MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK

MD18082 \$MN_MM_NUM_TOOL

18095	MM_TYPE_CC_TDA_PARAM			N02, N09	-	
-	Type of OEM tool data (SRAM)			DWORD	PowerOn	
-						
-	64	4, 4, 4, 4, 4, 4, 4, 4...	1	6	2/2	M

Description:

Individual types can be assigned to the parameters in this way. Array index n can take values from 0 to that of MD18094 \$MN_MM_NUM_CC_TDA_PARAM.

Type of tool-specific user data configured by MD18094 \$MN_MM_NUM_CC_TDA_PARAM.

Each parameter can be assigned its own type. Permissible types are:

Type Value of machine data

(See types of the NC language)

```
-----
BOOL          1
CHAR          2
INT           3
REAL          4
```

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STRING 5 (Identifier allowed up to a maximum of 31 characters.)
 AXIS 6
 FRAME Not defined
 Example:
 MD18094 \$MN_MM_NUM_CC_TDA_PARAM=1
 MD18095 \$MN_MM_TYPE_CC_TDA_PARAM=5
 Parameter \$TC_TPC1 = "UserTool" can then be programmed.
 Buffered user memory is used. A value change leads to a reconfiguration of the buffered memory.
 Related to:
 MD18094 \$MN_MM_NUM_CC_TDA_PARAM
 MD18082 \$MN_MM_NUM_TOOL

18096	MM_NUM_CC_TOA_PARAM			N02, N09	G2	
-	Number of data per tool edge for compile cycles (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	64	2/2	M

Description: Number of TOA data (of type Real) which can be created per tool, and which are available to the user or the compile cycle.
 This MD increases the buffered memory requirement by sizeof(double)*max. number of cutting edges.
 Related to:
 MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK
 MD18100 \$MN_MM_NUM_CUTTING_EDGES_IN_TOA

18097	MM_TYPE_CC_TOA_PARAM			N02, N09	-	
-	Type of OEM data per cutting edge (SRAM)			DWORD	PowerOn	
-						
-	64	4, 4, 4, 4, 4, 4, 4, 4...	1	6	2/2	M

Description: Individual types can be assigned to the parameters in this way.
 Array index n can take values from 0 to that of MD18096 \$MN_MM_NUM_CC_TOA_PARAM.
 Type of cutting edge-specific user data configured by MD18096 \$MN_MM_NUM_CC_TOA_PARAM.
 Each parameter can be assigned its own type. Permissible types are:
 Type Value of machine data
 (See types of the NC language)

 BOOL 1
 CHAR 2
 INT 3
 REAL 4
 - (STRING is explicitly not possible here, the value 5 is treated as the value 2)
 AXIS 6
 FRAME Not defined

Example:
 MD18096 \$MN_MM_NUM_CC_TOA_PARAM=1
 MD18097 \$MN_MM_TYPE_CC_TOA_PARAM=2
 Parameter \$TC_DPC1 = "A" can then be programmed.
 Buffered user memory is used. A value change leads to a reconfiguration of the buffered memory.
 Related to:

MD18096 \$MN_MM_NUM_CC_TOA_PARAM
MD18100 \$MN_MM_NUM_CUTTING_EDGES_IN_TOA

18098	MM_NUM_CC_MON_PARAM			N02, N09	FBWsl	
-	Number of monitoring data per tool for compile cycles			DWORD	PowerOn	
-						
-	-	0	0	64	2/2	M

Description: Number of monitoring data (of type Integer) which can be created per tool, and which are available to the user or the compile cycle.
This MD increases the buffered memory requirement by `sizeof(int)*max. number of cutting edges`.
Related to:
MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK
MD18100 \$MN_MM_NUM_CUTTING_EDGES_IN_TOA

18099	MM_TYPE_CC_MON_PARAM			N02, N09	FBWsl	
-	Type of OEM monitor data (SRAM)			DWORD	PowerOn	
-						
-	64	3, 3, 3, 3, 3, 3, 3...	1	6	2/2	M

Description: Individual types can be assigned to the parameters in this way. Array index n can take values from 0 to that of MD18098 \$MN_MM_NUM_CC_MON_PARAM.
Type of monitoring-specific user data configured by MD18098 \$MN_MM_NUM_CC_MON_PARAM. Each parameter can be assigned its own type. Permissible types are:

Type	Value of machine data

(See types of the NC language)

```

-----
BOOL                1
CHAR                2
INT                 3
REAL               4
-(STRING is explicitly not possible here, the value 5 is treated as the value 2)
AXIS                 6
FRAME               Not defined
Example:
MD18098 $MN_MM_NUM_CC_MON_PARAM=1
MD18099 $MN_MM_TYPE_CC_MON_PARAM=2
Parameter $TC_MOPC1 = "A" can then be programmed.
Buffered user memory is used. A value change leads to a reconfiguration of the buffered memory.
Related to:
MD18100 $MN_MM_NUM_CUTTING_EDGES_IN_TOA
MD18098 $MN_MM_NUM_CC_MON_PARAM

```

18100	MM_NUM_CUTTING_EDGES_IN_TOA			N02, N09	W1	
-	Number of tool offsets that the NCK can manage (SRAM)			DWORD	PowerOn	
-						
-	-	30	0	3000	7/2	M

Description: .Defines the number of tool cutting edges. This machine data reserves approximately 250 bytes of battery-buffered memory per TOA block for each tool cutting edge, irrespective of the tool type

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Tools with cutting edges of type 400-499 (= grinding tools) also occupy the location of a cutting edge.

Example:

Defining 10 grinding tools each of which has one cutting edge. Then at least:

MD18082 \$MN_MM_NUM_TOOL = 10

MD18100 \$MN_MM_NUM_CUTTING_EDGES_IN_TOA = 20

Also see MD18082 \$MN_MM_NUM_TOOL

Buffered user memory is used

Special cases:

The buffered data is lost if this machine data is altered!

18102	MM_TYPE_OF_CUTTING_EDGE			N02, N09	W1	
-	Type of D No. programming (SRAM)			DWORD	PowerOn	
NDLD						
-	-	0	0	1	ReadOnly	S

Description:

This MD activates the 'flat D number management'. This function is no longer supported.

The default value is zero. This means that the NCK manages the T and D numbers.

The NCK only accepts a value > 0 if bit 0 and bit 1 are not set in MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK. This means that neither the magazine management function nor the tool monitoring can be active.

Value: Meaning

0: No 'flat D number management' active

1: 'Flat D number' function is active

18103	MM_NUM_TOOL_ADAPTER_TYPE2			N02, N09	W1	
-	Type 2 tool adapters in all TO areas (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	3000	7/2	M

Description:

Number of type 2 tool adapters (angle head adapters) in all TO areas.

The function can only be used if magazine locations are free in the NCK.

For the setting to become effective, bit 7 (=0x80) must also be set in MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK.

Adapter data sets and cutting-edge-specific base lengths are mutually exclusive.

This means that if type 2 adapters can be created, then the values of the following parameters can be internally assigned by the NCK:

Base length: \$TC_DP21, \$TC_DP22, \$TC_DP23.

Meaning of the values:

0:

No adapter data definitions are possible.

The cutting-edge-specific parameters \$TC_DP21-23 can be written.

>0:

Number of adapter data sets.

An additional step after definition of the data assigns the adapters to the multitool locations.

So one adapter can, for example, be assigned to multiple multitool locations.

See the machine data

MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK,

MD18085 \$MC_MM_NUM_MULTITool_LOCATIONS

18104	MM_NUM_TOOL_ADAPTER	N02, N09	W1
-	Tool adapters in all TO areas (SRAM)	DWORD	PowerOn
-			
-	-	-1	-1
		1500	7/2
			M

Description:

Number of tool adapters in all TO areas.

The function can only be used if there are magazine locations in the NCK.

The tool management function must be active.

Bit 7 (=0x80) also has to be set in MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK for the setting to become active.

Adapter data blocks and the cutting edge-specific basic/adaptor dimensions are mutually exclusive. This means that if adapter data are defined, the parameters \$TC_DP21, \$TC_DP22, \$TC_DP23 and their values are available in the NCK.

-1:

An adapter is automatically assigned to each magazine location.

This means that internally the same number of adapters are provided as magazine locations are provided by MD18086 \$MN_MM_NUM_MAGAZINE_LOCATION.

0:

No adapter data definitions possible. The cutting edge-specific parameters \$TC_DP21, \$TC_DP22, \$TC_DP23 are available provided that adapters are used outside the active TMMG.

> 0:

Number of adapter data blocks. This means adapters can be defined irrespective of magazine locations. An additional step after defining the data assigns the adapters to the magazine locations. This enables one adapter, for example, to be assigned to several magazine locations.

Note: The setting >0 is currently not supported by HMI Operate.

See the machine data:

MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK,

MD20310 \$MC_TOOL_MANAGEMENT_MASK,

MD18084 \$MN_MM_NUM_MAGAZINE,

MD18086 \$MN_MM_NUM_MAGAZINE_LOCATION

18105	MM_MAX_CUTTING_EDGE_NO	N02, N09	W1
-	Maximum value of D number	DWORD	PowerOn
-			
-	-	9	1
		32000	7/2
			M

Description:

Maximum value of the D number.

This does not affect the maximum number of D numbers per cutting edge.

The monitoring of the D number assignment associated with this value is only active when the D numbers are redefined. This means that existing data sets are not subsequently checked if the MD is changed.

The following settings are advantageous:

MD18105 \$MN_MM_MAX_CUTTING_EDGE_NO is equal to

MD18106 \$MN_MM_MAX_CUTTING_EDGE_PER_TOOL.

If MD18105 \$MN_MM_MAX_CUTTING_EDGE_NO is selected > MD18106

\$MN_MM_MAX_CUTTING_EDGE_PER_TOOL, then the difference between offset number D and cutting-edge number CE should be known.

See also language commands CHKDNO, CHKDM, GETDNO, SETDNO, DZERO.

The machine data is not evaluated with the function "flat D number", and therefore has no significance there.

The MD can affect the memory requirement:

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If the relation between the two, above-mentioned MDs changes from "less than or equal to" to "greater than" or vice versa, then this affects the non-buffered memory requirement.

Related to:

MD18106 \$MN_MM_MAX_CUTTING_EDGE_PER_TOOL

18106	MM_MAX_CUTTING_EDGE_PERTOOL			N02, N09	W1	
-	Maximum number of D numbers per tool			DWORD	PowerOn	
-						
-	-	9	1	12	7/2	M

Description:

Maximum number of cutting edges (D offsets) per tool (per T number).

This enables more safety to be achieved in the data definition. The value can be set to 1 if only tools with one cutting edge are used. This prevents more than one cutting edge being assigned to a tool in the data definition.

The following settings are advantageous: MD18105 \$MN_MM_MAX_CUTTING_EDGE_NO is equal to MD18106 \$MN_MM_MAX_CUTTING_EDGE_PER_TOOL. If MD18105 \$MN_MM_MAX_CUTTING_EDGE_NO is selected > MD18106 \$MN_MM_MAX_CUTTING_EDGE_PER_TOOL, then the difference between offset number D and cutting-edge number CE should be known.

See also language commands CHKDNO, CHKDM, GETDNO, SETDNO, DZERO.

The machine data is not evaluated with the function "flat D number", and therefore has no significance there.

The data can affect the memory requirement.

The MD can affect the memory requirement.

If the relation between the two, above-mentioned MDs changes from "less than or equal to" to "greater than" or vice versa, then this affects the non-buffered memory requirement.

Related to:

MD18105 \$MN_MM_MAX_CUTTING_EDGE_NO

18108	MM_NUM_SUMCORR			N02, N09	W1	
-	Resulting offsets in TO area (SRAM)			DWORD	PowerOn	
-						
-	-	-1	-1	9000	7/2	M

Description:

Total number of resulting offsets in the NCK.

The value = -1 means that the number of resulting offsets is equal to the number of cutting edges multiplied by the number of resulting offsets per cutting edge.

A value > 0 and < "number of cutting edges multiplied by the number of resulting offsets per cutting edge" means that a maximum "number of resulting offsets per cutting edge" can be defined per cutting edge but do not have to be. This means that buffered memory can be used economically. Only those cutting edges for which explicit data have been defined have a resulting offset data block.

Buffered memory is reserved. The memory requirement for a resulting offset doubles if "setup offset active" has also been configured, see MD18112 \$MN_MM_KIND_OF_SUMCORR.

See also:

MD18100 \$MN_MM_NUM_CUTTING_EDGES_IN_TOA,

MD18110 \$MN_MM_MAX_SUMCORR_PER_CUTTEDGE

18110	MM_MAX_SUMCORR_PER_CUTTEDGE			N02, N09	S7	
-	Max. number of additive offsets per edge (SRAM)			DWORD	PowerOn	
-						
-	-	1	1	6	7/2	M

Description:

Maximum number of resulting offsets per cutting edge.

If MD18108 \$MN_MM_NUM_SUMCORR > 0 then:
The data is not memory defining, but is only used for monitoring.
If MD18108 \$MN_MM_NUM_SUMCORR = -1 then:
The data is memory defining.
See also
MD18108 \$MN_MM_NUM_SUMCORR,
MD18100 \$MN_MM_NUM_CUTTING_EDGES_IN_TOA.

18112	MM_KIND_OF_SUMCORR			N02, N09	W1	
-	Properties of resulting offsets in TO area (SRAM)			UDWORD	PowerOn	
-						
-	-	0	0	0x1F	7/2	M

Description:

Properties of the resulting offsets in NCK.

Bit 0=0 "Resulting offsets fine" are backed up when the tool data are backed up.

Bit 0=1 "Resulting offsets fine" are backed up when the tool data are backed up.

Bit 1=0 Set-up offsets are backed up when the tool data are backed up.

Bit 1=1 Set-up offsets are not backed up when the tool data are backed up.

Bit 2=0 If work is done with the function tool management (TOOLMAN) and/or tool monitoring (TMMO), existing "resulting offsets fine/setup offsets" are not affected when the tool status is set to "active".

Bit 2=1 Existing resulting offsets are set to zero when the tool status is set to "active".

Bit 3=0 If work is done with the function "TOOLMAN" + "adapter", the "resulting offsets fine"/setup offsets are transformed.

Bit 3=1 No transformation of the "resulting offsets fine"/setup offsets

Bit 4=0 No set-up offset data sets

Bit 4=1 Set-up offset data sets are additionally created. Whereby the resulting offset is composed of the sum of the set-up offset + "resulting offset fine"

Changing the status of bits 0, 1, 2, 3 does not change the memory structure.

Changing the status of bit 4 triggers restructuring of the buffered memory after the next PowerOn.

See also

MD18100 \$MN_MM_NUM_CUTTING_EDGES_IN_TOA

MD18108 \$MN_MM_NUM_SUMCORR

MD18110 \$MN_MM_MAX_SUMCORR_PER_CUTTEDGE

MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK,

MD20310 \$MC_TOOL_MANAGEMENT_MASK,

MD18086 \$MN_MM_NUM_MAGAZINE_LOCATION,

MD18104 \$MN_MM_NUM_TOOL_ADAPTER

18113	MM_NUM_DRS_GRINDING_PATHS			N02, N09	-	
-	Number of different path names for grinding tool dressing programs.			DWORD	PowerOn	
-						
-	-	10	0	1500	2/2	M

Description:

The number of different path names in the NCK that can be defined for the storage of the dressing programs of the grinding tools. See system parameter \$TC_TPG_DRSPATH. Grinding tools can only be defined if MD17540 \$MN_TOOLTYPES_ALLOWED has the bit value 'H90' set.

Buffered memory is reserved if MD17540 \$MN_TOOLTYPES_ALLOWED has enabled the function.

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18114	MM_ENABLE_TOOL_ORIENT			N02, N09	W1, F2	
-	Assign an orientation to tool cutting edges			DWORD	PowerOn	
-						
-	-	0	0	3	7/2	I

Description: The function allows an orientation deviating from the default value to be assigned to each tool cutting edge.

Value = 0:
The tool orientation function is inactive.

Value = 1:
The system parameter \$TC_DPVT[t, d] is assigned to each tool cutting edge D=d of the tool T=t, with the aid of which one of 6 possible tool orientations in positive or negative coordinate direction can be defined.

Value = 2:
Not only the system parameter \$TC_DPVT[t, d] but also the additional three system parameters \$TC_DPVT3[t, d], \$TC_DPVT4[t, d] and \$TC_DPVT5[t, d] are assigned to each tool cutting edge D=d of the tool T=t, with the aid of which any spatial tool orientation can be defined.

Value = 3:
Not only the system parameters \$TC_DPVT[t, d] and \$TC_DPVT3 - \$TC_DPVT5 but also the additional three system parameters \$TC_DPVTN3[t, d], \$TC_DPVTN4[t, d] and \$TC_DPVTN5[t, d] are assigned to each tool cutting edge D=d of the tool T=t, with the aid of which a vector (normal vector) can be defined that is preferably perpendicular to the tool orientation. The normal vector may be modified so that it lies in the plane formed by the orientation and the programmed normal vector but perpendicular to the orientation. The orientation and the possibly modified normal vector together define a complete orientation coordinate system.

T, D are the NC addresses T and D with which the tool change or the tool selection and the offset selection are programmed.

The machine data affects the requirement for buffered memory.

18116	MM_NUM_TOOL_ENV			N02, N09	W1	
-	Number of tool environments in the TO area (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	600	7/2	M

Description: Total number of tool environments in the NCK.
Battery-backed memory is reserved.

18118	MM_NUM_GUD_MODULES			N02	S7	
-	Number of GUD files in active file system (SRAM)			DWORD	PowerOn	
-						
-	-	7	1	9	7/2	M

Description: A GUD block corresponds to a file in which user-defined data can be stored. 9 GUD blocks are available of which 3 are already assigned to specific users/applications.

UGUD_DEF_USER (block for user)
SGUD_DEF_USER (block for SIEMENS)
MGUD_DEF_USER (block for machine manufacturer)

Special cases:
The number of GUD modules is determined by the GUD module with the highest number entered.

Example:
If the following GUD modules are defined,

UGUD

MGUD

GUD5

GUD8

then the machine data must be set to a value of 8, signifying a memory requirement of 8 x 120 bytes = 960 bytes.

It is therefore advisable to select the "lowest" possible GUD module. If GUD modules UGUD and MGUD have not been assigned elsewhere, then they may be used for this purpose.

Related to:

MD18150 \$MN_MM_GUD_VALUES_MEM

(Memory space for user variables)

18120	MM_NUM_GUD_NAMES_NCK			N02	S7	
-	Number of global user variable names (SRAM)			DWORD	PowerOn	
-						
-	-	60	60	32000	7/2	M

Description: Defines the number of user variables for NCK global user data (GUD). Approximately 80 bytes of memory per variable are reserved in the SRAM for the names of the variables. The additional memory required for the value of the variable depends on the data type of the variable. The number of available NCK global user data is exhausted on reaching the limit value set in MD18120 \$MN_MM_NUM_GUD_NAMES_NCK or MD18150 \$MN_MM_GUD_VALUES_MEM (memory space for user variables).

Buffered user memory is used.

Special cases:

The battery-backed data are lost if this machine data is altered.

Related to:

MD18150 \$MN_MM_GUD_VALUES_MEM

(Memory space for user variables)

18130	MM_NUM_GUD_NAMES_CHAN			N02	S7	
-	Number of channel-specific user variable names (SRAM)			DWORD	PowerOn	
-						
-	-	450	450	32000	7/2	M

Description: Defines the number of user variable names for channel-specific global user data (GUD). Approximately 80 bytes of memory are reserved in the SRAM for each variable name. The additional memory required for the value of the variable is equal to the size of the data type of the variable multiplied by the number of channels. This means that each channel has its own memory available for the variable values. The number of available channel-specific global user data is exhausted on reaching the limit value set in MD18130 \$MN_MM_NUM_GUD_NAMES_CHAN or MD18150 \$MN_MM_GUD_VALUES_MEM (memory space for user variables).

The name created with the DEF statement is valid for all channels.

The memory requirement for the variable value is equal to the size of the data type multiplied by the number of channels.

Buffered user memory is used.

Special cases:

The battery-backed data are lost if this machine data is altered.

Related to:

MD18150 \$MN_MM_GUD_VALUES_MEM

(Memory space for user variables)

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18150	MM_GUD_VALUES_MEM			N02	A2	
-	Memory location for global user variable values (SRAM)			DWORD	PowerOn	
-						
-	-	430	430	32000	7/2	M

Description:

The specified value reserves memory space for the variable values of the global user data (GUD). The dimensioning of the memory depends to a large extent on the data types used for the variables.

Overview of the memory requirements of the data types:

Data type	Memory requirement
REAL	8 bytes
INT	4 bytes
BOOL	1 byte
CHAR	1 byte
STRING	1 byte per character, 100 characters permitted per string
AXIS	4 bytes
FRAME	up to 1KB depending on control model

The total memory required by a channel or axis-specific global user variable is the memory requirement of the variables multiplied by the number of channels or axes. The number of global user variables available is given when the limit defined in

MD18120 \$MN_MM_NUM_GUD_NAMES_NCK,

MD18130 \$MN_MM_NUM_GUD_NAMES_CHAN,

or MD18150 \$MN_MM_GUD_VALUES_MEM is reached.

Buffered user memory is used.

Special cases:

The buffered data are lost if this machine data is altered!

Related to:

MD18118 \$MN_MM_NUM_GUD_MODULES

(Number of GUD blocks)

MD18120 \$MN_MM_NUM_GUD_NAMES_NCK

(Number of global user variables)

MD18130 \$MN_MM_NUM_GUD_NAMES_CHAN

(Number of channel-specific user variables)

18156	MM_NUM_R_PARAM_NCK			N01	K1	
-	Number of global R variables (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	32535	7/2	M

Description:

Defines the number of available global R-parameters in the NCK.

18160	MM_NUM_USER_MACROS			N02	S7	
-	Number of macros (DRAM)			DWORD	PowerOn	
-						
-	-	82	82	32000	7/2	M

Description:

Defines the number of macros that can be stored in the files `_N_SMAC_DEF`, `_N_MMAC_DEF` und `_N_UMAC_DEF`. Each of these files which is opened occupies at least one kbyte memory space for the file code in the part program memory. Another kbyte of memory is reserved for the file when the one kbyte file code limit is exceeded.

The dynamic user memory is used. For the stated number of macros, approximately 375 bytes are reserved per macro for management tasks.

18170	MM_NUM_MAX_FUNC_NAMES			N02	V2, A2	
-	Number of miscellaneous functions (cycles, DRAM)			DWORD	PowerOn	
-						
-	-	450	450	32000	7/2	M

Description: The data limits the maximum number of special functions over and above the predefined functions (such as sine, cosine, etc.) which can be used in

- cycle programs
- compile cycle software.

The function names are entered in the global NCK dictionary and must not conflict with the names that already exist.

The SIEMENS cycle package contains special functions that are taken into account by the default setting of the MD.

The data are stored in unbuffered memory. Approximately 150 bytes are required for each special function for management purposes.

Related to:

MD18180 \$MN_MM_NUM_MAX_FUNC_PARAM
(Number. of additional parameters)

18180	MM_NUM_MAX_FUNC_PARAM			N02	V2	
-	Number of additional parameters for cycles according to MD 18170			DWORD	PowerOn	
-						
-	-	6750	6750	32000	7/2	M

Description: Defines the maximum number of parameters required for the special functions in

- cycle programs
- compile cycle software.

50 parameters are required for the special functions of the SIEMENS cycle package, software version 1.

The data are stored in unbuffered memory. 72 bytes of memory are reserved for each parameter.

Related to:

MD18170 \$MN_MM_NUM_MAX_FUNC_NAMES
(Number of special functions)

18190	MM_NUM_PROTECT_AREA_NCK			N12, N02, N06, N09	A3	
-	Number of control-specific protection areas (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	10	7/2	M

Description: This machine data defines how many control-specific protection areas have been created.

Related to:

MD28200 \$MC_MM_NUM_PROTECT_AREA_CHAN (number of channel-specific protection areas)

MD28210 \$MC_MM_NUM_PROTECT_AREA_ACTIVE (number of simultaneously active protection areas)

References:

/FB/, A3, "Axis Monitoring, Protection Areas"

3.3 NC machine data

18192	MM_NUM_CC_MULTITOOl_PARAM			N02, N09	-	
-	Number of multitool-specific parameters \$TC_MTPCn per multitool.			DWORD	PowerOn	
-						
-	-	0	0	64	1/1	M

Description: Number of multitool-specific parameters \$TC_MTPCn which can be created per multitool and are available to the user or compile cycle.

18193	MM_TYPE_CC_MULTITool_PARAM			N02, N09	-	
-	Type of OEM multitool data			DWORD	PowerOn	
-						
-	64	4, 4, 4, 4, 4, 4, 4, 4...	1	6	1/1	M

Description: User or OEM data in tool management.
Type of multitool-specific user data \$TC_MTPCn configured with MD18192 \$MN_MM_NUM_CC_MULTITool_PARAM.
Each parameter can be assigned its own type. The permissible types are:

Type	Value of the machine data
(See types of the NC language)	

BOOL	1
CHAR	2
INT	3
REAL	4
STRING	5 (is not allowed, is not supported by the MCP.)
AXIS	6
FRAME	not defined

Buffered user memory is used. A value change leads to reconfiguration of the buffered memory.
Related to:
MD18192 \$MN_MM_NUM_CC_MULTITool_PARAM
MD18083 \$MN_MM_NUM_MULTITool

18194	MM_NUM_CC_MTLOC_PARAM			N02, N09	-	
-	Number of multitool-loc.-spec. parameters \$TC_MTPPCn per multitool location			DWORD	PowerOn	
-						
-	-	0	0	64	1/1	M

Description: Number of multitool-location-specific parameters \$TC_MTPPCn which can be created per multitool location and are available to the user or compile cycle.

18195	MM_TYPE_CC_MTLOC_PARAM			N02, N09	-	
-	Type of OEM multitool location data			DWORD	PowerOn	
-						
-	64	4, 4, 4, 4, 4, 4, 4, 4...	1	6	1/1	M

Description: User or OEM data in tool management.
Type of multitool-location-specific user data \$TC_MTPPCn configured with MD18194 \$MN_MM_NUM_CC_MTLOC_PARAM.
Each parameter can be assigned its own type. The permissible types are:

Type	Value of the machine data
(See types of the NC language)	

```

-----
BOOL                                1
CHAR                                2
INT                                 3
REAL                                4
-(STRING is explicitly not possible here; the value 5 is treated as the value 2)
AXIS                                6
FRAME                               not defined
Buffered user memory is used. A change in value leads to reconfiguration of the
buffered memory.
Related to:
MD18194 $MN_MM_NUM_CC_MTLOC_PARAM
MD18085 $MN_MM_NUM_MULTITool_LOCATIONS

```

18200	MM_NUM_CCS_MAGAZINE_PARAM			N02, N09	FBWsl	
-	Number of Siemens OEM magazine data (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	10	2/2	M

Description: Only when MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK, bit 0=1 ('H1') and bit 2=1 ('H4'), is set for TMMG (and option is set):
User or OEM data in the tool management (TMMG).
Number of Siemens OEM magazine data (standard format IN_Int).
See also: MD18090 \$MN_MM_NUM_CC_MAGAZINE_PARAM, MD18084 \$MN_MM_NUM_MAGAZINE
Buffered user memory is used

18201	MM_TYPE_CCS_MAGAZINE_PARAM			N02, N09	FBWsl	
-	Type of Siemens OEM magazine data (SRAM)			DWORD	PowerOn	
-						
-	10	3, 3, 3, 3, 3, 3, 3...	1	6	2/2	M

Description: User or OEM data in tool management.
Type of magazine-specific Siemens user data configured with MD18200
\$MN_MM_NUM_CCS_MAGAZINE_PARAM.
Each parameter can be assigned its own type. The permissible types are:
Type Value of the machine data
(See types of the NC language)

```

-----
BOOL                                1
CHAR                                2
INT                                 3
REAL                                4
STRING                             5 (is not allowed, is not supported by the MCP.)
AXIS                                6
FRAME                               not defined
Buffered user memory is used. A value change leads to reconfiguration of the buffered
memory.
Related to:
MD18200 $MN_MM_NUM_CCS_MAGAZINE_PARAM
MD18084 $MN_MM_NUM_MAGAZINE

```

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18202	MM_NUM_CCS_MAGLOC_PARAM			N02, N09	FBWsl	
-	No. of Siemens OEM magazine location data (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	10	2/2	M

Description: Only when MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK, bit 0=1 ('H1') and bit 2=1 ('H4'), is set for TMMG (and option is set):
 User or OEM data in the tool management.
 Number of Siemens OEM magazine location data (standard format IN_Int).
 See also: MD18092 \$MN_MM_NUM_CC_MAGLOC_PARAM, MD18086 \$MN_MM_NUM_MAGAZINE_LOCATION
 Buffered working memory is used. A change in value leads to reconfiguration of the buffered memory.

18203	MM_TYPE_CCS_MAGLOC_PARAM			N02, N09	FBWsl	
-	Type of Siemens OEM magazine location data (SRAM)			DWORD	PowerOn	
-						
-	10	3, 3, 3, 3, 3, 3, 3...	1	6	2/2	M

Description: User or OEM data in tool management.
 Type of magazine-location-specific Siemens user data configured with MD18202 \$MN_MM_NUM_CCS_MAGLOC_PARAM.
 Each parameter can be assigned its own type. The permissible types are:

Type	Value of the machine data

 (See types of the NC language)

BOOL	1
CHAR	2
INT	3
REAL	4
-(STRING is explicitly not possible here; the value 5 is treated as the value 2)	
AXIS	6
FRAME	not defined

 Buffered user memory is used. A change in value leads to reconfiguration of the buffered memory.
 Related to:
 MD18202 \$MN_MM_NUM_CCS_MAGLOC_PARAM
 MD18086 \$MN_MM_NUM_MAGAZINE_LOCATION

18204	MM_NUM_CCS_TDA_PARAM			N02, N09	FBWsl	
-	Number of Siemens OEM tool data (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	10	2/2	M

Description: Only when MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK, bit 2=1 ('H4'), is set:
 User or OEM data of the tools.
 Number of Siemens OEM TDA (=tool-specific) data (standard format Int).
 See also: MD18094 \$MN_MM_NUM_CC_TDA_PARAM, MD18082 \$MN_MM_NUM_TOOL
 Buffered user memory is used

18205	MM_TYPE_CCS_TDA_PARAM			N02, N09	FBWsl	
-	Type of Siemens OEM tool data (SRAM)			DWORD	PowerOn	
-						
-	10	4, 4, 4, 4, 4, 4, 4...	1	6	2/2	M

Description: User or OEM data in tool management.
Type of tool-specific Siemens user data configured with MD18204
\$MN_MM_NUM_CCS_TDA_PARAM.
Each parameter can be assigned its own type. The permissible types are:
Type Value of the machine data
(See types of the NC language)

BOOL	1
CHAR	2
INT	3
REAL	4
STRING	5 (is not allowed, is not supported by the MCP.)
AXIS	6
FRAME	not defined

Buffered user memory is used. A change in value leads to reconfiguration of the buffered memory.
Related to:
MD18204 \$MN_MM_NUM_CCS_TDA_PARAM
MD18082 \$MN_MM_NUM_TOOL

18206	MM_NUM_CCS_TOA_PARAM			N02, N09	FBWsl	
-	No. of Siemens OEM data per cutting edge (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	10	2/2	M

Description: Only when MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK, bit 2=1 ('H4'), is set:
User or OEM data of the tools.
Number of Siemens OEM TOA data (standard format IN_Real).
See also: MD18096 \$MN_MM_NUM_CC_TOA_PARAM, MD18100 \$MN_MM_NUM_CUTTING_EDGES_IN_TOA
Buffered user memory is used

18207	MM_TYPE_CCS_TOA_PARAM			N02, N09	FBWsl	
-	Type of Siemens OEM data per cutting edge (SRAM)			DWORD	PowerOn	
-						
-	10	4, 4, 4, 4, 4, 4, 4...	1	6	2/2	M

Description: User or OEM data in tool management.
Type of cutting-edge-specific Siemens user data configured with MD18206
\$MN_MM_NUM_CCS_TOA_PARAM.
Each parameter can be assigned its own type. The permissible types are:
Type Value of the machine data
(See types of the NC language)

BOOL	1
CHAR	2
INT	3

3.3 NC machine data

REAL 4
 -(STRING is explicitly not possible here; the value 5 is treated as the value 2)
 AXIS 6
 FRAME not defined
 Buffered user memory is used. A change in value leads to reconfiguration of the buffered memory.
 Related to:
 MD18206 \$MN_MM_NUM_CCS_TOA_PARAM
 MD18100 \$MN_MM_NUM_CUTTING_EDGES_IN_TOA

18208	MM_NUM_CCS_MON_PARAM			N02, N09	FBWsl	
-	No. of Siemens OEM monitor data (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	10	2/2	M

Description: Only when MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK, bit 0 = 1 or bit 1 = 1 and bit 2=1 ('H4'), is set:
 User or OEM data in the tool management.
 Number of Siemens OEM monitoring data; standard format IN_Int).
 See also: MD18098 \$MN_MM_NUM_CC_MON_PARAM, MD18100 \$MN_MM_NUM_CUTTING_EDGES_IN_TOA
 Buffered user memory is used

18209	MM_TYPE_CCS_MON_PARAM			N02, N09	FBWsl	
-	Type of Siemens OEM monitor data (SRAM)			DWORD	PowerOn	
-						
-	10	3, 3, 3, 3, 3, 3, 3...	1	6	2/2	M

Description: User or OEM data in tool management.
 Type of monitoring-specific Siemens user data configured with MD18208 \$MN_MM_NUM_CCS_MON_PARAM.
 Each parameter can be assigned its own type. The permissible types are:
 Type Value of the machine data
 (See types of the NC language)

 BOOL 1
 CHAR 2
 INT 3
 REAL 4
 -(STRING is explicitly not possible here; the value 5 is treated as the value 2)
 AXIS 6
 FRAME not defined
 Buffered user memory is used. A change in value leads to reconfiguration of the buffered memory.
 Related to:
 MD18208 \$MN_MM_NUM_CCS_MON_PARAM
 MD18100 \$MN_MM_NUM_CUTTING_EDGES_IN_TOA

18210	MM_USER_MEM_DYNAMIC			EXP, N02	S7	
-	Volatile user memory [kB]			DWORD	PowerOn	
NDLD						
840dsl-71	-	9000	0	135072	ReadOnly	M
840dsl-72	-	9000	0	135072	ReadOnly	M

840dsl-73	-	9000	0	135072	ReadOnly	M
840dsl-711	-	9000	0	262144	ReadOnly	M
840dsl-721	-	9000	0	271180	ReadOnly	M
840dsl-731	-	9000	0	404873	ReadOnly	M

Description:

The volatile memory available in the NCK.

MD18210 \$MN_MM_USER_MEM_DYNAMIC makes the size of the volatile memory available to the user visible.

There are various types of user data in this memory area, for example.

- Local user data
- IPO block buffers
- User macros
- Diagnostics functions such as trace recording of times,.....
- Tool management trace
- Communication with 1-n HMIs; value of n: see MD10134 \$MN_MM_NUM_MMC_UNITS.
- Reorg log file (required for internal purposes of the NC program sequence)
- ...

Each additionally active channel occupies a substantial amount of memory. With channel activation, the value of the MD is automatically increased accordingly and the value of MD18050 \$MN_INFO_FREE_MEM_DYNAMIC is retained if possible.

Each activated axis requires part of this memory. With axis activation, the value of the MD is automatically increased accordingly and the value of MD18050 \$MN_INFO_FREE_MEM_DYNAMIC is retained if possible.

The possible values of MD18050 depend on the hardware and software configurations.

Information alarms 6030, 6035 may indicate that the desired total memory may not be available on the model or on the hardware. See also MD11415 \$MN_SUPPRESS_ALARM_MASK_2, bit 22

The value of NCK is automatically set after startup of the NCK without memory retention (cold restart). The value is then such that the free memory defined in MD18050 \$MN_INFO_FREE_MEM_DYNAMIC is available to the user.

(See the description of MD18050 \$MN_INFO_FREE_MEM_DYNAMIC).

The data in the volatile memory are lost when the NCK is switched off.

Related to:

The available volatile memory can be taken from MD18050 \$MN_INFO_FREE_MEM_DYNAMIC (display data of the free dynamic memory).

18230	MM_USER_MEM_BUFFERED			N02	S7	
-	Buffered user memory			DWORD	PowerOn	
NDLD						
840dsl-71	-	0	0	36864	ReadOnly	M
840dsl-72	-	0	0	36864	ReadOnly	M
840dsl-73	-	0	0	36864	ReadOnly	M
840dsl-711	-	0	0	49152	ReadOnly	M
840dsl-721	-	0	0	49152	ReadOnly	M
840dsl-731	-	0	0	49152	ReadOnly	M

Description:

Nonvolatile user memory (in kB).

Various types of user data are stored in this memory area.

For example:

3.3 NC machine data

- NC part programs
- R variables
- Global user data (GUD)
- Definitions of the protection zones
- Correction tables EEC, CEC, QEC
- Tool / magazine data

...

This data is retained after control power-off.

(Provided the data backup (battery,...) is in good working order, i.e. the Init switch is correctly set on the control).

This means that they are available unchanged after restart.

Each additional active channel occupies some nonvolatile memory. With channel activation, the value of the MD is automatically increased accordingly; the value of MD18060 \$MN_INFO_FREE_MEM_STATIC is retained if possible.

To enlarge this user memory further, MD19250 \$ON_USER_MEM_BUFFERED must be increased.

The available values depend on the hardware and software configurations.

Information alarms 6030, 6035 can indicate that the desired total memory may not be available on the model or on the hardware. See also MD11415

\$MN_SUPPRESS_ALARM_MASK_2, bit 22

See also the meaning of MD18060 \$MN_INFO_FREE_MEM_STATIC

18232	MM_ACTFILESYS_LOG_FILE_MEM			N02	-	
-	System: logfile size in SRAM [KB]			DWORD	PowerOn	
-						
-	3	400, 50, 30	0	32000	2/2	M

Description:

Buffered log file for buffered data of the active file system (in kbytes)

Systems with slow data buffering media store changed buffered data in the internal system SRAM. When the buffer is full, all data of the active file system are made persistent. The buffer backs up the data persistence of the last persistence operation until the next power fail. After a power fail (power failure or power OFF), data that had not yet been made persistent at the time of the power fail can be restored from this buffer.

The log file serves to minimize or totally avoid data loss in the event of power fail. 1000 entries require approximately 70 kB.

A value greater than 0 is only practicable if MD18231

\$MN_MM_USER_MEM_BUFFERED_TYPEOF[1] = 1.

A value equal to 0 means that the buffered data are not voltage loss safe

if MD18231 \$MN_MM_USER_MEM_BUFFERED_TYPEOF[1] = 1 (typical for SINUMERIK solution line)

Example:

With MD18232 \$MN_MM_ACTFILESYS_LOG_FILE_MEM[2] = 0, data changes from synchronized actions can be excluded from the power fail data backup.

An improved time response of the synchronized actions would be advantageous. This should only be set if the buffered data that are changed by the synchronized action are not safety-related.

Index Meaning

0 Preprocessing buffer

1 Buffer for data changes within the range of the tool change and retract

2 Buffer for data changes of the main processing (synchronized actions)

See also MD17610 \$MN_DEPTH_OF_LOGFILE_OPT_PF, which can be used to optimize the behavior.

18233	IS_CONTINUOUS_DATA_SAVE_ON			EXP, N02	-	
-	System: Automatic saving of persistent data			BOOLEAN	PowerOn	
-						
-	3	TRUE, TRUE, TRUE	FALSE	TRUE	7/2	M

Description: The machine data is relevant only if MD18231 \$MN_MM_USER_MEM_BUFFERED_TYPEOF = 1.
Value = 0 : Continuous saving of persistent data on disk/flash/etc. is deactivated.
The dynamic response of the software on systems of the SolutionLine range can thus be improved.
Value = 1 : Continuous automatic saving of persistent data on disk/flash/etc. is active.
Index 0 = Reserved
Index 1 = Definition for the buffered data of the active file system (incl. machine data).
Index 2 = Definition for the buffered data of the passive file system (part programs, cycles, ...).
The default value should be changed only for diagnostic purposes or for optimizing the dynamic response.
The default value should be changed only if the system is operated in an environment, where no spontaneous shutdown of the system / spontaneous power failure occurs.
Otherwise, persistent data can be lost.

18234	MM_MEMORY_CONFIG_MASK			EXP, N02	-	
-	Setting of backup of persistant data of the current file system			UDWORD	PowerOn	
-						
-	-	0x01	0x00	0x01	2/2	M

Description: Bit 0 is defined for MD18231 \$MN_USER_MEM_BUFFERED_TYPEOF[1]=1. If the buffer size defined by MD18232 \$MN_MM_ACTFILESYS_LOG_FILE_MEM contains many data in the respective buffer, they are made persistent by the NCK software as follows:
Value = 0: synchronous data backup
Value = 1: asynchronous data backup
Asynchronous means not synchronized with the NCK sequence. Synchronous means that the preprocessing task in NCK is stopped for the time required for making the data persistent. Which setting is preferable depends on the hardware used and/or on the actual NCK application.

18235	MM_INCOA_MEM_SIZE			EXP	-	
-	Size of the DRAM memory for INCOA applications [Kbyte]			DWORD	PowerOn	
-						
-	-	20480	0	25600	7/2	M

Description: On cold restart of the control system, the default value of MD18235 \$MN_MM_INCOA_MEM_SIZE specifies the DRAM memory range that is available for INCOA applications in total.
This MD can only be read. With the diagnostics function "Read current actual value" the memory space actually occupied by the INCOA applications can be determined.

18237	MM_CYC_DATA_MEM_SIZE			EXP, N02	-	
-	Cycle/display setting data in SRAM [kB]			DWORD	PowerOn	
-						
-	-	0	0	128	ReadOnly	M

Description: Size of the buffered memory for 'Setting data for cycles and display' [kB]

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18270	MM_NUM_SUBDIR_PER_DIR			N02	S7	
-	Number of subdirectories (DRAM)			DWORD	PowerOn	
-						
-	-	256	0	-	ReadOnly	M

Description: Defines the maximum number of subdirectories that can be created in a directory or subdirectory of the passive file system.

This value is for information only, and cannot be changed.

See also MD18280 \$MN_MM_NUM_FILES_PER_DIR (number of files per directory).

18280	MM_NUM_FILES_PER_DIR			N02	S7	
-	Number of files per directory (DRAM)			DWORD	PowerOn	
-						
-	-	512	512	3000	7/2	M

Description: Defines the maximum number of files that can be created in a directory or subdirectory of the passive file system.

See also MMD18270 \$MN_MM_NUM_SUBDIR_PER_DIR (number of subdirectories per directory).

18310	MM_NUM_DIR_IN_FILESYSTEM			N02	S7	
-	Number of directories in passive file system (SRAM)			DWORD	PowerOn	
-						
-	-	30	30	256	7/2	M

Description: The machine data limits the number of directories in the passive file system.

It can be used to reserve memory in the buffered user memory for the management of the directories. The directories and subdirectories of the passive file system set up by the system are included in this machine data. The memory required for the management of the directories can be calculated as follows:

Corresponds with:

MD18270 \$MN_MM_NUM_SUBDIR_PER_DIR

18320	MM_NUM_FILES_IN_FILESYSTEM			N02	S7	
-	Number of files in passive file system (persistent)			DWORD	PowerOn	
-						
-	-	750	64	3000	7/2	M

Description: Defines the number of files available in the part program memory.

Nonvolatile user memory is used.

Special cases:

The backed-up data are lost if this machine data is altered.

Related to:

MD18280 \$MN_MM_NUM_FILES_PER_DIR

(Number of files in directories)

18321	MM_NUM_SYSTEM_FILES_IN_FS			N02	-	
-	Number of system files			DWORD	PowerOn	
-						
-	1	500	500	1000	1/1	M

Description: Index 0: Number of temporary system files in the passive file system (see also MD18355 \$MN_MM_T_FILE_MEM_SIZE);

e.g.: system traces

18342	MM_CEC_MAX_POINTS			N01, N02	K3	
-	Max. number of interpolation points on sag compensation (SRAM)			DWORD	PowerOn	
-						
-	62	128, 128, 128, 128, 128, 128, 128, 128...	0	2000	7/2	M

Description:

The MD defines the memory space available for the compensation tables.

When MD18342 \$MN_MM_CEC_MAX_POINTS = 0, no memory is set up for the table. The sag compensation function cannot then be used.

Caution!

If MD18342 \$MN_MM_CEC_MAX_POINTS[t] is changed, when the system is powered up, the buffered NC user memory is automatically reset. This deletes all user data in the buffered user memory (e.g. drive and HMI machine data, tool offsets, part programs etc.).

Related to:

SD41300 \$SN_CEC_TABLE_ENABLE[t]

Evaluation of the sag compensation table (t) enabled.

References:

/FB/, S7, "Memory Configuration"

18352	MM_U_FILE_MEM_SIZE			EXP, N02	S7	
-	End user memory for part programs/cycles/files			DWORD	PowerOn	
-						
840dsl-71	3	2560, 0, 0	0	15360	2/2	M
840dsl-72	3	2560, 0, 0	0	15360	2/2	M
840dsl-73	3	2560, 0, 0	0	15360	2/2	M
840dsl-711	3	7680, 0, 0	0	22528	2/2	M
840dsl-721	3	7680, 0, 0	0	22528	2/2	M
840dsl-731	3	7680, 0, 0	0	22528	2/2	M

Description:

The machine data is not available or not defined for PowerLine control models.

End user memory for files in the passive file system (in kbyte).

There are various types of user data in this memory area.

E.g.: NC part programs, cycle programs of the end user, diagnostic files, ...

The settable values depend on the hardware and software configurations.

The settable size of the part program memory is, apart from the upper limit value, determined by the MD18230 \$MN_MM_USER_MEM_BUFFERED and can also

be determined by a software option.

Index 0 = Size of the battery-backed part program / cycle program memory

Index 1 = Reserved

Index 2 = Reserved

18353	MM_M_FILE_MEM_SIZE			EXP, N02	S7	
-	Memory capacity for machine manufacturer's cycles/files			DWORD	PowerOn	
-						
840dsl-71	3	512, 0, 0	0	15360	1/1	M
840dsl-72	3	512, 0, 0	0	15360	1/1	M
840dsl-73	3	512, 0, 0	0	15360	1/1	M
840dsl-711	3	2560, 0, 0	0	22528	1/1	M

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840dsl-721	3	2560, 0, 0	0	22528	1/1	M
840dsl-731	3	2560, 0, 0	0	22528	1/1	M

Description: The machine data is not available or not defined for PowerLine control models.
Memory for machine manufacturer files in the passive file system (in kbyte).
The machine manufacturer's files are in this memory area of the passive file system.
E.g.: cycle programs
The settable values depend on the hardware and software configurations.
The settable size of the memory is, apart from the upper limit value,
determined by the MD18230 \$MN_MM_USER_MEM_BUFFERED.
Index 0 = Minimum size of the battery-backed (persistent) part program / cycle program memory
Index 1 = Reserved
Index 2 = Reserved

18354	MM_S_FILE_MEM_SIZE			EXP, N02	-	
-	Size of the Siemens cycle program memory [0] Size of the volatile cycle program memory [1] Reserved [2] Size of the volatile memory for system files (NRK fault file, etc.)			DWORD	PowerOn	
-						
-	3	3072, 0, 30	0	3072	7/2	M

Description: Memory for the control manufacturer's files in the passive file system (in KB)
The control manufacturer's files are in this memory area of the passive file system,
e.g.: cycle programs, system files
The settable values depend on the hardware and software configurations.
The settable size of the memory, apart from the upper limit value
for index = 0 is limited by the size of the available nonvolatile memory (see siehe MD18230\$MN_MM_USER_MEM_BUFFERED),
for Index = 2, is limited by the wize of the internally available buffered (SRAM) memory.
Index 0 = Size of the nonvolatile cycle program memory
Index 2 = Size of the non-volatile memory for system files in the SRAM. E.g. storage location of the NRK fault file.

18355	MM_T_FILE_MEM_SIZE			EXP, N02	-	
-	Memory size for temporary files			DWORD	PowerOn	
-						
-	-	4608	4608	1048576	7/2	M

Description: Memory for temporary files in the passive file system (in KB), e.g. compilations of cycles (preprocessing), cycles on CF, system traces

18357	MM_EES_FILE_MEM_SIZE			EXP, N02	-	
-	Size of the buffer memory for EES			DWORD	PowerOn	
-						
-	-	0	-	-	ReadOnly	S

Description: Size of the buffer memory for the "Execution from External Storage" function in the passive file system (in kB)

18360	MM_EXT_PROG_BUFFER_SIZE			N01	B1, K1	
-	FIFO buffer size for processing from external source (DRAM)			DWORD	PowerOn	
-						
-	-	50	30	1000000	7/2	M

Description: A FIFO buffer is needed on the NCK for each program level (main program or subprogram) that is processed externally (reload mode).

The size of the FIFO buffer is defined in kbyte by MD18360 \$MN_MM_EXT_PROG_BUFFER_SIZE.

MD18360 \$MN_MM_EXT_PROG_NUM sets the number of FIFO buffers which are simultaneously available.

During startup, the memory size determined by multiplying MD18360 \$MN_MM_EXT_PROG_BUFFER_SIZE by MD18362 \$MN_MM_EXT_PROG_NUM is reserved in the DRAM.

If the stated value exceeds the available memory space, alarm 4077 is output when writing the machine data.

References:

/PGA/Programming Guide Advanced, Section 2

18362	MM_EXT_PROG_NUM			N01	K1	
-	Number of program levels which can be simultaneously processed			BYTE	PowerOn	
-						
-	-	1	0	13	7/2	M

Description: Number of program levels that can simultaneously be in "Processing from external source" mode NCK-wide.

System resources are reserved for the HMI <-> NCK communication during "Processing from external source". Machine data MD18362 \$MN_MM_EXT_PROG_NUM defines the number of possible program levels.

The memory space is reserved during power on by MD18360 \$MN_MM_EXT_PROG_BUFFER_SIZE * MD18362 \$MN_MM_EXT_PROG_NUM. If it is found during program execution that all system resources are occupied, this is reported by alarm 14600.

18370	MM_PROTOD_NUM_FILES			N02	D1, OEM	
-	Max.no. of log files in passive file system			DWORD	PowerOn	
-						
-	10	2, 2, 0, 0, 0, 2, 2, 2...	2, 2, 0, 0, 0, 2, 2, 2...	10, 10, 10, 10, 10, 10, 10...	1/1	M

Description: Maximum number of log files in the passive file system.

The individual values involve the users of the logging function, which are assigned the following functions:

- 0: Reserved for system functions: simultaneous recording, simulation, synchronized actions analysis
- 1: Reserved for system functions: determining program runtimes, multi-step editor
- 2: Reserved for OEM applications
- 3: Reserved for OEM applications
- 4: Reserved for OEM applications
- 5: Reserved for system functions: trace
- 6: Reserved for system functions: trace
- 7: Reserved for system functions: trace
- 8: Reserved for system functions: trace
- 9: Reserved for system functions: action log

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18371	MM_PROTOD_NUM_ETPD_STD_LIST			N02	D1, OEM	
-	Number of standard data lists ETPD.			DWORD	PowerOn	
-						
-	10	25, 6, 0, 0, 0, 25, 25, 25...	25, 6, 0, 0, 0, 25, 25, 25...	25, 25, 25, 25, 25, 25, 25...	1/1	M

Description: Number of standard data lists in the OPI module ETPD (user-specific).
The individual values involve the users of the logging function, which are assigned the following functions:

- 0: Reserved for system functions: simultaneous recording, simulation, synchronized action analysis
- 1: Reserved for system functions: determining program runtimes, multi-step editor
- 2: Reserved for OEM applications
- 3: Reserved for OEM applications
- 4: Reserved for OEM applications
- 5: Reserved for system functions: trace
- 6: Reserved for system functions: trace
- 7: Reserved for system functions: trace
- 8: Reserved for system functions: trace
- 9: Reserved for system functions: action log

18372	MM_PROTOD_NUM_ETPD_OEM_LIST			N02	D1, OEM	
-	Number of OEM data lists ETPD.			DWORD	PowerOn	
-						
-	10	0, 0, 0, 0, 0, 0, 0, 0...	0	20	1/1	M

Description: Number of OEM data lists in the OPI module ETPD (user-specific).
The individual values involve the users of the logging function, which are assigned the following functions:

- 0: Reserved for system functions: simultaneous recording, simulation, synchronized action analysis
- 1: Reserved for system functions: determining program runtimes, multi-step editor
- 2: Reserved for OEM applications
- 3: Reserved for OEM applications
- 4: Reserved for OEM applications
- 5: Reserved for system functions: trace
- 6: Reserved for system functions: trace
- 7: Reserved for system functions: trace
- 8: Reserved for system functions: trace
- 9: Reserved for system functions: action log

18373	MM_PROTOD_NUM_SERVO_DATA				N02	D1	
-	Number of servo data for log				DWORD	PowerOn	
-							
-	10	0, 0, 0, 0, 0, 10, 10, 10...	0	20	1/1	M	

Description: Number of servo data, which must be recordable at the same time (user-specific).
The individual values involve the users of the logging function, which are assigned the following functions:

- 0: Reserved for system functions: simultaneous recording, simulation, synchronized action analysis
- 1: Reserved for system functions: determining program runtimes, multi-step editor

- 2: Reserved for OEM applications
- 3: Reserved for OEM applications
- 4: Reserved for OEM applications
- 5: Reserved for system functions: trace
- 6: Reserved for system functions: trace
- 7: Reserved for system functions: trace
- 8: Reserved for system functions: trace
- 9: Reserved for system functions: action log

18374	MM_PROTOC_FILE_BUFFER_SIZE			N02	-	
-	Size of log file buffer			DWORD	PowerOn	
-						
-	10	15000, 8000, 8000, 8000, 8000, 15000, 15000, 15000...	5000	1073741824	1/1	M

Description: Size of the data buffer between the IPO and preprocessing time levels of a log file [Bytes].

The individual values involve the users of the logging function, which are assigned the following functions:

- 0: Reserved for system functions: simultaneous recording, simulation, synchronized action analysis
- 1: Reserved for system functions: determining program runtimes, multi-step editor
- 2: Reserved for OEM applications
- 3: Reserved for OEM applications
- 4: Reserved for OEM applications
- 5: Reserved for system functions: trace
- 6: Reserved for system functions: trace
- 7: Reserved for system functions: trace
- 8: Reserved for system functions: trace
- 9: Reserved for system functions: action log

18375	MM_PROTOC_SESS_ENAB_USER			N02	-	
-	Users enabled for sessions			BYTE	PowerOn	
-						
-	10	0, 0, 0, 0, 0, 1, 1, 1...	0	1	1/1	M

Description: Users that are available for session management

The individual values involve the users of the logging function, which are assigned the following functions:

- 0: Reserved for system functions: simultaneous recording, simulation, synchronized action analysis
- 1: Reserved for system functions: determining program runtimes, multi-step editor
- 2: Reserved for OEM applications
- 3: Reserved for OEM applications
- 4: Reserved for OEM applications
- 5: Reserved for system functions: trace
- 6: Reserved for system functions: trace
- 7: Reserved for system functions: trace
- 8: Reserved for system functions: trace
- 9: Reserved for system functions, action log

3.3 NC machine data

18390	MM_COM_COMPRESS_METHOD			EXP, N01, N02	-	
-	Supported compression methods.			UDWORD	PowerOn	
-						
-	-	0x00	0	0x7FFFFFFF	ReadOnly	S

Description: Setting for the compression methods to be supported.

18391	TRACE_PATHNAME			EXP	-	
-	Path for trace generation			STRING	PowerOn	
NBUP						
-	-	-	-	-	1/1	M

Description: Path on which traces are saved.
The trace files are used for problem analysis by NCK development.

18392	TRACE_SAVE_OLD_FILE			EXP	-	
-	Old trace files are retained			BOOLEAN	PowerOn	
NBUP						
-	-	FALSE	0	-	1/1	M

Description: The old traces are no longer overwritten when new traces are created; instead, a version extension is added to the trace file name.
At the current time this function is executed only if files are saved on the host file system (see TRACE_PATHNAME).
The trace files are used for problem analysis by NCK development.

18400	MM_NUM_CURVE_TABS			N02, N09	M3	
-	Number of curve tables (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	-	1/1	M

Description: Defines the maximum number of curve tables that can be stored in the SRAM of the entire system. A curve table consists of a number of curve segments.
Related to:
MD18402 \$MN_MM_NUM_CURVE_SEGMENTS

18402	MM_NUM_CURVE_SEGMENTS			N02, N09	M3, B3	
-	Number of curve segments (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	-	1/1	M

Description: Defines the maximum number of curve segments that can be stored in the SRAM of the entire system. The curve segments are a component of a curve table.
Related to
MD18400 \$MN_MM_NUM_CURVE_TABS

18403	MM_NUM_CURVE_SEG_LIN			N02, N09	M3	
-	Number of linear curve segments (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	-	1/1	M

Description: Number of linear curve segments in the SRAM available throughout the NCK.
A curve table may consist of "normal" curve segments and linear segments. The number of "normal" curve segments in the SRAM is defined by MD18402 \$MN_MM_NUM_CURVE_SEGMENTS, these curve segments can accommodate polynomials.

Linear curve segments can only accommodate straight lines.

These linear curve segments are stored in battery-backed memory.

18404	MM_NUM_CURVE_POLYNOMS	N02, N09	M3, B3
-	Number of curve table polynomials (SRAM)	DWORD	PowerOn
-			
-	-	0	0
-	-	1/1	M

Description: Defines the maximum total number of polynomials for curve tables that can be stored in the SRAM of the entire system. The polynomials are a component of a curve segment. A maximum of 3 polynomials are required for a curve segment. As a rule, only 2 polynomials are used for each curve segment.

Related to

MD18400 \$MN_MM_NUM_CURVE_TABS

MD18402 \$MN_MM_NUM_CURVE_SEGMENTS

18406	MM_NUM_CURVE_TABS_DRAM	N02, N09	M3
-	Number of curve tables (DRAM)	DWORD	PowerOn
-			
-	-	0	0
-	-	1/1	M

Description: Number of curve tables in the DRAM available throughout the NCK.
The curve tables are stored either in the buffer memory or in the dynamic memory.
This MD is used to set the number of curve tables in the dynamic memory (DRAM).

18408	MM_NUM_CURVE_SEGMENTS_DRAM	N02, N09	M3
-	Number of curve segments (DRAM)	DWORD	PowerOn
-			
-	-	0	0
-	-	1/1	M

Description: Number of polynomial curve segments in the DRAM available throughout the NCK.
The curve segments are stored either in the buffer memory or in the dynamic memory.
This MD is used to set the number of segments in the dynamic memory (DRAM).

18409	MM_NUM_CURVE_SEG_LIN_DRAM	N02, N09	M3
-	Number of linear curve segments (DRAM)	DWORD	PowerOn
-			
-	-	0	0
-	-	1/1	M

Description: Number of linear curve segments in the DRAM available throughout the NCK.
A curve table may consist of "normal" curve segments and linear segments. The number of "normal" curve segments in the DRAM is defined by MD18408
\$MN_MM_NUM_CURVE_SEGMENTS_DRAM, these curve segments can accommodate polynomials.
Linear curve segments can only accommodate straight lines.
The curve segments are stored either in the buffer memory or in the dynamic memory.
This MD defines the number of curve segments in the dynamic memory (DRAM).

18410	MM_NUM_CURVE_POLYNOMS_DRAM	N02, N09	M3
-	Number of curve table polynomials (DRAM)	DWORD	PowerOn
-			
-	-	0	0
-	-	1/1	M

Description: Number of polynomials for curve tables in the DRAM available throughout the NCK.
The polynomials for curve tables are stored in the buffer memory or in the dynamic memory.

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This MD is used to set the number of polynomials for curve tables in the dynamic memory (DRAM).

18450	MM_NUM_CP_MODULES			N02, N09	-	
-	Max. number of CP modules			DWORD	PowerOn	
-						
-	-	4	0	48	1/1	M

Description: Number of CP coupling modules available within the NCK
The MD defines the max. permissible number of CP couplings and reserves the required dynamic memory (DRAM).

18452	MM_NUM_CP_MODUL_LEAD			N02, N09	-	
-	Maximum number of CP master values			DWORD	PowerOn	
-						
-	-	4	0	99	1/1	M

Description: Number of NCK-wide available CP master values.
This MD defines the max. permissible number of CP master values and reserves the required dynamic memory (DRAM).

18600	MM_FRAME_FINE_TRANS			N02	K2, M5	
-	Fine offset with FRAME (SRAM)			DWORD	PowerOn	
-						
-	-	1	0	1	7/2	M

Description: 0: The fine offset cannot be entered or programmed.
Disabling fine offset saves a maximum of 10KB SRAM, (depending on MD28080 \$MC_MM_NUM_USER_FRAMES).
1: The fine offset is possible for settable frames, the basic frame and the programmable frame by operator input or via program.

18601	MM_NUM_GLOBAL_USER_FRAMES			N02	K2, M5	
-	Number of global predefined user frames (SRAM).			DWORD	PowerOn	
-						
-	-	0	0	100	7/2	M

Description: Number of global predefined user frames.
The value corresponds to the number of field elements for the predefined field \$P_UIFR[].
If the value of the data is greater than 0, then all settable fields are only global.
The MD28080 \$MC_MM_NUM_USER_FRAMES is then ignored.

18602	MM_NUM_GLOBAL_BASE_FRAMES			N02	K2, M5	
-	Number of global base frames (SRAM).			DWORD	PowerOn	
-						
-	-	0	0	16	7/2	M

Description: Number of NCU basic frames.
The value corresponds to the number for the predefined field \$P_NCBFR[].

18603	MM_NUM_GLOBAL_G_FRAMES			N02	K2, M5	
-	Number of global grinding frames (SRAM)			DWORD	PowerOn	
-						
-	-	0	0	100	7/2	M

Description: Number of global grinding frames.
 The value corresponds to the number of field elements for the predefined field \$P_GFR[].
 If the value of the data is greater than 0, all settable frames are only global.
 MD28079 \$MC_MM_NUM_G_FRAMES is then ignored.

18660	MM_NUM_SYNACT_GUD_REAL			N02	-	
-	Number of configurable GUD variables of type REAL			DWORD	PowerOn	
-						
-	9	0, 0, 0, 0, 0, 0, 0, 0...	0	32767	7/2	M

Description: The MD18660 \$MN_MM_NUM_SYNACT_GUD_REAL[] can be used to extend individual GUD blocks by additional channel-specific parameter areas of type REAL. The GUD blocks are differentiated by the field index:

MD18660 \$MN_MM_NUM_SYNACT_GUD_REAL[0] = <value> -> extension of the SGUD block
 MD18660 \$MN_MM_NUM_SYNACT_GUD_REAL[1] = <value> -> extension of the MGUD block
 MD18660 \$MN_MM_NUM_SYNACT_GUD_REAL[2] = <value> -> extension of the UGUD block
 MD18660 \$MN_MM_NUM_SYNACT_GUD_REAL[3] = <value> -> extension of the GUD4 block
 MD18660 \$MN_MM_NUM_SYNACT_GUD_REAL[8] = <value> -> extension of the GUD9 block

In each case, fields with the following properties are created:

Data type REAL
 Field size corresponding to <value> of the relevant machine data
 Predefined names:

SYG_RS[] -> Synact parameter of type REAL in the SGUD block
 SYG_RM[] -> Synact parameter of type REAL in the MGUD block
 SYG_RU[] -> Synact parameter of type REAL in the UGUD block
 SYG_R4[] -> Synact parameter of type REAL in the GUD4 block

 SYG_R9[] -> Synact parameter of type REAL in the GUD9 block

The parameters can be read and written both by the part program and also via synchronous actions.

18661	MM_NUM_SYNACT_GUD_INT			N02	-	
-	Number of configurable GUD variables of type integer			DWORD	PowerOn	
-						
-	9	0, 0, 0, 0, 0, 0, 0, 0...	0	32767	7/2	M

Description: The MD18661 \$MN_MM_NUM_SYNACT_GUD_INT[] can be used to extend individual GUD blocks by additional channel-specific parameter areas of type INTEGER. The GUD blocks are differentiated by the field index:

MD18661 \$MN_MM_NUM_SYNACT_GUD_INT[0] = <value> -> extension of the SGUD block
 MD18661 \$MN_MM_NUM_SYNACT_GUD_INT[1] = <value> -> extension of the MGUD block
 MD18661 \$MN_MM_NUM_SYNACT_GUD_INT[2] = <value> -> extension of the UGUD block
 MD18661 \$MN_MM_NUM_SYNACT_GUD_INT[3] = <value> -> extension of the GUD4 block
 MD18661 \$MN_MM_NUM_SYNACT_GUD_INT[8] = <value> -> extension of the GUD9 block

In each case, fields with the following properties are created:

Data type BOOL
 Field size corresponding to <value> of the relevant machine data
 Predefined names:

SYG_IS[] -> Synact parameter of type INT in the SGUD block
 SYG_IM[] -> Synact parameter of type INT in the MGUD block
 SYG_IU[] -> Synact parameter of type INT in the UGUD block

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SYG_I4[] -> Synact parameter of type INT in the GUD4 block

....

SYG_I9[] -> Synact parameter of type INT in the GUD9 block

The parameters can be read and written both by the part program and also via synchronous actions.

18662	MM_NUM_SYNACT_GUD_BOOL			N02	-	
-	Number of configurable GUD variables of type Boolean			DWORD	PowerOn	
-						
-	9	0, 0, 0, 0, 0, 0, 0, 0...	0	32767	7/2	M

Description:

The MD18662 \$MN_MM_NUM_SYNACT_GUD_BOOL[] can be used to extend individual GUD blocks by additional channel-specific parameter areas of type Boolean. The GUD blocks are differentiated by the field index:

MD18662 \$MN_MM_NUM_SYNACT_GUD_BOOL[0] = <value> -> extension of the SGUD block

MD18662 \$MN_MM_NUM_SYNACT_GUD_BOOL[1] = <value> -> extension of the MGUD block

MD18662 \$MN_MM_NUM_SYNACT_GUD_BOOL[2] = <value> -> extension of the UGUD block

MD18662 \$MN_MM_NUM_SYNACT_GUD_BOOL[3] = <value> -> extension of the GUD4 block

MD18662 \$MN_MM_NUM_SYNACT_GUD_BOOL[8] = <value> -> extension of the GUD9 block

In each case, fields with the following properties are created:

Data type BOOL

Field size corresponding to <value> of the relevant machine data

Predefined names:

SYG_BS[] -> Synact parameter of type Boolean in the SGUD block

SYG_BM[] -> Synact parameter of type Boolean in the MGUD block

SYG_BU[] -> Synact parameter of type Boolean in the UGUD block

SYG_B4[] -> Synact parameter of type Boolean in the GUD4 block

....

SYG_B9[] -> Synact parameter of type Boolean in the GUD9 block

The parameters can be read and written both by the part program and also via synchronous actions.

18663	MM_NUM_SYNACT_GUD_AXIS			N02	-	
-	Number of configurable GUD variables of type Axis			DWORD	PowerOn	
-						
-	9	0, 0, 0, 0, 0, 0, 0, 0...	0	32767	7/2	M

Description:

The MD18663 \$MN_MM_NUM_SYNACT_GUD_AXIS[] can be used to extend individual GUD blocks by additional channel-specific parameter areas of type AXIS. The GUD blocks are differentiated by the field index:

MD18663 \$MN_MM_NUM_SYNACT_GUD_AXIS[0] = <value> -> extension of the SGUD block

MD18663 \$MN_MM_NUM_SYNACT_GUD_AXIS[1] = <value> -> extension of the MGUD block

MD18663 \$MN_MM_NUM_SYNACT_GUD_AXIS[2] = <value> -> extension of the UGUD block

MD18663 \$MN_MM_NUM_SYNACT_GUD_AXIS[3] = <value> -> extension of the GUD4 block

MD18663 \$MN_MM_NUM_SYNACT_GUD_AXIS[8] = <value> -> extension of the GUD9 block

In each case, fields with the following properties are created:

Data type AXIS

Field size corresponding to <value> of the relevant machine data

Predefined names:

SYG_AS[] -> Synact parameter of type AXIS in the SGUD block

SYG_AM[] -> Synact parameter of type AXIS in the MGUD block

SYG_AU[] -> Synact parameter of type AXIS in the UGUD block

SYG_A4[] -> Synact parameter of type AXIS in the GUD4 block

....

SYG_A9[] -> Synact parameter of type AXIS in the GUD9 block

The parameters can be read and written both by the part program and also via synchronous actions.

18664	MM_NUM_SYNACT_GUD_CHAR			N02	-	
-	Configurable GUD variable of type Char			DWORD	PowerOn	
-						
-	9	0, 0, 0, 0, 0, 0, 0, 0...	0	32767	7/2	M

Description:

The MD18664 \$MN_MM_NUM_SYNACT_GUD_CHAR[]

can be used to extend individual GUD blocks by additional channel-specific parameter areas of type CHAR.

The GUD blocks are differentiated by the field index:

MD18664 \$MN_MM_NUM_SYNACT_GUD_CHAR[0] = <value> -> extension of the SGUD block

MD18664 \$MN_MM_NUM_SYNACT_GUD_CHAR[1] = <value> -> extension of the MGUD block

MD18664 \$MN_MM_NUM_SYNACT_GUD_CHAR[2] = <value> -> extension of the UGUD block

MD18664 \$MN_MM_NUM_SYNACT_GUD_CHAR[3] = <value> -> extension of the GUD4 block

MD18664 \$MN_MM_NUM_SYNACT_GUD_CHAR[8] = <value> -> extension of the GUD9 block

In each case, fields with the following properties are created:

Data type CHAR

Field size corresponding to <value> of the relevant machine data

Predefined names:

SYG_CS[] -> Synact parameter of type CHAR in the SGUD block

SYG_CM[] -> Synact parameter of type CHAR in the MGUD block

SYG_CU[] -> Synact parameter of type CHAR in the UGUD block

SYG_C4[] -> Synact parameter of type CHAR in the GUD4 block

....

SYG_C9[] -> Synact parameter of type CHAR in the GUD9 block

The parameters can be read and written both by the part program and also via synchronous actions.

18665	MM_NUM_SYNACT_GUD_STRING			N02	-	
-	Configurable GUD variable of type STRING			DWORD	PowerOn	
-						
-	9	0, 0, 0, 0, 0, 0, 0, 0...	0	25	7/2	M

Description:

The MD18665 \$MN_MM_NUM_SYNACT_GUD_STRING[] can be

used to extend individual GUD blocks by additional channel-specific parameter areas of type STRING.

The GUD blocks are differentiated by the field index:

MD18665 \$MN_MM_NUM_SYNACT_GUD_STRING[0] = <value> -> extension of the SGUD block

MD18665 \$MN_MM_NUM_SYNACT_GUD_STRING[1] = <value> -> extension of the MGUD block

MD18665 \$MN_MM_NUM_SYNACT_GUD_STRING[2] = <value> -> extension of the UGUD block

MD18665 \$MN_MM_NUM_SYNACT_GUD_STRING[3] = <value> -> extension of the GUD4 block

MD18665 \$MN_MM_NUM_SYNACT_GUD_STRING[8] = <value> -> extension of the GUD9 block

In each case, fields with the following properties are created:

Data type STRING

Field size corresponding to <value> of the relevant machine data

The maximum length of a string is 31 characters.

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Predefined names:

SYG_SS[] -> Synact parameter of type STRING in the SGUD block

SYG_SM[] -> Synact parameter of type STRING in the MGUD block

SYG_SU[] -> Synact parameter of type STRING in the UGUD block

SYG_S4[] -> Synact parameter of type STRING in the GUD4 block

....

SYG_S9[] -> Synact parameter of type STRING in the GUD9 block

The parameters can be read and written both by the part program
and also via synchronous actions.

18700	MM_SIZEOF_LINKVAR_DATA			N02	B3	
-	Size of NCU-link variable memory			DWORD	PowerOn	
LINK, -						
-	-	0	0	1073741824	7/2	M

Description: Number of bytes of the NCK link memory for the variables \$A_DLx.

Note: If the number of addressable NCU link variables exceeds the value 32767, variables with an index greater than this limit cannot be visualized in the diagnostic display, etc. However they are still functionally available.

18710	MM_NUM_AN_TIMER			N02	-	
-	Number of global time variable for synchronized actions			DWORD	PowerOn	
-						
-	-	0	0	10000	7/2	M

Description: Number of global time variables for motion-synchronous actions (DRAM)

18720	MM_SERVO_FIFO_SIZE			EXP, N01	B3	
-	Setpoint value for buffer size between IPO and position control			DWORD	PowerOn	
-						
-	-	2	2	35	3/2	M

Description: The machine data determines the size of the setpoint value buffer between interpolator and position control, and has a direct effect on the dynamic user memory requirement. That is normally 2. If several NCUs are connected via NCU link for e.g. rotary indexing machines, the value should be set to 3 on all NCUs. This will balance the transmission rates of the setpoint values via the link.

In a master value application (e.g. line shaft), the value should be set to 4, but only on the NCU that generates the master value. For all the other NCUs, the preset value should be maintained at 2.

Note:

In control loops that are connected via interpolator, every increase of the value generates a further dead-time.

When the IPO cycles of the NCUs within an NCU group are set to different values, the link communication will only run in the slowest IPO cycle. The MD must be increased in the ratio of the NCU IPO cycle to the slowest IPO cycle in the NCU group, in order to achieve a synchronized output of the setpoint values on the drive interface. The formula for this is as follows:

$$MM\_SERVO\_FIFO\_SIZE = 2 * IPO \text{ cycle ratio} + 1$$

Example:

In an IPO cycle ratio of 4:1, the value on the fast NCU should be set to 9 instead of 3. On the slow NCU, the value must be set to 3.

18730	MM_MAXNUM_ALARM_ACTIONS			N02	-	
-	Length of the alarm action list			DWORD	PowerOn	
-						
-	-	500	100	2000	1/1	M

Description: Maximum number of alarm actions that are retained. This is the length of the alarm action list.

18780	MM_NCU_LINK_MASK			N01	B3	
-	Activation of NCU-link communication			UDWORD	PowerOn	
-						
-	-	0	0	0x7	3/2	M

Description: Activating NCU link communication
Bit-coded activation data. That is the NCU link communication can be activated in various forms.

Bit-coded activation data:

Bit 0 = 0x1: Link communication is to be activated.

Bit 1 = 0x2: reserved

Bit 2 = 0x4: Extended search for link SDBs

SDBs are additionally searched for in the following directories:

-/user/sinumerik/sdb/...

-/oem/sinumerik/sdb/...

-/addon/sinumerik/sdb/...

As usual it is first searched in the user, oem, addon directories and then in the siemens directory

(See description FAST_IPO_LINK)

Irrelevant for:

Systems without link modules

Related to:

MD30560 \$MA_IS_LOCAL_LINK_AXIS,

MD12510 \$MN_NCU_LINKNO,

MD12520 \$MN_LINK_TERMINATION,

MD18782 \$MN_MM_LINK_NUM_OF_MODULES,

MD12540 \$MN_LINK_BAUDRATE_SWITCH,

MD12550 \$MN_LINK_RETRY_CTR

18781	NCU_LINK_CONNECTIONS			N01	B3	
-	Number of internal link connections			DWORD	PowerOn	
LINK, -						
-	-	0	0	32	3/1	M

Description: Value = 0
The software calculates the internal link connections itself.
Value > 0
Number of internal link connections from each NCU to each other NCU.
These link connections do not accommodate the non-cyclic messages.
Each of these connections can transfer 240 bytes of raw data.
Non-cyclic messages occur with alarms, container switches and link variablen.

3.3 NC machine data

18782	MM_LINK_NUM_OF_MODULES			N01, N02	B3	
-	Number of NCU-link modules			UDWORD	PowerOn	
-						
-	-	2	2	16	3/2	M

Description: LINK_NUM_OF_MODULES defines how many link modules can participate in the link communication.

18788	MM_CC_STATION_CHAN_MASK			N01	-	
-	Channel bit mask for allocating CC stations			UDWORD	PowerOn	
-						
-	3	1, 0, 0	0	0x7FFFFFFF	1/1	M

Description: Machine data for channel-specific creation of special additional software stations for compile cycles.

Enter a bit mask with the bits set for the channels, in which a compile cycle shall use the relevant station.

Meaning of the individual array elements:

MD18788 \$MN_MM_CC_STATION_CHAN_MASK[0]:

Creates a CC station at the end of the geometry preparation and prior to velocity planning in the preparation task. A compile cycle application can buffer the blocks there and manipulate their contents.

MD18788 \$MN_MM_CC_STATION_CHAN_MASK[1]:

Creates another CC-Station that is called directly after the first CC station (see above) and permits the internal block contents independently of this manipulation.

MD18788 \$MN_MM_CC_STATION_CHAN_MASK[2]:

Creates an additional CC station in the preparation task that is called directly prior to tool radius offset and allows manipulation of the internal block contents.

18790	MM_MAX_TRACE_LINK_POINTS			EXP, N02, N06	B3	
-	Trace data buffer size for NCU-Link			DWORD	PowerOn	
NBUP						
-	-	8	0	20000	2/2	M

Description: MM_MAX_TRACE_LINK_DATAPOINTS defines the size of an internal data buffer which contains the trace recordings for the NCU-link functionality.

The MD is only evaluated if bit 0 is set in MD18792 \$MN_MM_TRACE_LINK_DATA_FUNCTION.

Related to:

MD22708 \$MC_TRACE_SCOPE_MASK,

MD22714 \$MC_MM_TRACE_DATA_FUNCTION,

MD28180 \$MC_MM_MAX_TRACE_DATAPOINTS

MD22700 \$MC_TRACE_STARTTRACE_EVENT,

MD22702 \$MC_TRACE_STARTTRACE_STEP,

MD22704 \$MC_TRACE_STOPTRACE_EVENT,

MD22706 \$MC_TRACE_STOPTRACE_STEP,

MD22710 \$MC_TRACE_VARIABLE_NAME,

MD22712 \$MC_TRACE_VARIABLE_INDEX,

MD18792 \$MN_MM_TRACE_LINK_DATA_FUNCTION

18792	MM_TRACE_LINK_DATA_FUNCTION			EXP, N02, N06	B3	
-	Specifies the contents of the NCU-link-trace files			UDWORD	PowerOn	
NBUP						
-	-	0	0	0x7FFFFFFF	2/2	M

Description:

The NCK link sends and receives 32 buffers with a length of 240 bytes in each interpolation cycle.

These buffers are saved in a FIFO (first in-first out) memory of length MD18790 \$MN_MM_MAX_TRACE_LINK_POINTS and written to a file (ncsctr01.mpf for the 1st channel) if a "trigger event" occurs (e.g. Cancel Alarm button, see MD22704 \$MC_TRACE_STOPTRACE_EVENT and MD22700 \$MC_TRACE_STARTTRACE_EVENT).

The machine data should be interpreted as a bit mask and has the following meaning:

BIT0 = 1

Enables the NCU link trace file.

The others are only evaluated if this bit is set!

MD18790 \$MN_MM_MAX_TRACE_LINK_POINTS is only evaluated with this bit.

BIT1 = 1

The stored buffer content is analyzed according to its meaning and written to the file in plain text. This means setpoint transfer can be detected, for example, from the text items "desVal", actual value transfer from the identifiers "actVal" etc.

BIT1 = 0

The buffer content is displayed in HEX and is not analyzed.

BIT2 = 1

Only buffers that contain a sporadically occurring communication message (dynamic message) between the NCUs are recorded.

These include, for example, the following events:

- Set machine data
- Set link variables
- Alarms spanning NCUs
- Axis container rotation

BIT3 = 1

Every addition and deletion of a CLEARHIMSELF alarm transferred via LINK triggers the following action:

The internal receive tree is recorded before and after the action and the most recent values can be

found again in trace.

NOTICE: Very very time-consuming; please only use in an emergency.

18794	MM_TRACE_VDI_SIGNAL			EXP, N02, N06	-	
-	Trace specification of VDI signals			UDWORD	PowerOn	
NBUP						
-	-	0	0	0x7FFFFFFF	2/2	M

Description:

The NCK sends and receives PLC VDI signals. The Trace function stores the signals which have changed in each interpolation cycle in an FIFO memory (first in-first out) having a size of MM_MAX_TRACE_POINTS.

The FIFO is written to a file (for the 1st channel: ncsctr01.mpf) when a "trigger event" occurs (e.g. Cancel Alarm key, see MD22704 \$MC_TRACE_STOPTRACE_EVENT and MD22700 \$MC_TRACE_STARTTRACE_EVENT).

The machine data should be interpreted as bit mask. The corresponding VDI signals are recorded depending on which bit is set.

Bits 1.. 6 describe which axial VDI input signals are recorded in the trace (see .. TRACE_DATA_FUNCTION).

18800	MM_EXTERN_LANGUAGE			N01, N12	K1	
-	Activation of external NC languages			UDWORD	PowerOn	
-						
-	-	0x0000	0x0000	0x0001	7/2	M

3.3 NC machine data

Description: The corresponding NC language must be activated to execute part programs of other control manufacturers. Only one external NC language can be selected. The range of instructions which is made available in each case is to be taken from the current documentation.

Bit 0 (LSB):

Execution of part programs ISO_2 or ISO_3.

See MD10880 \$MN_MM_EXTERN_CNC_SYSTEM for coding.

18860	MM_MAINTENANCE_MON			EXP, N01	W6	
-	Activation of maintenance data recording			BOOLEAN	PowerOn	
-						
-	-	FALSE	0	-	7/2	M

Description: Maintenance data is recorded when this MD has the value TRUE.
The axial MD33060 \$MA_MAINTENANCE_DATA sets which data are to be recorded.
Details are to be found in the service documentation.

18866	MM_NUM_KIN_TRAFOS			N02, N09	W1	
-	Maximum number of transformations that can be defined by kinematic chains.			DWORD	PowerOn	
-						
-	-	0	0	200	7/2	M

Description: This machine data defines the maximum number of transformations in the NCK that can be defined by kinematic chains.
It also defines the number of data sets (\$NT_...[1] to \$NT_...[\$MN_MM_NUM_KIN_TRAFOS] available for parameterizing these transformations. The data record with index 0 is locked.)
The kinematic transformations conventionally parameterized in machine data can exist irrespective of this.

18880	MM_MAXNUM_KIN_CHAIN_ELEM			EXP, N01	-	
-	Maximum number of elements in kinematic chains			DWORD	PowerOn	
-						
-	-	0	0	1000	7/2	I

Description: Maximum number of links in kinematic chains. If this MD has the value 0 (default value) then no kinematic chains at all are possible.

18882	MM_MAXNUM_KIN_SWITCHES			EXP, N01	-	
-	Maximum number of switches in the kinematic chains			DWORD	PowerOn	
-						
-	-	1	1	200	7/2	I

Description: Maximum number of switches in the kinematic description of a machine.
This machine data is only evaluated if the machine data MD18880 \$MN_MM_MAXNUM_KIN_CHAIN_ELEM is not equal to zero.

18890	MM_MAXNUM_3D_PROT_AREAS			EXP, N01	-	
-	Maximum number of 3D protection areas			DWORD	PowerOn	
-						
-	-	0	0	200	7/2	M

Description: Maximum number of protection areas. This MD must not be equal to 0 in order to activate the function "collision avoidance".

18891	MM_MAXNUM_3D_WPFX_PROT_ELEM	EXP, N01	-
-	Maximum number of protection area elements for WORKPIECE and FIXTURE	DWORD	PowerOn
-			
-	-	0	0
		500	7/2
			M

Description: Maximum number of protection area elements for the automatic generation of protection areas with the language commands WORKPIECE and FIXTURE.

18892	MM_MAXNUM_3D_PROT_AREA_ELEM	EXP, N01	-
-	Max. number of protection zone elements	DWORD	PowerOn
-			
-	-	0	0
		1000	7/2
			M

Description: Maximum number of protection zone elements. If this MD is 0 (default value), no protection zones are possible.

18893	MM_MAXNUM_3D_T_PROT_ELEM	EXP, N01	-
-	Max. number of tool protection area elements	DWORD	PowerOn
-			
-	-	0	0
		500	7/2
			M

Description: Maximum number of protection area elements for automatic creation of tool protection areas.

18894	MM_MAXNUM_3D_FACETS_INTERN	EXP, N01	-
-	Max. number of protection zone facets ro variable protection zones	DWORD	PowerOn
-			
-	-	0	0
		5000	7/2
			M

Description: Maximum number of facets permitted for all internally created protection zones.
Only applies if MAXNUM_3D_PROT_AREAS is greater than zero and bit 0 in PROT_AREA_TOOL_MASK is set.
Typical values would then be 1000 for milling machines with a modeled tool, and 5000 for lathes with various tool types in a turret.

18895	MM_MAXNUM_3D_FACETS	EXP, N01	-
-	Max. number of protection area facets/primitives	DWORD	PowerOn
-			
-	-	0	0
		5000	7/2
			M

Description: Maximum number of primitives and facets allowed for all protection areas.
Only applies if MAXNUM_3D_PROT_AREAS is greater than zero.

18896	MM_MAXNUM_3D_COLLISION	EXP, N01	-
-	Max. number of the memory location for collision check	DWORD	PowerOn
-			
-	-	0	0
		50000	7/2
			M

Description: Maximum size of a temporary memory area (in KB), which is required for the collision check of two protection zones.
If the contents of this machine data is 0, the required memory space is determined automatically from machine data MD18892 \$MN_MM_MAXNUM_3D_PROT_AREA_ELEM, MD18890 \$MN_MM_MAXNUM_3D_PROT_AREAS and MD18895 \$MN_MM_MAXNUM_3D_FACETS.
If the determined memory space is insufficient, it can be explicitly determined using this machine data.

3.3 NC machine data

18897	MM_MAXNUM_3D_INTERFACE_IN	EXP, N01	-
-	Max. no. of interf. bits for pre-activation of protection zones	DWORD	PowerOn
-			
-	-	16	0
		64	7/2
			M

Description: Defines how many input bits are available on the VDI interface for pre-activation of 3D protection zones.

It will influence the size of the memory space required for each NC block.

If this machine data has value n, a memory size of approximately $n * (n + 1) / 16$ bytes will be required per block.

This machine data will be evaluated and will cause reservation of memory space, only if MD18890 \$MN_MM_MAXNUM_3D_PROT_AREAS is unequal to 0.

18898	MM_MAXNUM_3D_COLL_PAIRS	EXP, N01	-
-	Maximum number of 3D collision pairs	DWORD	PowerOn
-			
-	-	0	0
		100	7/2
			M

Description: Maximum number of 3D collision pairs.

This machine data is only evaluated if MD18890 \$MN_MAX_NUM_3D_PROT_AREAS is not equal to zero.

If this machine data is zero and MD18890 \$MN_MAX_NUM_3D_PROT_AREAS is not equal to zero, memory space is automatically reserved for the maximum possible number of different 3D collision pairs ($\$MN\_MAX\_NUM\_3D\_PROT\_AREAS * (\$MN\_MAX\_NUM\_3D\_PROT\_AREAS - 1) / 2$).

If the content of this machine data is greater than the specified maximum value, then it is limited to this maximum value internally without an error message.

18899	PROT_AREA_TOOL_MASK	EXP	-
-	Controls the creation of automatically created tool protection areas	DWORD	NEW CONF
-			
-	-	0	-
		-	7/3
			U

Description: Controls the way tool protection areas are automatically created with collision detection active.

If bit 0 = 1, then in MD 18894 \$MN_MM_MAXNUM_3D_FACETS_INTERN memory space must be reserved.

This machine data is bit-coded.

Bit 0 (0x1) If no other data are available, create the tool protection area from the tool data (tool length and radius).

18930	COREFILE_NAME	EXP	-
-	Path for core file creation	STRING	PowerOn
NBUP			
-	-	-	-
			7/1
			M

Description: File name with path name under which a core file is created in the case of a control crash.

The core file is used for problem analysis by NCK development.

A core file will be created, if a valid file name is entered in this MD.

18951	MM_COLLISION_PREVIEW_LEN	EXP, N01	-
-	Length of preview in number of IPO cycles	DWORD	PowerOn
-			
-	-	100	10
		300	1/1
			M

Description: Length of buffer for the collision avoidance preview
The MD is only evaluated if option bits Bit0 and Bit3 are set in OD 19830
\$ON_COLLISION_MASK.

18952	MM_COLLISION_BRAKEPATH_LEN	EXP, N01	-
-	Length of braking ramp in number of IPO cycles	DWORD	PowerOn
-			
-	-	200	20
		600	1/1
			M

Description: Length of buffer for the braking ramp of collision avoidance
The MD is only evaluated if the option bits Bit0 and Bit3 are set in OD 19830
\$ON_COLLISION_MASK.

18960	POS_DYN_MODE	N01	K1
-	Type of positioning axis dynamic response	BYTE	Reset
-			
-	-	0	0
		1	7/2
			M

Description: The machine data determines the accelerations and jerks which are applied in the case of positioning axis motion.
Value 0:
The acceleration is taken from the first field entry in MD32300 \$MA_MAX_AX_ACCEL (value for DYNORM).
With G75 and active jerk limitation (SOFT), the jerk is taken from the first field entry in MD32431 \$MA_MAX_AX_JERK (value for DYNORM); without jerk limitation (BRISK) it is infinite.
The following applies for all other positioning axis movements:
If MD32420 \$MA_JOG_AND_POS_JERK_ENABLE is true, the jerk is taken from MD32430 \$MA_JOG_AND_POS_MAX_JERK; otherwise it is infinite (BRISK behavior).
Value 1:
The acceleration is taken from the second field entry in MD32300 \$MA_MAX_AX_ACCEL (value for DYNPOS).
The jerk is taken from the second field entry in MD32431 \$MA_MAX_AX_JERK (value for DYNPOS).
For BRISK behavior, enter very high values here.

18965	SIM_ENVIRONMENT	EXP	-
-	Defining the simulation environment	UDWORD	PowerOn
NBUP, NDLD			
-	-	0x0	0
		0x7	ReadOnly
			S

Description: Bit mask to define the simulation environment:
Bit no. Hexadec. Significance when the bit is set.
Value
Bit0: 0x1 Simulation runs on a SIMNCK
Bit1: 0x2 Simulation runs under the VNCK
Bit2: 0x4 Simulation runs under an HMI

3.3 NC machine data

19010	SYSTEM_INFO			N01	-	
-	System information			UBYTE	PowerOn	
-						
-	4	0x6, 0xA4	0	-	ReadOnly	S

Description:

System information

Current software identifiers

[0]: Class ID

[1]: Subsystem ID

[2]: Possibly export ID

[3]: Reserved

Class ID:

=====

5 (0x5) 828D

6 (0x6) 840D s1 SW 4.4 and higher

7 (0x7) 808D

8 (0x8) SINUMERIK ONE

15 (0xF) Simulation

32 (0x20) SINUMERIK MC

Subsystem ID:

=====

The following applies to 808D:

1 (0x01) PPU14*. * M

2 (0x02) PPU14*. * T

3 (0x03) Reserved

4 (0x04) PPU16*. * M

5 (0x05) PPU16*. * T

6 (0x06) Reserved

7 (0x07) PPU15*. * M

8 (0x08) PPU15*. * T

The following applies to 828D:

1 (0x01) SW26*. * T

2 (0x02) SW26*. * M

3 (0x03) Reserved

4 (0x04) Reserved from 4.8 SP3 : was SW28*. * T

5 (0x05) Reserved from 4.8 SP3 : was SW28*. * M

6 (0x06) Reserved

7 (0x07) SW24*. * T

8 (0x08) SW24*. * M

9 (0x09) Reserved

10 (0x0A) From 4.8 SP3 : SW28*. * T, was SW28*. * T Adv.

11 (0x0B) From 4.8 SP3 : SW28*. * M, was SW28*. * M Adv.

81/1 (0x51) SW24*. * GC

81/2 (0x51) SW24*. * GS

83/1 (0x53) SW26*. * GC

83/2 (0x53) SW26*. * GS

85/1 (0x55) SW28*. * GC Adv.

85/2 (0x55) SW28*. * GS Adv.

The following applies to 840Ds1:

4 (0xA4) 31-3
 5 (0xA5) 31-3e // generated by system SW

The following applies to SINUMERIK ONE:

4 (0xB4) 31-3
 5 (0xB5) 31-3e // generated by system SW

The following applies to SINUMERIK MC:

4 (0xC4) eco
 5 (0xC5) ecoe // generated by system SW

Export ID:

=====

14 (0x0E) non-export-restricted system software

This data cannot be written.

19100	NUM_AXES_IN_SYSTEM			N01	-	
-	Additionally 1 axis/spindle			BYTE	PowerOn	
-						
840dsl-71	-	3	0	8	3/3	I
840dsl-72	-	3	0	31	3/3	I
840dsl-73	-	3	0	31	3/3	I
840dsl-711	-	3	0	8	3/3	I
840dsl-721	-	3	0	31	3/3	I
840dsl-731	-	3	0	31	3/3	I

Description:

Number of available axes (IPO functionality)

If more axes are activated by the channel-specific MD20070 \$MC_AXCONF_MACHAX_USED than are permitted in OD19100 \$ON_NUM_AXES_IN_SYSTEM and/or OD19102 \$ON_NUM_ADD_AXES_IN_SYSTEM, then a power-up alarm is triggered and the NC start is prevented.

Note:

Virtual and simulated axes (actual value sensing and setpoint output are simulated) are not taken into account when calculating the number of axes.

Corresponds with:

MD30132 \$MA_IS_VIRTUAL_AX

MD30130 \$MA_CTRLOUT_TYPE

MD30240 \$MA_ENC_TYPE

19102	NUM_ADD_AXES_IN_SYSTEM			N01	-	
-	Additional 1 positioning axis/auxiliary spindle			BYTE	PowerOn	
-						
840dsl-71	-	0	0	8	3/3	I
840dsl-72	-	0	0	31	3/3	I
840dsl-73	-	0	0	31	3/3	I
840dsl-711	-	0	0	8	3/3	I
840dsl-721	-	0	0	31	3/3	I
840dsl-731	-	0	0	31	3/3	I

Description:

Number of available positioning/auxiliary axes

If more axes are activated by channel-specific MD \$MC_AXCONF_MACHAX_USED than permitted in OD19100 \$ON_NUM_AXES_IN_SYSTEM and/or OD19102 \$ON_NUM_ADD_AXES_IN_SYSTEM, a power-up alarm is triggered and the NC start is prevented.

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19110	NUM_IPO_AXES			N01	-	
-	Multiple-axis interpolation (more than 4 axes)			BYTE	PowerOn	
-						
840dsl-71	-	4	0	8	3/3	I
840dsl-72	-	4	0	31	3/3	I
840dsl-73	-	4	0	31	3/3	I
840dsl-711	-	4	0	8	3/3	I
840dsl-721	-	4	0	31	3/3	I
840dsl-731	-	4	0	31	3/3	I

Description: Number of simultaneously interpolating path axes
 If more interpolating axes are programmed than are permitted in OD19110 \$ON_NUM_IPO_AXES,
 an alarm is output and the corresponding block is not executed.
 Note: The input range is restricted for systems not subject to an export restriction.

19120	NUM_SAFE_AXES			N01, N06	-	
-	SI axis/spindle, add. 1 axis/spindle			BYTE	PowerOn	
-						
-	-	1	0	31	3/3	I

Description: Number of axes in which 'NC-based' safety functions can be activated.

19121	NUM_DRIVEBASED_SAFE_AXES			N01, N06	-	
-	Safety Integrated - axis/spindle			BYTE	PowerOn	
-						
-	-	0	0	31	3/3	U

Description: Number of axes in which drive-based safety functions can be activated.

19122	NUM_SPL_IO			N01, N06	-	
-	SI, identifier for the number of ext. SPL_I/O			BYTE	PowerOn	
-						
840dsl-71	-	0	0	2	3/3	I
840dsl-72	-	0	0	3	3/3	I
840dsl-73	-	0	0	3	3/3	I
840dsl-711	-	0	0	2	3/3	I
840dsl-721	-	0	0	3	3/3	I
840dsl-731	-	0	0	3	3/3	I

Description: The number of external SPL I/Os can be selected with the value in the option data:
 = 0 : The SPL has no external I/Os.
 = 1 : The SPL has a maximum of 4/4 external I/Os.
 = 2 : The SPL has a maximum of 64/64 external I/Os.
 = 3 : The SPL has a maximum of 192/192 external I/Os

19142	NUM_LEAD_LINK_AXES			N01	-	
-	Number of supported lead-link axes			BYTE	PowerOn	
-						
-	-	0	0	32	3/3	I

Description: Number of lead link axes supported by the software

19200	NUM_CHANNELS			N01	-	
-	Additional 1 machining channel			BYTE	PowerOn	
-						
840dsl-71	-	1	1	4	3/3	I
840dsl-72	-	1	1	10	3/3	I
840dsl-73	-	1	1	10	3/3	I
840dsl-711	-	1	1	4	3/3	I
840dsl-721	-	1	1	10	3/3	I
840dsl-731	-	1	1	10	3/3	I

Description:

Number of activatable channels

If more channels are activated by the global MD \$MN_ASSIGN_CHAN_TO_MODE_GROUP than are permitted in OD19200 \$ON_NUM_CHANNELS and OD19210 \$ON_NUM_ADD_CHANNELS, a power-up alarm is triggered which prevents the NC start.

19220	NUM_MODE_GROUPS			N01	-	
-	Additional 1 operation mode modul (BAG)			BYTE	PowerOn	
-						
-	-	1	1	10	3/3	I

Description:

Number of mode groups

If more mode groups are activated by the global MD \$MN_ASSIGN_CHAN_TO_MODE_GROUP than are permitted in \$ON_MODE_GROUPS, then a power-up alarm is triggered which prevents the NC start.

19250	USER_MEM_BUFFERED			N01, N02	-	
-	Additional CNC user memory			BYTE	Immediately	
-						
840dsl-71	-	0	0	3	3/3	I
840dsl-72	-	0	0	6	3/3	I
840dsl-73	-	0	0	6	3/3	I
840dsl-711	-	0	0	3	3/3	I
840dsl-721	-	0	0	6	3/3	I
840dsl-731	-	0	0	6	3/3	I

Description:

Option data for enabling the expansion levels of the nonvolatile user memory on the NC CPU.

Available memory = basic configuration + OD19250 \$ON_USER_MEM_BUFFERED * 2MB

OD19250 \$ON_USER_MEM_BUFFERED thus always indicates the part of the memory relative to the basic configuration.

19270	PLC_USER_MEM_SIZE			N01, N02, N03	-	
-	Additional PLC user memory			BYTE	PowerOn	
-						
-	-	4	1	12	3/3	I

Description:

Option data for enabling the additional PLC user memory

1 Minimal configuration

...

4 Basic configuration (512 kB)

5 GA + 128 kB

6 GA + 256 kB

7 GA + 384 kB

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... etc.

12 GA + 1MB (maximum configuration)

19280	PLC_C_USER_MEM_SIZE			N01, N02, N03	-	
-	Additional 64 KB for PLC C programming			BYTE	PowerOn	
-						
-	-	0	0	14	3/3	I

Description: Option data for enabling the memory configuration stages for C programming on the PLC. (Incrementation: 64KB)

0 = No memory
1 = 64KB
..
14 = 896KB

19300	COMP_MASK			N01	-	
-	Compensation options			UDWORD	PowerOn	
-						
-	-	0	0x0	0x1FF	3/3	1

Description:

Reserved TEMP Temperature compensation axial

Reserved: EEC Leadscrew error compensation

Bit 2 CEC Sag compensation

Reserved QEC Quadrant error compensation with neural network

Reserved EGA Electronic counterweight

Bit 5 BiEEC Bidirectional leadscrew error compensation

Bit 6 FRICT Friction compensation (integrated)

Bit 7 NOCO Nodding compensation ADVANCED

Bit 8 NOCO Nodding compensation ECO

19308	SINAMICS_FUNCTION_MASK			N01	-	
-	Drive options			UDWORD	PowerOn	
-						
-	-	0	0	0x7FFFFFFF	3/3	1

Description: Option data for enabling SINAMICS drive functions:

Bit 0 (LSB): Enable "'Advanced Positioning Control' (APC)" (drive parameter r108 bit 7)

Bit 1: Enable "'Advanced Positioning Control ECO' (APCeco)" (drive parameter r108 bit 19)

19310	AXIS_FUNCTION_MASK			N01, N09	-	
-	Axial options			UDWORD	PowerOn	
-						
-	-	0	0x0	0x7FFFFFFF	3/3	1

Description: Option data for enabling axial functions:

Bit 0 (LSB): Enable "Gantry axes" (MD37100 \$MA_GANTRY_AXIS_TYPE)

Bit 1: Enable "Force Control" (MD37080 \$MA_FOC_ACTIVATION_MODE)

Bit 2: Enable "Position switching signals" (MD10450 \$MN_SW_CAM_ASSIGN_TAB)

-----: Reserved "Prog. acceleration" not an option since 10/2000

Bit 4: Enable "Master-Slave" (MD37250 \$MA_MS_ASSIGN_MASTER_SPEED_CMD MD37252 \$MA_MS_ASSIGN_MASTER_TORQUE_CTR)

Bit 5: Enable "Digital setpoint exchange"

The listed machine data are reset during power on and alarm 8040 is output if the corresponding bit of the option data is not set.

19320	TECHNO_FUNCTION_MASK			N01, N09	-	
-	Technological options			UDWORD	PowerOn	
-						
-	-	0	0x0	0x7FFFFFFF	3/3	I

Description:

Option data for enabling technology-related functions

-----: (LSB): Reserved "Caliper function" (MD21220 \$MC_MULTFEED_ASSIGN_FASTIN) not an option since 10/2000

Bit 1: Enable "Adaptive Control (evaluation of internal drive variables)"

Bit 2: Enable "SINUMERIK HMI OA copy license WinCC flexible CE" (OP)

Bit 3: Enable "Oscillation functions" (MD43780 \$SA_OSCILL_IS_ACTIVE)

-----: Reserved "Tool management" (MD20310 \$MC_TOOL_MANAGEMENT_MASK)

Bit 5: Enable "Nibbling/punching" (MD26012 \$MC_PUNCHNIB_ACTIVATION)

Bit 6: Enable "Contour tunnel monitoring" (MD21050 \$MC_CONTOUR_TUNNEL_TOL)

-----: Reserved "F word interpolation" (FLIN/FCUB/FPO) not an option since 10/2000

-----: Reserved "Continuous Dressing" (FTOCON/FTOCOF) not an option since 10/2000

Bit 9: Enable "Tangential control" (TANON/TANGOF)

-----: Reserved "Synchronous spindle/Multi-edge turning" (COUPON/COUPOF)

Bit 11: Enable "Path velocity-dependent analog value output (\$AC_VACTB/\$AC_VACTW)"

-----: Reserved "Position offset as output of a synchronized action (2D)" (\$AA_OFF), not an option since 10/2000

-----: Reserved "Free contour input with stock removal against the contour" (ShopMill)

Bit 14: Enable "Measuring level 2" (MEASA, MEAWA, 1)

-----: Reserved "Tool measuring (ShopMill)" not an option since 07/2004

Bit 16: Enable "Contour pocket cycle with automatic residual material removal (ShopMill)"

Bit 17: Enable "Simultaneous recording (Realtime simulation of the current machining) (ShopMill/ShopTurn)" or "Simulation milling (HMI Embedded)"

Bit 18: Enable "Extended stop and retract" (MD37500 \$MA_ESR_REACTION)

-----: Reserved "Electronic gear (EGDEF)"

-----: Reserved "Teleservice HT6"

Bit 21: Enable "Fast retraction from the contour (LIFTFAST)"

Bit 22: Free

Bit 23: Enable "Work plan programming with ShopMill/ShopTurn"

Bit 24: Enable "Drive-autonomous generator operation" with SIMODRIVE (MD37500 \$MA_ESR_REACTION)

-----: Reserved "Tool monitoring without active tool management" (MD18080 \$MC_TOOL_MANAGEMENT_MASK)

-----: Reserved "Multiple clamping (ShopMill)"

-----: Reserved "NCU link with various IPO and position-control cycles (see description of FAST_IPO_LINK and MD18780 \$MN_MM_NCU_LINK_MASK)

Bit 28: Enable "Display volume model (ShopTurn)"

Bit 29: Enable "Online override in tool direction" (\$AA_TOFF[], handwheel override in automatic in tool direction)

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Bit 30: Enable "Milling machining package (package/only place holder for collective option)"

19321	TECHNO_FUNCTION_MASK_1	N01, N09	-
-	Technological options	UDWORD	PowerOn
-			
-	-	0x00003040	0x00003040
		0x43FEFFFF	3/3
			1

Description: Option data for enabling functions relating to technologies.

Bit 0: (LSB): Enable "Measuring cycles (MEACALC)"

Bit 1: Enable "Contour handwheel"

Bit 2: Enable "Generic coupling 'CP-BASIC'"

Bit 3: Enable "Generic coupling 'CP-COMFORT'"

Bit 4: Enable "Generic coupling 'CP-EXPERT'"

Bit 5: Enable "Generic coupling 'CP-STATIC'"

Bit 6: Enable "Replacement tools for TM"

Bit 7: Enable "TM with multiple magazines"

Bit 8: Enable "Monitoring for max. tool speed / acceleration"

Bit 9: Enable "Advanced Surface"

Bit 10: Enable "Machining package milling 3 axes (pkg/only placeholder for group option)"

Bit 11: Enable "Machining package milling 5 axes (pkg/only placeholder for group option)"

Bit 12: Enable "Siemens Cycles Base Technology"

Bit 13: Enable "Siemens Cycles Advanced Technology"

Bit 14: Enable "Balance cutting"

Bit 15: Enable "SINUMERIK Grinding Advanced"

Bit 16: Enable comb grooving

Bit 17: Enable "Top Surface"

Bit 18: Enable "Orientation offset static/dynamic"

Bit 19: Enable "Slot shape detection"

Bit 20: Enable "Intelligent load control"

Bit 21: Enable "Top Speed"

Bit 22: Enable "Jerk Adaptation"

Bit 23: Enable "Intelligent dynamic control"

Bit 24: Enable "Angle head adapter"

Bit 25: Enable "Path acceleration limitation"

Bit 26: Enable "Top Speed Plus"

Bit 27: Enable "SINUMERIK ONE Dynamics Operate"

Bit 28: Enable "SINUMERIK ONE Dynamics 3-axis milling"

Bit 29: Enable "SINUMERIK ONE Dynamics 5-axis milling"

Bit 31: Reserved ""

19330	IPO_FUNCTION_MASK	N01, N09	-
-	Interpolation	UDWORD	PowerOn
-			
-	-	0	0x0
		0x7FFFFFFF	1/1
			1

Description: Option data for enabling interpolation-related functions

-----: (LSB): Reserved "REPOS per program (REPOSx without REPOSA)" not an option since 10/2000

Bit 1: Enable "Spline interpolation (xSPLINE)"

Bit 2: Enable "Compressor 5-axis machining (COMPON/COMPCAD/COMPCURV) (solution line: incl. xSPLINE; as from NCK75 only xSPLINE because COMPx is GA)"

Bit 3: Enable "Polynomial interpolation (POLY)"

Bit 4: Enable "3D tool offset (CUT3Dx)"

Bit 5: Reserved "Master value coupling and curve table interpolation (LEADON, CTAB)"

-----: Reserved "Command axes and spindles"

Bit 7: Enable "Involute interpolation"

Bit 8: Enable "Compressor 3-axis machining (COMPON/COMPCAD/COMPCURV) (solution line: incl. xSPLINE); as from NCK75 only xSPLINE because COMPx is GA)"

Bit 31: Reserved ""

19334	SYSTEM_FUNCTION_MASK			N01, N09	-	
-	System options			UDWORD	PowerOn	
-						
-	-	0x0	0x0	0x7FFFF7FF	3/3	I

Description:

-----: (LSB): Reserved "FlashFileSystem (FFS)" is not an option but standard.

-----: Reserved "Execute from external (was 802D system)"

-----: Reserved "Color display (was 802D system)"

-----: Reserved "was 802D system"

-----: Reserved "Cycles in DRAM"

-----: Reserved "Modem (was 802D system)"

Bit 6: Enable "Machine maintenance data (MachineMaintenance)"

-----: Reserved "Direct keys/handwheel connection on MCP with PROFIBUS DP" (PL only)

Bit 8: Enable "Cycle protection"

Bit 9: Enable "Execution from External Memory (EES)"

Bit 10: Enable "AST call from part program"

Bit 11: Enable "CNC lock function"

Bit 12: Enable "Additional 100 MB CNC user memory"

Bit 13: Enable "AST add-on package"

...

Bit 28: Reserved

Bit 29: Reserved

Bit 30: Reserved "Special function SBM"

Bit 31: Reserved

19340	PROG_MASK			N01	-	
-	Program options			UBYTE	PowerOn	
-						
-	-	0	0x0	0x7F	3/3	I

Description:

Option data for enabling functions relating to program execution

Bit 0 (LSB): Reserved, was "Program preprocessing"

Bit 1: Enable "Technology cycles" and "Synchronized actions stage 2"

Bit 2: Enable "Cross-mode actions (ASUB and SYNACT)"

Bit 3: Enable "Configured stop"

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19410	TRAFO_TYPE_MASK			N01, N02, N09	-	
-	Transformation options			UDWORD	PowerOn	
-						
-	-	0	0x0	0x7FFFE7F	3/3	I

Description: Enables the transformations
 An alarm is output if an attempt is made to activate a transformation whose associated option bit is not set.
 Unbuffered memory is required.
 Setting one of the option bits increases the memory requirement.
 Meaning of the set bits in OD19410 \$ON_TRAFO_TYPE_MASK:
 Bit 0 (LBS): TRAFO5 (5-axis transformation) permitted
 Bit 1 : TRANSMIT/TRACYL (Transmit/cylinder surface curves transformation) permitted
 Bit 2 : Reserved
 Bit 3 : TRAANG (Inclined axis transformation) permitted
 Bit 4 : Reserved Was (OEM transformations) permitted
 Bit 5 : Reserved Was (Concatenated transformations) permitted
 Bit 6 : TRAFO7 (7-axis transformation) permitted
 Bit 7 : TRANSMIT/TRACYL (Transmit/transformation of cylinder peripheral curves, without real Y axis) permitted
 Bit 8 : TRAANG (Inclined axis, fixed angles) permitted
 Bit 9 : Interpolation turning
 As at 10/11/94: Centerless grinding transformation is not an option

19500	SAFE_PLC_LOGIC			N01	-	
-	Safety Integrated /SI Logic			BOOLEAN	PowerOn	
-						
-	-	FALSE	-	-	3/3	I

Description: Basic option to operate an F-PLC.

19510	SAFE_FUNCTION_MASK			N01	-	
-	Safety Integrated functions			UDWORD	PowerOn	
-						
-	-	0	0x00	0x01	3/3	M

Description: Option data for enabling Safety Integrated functions
 Bit 0 = 0: Maximum of 3 FSEND and 3 FRECV connections available
 Bit 0 = 1: More than 3 FSEND and 3 FRECV connections available

19610	TECHNO_EXTENSION_MASK			N01	-	
-	Technological extensions			UDWORD	PowerOn	
-						
-	9	0, 0, 0, 0, 0, 0, 0, 0...	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0x7FFFFFFF, 0x7FFFFFFF, 0x7FFFFFFF, 0x7FFFFFFF, 0x7F...	3/3	I

Description: Option data for activating technology functions that have been brought in for the first time as reloadable compile cycles.

\$ON_TECHNO_EXTENTION_MASK[0]

Bit 0: = 0 Only those ELF files can be loaded which are licensed by a bit in ON_TECHNO_EXTENTION_MASK[1].

1 All ELF files can be loaded

Bit 16-32: reserved for use by OEM customers

\$ON_TECHNO_EXTENTION_MASK[1]

(ELF files marketed by Siemens)

19620	TECHNO_CYCLES_MASK			N01	-	
-	Technological extensions			UDWORD	PowerOn	
-						
-	1	0	0x0	0xFFFFFFFF	3/3	I

Description: Option data for activating technology functions that are brought in as reloadable cycles.

19630	CNC_SHOPFLOOR_MGMT_SW_MASK			N01	-	
-	Shopfloor management software expansions			UDWORD	PowerOn	
-						
-	1	0	0x0	0xFFFFFFFF	3/3	I

Description: Option data for enabling CNC shopfloor management software

19640	ROB_FUNCTION_MASK			N01	-	
-	Robot functions			UDWORD	PowerOn	
-						
-	-	0	0x0	0xFFFFFFFF	3/3	I

Description: Option data for enabling robot functions

19700	ELEC_TRANSFER			N01	-	
-	Electronic transfer			BOOLEAN	PowerOn	
-						
-	-	FALSE	0	-	3/3	I

Description: Option data for enabling "electronic transfer" functionality
 The 'individual options' required for this functionality are set,
 + One additional positioning axis
 + Gantry
 + Synchronized actions level 2
 + Position switching signals/cams
 + Polynomial interpolation
 + Master value coupling
 + Cross-mode actions (ASUB and SYNACT)
 + PROFIBUS
 and the function normally present as a basic function
 - Spindle (assignments are not possible in MD35000 \$MA_SPIND_ASSIGN_TO_MACHAX)
 - Tool offsets (G40/G41/G42 are not possible)
 is disabled.

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19701	ELEC_TRANSFER_CP			N01	-	
-	Electronic transfer (CP)			BOOLEAN	PowerOn	
-						
-	-	FALSE	0	-	3/3	I

Description: Option data for enabling "electronic transfer with CP" functionality
The 'individual options' required for this functionality are set,
+ One additional positioning axis
+ Gantry
+ Synchronized actions level 2
+ Position switching signals/cams
+ Polynomial interpolation
+ Generic coupling CP-Comfort
+ Cross-mode actions (ASUB and SYNACT)
+ PROFIBUS
and the function normally present as a basic function
- Spindle (assignments are not possible in MD35000 \$MA_SPIND_ASSIGN_TO_MACHAX)
- Tool offsets (G40/G41/G42 are not possible)
is disabled.

19709	PLASTIC			N01	-	
-	Plastic package IME			BOOLEAN	PowerOn	
-						
-	-	FALSE	0	-	3/3	I

Description: Option data for enabling the "SINUMERIK plastic package" functionality
The 'individual options' required for this functionality are set:
+ 3 additional axes
+ Travel to fixed stop
+ Gantry
+ Synchronized actions level2
+ Master-slave for drives
+ Position switching signals/cams
+ Polynomial interpolation
+ Handling transformation package
and the functions normally present as basic functions
- Spindle (assignments are not possible in MD35000 \$MA_SPIND_ASSIGN_TO_MACHAX)
- Tool offsets (G40/G41/G42 are not possible)
are disabled.

19710	HANDLING			N01	-	
-	Handling package			BOOLEAN	PowerOn	
-						
-	-	FALSE	0	-	3/3	I

Description: Option data for enabling "handling" functionality
The 'individual options' required for this functionality are set,
+ 3 additional positioning axis
+ 3 additional channels
+ Synchronized actions level 2
+ Handling transformation package

+ Cross-mode actions (ASUB and SYNACT)
 and the function normally present as a basic function
 - Spindle (assignments are not possible in MD35000 \$MA_SPIND_ASSIGN_TO_MACHAX)
 - Tool offsets (G40/G41/G42 are not possible)
 is disabled.

19730	HMI_FUNCTION_MASK	N01, N09	-
-	Operating options	UDWORD	PowerOn
-			
-	2	0x00000804, 0x0000EFFF	0x00000804, 0x0000EFFF
		0x7FFFFFFF, 0x7FFFFFFF	3/3
			I

Description: Option data for enabling HMI functions:

Bit 0 (LSB): Enable "Additional languages" OD19730
 \$ON_HMI_FUNCTION_MASK[0].0

-----: Reserved "External HMI" OD19730
 \$ON_HMI_FUNCTION_MASK[0].1

-----: Reserved AP01 "Network drive management" OD19730 \$ON_HMI_FUNCTION_MASK[0].2

Bit 3: Enable "Multi-channel step sequence programming" OD19730 \$ON_HMI_FUNCTION_MASK[0].3

Bit 4: Enable "Manual machine" OD19730 \$ON_HMI_FUNCTION_MASK[0].4

Bit 5: Enable "Add. HMI user memory on NCU memory card" OD19730 \$ON_HMI_FUNCTION_MASK[0].5

Bit 6: Enable "Simulation milling (2D dynamic, 3D static)" OD19730 \$ON_HMI_FUNCTION_MASK[0].6

-----: Reserved "Measuring cycles" OD19730
 \$ON_HMI_FUNCTION_MASK[0].7

Bit 8: Enable "SINUMERIK HMI copy license OA" OD19730 \$ON_HMI_FUNCTION_MASK[0].8

Bit 9: Reserved "was Ethernet 802Dsl pro" OD19730 \$ON_HMI_FUNCTION_MASK[0].9

Bit 10: Enable "ShopTurn/Mill HMI for 840Di sl incl. HMI Advanced" OD19730 \$ON_HMI_FUNCTION_MASK[0].10

Bit 11: Enable "Advanced operator functions" OD19730 \$ON_HMI_FUNCTION_MASK[0].11

Bit 12: Enable "ShopMill/ShopTurn StepGuide" OD19730 \$ON_HMI_FUNCTION_MASK[0].12

Bit 13: Enable "Measure kinematics" OD19730 \$ON_HMI_FUNCTION_MASK[0].13

Bit 14: Enable "Trace (real-time simulation of curr. machining) MigA; for ShopMill" OD19730 \$ON_HMI_FUNCTION_MASK[0].14

Bit 15: Enable "Trace (real-time simulation of curr. machining) MigA; for ShopTurn" OD19730 \$ON_HMI_FUNCTION_MASK[0].15

Bit 16: Enable "3D simulation 1 (finished part)" OD19730 \$ON_HMI_FUNCTION_MASK[0].16

Bit 17: Enable "Determine tool requirements" OD19730
 \$ON_HMI_FUNCTION_MASK[0].17

Bit 18: Enable "Manual machine plus" OD19730
 \$ON_HMI_FUNCTION_MASK[0].18

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```

-----:      Reserved "was AP60 Run MyHMI /3GL is now in 19732
$ON_HMI_MASK"      OD19730 $ON_HMI_FUNCTION_MASK[0].19
-----:      Reserved AP61 "SINUMERIK HMI sl copy license OA
project"           OD19730 $ON_HMI_FUNCTION_MASK[0].20
-----:      Reserved AP62 "SINUMERIK HMI sl copy license OA upgrade
programming"      OD19730 $ON_HMI_FUNCTION_MASK[0].21
-----:      Reserved AP63 "SINUMERIK HMI sl copy license OA upgrade
configuration"    OD19730 $ON_HMI_FUNCTION_MASK[0].22
Bit 23:      Enable "SINUMERIK HMI sl Runtime OA Easy
Screen"          OD19730 $ON_HMI_FUNCTION_MASK[0].23
Bit 24:      Enable "Operation without SINUMERIK
OP"              OD19730 $ON_HMI_FUNCTION_MASK[0].24
Bit 25:      Enable "Access MyMachine /OPC UA -
Advanced"        OD19730 $ON_HMI_FUNCTION_MASK[0].25
Bit 26:      Enable "CCG Compiler (cam grinding)"
OD19730 $ON_HMI_FUNCTION_MASK[0].26
Bit 27:      Enable "CCG-SINUMERIK Operate Runtime OA Solution
Partner"         OD19730 $ON_HMI_FUNCTION_MASK[0].27
Bit 28:      Enable "SINUMERIK HMI sl Runtime
OA .net"         OD19730 $ON_HMI_FUNCTION_MASK[0].28
Bit 29:      Enable "Access MyMachine /OPC
UA"              OD19730 $ON_HMI_FUNCTION_MASK[0].29
Bit 30:      Reserved "SINUMERIK Operate /NCU (S00 - reserved on account of
SW4.6)"          OD19730 $ON_HMI_FUNCTION_MASK[0].30
Bit 31:      Enable "Access MyMachine /OPC UA -
OEM"             OD19730 $ON_HMI_FUNCTION_MASK[0].31
ADD ON
Bit 0:      Enable "MC information system RCS
host"            OD19730 $ON_HMI_FUNCTION_MASK[1].0
Bit 1:      Enable "MC information system RCS
@event"         OD19730 $ON_HMI_FUNCTION_MASK[1].1
Bit 2:      Enable "MC information system TPM
machine"        OD19730 $ON_HMI_FUNCTION_MASK[1].2
Bit 3:      Enable "MC information system TDI IFC (interface
client)"        OD19730 $ON_HMI_FUNCTION_MASK[1].3
Bit 4:      Enable "MC information system TDI
overview"       OD19730 $ON_HMI_FUNCTION_MASK[1].4
Bit 5:      Enable "MC information system TDI tool
handling"       OD19730 $ON_HMI_FUNCTION_MASK[1].5
Bit 6:      Enable "MC information system TDI
PLANNING"       OD19730 $ON_HMI_FUNCTION_MASK[1].6
Bit 7:      Enable "MC information system TDI
machine"        OD19730 $ON_HMI_FUNCTION_MASK[1].7
Bit 8:      Enable "MC information system TDI tool plan
generation"     OD19730 $ON_HMI_FUNCTION_MASK[1].8
Bit 9:      Enable "MC information system DNC
machine"        OD19730 $ON_HMI_FUNCTION_MASK[1].9
Bit 10:     Enable "MC information system DNC IFC (interface
client)"        OD19730 $ON_HMI_FUNCTION_MASK[1].10
Bit 11:     Enable "MC information system MDI
machine"        OD19730 $ON_HMI_FUNCTION_MASK[1].11
Bit 12:     Enable "MC information system MDI IFC (interface
client)"        OD19730 $ON_HMI_FUNCTION_MASK[1].12
Bit 13:     Enable "MC information system PMT IFC (interface
client)"        OD19730 $ON_HMI_FUNCTION_MASK[1].13

```

Bit 14: Enable "MC information system PDA IFC (interface client)" OD19730 \$ON_HMI_FUNCTION_MASK[1].14
 Bit 15: Enable "MC information system TPM IFC (interface client)" OD19730 \$ON_HMI_FUNCTION_MASK[1].15
 Bit 16: Enable "TRANSLINE 2000 HMI PRO sl" OD19730 \$ON_HMI_FUNCTION_MASK[1].16
 Bit 17: Enable "MC information system ADDM agent" OD19730 \$ON_HMI_FUNCTION_MASK[1].17
 Bit 18: Enable "MC information system RPC SINUMERIK" OD19730 \$ON_HMI_FUNCTION_MASK[1].18
 Bit 19: Enable "MC information system TDI statistic" OD19730 \$ON_HMI_FUNCTION_MASK[1].19
 Bit 20: Enable "MC information system TDI ident connection" OD19730 \$ON_HMI_FUNCTION_MASK[1].20
 Bit 21: Enable "Electronic key system (EKS)" OD19730 \$ON_HMI_FUNCTION_MASK[1].21
 Bit 22: Enable "SIMATIC ProDiag S7-1500 for WinCC" OD19730 \$ON_HMI_FUNCTION_MASK[1].22
 Bit 23: Enable "Integrated spindle monitor (S-Monitor)" OD19730 \$ON_HMI_FUNCTION_MASK[1].23
 Bit 24: Enable "DXF reader" OD19730 \$ON_HMI_FUNCTION_MASK[1].24
 Bit 25: Unused (was "SINUMERIK 828 Ladder Editor") OD19730 \$ON_HMI_FUNCTION_MASK[1].25
 Bit 26: Enable "SINUMERIK extended touch" OD19730 \$ON_HMI_FUNCTION_MASK[1].26
 Bit 27: Enable "Run MyRobot /Handling" OD19730 \$ON_HMI_FUNCTION_MASK[1].27
 Bit 28: Enable "xxx reserved YY 2018-04-17" OD19730 \$ON_HMI_FUNCTION_MASK[1].28
 Bit 29: Enable "3D JobShop" OD19730 \$ON_HMI_FUNCTION_MASK[1].29
 Bit 30: Enable "xxx reserved cn3sce00 interpolation turning AP57" OD19730 \$ON_HMI_FUNCTION_MASK[1].30

19732	HMI_MASK			N01	-	
-	Operating options			UBYTE	PowerOn	
-						
-	-	0	0x0	0x7F	ReadOnly	I

Description: Option data for enabling HMI functions:

Bit 0 (LSB): SINUMERIK Operate /NCU.
 Bit 1: SINUMERIK Operate /PCU
 Bit 2: SINUMERIK Operate /PC
 Bit 3: SINUMERIK basic PCU software /IPC
 Bit 4: SINUMERIK Operate /universal client
 Bit 5: Run MyHMI /3GL
 Bit 6: SINUMERIK Operate Display Manager

19734	HMI_OPT_MASK			N01	-	
-	Operating options			UDWORD	PowerOn	
-						
-	1	0	0x0	0x7FFFFFFF	ReadOnly	I

Description: Option data for enabling HMI functions:

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Bit 0 (LSB): Reserved
 Bit 1: Reserved
 Bit 2: Reserved
 Bit 3: Reserved
 Bit 4: Reserved
 Bit 5: Reserved
 Bit 6: Reserved
 Bit 7: Reserved

19740	DRIVE_MASK			N01	-	
-	Drive basic license bits			UDWORD	PowerOn	
-						
-	3	0x0, 0x0, 0x0	0x0	0x7FFFFFFF	3/3	I

Description: Option data

19742	DRIVE_CNT			N01, N06	-	
-	Drive count licenses [1] Cogging torque compensation for 1 axis/spindle [5] Simulated motor encoder			UBYTE	PowerOn	
-						
-	18	0, 0, 0, 0, 0, 0, 0, 0...	0, 0, 0, 0, 0, 0, 0, 0...	-	3/3	U

Description: Option data

19750	DRIVE_EXTENSION_MASK			N01	-	
-	Drive OA license bits			UDWORD	PowerOn	
-						
-	3	0x0, 0x0, 0x0	0x0, 0x0, 0x0	0xFFFFFFFF, 0xFDFC3FFF, 0xFFFFFFFF	3/3	I

Description: Option data

19830	COLLISION_MASK			N01	-	
-	Functional scope of collision avoidance			UDWORD	PowerOn	
-						
-	-	0x0	0x0	0x7	3/3	I

Description: Functional scope of collision avoidance

Bit 0 (LSB): Protect MyMachine /3D STL

The NCK internal collision avoidance is available and is supported by HMI Operate

Bit 1: Protect MyMachine /3D primitives

The NCK internal Protect MyMachine /3D primitives is available and is supported by HMI Operate

Bit 2: Protect MyMachine /Open

The external and NCK internal collision avoidance is available but is not supported in HMI Operate

Support by HMI Operate is activated by setting bit 0 and/or bit 1

19840	NUM_CHANNELS_CA_STL			N01	-	
-	Maximum number of channels for collision avoidance with STLs			UBYTE	PowerOn	
-						
-	-	1	0	10	3/3	I

Description: Maximum number of channels that have collision-relevant axes.

19841	NUM_CHANNELS_CA_PRIMITIVES			N01	-	
-	Maximum number of channels for collision avoidance with primitive bodies			UBYTE	PowerOn	
-						
-	-	1	0	10	3/3	I

Description: Maximum number of channels that have collision-relevant axes.

3.3.2 Channel-specific machine data

20000	CHAN_NAME				C01, C10	B3, K1	
-	Channel name				STRING	PowerOn	
-							
-	-	CHAN1, CHAN2, CHAN3, CHAN4, CHAN5, CHAN6, CHAN7, CHAN8...	-	-	7/2	M	

Description: The channel name can be defined in this MD. The channel name is only used for the display on the HMI.

20050	AXCONF_GEOAX_ASSIGN_TAB			C01, C10	TE7, TE8, M1, R2, K1, K2	
-	Assignment of geometry axis to channel axis			BYTE	PowerOn	
-						
-	3	1, 2, 3, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/2	M

Description: This MD is used to specify which channel axis the geometry axis is assigned to. Each geometry axis must be assigned to a specific channel. If a geometry axis is not assigned to a channel axis, then this geometry axis is not available, and cannot be programmed (with the name defined under MD20060 \$MC_AXCONF_GEOAX_NAME_TAB).

For example: Turning machine without transformation:

```
MD20050 $MC_AXCONF_GEOAX_ASSIGN_TAB[ 0 ] = 1 ; 1st geometry axis = 1st channel axis
MD20050 $MC_AXCONF_GEOAX_ASSIGN_TAB[ 1 ] = 0 ; 2nd geometry axis not defined
MD20050 $MC_AXCONF_GEOAX_ASSIGN_TAB[ 2 ] = 2 ; 3rd geometry axis = 2nd channel axis
```

The assignment made here is valid if no transformation is active. With active transformation n, the transformation-specific assignment table MD24... \$MC_TRAFO_GEOAX_ASSIGN_TAB... becomes active.

3.3 NC machine data

20060	AXCONF_GEOAX_NAME_TAB			C01, C11, C10	F2, V2, M1, K2	
-	Geometry axis name in channel			STRING	PowerOn	
-						
-	3	X, Y, Z, X, Y, Z, X, Y, Z, X, Y, Z, X, Y, Z, X, Y, Z, X...	-	-	7/2	M

Description:

This MD is used to enter the names of the geometry axes separately for each channel. Geometry axes can be programmed in the part program using the names specified here.

Special cases:

- The geometry axis name entered must not conflict with the designations and assignments of the machine and channel axis names or other identifiers.
Names for Euler angles (MD10620 \$MN_EULER_ANGLE_NAME_TAB),
Names for direction vectors (MD10640 \$MN_DIR_VECTOR_NAME_TAB),
Names for intermediate circle point coordinates for CIP (MD10660 \$MN_INTERMEDIATE_POINT_NAME_TAB) and the
Names for interpolation parameters (MD10650 \$MN_IPO_PARAM_NAME_TAB) coincide.
- The geometry axis name entered must not include any of the following reserved address letters:

- D Tool offset (D function)	- E Reserved
- F Feedrate (F function)	- G Path condition
- H Auxiliary function (H function)	- L Subroutine call
- M Miscellaneous function (M function)	- N Subblock
- P Subroutine number of passes	- R Arithmetic parameters
- S Spindle speed (S function)	- T Tool (T function)
- The name must not include any keywords (e.g. DEF, SPOS etc.) or pre-defined identifiers (e.g. ASPLINE, SOFT).
- The use of an axis identifier consisting of a valid address letter (A, B, C, I, J, K, Q, U, V, W, X, Y, Z) followed by an optional numerical extension (1-99) gives slightly better block change times than a general identifier.
- Identical names may be given to geometry axes assigned to different channels.

Related to:

MD10000 \$MN_AXCONF_MACHAX_NAME_TAB

(machine axis name [axis no.])

MD20080 \$MC_AXCONF_CHANAX_NAME_TAB

(channel axis name in the channel [channel axis no.])

20070	AXCONF_MACHAX_USED			C01, C10	TE3, B3, K5, M1, K1, K2, P3 pl, P3 sl, S1	
-	Machine axis number valid in channel			BYTE	PowerOn	
-						
-	20	1, 2, 3, 0, 0	0	31	7/2	M

Description:

This MD is used to specify the machine axis which the channel axis/special axis is assigned to. Each channel axis has to be assigned to a specific channel. A machine axis that has not been assigned to a channel is inactive, i.e. the axis control is not computed, the axis is not shown on the screen, and it cannot be programmed in any channel.

From software version 5, a machine axis need not be assigned to a channel axis for reasons of uniform configuration. The MD for the machine axis is set to 0 in this case. At the same time, MD11640 \$MN_ENABLE_CHAN_AX_GAP must be set to 1 (channel axis gaps are permitted).

From software version 5, the machine data MD20070 \$MC_AXCONF_MACHAX_USED does not directly refer to the machine axes created with MD10000 \$MN_AXCONF_MACHAX_NAME_TAB, but to the logical machine axis map which is defined with MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB.

MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB refers:

- directly to a local machine axis on the NCU,
- to a machine axis of another NCU in the NCU grouping or
- indirectly to an axis container with local or remote machine axes.

If the default values AX1, AX2, ..., AX31 are entered with MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB, then the NCK behaves in the same way as up to software version 4, this means that machine data MD20070 \$MC_AXCONF_MACHAX_USED refers to the corresponding local machine axis.

Special cases:

- Each geometry axis must be assigned to a channel axis and a machine axis so that it can be programmed.
- If a machine axis is assigned to several channels by means of MD20070 \$MC_AXCONF_MACHAX_USED, then the number of the channel from which the axis is to be programmed must be entered in MD30550 \$MA_AXCONF_ASSIGN_MASTER_CHAN.
- Up to software version 4, the list of entries must not contain any gaps (as from software version 5 - see above). In contrast, the assignment of the machine axes used may contain gaps.

For example:

Permissible:

```
AXCONF_MACHAX_USED [0] = 3; 3rd MA is the 1st axis in the channel
AXCONF_MACHAX_USED [1] = 1; 1st MA is the 2nd axis in the channel
AXCONF_MACHAX_USED [2] = 5; 5th MA is the 3rd axis in the channel
AXCONF_MACHAX_USED [3] = 0
```

Error for software version 4, permissible for version 5:

```
AXCONF_MACHAX_USED [0] = 1; 1st MA is the 1st axis in the channel
AXCONF_MACHAX_USED [1] = 2; 2nd MA is the 2nd axis in the channel
AXCONF_MACHAX_USED [2] = 0; gap in the list ...
AXCONF_MACHAX_USED [3] = 3; ... of the channel axes
```

Axis identifiers must be defined in the corresponding list places of AXCONF_CHANAX_NAME_TAB for the axes activated in the channel.

Related to:

```
MD30550 $MA_AXCONF_ASSIGN_MASTER_CHAN
MD20080 $MC_AXCONF_CHANAX_NAME_TAB
MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB
MD11640 $MN_ENABLE_CHAN_AX_GAP
```

Reference:

Description of Functions B3.

20080	AXCONF_CHANAX_NAME_TAB			C01, C11, C10	F2, V2, M1, K2, V1	
-	Channel axis name in channel			STRING	PowerOn	
-						
-	20	X, Y, Z, A, B, C, U, V, X11, Y11,, X, Y, Z, A, B, ...	-	-	7/2	M

Description:

The name of the channel axis/special axis is entered in this MD. Normally the first three channel axes are assigned by the three assigned geometry axes

(see also MD20050 \$MC_AXCONF_GEOAX_ASSIGN_TAB)

The remaining channel axes are also called special axes. The channel axis/special axis on the screen in the WCS (workpiece coordinate system) is always displayed with the name entered in this MD.

Special cases:

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- The specified channel axis name/special axis name must not conflict with the designation and assignment of the machine and geometry axis names or other identifiers.

Names for Euler angles (MD10620 \$MN_EULER_ANGLE_NAME_TAB),

Names for direction vectors (MD10640 \$MN_DIR_VECTOR_NAME_TAB),

Names for intermediate circle point coordinates for CIP (MD10660 \$MN_INTERMEDIATE_POINT_NAME_TAB)

and the names for interpolation parameters (MD10650 \$MN_IPO_PARAM_NAME_TAB) overlap.

- The channel axis name entered must not include any of the following reserved address letters:
 - D Tool offset (D function) - E Reserved
 - F Feedrate (F function) - G Path condition
 - H Auxiliary function (H function) - L Subroutine call
 - M Miscellaneous function (M function) - N Subblock
 - P Subroutine number of passes - R Arithmetic parameters
 - S Spindle speed (S function) - T Tool (T function)
- The name must not include any keywords (e.g. DEF, SPOS etc.) or pre-defined identifiers (e.g. ASPLINE, SOFT).
- The use of an axis identifier consisting of a valid address letter (A, B, C, I, J, K, Q, U, V, W, X, Y, Z) followed by an optional numerical extension (1-99) gives slightly better block change times than a general identifier.
- No special names need be entered in this MD for channel axes to which geometry axes are assigned (normally the first three channel axes).

Axis identifiers that are not allowed are rejected with an alarm during runup.

20082	AXCONF_CHANAX_DEFAULT_NAME			C01, C11, C10	-	
-	Default axis name for axis variables in the channel			STRING	PowerOn	
-						
-	-	-	-	-	7/2	M

Description:

Variables or parameters of type Axis which have not been initialized are initialized with a default axis identifier. The identifier can be configured via the machine data MD20082 \$MC_AXCONF_CHANAX_DEFAULT_NAME. If this machine data is set with an empty string, the 1st geometry axis is used, as previously.

MD20082 \$MC_AXCONF_CHANAX_DEFAULT_NAME can be set by default with all available, valid axis identifiers. The value of this machine data should generally always correspond to a value of \$MD20060 \$MC_AXCONF_GEOAX_NAME_TAB, MD20080 \$MC_AXCONF_CHANAX_NAME_TAB or MD10000 \$MN_AXCONF_MACHAX_NAME_TAB.

If an invalid axis name is entered as a value or if this name has been changed, for example, in MD20080 \$MC_AXCONF_CHANAX_NAME_TAB but not in MD20082 \$MC_AXCONF_CHANAX_DEFAULT_NAME, then this is indicated with alarm 4041 channel %1 block %2 axis identifier %3 is invalid".

Only valid axis identifiers, empty string and "NO_AXIS" may be entered in MD20082 \$MC_AXCONF_CHANAX_DEFAULT_NAME. "NO_AXIS" is used to indicate a non-initialized axis variable, empty string means previous behavior, i.e. each variable is initialized with the 1st geometry axis.

20090	SPIND_DEF_MASTER_SPIND			C01, C03	H2, K1, K2, P3 pl, P3 sl, S1, W1	
-	Initial setting of master spindle in channel			BYTE	PowerOn	
-						
-	-	1, 1, 1, 1, 1, 1, 1...	1	20	7/2	M

Description:

Definition of the default setting for the master spindle (in the channel).

The number of the spindle is entered.

A number of functions are linked to the master spindle, which are not possible with any other spindle.

Note:

The language command SETMS(n) can declare the spindle number as the master spindle.
 The spindle defined in this MD is declared once again as the master spindle with SETMS.
 The spindle defined in this MD is also declared as the master spindle at program end and program cancelation.

20092	SPIND_ASSIGN_TAB_ENABLE			C01, C03, C10	S1	
-	Enable/disable the spindle converter.			BYTE	Reset	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	1	7/7	U

Description: Value 0:
 The spindle converter function is deactivated. The contents of SD42800 \$SC_SPIND_ASSIGN_TAB[...] are not evaluated.
 Value 1:
 The spindle converter is activated. Conversion from logical to physical spindle takes place. For more information, see SD42800 \$SC_SPIND_ASSIGN_TAB.
 Note:
 The spindle converter is deactivated after "Delete SRAM" (service switch in position "1").
 Related to:
 SD42800 \$SC_SPIND_ASSIGN_TAB

20094	SPIND_RIGID_TAPPING_M_NR			C01, C03, C10	H2, K1, S1	
-	M function for switching into controlled axis mode			DWORD	PowerOn	
-						
-	-	70, 70, 70, 70, 70, 70, 70, 70...	-	-	7/2	M

Description: This machine data defines the M auxiliary function number with which the spindle is switched into axis mode.
 The M number defined in the machine data replaces M70 in Siemens mode.
 Note:
 On the VDI interface, M70 is always output with the corresponding address extension to indicate the switch to axis mode.
 Restrictions: Refer to machine data MD10715 \$MN_M_NO_FCT_CYCLE
 Related to:
 MD10714 \$MN_M_NO_FCT_EOP,
 MD10715 \$MN_M_NO_FCT_CYCLE,
 MD20094 \$MC_SPIND_RIGID_TAPPING_M_NR,
 MD22254 \$MC_AUXFU_ASSOC_M0_VALUE
 MD10814 \$MN_EXTERN_M_NO_MAC_CYCLE,
 MD10804 \$MN_EXTERN_M_NO_SET_INT
 MD10806 \$MN_EXTERN_M_NO_DISABLE_INT,
 MD10800 \$MN_EXTERN_CHAN_SYNC_M_NO_MIN,
 MD10802 \$MN_EXTERN_CHAN_SYNC_M_NO_MAX
 MD20095 \$MC_EXTERN_RIGID_TAPPING_M_NR
 \$MD26008 \$MC_NIBBLE_PUNCH_CODE

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20095	EXTERN_RIGID_TAPPING_M_NR			C01, C11, C03, C10	H2, K1	
-	M function for switching to controlled axis mode(external mode)			DWORD	PowerOn	
-						
-	-	29, 29, 29, 29, 29, 29, 29, 29...	-	-	7/2	M

Description:

This machine data defines the M function number with which the switchover to controlled spindle/axis mode is to be carried out.

The M number defined in the machine data replaces M29 in external language mode.

Pre-defined M numbers, such as M00, M1, M2, M3, etc., are not allowed as M numbers.

Restrictions: See machine data MD10715 \$MN_M_NO_FCT_CYCLE

Related to:

MD10714 \$MN_M_NO_FCT_EOP,
MD10715 \$MN_M_NO_FCT_CYCLE,
MD20094 \$MC_SPIND_RIGID_TAPPING_M_NR,
MD22254 \$MC_AUXFU_ASSOC_MO_VALUE
MD10814 \$MN_EXTERN_M_NO_MAC_CYCLE,
MD10804 \$MN_EXTERN_M_NO_SET_INT
MD10806 \$MN_EXTERN_M_NO_DISABLE_INT,
MD10800 \$MN_EXTERN_CHAN_SYNC_M_NO_MIN,
MD10802 \$MN_EXTERN_CHAN_SYNC_M_NO_MAX
MD20095 \$MC_EXTERN_RIGID_TAPPING_M_NR
MD26008 \$MC_NIBBLE_PUNCH_CODE

20096	T_M_ADDRESS_EXT_IS_SPINO			C01, C04, C09	H2, W1	
-	Meaning of address extension at T, M tool change			BOOLEAN	PowerOn	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description:

This MD is only significant if the functions 'Tool management'/'flat D numbers' are inactive.

FALSE

The contents of the address extensions of the NC addresses T and M 'tool change command number' are not evaluated by the NCK. The PLC decides on the significance of the programmed extension.

TRUE

The address extensions of the NC addresses T and M 'tool change command number' - 'tool change command number'=TOOL_CHANGE_M_CODE with 6 as the default value - are interpreted as spindle numbers.

NCK treats the extension in the same way as the active functions 'tool management' and 'flat D number management'.

That is, the programmed D number always refers to the T number of the programmed main spindle number.

See also:

MD20090 \$MC_SPIND_DEF_MASTER_SPIND,
MD22550 \$MC_TOOL_CHANGE_MODE,
MD22560 \$MC_TOOL_CHANGE_M_CODE

20098	DISPLAY_AXIS			EXP, C01	-	
-	Display axis on HMI			UDWORD	Immediately	
-						
-	20	0x7FFFFFFF, 0x7FFFFFFF, 0x7FFFFFFF, 0x7FFFFFFF, 0x7FFFFFFF,, 0x7...	0	0x7FFFFFFF	7/2	M

Description: Identifies whether the axis will be displayed by the HMI as a machine, geometry, or auxiliary axis.

This data is only evaluated by the HMI.

Bits 0 to 15: MCS

Bit 0= 1 MCS - display machine axis in the actual value windows
0 MCS - hide machine axis in the actual value windows

Bit 1= 1 MCS - display machine axis in the reference point window
0 MCS - hide machine axis in the reference point window

Bit 2= 1 MCS - display machine axis in the preset/scratch/parameter work offset windows
0 MCS - hide machine axis in the preset/scratch/parameter work offset windows

Bit 3= 1 MCS - display machine axis in the handwheel selection window
0 MCS - hide machine axis in the handwheel selection window

(Bit 4) Not assigned

Bit 5= 1 Display spindle in the T,F,S window and the T,S,M, window
0 Hide spindle in the T,F,S window and the T,S,M, window

Bit 6= 1 MCS - display axis selection as JOG axis in the actual value windows
0 MCS - hide axis selection as JOG axis in the actual value windows

Bits 16 to 31: WCS

Bit 16= 1 WCS - display geometry axis in the actual value windows
0 WCS - hide geometry axis in the actual value windows

(Bit 17) Not assigned

Bit 18= 1 WCS - display geometry axis in parameter work offset window
0 WCS - hide geometry axis in parameter work offset window

Bit 19= 1 WCS - display geometry axis in the handwheel selection window
0 WCS - hide geometry axis in the handwheel selection window

Bit 20= 1 WCS - display positioning axis in the position/straight line windows
0 WCS - hide positioning axis in the position/straight line windows

(Bit 21) Not assigned

Bit 22= 1 WCS - display axis selection as JOG axis in the actual value windows
0 WKS - hide axis selection as JOG axis in the actual value windows

20100	DIAMETER_AX_DEF			C01, C10	H1, M5, P1, V1, W1	
-	Geometry axis with transverse axis function			STRING	PowerOn	
-						
-	-	-	-	-	7/2	M

Description: This MD is used to define a geometry axis as a transverse axis. Only one transverse axis can be defined here for each channel.

Further transverse axes for axis-specific diameter programming can be activated via MD30460 \$MA_BASE_FUNCTION_MASK, bit 2.

The axis identifier of an active geometry axis that has been defined in the channel-specific MD20050 \$MC_AXCONF_GEOAX_ASSIGN_TAB[n]
or MD24120 \$MC_TRAFO_AX_GEOAX_ASSIGN_TAB_1[n] (from SW 4) and

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MD20060 \$MC_AXCONF_GEOAX_NAME_TAB[n] must be specified.

If space characters are entered or if an axis identifier is specified for an axis which is not defined as a geometry axis, this leads to the following alarms:

- during runup, to alarm 4032 "Channel %1 wrong identifier for transverse axis in %2", if the "Diameter programming" function (DIAMON) or constant cutting speed G96/G961/G962 is the switch-on setting.
- when the "Diameter programming (DIAMON)" function is activated, to alarm 16510 "Channel %1 block %2 No transverse axis available for diameter programming", if no axis has been permitted via DIAMCHANA[AX] for channel-specific diameter programming.
- when G96/G961/G962 has been programmed, to alarm 10870 "Channel %1 block %2 No transverse axis defined as reference axis for G96/G961/G962", if no geometry axis has been defined as the reference axis for G96/G961/G962 by the instruction SCC[ax].

Related to:

MD20050 \$MC_AXCONF_GEOAX_ASSIGN_TAB[n]

MD20060 \$MC_AXCONF_GEOAX_NAME_TAB[n]

MD24120 \$MC_TRAFO_AX_GEOAX_ASSIGN_TAB_1[n]

MD30460 \$MA_BASE_FUNCTION_MASK

20105	PROG_EVENT_IGN_REFP_LOCK			N01	K1, Z1	
-	Start Prog-Events despite non-referenced axes.			UDWORD	PowerOn	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x3F	7/2	M

Description: The behavior of event-driven program calls (prog-events) regarding non-referenced axes can be set.

Bit 0 = 1 :

Prog-event ignores non-referenced axes after part program start

Bit 1 = 1 :

Prog-event after part program end ignores non-referenced axes

Bit 2 = 1 :

Prog-event after operator panel reset ignores non-referenced axes

Bit 3 = 1 :

Prog-event after power-up ignores non-referenced axes

Bit 4 = 1 :

Prog-event after 1st start after search ignores non-referenced axes

Bit 5 = 1 :

Reserved

Corresponds with:

MD20106 \$MC_PROG_EVENT_IGN_SINGLEBLOCK

MD20107 \$MC_PROG_EVENT_IGN_INHIBIT

MD20108 \$MC_PROG_EVENT_MASK

MD20192 \$MC_PROG_EVENT_IGN_PROG_STATE

MD20193 \$MC_PROG_EVENT_IGN_STOP

The machine data MD20105 \$MC_PROG_EVENT_IGN_REFP_LOCK and MD20115

\$MC_IGNORE_REFP_LOCK_ASUP replace bit 1 from MD11602 \$MN_ASUP_START_MASK.

If MD20700 \$MC_REFP_NC_START_LOCK is equal to 0, the setting in MD20105

\$MC_PROG_EVENT_IGN_REFP_LOCK is ignored, and non-referenced axes are always ignored.

20106	PROG_EVENT_IGN_SINGLEBLOCK			N01	K1, Z1	
-	Prog-Events ignore single block			UDWORD	PowerOn	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x3F	7/2	M

Description: Event-driven program calls (Prog-Events) can be set regarding their single-block response.

Bit 0 = 1 :

Prog-Event after start-of-part-program causes block change without restart

Bit 1 = 1 :

Prog-Event after end-of-part-program causes block change without restart

Bit 2 = 1 :

Prog-Event after OP reset causes block change without restart

Bit 3 = 1 :

Prog-Event after ramp-up causes block change without restart

Bit 4 = 1 :

Prog-Event after 1st start after search causes block change without restart

Bit 5 = 1 :

Safety Prog-Event during ramp-up causes block change without restart

Corresponds to:

MD20105 \$MC_PROG_EVENT_IGN_REFP_LOCK

MD20107 \$MC_PROG_EVENT_IGN_INHIBIT

MD20108 \$MC_PROG_EVENT_MASK

MD20192 \$MC_PROG_EVENT_IGN_PROG_STATE

MD20193 \$MC_PROG_EVENT_IGN_STOP

20107	PROG_EVENT_IGN_INHIBIT			N01	K1, Z1	
-	Prog-Events ignore read-in disable			UDWORD	PowerOn	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x3F	7/2	M

Description: Event-driven programm calls (Prog-Events) can be set regarding their read-in disable response.

Bit 0 = 1 :

Prog-Event after start-of-part-program causes block change despite read-in disable

Bit 1 = 1 :

Prog-Event after end-of-part-program causes block change despite read-in disable

Bit 2 = 1 :

Prog-Event after OP reset causes block change despite read-in disable

Bit 3 = 1 :

Prog-Event after ramp-up causes block change despite read-in disable

Bit 4 = 1 :

Prog-Event after 1st start after search run causes block change despite read-in disable

Bit 5 = 1 :

Safety-Prog-Event during ramp-up causes block change despite read-in disable

Corresponds to:

MD20105 \$MC_PROG_EVENT_IGN_REFP_LOCK

MD20106 \$MC_PROG_EVENT_IGN_SINGLEBLOCK

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MD20108 \$MC_PROG_EVENT_MASK
MD20192 \$MC_PROG_EVENT_IGN_PROG_STATE
MD20193 \$MC_PROG_EVENT_IGN_STOP

20108	PROG_EVENT_MASK				N01	TE3, K1	
-	Setting of event-driven programm calls				UDWORD	PowerOn	
-							
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x3F	7/2	M	

Description:

Parameterization of the events with which the user program (default: `_N_PROG_EVENT_SPF`) set with MD11620 \$MN_PROG_EVENT_NAME is implicitly called.
Parameterization of the events causing the safety program `_N_SAFE_SPF` to be called implicitly:

Bit 0 = 1 : Start of part program

Bit 1 = 1 : End of part program

Bit 2 = 1 : Operator panel reset

Bit 3 = 1 : Ramp-up

Bit 4 = 1 : Reserved

Bit 5 = 1 : Safety program booting

The user program is called via the following search path:

1. `/_N_CUS_DIR/_N_PROG_EVENT_SPF`

2. `/_N_CMA_DIR/_N_PROG_EVENT_SPF`

3. `/_N_CST_DIR/_N_PROG_EVENT_SPF`

The safety program has to be available in the following location:

1. `/_N_CST_DIR/_N_SAFE_SPF`

Furthermore, MD11450 \$MN_SEARCH_RUN_MODE bit 1 also causes the user program set with MD11620 \$MN_PROG_EVENT_NAME to be started up automatically after the action blocks, regardless of the settings in this machine data.

Related to:

MD20105 \$MC_PROG_EVENT_IGN_REFP_LOCK

MD20106 \$MC_PROG_EVENT_IGN_SINGLEBLOCK

MD20107 \$MC_PROG_EVENT_IGN_INHIBIT

MD20192 \$MC_PROG_EVENT_IGN_PROG_STATE

MD20193 \$MC_PROG_EVENT_IGN_STOP

Note:

The Siemens cycle package includes the cycle `/_N_CST_DIR/_N_PROG_EVENT_SPF`, that should be used by default to process the event-driven program calls. It contains subroutine calls for the particular manufacturer and end user applications (For details see the documentation "Standard cycle PROG-EVENT.SPF").

20109	PROG_EVENT_MASK_PROPERTIES			N01	K1	
-	Properties of Prog-Events			UDWORD	PowerOn	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x1	7/2	M

Description:

Parameterization of additional properties of the event-controlled program calls (in short, Prog-Event), that is, the MD20108 \$MC_PROG_EVENT_MASK is further parameterized.

Bit 0 = 1 :

An ASUB started from channel status RESET does not result in a Prog-Event.

20110	RESET_MODE_MASK			C11, C03	F2, K6, M3, TE4, W5, B3, K5, M1, G2, K1, K2, P1, S1, W1, 2.4, 2.7	
-	Definition of basic control settings after reset/part program end			UDWORD	Reset	
-						
-	-	0x1, 0x1, 0x1, 0x1, 0x1, 0x1, 0x1, 0x1...	0	0x17FFFF	7/2	M

Description: Definition of the initial setting of the control after ramp-up and at reset/end-of-part-program with regard to the G codes (in particular the active plane and the settable work offset), tool length offset and transformation by setting the following bits:

Bit 0: Reset mode
 Bit 1: Suppress aux. funct. output on tool selection
 Bit 2: Select reset response after power-on (e.g. tool offset)
 Bit 3: Select reset response after end of test mode with regard to active tool offsets.
 Bit 4: Reserved
 Bit 5: Reserved
 Bit 6: Reset response "Active tool length offset"
 Bit 7: Reset response "Active kinematic transformation"
 Bit 8: Reset response "Coupled-motion axes"
 Bit 9: Reset response "Tangential correction"
 Bit 10: Reset response "Synchronous spindle"
 Bit 11: Reset response "Revolutional feedrate"
 Bit 12: Reset response "Geo axis replacement"
 Bit 13: Reset response "Master value coupling"
 Bit 14: Reset response "Basis frame"
 Bit 15: Reset response "Electronic gearbox"
 Bit 16: Reset response "Master spindle"
 Bit 17: Reset response "Master toolholder"
 Bit 18: Reset response "Reference axis for G96/G961/G962"
 Bit 19: Reserved "Adjustable software limit switch ineffective"
 Bit 20: Reset response "\$P_USEKT"

Bits 4 to 11, 16 and 17 are only evaluated for bit 0 = 1.

Meaning of the individual bits:

Bit 0 (LSB) = 0: corresponds to the behavior of SW release 1, is only recommended for test mode

Initial setting after ramp-up:

- G codes according to MD20150 \$MC_GCODE_RESET_VALUES
- Tool length offset not active
- Transformation not active
- No coupled-motion axis groupings active
- No tangential correction active
- No axial revolutional feedrate active
- Path revolutional feedrate with master spindle (default))

Initial setting after reset or end of part program:

The current settings are retained.

When next part program is started, the following initial setting is effective:

- G codes according to MD20150 \$MC_GCODE_RESET_VALUES
- Tool length offset not active
- Transformation not active

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- No coupled-motion axis groupings active
- No tangential correction active
- No master value coupling active
- No axial revolutionary feedrate active
- Path revolutionary feedrate with master spindle (default)

Bit 0 (LSB) = 1: Standard value for Powerline and Solutionline systems

Initial setting after startup:

- G codes acc. to MD20150 \$MC_GCODE_RESET_VALUES
- Tool length offset active acc. to MD20120 \$MC_TOOL_RESET_VALUE, MD20130 \$MC_CUTTING_EDGE_RESET_VALUE, and MD20132 \$MC_SUMCORR_RESET_VALUE
- Transformation active acc. to MD20140 \$MC_TRAFO_RESET_VALUE
- Geometry axis replacement acc. to MD20118 \$MC_GEOAX_CHANGE_RESET
- No coupled-motion axis groupings active
- No tangential correction active

Initial setting after reset or end of part program:

Depending on MD20152 \$MC_GCODE_RESET_MODE, the current settings are retained for the G groups or the initial settings stored in MD20150 \$MC_GCODE_RESET_VALUES are set.

Initial setting after reset or end of part program

Depending on MD20110 \$MC_RESET_MODE_MASK bits 6 to 7, for

- Tool length offset
- Transformation

either the current settings are retained or the initial settings saved in the MDs are set.

Depending on bits 8 and 9, the current settings of coupled-motion axes or tangentially corrected axes are either deactivated or retained.

Configured synchronous spindle coupling:

The coupling is deselected depending on the setting in MD21330 \$MC_COUPLE_RESET_MODE_1.

Non-configured synchronous spindle coupling:

Depending on bit 10, the coupling is either deactivated or retained.

Depending on bit 14, the basic frame is either retained or deselected.

Bit 1 = 0:

Auxiliary function output (D,T,M) at the PLC for tool selection corresponding to machine data

MD20120 \$MC_TOOL_RESET_VALUE

MD20130 \$MC_CUTTING_EDGE_RESET_VALUE

MD20121 \$MC_TOOL_PRESEL_RESET_VALUE

MD22550 \$MC_TOOL_CHANGE_MODE

When magazine management is active, T, M are not output as auxiliary functions. The function uses its own communication to output T, M to the PLC, for example.

Bit 1 = 1:

Suppress aux. funct. output to PLC on tool selection.

If tool management or magazine management is active, T, M are never output as auxiliary functions.

Bit 2 = 0:

If tool or magazine management is not active:

- No tool offset active after power-on. Active and programmed T depend on the subsequent settings of the machine data (bits 0, 6).

If tool or magazine management is active:

- No meaning.

Bit 2 = 1:

If tool or magazine management is not active:

- If bits 0 and 6 both = 1 (0x41), the tool offset of the last tool active in the NCK is active after the first reset after power-on.

(The value of the programmed tool depends on the value of machine data MD20121 \$MC_TOOL_PRESEL_RESET_VALUE.)

Notice: The NCK does not know the conditions at the machine.

For active tool or magazine management:

- No meaning

Bit 3 = 0:

With and without active tool management:

- End of test mode: "Retain current setting for active tool length offset" (bits 0 and 6 set) refers to the program that was active before test mode was activated.

Bit 3 = 1:

Relevant only if tool management is not active:

- End of test mode: "Retain current setting for active tool length offset" (bits 0 and 6 set) refers to the program that was active when test mode ended. (If tool management is active, the tool on the spindle is generally the active tool. Exception only for MD20270 \$MC_CUTTING_EDGE_DEFAULT = -2.)

Bit 4 = 0: Reserved

Bit 4 = 1: Reserved

Bit 5 = 0: Reserved

Bit 5 = 1: Reserved

Bit 6 = 0:

Initial setting for active tool length offset after reset/end of part program acc. to MD20120 \$MC_TOOL_RESET_VALUE, MD20130 \$MC_CUTTING_EDGE_RESET_VALUE, MD20123 \$MC_USEKT_RESET_VALUE and MD20132 \$MC_SUMCORR_RESET_VALUE.

If MD22550 \$MC_TOOL_CHANGE_MODE = 1, the tool specified in MD20121 \$MC_TOOL_PRESEL_RESET_VALUE is additionally preselected.

If tool or magazine management is active, MD20122 \$MC_TOOL_RESET_NAME is used instead of data MD20120 \$MC_TOOL_RESET_VALUE.

Bit 6 = 1:

The current setting for active tool length offset is retained after reset/end of part program.

If tool or magazine management is active, the tool currently on the master spindle (generally = master toolholder) is selected.

If the tool on the master spindle is disabled, the "disabled" status is ignored.

Please note that after a program ends or is terminated, either the most recent value for master spindle or master toolholder programmed in the program, or the value set in MD20090 \$MC_SPIND_DEF_MASTER_SPIND or MD20124 \$MC_TOOL_MANAGEMENT_TOOLHOLDER defines the master spindle or master toolholder.

(The selection is made in bit 16 or bit 17.)

For MD20270 \$MC_CUTTING_EDGE_DEFAULT = -2, the following applies specifically:

- If a tool has been loaded into the spindle, but a new offset D has not yet been programmed, the previous tool is still active in the NCK.
- If machining is canceled in this status (e.g. with the Reset key), the offset is defined with the smallest D number of the master spindle tool.

Bit 7 = 0:

Initial setting for active transformation after reset/end of part program according to MD20140 \$MC_TRAFO_RESET_VALUE.

Bit 7 = 1:

The current setting for active transformation is retained after reset/end of part program.

Bit 8 = 0:

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Coupled-motion axis groups are ungrouped at reset/end of part program.

Bit 8 = 1:

Coupled-motion axis groups remain active after reset/end of part program.

Bit 9 = 0:

Tangential correction is deactivated at reset/end of part program.

Bit 9 = 1:

Tangential correction remains active after reset/end of part program.

Bit 10 = 0:

Non-configured synchronous spindle coupling is deactivated at reset/end of part program.

Bit 10 = 1:

Non-configured synchronous spindle coupling remains active after reset/end of part program.

Bit 11 = 0:

At reset/end of part program, the setting data SD43300 \$SA_ASSIGN_FEED_PER_REV_SOURCE is reset to 0 for all non-active axes/spindles, i.e. traversing at revolutional feedrate is canceled and the setting for path and synchronous axes is reset to the master spindle (default).

Bit 11 = 1:

The current setting for revolutional feedrate is retained after reset/end of part program. At the start of the part program, the setting data SD43300 \$SA_ASSIGN_FEED_PER_REV_SOURCE is reset to 0 for all non-active axes/spindles, i.e. traversing at revolutional feedrate is canceled and the setting for path and synchronous axes is reset to the master spindle (default).

Bit 12 = 0:

If machine data MD20118 \$MC_GEOAX_CHANGE_RESET is set, a changed geometry axis assignment is canceled at reset/end of part program. The initial setting for the geometry axis assignment defined in the machine data becomes active.

Bit 12 = 1:

A changed geometry axis assignment remains active after reset/end of part program.

Bit 13 = 0:

Master value couplings are canceled at reset/end of part program.

Bit 13 = 1:

Master value couplings remain active after reset/end of part program.

Bit 14 = 0:

The basic frame is deselected.

Bit 14 = 1:

The current setting of the basic frame is retained.

Bit 15 = 0:

Active electronic gearboxes remain active at reset/end of part program.

Bit 15 = 1:

Active electronic gearboxes are canceled at reset/end of part program.

Bit 16 = 0:

Initial setting for the master spindle according to MD20090 \$MC_SPIND_DEF_MASTER_SPIND.

Bit 16 = 1:

The current setting of the master spindle (SETMS) is retained.

For MD20124 \$MC_TOOL_MANAGEMENT_TOOLHOLDER = 0, this bit also influences the behavior of bit 6.

Bit 17 = 0:

Initial setting for the master toolholder according to MD20124 \$MC_TOOL_MANAGEMENT_TOOLHOLDER.

Bit 17 = 1:

The current setting of the master toolholder (SETMTH) is retained.

(Bit17 is only relevant for active tool or magazine management MD20124 \$MC_TOOL_MANAGEMENT_TOOLHOLDER > 0. Otherwise, the setting is valid for master spindle bit 16, for active tool or magazine management. This bit also influences the behavior of bit6.)

Bit 18 = 0:

Reference axis for G96/G961/G962 acc. to MD 20100: \$MC_DIAMETER_AX_DEF.

When using SCC for your own spindle reset, bit 18 = 1 is recommended (see also MD 20112 \$MC_START_MODE_MASK, bit 18).

Bit 18 = 1:

Reference axis for G96/G961/G962 is retained.

Bit 19: Reserved!

Bit 19= 0:

The two adjustable software limit switches are deleted after reset and are no longer effective.

Bit 19 = 1:

The two adjustable software limit switches remain active after reset.

Bit 20: Reset response for \$P_USEKT (use kind of tool)

Bit 20= 0:

After the RESET, \$P_USEKT is set to \$MC_USEKT_RESET_VALUE (default=0).

Bit 20 = 1:

On RESET, \$P_USEKT is retained.

Related to:

MD20120 \$MC_TOOL_RESET_VALUE

MD20130 \$MC_CUTTING_EDGE_RESET_VALUE

MD20150 \$MC_GCODE_RESET_VALUES

MD20152 \$MC_GCODE_RESET_MODE

MD20140 \$MC_TRAFO_RESET_VALUE

MD20112 \$MC_START_MODE_MASK

MD20121 \$MC_TOOL_PRESEL_RESET_VALUE

MD20118 \$MC_GEOAX_CHANGE_RESET

MD20123 \$MC_USEKT_RESET_VALUE

20112	START_MODE_MASK			C03	K6, M3, K5, M1, K1, K2, P1, S1, W1	
-	Definition of basic setting of control after part program start			UDWORD	Reset	
-						
-	-	0x400, 0x400, 0x400, 0x400, 0x400, 0x400, 0x400, 0x400...	0	0x7FFFF	7/2	M

Description: The initial setting of the control at the start of the part program with respect to G codes (in particular, current plane and settable work offset), tool length offset, transformation, and axis couplings is defined by setting the following bits:

Bit 0: Start mode

Bit 1: Suppress aux. funct. output on tool selection

Bit 2: Not assigned, but reserved (see corresponding bit in RESET_MODE_MASK)

Bit 3: Not assigned, but reserved (see corresponding bit in RESET_MODE_MASK)

Bit 4: Start response for G code "Current plane"

Bit 5: Start response for G code "Settable work offset"

Bit 6: Start response for "Active tool length offset"

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Bit 7: Start response for "Active kinematic transformation"
 Bit 8: Start response for "Coupled-motion axes"
 Bit 9: Start response for "Tangential correction"
 Bit 10: Start response for "Synchronous spindle"
 Bit 11: Not assigned, but reserved (see corresponding bit in RESET_MODE_MASK)
 Bit 12: Start response for "Geo axis replacement"
 Bit 13: Start response for "Master value coupling"
 Bit 14: Not assigned, but reserved (see corresponding bit in RESET_MODE_MASK)
 Bit 15: Not assigned, but reserved (see corresponding bit in RESET_MODE_MASK)
 Bit 16: Start response for "Master spindle"
 Bit 17: Start response for "Master toolholder"
 Bit 18: Start response for "Reference axis for G96/G961/G962"
 Bit 19: Reserved "Adjustable software limit switch ineffective"
 Bit 20: Reserved "\$P_USEKT reset response"

Meaning of individual bits:

Bit 0 = 0:

The bits 8 (TRAIL), 10 (COUP), bit 13 (LEAD) and bit 15 (EG) are evaluated on part program start and event-driven program calls of the Progevent ASUB

Bit 0 = 1:

The bits 8 (TRAIL), 10 (COUP), bit 13 (LEAD) and bit 15 EG) are evaluated only on part program start

Bit 1 = 0:

Auxiliary function output (D, T, M, DL) to PLC on tool selection according to the following MDs: MD20120 \$MC_TOOL_RESET_VALUE, MD20130 \$MC_CUTTING_EDGE_RESET_VALUE, MD20121 \$MC_TOOL_PRESEL_RESET_VALUE, and MD22550 \$MC_TOOL_CHANGE_MODE.

Note:

If tool or magazine management is active, only auxiliary functions D and DL are output.

Bit 1 = 1:

Suppress auxiliary function output to PLC on tool selection.

Bit 1 is not relevant if tool or magazine management is active.

Bit 2 : Reserved (reset response after power-on)

Bit 3 : Reserved (end of test mode)

Bit 4 = 0:

The current setting for G code "current plane" is retained.

Bit 4 = 1:

Initial setting for G code "current plane" according to MD20150 \$MC_GCODE_RESET_VALUES

Bit 5 = 0:

The current setting for G code "settable work offset" is retained.

Bit 5 = 1:

Initial setting for G code "settable work offset" according to MD20150 \$MC_GCODE_RESET_VALUES

Bit 6 = 0:

The current setting for active tool length offset is retained.

If tool or magazine management is active, the tool currently on the active toolholder (spindle) is always selected.

If the tool that is currently on the spindle is disabled, it is automatically replaced by a suitable replacement tool.

If such a replacement tool does not exist, an alarm is output.

Bit 6 = 1:

Initial setting for active tool length offset according to MD20120 \$MC_TOOL_RESET_VALUE, MD20130 \$MC_CUTTING_EDGE_RESET_VALUE, MD20123 \$MC_USEKT_RESET_VALUE, and MD20132 \$MC_SUMCORR_RESET_VALUE.

If MD22550 \$MC_TOOL_CHANGE_MODE = 1, the tool selected via MD20121 \$MC_TOOL_PRESEL_RESET_VALUE is preselected in addition.

If tool or magazine management is active, MD20120 \$MC_TOOL_RESET_NAME is used instead of MD20122 \$MC_TOOL_RESET_VALUE.

Bit 7 = 0:
The current setting for the active transformation is retained.

Bit 7 = 1:
Initial setting for active transformation after reset/end of part program according to MD20140 \$MC_TRAFO_RESET_VALUE

Bit 8 = 0:
Coupled-motion axis groupings remain active.

Bit 8 = 1:
Coupled-motion axis groupings are deactivated.

Bit 9 = 0:
Tangential correction remains active.

Bit 9 = 1:
Tangential correction is deactivated.

Bit 10 = 0:
Non-configured synchronous spindle coupling remains active.

Bit 10 = 1:
Non-configured synchronous spindle coupling is deactivated.

Bit 11 : Reserved (revolutional feedrate)

Bit 12 = 0:
A changed geometry axis assignment remains active when the part program starts.

Bit 12 = 1:
If machine data MD20118 \$MC_GEOAX_CHANGE_RESET is set, a changed geometry axis assignment is deleted when the part program starts.

Bit 13 = 0:
Master value couplings remain active.

Bit 13 = 1:
Master value couplings are deactivated.

Bit 14 : Reserved (basic frame)

Bit 15 = 0:
Active electronic gearboxes remain active.

Bit 15 = 1:
Active electronic gearboxes are deactivated.

Bit 16 = 0:
The current setting of the master spindle (SETMS) is retained.

Bit 16 = 1:
Initial setting for the master spindle according to MD20090 \$MC_SPIND_DEF_MASTER_SPIND

Bit 17 = 0:
The current setting of the master toolholder (SETMTH) is retained (relevant only if tool or magazine management is active)

Bit 17 = 1:
Only if MD20124 \$MC_TOOL_MANAGEMENT_TOOLHOLDER > 0: Initial setting for the master toolholder according to MD20124 \$MC_TOOL_MANAGEMENT_TOOLHOLDER.
Otherwise, the setting for the master spindle applies.

Bit 18 = 0:

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Reference axis for G96/G961/G962 according to MD20100 \$MC_DIAMETER_AX_DEF.

When using SCC with its own spindle reset, setting bit 18 = 1 is recommended (see also MD20110: \$MC_RESET_MODE_MASK, bit 18).

Bit 18 = 1:

Reference axis for G96/G961/G962 is retained.

Related to:

MD20120 \$MC_TOOL_RESET_VALUE

MD20130 \$MC_CUTTING_EDGE_RESET_VALUE

MD20150 \$MC_GCODE_RESET_VALUES

MD20152 \$MC_GCODE_RESET_MODE

MD20140 \$MC_TRAFO_RESET_VALUE

MD20110 \$MC_RESET_MODE_MASK

MD20121 \$MC_TOOL_PRESEL_RESET_VALUE

MD20118 \$MC_GEOAX_CHANGE_RESET

20114	MODESWITCH_MASK			C03	K1	
-	Interruption MDI by mode change			UDWORD	Reset	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0xFFFF	7/2	M

Description:

After program interruption in MDI mode (e.g. in order to carry out a measurement on the workpiece and to correct the tool wear values or after tool breakage) the tool can be manually withdrawn from the contour by changing into JOG mode.

In this case, the control stores the coordinates of the position of the interruption and indicates the path differences traversed by the axes in JOG mode as "Repos offset". When MDI mode is selected again, the axis is repositioned on the contour. This response can be canceled by means of this machine data.

Bit 0 (LSB) = 0:

When MDI (JOG, JOGREF, JOGREPOS, MDIREF and MDIREPOS) are deselected in stopped status, the system ASUB Repos is selected.

Bit 0 (LSB) = 1:

When MDI (JOG, JOGREF, JOGREPOS, MDIREF and MDIREPOS) are deselected in stopped status, the system ASUB Repos is not selected.

Bit 1 (LSB) = 0:

If the NCK stops at a part program block in the program execution in which repositioning is not possible, alarm 16916 is generated if an attempt is made to switch to manual mode.

Bit 1 (LSB) = 1:

If the NCK stops at a part program block in the program execution in which repositioning is not possible, no alarm is generated if an attempt is made to switch to manual mode.

20115	IGNORE_REFP_LOCK_ASUP			C01	K1, Z1	
-	Process interrupt program despite non-referenced axes			UDWORD	NEW CONF	
-						
-	-	0x200, 0x200, 0x200, 0x200, 0x200, 0x200, 0x200, 0x200...	0	0x7FFFFFFF	7/2	M

Description:

Despite non-referenced axes, the assigned ASUB with the set bit is processed for the interrupt.

Bit 0 = 1: Enable interrupt 1 (user interrupt)

Bit 1 = 1: Enable interrupt 2 (user interrupt)


```

...
Bit 7 = 1: Enable interrupt 8 (user interrupt)
Bit 8 = 1: Enable interrupt 9 (system interrupt, reserved)
Bit 9 = 1: Enable interrupt 10 (system interrupt, reserved)
Bit 10 = 1: Enable interrupt 11 (system interrupt, reserved)
...
Bit 31 = 1: Enable interrupt 32 (system interrupt, reserved)
Notice
System interrupts can start system ASUBs with traversing motions
Notes
1. Replace following machine data MD11602 $MN_ASUP_START_MASK, bit1.
  - MD20105 $MC_PROG_EVENT_IGN_REFP_LOCK
  - MD20115 $MC_IGNORE_REFP_LOCK_ASUP
2. If MD20700 $MC_REFP_NC_START_LOCK == 0, the setting in MD20105
   $MC_PROG_EVENT_IGN_REFP_LOCK will be ignored, and non-referenced axes will be ignored.
Related to:
MD11602 $MN_ASUP_START_MASK
MD20116 $MC_IGNORE_INHIBIT_ASUP
MD20117 $MC_IGNORE_SINGLEBLOCK_ASUP
MD20191 $MC_IGN_PROG_STATE_ASUP
MD20194 $MC_IGNORE_NONCSTART_ASUP

```

20116	IGNORE_INHIBIT_ASUP	C01	K1, Z1
-	Execute interrupt program despite read-in disable	UDWORD	NEW CONF
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 0x7FFFFFFF 7/2 M

Description: The assigned ASUB with the set bit is executed in spite of read-in disable being set.

```

Bit 0 = 1: Enable interrupt 1 (user interrupt)
Bit 1 = 1: Enable interrupt 2 (user interrupt)
...
Bit 7 = 1: Enable interrupt 8 (user interrupt)
Bit 8 = 1: Enable interrupt 9 (system interrupt, reserved)
Bit 9 = 1: Enable interrupt 10 (system interrupt, reserved)
Bit 10 = 1: Enable interrupt 11 (system interrupt, reserved)
..
Bit 31 = 1: Enable interrupt 32 (system interrupt, reserved)
NOTICE:
System ASUBs started by system interrupts may contain traversing motions.
Related to:
MD11602 $MN_ASUP_START_MASK
MD20115 $MC_IGNORE_REFP_LOCK_ASUP
MD20117 $MC_IGNORE_SINGLEBLOCK_ASUP
MD20191 $MC_IGN_PROG_STATE_ASUP
MD20194 $MC_IGNORE_NONCSTART_ASUP

```

20117	IGNORE_SINGLEBLOCK_ASUP	C01	K1, Z1
-	Execute interrupt program completely despite single block	UDWORD	NEW CONF
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 0x7FFFFFFF 7/2 M

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Description: In spite of the set single-block processing mode, the assigned ASUB with the set bit is executed for the interrupt.

Bit 0 = 1: Enable interrupt 1 (user interrupt)

Bit 1 = 1: Enable interrupt 2 (user interrupt)

...

Bit 7 = 1: Enable interrupt 8 (user interrupt)

Bit 8 = 1: Enable interrupt 9 (system interrupt, reserved)

Bit 9 = 1: Enable interrupt 10 (system interrupt, reserved)

Bit 10 = 1: Enable interrupt 11 (system interrupt, reserved)

...

Bit 31 = 1: Enable interrupt 32 (system interrupt, reserved)

NOTICE:

System-ASUBs started by system interrupts may contain traversing motions.

Note:

The machine data is only active with single block SBL1.

Related to:

MD11602 \$MN_ASUP_START_MASK

MD20115 \$MC_IGNORE_REFP_LOCK_ASUP

MD20116 \$MC_IGNORE_INHIBIT_ASUP

MD20191 \$MC_IGN_PROG_STATE_ASUP

MD20194 \$MC_IGNORE_NONCSTART_ASUP

20118	GEOAX_CHANGE_RESET			C03	M1, K1, Z1	
-	Enable automatic geometry axis change			BOOLEAN	Reset	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: 0: The current configuration of the geometry axes remains unchanged on reset and part program start. With this setting, the response is identical to that of older software versions without geometry axis replacement.

1: The configuration of the geometry axes remains unchanged on reset or part program end as a function of MD20110 \$MC_RESET_MODE_MASK and, on part program start, as a function of MD20112 \$MC_START_MODE_MASK, or is switched to the initial state defined by MD20050 \$MC_AXCONF_GEOAX_ASSIGN_TAB.

Related to:

MD20050 \$MC_AXCONF_GEOAX_ASSIGN_TAB

MD20110 \$MC_RESET_MODE_MASK

MD20112 \$MC_START_MODE_MASK

20120	TOOL_RESET_VALUE			C03	K1, W1	
-	Tool with length compens. during runup (reset/part program end)			DWORD	Reset	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	32000	7/2	M

Description: Definition of the tool for which tool length compensation is selected during runup or on reset or part program end as a function of MD20110 \$MC_RESET_MODE_MASK, and on part program start as a function of MD20112 \$MC_START_MODE_MASK

Related to:

MD20110 \$MC_RESET_MODE_MASK

MD20112 \$MC_START_MODE_MASK

20121	TOOL_PRESEL_RESET_VALUE	C03	K1, W1
-	Preselected tool on RESET	DWORD	Reset
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 32000 7/2 M

Description: Definition of the preselected tool in MD20310 \$MC_TOOL_MANAGEMENT_MASK=1.
A tool is selected after runup, or on reset or part program end as a function of MD20110 \$MC_RESET_MODE_MASK, and on part program start as a function of MD20112 \$MC_START_MODE_MASK.
This MD is valid only without tool management.
Related to:
MD20110 \$MC_RESET_MODE_MASK
MD20112 \$MC_START_MODE_MASK

20122	TOOL_RESET_NAME	C03	-
-	Active tool at RESET/START with tool management	STRING	Reset
-			
-	-	-	- 7/2 M

Description: This MD is used only with active tool management.
Definition of the tool for which tool length compensation is selected during runup or on reset or part program end as a function of MD20110 \$MC_RESET_MODE_MASK, and on part program start as a function of MD20112 \$MC_START_MODE_MASK.
Related to:
MD20110 \$MC_RESET_MODE_MASK,
MD20112 \$MC_START_MODE_MASK
MD20124 \$MC_TOOL_MANAGEMENT_TOOLHOLDER
MD20130 \$MC_CUTTING_EDGE_RESET_VALUE

20123	USEKT_RESET_VALUE	C03	-
-	Preselected value of \$P_USEKT on RESET	DWORD	Reset
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 0xF 7/2 M

Description: The system variable \$P_USEKT is set with the value of this MD:

- after run-up:
As a function of MD20112 \$MC_START_MODE_MASK
- after RESET or part program end:
As a function of MD20110 \$MC_RESET_MODE_MASK

Related to:
MD20110 \$MC_RESET_MODE_MASK
MD20112 \$MC_START_MODE_MASK

20124	TOOL_MANAGEMENT_TOOLHOLDER	C03	H2, K1
-	Tool holder number	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 20 7/2 M

Description: This MD is only relevant with tool management active.
The TM must know on which tool holder a tool has to be loaded.
The data is only evaluated if the value is greater than zero.
Then, the numbers \$TC_MPP5 are no longer regarded as spindle numbers but as tool holder numbers.

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The automatic address extension of T and M=6 is then the value of this machine data, and no longer the value of MD20090 \$MC_SPIND_DEF_MASTER_SPIND.

The MD defines the master tool holder number to which a tool preparation or a tool change refers.

Reference is also made to this value for the determination of the tool on the tool holder for the setting 'retain old offset' of MD20110 \$MC_RESET_MODE_MASK.

If a machine has several tool holders but no defined master spindle, then the MD serves as a default value for determining the tool holder on which the tool is to be loaded during a tool change (reset, start, T='identifier', M6).

When defining the magazine locations of internal magazines (see documentation for TM), locations of the type 'SPINDLE' - \$TC_MPP1=2 = spindle location can be given a 'location kind index' (\$TC_MPP5). This assigns the location to a specific tool holder.

The tool holder with the number n can be declared the master tool holder with the language command SETMTH(n). That is, the offsets of a tool, which is loaded in a provisional buffer storage location of the type 'SPINDLE', correct the tool path with the value \$TC_MPP5=n.

Tool changes on 'SPINDLE' locations with \$TC_MPP5 unequal to the number of the master tool holder do not influence the path.

The tool holder defined in the MD is again declared as the master tool holder with SETMTH.

Related to:

MD20110 \$MC_RESET_MODE_MASK,

MD20112 \$MC_START_MODE_MASK

MD20122 \$MC_TOOL_RESET_NAME

MD20130 \$MC_CUTTING_EDGE_RESET_VALUE

References:

Description of Functions: Coordinate Systems (K2)

20125	CUTMOD_ERR	C08	-
-	Error handling for function CUTMOD	UDWORD	Immediately
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 0x7FFFFFFF 7/7 U

Description:

When function CUTMOD becomes active (through explicit call or tool selection), various error conditions may occur. For any of these error conditions it is possible to use this machine data to set whether the error shall trigger an alarm and, if so, whether such an alarm shall only be displayed (warning) or whether the interpretation of the part program shall be canceled.

Two machine data bits are assigned to each error condition (also see the description of alarm 14162).

The 2nd bit, which can be used in the case of an error to set that the part program interpretation should be interrupted, is only effective, if the associated 1st bit (display) of an alarm is also set.

Bit Hex. Meaning

Value

0	0x1	Display error "Invalid cutting direction."
1	0x2	Program stop after error "Invalid cutting direction".
2	0x4	Display error "Undefined cutting edge angle".
3	0x8	Program stop after error "Undefined cutting edge angle".
4	0x10	Display error "Invalid clearance angle."
5	0x20	Program stop after error "Invalid clearance angle".
6	0x40	Display error "Invalid holder angle".
7	0x80	Program stop after error "Invalid holder angle".

8 0x100 Display error "Invalid insert angle."
 9 0x200 Program stop after error "Invalid tool angle".
 10 0x400 Program stop after error "Invalid insert angle".
 11 0x800 Program stop after error "Invalid combination of cutting edge position and holder angle".
 12 0x1000 Display error "Cutting edge plane deviates too significantly from machining plane".
 13 0x2000 Program stop after error "Cutting edge plane deviates too significantly from machining plane".
 14 0x4000 Error "Invalid angle ALPHA".
 15 0x8000 Program stop after error "Invalid angle ALPHA".

20126	TOOL_CARRIER_RESET_VALUE	C03	W1
-	Active tool holder on RESET	DWORD	Reset
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 - 7/7 M

Description: Definition of the tool holder for which tool length compensation is selected during runup or on reset or part program end as a function of MD20110 \$MC_RESET_MODE_MASK and as a function of MD20112 \$MC_START_MODE_MASK on part program start.
 This data is valid without tool management.
 Related to:
 MD20110 \$MC_RESET_MODE_MASK
 MD20112 \$MC_START_MODE_MASK

20127	CUTMOD_INIT	C08	K1, W1
-	Initialize CUTMOD after power ON	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-2 999999999 7/2 M

Description: The value programmable with NC command CUTMOD is initialized automatically on power ON with the value stored in this machine data. If the value of the machine data equals -2, CUTMOD will be set to the value included in MD20126 \$MC_TOOL_CARRIER_VALUE.

20128	COLLECT_TOOL_CHANGE	C04	-
-	Tool change commands to PLC after search run	DWORD	PowerOn
-			
-	-	1, 1, 1, 1, 1, 1, 1, 1...	- - 1/1 M

Description: This MD is only relevant with active magazine management (MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK, MD20310 \$MC_TOOL_MANAGEMENT_MASK).
 It defines whether or not tool change commands, tool preparation commands (tool change commands in general) are output to the PLC after block search with calculation.
 1: Tool change commands, tool preparation commands are collected and, after reaching the search target, output to the PLC with program start.
 0: All tool/magazine-specific commands that have been collected during the block search are not output to the PLC with the subsequent program start! This means that programmed POSM, TCI, TCA commands are not output either.
 Note 1:
 Without active magazine management, the tool change M code is not collected if it is not assigned to an auxiliary function group. With active magazine management, this corresponds to MD value = 0.
 Note 2:

3.3 NC machine data

Value = 0 is appropriate if, for example, after reaching of the search target, the collected tool change commands are output to the PLC in an ASUB by means of the GETSELT, GETEXET commands.

Related to:

MD22560 \$MC_TOOL_CHANGE_M_CODE

20130	CUTTING_EDGE_RESET_VALUE	C03	-
-	Tool edge with length compens. during runup (reset/part program end)	DWORD	Reset
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0
		32000	7/2
			M

Description:

Definition of the tool edge for which tool length compensation is selected during runup or on reset or part program end as a function of MD20110 \$MC_RESET_MODE_MASK, and as a function of MD20112 \$MC_START_MODE_MASK on part program start.

With active tool management and with bit 0 and bit 6 set in MD20110 \$MC_RESET_MODE_MASK at selection, the last offset of the tool active at power OFF - as a rule the tool on the spindle - is effective after runup.

Related to:

MD20110 \$MC_RESET_MODE_MASK

MD20112 \$MC_START_MODE_MASK

20132	SUMCORR_RESET_VALUE	C03	-
-	Effective resulting offset on RESET	DWORD	Reset
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0
		6	7/2
			M

Description:

Definition of the total offset with which the tool length compensation is selected in the runup and on reset or part program end as a function of MD20110 \$MC_RESET_MODE_MASK and as a function of MD20112 \$MC_START_MODE_MASK on part program start.

MD18110 \$MN_MM_MAX_SUMCORR_PER_CUTTEDGE determines the maximum useful value which can be entered.

20140	TRAFO_RESET_VALUE	C03	F2, TE4, M1
-	Transformation data block during runup (reset/part program end)	BYTE	Reset
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0
		20	7/2
			M

Description:

Definition of the transformation data block which is selected during runup and on reset or part program end as a function of MD20110 \$MC_RESET_MODE_MASK, and as a function of MD20112 \$MC_START_MODE_MASK on part program start.

Related to:

MD20110 \$MC_RESET_MODE_MASK

MD20112 \$MC_START_MODE_MASK

20142	TRAFO_RESET_NAME	C03	K1
-	Transformation during runup (reset/part program end)	STRING	Reset
-			
-	-	-	-
			7/2
			M

Description:

Specifies the name of a transformation (\$NT_NAME[n]) defined with the aid of kinematic chains, which is selected during power on or on reset/part program end as a function of MD 20110: \$MC_RESET_MODE_MASK and, on part program start, as a function of MD 20112: \$MC_START_MODE_MASK.

If this machine data is not empty, machine data MD20140 \$MC_TRAFO_RESET_VALUE is ignored. This means that MD20142 \$MC_TRAFO_RESET_NAME has priority over MD20140 \$MC_TRAFO_RESET_VALUE.

Not relevant:

MD20110 \$MC_RESET_MODE_MASK, bit 0 = 0

20144	TRAFO_MODE_MASK			C07	M1	
-	Function selection of kinematic transformation			UBYTE	Reset	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x03	7/2	M

Description: The specific functionality of the kinematic transformation is selected by setting the following bits:

Bit 0 = 0:

Default behavior.

Bit 0 = 1:

The transformation as defined in MD20140 \$MC_TRAFO_RESET_VALUE is persistent. That is, it is also selected with TRAFOOF and not shown in the display. This requires that the transformation defined in MD20140 \$MC_TRAFO_RESET_VALUE is selected automatically after RESET and START via MD20110 \$MC_RESET_MODE_MASK and MD20112 \$MC_START_MODE_MASK. This means that:

MD20110 \$MC_RESET_MODE_MASK bit 0 = 1 and bit 7 = 0,

MD20112 \$MC_START_MODE_MASK bit 7 = 1

MD20118 \$MC_GEOAX_CHANGE_RESET = TRUE

Bit 1 = 0:

Default behavior.

Bit 1 = 1:

The last active transformation is selected again after control power on. MD20110 \$MC_RESET_MODE_MASK Bit 0 = 1 and Bit 7 = 1 also have to be set.

20147	ZERO_CHAIN_ELEM_NAME			EXP, N01	K1	
-	Name of the kinematic chain element for defining the machine zero point			STRING	Reset	
-						
-	-	-	-	-	7/2	M

Description: Specifies the name of a kinematic chain element that defines the machine zero point. This zero point is required, for example, to specify the position of a workpiece defined by the language command WORKPIECE, if its position is not specified relative to a kinematic chain in the language command itself.

20150	GCODE_RESET_VALUES			C11, C03	F2, TE4, K3, M1, M5, K1, K2, P1, V1	
-	Initial setting of G groups			BYTE	Reset	
-						
-	70	2, 0, 0, 1, 0, 1, 1, 1, 0, 1, 0, 1, 2, 1, 2, 1, 1, 1, 1, 1, 1,, ...	0	-	7/2	M

Description: Definition of the G codes, which are active when powering up and reset and/or end of part program depending on MD20152 \$MC_GCODE_RESET_MODE and for the start of part program depending on MD20112 \$MC_START_MODE_MASK.

The index of the G codes in the respective groups must be programmed as the default value.

For a list of the G groups and their G functions, please refer to References:

3.3 NC machine data

Programming Manual, Fundamentals

Designation	Group	Standard value for 840D
GCODE_RESET_VALUES[0]	1	2 (G1)
GCODE_RESET_VALUES[1]	2	0 (inactive)
GCODE_RESET_VALUES[2]	3	0 (inactive)
GCODE_RESET_VALUES[3]	4	1 (STARTFIFO)
GCODE_RESET_VALUES[4]	5	0 (inactive)
GCODE_RESET_VALUES[5]	6	1 (G17)
GCODE_RESET_VALUES[6]	7	1 (G40)
GCODE_RESET_VALUES[7]	8	1 (G500)
GCODE_RESET_VALUES[8]	9	0 (inactive)
GCODE_RESET_VALUES[9]	10	1 (G60)
GCODE_RESET_VALUES[10]	11	0 (inactive)
GCODE_RESET_VALUES[11]	12	1 (G601)
GCODE_RESET_VALUES[12]	13	2 (G71)
GCODE_RESET_VALUES[13]	14	1 (G90)
GCODE_RESET_VALUES[14]	15	1 (G94)
GCODE_RESET_VALUES[15]	16	1 (CFC)
GCODE_RESET_VALUES[16]	17	1 (NORM)
GCODE_RESET_VALUES[17]	18	1 (G450)
GCODE_RESET_VALUES[18]	19	1 (BNAT)
GCODE_RESET_VALUES[19]	20	1 (ENAT)
GCODE_RESET_VALUES[20]	21	1 (BRISK)
GCODE_RESET_VALUES[21]	22	1 (CUT2D)
GCODE_RESET_VALUES[22]	23	1 (CDOF)
GCODE_RESET_VALUES[23]	24	1 (FFWOF)
GCODE_RESET_VALUES[24]	25	1 (ORIWKS)
GCODE_RESET_VALUES[25]	26	2 (RMI)
GCODE_RESET_VALUES[26]	27	1 (ORIC)
GCODE_RESET_VALUES[27]	28	1 (WALIMON)
GCODE_RESET_VALUES[28]	29	1 (DIAMOF)
GCODE_RESET_VALUES[29]	30	1 (COMPOF)
GCODE_RESET_VALUES[30]	31	1 (inaktiv)
GCODE_RESET_VALUES[31]	32	1 (inactive)
GCODE_RESET_VALUES[32]	33	1 (FTOCOF)
GCODE_RESET_VALUES[33]	34	1 (OSOF)
GCODE_RESET_VALUES[34]	35	1 (SPOF)
GCODE_RESET_VALUES[35]	36	1 (PDELAYON)
GCODE_RESET_VALUES[36]	37	1 (FNORM)
GCODE_RESET_VALUES[37]	38	1 (SPIF1)
GCODE_RESET_VALUES[38]	39	1 (CPRECOF)
GCODE_RESET_VALUES[39]	40	1 (CUTCONOF)
GCODE_RESET_VALUES[40]	41	1 (LFOF)
GCODE_RESET_VALUES[41]	42	1 (TCOABS)
GCODE_RESET_VALUES[42]	43	1 (G140)
GCODE_RESET_VALUES[43]	44	1 (G340)
GCODE_RESET_VALUES[44]	45	1 (SPATH)
GCODE_RESET_VALUES[45]	46	1 (LFTXT)
GCODE_RESET_VALUES[46]	47	1 (G290 SINUMERIK mode)

20152	GCODE_RESET_MODE			C03	M1, K1, K2, P1	
-	Reset response of G groups			BYTE	Reset	
-						
-	70	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,, ...	0	1	7/2	M

Machine data and parameters
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However, if the current setting for the 8th G group (work offset) is to be retained after reset / part program end, then the following setting results:

MD20152 \$MC_GCODE_RESET_MODE[7]=1 ; if a work offset (e.g. G54) was active at the time of reset, then the values of the corresponding data handling frame at the time of reset are activated (that is UIFR[1] with G54)

The changing of the initial setting of individual G groups can be disabled for specific systems.

Related to:

MD20110 \$MC_RESET_MODE_MASK

MD20112 \$MC_START_MODE_MASK

20154	EXTERN_GCODE_RESET_VALUES			C11, C03	-	
-	Initial setting of G groups in ISO mode			BYTE	Reset	
-						
-	31	1, 1, 1, 2, 1, 1, 1, 3, 4, 1, 1, 2, 2, 1, 3, 2, 1, 0, 1, 1, 1,, ...	0	-	2/2	M

Description: When an external NC programming language is used, the G codes which become active on runup and reset or at part program end are defined as a function of MD20110

\$MC_RESET_MODE_MASK and at part program start as a function of MD20112

\$MC_START_MODE_MASK.

The following external programming languages are possible:

ISO mode Milling

ISO mode Turning

The G group division that is to be used is stated in the current SINUMERIK documentation.

The following groups within MD20154 \$MC_EXTERN_GCODE_RESET_VALUES can be written:

ISO mode M:

G group 2: G17/G18/G19

G group 3: G90/G91

G group 5: G94/G95

G group 6: G20/G21

G group 13: G96/G97

G group 14: G54-G59

ISO mode T:

G group 2: G96/G97

G group 3: G90/G91

G group 5: G94/G95

G group 6: G20/G21

G group 16: G17/G18/G19

20156	EXTERN_GCODE_RESET_MODE			C03	-	
-	Reset response of external G groups			BYTE	Reset	
-						
-	31	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,, ...	0	1	7/2	M

Description: This MD is evaluated only if bit0 is set in MD20110 \$MC_RESET_MODE_MASK (see there). For each entry in MD20154 \$MC_EXTERN_GCODE_RESET_VALUES (that is for each G group), this MD is used to determine whether, on reset/part program end, the setting in MD20154 \$MC_EXTERN_GCODE_RESET_VALUES is used again (MD = 0) or the current setting is retained (MD = 1).

Example for ISO mode M:

Here, the basic setting for the 14th G group (settable work offset) is read from MD20154 \$MC_EXTERN_GCODE_RESET_VALUES at each reset / part program end:

```
MD20154 $MC_EXTERN_GCODE_RESET_VALUES[13]=1 ; the reset value for the 14th G group
;is G54

MD20156 $MC_EXTERN_GCODE_RESET_MODE[13]=0 ; the basic setting for the 14th G group
;after reset / part program end is defined
by
;MD20154 $MC_EXTERN_GCODE_RESET_VALUES[13]
;
```

However, if the current setting for the 14th G group is to be retained beyond reset / part program end, this results in the following setting:

```
MD20154 $MC_EXTERN_GCODE_RESET_VALUES[13]=1 ;reset value for the 14th G group
;is G54

MD20156 $MC_EXTERN_GCODE_RESET_MODE[13]=1 ;current setting for the 14th
;G group is retained even after
;reset / part program end
```

20160	CUBIC_SPLINE_BLOCKS			EXP, C09	-	
-	Number of blocks for C spline			BYTE	PowerOn	
-						
-	-	8, 8, 8, 8, 8, 8, 8, 8...	4	9	7/2	M

Description: Number of motion blocks across which a spline section is calculated with the cubic spline (CSPLINE) function.

The larger the value, the closer the generated contour is to the ideal mathematical cubic spline, which in the boundary condition CUBIC_SPLINE_BLOCKS = reaches infinity. However, the higher the value, the longer the block search calculation time.

References:
/PA/, Programming Guide: Fundamentals

20170	COMPRESS_BLOCK_PATH_LIMIT			C09	B1	
mm	Maximum traversing distance of an NC block with compression			DOUBLE	NEW CONF	
-						
-	-	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0...	0.0	1.0E+301	7/2	M

Description: The machine data defines the maximum traversing length of a block that can be compressed. Longer blocks interrupt the compression and are traversed in the normal way.

Related to:
MD33100 \$MA_COMPRESS_POS_TOL (maximum deviation with compression)

References:
/PA/, Programming Guide: Fundamentals

20171	SURF_BLOCK_PATH_LIMIT			C09	-	
mm	Maximum traverse length of an NC block for the COMPSURF function			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0E+301	7/2	M

Description: The machine data defines the maximum traverse length of a block that is still regarded as compressible. Longer blocks interrupt the smoothing and are traversed normally.

3.3 NC machine data

If the value 0 is entered, then the maximum traverse length in the control is determined by the specified tolerance.

20172	COMPRESS_VELO_TOL			C09	B1, V1	
mm/min	Max. permissible deviation of path feedrate with compression			DOUBLE	PowerOn	
-						
-	-	60000.0, 60000.0, 60000.0, 60000.0, 60000.0, 60000.0, 60000.0, 6...	0.0	1.0E+301	7/2	M

Description: The value indicates the maximum permissible deviation for the compression for the path feedrate. The larger the value, the more short blocks can be compressed into one long block. The maximum number of compressible blocks is limited by the size of the spline buffer.

In this way, the the compressors COMPON and COMPCURV may limit the compression of the path axes.

Compressor COMPCAD acts differently: It ignores changes to the F word as long as they lie below the threshold defined by COMPRESS_VELO_TOL. If the feed programmed in a block changes more than COMPRESS_VELO_TOL, COMPCAD interrupts the compression at this block transition so that the feed change takes place at exactly the desired position.

Related to:

MD33100 \$MA_COMPRESS_POS_TOL[AXn]

MD20170 \$MC_COMPRESS_BLOCK_PATH_LIMIT

References:

/PGA/, Programming Guide, Advanced

20173	SURF_VELO_TOL			C09	-	
mm/min	Maximum permitted deviation of the path feed on compression with COMPSURF			DOUBLE	PowerOn	
-						
-	-	1000.0, 1000.0, 1000.0, 1000.0, 1000.0, 1000.0, 1000.0, 1000.0...	0.0	1.0E+301	7/2	M

Description: The value specifies the maximum permitted deviation for compression for the path feed. The larger the value, the more short blocks can be compressed into one long block.

20180	TOCARR_ROT_ANGLE_INCR			C08	W1	
-	Rotary axis increment of orientable tool holder			DOUBLE	NEW CONF	
-						
-	2	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0,...	-1.0E+301	1.0E+301	7/3	M

Description: For orientable tool carriers, this machine data defines the size of the minimum increment (in degrees) by which the first or second orientation axis can be changed (e.g. for Hirth tooth systems).

A programmed or calculated angle is rounded to the nearest value resulting from

$$\phi = s + n * d$$

with integer n.

In which:

s = MD20180 \$MC_TOCARR_ROT_ANGLE_INCR[i]

d = MD20182 \$MC_TOCARR_ROT_ANGLE_OFFSET[i]

and i is 0 for the 1st and 1 for the 2nd axis.

There is no rounding if this machine data is equal to zero.

20182	TOCARR_ROT_ANGLE_OFFSET			C08	-	
-	Rotary axis offset of orientable tool holder			DOUBLE	NEW CONF	
-						
-	2	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0,...	-1.0E+301	1.0E+301	7/3	M

Description: This machine data defines the offset of the rotary axis for an orientable tool holder if its position cannot be continuously changed.
It is only evaluated if MD20180 \$MC_TOCARR_ROT_ANGLE_INCR is not equal to zero.
For the precise meaning of this machine data, see the description of MD20180 \$MC_TOCARR_ROT_ANGLE_INCR.

20184	TOCARR_BASE_FRAME_NUMBER			C08	K2, W1	
-	Base frame number for holding machine table offset			DWORD	NEW CONF	
-						
-	-	-1, -1, -1, -1, -1, -1, -1, -1...	-1	15	7/3	M

Description: This machine data indicates into which channel-specific base frame the table offset of an orientable tool holder with a rotary table is written.
This machine data must refer to a valid base frame.
If its content is less than 0 or greater than or equal to the maximum number of base frames set in MD28081 \$MC_MM_NUM_BASE_FRAMES, selection of a corresponding tool holder causes an alarm.

20188	TOCARR_FINE_LIM_LIN			C07	W1	
mm	Limit of linear fine offset TCARR			DOUBLE	Immediately	
-						
-	-	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0...	0.0	1.0E+301	7/3	M

Description: Indicates for each channel the input limit for the linear fine offset values of an orientable tool holder.

20190	TOCARR_FINE_LIM_ROT			C07	W1	
degrees	Limit of rotary fine offset TCARR			DOUBLE	Immediately	
-						
-	-	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0...	0.0	1.0E+301	7/3	M

Description: Indicates for each channel the input limit for the rotary fine offset values of an orientable tool holder.

20191	IGN_PROG_STATE_ASUP			EXP	K1	
-	Do not display interrupt program execution on OPI			UDWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	0x7FFFFFFF	7/2	M

Description: The execution of the ASUB assigned to the interrupt is NOT displayed by the OPI variables "progStatus" and "chanStatus".
Bit 0 = 1: Enable interrupt 1 (user interrupt)
Bit 1 = 1: Enable interrupt 2 (user interrupt)
...
Bit 7 = 1: Enable interrupt 8 (user interrupt)

3.3 NC machine data

Bit 8 = 1: Enable interrupt 9 (system interrupt, reserved)
 Bit 9 = 1: Enable interrupt 10 (system interrupt, reserved)
 Bit 10 = 1: Enable interrupt 11 (system interrupt, reserved)
 ...
 Bit 31 = 1: Enable interrupt 32 (system interrupt, reserved)
 NOTICE:
 System ASUBs started by system interrupts may contain traversing motions.
 Related to:
 MD11602 \$MN_ASUP_START_MASK
 MD20115 \$MC_IGNORE_REFP_LOCK_ASUP
 MD20116 \$MC_IGNORE_INHIBIT_ASUP
 MD20117 \$MC_IGNORE_SINGLEBLOCK_ASUP
 MD20194 \$MC_IGNORE_NONCSTART_ASUP

20192	PROG_EVENT_IGN_PROG_STATE			EXP	-	
-	Do not display the Prog-Event on OPI			UDWORD	NEW CONF	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x3F	7/2	M

Description: Event-driven program calls (Prog-Events) can be set regarding their response on the OPI.

The progStatus and chanStatus variables remain unaffected despite Prog-Event processing being active and retain the old value. This provides a means of concealing Prog-Event processing from the HMI.

Bit 0 = 1 :
 Reserved bit, ineffective
 Bit 1 = 1 :
 Prog-Event after end-of-part-program does not change progStatus and chanStatus
 Bit 2 = 1 :
 Prog-Event after OP reset does not change progStatus and chanStatus
 Bit 3 = 1 :
 Prog-Event after ramp-up does not change progStatus and chanStatus
 Bit 4 = 1 :
 Reserved
 Bit 5 = 1 :
 Safety-Prog-Event during ramp-up does not change progStatus and chanStatus

Corresponds to:

MD20105 \$MC_PROG_EVENT_IGN_REFP_LOCK
 MD20106 \$MC_PROG_EVENT_IGN_SINGLEBLOCK
 MD20107 \$MC_PROG_EVENT_IGN_INHIBIT
 MD20108 \$MC_PROG_EVENT_MASK
 MD20193 \$MC_PROG_EVENT_IGN_STOP

20193	PROG_EVENT_IGN_STOP			EXP	-	
-	Prog-Events ignore the stop key			UDWORD	NEW CONF	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0xF	7/2	M

Description: Event-controlled program calls (Prog-Events) can be influenced with regard to their behavior after pressing of the stop key.

The Stop, StopAll and StopAtEnd key of the PLC is ignored, if required.

Bit 0 = 1 :

Prog-Event after part program start delays the stop until the part program starts, i.e. the stop only becomes active in the part program, not before its start. If the part program starts with a traversing block, it is possible that it starts briefly, i.e. a short motion occurs, although Stop has already been pressed in the Start-Prog-Event.

Bit 1 = 1 :

Prog-Event after part program end ignores the stop

Bit 2 = 1 :

Prog-Event after operator panel reset ignores the stop

Bit 3 = 1 :

Prog-Event after power up ignores the stop

Corresponds to:

MD20105 \$MC_PROG_EVENT_IGN_REFP_LOCK

MD20106 \$MC_PROG_EVENT_IGN_SINGLEBLOCK

MD20107 \$MC_PROG_EVENT_IGN_INHIBIT

MD20108 \$MC_PROG_EVENT_MASK

MD20192 \$MC_PROG_EVENT_IGN_PROG_STATE

20194	IGNORE_NONCSTART_ASUP	EXP	K1
-	Permit ASUB in spite of "Interlock NC-START" if user alarms present.	UDWORD	NEW CONF
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 0x7FFFFFFF 7/2 M

Description:

A user alarm from the number range 65500-65999 sets the signal "NC start interlock". By default, an ASUB is not executed on account of interrupts.

Despite the presence of signal "NC start interlock", the assigned ASUB with the set bit is executed for the interrupt:

Bit 0 = 1: Enable interrupt 1 (user interrupt)

Bit 1 = 1: Enable interrupt 2 (user interrupt)

...

Bit 7 = 1: Enable interrupt 8 (user interrupt)

Bit 8 = 1: Enable interrupt 9 (system interrupt, reserved)

Bit 9 = 1: Enable interrupt 10 (system interrupt, reserved)

Bit 10 = 1: Enable interrupt 11 (system interrupt, reserved)

...

Bit 31 = 1: Enable interrupt 32 (system interrupt, reserved)

NOTICE:

System ASUBs started by system interrupts may contain traversing motions.

Related to:

MD11602 \$MN_ASUP_START_MASK

MD20115 \$MC_IGNORE_REFP_LOCK_ASUP

MD20116 \$MC_IGNORE_INHIBIT_ASUP

MD20117 \$MC_IGNORE_SINGLEBLOCK_ASUP

MD20191 \$MC_IGN_PROG_STATE_ASUP

20196	TOCARR_ROTAX_MODE	C07	W1
-	ToolCarrier: rotary axis setting with axis positions not defined	UDWORD	Immediately
-			
-	-	2, 2, 2, 2, 2, 2, 2, 2...	0 0x7 7/3 U

3.3 NC machine data

Description:

The MD is bit-coded. Bit 0 applies to orientable tool holders with one axis, bit 1 for those with 2 axes.

When the axis positions of an orientable tool holder are determined from a specified frame, it may happen that the required orientation is achieved at any position of a rotary axis.

This MD specifies how the rotary axis position is defined in these cases:

If the relevant bit is 0, the position of the rotary axis will be 0; a possibly necessary rotation is performed through the specified frame.

If the relevant bit is 1, the rotation is performed by means of the rotary axis of the orientable tool holder. The resulting frame will no longer include a rotation.

Example:

A tool in its basic position points into the Z direction, and an axis of the orientable tool holder rotates the workpiece around Z (C_Axis). If the tool is to be oriented parallel to the Z axis of a rotating frame, and if the frame only rotates around the Z axis, the tool orientation will not be changed if the C axis is rotated. The condition stating that the tool is to point in the direction of the Z axis defined by the frame is therefore fulfilled for any position of the Z axis.

Bit 2: If this bit is set, the value 1 is output in the system variable \$P_TCSOL as the number of solutions in a singular position for which there is one unique solution because of the alignment with the vertical coordinate axes perpendicular to the orientation. If this bit is not set, two solutions are output (the angles around the orientation axis differ by 180 degrees). This variant is required for compatibility with older software versions.

20200	CHFRND_MAXNUM_DUMMY_BLOCKS				EXP, C02, C06, C09	V1	
-	Empty blocks with chamfer/radii				BYTE	PowerOn	
-							
-	-	3, 3, 3, 3, 3, 3, 3...	0	15	7/2	M	

Description:

Indicates the maximum number of blocks without traversing information in the compensation plane (dummy blocks) that can be programmed between two blocks with traversing information when chamfer/rounding are active.

20201	CHFRND_MODE_MASK			C09	V1	
-	Chamfer/rounding behavior			UDWORD	Reset	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0xFFFF	7/2	M

Description:

Determination of the chamfer/rounding behavior

Bit 0: (LSB) Assignment of the chamfer/rounding to the preceding or following block.

This influences:

- The technology of the chamfer/rounding (feed, type of feed, M commands ...)
- The execution of the blocks without movement in the active plane (e.g. M commands, movement in the applicate) before or after a modal rounding (RNDM)

Bit 1: free

Meaning of the individual bits:

Bit 0 = 0

Chamfer/rounding is derived from the following block (default value).

The technology of the chamfer/rounding is determined by the following block. Blocks without movement (M commands) or movement only in the applicate between two motion blocks in the plane are executed before the modal rounding.

Bit 0 = 1:

Chamfer/rounding is derived from the preceding block.

The technology of the chamfer/rounding is determined by the preceding block. Blocks without movement (M commands) or movement only in the applicate between two motion blocks in the plane are executed after the modal rounding.

20202	WAB_MAXNUM_DUMMY_BLOCKS			C02, C06	W1	
-	Maximum number of blocks w/o traversing movement with SAR			BYTE	Reset	
-						
-	-	5, 5, 5, 5, 5, 5, 5, 5...	0	10	7/2	M

Description: Maximum number of blocks which can appear between the SAR (soft approach and retraction) block and the traversing block which determines the direction of the approach or retraction tangent.

20204	WAB_CLEARANCE_TOLERANCE			C06	W1	
mm	Change of direction with SAR			DOUBLE	PowerOn	
-						
-	-	0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01...	0.0	1.0E+301	7/2	M

Description: In the case of smooth approach and retraction, the point defined with DISCL, from which, in the case of infeed from the initial plane, traversing is carried out at lower speed (G341) or the point in which the actual approach movement begins (G 340), must lie between the initial plane and the approach plane.

If this point lies outside this interval and the deviation is less than or equal to this machine data, it is assumed that the point lies in the approach or retraction plane.

If the deviation is greater, then alarm 10741 is output.

Example:

An approach is made from position Z = 20. The SAR plane is at Z = 0. The point defined by DISCL must therefore lie between these two values. If it lies between 20.000 and 20.010 or between 0 and -0.010, it is assumed that the value 20.0 or 0.0 was programmed (under the condition that the MD has the value 0.010). The alarm is output if the position is greater than 20.010 or less than -0.010.

20210	CUTCOM_CORNER_LIMIT			C08, C06	W1	
degrees	Maximum angle f. compensation blocks in tool radius compensation			DOUBLE	Reset	
-						
-	-	100., 100., 100., 100., 100., 100., 100., 100....	0.0	150.	7/2	M

Description: Where outer corners are very pointed, G451 can result in long idle paths. The system therefore switches automatically from G451 (intersection) to G450 (transition circle, with DISC where appropriate) when the outer corners are very pointed. The contour angle which can be traversed following this automatic switchover (intersection ---> transition circle) can be defined in CUTCOM_CORNER_LIMIT.

20212	CUTCOM_CUSP_LIMIT			C08, C06	W1	
degrees	Maximum angle for path overlap with tool radius compensation			DOUBLE	Reset	
-						
-	-	0.3, 0.3, 0.3, 0.3, 0.3, 0.3, 0.3, 0.3...	0.0	2.	7/2	M

Description: Owing to rounding errors (limited resolution of the positions in the NC program), very sharp outside corners (near 180 degrees) may lead to overlapping at the reversal point of the path. This means that block transitions that should actually be outside corners are regarded mathematically as inside corners.

3.3 NC machine data

This machine data can be used to set the deviation from 180 degrees at which an inside corner is to be treated as an outside corner.

20220	CUTCOM_MAX_DISC			C08, C06	W1	
-	Maximum value for DISC			DOUBLE	Reset	
-						
-	-	50.0, 50.0, 50.0, 50.0, 50.0, 50.0, 50.0, 50.0...	0.0	75.0	7/2	M

Description:

The G450 transition circle cannot produce sharp outer contour corners, because the path of the tool center point through the transition circle is controlled so that the cutting edge stops at the outer corner (programmed position).

Where sharp outer corners are to be machined with G450, the DISC instruction can be used in the program to program an overshoot. This transforms the transition circle into a conic section and the cutting edge lifts off from the outer corner.

The value range of the DISC instruction extends from 0 to theoretically 100 in steps of 1.

DISC = 0 ...Overshoot disabled, transition circle active

DISC = 100 ...Overshoot large enough to theoretically produce a response similar to intersection (G451).

Programmed values of DISC which are higher than those stored in CUTCOM_MAX_DISC are limited to this maximum value without output of a message. A severely non-linear alteration in the path velocity can thus be avoided.

Special cases:

It is not generally meaningful to enter values higher than 50 in DISC.

It is therefore not possible to enter values > 75.

20230	CUTCOM_CURVE_INSERT_LIMIT			C08, C06	W1	
-	Maximum angle for calculation of intersection with TRC			DOUBLE	Reset	
-						
-	-	10., 10., 10., 10., 10., 10., 10., 10....	0.0	150.	7/2	M

Description:

Where outer corners are very flat, G450 (transition circle) and G451 (intersection) approximate each other more and more. In such a case, it is no longer useful to insert a transition circle. Especially with 5-axis machining, it is not allowed to insert a transition circle at these outer corners, as this might lead to losses in velocity during continuous-path mode (G64).

That is why the system switches automatically from G450 (transition circle, possibly with DISC) to G451 (intersection) in the case of very flat outer corners. The contour angle (in degrees), as of which the automatic switchover (transition circle ---> intersection) is to be carried out, can be specified in CUTCOM_CURVE_INSERT_LIMIT.

20240	CUTCOM_MAXNUM_CHECK_BLOCKS			C08, C02	W1	
-	Blocks for look-ahead contour calculation with TRC			DWORD	PowerOn	
-						
-	-	4, 4, 4, 4, 4, 4, 4...	2	10000	7/2	M

Description:

Indicates the maximum number of blocks with traversing information at the offset plane that are considered simultaneously for collision detection with active radius compensation.

20250	CUTCOM_MAXNUM_DUMMY_BLOCKS			C08, C02	W1	
-	Maximum number of blocks without traversing motion in TRC			DWORD	PowerOn	
-						
-	-	3, 3, 3, 3, 3, 3, 3...	0	1000	7/2	M

Description: During active TRC only program blocks with movements of geometry axes perpendicular to the current tool orientation are normally programmed. Nevertheless, individual intermediate blocks that do not contain such path information may also be programmed during active TRC. For example:

- Movements in the direction of tool orientation
- Movements in axes that are not geometry axes
- Auxiliary functions
- In general: Blocks that are taken over into the main run and executed there

The maximum number of intermediate blocks is defined with this MD. If the value is exceeded, alarm 10762 "Too many empty blocks between 2 traversing blocks during active tool radius compensation" is output.

Note:

Comment blocks, arithmetic blocks and empty blocks are not intermediate blocks in the sense of this MD and can therefore be programmed in any number (without an alarm being triggered).

20252	CUTCOM_MAXNUM_SUPPR_BLOCKS			EXP, C01, C08, C02	W1	
-	Maximum number of blocks with compensation suppression			DWORD	PowerOn	
-						
-	-	5, 5, 5, 5, 5, 5, 5...	0	1000	7/2	M

Description: Indicates the maximum number of blocks for active tool radius compensation, in which the function "Keep radius offset constant" (CUTCONON or reprogramming of G41 / G42 during active TRC) may be active.

Note:

The restriction of the number of blocks with active CUTONON is necessary in order to carry out repositioning in this situation too. Increasing this value for the machine data can lead to an increased memory requirement for NC blocks.

20254	ONLINE_CUTCOM_ENABLE			EXP, C01, C08	-	
-	Real-time tool radius compensation enabled			BOOLEAN	PowerOn	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: This data enables online tool radius compensation. When the function is enabled, the control reserves the necessary memory space required for online tool radius compensation after POWER ON.

ONLINE_CUTCOM_ENABLE = 0:

Online tool radius compensation can be used

ONLINE_CUTCOM_ENABLE = 1:

Online tool radius compensation cannot be used

20256	CUTCOM_INTERS_POLY_ENABLE			C09	W1	
-	Intersection procedure for polynomials is possible			BOOLEAN	PowerOn	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/2	M

Description: If this machine data is TRUE and tool radius compensation active, the transitions at outer corners where polynomials (splines) are involved can be treated with the intersection mode. If the machine data is FALSE, conic sections (circles) are always inserted in this case.

3.3 NC machine data

If the machine data is FALSE, the response is identical to that of software releases older than 4.0.

20262	SPLINE_FEED_PRECISION			EXP, C09, C05	-	
-	Permissible rel. error of path velocity for spline			DOUBLE	PowerOn	
-						
-	-	0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001...	0.000001	1.0	7/2	M

Description:

This machine data is evaluated only if MD28540 \$MC_MM_ARCLENGTH_SEGMENTS is greater than 0.

The factor indicates how large the relative error of the path velocity may be for splines, compressor and polynomial interpolation. The smaller the factor the more computing time is required for preprocessing.

Furthermore, more memory is required to display the arc length function (see 28540 \$MC_MM_ARCLENGTH_SEGMENTS).

Example:

SPLINE_FEED_PRECISION=0.1, programmed path velocity=1000 mm/min.

The actual path velocity for polynomial and spline interpolations may then vary within the range between 900 and 1100 mm/min.

20270	CUTTING_EDGE_DEFAULT			C11, C03	H2, W1	
-	Initial position of tool cutting edge without programming			DWORD	PowerOn	
-						
-	-	1, 1, 1, 1, 1, 1, 1...	-2	32000	7/2	M

Description:

Default cutting edge after tool change

If no cutting edge has been programmed after a tool change, the default cutting edge number set in MD20270 \$MC_CUTTING_EDGE_DEFAULT is used.

Value

:= 0

Initially, no cutting edge is active after a tool change.

The cutting edge is not selected until D programming.

:= 1

MD_SLMAXCUTTINGEDGENUMBER

No. of cutting edge (MD_SLMAXCUTTINGEDGENUMBER=9 is valid up to P4)

:= -1

Cutting edge number of old tool also applies to new tool.

:= -2

Cutting edge (correction) of old tool remains active until D is programmed. This means that the old tool remains the active tool until D is programmed. In other words, the tool on the spindle remains the programmed tool until D is programmed.

Example:

MD20270 \$MC_CUTTING_EDGE_DEFAULT = 1;

After a tool change, the first cutting edge is active if no other cutting edge has been programmed.

20272	SUMCORR_DEFAULT			C03	H2, W1	
-	Initial position resulting offset without program			DWORD	PowerOn	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-1	6	7/2	M

Description:

The number of the total offset of the cutting edge which becomes active when a new cutting edge compensation is activated without a programmed DL value being available.

MD18110 \$MN_MM_MAX_SUMCORR_PER_CUTTEDGE

defines the maximum useful value which can be entered.

Value Meaning

> 0 Number of the total offset

= 0 No total offset active with D programming

= 1 The total offset number for the previously programmed D is used.

Related to:

MD20270 \$MC_CUTTING_EDGE_DEFAULT.

20274	MULTITOOLLOC_DEFAULT	N09	-
-	Number of the multitool location, whose tool is selected for T= location.	DWORD	Immediately
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 72 7/3 U

Description: Only of significance when the 'Multitool' function is active plus 'T= location' programming: Multitool location number of the location in the multitool, whose tool is selected for a tool change programmed with 'T= location'. If the tool is not ready for use, with the appropriate configuration, an attempt is made to select a replacement tool.

If the tool at the magazine location programmed with 'T= location' is not a multitool, then MD20274 has no effect.

The value zero signifies that when programming 'T= location' the multitool location number is used, which corresponds to the multitool position.

Entering the MD can be suppressed by explicitly programming the multitool location number with the MTL command.

The value entered in MD20274 must correspond at the time of programming to the location of the multitool, located in the magazine location, which was programmed with 'T= location'.

Example:

MD20274 \$MC_MULTITOOLLOC_DEFAULT = 2;

T=5 ; 5 is a magazine location with a multitool. Select the tool that is located at location 2 of this multitool.

T=5 MTL=1 ; 5 is a magazine location with a multitool. Select the tool that is located at location 1 of this multitool. Programming MTL suppresses the setting of this MD

20280	LIMIT_CHECK_MODE	EXP	-
-	Type of limit switch check	DWORD	Reset
-			
-	-	1, 1, 1, 1, 1, 1, 1, 1...	0 1 1/1 M

Description: This MD can be used to set the mode of operation for the software limit switch check.

The following options are available:

0: The limit switches are checked in real time on active transformation

1: The limit switches are checked in a preparative manner on active transformation

20310	TOOL_MANAGEMENT_MASK	C09	P3 pl, P3 sl
-	Activation of tool management functions	UDWORD	PowerOn
-			
-	-	0x2, 0x2, 0x2, 0x2, 0x2, 0x2, 0x2, 0x2...	0 0xFFFFFFFF 7/2 M

Description: MD = 0: Tool management inactive

Bit 0 to bit4

Bit 0=1: Tool management active

3.3 NC machine data

Tool management functions are enabled for the current channel.

Bit 1=1: Tool monitoring function active

The functions for monitoring the tools (tool life and quantity) are enabled.

Bit 2=1: OEM functions active

The memory for user data can be used (see also MD18090 \$MN_MM_NUM_CC_MAGAZINE_PARAM to MD18098 \$MN_MM_NUM_CC_MON_PARAM)

Bit 3=1: Consider adjacent location active

Bit 0 to bit 3 must be set as in MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK.

Bit 4=1: The PLC has the option of requesting a T preparation again with changed parameters.

The acknowledgment states "2", "7" und "103" are enabled with this bit. The tool selection is then recalculated in the NCK.

Note: Bit4=1 (PLC can reject tool) and Bit23=1 (interpreter selects tool) are mutually exclusive.

Bit 5 to bit 8

Bit 5 and bit 7 refer to the main spindle

Bit 6 und bit 8 refer to secondary spindles

Bit 5 = 1: The command is regarded as output when the internal transport acknowledgment + the transport acknowledgment are present, that is, when the command has been accepted by the basic PLC program.

(Bit 19=1 also allows the block change to be prevented (main run) until the required acknowledgments have been received.)

Bit 7 = 1: The output of the command is not regarded as being completed until the end acknowledgment has been received from the PLC. That is, the command has been acknowledged by the PLC user program with status "1".

(Bit 19=1 also allows the block change to be prevented (main run) until the required acknowledgments have been received.)

Bit 5 and bit 7 (alternatively bit 6 and bit 8) are mutually exclusive.

Only the following combinations are permissible:

Bit 5: ...0...1...0

Bit 7: ...0...0...1

With the default setting, that is bits 5 to 8 = 0, synchronization takes place in the block in which a cutting edge is selected for the first time.

Setting these bits delays the block processing.

Bit 9 to bit 11

Bit 9: Reserved for test purposes

It can also be used by machine manufacturers during the test phase, provided that the PLC program does not yet control the tool change.

Bit 10=1: M06 is delayed until the preparation has been accepted by the PLC user program.

The change command is not output until the preparation acknowledgment has been received. That can be, for example, status "1" or "105".

Bit 10=0: The change command is output without delay, directly after the preparation command.

Bit 11=1: The tool preparation command (PLC command numbers=2, 4, 5) is also executed if the same tool preparation command has already been executed. (Commands 4, 5 contain the tool preparation)

Example: (Tool changed with M6 (PLC command no.= 3):

T="Tool1"; tool preparation

M6; tool change

T="Tool2" ; 1st tool preparation after M6 (for same tool holder)

; is always output to PLC.

T="Tool2"; 2nd tool preparation is only output as a command to the PLC if bit 11 = 1.
 ; This tool preparation counts as the first if the state of the tool has changed since the previous tool preparation such that it would no longer be serviceable.
 That might be, for example, an asynchronous unloading of the tool. This tool preparation then attempts to select a replacement tool.
 Bit 11=0: The preparation command can only be output once for any one tool.
 Bit 12 to bit 14
 Bit 12=1: The preparation command (PLC command numbers = 2, 4, 5) is also executed when the tool is already in the spindle/tool holder.
 T="Tool1" ; tool preparation
 M6; tool change
 T="Tool1"; tool is already in the tool holder
 ; 1st tool preparation after M6 (for the same tool holder)
 ; is only output to the PLC if bit 12 = 1.
 ; An unserviceable tool (e.g. disabled because of tool monitoring.) on the tool holder does not count as being on the tool holder. This tool preparation then attempts to select a replacement tool.
 T="Tool2" ; 2nd tool preparation - the rules of bit 11 apply to the output.
 Bit 12=0: The preparation command is not executed if the tool is already in the spindle.
 Bit 13=1: On reset, the commands are retrieved from the diagnostics buffer and stored in the passive file system (TCTRAxx.MPF under part program) This file is required by the Hotline.
 The tool sequences are only recorded in the diagnostics buffers of systems that have adequate memory (NCU572, NCU573)).
 Bit 14=1: Reset mode
 Tool and offset selection correspond to the settings in MD20110 \$MC_RESET_MODE_MASK and MD20112 \$MC_START_MODE_MASK.
 Bit 14=0: No reset mode
 Bit 15 to bit 19
 Bit 15=1: No return transport of the tool if there are multiple preparation commands (Tx->Tx).
 Bit 15=0: Return transport of the tool from any defined buffers.
 Bit 16=1: T = location number is active
 Bit 16=0: T="Tool name"
 Bit 17=1: Tool life decrementation can be started and stopped via the PLC in channel DB 2.1...DBx 1.3.
 Bit 18=1: Activation of monitoring of "Last tool in the tool group"
 Bit 18 Lengthens the search for a suitable tool, above all, when there are a large number of disabled replacement tools.
 Bit 18=0: No monitoring of "Last tool in the tool group"
 Bit 19=1: The synchronizations determined by bits 5...8 refer to the main run block. This means that the block change is delayed until the required acknowledgments have been received.
 Bit 19, in conjunction with set bits 5, 6, 7, 8, delays block processing.
 Bit 19=0: The synchronizations determined by bits 5...8 refer to the tool command output. This means that the block change is not delayed.
 Bit 20 to bit 24
 Bit 20=0: If the PLC signal "Program test active" is present, then the commands generated are not output to the PLC. The NCK acknowledges the commands itself. The magazine and tool data are not changed.

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Bit 20=1: If the PLC signal "Program test active" is present, then the commands generated are output to the PLC. Depending upon the type of acknowledgment, tool/magazine data can be changed in the NCK. If the acknowledgment parameters for the "target magazine" are given the values of the "source magazine", then there is no tool transport, and thus also no data change in the NCK.

Bit 21=0: Default setting: Ignore the tool state "W" during tool selection.

Bit 21=1: Tools in the state "W" cannot be selected by another tool change/tool preparation command.

Bit 22=1: Function "Tool subgroups"

\$TC_TP11[x] is the grouping or selection parameter

Bit 23=0: Default setting

The tool management selects the tool optimally and safely in the main run. This means that the interpreter may have to wait until the end of the tool selection for the offset selection.

Bit 23=1: For simple applications

The interpreter selects the tool itself. This means synchronization with the main run is not required for the offset selection. (However, an uncorrectable alarm may be issued if a tool becomes unserviceable after selection but before loading.)

Note: Bit4=1 (PLC can reject tool) and Bit23=1 (interpreter selects tool) are mutually exclusive.

Bit 24=0: Default setting

If the PLC commands 8 and 9 (asynchronous transfer) want to move a tool to a location reserved for another tool, then this is rejected with an alarm.

Bit 24=1: If the PLC commands 8 and 9 want to move a tool to a location reserved for another tool with "Reserved for tool from buffer" (bit value= "H4"), then this is possible. This location reservation is removed before execution of the motion ("Reserved for new tool to be loaded" (bit value= "H8") remains effective).

Related to:

MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK

MD20320 \$MC_TOOL_TIME_MONITOR_MASK

MD20122 \$MC_TOOL_RESET_NAME

MD20110 \$MC_RESET_MODE_MASK

MD20124 \$MC_TOOL_MANAGEMENT_TOOLHOLDER

MD22560 \$MC_TOOL_CHANGE_M_CODE

20320	TOOL_TIME_MONITOR_MASK			C06, C09	-	
-	Time monitoring for tool in tool holder			UDWORD	PowerOn	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x7FFFFFFF	7/2	M

Description: Activation of the tool time monitoring for the tool holders and spindles 1..x.

As soon as the path axes have been traversed (not with G00, always with G63), the tool time monitoring data of the active D compensation are updated for the tool in the selected tool holder, which is also the master tool holder.

Bit 0...x-1: Monitoring of the tool in tool holder 1...x

20350	TOOL_GRIND_AUTO_TMON			C06, C09	-	
-	Activation of tool monitoring. 0/1: Monitoring off/on			BYTE	PowerOn	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	1	7/2	M

Description: This MD is used to define whether tool monitoring is switched on automatically if tool length compensation for a grinding tool with monitoring is selected (odd type number types 401 - 499).

TOOL_GRIND_AUTO_TMON = 1 : Automatic monitoring switched on

TOOL_GRIND_AUTO_TMON = 0 : Automatic monitoring switched off

20360	TOOL_PARAMETER_DEF_MASK			C09	M5, P1, W1	
-	Definition of tool parameters			UDWORD	PowerOn	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x7FFFFFFF	7/2	M

Description:

Definition of the effects of tool parameters.

Bit no. meaning when bit is set

Bit 0: (LSB):

For turning and grinding tools, the wear parameter of the transverse axis is included in the calculation as a diameter value.

Bit 1:

For turning and grinding tools, the tool length component of the transverse axis is included in the calculation as a diameter value.

Bit 2:

If a tool length correction is included in the calculation as a diameter value, the tool may only be used in the plane that was active when the tool was selected. If this bit is set, a plane change leads to an alarm.

Bit 3:

Work offsets in frames in the transverse axis are included in the calculation as diameter values.

Bit 4:

PRESET value is included in the calculation as a diameter value

Bit 5:

Include the external work offset in the transverse axis in the calculation as a diameter value

Bit 6:

Read actual values of the transverse axis as diameter values (AA_IW, AA_IEN, AA_IBN, AA_IB. Notice: Not AA_IM.)

Bit 7:

Display all actual values of the transverse axis as diameter values, irrespective of the G code of group 29 (DIAMON / DIAMOF)

Bit 8:

Always display the distance-to-go as a radius in the Work (WCS)

Bit 9:

During DRF handwheel travel of a transverse axis, only half the distance of the specified increment is traveled (on condition that MD11346 \$MN_HANDWH_TRUE_DISTANCE = 1).

Bit10:

Activate the tool component of an active, orientable tool holder even if no tool is active.

Bit11:

The tool parameter \$TC_DP6 is not interpreted as a tool radius but as a tool diameter.

Bit12:

The tool parameter \$TC_DP15 is not interpreted as wear of the tool radius but as wear of the tool diameter.

Bit13:

During JOG of circles, the circle center coordinate is always a radius value, see D42690 \$SC_JOG_CIRCLE_CENTRE.

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Bit14:

Absolute values of the transverse axis with cycle screenforms in the radius

Bit15:

Incremental values of the transverse axis with cycle screenforms as diameter

Bit16:

For GWPS (GWPSON/TMON), the tool parameters, tool length, wear and base dimension, are interpreted as diameter values

Bit17:

With cutting edge position compensation (CUTMOD/CUTMODK) for turning and grinding tools, the cutting plane for calculating the compensation values is rotated into the machining plane. If this bit is not set, the cutting edge is projected into the machining plane instead.

Bit18:

With cutting edge position compensation (CUTMOD/CUTMODK) for turning and grinding tools, always use the active plane (G17 - G19). If this bit is not set, the plane specified by setting data SD42940 \$SC_TOOL_LENGTH_CONST has priority over the plane specified by the G code group 6 (plane selection, G17 - G19).

Bit19:

The tool orientation change caused by an orientable tool holder becomes effective even if no tool is active. This bit is only effective if bit 10 is also set.

Bit20:

If this bit is zero, and if the tool parameter \$TC_DP10 (holder angle) and/or \$TC_DP24 (clearance angle) contain the value 0, the following default values are used as the basis for the function CUTMOD/CUTMODK to calculate the modified cutting-edge position and the modified cutting-edge direction:

Holder angle 112.5 degrees for cutting-edge positions 1 - 4

Holder angle 67.5 degrees for cutting-edge positions 5 - 8

Clearance angle 22.5 degrees for cutting edge positions 1 - 4

Clearance angle 67.5 degrees for cutting-edge positions 5 - 8

If this bit is set, an alarm is output in the cases mentioned. This bit is used to establish compatibility with older software releases.

Bit21:

If this bit is zero, any existing rotation in the part proportion of the tool carrier is taken into account for CUTMOD with tool carrier when modifying the cutting edge position. Frames are ignored.

If this bit is 1, in the place of the part proportion of the tool carrier, the active total frame is taken into account with CUTMOD with tool carrier with modification of the cutting edge position. The total frame can also contain a part proportion of the tool carrier.

Bit22:

If this bit is zero, with an active kinematic transformation, a wear component of the tool that cannot be transformed (see SD42935 \$SC_WEAR_TRANSFORM) is taken into account statically with the position of the transformation that was valid at the time of the tool selection.

If this bit is 1, with an active kinematic transformation, a wear component of the tool that cannot be transformed (see SD42935 \$SC_WEAR_TRANSFORM) is taken into account in real-time with the relevant current position of the transformation.

20370	SHAPED_TOOL_TYPE_NO			C01, C08	-	
-	Tool type number for contour tools			DWORD	Immediately	
-						
-	4	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/2	M

Description:

Indicates for each channel max. two number ranges for tool types that are treated as forming tools. Therefore individual ranges are possible both for grinding and for turning tools.

The first range is specified by the first and the second number, the second range by the third and fourth number.

If the first number is not smaller than the second one (the same applies for the third and fourth number), no range will be defined, but two individual numbers will be specified instead.

The numbers 400 through 599 are permissible (tool type numbers for turning and grinding tools), and also value 0 (no tool type number defined).

Examples:

400 405 590 596 : Tool types 400-405 and 590-596 are contour tools

410 400 590 596 : tool types 400, 410 and 590-596 are contour tools

450 0 420 430 : Tool types 450 and 420-430 are contour tools

20372	SHAPED_TOOL_CHECKSUM			C01, C08	-	
-	Checksum test for contour tools			BOOLEAN	Immediately	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/5	U

Description:

Indicates for each channel whether for completion of the contour tool definition an edge must be available that includes the negative sums of tool length components and tool radius of the previous edges.

20380	TOOL_CORR_MODE_G43G44			C01, C08, C11	-	
-	Treatment of tool length compensation with G43 / G44			BYTE	Reset	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	2	7/2	M

Description:

This machine data determines in ISO mode M (G43 / G44) the way in which length compensations programmed with H are processed.

0: Mode A

Tool length H always acts on the third geometry axis (usually Z)

1: Mode B

Tool length H acts, depending on the active plane, on one of the three geometry axes. This means with

G17 on the 3rd geometry axis (usually Z)

G18 on the 2nd geometry axis (usually Y)

G19 on the 1st geometry axis (usually X)

In this mode, compensations in all three geometry axes can be configured through multiple programming, i.e. through the activation of one component, the length compensation possibly active in another axis is not deleted.

2: Mode C

The tool length acts, independent of the active plane, on the axis that has simultaneously been programmed with H. Otherwise, the response is the same as with mode B.

20382	TOOL_CORR_MOVE_MODE			C01, C08	-	
-	Traversing of tool length compensation			BOOLEAN	Reset	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

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Description: This machine data determines how the tool length compensations are traversed.

0: A tool length compensation is only traversed if the associated axis has been programmed (behavior as in previous software versions)

1: Tool lengths are always traversed independently of whether the associated axes are programmed or not.

20384	TOOL_CORR_MULTIPLE_AXES			C01, C08, C11	-	
-	Tool length compensation in several axes simultaneously			BOOLEAN	Reset	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/2	M

Description: This machine data determines for tool length compensation in ISO mode M (ISO2) (G43 / G44), whether the compensation shall be allowed in mode C (selection of the axis on which the compensation is acting by specifying the corresponding axis letter) to act on several axes simultaneously.

If this machine data is 1, this type of programming is allowed; otherwise it is rejected with an alarm.

20390	TOOL_TEMP_COMP_ON			C01, C08	K3, W1	
-	Activation of temperature compensation for tool length			BOOLEAN	Reset	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: This machine data activates the temperature compensation in tool direction (see also SD42960 \$SC_TOOL_TEMP_COMP)

20392	TOOL_TEMP_COMP_LIMIT			C01, C08	W1	
mm	Max. temperature compensation for tool length			DOUBLE	Reset	
-						
-	3	1.0, 1.0 , 1.0, 1.0, 1.0 , 1.0, 1.0, 1.0 , 1.0, 1.0, 1.0, 1.0, ...	0.0	1.0E+301	7/7	U

Description: With temperature compensation, this machine data indicates the maximum permissible value for the tool length for each geometry axis.

If a temperature compensation value larger than this limit value is entered, it will be limited without an alarm.

20400	LOOKAH_USE_VELO_NEXT_BLOCK			EXP, C05	B1	
-	LookAhead following block velocity			BOOLEAN	PowerOn	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/2	M

Description: For SW-internal function optimization.

20430	LOOKAH_NUM_OVR_POINTS			EXP, C02, C05	B1	
-	Number of override characteristics for LookAhead			DWORD	PowerOn	
-						
-	-	1, 1, 1, 1, 1, 1, 1...	0	2	7/2	M

Description: For SW-internal function optimization.

Description: For SW-internal function optimization.

Description:	The MD specifies for which technology groups the extended LookAhead is active. Value 0: Default LookAhead Value 1: Extended LookAhead Value 2: reserved E.g. MD20443 <code>\$MC_LOOKAH_FFORM[4]=1</code>; i.e. activation for DYNFINISH. Entry for all dynamic G code groups. When changing between default LookAhead and extended LookAhead or vice versa, the continuous-path mode is interrupted by an interpolatory stop.

Description:	Block change problems occur for the following reason: The traversing length of the NC blocks to be processed is so short that the Look Ahead function has to reduce the machine velocity to provide enough time for block preparation. In this situation, constant decelerations and accelerations of the path motion can occur. This machine data defines the extent to which such velocity fluctuations are to be smoothed. Special cases: Values up to approx. 1.0 are appropriate. The value 0.0 means that the function is deactivated.

Description:	Look Ahead special functions. The function is not available with BRISK and SOFT, not with DRIVE. Bit 0 = 1: The Safety Integrated setpoint limitation is already taken into account in Look Ahead. It is used to calculate a block-wide limitation of the path velocity which acts in addition to the other limitations (e.g. override). Bit 1 = 1:

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The function of bit 0 is extended so that, from the Safety Integrated setpoint limitation, various limits of the path velocity are calculated for various areas of the block. In comparison to the functionality of bit 0, this enables the axis velocity to run nearer (but still below) the Safety Integrated setpoint limitation.

Bit 2 = 1:

Reserved

Bit 3: Deceleration response on approaching conditional stops (inc. for clamping, WAIT marks, protection areas) if extended Look Ahead is used (\$MC_LOOKAH_FFORM[i]=1).

Bit 3 = 0:

Early start of deceleration.

Bit 3 = 1:

Late start of deceleration.

Related to:

MD36931 \$MA_SAFE_VELO_LIMIT

MD36933 \$MA_SAFE_DES_VELO_LIMIT

20463	FIFOCTRL_ADAPTION			EXP, C05	-	
-	Adaptation of the IPO buffer control			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0	1/1	M

Description:

The MD defines how significantly the IPO buffer control (FIFOCTRL) should influence the path feedrate with the buffer full.

0.0 means that the IPO buffer control, for a full IPO buffer stops limiting the path feedrate. This shortens the machining time, but it can increase the risk of the IPO buffer running empty.

1.0 means that the IPO buffer control, with full IPO buffer continues to control the path feedrate, and therefore avoids the IPO buffer becoming empty faster. This results in minor fluctuations of the IPO buffer fill level. However, a longer machining time must be expected.

Values between 0.0 and 1.0 permit a smooth, seamless transition from the old to the new response.

Corresponds with:

FIFOCTRL

20464	PATH_MODE_MASK			EXP, C05	-	
-	Path behavior			UDWORD	Reset	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	0xffff	7/2	M

Description:

This machine data is used to influence the path action

Bit0:

If only rotary axes are traversed in the block as path axes with active G700, the programmed rotary axis velocity corresponds to

0: [degrees/min]

1: [25.4*degrees/min]

20470	CPREC_WITH_FFW			EXP, C06, C05	K6	
-	Programmable contour accuracy			BYTE	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	5	7/2	M

Description:

This machine data defines the behaviour of the programmable function CPRECON.

0: The CPRECON function is inactive when feedforward control is activated simultaneously.

1: CPRECON is also active with feedforward control.

2: As 1, but the function is parameterised with MD32415 \$MA_EQUIV_CPREC_TIME.

3: As 2, but any contour accuracy programmed with CTOL has priority over SD42450 \$SC_CONTPREC.

4: CPRECON is active independently of the feedforward control and jerk filter. Only MD32415 \$MA_EQUIV_CPREC_TIME is taken into account in the calculation of the contour error. All time constants that have effects on the contour error must be summated and entered MD32415 \$MA_EQUIV_CPREC_TIME.

5: As 4, but a contour accuracy that may have been programmed with CTOL has priority over SD42450 \$SC_CONTPREC.

The values 0 and 1 are no longer recommended. They only provide compatibility with older software versions.

Related to:

SD42450 \$SC_CONTPREC

SD42460 \$SC_MINFEED

MD32415 \$MA_EQUIV_CPREC_TIME

20476	ORISON_STEP_LENGTH			EXP	F2	
mm	Path length for block division with ORISON			DOUBLE	NEW CONF	
-						
-	-	0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5...	0.001	1.0E+301	1/1	M

Description: The path lengths of the part blocks are set with this MD as they are formed with orientation smoothing with ORISON.

For this data to be active, the division of blocks with ORISON must be enabled with MD20478 \$MC_ORISON_MODE (Value 100).

If a length is set for this MD that is significantly shorter than the default length of 0.5 mm, problems may occur with the performance and effectiveness of the orientation smoothing with large tolerances. If this length is reduced, the block buffer for the orientation smoothing (MD28590 \$MC_MM_ORISON_BLOCKS) usually also has to be increased, so that the orientation smoothing can still act over an adequately long path length.

20478	ORISON_MODE			EXP	F2	
-	Mode of orientation smoothing			DWORD	NEW CONF	
-						
-	-	100, 100, 100, 100, 100, 100, 100, 100...	0	3232	7/7	U

Description: The mode of operation of orientation smoothing with ORISON can be set with this MD. The units, tens, hundreds and thousands digits have different meanings. The following possibilities are available:

The units digits of this data define the type of smoothing: rotary axis or vector smoothing.

xx0: The type of smoothing is defined by the active G code of the 51st G code group:
ORIAXES active: rotary axis smoothing, ORIAXES inactive (e.g. ORIVECT): vector smoothing.

xx1: Vector smoothing irrespective of the active G code of the 51st G code group

xx2: Rotary axis smoothing irrespective of the active G code of the 51st G code group

The tens digits can change the effect of the smoothing:

x0x: Smoothing takes place along the entire path length.

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x1x: Smoothing takes place homogeneously along the traversing length of the orientation axes.

x2x: Tolerance changes become active block-synchronously. In the other case, a change of tolerance becomes active incrementally over a defined path length. As a rule, this leads to a more homogeneous progression of the orientation. This setting option only plays a role if the blocks are subdivided (hundreds digit of this machine data 1xx). If the blocks are not subdivided, any tolerance change always becomes active block-synchronously.

The hundreds digits can be used to set whether the smoothing works on the programmed original blocks or on suitably split blocks:

0xx: The programmed blocks are not subdivided. The effect of the orientation smoothing is very dependent on the programmed block structure.

1xx: The programmed blocks are subdivided so that the orientation smoothing can generate a homogeneous progression of the orientation.

Only those blocks are subdivided, in which a compressor (COMPCAD, COMPCURV, COMPON) is active.

2xx: The programmed blocks are subdivided so that the orientation smoothing can generate a homogeneous progression of the orientation.

All program blocks are subdivided, irrespective of whether a compressor (COMPCAD, COMPCURV, COMPON) is active in it or not.

The thousands digit can be used to set how the tolerance is specified for the orientation smoothing:

0xxx: The tolerance is specified according to the usual rules. This means that when OTOL = <...> is programmed, the value thus programmed becomes active, otherwise the value of SD \$SC_ORISON_TOL becomes active. The G0 tolerance factor is always

calculated in (value of MD20560 \$MC_G0_TOLERANCE_FACTOR or the value programmed with STOLF = <...>).

1xxx: The tolerance is always specified with SD42678 \$SC_ORISON_TOL, irrespective of whether OTOL = <...> was programmed.

2xxx: The G0 tolerance factor is not included in the calculation. This is the case both for the tolerance specified with OTOL = <...> as well as with SD42678 \$SC_ORISON_TOL.

The two numerical values can be combined with one another.

20480	SMOOTHING_MODE			EXP	B1	
-	Behavior of smoothing with G64x			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	75744	7/7	U

Description:

Configuration of smoothing with G641 and G642 or G643.

The MD is decimal-coded. The units digits define the response with G643, and the tens digits the response with G642. The hundreds digit can define whether, with G641 or G642, the axes may be accelerated within the smoothing range or traversed at constant velocity. The thousands and ten-thousands digits are used to configure smoothing with G644.

x0: G643 uses axis-specific tolerances; these are set with the axis-specific MD33100 \$MA_COMPRESS_POS_TOL.

x1: G643 uses the contour tolerance SD42465 \$SC_SMOOTH_CONTUR_TOL for smoothing the geometry axes. The axis-specific tolerances in MD33100 \$MA_COMPRESS_POS_TOL are used for smoothing all other axes.

x2: The angular tolerance SD42466 \$SC_SMOOTH_ORI_TOL is used for smoothing the orientation movement. The axis-specific tolerances in MD33100 \$MA_COMPRESS_POS_TOL are used for all other axes.

x3: Combination of the two options 01 and 02. This means that G643 uses the tolerances SD42465 \$SC_SMOOTH_CONTUR_TOL and SD42466 \$SC_SMOOTH_ORI_TOL. All other axes are smoothed with an axis-specific tolerance.

x4: G643 uses the smoothing length programmed with ADIS= or ADISPOS=. The specification of possible axis-specific tolerances or contour and orientation tolerances is ignored.

0x: G642 uses axis-specific tolerances; these are set with the axis-specific MD33100 \$MA_COMPRESS_POS_TOL.

1x: G642 uses the contour tolerance for smoothing the geometry axes. The axis-specific tolerances in MD33100 \$MA_COMPRESS_POS_TOL are used for smoothing all other axes.

2x: The orientation movement with G642 is smoothed using the angular tolerance SD42466 \$SC_SMOOTH_ORI_TOL. The axis-specific tolerances in MD33100 \$MA_COMPRESS_POS_TOL are used for smoothing all other axes.

3x: Combination of both options 10 and 20. This means that G642 uses the tolerances SD42465 \$SC_SMOOTH_CONTUR_TOL and SD42466 \$SC_SMOOTH_ORI_TOL. Other axes are smoothed with an axis-specific tolerance.

4x: G642 uses the smoothing length programmed with ADIS= or ADISPOS=. The specification of possible axis-specific tolerances or contour and orientation tolerances is ignored.

Possible values of the hundreds digit (specification of path velocity for smoothing):

0xx: A profile of the limit velocity is calculated within the smoothing range from the specified maximum values for acceleration and jerk of the axes or path involved. This can lead to an increase in
 path velocity in the smoothing range and consequently to an acceleration of the axes involved.

1xx: A profile of the limit velocity is not calculated for smoothing blocks with G641. Only a constant limit velocity is specified. In the case of smoothing with G641/G642, this prevents the axes involved accelerating in the
 smoothing range. However, this setting may lead to smoothing blocks being traversed at a velocity that is too low, especially in the case of long smoothing ranges.

2xx: No velocity profile for G642 and G645 (see the above scenario for description).

4xx: The "effective" path velocity in a smoothing block will remain constant, if possible, as long as the dynamic response of the axes permits this. Unlike the default setting, the smoothing blocks are also interpolated as a path with this setting.

Possible values for the thousands digit (configuration of G644):

0xxx: When smoothing with G644, the maximum deviations of each axis specified in MD COMPRESS_POS_TOL are adhered to. If the dynamic response of the axis allows, the specified tolerance may not be fully utilized.

1xxx: When smoothing with G644, the smoothing distance is specified.

2xxx: When smoothing with G644, the maximum frequency at which the smoothing movement of each axis occurs is limited. The maximum frequency is specified in MD32440 \$MA_LOOKAH_FREQUENCY.

3xxx: When smoothing with G644, neither the tolerance nor the smoothing distance is monitored. Each axis traverses around a corner with the maximum possible dynamic response. With SOFT, both the maximum acceleration and the maximum jerk of each axis are observed. With BRISK, the jerk is not limited; instead, each axis traverses with the maximum possible acceleration.

4xxx:

3.3 NC machine data

When smoothing with G644, the maximum deviations of each axis specified in MD COMPRESS_POS_TOL are adhered to. In contrast to the value 0xxx, the specified tolerance is fully utilized where possible. The axis then does not reach its maximum possible dynamic response.

5xxx:

When smoothing with G644, the smoothing distance is specified (ADIS or ADISPOS). In contrast to the value 1xxx, the specified smoothing distance is also fully utilized where possible. The axes involved then might not reach their maximum dynamic response. Possible values for the ten-thousands digit (various special setting options for G641/G642/G645):

0xxxx:

The velocity profiles of the axes in the smoothing range are defined without jerk limitation when BRISK is active, and with jerk limitation when SOFT is active.

1xxxx:

The velocity profiles of the axes in the smoothing range are always defined with jerk limitation no matter whether BRISK or SOFT is active.

2xxxx: When smoothing tangential block transitions with G645, "counter motion" may occur when moving along the contour. This can be avoided if circles are involved. If this function is activated, the circles involved are reduced by the set tolerance. As a consequence, the smoothed contour runs on the inner side of the tolerance band and "counter motion" is avoided.

4xxxx: When smoothing with G641/G642 and G645, the smoothing movements of the orientation axes are made with vector interpolation if possible, this is conditional upon vector interpolation being active in both the blocks involved and the active orientation transformation permitting this (e.g. by pole handling).

By default, the orientation axes are always smoothed by means of rotary axis interpolation.

The values of the units, tens, hundreds and ten-thousands digits are added.

The values of the thousands digit are interpreted individually.

Related to:

MD33100 \$MA_COMPRESS_POS_TOL,

SD42465 \$SC_SMOOTH_CONTUR_TOL,

SD42466 \$SC_SMOOTH_ORI_TOL

20481	ORISMOOTHING_MODE			EXP	B1	
-	Behavior of smoothing of orientations with OST/OSD			DWORD	NEW CONF	
-						
-	-	1, 1, 1, 1, 1, 1, 1, 1...	0	12	7/7	U

Description:

Settings for the behavior of smoothing of orientation motions with OST/OSD.

It can be set how block transitions are smoothed if additional rotary axes are participating in a path motion which do not act as orientation axes in a transformation. If the value of this MD is zero, for OST/OSD at a block transition, only rotary axes that act as orientation axes in a transformation are smoothed. For values <> 0, any existing additional rotary axes are also smoothed, depending on the situation.

Meaning of the unit position:

x0: Additional rotary axes are not smoothed.

x1: Additional rotary axes are only smoothed if rotary axis interpolation is active for orientation.

x2: Additional rotary axes are smoothed even if vector interpolation is active. In this case, in both blocks it is switched to rotary axis interpolation. Depending on machine kinematics and situation, the switchover can cause undesired rotary axis movements (orientation changes).

Meaning of the decade:

0x: If no orientation transformation is active, rotary axis motions with OST/OSD are not smoothed.

1x: Even without active transformation, rotary axis motions are smoothed. This permits the active smoothing of rotary axes with OST/OSD even without active orientation transformation.

20482	COMPRESSOR_MODE			EXP	F2	
-	Mode of compressor			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	1333	7/7	U

Description:

This MD is used to set the compressor operating mode.

The units digits, the tens digits and the hundreds digits have different meanings.

The following options are available:

Units digits:

0: With the compressor, the tolerances specified with MD33100 \$MA_COMPRESS_POS_TOL are met for all axes (geometry and orientation axes).

1: With the compressor, the contour tolerances specified with SD42475 \$SC_COMPRESS_CONTUR_TOL are active for the geometry axes.

For the orientation axes, the axis-specific tolerances MD33100 \$MA_COMPRESS_POS_TOL are active.

2: With the compressor, the axis-specific tolerances MD33100 \$MA_COMPRESS_POS_TOL become active for the geometry axes. The orientation movement is compressed in compliance with the maximum angular deviations specified with SD42476 \$SC_COMPRESS_ORI_TOL or SD42477 \$SC_COMPRESS_ORI_ROT_TOL.

3: With the compressor, the contour tolerance SD42475 \$SC_COMPRESS_CONTUR_TOL becomes active for the geometry axes and the maximum angular deviation SD42476 \$SC_COMPRESS_ORI_TOL or SD42477 \$SC_COMPRESS_ORI_ROT_TOL becomes active for the orientation axes.

Tens digits:

The tens digits of this MD can be used to set a compressor response that is compatible with previous software releases (< SW 6.3).

0x: All blocks with orientations and value assignments are compressed.

This is the default setting.

Notice: This response is incompatible with previous software releases!

1x: Blocks with value assignments are not compressed (e.g. X=100 ..., etc.)

2x: Blocks with a programmed tool orientation are not compressed.

(e.g. A3= B3= C3=).

3x: All blocks with value assignments and/or programmed tool orientation are not compressed. With this setting, the response is fully compatible with previous software releases (< 6.3).

Hundreds digits:

The hundreds digit can be used to set which blocks in addition to G01 blocks are to be compressed or not:

0xx: Circular blocks and G00 blocks are not compressed. Is compatible with previous releases.

1xx: Circular blocks are linearized and compressed by COMPCAD.

2xx: G00 blocks are compressed; a different tolerance may be applied here (see MD 20560 \$MC_G0_TOLERANCE_FACTOR).

3xx: Combination of the two previous options: Both circular blocks and G00 blocks are compressed.

The thousands digits optimize the compressor for different machine types:

0xxx: Optimization for a good surface quality in tool and mold making.

1xxx: Optimization for soft and fast traversing in special applications.

3.3 NC machine data

20485	COMPRESS_SMOOTH_FACTOR			EXP, C05	B1	
-	Smoothing by compressor			DOUBLE	NEW CONF	
-						
-	6	0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., ...	0.	1.	7/2	M

Description: Smoothing of the programmed block end points with compressor type COMPCAD. Value 0: no smoothing. Value 1: maximum smoothing.
Entry for all dynamic G code groups.

20486	COMPRESS_SPLINE_DEGREE			EXP, C05	B1	
-	Compressor spline degree			BYTE	NEW CONF	
-						
-	6	3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3...	3	5	7/2	M

Description: Spline degree for compressor type COMPCAD. Value 3 is recommended; value 5 may be possible for roughing, if soft and rapid movements are more important than accuracy
Entry for all dynamic G code groups.

20487	COMPRESS_SMOOTH_FACTOR_2			EXP, C05	B1	
-	Smoothing by compressor			DOUBLE	NEW CONF	
-						
-	6	0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., ...	0.	1.	7/2	M

Description: Extent to which the programmed block end points are smoothed in the case of compressor type COMPCAD for non-geometry axes. Value 0: No smoothing. Value 1: Maximum smoothing.
Entry for each dynamic G code group.

20488	SPLINE_MODE			EXP	B1	
-	Setting for spline interpolation			UBYTE	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	0x7	7/7	M

Description: This MD is used to determine the settings for spline interpolation. The allocation of the spline segments to the NC blocks can thus be influenced. With spline interpolation, the spline blocks are combined, if possible, in such a way, that there are no blocks that are too short and could lead to a reduction in the possible path velocity.
Bit 0: With BSPLINE, blocks that are too short are avoided.
Bit 1: With BSPLINE/ORICURVE, blocks that are too short are avoided.
Bit 2: With CSPLINE, blocks that are too short are avoided.

20490	IGNORE_OVL_FACTOR_FOR_ADIS			EXP	B1	
-	G64x independent of overload factor			BOOLEAN	NEW CONF	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/7	U

Description:

A block transition is normally only smoothed with G64x when the path velocity at block transition is reduced by the overload factor set in MD32310 \$MA_MAX_ACCEL_OVL_FACTOR. When SOFT is active, the maximum jerk occurring at block transitions is also limited by MD32432 \$MA_PATH_TRANS_JERK_LIM. This means that the effect of smoothing with G64x depends on the values set for the overload factor and possibly for the maximum jerk. By setting MD20490 \$MC_IGNORE_OVL_FACTOR_FOR_ADIS = TRUE, a block transition can be smoothed with G64x, irrespectively of the values set for the overload factor.

20500	CONST_VELO_MIN_TIME			EXP, C05	B2	
s	Minimum time with constant velocity			DOUBLE	PowerOn	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	0.1	7/2	M

Description:

Defines the minimum time for constant velocity during transition from acceleration to deceleration in short blocks in which the set velocity cannot be reached. Entering a time of at least several IPO cycles prevents a direct transition from the acceleration to the deceleration phase and thus reduces the acceleration jump to half. This acceleration limitation is only active with the acceleration profile BRISK.

MD irrelevant for:

Look Ahead does not take account of this function.

20550	EXACT_POS_MODE			EXP	B1	
-	Exact stop conditions on G00/G01.			BYTE	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	33	7/2	M

Description:

Configuration of the exact stop conditions for G00 and other G codes of the 1st G code group.

The MD is decimal-coded. The units digits define the behavior at G00 (infeed motion) and the tens digits the behavior of all the other G codes of the 1st group ("machining G codes").

x0: At G00, the relevant programmed exact stop conditions become active.

x1: At G00, G601 (fine positioning window) becomes active independent of the programmed exact stop condition.

x2: At G00, G602 (coarse positioning window) becomes active independent of the programmed exact stop condition.

x3: At G00, G603 (setpoint value reached) becomes active independent of the programmed exact stop condition.

0x: At the machining G codes, the relevant programmed exact stop conditions become active.

1x: At the machining G codes, G601 (fine positioning window) becomes active independent of the programmed exact stop condition.

2x: At the machining G codes, G602 (coarse positioning window) becomes active independent of the programmed exact stop condition.

3x: At the machining G codes, G603 (setpoint value reached) becomes active independent of the programmed exact stop condition.

The values of the units digits and tens digits are added.

For example, the value of EXACT_POS_MODE = 2 means that the exact stop condition G602 is always activated automatically at G00, independently of which exact stop condition was programmed. At all other G codes of group 1, the programmed exact stop condition becomes active.

3.3 NC machine data

20552	EXACT_POS_MODE_G0_TO_G1			EXP	B1	
-	Exact stop condition at G00-G01 transition			BYTE	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	5	7/2	M

Description:

Configuration of a stop at transition from G00 to a different G code of the 1st G code group, and also vice versa, at transition from non-G00 to G00 in continuous-path mode. In exact-stop mode, the positioning window programmed or set in MD20550 \$MC_EXACT_POS_MODE is used.

The following applies:

- 0: No additional stop, no control of exact stop
- 1: Behavior active as with G601 (positioning window, fine).
- 2: Behavior active as with G602 (positioning window, coarse).
- 3: Behavior active as with G603 (setpoint reached).
- 4: As 0, no stop at block transition.

At block change from G0 to non-G0 in the G0 block in continuous-path mode, LookAhead takes account of the current value of the feedrate override of the following non-G0 block. Depending on the axis dynamics and the path length of the current block, the block change takes place with the exact or best possibly adapted velocity of the following block.

- 5: As 0, no stop at block transition.

At block change from G0 to non-G0 and non-G0 to G0 in continuous path mode, LookAhead takes account of the current value of the feedrate override (G0 to non-G0) or rapid traverse override (non-G0 to G0) of the following block. Depending on the axis dynamics and the path length of the current block, the block change takes place with the exact or best possibly adapted velocity of the following block.

20560	G0_TOLERANCE_FACTOR			EXP	B1	
-	Tolerance factor for G00			DOUBLE	NEW CONF	
-						
-	-	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0...	1.e-9	1.0E+301	1/1	M

Description:

Tolerance factor for G00.

This factor is used to make different settings for the tolerances for processing when G00 is active (rapid traverse, infeed motion).

This tolerance factor is relevant for the following control functions:

1. Compressor (COMPCAD, COMPCURV, and COMPON)
2. Smoothing with G64x
3. Smoothing of orientation with OST
4. Smoothing of orientation response with ORISON

This factor can be both greater than 1 and less than 1. However, higher tolerance settings are usual for infeed motion.

If the factor is equal to 1, the tolerances applied for G00 motion are the same as those for non-G00 motion.

20561	G0_TOLERANCE_CTOL_ABS			EXP	B1	
-	Absolute value for G00 tolerance of the contour			DOUBLE	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	1.0E+301	1/1	M

Description:

Absolute value for G00 tolerance of the contour

With this value, the tolerances for active G00 (rapid traverse, infeed motions) can be set differently for machining.

This tolerance value is relevant to the following functions of the control:

1. Compressor (COMPSURF, COMPCAD, COMPCURV and COMPON)
2. Smoothing with G64x

The value set here has priority over the value from MD20605 \$MC_G0_TOLERANCE_FACTOR.

If the set value is 0, the factor from MD20605 \$MC_G0_TOLERANCE_FACTOR is active.

20562	G0_TOLERANCE_OTOL_ABS			EXP	B1	
-	Absolute value for G00 tolerance of the orientation			DOUBLE	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	1.0E+301	1/1	M

Description: Absolute value for G00 tolerance of the orientation

With this value, the tolerances for active G00 (rapid traverse, infeed motions) can be set differently for machining.

This tolerance value is relevant to the following functions of the control:

1. Compressor (COMPSURF, COMPCAD, COMPCURV and COMPON)
2. Smoothing with G64x
3. Smoothing of the orientation with OST
4. Smoothing of the orientation characteristic with ORISON

The value set here has priority over the value from MD20605 \$MC_G0_TOLERANCE_FACTOR.

If the set value is 0, the factor from MD20605 \$MC_G0_TOLERANCE_FACTOR is active.

20600	MAX_PATH_JERK			C05	B1, B2	
m/s³	Path-related maximum jerk			DOUBLE	NEW CONF	
-						
-	6	100., 100., 100., 100., 100., 100., 100., 100., 100., 100., 100....	1.e-9	1.0E+301	7/2	M

Description: The jerk limitation restricts the path acceleration change in SOFT mode. The path acceleration divided by the jerk limitation value produces a time in which the acceleration change takes place.

The jerk limitation is activated on the path by the NC command SOFT, and deactivated by BRISK.

MD irrelevant for:

Error states that lead to a rapid stop. In addition, the limitation is also inactive for positioning axes.

There is an entry for each dynamic G code group.

20602	CURV_EFFECT_ON_PATH_ACCEL			EXP, C05	B1, B2	
-	Effect of path curvature on path dynamic			DOUBLE	NEW CONF	
-						
-	6	0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., ...	0.	0.95	7/2	M

Description: This MD is used to determine whether the reaction of path curvature on path acceleration and path velocity is taken into account.

0:

Not taken into account

> 0:

If required, the path velocity and path acceleration are reduced in order to keep a sufficient reserve on the machine axes for centripetal acceleration.

0.75: Recommended setting.

3.3 NC machine data

MD20602 \$MC_CURV_EFFECT_ON_PATH_ACCEL defines the proportion of the axis accelerations (see MD32300 \$MA_MAX_AX_ACCEL[...]) that can be used for centripetal acceleration. The remainder is used for changing the path velocity.

Centripetal acceleration is not required for linear blocks; the full axis acceleration is therefore available for the path acceleration. On slightly curved contours or with a sufficiently low maximum path feedrate

\$MC_CURV_EFFECT_ON_PATH_ACCEL has only a partial or no effect. Accordingly, the path acceleration is higher than that specified by (1. - MD20602

\$MC_CURV_EFFECT_ON_PATH_ACCEL) * MD32300 \$MA_MAX_AX_ACCEL[...].

There is an entry for each dynamic G code group.

20603	CURV_EFFECT_ON_PATH_JERK			EXP, C05	B1	
-	Effect of path curvature on path jerk			DOUBLE	NEW CONF	
-						
-	6	0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., ...	0.	1000.	7/2	M

Description: Allows the reaction of the path curvature on the path jerk to be taken into account on especially jerk-sensitive machines.

Entry for each dynamic G code group.

20605	PREPDYN_SMOOTHING_FACTOR			EXP, C05	B1	
-	Factor for curve smoothing			DOUBLE	NEW CONF	
-						
-	6	1., 1., 1., 1., 1., 1., 1., 1., 1., 1., 1., 1., 1., 1., 1., 1., ...	0.0	1.0E+301	1/1	M

Description: Factor to determine the degree of smoothing and torsion.

A larger value of this MD causes a stronger smoothing and thus a more homogenous curvature/torsion and resulting path velocity.

With this factor being zero no smoothing is performed.

There is an entry for all dynamic G code groups.

20606	PREPDYN_SMOOTHING_ON			EXP, C05	B1	
-	Activation of curve smoothing			DWORD	NEW CONF	
-						
-	6	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	1	7/2	M

Description: Switch on of curve and torsion smoothing.

Smoothing of the curve or torsion causes a homogenous path velocity.

Smoothing is only performed, when the relevant factor is MD 20605

\$MC_PREPDYN_SMOOTHING_FACTOR > 0.

Meaning:

0: Curve smoothing off.

1: Curve smoothing on.

2: Reserved.

There is an entry for all dynamic G code groups.

20610	ADD_MOVE_ACCEL_RESERVE				C05	F2, B2, K1	
-	Acceleration margin for overlaid movements				DOUBLE	PowerOn	
-							
-	-	.2, .2, .2, .2, .2, .2, .2, .2...	0.	0.9	7/2	M	

Description:

This machine data contains the factor that defines the acceleration and velocity margins which are not used by the path movements on the machine axes in order to provide sufficient acceleration and velocity margins for an overlaid movement for the velocity control.

A factor of 0.2 means that the path axes utilize 80% of the path acceleration and of the maximum velocity in normal operation. Only when a request for overlaid movement is made, can 100% of the path acceleration and velocity be utilized.

MD irrelevant for:

Error states that lead to a rapid stop. In addition, the limitation is also ineffective for positioning axes.

Special cases:

At the moment the machine data is only taken into account:

If the function "Fast retraction" is already activated

If the function "Online tool length compensation" is activated by the program command TOFFON

Related to:

MD32000 \$MA_MAX_AX_VELO (maximum axis velocity)

MD32300 \$MA_MAX_AX_ACCEL (maximum axis acceleration)

20620	HANDWH_GEOAX_MAX_INCR_SIZE			C08, C06	H1	
mm	Limitation handwheel increment for geometry axes			DOUBLE	PowerOn	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0E+301	7/2	M

Description:

> 0: Limitation of the size of the selected increment for geometry axes

MD 11330 \$MN_JOG_INCR_SIZE0[<increment/VDI signal>] or

SD41010 \$SN_JOG_VAR_INCR_SIZE for geometry axes

0: No limitation on geometry axes

20621	HANDWH_ORIAX_MAX_INCR_SIZE			C08, C06	-	
degrees	Limiting of handwheel increment for orientation axes			DOUBLE	PowerOn	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0E+301	7/2	M

Description:

> 0: Limitation of the size of the selected increment for orientation axes

MD11330 \$MN_JOG_INCR_SIZE[<increment/VDI signal>] or

SD41010 \$SN_JOG_VAR_INCR_SIZE for orientation axes

= 0: No limitation on orientation axes

20622	HANDWH_GEOAX_MAX_INCR_VSIZE			C08, C06, C05	-	
mm/min	Path velocity override			DOUBLE	PowerOn	
-						
-	-	500., 500., 500., 500., 500., 500., 500., 500....	0.0	1.0E+301	7/2	M

Description:

The following applies to the velocity override of the path:

3.3 NC machine data

> 0: Limitation of the size of the selected increment
(MD11330 \$MN_JOG_INCR_SIZE [<increment/VDI signal>] or
SD41010 \$SN_JOG_VAR_INCR_SIZE) / 1000*IPO sampling time
= 0: No limitation

20623	HANDWH_ORIAX_MAX_INCR_VSIZE			C08, C06, C05	-	
rev/min	Orientation velocity overlay			DOUBLE	PowerOn	
-						
-	-	0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1...	0.0	1.0E+301	7/2	M

Description:

For the orientation velocity overlay:

> 0: Limitation of the size of the selected increment
(MD11330 \$MN_JOG_INCR_SIZE [< increment/VDI signal>] or
SD41010 \$SN_JOG_VAR_INCR_SIZE) / 1000 * IPO sampling time
= 0: No limitation

20624	HANDWH_CHAN_STOP_COND			EXP, C09	H1, P1	
-	Definition of response of handwheel travel, channel-specific			UDWORD	PowerOn	
-						
-	-	0x13FF, 0x13FF, 0x13FF, 0x13FF, 0x13FF, 0x13FF, 0x13FF, 0x13FF...	0	0x1FFFF	7/2	M

Description:

Definition of the response for handwheel travel to channel-specific VDI interface signals (bit 0 to bit 7) or CP-SW limit stop or stop by an OEM application (bit 7):

Bit = 0:

Interruption or collection of the displacements entered via the handwheel.

Bit = 1:

Traversing canceled and no collecting.

Bit assignment:

Bit 0: Mode group stop

Bit 1: Mode group stop, axes plus spindle

Bit 2: NC stop

Bit 3: NC stop, axes plus spindles

Bit 4: Feedrate disable (exception for MD30460 \$MA_BASE_FUNCTION_MASK bit6)

For bit 4 feed disable, it must be taken into account that a PLC-controlled axis, for which MD30460 \$MA_BASE_FUNCTION_MASK bit 6 = 1, is not stopped by the feed disable, and that no interruption and no cancellation are triggered here.

Bit 5: Feedrate override

Bit 6: Rapid traverse override

Bit 7: Feedrate stop, geometry axis or CP-SW limit stop or stop by an OEM application

Bit 8 = 0:

The maximum feedrate for handwheel travel of geometry axes is that specified in machine data JOG_AX_VELO for the corresponding machine axis/axes.

Bit 8 = 1:

The maximum feedrate for handwheel travel of geometry axes is that specified in machine data MAX_AX_VELO for the corresponding machine axis/axes.

Bit 9 = 0:

The override is active during handwheel travel of geometry axes.

Bit 9 = 1:

During handwheel travel of geometry axes, the override is assumed to be 100% irrespective of the position of the override switch.

Exception: override 0, which is always active.

Bit 10 = 0:

MD11310 \$MN_HANDWH_REVERSE is not active for DRF, i.e. handwheel travel with DRF is carried out as if MD11310 \$MN_HANDWH_REVERSE = 0.

Bit 10 = 1:

MD11310 \$MN_HANDWH_REVERSE is active for DRF.

Bit 11 = 0:

When the contour handwheel is deselected, program processing is continued automatically.

Bit 11 = 1:

When the contour handwheel is deselected, an NCSTOP is triggered automatically. Program processing is not continued until NCSTART is entered.

Bit 12 = 0:

NC start has no effect on handwheel travel.

Bit 12 = 1:

The previously collected paths are rejected at NC start.

Bit 13 = 0:

For DRF, bits 0 - 3 and bit 12: bit = 0 / bit = 1 are active (see above).

Bit 13 = 1:

For DRF, bits 0 - 3 and bit 12 are NOT active: the DRF motion is not interrupted by a stop, and a DRF motion can take place even in "Automatic interrupted" state (achieved by NC Stop).

Note:

If an alarm leads to an axis stop and if such an alarm is pending, no DRF motion can take place.

Bit 14 = 0:

The maximum feedrate for handwheel travel of geometry axes is that specified in SD41120 \$SN_JOG_REV_SET_VELO or in MD32050 \$MA_JOG_REV_VELO (for revolutionary feedrate) or in MD32040 \$MA_JOG_REV_VELO_RAPID (for rapid traverse) for the corresponding machine axis, the spindle or rotary axis feedrate is included in the calculation.

Bit 14 = 1:

The maximum rotational feedrate for handwheel travel of geometry axes is the feedrate specified in MD32000 \$MA_MAX_AX_VELO for the corresponding machine axis (see also bit 6).

Bit 15 = 0:

If an axis with active diameter programming is traversed in the channel, only half the distance of the specified increment is traveled during handwheel travel (MD11346 \$MN_HANDWH_TRUE_DISTANCE = 1 or 3).

Bit 15 = 1:

If an axis with active diameter programming is traversed in the channel, the specified increment is fully traveled during handwheel travel (MD11346 \$MN_HANDWH_TRUE_DISTANCE = 1 or 3).

Bit 16 = 0:

Return traveling is possible to the start of the block.

Bit 16 = 1:

Return traveling is not possible (response as at start of block, i.e. pulses are ignored).

3.3 NC machine data

20630	AFIS_MODE			A04, EXP	B1, B2	
-	Configuration of the Automatic Filter Switching (AFIS) function			UDWORD	Reset	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	1	1/1	M

Description: 0: Automatic filter switching is not possible in this channel.
1: Automatic filter switching is possible in this channel.

20700	REFP_NC_START_LOCK			C01, C03	D1, R1, Z1	
-	NC start disable without reference point			BYTE	Reset	
-						
-	-	1, 1, 1, 1, 1, 1, 1, 1...	0	2	7/2	M

Description: 0: The NC/PLC interface signal DB21-30 DBX7.1 (NC start) for starting part programs or part program blocks (MDI and overstore) is active even if one or all axes of the channel have not yet been referenced.
To ensure that the axes nevertheless reach the correct position after NC startup, the work (workpiece coordinate system = work) must be set to the correct value by means of other methods (scratch method, automatic work offset determination etc.).
1: Axes for which the axial MD34110 \$MA_REFP_CYCLE_NR specifies that a reference point is mandatory (value > -1), must be referenced for NC startup to be enabled.
2: Advanced form of setting 1 in that the axis state "Position restored" (instead of "referenced") is sufficient for NC startup in MDI or overstore.

20730	G0_LINEAR_MODE			C09	P2	
-	G0 interpolation mode			BOOLEAN	PowerOn	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/2	M

Description: This machine data defines the interpolation behavior of G0:
0: Non-linear interpolation (RTLIOF): Each path axis interpolates as an individual axis (positioning axis), independently of the other axes, at the rapid traverse velocity of the axis (MD32000 \$MA_MAX_AX_VELO).
However, this is possible only in simple cases:
- No transformation active (TRAORI, TRANSMIT etc.).
- G60 active (stop at end of block).
- No compressor active (COMPOF).
- No tool radius compensation active (G40).
- No contour handwheel selected.
- No nibbling active.
If one of these conditions is not fulfilled, linear interpolation takes place with the value 1 (RTLION).
1: Linear interpolation (RTLION): The path axes are interpolated jointly.

20734	EXTERN_FUNCTION_MASK			N12	-	
-	Function mask for external language			UDWORD	Reset	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	0x7FFFFFFF	7/2	M

Description: This machine data is used to influence functions in ISO mode.
Bit0: 0:

ISO mode T: "A" and "C" are interpreted as axes. If contour definition has been programmed, "A" or "C" must be preceded by a comma.

1:

"A" and "C" in the part program are always interpreted as a contour definition. An axis "A" or "C" is not allowed.

Bit1: 0:

ISO mode T: G10 P < 100 tool geometry

P > 100 tool wear

1:

G10 P < 10000 tool geometry

P > 10000 tool wear

Bit2: 0:

G04 dwell time: always [s] or [ms]

1:

If G95 is active, in spindle revolutions

Bit3: 0:

Errors in ISO mode lead to an alarm

1:

Errors in ISO mode are not output, the block is compiled in Siemens mode.

Bit4: 0:

G00 is traversed with the current exact stop - continuous-path mode G code

1:

G00 is always traversed with G09

Bit5: 0:

Modulo rotary axis is positioned at the shortest possible distance

1:

Direction of rotation of modulo rotary axis depends on sign

Bit6: 0:

Only 4-digit program number allowed.

1:

8-digit program number allowed. If the program number has less than 4 digits, it is expanded to 4 digits with 0.

Bit7: 0:

Axis programming for geometry axis exchange/parallel axes is compatible with ISO mode.

1:

Axis programming for geometry axis exchange/parallel axes in ISO mode is compatible with Siemens mode.

Bit8: 0:

With cycles, the F value transferred is always interpreted as a feedrate.

1:

With threading cycles, the F value transferred is interpreted as a pitch.

Bit9: 0:

Multiplication with 0.01mm / 0.0001inch is carried out in ISO mode T for G84, G88 and in standard mode F for G95.

1:

Multiplication with 0.001mm / 0.00001inch is carried out in ISO mode T for G84, G88 and in standard mode F for G95.

Bit10: 0:

With M96 Pxx, the program programmed with Pxx is always called in the case of an interrupt

3.3 NC machine data

1:
 With M96 Pxx, CYCLE396.spf is always called in the case of an interrupt
 Bit11: 0:
 With G54 Pxx, only G54.1 is displayed
 1:
 With G54 Pxx, the programmed program is displayed after the point, e.g. G54.48
 Bit12: 0:
 When the subroutine defined with M96 Pxx is called, \$P_ISO_STACK is not modified
 1:
 When the subroutine defined with M96 Pxx is called, \$P_ISO_STACK is incremented
 Bit13: 0:
 G10 is executed without internal STOPRE
 1:
 G10 is executed with internal STOPRE
 Bit14: 0:
 ISO mode T: No alarm if a cutting edge has been programmed in the T command.
 1:
 ISO mode T: Alarm 14185 if a cutting edge has not been programmed in the T command.
 Bit 15: 0:
 ISO mode M: G51 Scale, the axial scale factors I, J, K work with 'pocket calculator notation' as programmed.
 1:
 ISO mode M: G51 Scale, the axial scale factors I, J, K with 'pocket calculator notation', are multiplied by the value in MD22910 \$MC_WEIGHTING_FACTOR_FOR_SCALE.
 Bit 16: 0:
 In circular-path programming with radius R, there is no replacement of missing geometry axes of the selected plane. This corresponds to the behavior in Siemens mode
 1:
 In circular-path programming with radius R, missing geometry axes of the selected plane are supplemented by incremental distance 0
 Bit 17: 0:
 ISO mode T: Programming of several spindles in the channel deactivated. Corresponds to the previous behavior.
 1:
 ISO-Mode T: Programming of several spindles in the channel is possible. This is configured via MD22940 \$MC_EXTERN_SPIND_AUXFU_CW, MD22941 \$MC_EXTERN_SPIND_AUXFU_CCW, MD22942 \$MC_EXTERN_SPIND_AUXFU_STOP and MD22950 \$MC_EXTERN_SPIND_AUXFU_P.

20750	ALLOW_G0_IN_G96			C09, C05	P2, V1	
-	G0 logic with G96, G961			BOOLEAN	PowerOn	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/2	M

Description: This machine data defines the speed regulation characteristic of the spindle in G0 blocks with constant cutting speed (G96, G961) selected .

1: In a G0 block, the spindle speed is kept constant at the last value of the previous block that was unequal G0.

Prior to a subsequent block that does not contain G0, the spindle speed is increased to a value that belongs to the transverse axis position of the subsequent block.

0: In a G0 block, the spindle speed changes against the transverse axis position.

20800	SPF_END_TO_VDI			C04, C03	H2, K1	
-	End of subroutine to PLC			BYTE	PowerOn	
-						
-	-	1, 1, 1, 1, 1, 1, 1...	-	-	7/2	M

Description:

Bit 0 = 1:

The M functions for subroutine end (M17 and/or M2/M30) are transferred to the PLC interface.

Bit 0 = 0:

The M functions for subroutine end (M17 and/or M2/M30) are not transferred to the PLC interface.

Note:

To prevent stopping in continuous-path mode, M17 must not be programmed alone in a block.

Example of a subroutine: G64 F2000 G91 Y10 X10

X10 Z10 M17

Bit 1 = 0:

M01:

conditional program stop is always output to PLC, irrespective of whether the M01 signal is active or not.

Fast auxiliary function output M=QU(1) is inactive because M01 is assigned to the 1st M function group and thus is always output at block end.

Bit 1 = 1:

M01:

conditional program stop is only output to PLC, if M01 is also active.

This thus enables optimal run-time processing of the part program.

With fast auxiliary function output M=QU(1), M1 is output during the movement; thus it is possible to traverse blocks in continuous-path mode with programmed M01 as long as M01 is not active.

The request of the M01 signal with M=QU(1) no longer occurs at block end but during the movement.

20850	SPOS_TO_VDI			C04, C03	S1	
-	Output of M19 to PLC on SPOS/SPOSA			BYTE	PowerOn	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/2	M

Description:

Bit 0 = 0:

When bit 19 is also set to '0' in MD35035 \$MA_SPIND_FUNCTION_MASK, auxiliary function M19 is not generated with SPOS and SPOSA. This also eliminates the acknowledgment time for the auxiliary function, which can cause faults with very short blocks.

Bit 0 = 1:

When SPOS and SPOSA are programmed in the part program, auxiliary function M19 is generated and output to the PLC. The address extension corresponds to the spindle number.

Related to:

SPIND_FUNCTION_MASK

20900	CTAB_ENABLE_NO_LEADMOTION			EXP	M3	
-	Curve tables with jump of slave axis			BYTE	Reset	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	2	7/2	M

3.3 NC machine data

Description: This MD is used to configure the way jumps of the slave axis are processed in curve tables. A jump of the slave axis results from the presence of a movement of the slave axis in a segment of the curve table with no corresponding movement of the master axis. The jumps of the slave axis may be programmed directly, or they are created internally in the control.

These segments may be created especially if a curve table with active tool radius compensation is generated.

The following configurations are possible:

0: No curve tables are created that contain a jump of the slave axis. If a jump of the slave axis occurs, alarm 10949 (CTAB_NO_LEADMOTION) is issued and program processing is terminated. This setting is compatible with previous software versions.

1: Curve tables containing a jump of the slave axis may be implemented. If a jump of the slave axis occurs, alarm 10955 (CTAB_NO_LEADMOTIONWARNING) is issued without terminating program processing.

2: Curve tables with jumps of the slave axis are implemented without issuing an alarm or a note.

20905	CTAB_DEFAULT_MEMORY_TYPE			EXP	M3	
-	Default memory type for curve tables			BYTE	Reset	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	1	7/2	M

Description: This machine data defines the memory (SRAM or DRAM) in which the curve tables are created by default.

This MD is only relevant if no memory type was specified when defining a curve table using CTABDEF().

The following settings can be selected:

0: By default, curve tables are created in the SRAM.

1: By default, curve tables are created in the DRAM.

21000	CIRCLE_ERROR_CONST			C06	-	
mm	Circle end point monitoring constant			DOUBLE	NEW CONF	
-						
-	-	0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01...	0.0	1.0E+301	7/2	M

Description: This machine data is used to specify the permissible absolute circle error [mm].

When a circle is programmed, both conditions (that the distances from the programmed center point to the start and end points (circle radius) must be the same and that the center point of the circle must be located on the perpendicular bisector of the straight line connecting the start and end points (perpendicular bisector of the circular plane)) apply.

The fact that the circular parameters can be freely programmed means that these conditions are not usually met exactly in the case of circle programming with I, J, and K (the circle is "overdefined").

The maximum permissible difference between the two radii that is accepted without an alarm, as well as the distance between the programmed center point of the circle and the perpendicular bisector described above, is defined by the larger value in the following data:

- MD21000 \$MC_CIRCLE_ERROR_CONST
- Start radius multiplied by MD21010 \$MC_CIRCLE_ERROR_FACTOR

This means that for small circles the tolerance is a fixed value (MD21000 \$MC_CIRCLE_ERROR_CONST), and for large circles it is proportional to the start radius.

Related to:

MD21010 \$MC_CIRCLE_ERROR_FACTOR
(circle end point monitoring factor)

In the context of the predefined tolerances, conflicting circle data is compensated essentially by moving the center point of the circle. Please note that the deviation between the programmed center point and the actual center point can reach the order of magnitude set with machine data MD21000 \$MC_CIRCLE_ERROR_CONST and/or MD21010 \$MC_CIRCLE_ERROR_FACTOR. In the case of circles which are almost full circles in particular, this can also lead to contour deviations of the same order of magnitude.

21010	CIRCLE_ERROR_FACTOR			C06	-	
-	Circle end point monitoring factor			DOUBLE	NEW CONF	
-						
-	-	0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001...	0.0	1.0E+301	7/2	M

Description: Factor for permissible radius difference.

Defines the factor for large circles by which the starting radius and end radius may deviate from each other

(see also MD21000 \$MC_CIRCLE_ERROR_CONST (circle end point monitoring constant)).

When a circle is programmed, both conditions (that the distances from the programmed center point to the start and end points (circle radius) must be the same and that the center point of the circle must be located on the perpendicular bisector of the straight line connecting the start and end points (perpendicular bisector of the circular plane)) apply.

The fact that the circular parameters can be freely programmed means that these conditions are not usually met exactly in the case of circle programming with I, J, and K (the circle is "overdefined").

The maximum permissible difference between the two radii that is accepted without an alarm, as well as the distance between the programmed center point of the circle and the perpendicular bisector described above, is defined by the larger value in the following data:

- MD21000 \$MC_CIRCLE_ERROR_CONST
- Start radius multiplied by MD21010 \$MC_CIRCLE_ERROR_FACTOR

This means that for small circles the tolerance is a fixed value (MD21000 \$MC_CIRCLE_ERROR_CONST), and for large circles it is proportional to the start radius.

Related to:

MD21000 \$MC_CIRCLE_ERROR_CONST
(circle end point monitoring factor)

In the context of the predefined tolerances, conflicting circle data is compensated essentially by moving the center point of the circle. Please note that the deviation between the programmed center point and the actual center point can reach the order of magnitude set with machine data MD21000 \$MC_CIRCLE_ERROR_CONST and/or MD21010 \$MC_CIRCLE_ERROR_FACTOR. In the case of circles which are almost full circles in particular, this can also lead to contour deviations of the same order of magnitude.

21015	INVOLUTE_RADIUS_DELTA			C06	A2	
mm	Involute end point monitoring			DOUBLE	PowerOn	
-						
-	-	0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01...	0.0	1.0E+301	7/2	M

Description: Permissible absolute difference of radius at involute interpolation [mm].

At involute interpolation, the radius of the basic circle determined by the end point may differ from the programmed radius.

This data is used to limit the permissible maximum difference between start radius and end radius.

3.3 NC machine data

21016	INVOLUTE_AUTO_ANGLE_LIMIT			C06	A2	
-	Automatic angle limitation during involute interpolation			BOOLEAN	PowerOn	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description:

If the angle of rotation is programmed for an involute (AR=angle), the maximum angle of rotation is limited in case the involute is travelling towards the basic circle (AR < 0). The maximum angle of rotation is reached when the involute touches the basic circle.

Normally, if an angle larger than the maximum angle is programmed, an alarm is issued and the NC program canceled.

If this MD is set to TRUE any angle is accepted without an alarm for programming. If required, this angle is limited automatically.

21020	WORKAREA_WITH_TOOL_RADIUS			C03, C06	A3	
-	Consideration of tool radius for working area limitation			BOOLEAN	Reset	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description:

This machine data indicates whether the tool radius is taken into account in the working area limitation.

0: It is checked whether the tool center lies within the working area limits.

1: The tool radius is taken into account when the working area limitation is checked. This means that the working area is reduced by the tool radius.

21050	CONTOUR_TUNNEL_TOL			C06	K6	
mm	Response threshold for contour tunnel monitoring			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0E+301	7/2	M

Description:

Response threshold for contour tunnel monitoring. Defines the radius of the "tunnel" around the path of the tool tip.

If three geometry axes are defined, the tunnel can be regarded as a tube through the center of which the path of the tool tip travels.

If only two geometry axes are defined, this tube can be regarded as squashed flat in the plane of the two geometry axes.

Monitoring is only active if:

- option contour tunnel monitoring is present and
- MD21050 \$MC_CONTOUR_TUNNEL_TOL is larger than 0.0 and
- at least two and at most three geometry axes are defined.

Related to:

MD21060 \$MC_CONTOUR_TUNNEL_REACTION,

MD21070 \$MC_CONTOUR_ASSIGN_FASTOUT,

MD36500 \$MA_ENC_CHANGE_TOL

21060	CONTOUR_TUNNEL_REACTION			C06	K6	
-	Reaction when contour tunnel monitoring responds			BYTE	PowerOn	
-						
-	-	1, 1, 1, 1, 1, 1, 1...	0	2	7/2	M

Description: Reaction to response of the alarm

0: Only display alarm, continue machining

1: Ramp stop

2: Rapid stop

MD irrelevant:

If the contour tunnel monitoring option is not available

Related to:

MD21050 \$MC_CONTOUR_TUNNEL_TOL, MD21070 \$MC_CONTOUR_ASSIGN_FASTOUT

21070	CONTOUR_ASSIGN_FASTOUT	C01, C06	K6
-	Assignment of an analog output for the output of contour error	BYTE	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 8 7/2 M

Description: Assignment of an analog output on which the calculated contour error can be output.

0: No output

1: Output on output 1

2: Output on output 2

etc.

8: Output on output 8

An error as large as the response threshold MD21050 \$MC_CONTOUR_TUNNEL_TOL appears on the output as a voltage of 10V.

Multiple assignment of the same output by other signals is checked automatically.

MD irrelevant:

If the contour tunnel monitoring option is available

Related to:

MD21050 \$MC_CONTOUR_TUNNEL_TOL, MD21060 \$MC_CONTOUR_TUNNEL_REACTION

21080	CUTCOM_PARALLEL_ORI_LIMIT	C08, C06	-
degrees	Minimum angle (path tangent / tool orientation) in 3D TRC	DOUBLE	Reset
-			
-	-	3., 3., 3., 3., 3., 3., 3., 3....	0.1 89. 7/2 M

Description: With 3D tool radius compensation, the angle between the path tangent and the tool orientation may not drop below a certain limit angle. This machine data specifies this angle (in degrees).

Generally speaking, the lower the value entered in this machine data, the greater the computing capacity required to check that the above conditions are fulfilled.

Linear blocks with constant orientation are an exception.

21082	CUTCOM_PLANE_ORI_LIMIT	C08, C06	-
degrees	Minimum angle between surface normal vector and tool orientation	DOUBLE	Reset
-			
-	-	3., 3., 3., 3., 3., 3., 3., 3....	1.0 89. 7/2 M

Description: This machine data applies to 3D face milling operations and specifies the minimum angle that must exist between the surface normal vector and the tool orientation on every point of the path if the applied lateral angle is not equal to zero and the tool is not a ball mill. Otherwise, machining is canceled with an alarm if the angle is smaller than the value set here.

3.3 NC machine data

Generally speaking, the lower the value entered in this machine data, the greater the computing capacity required to check that the above conditions are fulfilled. This data has no effect in linear blocks with constant orientation. The angle between the surface normal vector and tool orientation may be as small as desired in such cases, even if the lateral angle is not equal to zero.

21084	CUTCOM_PLANE_PATH_LIMIT			C08, C06	W5	
degrees	Min. angle betw. surface normal vector and path tangent vector			DOUBLE	Reset	
-						
-	-	3., 3., 3., 3., 3., 3., 3., 3....	1.0	89.	7/2	M

Description: This machine data applies to 3D face milling operations and specifies the minimum angle that must exist between the surface normal vector and the path tangent vector on every point of the path. Otherwise machining is canceled with an alarm if the angle is smaller than the value set here.

Generally speaking, the lower the value entered in this machine data, the greater the computing capacity required to check that the above conditions are fulfilled.

21090	MAX_LEAD_ANGLE			C08, C09	M1	
degrees	Maximum value of permitted lead angle for orientation progr.			DOUBLE	NEW CONF	
-						
-	-	80., 80., 80., 80., 80., 80., 80....	0.	80.	7/7	U

Description: Maximum permissible value of the lead angle in degrees.

21092	MAX_TILT_ANGLE			C08, C09	M1	
degrees	Maximum value of permitted side angle for orientation progr.			DOUBLE	NEW CONF	
-						
-	-	180., 180., 180., 180., 180., 180., 180., 180....	-180.	180.	7/7	U

Description: Maximum permissible value of the tilt angle in degrees.

21094	ORIPATH_MODE			C02	F2	
-	Setting for ORIPATH path-relative orientation			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	21241	7/7	U

Description: This MD is used to set the response for ORIPATH, i.e. path-relative interpolation of tool orientation.

The various digits of this machine data are used to activate different functions for ORIPATH.

The tens digit of this MD enables specification of the way in which the programmed LEAD and TILT angles are interpreted.

This setting option is also significant without active ORIPATH if offsets have been programmed for the LEAD and TILT angles

(with \$P_OFF_LEAD and \$P_OFF_TILT or \$AC_OFF_LEAD and \$AC_OFF_TILT).

Meaning of the units digit: Activation of "true" path-relative orientation interpolation

xxx0:

The tool orientation has the relation to the path tangent and the normal vector programmed with LEAD and TILT only at the end of the block; within the block, the orientation does not follow the path tangent. This corresponds to the response in SW release 6.xx.

xxx1:

The tool orientation relation to the path tangent and the surface normal vector programmed with LEAD/TILT is retained throughout the block. Meaning of the tens digit: Interpretation of the TILT angle.

Meaning of the tens digit: Interpretation of the LEAD and TILT angles. This applies both to the angles programmed with LEAD and TILT with path-relative orientation interpolation (ORIPATH),

as well as to offsets of the LEAD and TILT angles, which can also be programmed without ORIPATH by means of \$P_OFF_LEAD and \$P_OFF_TILT or \$AC_OFF_LEAD and \$AC_OFF_TILT.

With path-relative orientation, the coordinate system is formed by the two vectors path tangent and normal vector. If an offset is applied to a programmed orientation, the current orientation itself takes over the role of the normal vector. A plane is then formed by the current orientation and the path tangent, in which the rotation is made perpendicularly with the LEAD angle or the TILT angle.

xx0x:

The angles programmed with LEAD and TILT are evaluated in the following rotation sequence:

1. LEAD = Rotation around direction vertical to tangent and normal vector/orientation vector (forward angle)
2. TILT = Rotation of orientation around normal vector

This is the interpretation of the LEAD/TILT angles in SW releases < 7.2

xx1x:

The angles programmed with LEAD and TILT are evaluated in the following rotation sequence:

1. LEAD = Rotation around direction vertical to tangent and normal vector/orientation vector (forward angle)
2. TILT = Rotation of orientation around vector in direction of tangent (tilt angle)

xx2x:

The angles programmed with LEAD and TILT are evaluated in the following rotation sequence:

1. LEAD = Rotation around direction vertical to tangent and normal vector/orientation vector (forward angle)
2. TILT = Rotation of orientation around vector in direction of rotated (new) tangent (tilt angle)

xx3x:

The angles programmed with LEAD and TILT are evaluated in the following rotation sequence:

1. TILT = Rotation of orientation around vector in direction of tangent (tilt angle)
2. LEAD = Rotation around direction vertical to tangent and normal vector/orientation vector (forward angle)

xx4x:

The angles programmed with LEAD and TILT are evaluated in the following rotation sequence:

1. TILT = Rotation of orientation around vector in direction of tangent (tilt angle)
2. LEAD = Rotation around direction vertical to tangent and rotated (new) normal vector/orientation vector (forward angle)

Meaning of hundreds digit: Activation of a retract movement in the case of reorientation.

0xx:

In the case of reorientation with ORIPATH, a retract movement is not executed.

1xx:

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In the case of reorientation with active ORIPATH, a retract movement in the direction of the programmed vector is executed. The programmed vector for the direction of the retract movement refers to the coordinate system defined by the current tool direction (z coordinate) and the change in orientation (x coordinate).

2xx:

In the case of reorientation with active ORIPATH, a retract movement in the direction of the programmed vector is executed. The programmed vector for the direction of the retract movement refers to the coordinate system defined by the current surface normal vector (z coordinate) and the change in orientation (x coordinate).

A retract movement is possible only with a "true" path-relative orientation interpolation, i.e. if the units digit of this MD has a value of one.

Meaning of the thousands digit: Response of path-relative orientation on activation / deactivation of tool offset.

0xxx:

The path-relative orientation is also retained in activation / deactivation blocks associated with tool offset.

1xxx:

The path-relative orientation is not retained in activation / deactivation blocks associated with tool offset. In these blocks, the tool orientation usually remains constant. However, tool orientation can be programmed in these blocks and then traversed there, although any orientation has to be programmed with vectors (the programming of rotary axis positions is not permitted).

1xxxx:

Reserved

2xxxx:

Reserved

21096	OFF_ORI_MODE			C08	-	
-	Effect of the override of the tool orientation			UDWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0x0	0x7FFFFFFF	7/2	M

Description:

With this machine data, the effect of the override of the tool orientation is set with the system variables (bit 0-15)

\$AC_OFF_O[i], \$AC_OFF_R[i], \$AC_OFF_LEAD, \$AC_OFF_TILT, \$AC_OFF_THETA, \$AC_OFF_O_ANGLE and \$AC_OFF_R_ANGLE

and the program variables (bit 16-31)

\$P_OFF_O[i], \$P_OFF_R[i], \$P_OFF_LEAD, \$P_OFF_TILT, \$P_OFF_THETA, \$P_OFF_O_ANGLE and \$P_OFF_R_ANGLE.

Bit 0-15: Effect of the overrides in the interpolator

Bit 0: Behavior of the system variables on RESET

0: Offset is deselected on RESET

1: Offset is retained after RESET

Bit 1: Behavior of the system variables in JOG mode

0: No offset of the tool orientation on account of the system variables for offsetting the tool orientation

1: An overlaid motion is interpolated on account of the system variables for offsetting the tool orientation.

Bit 2: Effect of the value assignment to the components of the system variable \$AC_OFF_O[i]

0: Absolute value

1: Incremental value (integrator)

Bit 3: Effect of the value assignment to the components of the system variable
 \$AC_OFF_R[i]
 0: Absolute value
 1: Incremental value (integrator)
 Bit 4: Effect of the value assignment to the system variable \$AC_OFF_LEAD
 0: Absolute value
 1: Incremental value (integrator)
 Bit 5: Effect of the value assignment to the system variable \$AC_OFF_TILT
 0: Absolute value
 1: Incremental value (integrator)
 Bit 6: Effect of the value assignment to the system variable \$AC_OFF_THETA
 0: Absolute value
 1: Incremental value (integrator)
 Bit 7: Effect of the value assignment on the system variable \$AC_OFF_O_ANGLE
 0: Absolute value
 1: Incremental value (integrator)
 Bit 8: Effect of the value assignment on the system variable \$AC_OFF_R_ANGLE
 0: Absolute value
 1: Incremental value (integrator)
 Bit 9: Suppression of the alarm 20301
 0: Alarm is output
 1: Alarm is suppressed

 Bit 16-31: Effect of the overrides in the NC program

 Bit 16: Effect of the value assignment to the components of the system variable
 \$P_OFF_O[i]
 0: Absolute value
 1: Incremental value (integrator)
 Bit 17: Effect of the value assignment to the components of the system variable
 \$P_OFF_R[i]
 0: Absolute value
 1: Incremental value (integrator)
 Bit 18: Effect of the value assignment on the system variable \$P_OFF_LEAD
 0: Absolute value
 1: Incremental value (integrator)
 Bit 19: Effect of the value assignment on the system variable \$P_OFF_TILT
 0: Absolute value
 1: Incremental value (integrator)
 Bit 20: Effect of the value assignment on the system variable \$P_OFF_THETA
 0: Absolute value
 1: Incremental value (integrator)
 Bit 21: Effect of the value assignment on the system variable \$P_OFF_O_ANGLE
 0: Absolute value
 1: Incremental value (integrator)
 Bit 22: Effect of the value assignment on the system variable \$P_OFF_R_ANGLE
 0: Absolute value
 1: Incremental value (integrator)

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21100	ORIENTATION_IS_EULER			C01, C09	F2, TE4, M1	
-	Angle definition for orientation programming			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This data is only active for MD21102 \$MC_ORI_DEF_WITH_G_CODE = 0
MD = 0 (FALSE):
The values programmed with A2, B2, C2 during orientation programming are interpreted as an RPY angle (in degrees).
The orientation vector is produced by rotating a vector in direction Z first by C2 around the Z axis, then by B2 around the new Y axis and finally by A2 around the new X axis. In contrast to Euler angle programming, all three values influence the orientation vector in this case.
MD = 1 (TRUE):
The values programmed with A2, B2, C2 during orientation programming are interpreted as Euler angles (in degrees).
The orientation vector is produced by rotating a vector in direction Z first by A2 around the Z axis, then by B2 around the new X axis and finally by C2 around the new Z axis. This means that the value of C2 is meaningless.

21102	ORI_DEF_WITH_G_CODE			C01, C07	F2	
-	Definition of orientation axes with G code			BOOLEAN	NEW CONF	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: Definition of the orientation angles A2, B2, C2
0: Definition as per MD21100 \$MC_ORIENTATION_IS_EULER
1: Definition as per G code (ORIEULER, ORIRPY, ORIVIRT1, ORIVIRT2)

21103	ORI_ANGLE_WITH_G_CODE			C01, C07	-	
-	Definition of orientation angles via G code			BOOLEAN	NEW CONF	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: Definition of the orientation angles A2, B2, C2:
FALSE: Definition as per MD21100 \$MC_ORIENTATION_IS_EULER
TRUE : Definition as per G code (ORIEULER, ORIRPY, ORIVIRT1, ORIVIRT2)
Only programming of angles with A2, B2, C2 is interpreted in accordance with G codes ORIEULER, ORIRPY, ORIVIRT1, ORIVIRT2 and not programming of angles by means of the orientation axes, as is the case with MD21102 \$MC_ORI_DEF_WITH_G_CODE = 1.

21104	ORI_IPO_WITH_G_CODE			C01, C07	F2	
-	G code for orientation interpolation			BOOLEAN	NEW CONF	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: Definition of the type of interpolation for the orientation
FALSE: Referred to G codes ORIWKS and ORIMKS

TRUE : Referred to G codes ORIAXES, ORIVECT, ORIPLANE, ORICONxx and ORICURVE of the 51st G code group

21106	CART_JOG_SYSTEM	C01, C07	F2, M1
-	Coordinate systems for Cartesian JOG	UDWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 7 7/2 M

Description: This machine data has two meanings. First, it is used to activate the "Cartesian manual traverse" function. Second, it is used to determine the reference systems between which a switchover can be performed.

The meaning of the individual bits is determined as follows:

Bit 0 : Basic coordinate system

Bit 1 : Workpiece coordinate system

Bit 2 : Tool coordinate system

21108	POLE_ORI_MODE	C07	F2
-	Response with vector interpolation in pole position	DWORD	NEW CONF
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 111122 7/7 U

Description: This MD defines how the change in orientation in the case of vector interpolation is treated if the orientation runs through the pole taper, which is defined by MD24540, 24640, 25240, 35340 \$MC_TRAFO5_POLE_LIMIT_1,2,3,4.

Vector interpolation is present, if tool orientation is interpolated independent of the kinematics, e.g. by means of large circle interpolation (orientation is swiveled in a plane), taper interpolation or through interpolation of a 2nd reference point on the tool (ORICURVE), and not directly the orientation axes.

In the pole, the pole axis can have any position. For large circle interpolation, however, this axis requires a certain orientation.

If the start orientation is equal or close to the pole orientation and the end orientation of the block lies outside the tolerance circle defined by machine data TRAF05_POLE_LIMIT_n, the pole axis can be moved to a position suitable to ensure that the subsequent vector interpolation can be carried out. This is set via the units and tens digits of this machine data.

The units digits can have the following values (active if start orientation is equal to pole orientation):

0: The interpolation is carried out as an axis interpolation. The specified orientation path (large circle) is followed only if the pole axis (coincidentally) has the right position and the basic orientation is perpendicular to the 2nd rotary axis.

1: A block, that positions the pole axis such that large circle interpolation can be carried out in the subsequent block, is inserted before the block where the described situation occurs.

2: If the block preceding the block, in which the described situation occurs, contains a geometry axis movement but no orientation movement, the required positioning movement of the pole axis is additionally carried out in this previous block.

If one of the two conditions is not fulfilled (block does not contain a geometry axis movement or block contains an orientation movement), the pole axis movement is carried out in a separate block (same behavior as under 1.)

The tens digits can have the following values (active if the start orientation differs from the pole orientation, but lies within the tolerance circle defined by TRAF05_POLE_LIMIT_n):

00: The interpolation is carried out as an axis interpolation. The specified orientation path (large circle) is followed only if the pole axis (coincidentally) has the right position and the basic orientation is perpendicular to the 2nd rotary axis.

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10: A block that positions the two rotary axes to the point where the programmed large circle interpolation intersects with the tolerance circle defined by TRAF05_POLE_LIMIT_n is inserted before the block where the described situation occurs. In the original block, large circle interpolation is applied as of this point.

20: If the block preceding the block in which the described situation occurs contains a geometry axis movement but no orientation movement, the necessary positioning movements of the two rotary axes are additionally carried out in this previous block. The residual movement in the original block is the same as that of value 10 of this machine data.

If one of the two conditions is not fulfilled (block does not contain a geometry axis movement or block contains an orientation movement), the pole axis movement is carried out in a separate block (same behavior as under 10.)

The hundreds digit of this MD is used to set the behavior in case the orientation runs through the pole taper or ends within the pole taper.

The hundreds digit can have the following values:

000: A block with the orientation running within the pole taper is subdivided only if the start orientation is equal to the pole orientation (with POLE_ORI_MODE = 1) or is close to the pole orientation (with POLE_ORI_MODE = 10). If the pole orientation occurs at an arbitrary point in the block, the whole change in orientation is traversed by means of rotary axis interpolation. In general, this leads to a more or less significant deviation from the programmed orientation path.

100: If the programmed orientation path runs through the pole taper, the block is subdivided in up to 3 parts, so that there is a deviation from the orientation path only within the pole taper. Outside the pole taper, the orientation is interpolated exactly on the programmed orientation path.

The pole handling behavior with active ORIANGLE (interpolation of orientation in virtual axis angles) is set with the thousands digit of the MD.

0xxx: With this setting, the normal pole behavior is active even if ORIANGLE is active. If the transformation causes a switchover to axis interpolation due to a pole, orientation is interpolated by means of the real rotary axes. This can result in considerable deviations from the programmed orientation path. Any different settings of the MD \$MC_POLE_ORI_MODE are also effective. This means, for example, that by means of the setting MD21108 \$MC_POLE_ORI_MODE = 100, this behavior can be changed such that deviations from the programmed orientation path only occur within the pole taper.

1xxx: If ORIANGLE is active, there is never a switchover to the interpolation of the orientation by means of real rotary axes. The orientation is always interpolated with virtual axis angles (e.g. Euler angle or RPY angle). Different settings of the MD21108 \$MC_POLE_ORI_MODE do not become effective. For example, with MD21108 \$MC_POLE_ORI_MODE = 1100 the division of the orientation movement, which was activated by the value 100, does not become effective. Therefore, if MD21108 \$MC_POLE_ORI_MODE = 1xxx, the units, tens and hundreds digits are ignored.

Using the ten thousands digit, it is possible to set whether for the generic 5/6 axis transformation, alarm 14112 should be output, if the intermediate orientations do not lie in the orientation range of the kinematics but final orientation of the block is possible:

0xxxx: The intermediate orientations are checked, as to whether these can be reached. If an orientation characteristic is programmed which goes through the range that cannot be reached, alarm 14112 (program orientation path not possible) is output.

1xxxx: The intermediate orientations are checked as to whether these can be reached. However, no alarm is output if the orientation runs through the range that cannot be reached, instead, the orientation change is performed using the rotary axis interpolation. This can result in significant deviations in orientation from the programmed orientation characteristic.

The hundred thousands digit can be used to set whether the rotary axis moves toward the programmed value when vector or great circle interpolation is activated, even if this does not lead to any change in orientation.

0xxxxx: With active vector or great circle interpolation, the polar axis is not moved to the programmed rotary axis value (behavior as up to SW versions 4.94).

lxxxxx: With active vector or great circle interpolation, the polar axis is moved to the programmed rotary axis value, even if this does not lead to any change in orientation.

The values of the units, tens, hundreds and thousands digits are added. If the thousands digit = 1, the remaining decimals of the MD are not evaluated (with the exception of the ten thousands digit and the hundred thousands digit).

21110	X_AXIS_IN_OLD_X_Z_PLANE			EXP, C01, C09	M1, K2	
-	Coordinate system for automatic frame definition			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	M

Description:

1 = With automatic definition of a frame (TOFRAME), the Z direction of which equals the current tool orientation, the new coordinate system is additionally rotated around the new Z axis so that the new X axis is in the old Z-X plane.

0 = With automatic definition of a frame (TOFRAME), the Z direction of which equals the current tool orientation, the new coordinate system is maintained as it results from the kinematics of the machine, i.e. it is assumed that the coordinate system is fixed to the tool and rotates with the tool (orientation).

From SW 5.3:

This machine data is only effective when the three lowest value decimal positions (units, tens, hundreds) of SD42980 \$SC_TOFRAME_MODE equal zero. Otherwise the frame definition is specified by SD42980 \$SC_TOFRAME_MODE.

MD irrelevant for:

No orientation programming

Related to:

MD21100 \$MC_ORIENTATION_IS_EULER

Further references:

/PG/, Programming Guide, Fundamentals

21120	ORIAX_TURN_TAB_1			C07	F2, M1	
-	Definition of reference axes for orientation axes			BYTE	NEW CONF	
-						
-	3	1, 2, 3, 1, 2, 3, 1, 2, 3, 1, 2, 3, 1, 2, 3, 1, 2, 3, 1, 2, 3, 1...	0	3	7/2	M

Description:

Defines the assignment of the rotations of the orientation axes around the reference axes for each channel (definition 1).

This orientation description is activated with the G code ORIVIRT1

0: No rotation

1: Rotation around reference axis X

2: Rotation around reference axis Y

3: Rotation around reference axis Z

Example :

MD21120 \$MC_ORIAX_TURN_TAB_1[0] = 3 ; 1st ORI axis rotates around reference axis Z

MD21120 \$MC_ORIAX_TURN_TAB_1[1] = 2 ; 2nd ORI axis rotates around reference axis Y

MD21120 \$MC_ORIAX_TURN_TAB_1[2] = 1 ; 3rd ORI axis rotates around reference axis X

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21130	ORIAX_TURN_TAB_2			C07	F2	
-	Definition of reference axes for orientation axes			BYTE	NEW CONF	
-						
-	3	1, 2, 3, 1, 2, 3, 1, 2, 3, 1, 2, 3, 1, 2, 3, 1, 2, 3, 1...	0	3	7/2	M

Description: Defines the assignment of the rotations of the orientation axes around the reference axes for each channel (definition 2).

This orientation description is activated with the G code ORIVIRT2

0: No rotation

1: Rotation around reference axis X

2: Rotation around reference axis Y

3: Rotation around reference axis Z

Example :

MD21120 \$MC_ORIAX_TURN_TAB_1[0] = 3 ; 1st ORI axis rotates around reference axis Z

MD21120 \$MC_ORIAX_TURN_TAB_1[1] = 2 ; 2nd ORI axis rotates around reference axis Y

MD21120 \$MC_ORIAX_TURN_TAB_1[2] = 1 ; 3rd ORI axis rotates around reference axis X

21132	ORI_DISP_IS_MODULO			C07	F2	
-	Modulo display of orientation axis positions			BOOLEAN	NEW CONF	
-						
-	3	FALSE,FALSE,FALSE, FALSE,FALSE,FALSE, FALSE,FALSE,FALSE, FALSE,F...	0	-	7/7	U

Description: This MD is used to activate the modulo display of orientation axes.

This only impairs the displayed positions and not the possible programming or traversing range of these axes.

The modulo range is set using MD21134 \$MC_ORI_DISP_MODULO_RANGE and MD21136 \$MC_ORI_DISP_MODULO_RANGE_START.

21134	ORI_DISP_MODULO_RANGE			C07	-	
degrees	Size of the modulo range for orientation axis display.			DOUBLE	NEW CONF	
-						
-	3	360.0, 360.0, 360.0, 360.0, 360.0, 360.0, 360.0, 360.0, 360.0, 3...	1.0	3600000000.0	7/7	U

Description: Defines the size of the modulo range for the display of orientation axis positions.

This modulo range does not impair the programmable values of the positions nor the possible traversing range of orientation axes.

21136	ORI_DISP_MODULO_RANGE_START			C07	-	
degrees	Starting position of the modulo range for orientation axis display.			DOUBLE	NEW CONF	
-						
-	3	-180.0, -180.0, -180.0, -180.0, -180.0, -180.0, -180.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Defines the start position for the modulo range used to display the positions of orientation axes.

This only impairs the displayed positions, but not the possible programming or traversing range of these axes.

Example:

Start = 0 degree -> modulo range 0 <-> 360 degrees

Start = 180 degrees -> modulo range 180 <-> 540 degrees

Start = -180 degrees -> modulo range -180 <-> 180 degrees

21140	DYN_ORI_OFF_ON			C07	F2	
-	Activation of the dynamic override of the orientation			BOOLEAN	NEW CONF	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	-	-	7/7	U

Description: The dynamic override of the tool orientation is activated with this MD. The current orientation is then corrected according to the current path velocity. This enables, for example, the jet of water jet machines to be corrected as a function of the velocity. See also the MDs

MD21142 \$MC_DYN_ORI_OFF_VEL

MD21144 \$MC_DYN_ORI_OFF_ANGLE

21142	DYN_ORI_OFF_VEL			C07	F2	
mm/min	Jet speed			DOUBLE	NEW CONF	
-						
-	-	20000, 20000, 20000, 20000, 20000, 20000, 20000, 20000...	-	-	7/7	U

Description: For the dynamic override of the tool orientation. The outflow speed of the water jet is specified with this data.

21144	DYN_ORI_OFF_ANGLE			C07	F2	
degrees	Additional offset angle of the water jet			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0,...	-	-	7/7	U

Description: For the dynamic override of the tool orientation.
Additional offset angle of the water jet:
0: LEAD angle longitudinal
1: Side angle TILT
2: Angle of rotation THETA (only with 6-axis kinematics)

21150	JOG_VELO_RAPID_ORI			C07	F2, R2	
rev/min	JOG rapid traverse for orientation axes			DOUBLE	Reset	
-						
-	3	10.0, 10.0, 10.0, 10.0, 10.0, 10.0, 10.0, 10.0, 10.0, 10.0, 10.0...	0.0	1.0E+301	7/2	M

Description: Velocity in JOG mode with rapid traverse override for orientation axes in the channel [degrees/min]

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21155	JOG_VELO_ORI			C07	F2	
rev/min	Jog feedrate for orientation axes			DOUBLE	Reset	
-						
-	3	2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0,...	0.0	1.0E+301	7/2	M

Description: Velocity in JOG mode for orientation axes in the channel

21158	JOG_JERK_ORI			C07	F2	
m/s³	Jerk for jogging of orientation axes			DOUBLE	Reset	
-						
-	3	100., 100., 100., 100., 100., 100., 100., 100., 100., 100., 100....	1.e-9	1.0E+301	7/2	M

Description: The jerk limit value limits the change in acceleration of the orientation axes in SOFT mode when jogging. The acceleration divided by the jerk limit value results in a time period during which the acceleration is changed.

The jerk limitation during jogging of orientation axes is activated by the machine data MD21159 \$MC_JOG_JERK_ORI_ENABLE = 1 (SOFT), and deactivated by MD21159 \$MC_JOG_JERK_ORI_ENABLE = 0 (BRISK).

Not relevant for:

Fault conditions that cause a quick stop.

21159	JOG_JERK_ORI_ENABLE			C07	F2	
-	Jogging of orientation axes with SOFT			BOOLEAN	Reset	
-						
-	3	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, F...	0	-	7/2	M

Description: The jerk limitation function during jogging of orientation axes is enabled.

FALSE: no jerk limitation (BRISK)

TRUE: jerk limitation (SOFT)

21160	JOG_VELO_RAPID_GEO			C07	F2	
mm/min	JOG rapid traverse for geometry axes			DOUBLE	Reset	
-						
-	3	10000., 10000.0, 10000., 10000., 10000.0, 10000., 10000., 10000....	0.0	1.0E+301	7/2	M

Description: Velocity in JOG mode with rapid traverse override for geometry axes in the channel (mm/min)

21165	JOG_VELO_GEO			C07	F2	
mm/min	Jog feedrate for geometry axes			DOUBLE	Reset	
-						
-	3	1000., 1000., 1000., 1000., 1000., 1000., 1000., 1000., 1000., 1...	0.0	1.0E+301	7/2	M

Description: JOG velocity for geometry axes in the channel (mm/min)

Description: Acceleration of the geometry axes when traversing in Jog mode.
If the machine data has the value zero, the value of the machine data MD32301 \$MA_JOG_MAX_ACCEL[<axis>] is used.

Description: The jerk limit value limits the change in acceleration of the geometry axes in SOFT mode when jogging. The acceleration divided by the jerk limit value results in a time period during which the acceleration is changed.

If the machine data has the value zero, the value of the machine data MD32430 \$MA_JOG_AND_POS_MAX_JERK[<axis>] is used.

Jerk limitation during jogging of geometry axes is activated by the machine data MD32420 \$JOG_AND_POS_JERK_ENABLE[<axis>] = 1 (SOFTA) of the underlying machine axes, and it is deactivated by MD32420 \$JOG_AND_POS_JERK_ENABLE[<axis>] = 0 (BRISKA), or by means of the NC commands SOFTA, DRIVEA or BRISKA.

Not relevant for:

Fault conditions that cause a rapid stop.

Description:	Acceleration for orientation axes in the channel

Description: This machine data is evaluated only with the generic 5-axis transformation.

If the block preparation shows that the path programmed in the direction programming would lead to a violation of the software limit switches of the orientation axes, this machine data determines how the motions of the rotary axes have to be modified.

The units digit of the MD is used to determine how alternative end positions of the rotary axes are created if the software limit switches would be violated. The tens digit is used to determine how the axes approach these end positions. The hundreds digit is used to activate an automatic limitation of the axis that swivels through the pole (non-pole axis).

Meaning of the units digit:

0: The path is not modified. Alarm 10720 (SW_LIMITSWITCH) is output if it is not possible to travel along the shortest path.

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1: If the initially determined orientation path would violate the limits of the orientation axes, an attempt is made to modify the end points so that a motion becomes possible.

The first attempt uses the second solution. (There are usually two solutions to the conversion: orientation ==> angle of axis). If this solution would also violate the axis limits, an attempt is made to find a permissible solution by modifying both rotary axes by multiples of 360 degrees in both solutions.

The modifications of end positions described will only be performed if axis interpolation of rotary axes is active.

2: Monitoring and possibly modifications of the rotary-axis positions are the same as those when the machine data has the value 1.

However, modifications are also permissible if vector interpolation (large-circle interpolation, taper circumference interpolation, etc.) is active. If, in such a case, the rotary-axes positions would have to be modified, there is a switch to axis interpolation. The originally programmed orientation path will then usually not be followed.

Meaning of the tens digit:

0x: The orientation axes travel simultaneously to their possible end positions. There may be larger or smaller deviations from the original orientation path.

1x: If possible, the orientation is first rotated in the pole direction. In the pole position, the pole axis is then positioned so that the final orientation can be approached by rotating the orientation from the pole position into the programmed direction. The originally programmed orientation path is then followed.

Meaning of the hundreds digit:

0xx: The range of the non-pole axis is determined by its software limits or working area limitations.

1xx: The range of the non-pole axis is limited either in the positive or negative travel range. The possible range is limited by the larger of the absolute positive and negative values.

Examples:

1. MD36100 \$MA_POS_LIMIT_MINUS[AX5] = -5.0 and MD36110 \$MA_POS_LIMIT_PLUS[AX5] = 135.0, the possible range of axis AX5 is 0 ... 135.0

2. MD36100 \$MA_POS_LIMIT_MINUS[AX5] = -100.0 and MD36110 \$MA_POS_LIMIT_PLUS[AX5] = 10.0, the possible range of axis AX5 is -100.0 ... 0.0

3. MD36100 \$MA_POS_LIMIT_MINUS[AX5] = 5.0 und MD36110 \$MA_POS_LIMIT_PLUS[AX5] = 120.0, the possible range is 5.0 ... 120.0, there is no automatic limitation of the travel range.

Meaning of the thousands digit: Reserved.

21186	TOCARR_ROT_OFFSET_FROM_FR			C01, C07	F2	
-	Offset of TOCARR rotary axes from WO			BOOLEAN	Immediately	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: Rotary axes offset for the orientable tool holder is automatically accepted from the work offset activated on activation of the orientable tool holder for the rotary axes.

21190	TOFF_MODE			C08	F2, 2.4	
-	Mode of correction in tool direction			UDWORD	Reset	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	0xFFF	7/2	M

Description: This machine data specifies the online correction mode in tool direction via \$AA_TOFF[].

Bit 0: Behavior of \$AA_TOFF in case of a RESET

0: \$AA_TOFF is deselected on a RESET
 1: \$AA_TOFF is retained beyond a RESET

Bit 1: Effect of the value assigned to the 1st component of \$AA_TOFF[]
 0: Absolute value
 1: Incremental value (integrator)

Bit 2: Effect of the value assigned to the 2nd component of \$AA_TOFF[]
 0: Absolute value
 1: Incremental value (integrator)

Bit 3: Effect of the value assigned to the 3rd component of \$AA_TOFF[]
 0: Absolute value
 1: Incremental value (integrator)

Bit 4: Response of \$AA_TOFF motion on NC stop
 0: Motion is interrupted on NC stop
 1: Motion remains active on NC stop

Bit 5: Response of \$AA_TOFF motion on RESET and end of program
 0: Motion is interrupted on RESET or end of program
 1: Motion remains active on RESET or end of program

Bit 6: Effect of the setting data \$SC_TOFF_LIMIT_MINUS
 0: The lower limit \$SC_TOFF_LIMIT_MINUS has no effect. -\$SC_TOFF_LIMIT is taken as the lower limit.
 1: The lower limit \$SC_TOFF_LIMIT_MINUS is effective.

Bit 7: Blockwise suppression of TOFF with SUPA
 0: TOFF is not suppressed block-by-block with SUPA.
 1: TOFF is suppressed block-by-block with SUPA.

Bit 8: Response of the TOFF handwheel travel at TOFF_LIMIT / TOFF_LIMIT_MINUS
 0: Interruption, that means collection of the distances preset via the handwheel
 1: Abortion of the traversing movement, that means no collection

Bit 9: \$AA_TOFF handwheel override possible without activation by TOFFON.
 0: \$AA_TOFF handwheel override possible only after activation of the \$AA_TOFF function by TOFFON.
 1: \$AA_TOFF handwheel override possible without activation of the \$AA_TOFF function by TOFFON.

Bit 10: Axis assignment of the TOFF components on plane change.
 0: The axis components are exchanged cyclically on plane change from G17 to G18 or G19. This means that all three axes of the rotated coordinate system point in the positive axis directions of the initial coordinate system.
 1: The coordinate system is rotated -90 degrees around the X axis on plane change from G17 to G18, and 90 degrees around the Y axis on plane change from G17 to G18.

In both cases, the rotated Z axis points in the same direction as when bit 10 is not set.

The other two axes are exchanged in comparison to the setting with bit 10 not set, and one of the two axes points in the negative direction.

This setting should only be used if compatibility with older software versions is required (SW 4.5 and older). This setting is not recommended for new developments.

Bit 11: TOFF direction with overlays.
 0: Overlays (e.g. DRF components) in the orientation axes are not taken into account for the direction of the TOFF motion.
 1: Overlays (e.g. DRF components) in the orientation axes are taken into account for the direction of the TOFF motion.

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21194	TOFF_VELO			C08	F2, 2.4	
mm/min	Feedrate for online correction in tool direction			DOUBLE	NEW CONF	
-						
-	3	0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., ...	0.0	1.0E+301	7/2	M

Description: Feedrate for online correction in tool direction [mm/min] via \$AA_TOFF[]

21196	TOFF_ACCEL			C08	2.4	
m/s²	Acceleration for online correction in tool direction			DOUBLE	NEW CONF	
-						
-	3	100., 100., 100., 100., 100., 100., 100., 100., 100., 100., 100....	1.0e-6	1.0E+301	7/2	M

Description: Acceleration for online correction in tool direction [m/s**2] via \$AA_TOFF[]

21198	ORI_TRAFO_ONLINE_CHECK_LIM			C07	F2	
mm	Activation limit of the realtime dynamic monitoring			DOUBLE	NEW CONF	
-						
-	-	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0...	0.0	1.0E+301	7/2	M

Description: If, in the case of an orientation transformation, the effective BCS position or the effective tool length deviates from the values applied in preprocessing by more than the value defined in this machine data (e.g. due to superimposed movement or the activation of online tool length offset), real-time limiting of the dynamic response is activated.

21199	ORI_TRAFO_ONLINE_CHECK_LIMR			C07	F2	
degrees	Activation limit for real-time monitoring of dynamic response, rotary axes			DOUBLE	NEW CONF	
-						
-	-	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0...	0.0	1.0E+301	7/2	M

Description: If, in the case of an orientation transformation, the effective BCS position of one of the rotary axes involved in the transformation deviates from the values applied in preprocessing by more than the value defined in this machine data (e.g. due to superimposed movement), real-time limiting of the dynamic response is activated.

21200	LIFTFAST_DIST			C09	K1, V1, 2.6, 6.1	
mm	Traversing distance on rapid lift from contour			DOUBLE	PowerOn	
-						
-	-	0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1...	0.0	1.0E+301	7/2	M

Description: The machine data determines the absolute value of the traverse movement for rapid lift. The direction of the traverse movement is defined in the part program by the command ALF.

References:

/PA/, Programming Guide: Fundamentals

21202	LIFTFAST_WITH_MIRROR			C09	K1	
-	Rapid retract with mirroring			BOOLEAN	PowerOn	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description:

1: When determining the retraction direction, if mirroring of the contour is active then the retraction direction is also mirrored. Mirroring of the retraction direction only refers to the directional components vertical to the tool direction.

0: Mirroring of the contour is NOT taken into account when determining the retraction direction.

21203	LIFTFAST_MODE_MASK			C09	K1	
-	Settings for fast retraction			UDWORD	PowerOn	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0x0	0x1	7/2	M

Description:

Bit0: Behavior of LFWP with active frame

=0 If the retraction direction is defined with LFWP, the active frame is not effective.

=1 If the retraction direction is defined with LFWP, the active frame is effective. In this case MD21202 \$MC_LIFTFAST_WITH_MIRROR has no effect.

21204	LIFTFAST_STOP_COND			C09	M3	
-	Stop behavior with fast retraction			UDWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	0x7FFFFFFF	7/2	M

Description:

Specifies the stop behavior of the liftfast motion under different stop conditions

Bit0: Axial NC/PLC interface signal DB31, ... DBX4.3 (Axial feed stop / Spindle stop) or CP-SW limit stop or a stop by an OEM application

=0 Stop of the retraction motion in case of an axial feed stop or CP-SW limit stop or stop by an OEM application

=1 No stop of the retraction motion in case of an axial feedstop or CP-SW limit stop or stop by an OEM application

Bit1: Feed disable in channel NC/PLC interface signal DB21-30 DBX6.0 (Feed stop)

=0 Stop of the retraction motion in case of a feed stop in the channel

=1 No stop of the retraction motion in case of a feed stop in the channel

21210	SETINT_ASSIGN_FASTIN			C01, C09	-	
-	HW assignment of ext. NC input byte for NC progr. interrupts			UDWORD	PowerOn	
-						
-	-	1, 1, 1, 1, 1, 1, 1, 1...	0	0x7FFFFFFF	7/2	M

Description:

Assignment of input bytes for processing user interrupts in NC programs (SETINT)

Bit 0 ... 7: Number of the input byte (see below)

Bit 16 ... 23: Selection screen for the signals that are NOT evaluated in the channel

Bit 24 to 31: Selection screen for the signals that are evaluated in the channel in INVERTED form

Bit x = 0: Interrupt triggered by rising edge

Bit x = 1: Interrupt triggered by falling edge.

Input bytes:

3.3 NC machine data

Byte 1: On-board inputs of the NCU module (DB)

Bytes 2 - 5: External digital inputs (fast NCK I/Os or default via NC/PLC interface)

Bytes 128 - 129: Comparator byte (result from fast analogue inputs or default via NC/PLC interface)

21220	MULTFEED_ASSIGN_FASTIN	C01, C09	A4, V1
-	Assignment of the NC I/Os for 'several feedrates in the block'	UDWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0
		0x7FFFFFFF	7/2
			M

Description:

In MD21220 \$MC_MULTFEED_ASSIGN_FASTIN (assignment of the input bytes of the NC I/Os for "Multiple feeds in one block"), at most two digital input bytes or comparator input bytes of the NC I/Os can be assigned to the input byte for the "Multiple feeds in one block" function.

Furthermore, the assigned input signals can be inverted with the machine data.

The MD is coded as follows:

Bit 0-7:

No. of 1st digital input byte or comparator input byte used

Bit 8 - 15:

No. of 2nd digital input byte or comparator input byte used

Bit 16 - 23:

Inversion mask for describing the 1st byte

Bit 24 - 31:

Inversion mask for describing the 2nd byte

Bit=0: do not invert

Bit=1: invert

The number for the digital inputs should be specified as follows:

1: for the on-board byte

2 - 5: for external bytes

The number for a comparator input byte should be specified as follows:

128: for comparator 1 (corresponds to 80Hex)

129: for comparator 2 (corresponds to 81Hex)

21230	MULTFEED_STORE_MASK	C01, C09	V1
-	Memory response for 'several feedrates in the block'	UBYTE	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0
		-	7/2
			M

Description:

The priority of the signals for feeds F2 - F7 of the "Multiple feeds in one block" function decreases as the bit number increases in the input byte. The highest priority signal determines the current feed.

The MD21230 \$MC_MULTFEED_STORE_MASK (store input signals of the "Multiple feeds in one block" function) can be used to specify the response when the highest priority input drops out:

Set bit 2 - 7 has the effect that the associated feed (F2 to F7) that has been selected by the highest priority input signal in each case is retained, even if the input signal drops out and a lower priority is present.

The MD is coded as follows:

Bit 0 - 1: No significance

Bit 2 - 7: Storage response of the feed signals

21240	PREVENT_SYNACT_LOCK_CHAN			C01, C09	-	
-	Protected synchronized actions			DWORD	PowerOn	
-						
-	2	-1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1, -1...	-1	1399	7/2	M

Description:

The machine data specifies a range of synchronized action IDs.

Synchronized actions with IDs in this range cannot be overwritten, canceled or locked via synchronized actions.

With 0.0, there is no range of protected synchronized actions. The values are read as absolute values; the upper value and the lower value can be indicated in any order.

If a value is configured with -1, the configuration of the general machine data becomes active.

Note:

During the creation of protected static synchronized actions, the protection should be canceled; otherwise, a power ON would be necessary for each change in order to be able to redefine the logic.

21300	COUPLE_AXIS_1				C09	S3	
-	Synchron. spindle pair def, mach. axis no: follow. spindle [0], lead.sp [1]				BYTE	PowerOn	
-							
-	2	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	31	7/2	M	

Description:

One pair of synchronous spindles per NC channel can be defined in a fixed configuration with this machine data.

The machine axis numbers (channel-specific MD20070 \$MC_AXCONF_MACHAX_USED) applicable in the NC channel must be entered for the following spindle [n=0] and the leading spindle [n=1].

The coupling is not regarded as configured if values of "0" are entered, thus leaving 2 couplings to be configured freely via the NC part program.

MD irrelevant for:

User-defined coupling

Related to:

Channel-specific MD21310 \$MC_COUPLING_MODE_1

(type of coupling in synchronous spindle mode)

Channel-specific MD21340 \$MC_COUPLE_IS_WRITE_PROT_1

(coupling parameters cannot be changed)

Channel-specific MD21330 \$MC_COUPLE_RESET_MODE_1

(coupling cancelation response)

Channel-specific MD21320 \$MC_COUPLE_BLOCK_CHANGE_CTRL_1

(block change response in synchronous spindle mode)

SD42300 \$SC_COUPLE_RATIO_1

(speed ratio parameters for synchronous spindle mode)

21310	COUPLING_MODE_1			C03, C09	S3	
-	Type of coupling in synchronous spindle operation			BYTE	PowerOn	
-						
-	-	1, 1, 1, 1, 1, 1, 1, 1...	0	2	7/2	M

Description:

This machine data determines the type of coupling for the fixed coupling configuration defined with machine data COUPLE_AXIS_1[n].

3.3 NC machine data

1: Setpoint coupling activated.

With a setpoint coupling, the reference variable for the following spindle is calculated from the position setpoint of the leading spindle, thus allowing the setpoints for the FS and LS to be input simultaneously. This has a particularly positive effect on the spindle synchronism during acceleration and deceleration processes.

A setpoint coupling thus achieves better command behavior than an actual-value coupling.

When a setpoint coupling is used, the following conditions must be fulfilled before synchronous mode is activated:

- The LS must be assigned to the same NC channel as the FS
- The FS and LS must be in position control mode (SPCON)
- The FS and LS must have the same dynamic control response

0: Actual-value coupling activated.

With an actual-value coupling, the command variable for the following spindle is calculated from the actual position value of the leading spindle. With this type of coupling, the following drive must be significantly more dynamic than the leading drive, but never vice versa.

The actual-value coupling can be used, for example, in the following cases:

- The LS must be assigned to a different NC channel than the FS.
- For leading spindles which are not suitable for position control.
- In cases where the dynamic control response of the leading spindle is considerably slower than that of the following spindle. As soon as the actual-value coupling is active, the NC/PLC interface signal DB31, ... DBX98.2 (Actual-value coupling) for the FS is set to "1-signal".

2: Speed coupling activated.

Internally, the speed coupling is a setpoint coupling. Lower dynamic requirements are placed on the FS and LS. A defined relation between the positions of the FS and LS cannot be established.

A speed coupling is used in the following cases:

- LS and/or FS are not in position control.
- There are no measuring systems present.

The coupling type can be altered in the NC part program when the coupling is deactivated by means of language instruction COUPDEF provided this option has not been inhibited by the channel-specific MD21340 \$MC_COUPLE_IS_WRITE_PROT_1. However, the parameterized value of channel-specific MD21310 \$MC_COUPLING_MODE_1 remains unchanged.

MD irrelevant to:

User-defined coupling

Related to:

Channel-specific MD21300 \$MC_COUPLE_AXIS_1

(definition of pair of synchronous spindles)

Channel-specific MD21340 \$MC_COUPLE_IS_WRITE_PROT_1

(write-protection for configured coupling parameters)

NC/PLC interface signal DB31, ... DBX98.2 (Actual-value coupling)

21320	COUPLE_BLOCK_CHANGE_CTRL_1			C09	S3	
-	Block change behavior in synchronous spindle operation			BYTE	PowerOn	
-						
-	-	3, 3, 3, 3, 3, 3, 3...	0	3	7/2	M

Description: This machine data determines the condition under which a block change has to be executed when synchronous mode is activated for the fixed coupling configuration defined in the channel-specific machine data COUPLE_AXIS_ [n].

The following options are available:

- 0: Block change is enabled immediately
- 1: Block change in response to "Fine synchronization"
- 2: Block change in response to "Coarse synchronization"
- 3: Block change in response to IPOSTOP (i.e. after setpoint-based synchronization)

The block change response can be altered in the NC part program with language instruction COUPDEF provided this option is not inhibited by the channel-specific MD21340 \$MC_COUPLE_IS_WRITE_PROT_1. However, the parameterized value of the channel-specific MD21320 \$MC_COUPLE_BLOCK_CHANGE_CTRL_1 remains unchanged.

The selected block change response remains valid even when the velocity ratio is changed or a defined angular offset is programmed while the coupling is active.

MD irrelevant for:

User-defined coupling

Related to:

Channel-specific MD21300 \$MC_COUPLE_AXIS_1

(definition of pair of synchronous spindles)

Channel-specific MD21340 \$MC_COUPLE_IS_WRITE_PROT_1

(coupling parameters cannot be changed)

Channel-specific MD37200 \$MA_COUPLE_POS_TOL_COARSE or MD37220

\$MA_COUPLE_VELO_TOL_COARSE

(threshold value for coarse synchronization)

Channel-specific MD37210 \$MA_COUPLE_POS_TOL_FINE or MD37230 \$MA_COUPLE_VELO_TOL_FINE

(threshold value for fine synchronization)

21330	COUPLE_RESET_MODE_1			C03, C09	S3, K1	
-	Coupling cancelation behavior			UDWORD	PowerOn	
-						
-	-	1, 1, 1, 1, 1, 1, 1...	0	0x3FF	7/2	M

Description:

This machine data defines the behavior of the synchronous mode for the pair of synchronous spindles configured with machine data COUPLE_AXIS_1[n].

Bit 0=0:

Synchronous mode remains active with a new program start and, as long as the control remains switched on, can be canceled only with COUPOF.

Bit 0=1:

Synchronous mode is canceled with program start (from the reset condition).

Bit 1=0:

Synchronous mode remains active even with program end and reset and, as long as the control remains switched on, can be canceled only with COUPOF.

Bit 1=1:

Synchronous mode is canceled with program end or RESET.

Bit 5=1:

The configured data are activated with program start.

Bit 6=1:

The configured data are activated with program end or RESET.

Bit 9=1:

Synchronous mode is switched on with program start.

Note:

Synchronous mode is not deselected with NC Start after NC Stop.

MD irrelevant to:

User-defined coupling

Related to:

3.3 NC machine data

Channel-specific MD21300 \$MC_COUPLE_AXIS_1 (definition of pair of synchronous spindles)

NC/PLC interface signal DB31, ... DBX84.4 (Active spindle mode - synchronous mode)

21340	COUPLE_IS_WRITE_PROT_1			C09	S3	
-	Coupling parameters cannot be altered			BOOLEAN	PowerOn	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description:

This machine data defines whether or not the coupling parameters (speed ratio, block change response, coupling type) for the pair of synchronous spindles configured with channel-specific machine data COUPLE_AXIS_1[n] may be altered by the NC part program.

1: Coupling parameters may not be altered by the NC program (write-protection active)

An alarm message is generated if an attempt is made to change the parameters.

0: NC part program may alter coupling parameters using language instruction COUPDEF. MD irrelevant for:

User-defined coupling

Related to:

Channel-specific MD21300 \$MC_COUPLE_AXIS_1
(definition of pair of synchronous spindles)

Channel-specific MD21310 \$MC_COUPLING_MODE_1
(type of coupling in synchronous spindle mode)

Channel-specific MD21330 \$MC_COUPLE_RESET_MODE_1
(coupling cancelation response)

Channel-specific MD21320 \$MC_COUPLE_BLOCK_CHANGE_CTRL_1
(block change response in synchronous spindle mode)

SD42300 \$SC_COUPLE_RATIO_1
(speed ratio parameters for synchronous spindle mode)

21380	ESR_DELAY_TIME1			EXP, N09	M3	
s	Delay time ESR axes			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0E+301	7/2	M

Description:

When, for example, an alarm occurs, this MD can be used to delay deceleration in order, for example, to enable a retraction from the tooth gap (ESR) in gear wheel machining.

21381	ESR_DELAY_TIME2			EXP, N09	M3	
s	ESR time for IPO controlled braking			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0E+301	7/2	M

Description:

When time MD21380 \$MC_ESR_DELAY_TIME1 has expired, the time (MD21381 \$MC_ESR_DELAY_TIME2) specified for interpolatory braking is still available.

When time MD21381 \$MC_ESR_DELAY_TIME2 has expired, rapid deceleration with following tracking is initiated.

21500	TRACLG_GRINDSPI_VERT_OFFSET	C07	-
mm	Vertical position offset of grinding axis in centerless grinding	DOUBLE	PowerOn
-			
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	-1.0E+301 1.0E+301 7/2 M

Description: The vertical offset of the grinding axis is specified in this MD.

21501	TRACLG_GRINDSPI_HOR_OFFSET	C07	-
mm	Horiz. position offset of grinding axis in centerless grinding	DOUBLE	PowerOn
-			
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	-1.0E+301 1.0E+301 7/2 M

Description: Horizontal position offset of the grinding axis in centerless grinding.
The setting in this MD is significant only when MD: TRAFO_AXES_IN_n[0] = 0, i.e. no axis is programmed for the grinding wheel.

21502	TRACLG_CTRLSPI_VERT_OFFSET	C07	-
mm	Vert. position offset of regulating axis in centerless grinding	DOUBLE	PowerOn
-			
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	-1.0E+301 1.0E+301 7/2 M

Description: The vertical offset for the regulating axis is specified in this MD.

21504	TRACLG_SUPPORT_VERT_OFFSET	C07	-
mm	Vertical offset of work blade in centerless grinding	DOUBLE	PowerOn
-			
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	-1.0E+301 1.0E+301 7/2 M

Description: Y offset for work blade
Rule: $X(0) = Y(\text{offset}) + Q1 < Y(\text{direction vector } Q1) + Q2 < Y(\text{direction vector } Q2)$

21506	TRACLG_SUPPORT_HOR_OFFSET	C07	S8
mm	Horizontal offset of work blade in centerless grinding	DOUBLE	PowerOn
-			
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	-1.0E+301 1.0E+301 7/2 M

Description: X offset for work blade
Rule: $X(0) = X(\text{offset}) + Q1 < X(\text{direction vector } Q1) + Q2 < X(\text{direction vector } Q2)$

21508	TRACLG_VERT_DIR_SUPPORTAX_1	C07	-
-	Vertical component of work blade direction vector for Q1	DOUBLE	PowerOn
-			
-	-	1., 1., 1., 1., 1., 1., 1., 1., 1....	-1.0E+301 1.0E+301 7/2 M

Description: Y component of blade direction vector for Q1
Rule: $Y(0) = Y(\text{offset}) + Q1 < Y(\text{direction vector } Q1) + Q2 < Y(\text{direction vector } Q2)$

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21510	TRACLG_HOR_DIR_SUPPORTAX_1	C07	-
-	Horizontal component of work blade direction vector for Q1	DOUBLE	PowerOn
-			
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	-1.0E+301 1.0E+301 7/2 M

Description: X component of blade direction vector for Q1
Rule: $X(0) = X(\text{offset}) + Q1 < X(\text{direction vector } Q1) + Q2 < X(\text{direction vector } Q2)$

21512	TRACLG_VERT_DIR_SUPPORTAX_2	C07	-
-	Vertical component of work blade direction vector for Q2	DOUBLE	PowerOn
-			
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	-1.0E+301 1.0E+301 7/2 M

Description: Y component of blade direction vector for Q2
Rule: $Y(0) = Y(\text{offset}) + Q1 < Y(\text{direction vector } Q1) + Q2 < Y(\text{direction vector } Q2)$

21514	TRACLG_HOR_DIR_SUPPORTAX_2	C07	-
-	Horizontal component of work blade direction vector for Q2	DOUBLE	PowerOn
-			
-	-	1., 1., 1., 1., 1., 1., 1., 1., 1....	-1.0E+301 1.0E+301 7/2 M

Description: X component of blade direction vector for Q2
Rule: $X(0) = X(\text{offset}) + Q1 < X(\text{direction vector } Q1) + Q2 < X(\text{direction vector } Q2)$

21516	TRACLG_SUPPORT_LEAD_ANGLE	C07	-
degrees	Lead angle of work blade in centerless grinding	DOUBLE	PowerOn
-			
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	-90. 90. 7/2 M

Description: The angle of lead of the work blade (a) is entered here.

21518	TRACLG_CONTACT_UPPER_LIMIT	C07	-
mm	Upper contact limit of work blade with work in centerl. grinding	DOUBLE	PowerOn
-			
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	-1.0E+301 1.0E+301 7/2 M

Description: It is necessary to specify the upper contact limit of the blade with the part to be ground (d1) for the purpose of monitoring the support range limits.
Related to:
MD21520 \$MC_TRACLG_CONTACT_LOWER_LIMIT

21520	TRACLG_CONTACT_LOWER_LIMIT	C07	-
mm	Lower contact limit of work blade with work in centerl. grinding	DOUBLE	PowerOn
-			
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	-1.0E+301 1.0E+301 7/2 M

Description: It is necessary to specify the lower contact limit of the blade with the part to be ground (d2) for the purpose of monitoring the support range limits.
Related to:
MD: TRACLG_CONTACT_UPPER_LIMIT

21522	TRACLG_GRINDSPI_NR	C07	-
-	Definition of grinding spindle for centerless grinding	BYTE	PowerOn
-			
-	-	2, 2, 2, 2, 2, 2, 2, 2...	1 20 7/2 M

Description: The number of the grinding spindle is specified in this MD.

21524	TRACLG_CTRLSPI_NR	C07	-
-	Definition of regulating spindle for centerless grinding	BYTE	PowerOn
-			
-	-	1, 1, 1, 1, 1, 1, 1, 1...	1 20 7/2 M

Description: The number of the regulating spindle is specified in this MD.

21526	TRACLG_GO_IS_SPECIAL	C07	-
-	Special logic for G0 in centerless grinding	BOOLEAN	PowerOn
-			
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0 - 7/2 M

Description: This MD can be used to define how the speed of the regulating wheel must respond in the case of transitions from motion blocks with G0 and without G0 (see table).
TRACLG_GO_IS_SPECIAL = 1:
On transition from a motion block with G0 to one without G0, the speed of the regulating wheel is increased during the G0 block to the desired initial speed in the block without G0.
TRACLG_GO_IS_SPECIAL = 0:
The speed of the regulating wheel is controlled only for motion blocks without G0 (the transitions from a motion block with G0 to one without G0 are not taken into account).

22000	AUXFU_ASSIGN_GROUP	C04	H2, S1
-	Auxiliary function group	DWORD	PowerOn
-			
-	255	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ...	1 168 7/2 M

Description: See MD22010 \$MC_AUXFU_ASSIGN_TYPE [n] (auxiliary function type)

22010	AUXFU_ASSIGN_TYPE	C04	H2, S1
-	Auxiliary function type	STRING	PowerOn
-			
-	255		- - 7/2 M

Description: Machine data
AUXFU_ASSIGN_TYPE[n] (auxiliary function type),
AUXFU_ASSIGN_EXTENSION[n] (auxiliary function extension),
AUXFU_ASSIGN_VALUE[n] (auxiliary function value) and
AUXFU_ASSIGN_GROUP[n] (auxiliary function group)
assign an auxiliary function type (M,S,H,T,F,D,DL), the associated extension and the auxiliary function value to an auxiliary function group.

Example:

M0 = 100 => Group 5 (corr. M100)

22020	AUXFU_ASSIGN_EXTENSION			C04	H2, S1	
-	Auxiliary function extension			DWORD	PowerOn	
-						
-	255	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,, ...	-1	99	7/2	M

22030	AUXFU_ASSIGN_VALUE			C04	H2, S1	
-	Auxiliary function value			DWORD	PowerOn	
-						
-	255	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,, ...	-	-	7/2	M

22035	AUXFU_ASSIGN_SPEC			C04	H2	
-	Output specification			UDWORD	PowerOn	
-						
-	255	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,, ...	0	0x7FFFFFFF	7/2	M

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Bit 0 = 1 Acknowledgment "normal" after an OB1 cycle
 Bit 1 = 1 Acknowledgment "quick" with OB40
 Bit 2 = 1 No predefined auxiliary function
 Bit 3 = 1 No output to the PLC
 Bit 4 = 1 Spindle reaction after acknowledgment by the PLC
 Bit 5 = 1 Output before the motion
 Bit 6 = 1 Output during the motion
 Bit 7 = 1 Output at block end
 Bit 8 = 1 No output after block search types 1, 2, 4
 Bit 9 = 1 Collection during block search type 5 (SERUPRO)
 Bit 10 = 1 No output during block search type 5 (SERUPRO)
 Bit 11 = 1 Cross-channel auxiliary function during block search type 5 (SERUPRO)
 Bit 12 = 1 Output via synchronized action
 Bit 13 = 1 Implicit auxiliary function
 Bit 14 = 1 Active M01
 Bit 15 = 1 No output during running-in test
 Bit 16 = 1 Nibbling off
 Bit 17 = 1 Nibbling on
 Bit 18 = 1 Nibbling

22037	AUXFU_ASSIGN_SIM_TIME			C04	H2, S1	
-	Acknowledgment time			DWORD	PowerOn	
-						
-	255	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...	0	0x7FFFFFFF	7/2	M

Description: Acknowledgment time for auxiliary functions in ms.
 See MD22010 \$MC_AUXFU_ASSIGN_TYPE[n] (auxiliary function type)

22040	AUXFU_PREDEF_GROUP			C04	H2	
-	Predefined auxiliary function groups			DWORD	PowerOn	
-						
-	301	1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 4, 4, 4, 4, 4, 4, 3, 1, 1, 1, ...	0	168	7/2	M

Description: Group assignment of predefined auxiliary functions.
 The predefined groups cannot be changed for indices 0, 1, 2, 3, 4, 22, 23, 24.

22050	AUXFU_PREDEF_TYPE			C04	H2	
-	Predefined auxiliary function type			STRING	PowerOn	
-						
-	301	M, M, M, M, M, M, M, M, M, M, M, M, M, M, M...	-	-	7/2	M

Description: The address codes of the predefined auxiliary functions are fix.
 This setting cannot be changed!

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22060	AUXFU_PREDEF_EXTENSION			C04	H2	
-	Predefined auxiliary function extension			DWORD	PowerOn	
-						
-	301	0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 0, 0, 0,, ...	-1	99	7/2	M

Description: Address extension for predefined auxiliary functions:
This setting can be changed only for indices 5 to 17 and 21!

22070	AUXFU_PREDEF_VALUE			C04	H2	
-	Predefined auxiliary function value			DWORD	PowerOn	
-						
-	301	0, 1, 2, 17, 30, 6, 3, 4, 5, 19, 70, 40, 41, 42, 43, 44, 45, -1,...	-	-	7/2	M

Description: Value of predefined auxiliary functions.
This setting cannot be changed!

22080	AUXFU_PREDEF_SPEC			C04	H2, K1	
-	Output specification			UDWORD	PowerOn	
-						
-	301	0x81, 0x81, 0x81, 0x81, 0x81, 0x21, 0x21, 0x21, 0x21, 0x21,, 0x8...	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0x7FFF, 0x7FFF, 0x7FFF, 0x7FFF, 0x7FFF, 0x7FFF, 0x7FFF, 0...	7/2	M

Description: Specification of the output behavior of the predefined auxiliary functions.

- Bit 0 = 1 Acknowledgment "normal" after an OB1 cycle
- Bit 1 = 1 Acknowledgment "quick" with OB40
- Bit 2 = 1 No predefined auxiliary function
- Bit 3 = 1 No output to the PLC
- Bit 4 = 1 Spindle reaction after acknowledgment by the PLC
- Bit 5 = 1 Output before the motion
- Bit 6 = 1 Output during the motion
- Bit 7 = 1 Output at block end
- Bit 8 = 1 No output after block search types 1, 2, 4
- Bit 9 = 1 Collection during block search type 5 (SERUPRO)
- Bit 10 = 1 No output during block search type 5 (SERUPRO)
- Bit 11 = 1 Cross-channel auxiliary function during block search type 5 (SERUPRO)
- Bit 12 = 1 Output via synchronized action
- Bit 13 = 1 Implicit auxiliary function
- Bit 14 = 1 Active M01
- Bit 15 = 1 No output during running-in test
- Bit 16 = 1 Nibbling off
- Bit 17 = 1 Nibbling on
- Bit 18 = 1 Nibbling

Description: Acknowledgment time for auxiliary functions in ms.
See MD22010 \$MC_AUXFU_PREDEF_TYPE[n] (auxiliary function type)

Description:	Block change is not delayed with quick auxiliary functions. 0: With the quick auxiliary function output the block change is delayed until acknowledgment by the PLC (OB40). 1: With the quick auxiliary function output to the PLC the block change is not delayed. MD irrelevant for: Auxiliary functions with normal acknowledgment References: /FBSY/, Synchronized Actions

Description:

0: The values of H auxiliary functions are present in floating point format.
The maximum value range is +/-3.4028 ex 38.

1: The value of H auxiliary functions is rounded and changed to an integer.
The basic program in the PLC must interpret the value as an integer.
The maximum value range is -2147483648 to 2147483647.

Description:	Synchronization of the M auxiliary functions with regard to a simultaneously programmed axis motion. 0 = Output before motion 1 = Output during motion 2 = Output at block end 3 = No output to the PLC (therefore no block change delay) Notice: An auxiliary function output specification configured by MD22080 \$MC_AUXFU_PREDEF_SPEC[preIndex], MD22035 \$MC_AUXFU_ASSIGN_SPEC[auxIndex] or A group output specification configured by MD11110 \$MN_AUXFU_GROUP_SPEC[groupIndex] has a higher priority.

3.3 NC machine data

22210	AUXFU_S_SYNC_TYPE	C04	H2, 2.4
-	Output time of S functions	BYTE	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 4 7/2 M

Description: Synchronization of the S auxiliary functions with regard to a simultaneously programmed axis motion.

0 = Output before motion

1 = Output during motion

2 = Output at block end

3 = No output to the PLC (therefore no block change delay)

4 = Output in accordance with the predefined output specification

Notice:

An auxiliary function output specification configured by MD22035

\$MC_AUXFU_ASSIGN_SPEC[auxIndex] has a higher priority.

22220	AUXFU_T_SYNC_TYPE	C11, C04	H2, 2.4
-	Output time for T functions	BYTE	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 4 7/2 M

Description: Synchronization of the T auxiliary functions with regard to a simultaneously programmed axis motion.

0 = Output before motion

1 = Output during motion

2 = Output at block end

3 = No output to the PLC (therefore no block change delay)

4 = Output in accordance with the predefined output specification

Notice:

An auxiliary function output specification configured by MD22035

\$MC_AUXFU_ASSIGN_SPEC[auxIndex] has a higher priority.

22230	AUXFU_H_SYNC_TYPE	C04	H2, 2.4
-	Output time for H functions	BYTE	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 3 7/2 M

Description: Synchronization of the H auxiliary functions with regard to a simultaneously programmed axis motion.

0 = Output before motion

1 = Output during motion

2 = Output at block end

3 = No output to the PLC (therefore no block change delay)

Notice:

An auxiliary function output specification configured by MD22080

\$MC_AUXFU_PREDEF_SPEC[preIndex], MD22035 \$MC_AUXFU_ASSIGN_SPEC[auxIndex] or

A group output specification configured by MD11110

\$MN_AUXFU_GROUP_SPEC[groupIndex], which has a higher priority.

22240	AUXFU_F_SYNC_TYPE	C04	H2, K1, V1, Z1
-	Output time for F functions	BYTE	PowerOn
-			
-	-	3, 3, 3, 3, 3, 3, 3, 3...	0 4 7/2 M

Description: Synchronization of the F auxiliary functions with regard to a simultaneously programmed axis motion.

0 = Output before motion

1 = Output during motion

2 = Output at block end

3 = No output to the PLC (therefore no block change delay)

4 = Output in accordance with the predefined output specification

Notice:

An auxiliary function output specification configured by MD22035

\$MC_AUXFU_ASSIGN_SPEC[auxIndex] has a higher priority.

22250	AUXFU_D_SYNC_TYPE	C04	H2
-	Output time for D functions	BYTE	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 4 7/2 M

Description: Synchronization of the D auxiliary functions with regard to a simultaneously programmed axis motion.

0 = Output before motion

1 = Output during motion

2 = Output at block end

3 = No output to the PLC (therefore no block change delay)

4 = Output in accordance with the predefined output specification

Notice:

An auxiliary function output specification configured by MD22035

\$MC_AUXFU_ASSIGN_SPEC[auxIndex] has a higher priority.

22252	AUXFU_DL_SYNC_TYPE	C04	H2
-	Output time of DL functions	BYTE	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 4 7/2 M

Description: Synchronization of the auxiliary function with regard to a simultaneously programmed motion.

0 = Output before motion

1 = Output during motion

2 = Output at block end

3 = No output to the PLC (therefore no block change delay)

4 = Output in accordance with the predefined output specification

Notice:

An auxiliary function output specification configured by MD22035

\$MC_AUXFU_ASSIGN_SPEC[auxIndex] has a higher priority.

3.3 NC machine data

22254	AUXFU_ASSOC_M0_VALUE			C01, C03, C10	H2, K1	
-	Additional M function to stop a program			DWORD	PowerOn	
-						
-	-	-1, -1, -1, -1, -1, -1, -1, -1...	-	-	7/2	M

Description: This machine data defines an additional, predefined M function, which behaves in the same way as M0. The value of the machine data corresponds to the number of the auxiliary M function.

Predefined M numbers, such as M0, M1, M2, M3, etc., are not allowed.

Restriction:

See MD10715 \$MN_M_NO_FCT_CYCLE

Related to:

MD10714 \$MN_M_NO_FCT_EOP,
MD10715 \$MN_M_NO_FCT_CYCLE,
MD20094 \$MC_SPIND_RIGID_TAPPING_M_NR,
MD22254 \$MC_AUXFU_ASSOC_M0_VALUE
MD10814 \$MN_EXTERN_M_NO_MAC_CYCLE,
MD10804 \$MN_EXTERN_M_NO_SET_INT
MD10806 \$MN_EXTERN_M_NO_DISABLE_INT,
MD10800 \$MN_EXTERN_CHAN_SYNC_M_NO_MIN,
MD10802 \$MN_EXTERN_CHAN_SYNC_M_NO_MAX
MD20095 \$MC_EXTERN_RIGID_TAPPING_M_NR
MD26008 \$MC_NIBBLE_PUNCH_CODE

22256	AUXFU_ASSOC_M1_VALUE			C01, C03, C10	H2	
-	Additional M function for conditional stop			DWORD	PowerOn	
-						
-	-	-1, -1, -1, -1, -1, -1, -1, -1...	-	-	7/2	M

Description: This machine data defines an additional, predefined M function, which behaves in the same way as M1. The value of the machine data corresponds to the number of the auxiliary M function.

Predefined M numbers, such as M0, M1, M2, M3, etc., are not allowed.

Restriction:

See MD10715 \$MN_M_NO_FCT_CYCLE

Related to:

MD10714 \$MN_M_NO_FCT_EOP,
MD10715 \$MN_M_NO_FCT_CYCLE,
MD20094 \$MC_SPIND_RIGID_TAPPING_M_NR,
MD22254 \$MC_AUXFU_ASSOC_M0_VALUE
MD10814 \$MN_EXTERN_M_NO_MAC_CYCLE,
MD10804 \$MN_EXTERN_M_NO_SET_INT
MD10806 \$MN_EXTERN_M_NO_DISABLE_INT,
MD10800 \$MN_EXTERN_CHAN_SYNC_M_NO_MIN,
MD10802 \$MN_EXTERN_CHAN_SYNC_M_NO_MAX
MD20095 \$MC_EXTERN_RIGID_TAPPING_M_NR
MD26008 \$MC_NIBBLE_PUNCH_CODE

22400	S_VALUES_ACTIVE_AFTER_RESET			C04, C03, C05	-	
-	S function active beyond RESET			BOOLEAN	PowerOn	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description:

1: The last S values set in the main run are still active after a RESET.
This also applies to the dynamic correction values ACC, VELOLIM in spindle mode.

0: The various S values are equal to 0 after a RESET, and must therefore be reprogrammed.

The dynamic correction values ACC and VELOLIM are reset to 100% for spindle mode if the axis-specific MD35040 \$MA_SPIND_ACTIVE_AFTER_RESET and MD32320 \$MA_DYN_LIMIT_RESET_MASK do not specify anything else.

Note:

The values for ACC and VELOLIM are also retained for spindle mode if MD35040 \$MA_SPIND_ACTIVE_AFTER_RESET is not equal to zero or the axis-specific MD35040 \$MA_SPIND_ACTIVE_AFTER_RESET is not equal to zero.

22410	F_VALUES_ACTIVE_AFTER_RESET			C04, C03, C05	M3, V1	
-	F function active beyond RESET			BOOLEAN	PowerOn	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description:

1: The last programmed F, FA, OVR and OVRA values are still active after RESET.
This also applies to the dynamic correction values (ACC, VELOLIM, JERKLIM, ACCLIMA, VELOLIMA, JERKLIMA).

0: The various values are set to their default values after reset.

This does not apply to the dynamic correction values if the axis-specific MD32320 \$MA_DYN_LIMIT_RESET_MASK specifies anything else.

Note:

The dynamic correction values are also retained if the axis-specific MD32320 \$MA_DYN_LIMIT_RESET_MASK is not equal to zero.

Related to:

MD22240 \$MC_AUXFU_F_SYNC_TYPE Output time of the F functions

22420	FGROUP_DEFAULT_AXES			C11	-	
-	Default setting for FGROUP command			BYTE	PowerOn	
-						
-	8	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description:

Default setting for FGROUP command. You can specify up to 8 channel axes whose resulting velocity is equivalent to the programmed path feed.

If all eight values are zero (default), the geo axis entered in MD20050 \$MC_AXCONF_GEOAX_ASSIGN_TAB are active as the default setting for the FGROUP command as previously.

22430	FGROUP_PATH_MODE			EXP	-	
-	Response of the path velocity in singular situations			BYTE	Immediately	
-						
-	-	1, 1, 1, 1, 1, 1, 1, 1...	0	3	3/3	U

3.3 NC machine data

Description: If the path of the FGROUPE axes is short in comparison to that of the non-FGROUPE axes, the latter must become very fast in order to follow the path. If the path is precisely 0, then they travel instead at the programmed feedrate. The machine data can be used to soften this abrupt transition.

Value 0: This abrupt transition is not processed. Setting compatible with the behavior before the software release 6

Value 1: From a threshold of the path relationship of MD22440 \$MC_FGROUPE_PATH_RATIO, the paths of the non-FGROUPE axes are increasingly taken into account. However, this is only applicable in polynomial blocks with significantly changing path components. Setting compatible with the behavior before software release NCK.P7_91

Value 2: As for 1, however, without the restrictions.

Value 3: As for 2, but with improved behavior if there are no geometry axes in the FGROUPE. Recommended setting for mold making applications and special machines.

.

Related to:

MD22420 \$MC_FGROUPE_DEFAULT_AXES, MD22440 \$MC_FGROUPE_PATH_RATIO

22440	FGROUP_PATH_RATIO			EXP	-	
-	Path ratio when using the FGROUP singularity strategy			DOUBLE	Immediately	
-						
-	-	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0...	0.	1.e6	3/3	U

Description: Ratio of the path of non-FGROUPE axes to the FGROUPE axes, from which also the path of the first is taken into account for the reference of the path velocity.

Is only of significance for MD22430 \$MC_FGROUPE_PATH_MODE > 0. A value of 0 has the same effect as if all axes were in the FGROUPE. For larger values, this approaches the behavior of that of MDMD22430 \$MC_FGROUPE_PATH_MODE = 0.

Corresponds with:

MD22420 \$MC_FGROUPE_DEFAULT_AXES, MD22430 \$MC_FGROUPE_PATH_MODE

22450	DYN_LIM_MODE			EXP, C05	-	
-	Axial or geometric velocity limitations			UDWORD	NEW CONF	
-						
-	6	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	1	3/2	M

Description: The data specifies how the velocities of the geometry axes are limited for technology groups by curvatures.

Value 0: The limitation results from the axial accelerations of the geometry axes involved in the path.

Value 1: The limitation results from the geometric curvatures of the geometry axes involved in the path.

Setting 0 leads to a higher path velocity, because traversing can then be faster in the diagonal direction. With setting 1, the path velocity is equally limited at points with diagonal and paraxial tangents. The course of the path velocity is then smoother. This setting should therefore be selected for finishing.

The setting affects the limitations of the path velocity on account of the contour accuracy function (G code CPRECON), the maximum axis acceleration (MD32300 \$MA_MAX_AX_ACCEL) and the chord error caused by the interpolation cycle (MD10682 \$MN CONTOUR_SAMPLING_FACTOR).

22510	GCODE_GROUPS_TO_PLC			C04	K1, P3 pl, P3 sl	
-	G codes output at NCK-PLC interface on block change/RESET			BYTE	PowerOn	
-						
-	8	0,0,0,0,0,0,0,0,0,0, 0,0,0,0,0,0,0,0,0,0, 0,0...	-	-	7/2	M

Description: Specification of the G code group, the G codes of which are output to the NCK/PLC interface in case of block change/ reset.

The interface is updated after each block change and reset.

Notice:

It is not guaranteed that a PLC user program has at all times a block-synchronous relation between the active NC block and the G codes present.

Example: Path mode with very short blocks

22512	EXTERN_GCODE_GROUPS_TO_PLC			C11, C04	-	
-	Send G codes of an external NC language to PLC			BYTE	PowerOn	
-						
-	8	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/2	M

Description: Specification of the G code group for external languages, the G codes of which are output at the NCK interface on block change/reset.

The interface is updated at each block change and after RESET.

Notice:

It cannot be ensured that a PLC user program has at all times a block-synchronous relation between the active NC block and the G codes present. (Example: Path mode with very short blocks).

22515	GCODE_GROUPS_TO_PLC_MODE			C04	-	
-	Behavior of G group transfer to PLC			UDWORD	PowerOn	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	0x1	7/2	M

Description: For setting the behavior, i.e. how the G groups are to be interpreted in the PLC with regard to data.

With the current behavior (bit 0 = 0), the G group is the array index of a 64-byte field (DBB 208 - DBB 271).

Maximally the 64th G group can be reached in this way.

With the new behavior (bit 0 = 1), the data storage in the PLC consists of max. 8 bytes (DBB 208 - DBB 215).

With this procedure, the array index of this byte array is identical with the index of the MD22510 \$MC_GCODE_GROUPS_TO_PLC[Index] and MD22512 \$MC_EXTERN_GCODE_GROUPS_TO_PLC[Index].

Each index (0 - 7) may only be set for one of the two machine data; the value 0 must be entered for the other MD.

Bit 0 (LSB) = 0:

Behavior as before, the 64-byte field is used for displaying the G codes

Bit 0 (LSB) = 1:

The user specifies for which G groups the first 8 bytes are to be used

3.3 NC machine data

22530	TOCARR_CHANGE_M_CODE	C04	H2, W1
-	M code at change of tool holder	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-99999999 99999999 7/2 M

Description: The absolute value of this machine data indicates the number of the M code, which is output at the VDI interface when a tool holder is activated.

- If the MD is positive, the unchanged M code is always output.
- If the MD is negative, the number of the tool holder is added to the absolute value of the machine data and the number is output.

Special cases:

N M code is output, if the number of the M code to be output or the absolute value of this MD is set to one of the values 0 to 6, 17 or 30. It is not monitored whether an M code created in this way will conflict with other functions.

References:

/FB/, H2, Auxiliary Function Output to PLC

22532	GEOAX_CHANGE_M_CODE	C04	H2, K2
-	M code at change of geo axes	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 99999999 7/2 M

Description: Number of the M code, which is output at the VDI interface in the case of a switchover of the geometry axes.

No M code is output if this MD is set to one of the values 0 to 6, 17 or 30.

It is not monitored whether an M code created in this way will conflict with other functions.

22534	TRAFO_CHANGE_M_CODE	C04	M1, H2
-	M code at change of transformation	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 99999999 7/2 M

Description: Number of the M code that is output at the VDI interface in the case of a transformation changeover of the geometry axes.

No M code is output if this MD is set to one of the values 0 to 6, 17 or 30.

It is not monitored whether an M code created in this way will conflict with other functions.

22550	TOOL_CHANGE_MODE	C01, C11, C04, C09	W3, K1, W1
-	New tool compensation for M function	BYTE	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 1 7/2 M

Description: The T function is used to select a tool in the program. The setting in this machine data determines whether the new tool is loaded immediately on execution of the T function:

MD22550 \$MC_TOOL_CHANGE_MODE = 0

The new tool is loaded directly with the programming of T or D. This setting is mainly used on turning machines. If a D is not programmed in the block by T, then the tool offset defined in MD20270 \$MC_CUTTING_EDGE_DEFAULT is active.

In this case, the function "Manual tools" is not enabled.

MD22550 \$MC_TOOL_CHANGE_MODE = 1

The new tool is prepared for loading on execution of the T function. This setting is used mainly on milling machines with a tool magazine in order to bring the new tool into the tool change position without interrupting the machining process. The M function entered in MD22560 \$MC_TOOL_CHANGE_M_CODE is used to remove the old tool from the spindle and load the new tool onto the spindle. According to DIN 66025, this tool change has to be programmed with M function M06.

Related to:

MD22560 \$MC_TOOL_CHANGE_M_CODE

22560	TOOL_CHANGE_M_CODE	C01, C04, C09	H2, K1, W1
-	M function for tool change	DWORD	PowerOn
-			
-	-	6, 6, 6, 6, 6, 6, 6, 6...	6 99999999 7/2 M

Description: If the T function is only used to prepare a new tool for a tool change (this setting is used mainly on milling machines with a tool magazine, in order to bring the new tool into the tool change position without interrupting the machining process), another M function must be used to trigger the tool change.

The M function entered in TOOL_CHANGE_M_CODE triggers the tool change (remove old tool from the spindle and load new tool into the spindle). This tool change is required to be programmed with M function M06, in accordance with DIN 66025.

Related to:

MD22550 \$MC_TOOL_CHANGE_MODE

22562	TOOL_CHANGE_ERROR_MODE	C09	W1
-	Response to tool change errors	UDWORD	PowerOn
-			
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0 0x3FF 7/2 M

Description: Behavior if faults/problems occur during programmed tool change.

Bit 0=0: Standard behavior: Stop at the faulty NC block

Bit 0=1: If a fault is detected in the block with the tool change preparation, the alarm relevant to the preparation command T is delayed until the corresponding tool change command (M06) has been interpreted in the program sequence. Until then, the alarm triggered by the preparation command is not output. The operator can take corrective actions in this block. When the program continues, the faulty NC block is re-interpreted, and the preparation command is automatically executed again internally.

The value = 1 is relevant only if the setting MD22550 \$MC_TOOL_CHANGE_MODE = 1 is used.

Bit 1 Only relevant with active tool management.

Bit 1=0: Standard behavior: Only tools with data assigned to a magazine are detected during tool change preparation.

Bit 1=1: Manual tools can be loaded.

A tool will also be loaded if its data is known in the NCK but has not been assigned to a magazine. In this case, the tool data is automatically assigned to the programmed toolholder.

The user is prompted to insert tools into or remove tools from the toolholder.

Bit 2 qualifies the offset programming

Bit 2=0: active D no. > 0 and active T no.=0 gives offset 0

Active D no. > 0 and active D no.=0 gives total offset 0

Bit 2=1: active D no. > 0 and active T no.=0 lead to an alarm message

Active D no. > 0 and active D no.=0 lead to an alarm message

Bits 3 and 4 are only relevant with active tool management.

Function:

3.3 NC machine data

Control of the behavior of the init. block generation on program start if an unserviceable tool is on the spindle and this tool is to be activated.

See also: MD20112 \$MC_START_MODE_MASK, MD20110 \$MC_RESET_MODE_MASK

On RESET, this does not affect the behavior "Keep disabled tool on the spindle active".

Bit 3=0: Standard: If the tool on the spindle is unserviceable, generate a tool change command requesting a replacement tool. An alarm will be generated if there is no such replacement tool.

Bit 3=1: The status of the unserviceable spindle tool is ignored. (Exception: disabled tools.) The tool becomes active. The subsequent part program should be formulated so that no parts are machined with the unserviceable tool.

Bit 4=0: Standard: The system tries to activate the spindle tool or its replacement tool

Bit 4=1: If the tool on the spindle is unserviceable, T0 is programmed in the start init block.

The combination of bits 3 and 4 produces the following statements:

0 / 0: Behavior as before, automatic change on NC start if an unserviceable tool is in the spindle

1 / 0: Is not always automatically changed

0 / 1: A T0 is automatically generated if an unserviceable tool is in the spindle at NC start

1 / 1: No statement

Bit 5: Reserved

Bit 6=0: Standard: If T0 or D0, only T0 or D0 is exactly programmed.

This means that MD20270 \$MC_CUTTING_EDGE_DEFAULT and MD20272 \$MC_SUMCORR_DEFAULT define, with the programming of T0 the value of D, DL.

For example, MD20270 \$MC_CUTTING_EDGE_DEFAULT=1

MD20272 \$MC_SUMCORR_DEFAULT=2

MD22550 \$MC_TOOL_CHANGE_MODE=0 (tool change with T programming)

N10 T0; T no. 0 has active number D1 and DL=2 which results in offset zero. If bit 2 is also set:

Programming of

a) T0; for tool deselection

b) D0; for offset deselection

generates an alarm, if at least one of the machine data

MD20270 \$MC_CUTTING_EDGE_DEFAULT

MD20272 \$MC_SUMCORR_DEFAULT

is not equal to zero (T0 D0 DL=0 is the correct programming).

or MD20272 \$MC_SUMCORR_DEFAULT is not equal to zero (D0 DL=0 is the correct programming).

Bit 6=1: controls the NCK response when programming (x, y, z all greater than zero), if at least one of

MD20270 \$MC_CUTTING_EDGE_DEFAULT

MD20272 \$MC_SUMCORR_DEFAULT

is not equal to zero.

a) Tx Dy -> T0

T0 is automatically programmed in NCK D0 or D0 DL=0; i.e. values not equal to zero of MD20270 \$MC_CUTTING_EDGE_DEFAULT, MD20272 \$MC_SUMCORR_DEFAULT are treated as value equal to zero.

b) Tx Dy -> T0 Dy, or T0 DL=z, or T0 Dy DL=z, or T0 D0 DL=z explicitly programmed values of D, DL are not influenced.

c) Dy DL=z -> D0

With D0, DL=0 is automatically programmed in the NCK; i.e. values in MD20272 \$MC_SUMCORR_DEFAULT unequal to zero are treated as values equal to zero.

d) Dy DL=z -> D0 DL=z

Explicitly programmed values of DL are not influenced.

If bit 2 is also set:

Only T0 / D0 have to be programmed for tool/offset deselection, and this does not generate an alarm.

The statements relating to MD20272 \$MC_SUMCORR_DEFAULT or DL are only valid if the total offset function is active

(see MD18080 \$MN_MM_TOOL_MANAGEMENT_MASK, bit 8).

Bit 7=0: When Tx is programmed, a check is made to see whether a tool with T number x is known in the T0 unit of the channel. If not, the program is stopped in this block with alarm 17190.

Bit 7=1: only if the tool basic functionality is active

(MD20310 \$MC_TOOL_MANAGEMENT_MASK, bit 0,1=0)

and (MD18102 \$MN_MM_TYPE_OF_CUTTING_EDGE=0):

When Tx is programmed, an unknown Tx is initially ignored, and the alarm relating to the preparation command (Tx) is also ignored until the D selection is interpreted in the program sequence. Only then is alarm 17191, which has been triggered by the preparation command, output. This means that the operator can take corrective actions with the D selection in this block. When the program is continued, the incorrect NC block is re-interpreted, and the preparation command is automatically executed again internally.

(This is of interest for Cutting-Edge-Default=0 or =-2 and D0 programming, otherwise the D of Cutting-Edge-Default is deselected on tool change..)

This variant is justified for programming "Tool number=Location" (turret as toolholder) without tool management. The turret can now be positioned on a location for which a tool has not (yet) been defined.

This bit has no meaning if bit 0=1 is set.

Bit 8=0: A tool that is located at a blocked magazine location is not taken into account when selecting a tool. (default setting)

Bit 8=1: Even a tool that is located at a blocked magazine location is taken into account when selecting a tool (this corresponds to the previous behavior.)

Bit 9=0: The tool status "to unload" (\$TC_TP8[T_No] bit10=1) has no meaning. (default setting)

Bit 9=1: A tool with the status "to unload" (\$TC_TP8[T_No] bit10=1) is not selected in T programming.

Bit 9=1: If a multitool or one of the tools on the multitool has the status "to unload" (\$TC_MTP8[MT_No] or \$TC_TP8[T_No] Bit10=1)

the tools on the multitool are not selected in T programming.

22600	SERUPRO_SPEED_MODE			EXP	K1	
-	Speed for block search run type 5			DWORD	Immediately	
-						
-	-	1, 1, 1, 1, 1, 1, 1...	0	3	2/2	M

Description:

This machine data specifies the search run mode: SERUPRO in more detail.

SERUPRO search run is activated with PI service _N_FINDBL mode parameter = 5.

SERUPRO means Search Run by Program test, i.e. traversing under program test from beginning of program to search target.

Note:

Program test does not move any axes/spindles.

MD22600 \$MC_SERUPRO_SPEED_MODE= 0

Program test with the search run/dry run speed

Under program test, the axes/spindles are traversed at the following velocity/speed:

Axes: MD22601 \$MC_SERUPRO_SPEED_FACTOR*dry run feed

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Spindles: MD22601 \$MC_SERUPRO_SPEED_FACTOR*programmed speed
 Dynamic axis / spindle limitations are not taken into account.
 MD22600 \$MC_SERUPRO_SPEED_MODE= 1
 Program test at programmed speed
 Under program test, the axes/spindles are traversed at the following velocity/speed:
 Axes: at the same velocity as dry run feed.
 Spindles: at the programmed speed.
 Dynamic axis / spindle limitations are taken into account.
 MD22600 \$MC_SERUPRO_SPEED_MODE= 2
 Program test at dry run speed
 Under program test, the axes/spindles are traversed at the programmed velocity/speed.
 Dynamic axis / spindle limitations are taken into account.
 MD22600 \$MC_SERUPRO_SPEED_MODE= 3
 Program test at search run speed
 Under program test, the axes/spindles are traversed at the following velocity/speed:
 Axes: MD22601 \$MC_SERUPRO_SPEED_FACTOR*programmed feed
 Spindles: MD22601 \$MC_SERUPRO_SPEED_FACTOR*programmed speed.
 Dynamic axis / spindle limitations are not taken into account.
 Note:
 With active revolutional feedrate (e.g. G95), the programmed F value is not multiplied by the factor MD22601 \$MC_SERUPRO_SPEED_FACTOR but only by the programmed spindle speed. Here again, this increases the effective path velocity by the MD22601 \$MC_SERUPRO_SPEED_FACTOR.
 Related to:
 SD42100 \$SC_DRY_RUN_FEED, MD22601 \$MC_SERUPRO_SPEED_FACTOR

22601	SERUPRO_SPEED_FACTOR			EXP	K1	
-	Speed factor for search run type 5			DOUBLE	Immediately	
-						
-	-	10.0, 10.0, 10.0, 10.0, 10.0, 10.0, 10.0, 10.0...	1.0	1.0E+301	2/2	M

Description: SERUPRO means Search Run by Program test, i.e. traversing under program test from beginning of program to search target.

Note:

Program test does not move any axes / spindles.

The machine data is relevant only if the first two bits of MD22600 \$MC_SERUPRO_SPEED_MODE are 0. The machine data has the following meaning:

Axes: MD specifies the factor by which the test run feedrate is multiplied.

Spindles: MD specifies the factor by which the programmed speed is multiplied.

Dynamic limitations of axes / spindles are always ignored.

Related to:

SD42100 \$SC_DRY_RUN_FEED, MD22600 \$MC_SERUPRO_SPEED_MODE

22620	START_MODE_MASK_PRT			EXP, C03	M3, K1	
-	Initial setting on special starts			UDWORD	Reset	
-						
-	-	0x400, 0x400, 0x400, 0x400, 0x400, 0x400, 0x400, 0x400...	0	0xFFFF	7/2	M

Description: This machine data is activated via MD22621 \$MC_ENABLE_START_MODE_MASK_PRT.

If MD22621 \$MC_ENABLE_START_MODE_MASK_PRT is in its initial setting, MD22620 \$MC_START_MODE_MASK_PRT is inactive.

If MD22620 \$MC_START_MODE_MASK_PRT is activated for "search via program test" (abbr. SERUPRO), then MD22620 \$MC_START_MODE_MASK_PRT replaces MD20112 \$MC_START_MODE_MASK when "search via program test" is started.

This enables a behavior deviating from PLC start to be set at the start of the search. The meaning of the bit-by-bit assignment of MD22620 \$MC_START_MODE_MASK_PRT is the same as that in MD20112 \$MC_START_MODE_MASK.

22621	ENABLE_START_MODE_MASK_PRT			EXP, C03	M3, K1	
-	Enables MD22620 \$MC_START_MODE_MASK_PRT			UDWORD	Reset	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x1	7/2	M

Description: MD22620 \$MC_START_MODE_MASK_PRT is activated via MD22621 \$MC_ENABLE_START_MODE_MASK_PRT.

If MD22621 \$MC_ENABLE_START_MODE_MASK_PRT is in its initial setting, MD22620 \$MC_START_MODE_MASK_PRT is inactive.

Bit0 = 1:

If a "search via program test" (English abbr. SERUPRO) is started from RESET (PI service _N_FINDBL mode parameter == 5), MD22620 \$MC_START_MODE_MASK_PRT replaces MD20112 \$MC_START_MODE_MASK.

This method can be used to set a start behavior differing from PLC start when the search is started.

22622	DISABLE_PLC_START			EXP	-	
-	Enable part program start via PLC			UDWORD	PowerOn	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x7FFFFFFF	2/2	M

Description: Allow part program start via PLC.

This machine data will ONLY be evaluated, if "Group-Serupro" mode is switched on. "Group-Serupro" is switched on by means of "\$MC_SERUPRO_MODE BIT2".

BIT0 = 0

A part program can be started in this channel only via the PLC. Starting via the part program command "START" is interlocked.

BIT0 = 1

A part program can be started in this channel only by means of the part program command "START" from another channel. Starting via the PLC is interlocked.

22680	AUTO_IPTR_LOCK			EXP, C03	K1	
-	Disable interrupt pointer			UDWORD	Reset	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x3	7/2	M

Description: With MD22680 \$MC_AUTO_IPTR_LOCK program areas are defined in which the individually indicated coupling types are active. If a program cancelation is executed in a program range that is defined as such, it will not be the currently executed part program block that is stored in the interrupt pointer (OPI module InterruptionSearch), but the last block prior to activation of the coupling.

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22700	TRACE_STARTTRACE_EVENT			EXP, C06	-	
-	Diagnostic data rec. starts with event TRACE_STARTTRACE_EVENT.			STRING	PowerOn	
NBUP						
-	-	-	-	-	2/2	M

Description: The machine data is intended for diagnostics.
The recording of the diagnostic data does not start until the event (TRACE_STARTTRACE_EVENT) has occurred at the trace point (TRACE_STARTTRACE_TRACEPOINT) and in the correct step (TRACE_STARTTRACE_STEP)!
The machine data is additionally activated using the Cancel alarm key.

22702	TRACE_STARTTRACE_STEP			EXP, C06	-	
-	Conditions for start of trace recording			STRING	PowerOn	
NBUP						
-	2		-	-	2/2	M

Description: The machine data is only intended for diagnostic use.
See TRACE_STARTTRACE_EVENT
For TRACE_STARTTRACE_EVENT BLOCK_CHANGE the string TRACE_STARTTRACE_STEP is interpreted as a file name and block number!
For BSEVENTTYPE_SETALARM the string is interpreted as an alarm number.
The machine data can be additionally activated using the Cancel alarm key.

22704	TRACE_STOPTRACE_EVENT			EXP, C06	-	
-	Conditions for stop of trace recording			STRING	PowerOn	
NBUP						
-	-	CLEARCANCELALARM_M, CLEARCANCELALARM_M, CLEARCANCELALARM_M, CLEA...	-	-	2/2	M

Description: The machine data is only intended for diagnostics.
The recording of the diagnostic data ends when the event (TRACE_STOPTRACE_EVENT) has occurred at the trace point (TRACE_STOPTRACE_TRACEPOINT) and in the correct step (TRACE_STOPTRACE_STEP)!
After reaching the stop condition, the previously recorded diagnostic data is stored in a file "NCSCTryy.MPF" or for NCU-LINK in "NCxxTRYy.MPF" in the MPF directory.
The machine data is additionally activated using the Cancel alarm key.

22706	TRACE_STOPTRACE_STEP			EXP, C06	-	
-	CommandSequenzStep with which the recording ends			STRING	PowerOn	
NBUP						
-	2		-	-	2/2	M

Description: The machine data is only intended for diagnostics.
The machine data can be additionally activated using the Cancel alarm key.

22708	TRACE_SCOPE_MASK			EXP, C06	-	
-	Selects the contents of the trace file			STRING	PowerOn	
NBUP						
-	-	-	-	-	2/2	M

Description: The machine data is only intended for diagnostics purposes.

Specific trace contents are selected with the MD data.

The entry SETALARM records the alarm environment and the block change in the main run is also logged by means of BLOCK_CHANGE.

The machine data is additionally activated using the Cancel alarm key.

22710	TRACE_VARIABLE_NAME			-	-	
-	Definition of trace data			STRING	PowerOn	
NBUP						
-	10	BL_NR, TR_POINT, EV_TYPE, EV_SRC, CS_ASTEP,, BL_NR, TR_POINT, EV...	-	-	2/2	M

Description: The machine data is only intended for diagnostic purposes.
The MD datum defines which data are recorded in the trace file.

22712	TRACE_VARIABLE_INDEX			EXP, C06	-	
-	Index for trace recording data			DWORD	PowerOn	
NBUP						
-	10	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0,...	0	0xFFFF	2/2	M

Description: The machine data is only intended for diagnostic use.
The MD data, together with TRACE_VARIABLE_NAME, determines which data are recorded in the trace file.
It enables access to an array element.
E.g. use as an axis index when accessing axis data.

22714	MM_TRACE_DATA_FUNCTION			EXP, C02, C06	-	
-	Activating diagnostics			UDWORD	PowerOn	
NBUP						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x1FFFFFFF	2/2	M

Description: The machine data is only intended for diagnostics purposes.
Activating diagnostics
An internal ring buffer records important events.
After a trigger event, the 'Cancel alarm' key is set as default,
the ring buffer is briefly frozen, read, and converted into an ASCII file
in the part program directory. The file name for the 1st channel
is ncsctr01.mpf and for the 7th channel it is ncsctr07.mpf.
The data in the ring buffer is referred to as dynamic data in the following.
In addition to the trigger event, other up-to-date data is read from the
NCK and transferred to the ASCII file. These recordings do
NOT have a history and are referred to as static data in the following.
Bit no. Significance when bit is set

```

-----
0 (LSB) Recording of dynamic data (see TRACE_VARIABLE_NAME)
1      Recording of block control static data
2      Recording of alarm data static data
3      Recording of process data static data
4      Recording of command sequence static data

```

3.3 NC machine data

- 5 Recording of tool management static data
- 6 Recording of the NCK version file. Static data
- 7 Recording of the states of the current block
Various states of the axes and the SPARPI. Static data
- 8 Recording of various states of the channel. Static data
- 9 Error states in the NCK memory management are scanned during trace generation.
An error renames the trace file. Static data
Possible names and their meanings:
NCFIER.MPF Error in the file system
NCSLER.MPF Error during string creation
NCFIER.MPF Error on New/Delete
- 10 All block changes in the interpreter are recorded. Dynamic data.
- 11 Axial VDI signals are recorded. Dynamic data.
Only in conjunction with MD18794 \$MN_MM_TRACE_VDI_SIGNAL
- 12 OEM traces are activated. Dynamic data.
- 13 Synchronized actions are recorded. Dynamic data.
NOTICE: Filled in applications with intensive use of
these trace points, other events are ignored!
That is why this bit should remain at 0 in these cases.
- 14 Reserved.
- 15 Recording of station commands. Dynamic data.
Note: Most important output of the NCK module NCSC!
- 16 Recording of gantry commands
- 17 Recording of changes in the drive's status
- 18 Recording of the processing of the Event-Queue and generation of command
sequences
- 19 Recording of time of event destructor calls
- 20 Recording of the dynamic limitations per block (only active when bit 0 is set).
- 21 Recording of the Look Ahead data and events for collision avoidance (only active
when bit 0 is set).
- 22 Recording of all Functions Config data.
Both a static part as well as a block-related part with the dynamic block data
are output at the time of trace generation.
- 22 Config data output (static)
- 23 Recording if computing time is given away during preprocessing (only active
when bit 0 is set).
- 24 Recording of multi-threading sequences (Multicore).
- 25 Recording of the external communication.
- 26 Recording of geometry data: positions, vLim, vLimSafety, OVR, clamping, etc.
- 27 Program trace: Extension of bit 10 to include recording of NC blocks in a
representation based on the basic block display with the prefix ID ":PT:"
- 28 Output of performance data in the static and, if bit 0 is set, in the dynamic
part, with corresponding trace configuration

22900	STROKE_CHECK_INSIDE			EXP, C01, C11	-	
-	Direction (inside/outside) in which prot. zone 3 is effective			BOOLEAN	PowerOn	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: This MD defines whether protection zone 3 is a protection zone inside or outside.

Meaning:

0: Protection zone 3 is a protection zone inside, i.e. the protection zone must not entered inwardly.

1: Protection zone 3 is a protection zone outside

22910	WEIGHTING_FACTOR_FOR_SCALE			EXP, C01, C11	-	
-	Input resolution for scaling factor			BOOLEAN	PowerOn	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: Definition of the unit for the scaling factor P and for the axial scaling factors I, J, K.

Meaning:

0 Scale factor in 0.001

1 Scale factor in 0.00001

Related to:

SD43120 \$SA_DEFAULT_SCALE_FACTOR_AXIS,

SD42140 \$SC_DEFAULT_SCALE_FACTOR_P

22914	AXES_SCALE_ENABLE			EXP, C01, C11	-	
-	Activation for axial scaling factor (G51)			BOOLEAN	PowerOn	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: This MD enables axial scaling.

Meaning:

0: Axial scaling not possible

1: Axial scaling possible -> MD DEFAULT_SCALE_FACTOR_AXIS is active

Related to:

SD43120 \$SA_DEFAULT_SCALE_FACTOR_AXIS

22920	EXTERN_FIXED_FEEDRATE_F1_ON			EXP, C01, C11	-	
-	Activation of fixed feedrates F1 - F9			BOOLEAN	PowerOn	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: This MD is used to activate the fixed feedrates set in SD42160

\$SC_EXTERN_FIXED_FEEDRATE_F1_F9[].

Meaning:

0: no fixed feedrates with F1 - F9

1: the feedrates set in SD42160 \$SC_EXTERN_FIXED_FEEDRATE_F1_F9[] become active when F1 - F9 are programmed.

Description: Assignment table of the axes positioned parallel to the geometry axes.

This table can be used to assign channel axes positioned parallel to the geometry axes. The parallel axes can then be activated as geometry axes in ISO mode using the G functions of plane selection (G17 - G19) and the axis name of the parallel axis.

The axis is then replaced by the axis defined via MD20050
\$MC_AXCONF_GEOAX_ASSIGN_TAB[].

Prerequisite:

The channel axes used must be active. (list position assigned in
AXCONF_MACHAX_USED). Entering zero deactivates the corresponding parallel geometry axis:

Description: Definition of the M functions for clockwise direction of rotation which can be used to address the spindle in the external language.

If this value is ≤ 0 , no addressing via the M function is possible.

Index 1:

Spindle number, index 0 corresponds to 1st spindle.

Description:	Definition of the P functions which can be used to address the spindle in the external language.
	Index 1:
	Spindle number, index 0 corresponds to 1st spindle.

Description:	Additive programmable frame components can be separately programmed and modified. 0: Additive translations which have been programmed with ATRANS are stored in the frame together with the absolute translation (prog. with TRANS). G58 and G59 are not possible.

1: The sum of the additive translations are stored in the fine offset of the programmable frame. The absolute and the additive translations can be changed independently of one another.

G58 and G59 are possible.

24002	CHBFRAME_RESET_MASK			C03	K2	
-	Active channel-specific base frames after reset			UDWORD	Reset	
-						
-	-	0xFFFF, 0xFFFF, 0xFFFF, 0xFFFF, 0xFFFF, 0xFFFF, 0xFFFF, 0xFFFF...	0	0xFFFF	7/2	M

Description: Bit mask for the reset setting of the channel-specific base frames which are included in the channel.

The following apply:

If MD20110 \$MC_RESET_MODE_MASK bit0 = 1 and BIT14 = 1

the entire base frame is determined on reset by chaining the base frame field elements, whose bit is 1 in the bit mask.

If MD20110 \$MC_RESET_MODE_MASK bit0 = 1 and BIT14 = 0

the entire base frame is deselected on reset.

24004	CHBFRAME_POWERON_MASK			C03	K2	
-	Reset channel-specific base frames after power on			UDWORD	PowerOn	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0xFFFF	7/2	M

Description: This machine data defines whether channel-specific base frames are reset in the data management on Power On.

That is

- Offsets and rotations are set to 0,
- Scalings are set to 1.
- Mirror image machining is disabled.

The selection can be made separately for individual base frames.

Bit 0 means base frame 0, bit 1 base frame 1 etc.

Value=0: Base frame is retained on Power On

Value=1: Base frame is reset in the data management on Power On.

Related to:

MD10615 \$MN_NCBFRAME_POWERON_MASK

24006	CHSFRAME_RESET_MASK			C03	K2	
-	Active system frames after reset			UDWORD	Reset	
-						
-	-	0x1, 0x1, 0x1, 0x1, 0x1, 0x1, 0x1, 0x1...	0	0x00000FFF	7/2	M

Description: Bit mask used for the reset setting of the channel-specific system frames included in the channel.

Bit 0: System frame for actual value setting and scratching is active after reset.

Bit 1: System frame for external work offset is active after reset.

Bit 2: Reserved, for TCARR and PAROT see MD20150 \$MC_GCODE_RESET_VALUES[].

Bit 3: Reserved, for TOROT and TOFRAME see MD20150 \$MC_GCODE_RESET_VALUES[].

Bit 4: System frame for workpiece reference points is active after reset.

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Bit 5: System frame for cycles is active after reset.
 Bit 6: Reserved; reset behavior dependent on MD20110 \$MC_RESET_MODE_MASK.
 Bit 7: System frame \$P_ISO1FR (ISO G51.1 Mirror) is active after reset.
 Bit 8: System frame \$P_ISO2FR (ISO G68 2DROT) is active after reset.
 Bit 9: System frame \$P_ISO3FR (ISO G68 3DROT) is active after reset.
 Bit 10: System frame \$P_ISO4FR (ISO G51 Scale) is active after reset.
 Bit 11: System frame \$P_RELFR is active after reset.
 Related to:
 MD28082 \$MC_MM_SYSTEM_FRAME_MASK

24007	CHSFRAME_RESET_CLEAR_MASK			C03	K2	
-	Deletion of system frames after reset			UDWORD	Reset	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x00000FFF	7/2	M

Description: Bit mask used to delete channel-specific system frames from the data management on reset.

Bit 0: System frame for actual value setting and scratching is deleted on reset.
 Bit 1: System frame for external work offset is deleted on reset.
 Bit 2: Reserved, for TCARR and PAROT, see MD20150 \$MC_GCODE_RESET_VALUES[].
 Bit 3: Reserved, for TOROT and TOFRAME, see MD20150 \$MC_GCODE_RESET_VALUES[].
 Bit 4: System frame for workpiece reference points is deleted on reset.
 Bit 5: System frame for cycles is deleted on reset.
 Bit 6: Reserved; reset behavior depends on MD20110 \$MC_RESET_MODE_MASK.
 Bit 7: System frame \$P_ISO1FR (ISO G51.1 Mirror) is deleted on reset.
 Bit 8: System frame \$P_ISO2FR (ISO G68 2DROT) is deleted on reset.
 Bit 9: System frame \$P_ISO3FR (ISO G68 3DROT) is deleted on reset.
 Bit 10: System frame \$P_ISO4FR (ISO G51 Scale) is deleted on reset.
 Bit 11: System frame \$P_RELFR is deleted on reset.

24008	CHSFRAME_POWERON_MASK			C03	K2	
-	Reset channel system frames after power on			UDWORD	PowerOn	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x00000FFF	7/2	M

Description: This machine data defines whether channel-specific system frames are reset in the data management on Power On. That is offsets and rotations are set to 0, scalings to 1. Mirroring is disabled.

The selection can be made separately for individual system frames.

Bit 0: System frame for set actual value and scratching is deleted after Power On.
 Bit 1: System frame for external work offset is deleted after Power On.
 Bit 2: System frame for TCARR and PAROT is deleted after Power On.
 Bit 3: System frame for TOROT and TOFRAME is deleted after Power On.
 Bit 4: System frame for work piece reference points deleted after Power On.
 Bit 5: System frame for cycles retained after Power On.
 Bit 6: System frame for transformations deleted after Power On.
 Bit 7: System frame \$P_ISO1FR (ISO G51.1 Mirror) is deleted after power ON.
 Bit 8: System frame \$P_ISO2FR (ISO G68 2DROT) is deleted after power ON.
 Bit 9: System frame \$P_ISO3FR (ISO G68 3DROT) is deleted after power ON.
 Bit 10: System frame \$P_ISO4FR (ISO G51 Scale) is deleted after power ON.

Bit 11: System frame \$P_RELFR is deleted after power ON.

Related to:

MD28082 \$MC_MM_SYSTEM_FRAME_MASK

24010	PFRAME_RESET_MODE	C03	K2
-	Reset mode for programmable frame	DWORD	Reset
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 1 7/2 M

Description: 0: Programmable frame is deleted at reset.
1: Programmable frame remains active at reset.

24020	FRAME_SUPPRESS_MODE	C03	K2
-	Positions for frame suppression	UDWORD	PowerOn
-			
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0 0x0000003 7/2 M

Description: .Bit mask for configuring the positions for frame suppressions (SUPA, G153, G53).
The following rule applies:
Bit 0: Positions for display (OPI) without frame suppression.
Bit 1: Position variables without frame suppression.

24030	FRAME_ACS_SET	C03	K2
-	Adjustment of SZS coordinate system	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 1 7/2 M

Description: 0: SZS results from the Work transformed with \$P_CYCFRAME and \$P_PFRAME.
1: SZS results from the Work transformed with \$P_CYCFRAME.

24040	FRAME_ADAPT_MODE	C03	K2
-	Adaptation of active frames	UDWORD	PowerOn
-			
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0 0x0000007 7/2 M

Description: Bit mask for adapting the active frames for axis configuration
The following applies:
Bit 0:
Rotations in active frames that rotate coordinate axes for which there are no geometry axes are deleted from the active frames.
Bit 1:
Shear angles in active frames are orthogonalized.
Bit 2:
Scalings of all geometry axes in the active frames are set to value 1.

24050	FRAME_SAA_MODE	C03	-
-	Saving and activating of data management frames	UDWORD	PowerOn
-			
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0 0x0000003 7/2 M

Description: Bit mask for saving and activating data management frames.
The following applies:

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Bit 0:

Data management frames are only activated by programming the bit masks \$P_CHBFRMASK, \$P_NCBFRMASK and \$P_CHSFRMASK. G500..G599 only activate the relevant settable frame, GFRAME0..GFRAME100 only activate the corresponding grinding frame. The reset behavior is independent of this.

Bit 1:

Data handling frames are not written implicitly by system functions such as TOROT, PAROT, ext. work offset, transformations.

24080	USER_FRAME_POWERON_MASK				N01	-	
-	Parameterize properties for settable frame				UDWORD	PowerOn	
-							
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x1	7/2	M	

Description: Setting the following bits activates certain properties of the settable frame:

Bit 0 = 0: default behavior.

Bit 0 = 1: if MD20152 \$MC_GCODE_RESET_MODE[7] = 1, the last active settable frame is selected again according to G code group 8 after power up of the control.

24100	TRAFO_TYPE_1			C07	F2, TE4, M1, K1, W1	
-	Definition of transformation 1 in channel			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: This MD specifies the first available transformation in each channel.

The 4 low-value bits identify the specific transformation of a specific transformation group. The transformation group is identified by a number starting with the 5th bit.

Meaning:

0 No transformation

ab 16

5-axis transformation with turnable tool

ab 32

5-axis transformation with turnable workpiece

ab 48

5-axis transformation with turnable tool and turnable workpiece

72

Generic 5-axis transformation. Type and kinematic data are determined by an associated, orientable toolholder.

see:

MD24582 \$MC_TRAFO5_TCARR_NO_1

MD24682 \$MC_TRAFO5_TCARR_NO_2

The 4 low-value bits have the following meaning for a 5-axis transformation:

0 axis sequence AB

1 axis sequence AC

2 axis sequence BA

3 axis sequence BC

4 axis sequence CA

5 axis sequence CB

8 Generic orientation transformation (3- 5 axes)

ab 256

TRANSMIT transformation

ab 512
 TRACYL transformation
 ab 1024
 TRAANG transformation
 2048
 TRACLG: centerless transformation
 ab 4096 bis 4098
 OEM transformation
 ab 8192
 TRACON: cascaded transformations
 Example:
 A 5-axis transformation with turnable tool and axis sequence CA (i.e. C axis turns A axis) has number 20 (= 16 + 4)
 Notice:
 Not all combinations of group numbers and axis sequence numbers are allowed. An error message is output if a number for a non-existent transformation is entered.
 Corresponds with:
 MD24200 \$MC_TRAFO_TYPE_2, MD24300 \$MC_TRAFO_TYPE_3, ... MD24460 \$MC_TRAFO_TYPE_8
 References:
 /FB/, F2, "5-Axis Transformation"

24110	TRAFO_AXES_IN_1			C07	F2, TE4, M1, K1, W1	
-	Axis assignment for the 1st transformation in the channel			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...	0	20	7/7	U

Description: Axis assignment at input point of 1st transformation
 The index input at the nth position states which axis is mapped internally from the transformation to axis n.
 Not relevant:
 No transformation
 Related to:
 MD24200 \$MC_TRAFO_TYPE_2, MD24300 \$MC_TRAFO_TYPE_3, ...
 MD24460 \$MC_TRAFO_TYPE_8
 References:
 /FB/, F2, "5-Axis Transformation"

24120	TRAFO_GEOAX_ASSIGN_TAB_1			C07	F2, TE4, TE4, M1, K1, W1	
-	Assignment of the geometry axes to channel axes for transformation 1			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

Description: This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 1.
 Not relevant:
 No transformation
 Related to:
 MD20050 \$MC_AXCONF_GEOAX_ASSIGN_TAB, if no transformation is active.

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References:

/FB/, K2, "Coordinate Systems, Axis Types, Axis Configurations, Workpiece-Related Actual Value System, External Work Offset"

24130	TRAFO_INCLUDES_TOOL_1			C07	-	
-	Tool handling with active 1st transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This machine data states for each channel whether the tool is handled during the 1st transformation or externally.

This machine data is evaluated only with specific transformations.

It is evaluated on the condition that the orientation of the tool with reference to the Basic Coordinate System cannot be changed by the transformation. In standard transformations, only the "inclined-axis transformation" fulfills this condition.

If this machine data is set, the Basic Coordinate System (BCS) refers to the tool reference point even with active transformations. Otherwise, it refers to the tool tip (Tool Center Point - TCP).

The method of operation of protection zones and working area limitations varies correspondingly.

24200	TRAFO_TYPE_2			C07	F2, M1	
-	Definition of the 2nd transformation in the channel			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: This MD states the second available transformation in each channel.

Same as TRAFO_TYPE_1, but for the second available transformation in the channel.

References:

/FB/, F2, "5-Axis Transformation"

24210	TRAFO_AXES_IN_2			C07	F2, M1	
-	Axis assignment for transformation 2			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,, ...	0	20	7/7	U

Description: TRAFO_AXES_IN_2(n)

Axis assignment at input of 2nd to 8th transformation.

Same meaning as for TRAFO_AXES_IN_1.

24220	TRAFO_GEOAX_ASSIGN_TAB_2			C07	F2, M1	
-	Assignment of geometry axes to channel axes for transformation 2			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

Description: This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 2.

Otherwise the meaning corresponds to TRAFO_GEOAX_ASSIGN_TAB_1.

24230	TRAFO_INCLUDES_TOOL_2			C07	-	
-	Tool handling with active 2nd transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This machine data states for each channel whether the tool is handled during the 2nd transformation or externally.

This machine data is evaluated only with specific transformations.

It is evaluated on the condition that the orientation of the tool with reference to the Basic Coordinate System cannot be changed by the transformation. In standard transformations, only "inclined-axis transformation" fulfills this condition.

If this machine data is set, the Basic Coordinate System (BCS) refers to the tool reference point even with active transformations. Otherwise, it refers to the tool tip (Tool Center Point - TCP).

The method of operation of protection zones and working area limitations varies correspondingly.

24300	TRAFO_TYPE_3			C07	M1	
-	Definition of the 3rd transformation in the channel			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: This MD states the third available transformation in each channel.

Same as TRAFO_TYPE_1, but for the third available transformation in the channel.

References:

/FB/, F2, "5-Axis Transformation"

24310	TRAFO_AXES_IN_3			C07	M1	
-	Axis assignment for transformation 3			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...	0	20	7/7	U

Description: Axis assignment at the input point of the 3rd transformation in the channel.

Meaning is the same as TRAFO_AXES_IN_1, but for the third available transformation in the channel.

24320	TRAFO_GEOAX_ASSIGN_TAB_3			C07	M1	
-	Assignment of geometry axes to channel axes for transformation 3			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

Description: This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 3.

Otherwise the meaning corresponds to TRAFO_GEOAX_ASSIGN_TAB_1.

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24330	TRAFO_INCLUDES_TOOL_3			C07	-	
-	Tool handling with active 3rd transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description:

This machine data states for each channel whether the tool is handled during the 3rd transformation or externally.

This machine data is evaluated only with specific transformations.

It is evaluated on the condition that the orientation of the tool with reference to the Basic Coordinate System cannot be changed by the transformation. In standard transformations, only "inclined-axis transformation" fulfills this condition.

If this machine data is set, the Basic Coordinate System (BCS) refers to the tool reference point even with active transformations. Otherwise, it refers to the tool tip (Tool Center Point - TCP).

The method of operation of protection zones and working area limitations varies correspondingly.

24400	TRAFO_TYPE_4			C07	M1	
-	Definition of the 4th transformation in the channel			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description:

This MD states the fourth available transformation in each channel.

Same as TRAFO_TYPE_1, but for the fourth available transformation in the channel.

References:

/FB/, F2, "5-Axis Transformation"

24410	TRAFO_AXES_IN_4			C07	F2, M1	
-	Axis assignment for the 4th transformation in the channel			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,, ...	0	20	7/7	U

Description:

Axis assignment at the input point of the 4th transformation in the channel.

Meaning is the same as TRAFO_AXES_IN_1, but for the fourth available transformation in the channel.

24420	TRAFO_GEOAX_ASSIGN_TAB_4			C07	M1	
-	Assignment of geometry axes to channel axes for transformation 4			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

Description:

This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 4.

Otherwise the meaning corresponds to TRAFO_GEOAX_ASSIGN_TAB_1.

24426	TRAFO_INCLUDES_TOOL_4			C07	-	
-	Tool handling with active 4th transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This machine data states for each channel whether the tool is handled during the 4th transformation or externally.

This machine data is evaluated only with specific transformations.

It is evaluated on the condition that the orientation of the tool with reference to the Basic Coordinate System cannot be changed by the transformation. In standard transformations, only "inclined-axis transformation" fulfills this condition.

If this machine data is set, the Basic Coordinate System (BCS) refers to the tool reference point even with active transformations. Otherwise, it refers to the tool tip (Tool Center Point - TCP).

The method of operation of protection zones and working area limitations varies correspondingly.

24430	TRAFO_TYPE_5			C07	M1	
-	Type of transformation 5 in the channel			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: Type of transformation available as the fifth in the channel. See MD24100 \$MC_TRAFO_TYPE_1 for explanation.

24432	TRAFO_AXES_IN_5			C07	F2	
-	Axis assignment for transformation 5			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,, ...	0	20	7/7	U

Description: Axis assignment at the input point of the 5th transformation. See TRAFO_AXES_IN_1 for explanation.

24434	TRAFO_GEOAX_ASSIGN_TAB_5			C07	M1	
-	Assignment of geometry axes to channel axes for transformation 5			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

Description: This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 5.

Otherwise the meaning corresponds to TRAFO_GEOAX_ASSIGN_TAB_1.

24436	TRAFO_INCLUDES_TOOL_5			C07	-	
-	Tool handling with active 5th transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This machine data states for each channel whether the tool is handled during the 5th transformation or externally.

The method of operation of protection zones and working area limitations varies correspondingly.

Description:	Type of transformation available as the sixth in the channel. See MD24100 \$MC_TRAFO_TYPE_1 for explanation.

Description:	Axis assignment at the input point of the 6th transformation. See TRAFO_AXES_IN_1 for explanation.

Description:	This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 6. Otherwise the meaning corresponds to TRAFO GEOAX ASSIGN TAB 1.

Description:	This machine data states for each channel whether the tool is handled during the 6th transformation or externally. This machine data is evaluated only with specific transformations. It is evaluated on the condition that the orientation of the tool with reference to the Basic Coordinate System cannot be changed by the transformation. In standard transformations, only "inclined-axis transformation" fulfills this condition. If this machine data is set, the Basic Coordinate System (BCS) refers to the tool reference point even with active transformations. Otherwise, it refers to the tool tip (Tool Center Point - TCP). The method of operation of protection zones and working area limitations varies correspondingly.

24450	TRAFO_TYPE_7			C07	-	
-	Type of transformation 7 in the channel			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: Type of transformation available as the seventh in the channel. See MD24100 \$MC_TRAFO_TYPE_1 for explanation.

24452	TRAFO_AXES_IN_7			C07	-	
-	Axis assignment for transformation 7			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...	0	20	7/7	U

Description:	Axis assignment at the input point of the 7th transformation. See TRAFO_AXES_IN_1 for explanation.

24454	TRAFO_GEOAX_ASSIGN_TAB_7			C07	-	
-	Assignment of geometry axes to channel axes for transformation 7			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

Description:	This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 7.

Otherwise the meaning corresponds to TRAFO GEOAX ASSIGN TAB 1.

24456	TRAFO_INCLUDES_TOOL_7			C07	-	
-	Tool handling with active 7th transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description:	This machine data states for each channel whether the tool is handled during the 7th transformation or externally.

This machine data is evaluated only with specific transformations.

It is evaluated on the condition that the orientation of the tool with reference to the Basic Coordinate System cannot be changed by the transformation. In standard transformations, only "inclined-axis transformation" fulfills this condition.

If this machine data is set, the Basic Coordinate System (BCS) refers to the tool reference point even with active transformations. Otherwise, it refers to the tool tip (Tool Center Point - TCP).

The method of operation of protection zones and working area limitations varies correspondingly.

24460	TRAFO_TYPE_8			C07	F2, TE4, M1	
-	Type of transformation 8 in the channel			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description:	Type of transformation available as the eighth in the channel. See MD24100 SMC TRAFO TYPE 1 for explanation.

3.3 NC machine data

24462	TRAFO_AXES_IN_8			C07	F2	
-	Axis assignment for transformation 8			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...	0	20	7/7	U

Description: Axis assignment at the input point of the 8th transformation. See TRAFO_AXES_IN_1 for explanation.

24464	TRAFO_GEOAX_ASSIGN_TAB_8			C07	-	
-	Assignment of geometry axes to channel axes for transformation 8			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

Description: This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 8.
Otherwise the meaning corresponds to TRAFO_GEOAX_ASSIGN_TAB_1.

24466	TRAFO_INCLUDES_TOOL_8			C07	-	
-	Tool handling with active 8th transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This machine data states for each channel whether the tool is handled during the 8th transformation or externally.
This machine data is evaluated only with specific transformations.
It is evaluated on the condition that the orientation of the tool with reference to the Basic Coordinate System cannot be changed by the transformation. In standard transformations, only "inclined-axis transformation" fulfills this condition.
If this machine data is set, the Basic Coordinate System (BCS) refers to the tool reference point even with active transformations. Otherwise, it refers to the tool tip (Tool Center Point - TCP).
The method of operation of protection zones and working area limitations varies correspondingly.

24470	TRAFO_TYPE_9			C07	M1	
-	Type of transformation 9 in the channel			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: Type of transformation available as the ninth in the channel. See MD24100 \$MC_TRAFO_TYPE_1 for explanation.

24472	TRAFO_AXES_IN_9			C07	-	
-	Axis assignment for transformation 9			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...	0	20	7/7	U

Description: Axis assignment at the input point of the 9th transformation. See TRAFO_AXES_IN_1 for explanation.

Description: This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 9.

Description: Same as TRAFO_INCLUDES_TOOL_1, but for the 9th transformation.

Description:	Same as TRAFO_TYPE_1, but for the tenth available transformation in the channel.

Description:	Axis assignment at the input of the 10th transformation. See TRAFO_AXES_IN_1 for explanation.

Description:	Assignment table of geometry axes with transformation 10 Same as AXCONF GEOAX ASSIGN TAB, but only effective when transformation 10 is active.

Description:	Same as TRAFO INCLUDES TOOL 1, but for the 10th transformation.

3.3 NC machine data

24500	TRAFO5_PART_OFFSET_1			C07	F2, M1	
mm	Offset vector of 5-axis transformation 1			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description:

This machine data designates an offset of the workpiece carrier for the first (MD24500 \$MC_TRAFO5_PART_OFFSET_1) or second (MD24600 \$MC_TRAFO5_PART_OFFSET_2) 5-axis transformation of a channel, and has a specific meaning for the different machine types:

Machine type 1 (two-axis swivel head for tool):

Vector from machine reference point to zero point of workpiece table. This will generally be a zero vector if both coincide.

Machine type 2 (two-axis rotary table for workpiece):

Vector from the second rotary joint of workpiece rotary table to zero point of table.

Machine type 3 (single-axis rotary table for workpiece and single-axis swivel head for tool):

Vector from rotary joint of workpiece table to zero point of table.

MD irrelevant:

if the "5-Axis Transformation" option is not installed.

24510	TRAFO5_ROT_AX_OFFSET_1			C07	F2, M1	
degrees	Position offset of rotary axes 1/2/3 for 5-axis transformation 1			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0,...	-1.0E+301	1.0E+301	7/7	U

Description:

This machine data designates the angular offset of the first or second rotary axis in degrees for the first 5-axis transformation of a channel.

MD irrelevant:

if the "5-Axis Transformation" option is not installed.

24520	TRAFO5_ROT_SIGN_IS_PLUS_1			C07	F2, M1	
-	Sign of rotary axis 1/2/3 for 5-axis transformation 1			BOOLEAN	NEW CONF	
-						
-	3	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description:

This machine data designates the sign with which the two rotary axes are included in the first 5-axis transformation of a channel.

MD = 0 (FALSE):

Sign is reversed.

MD = 1 (TRUE) :

Sign is not reversed and the traversing direction is defined according to MD32100 \$MA_AX_MOTION_DIR.

This machine data does not mean that the rotational direction of the rotary axis concerned is to be reversed, but specifies whether its motion is in the mathematically positive or negative direction when the axis is moving in the positive direction.

The result of a change to this machine data is not therefore a change in the rotational direction, but a change in the compensatory motion of the linear axes.

However, if a directional vector and thus, implicitly, a compensatory motion is specified, the result is a change in the rotational direction of the rotary axis concerned.

On a real machine, therefore, the machine data may be set to FALSE (or zero) only if the rotary axis is turning in an anti-clockwise direction when moving in a positive direction.

MD irrelevant:

if the "5-Axis Transformation" option is not installed.

24530	TRAFO5_NON_POLE_LIMIT_1			C07	F2	
degrees	Definition of pole range for 5-axis transformation 1			DOUBLE	NEW CONF	
-						
-	-	2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0...	-1.0E+301	1.0E+301	7/7	U

Description: This MD designates a limit angle for the fifth axis of the first 5-axis transformation with the following properties: if the path runs below this angle past the pole, the traverse will pass through the pole.

For the 5-axis transformation, the two orientation axes of the tool form a coordinate system of length and width circles on a spherical surface. If orientation programming (that is the orientation vector lies in a plane) leads the path so close past the pole that the angle defined by the MD is undershot then there is a deviation from the defined interpolation such that the interpolation runs through the pole.

Alarm 14112 is output if this modification of the path gives a deviation greater than a tolerance defined by MD24540 TRAFO5\$MC_TRAFO5_POLE_LIMIT_1.

MD irrelevant:

If the "5-Axis Transformation" option is not installed.

Also irrelevant with programming in the machine coordinate system ORIMKS.

Related to:

MD: TRAFO5_POLE_LIMIT_n

24540	TRAFO5_POLE_LIMIT_1			C07	F2, M1	
degrees	End angle tolerance with interpolation through pole for 5-axis transf.			DOUBLE	NEW CONF	
-						
-	-	2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0...	-1.0E+301	1.0E+301	7/7	U

Description: This MD designates an end angle tolerance for the fifth axis of the first 5-axis transformation with the following properties:

With the interpolation through the pole point, only the fifth axis moves, the fourth axis retains its starting position. If a motion is programmed that does not run exactly through the pole point but will run near the pole within the area given by MD: TRAFO5_NON_POLE_LIMIT_n, there is a deviation from the defined path as the interpolation runs exactly through the pole point. This results in a deviation in the position of the end point of the fourth axis (the polar axis) from the programmed value.

This MD defines the angle by which the polar axis may deviate from the programmed value with 5-axis transformation when switching from the programmed interpolation to the interpolation through the pole point.

Alarm 14112 is output if there is a greater deviation and the interpolation is not executed.

MD irrelevant:

If the "5-Axis Transformation" option is not installed.

Also irrelevant with programming in the machine coordinate system ORIMKS.

Related to:

3.3 NC machine data

MD2.... \$MC_TRAFO5_NON_POLE_LIMIT_...

24542	TRAFO5_POLE_TOL_1	C07	-
degrees	End angle tolerance for tool orientation	DOUBLE	NEW CONF
-			
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0

Description: End angle tolerance for interpolation through the pole for the 1st 5/6-axis transformation.

This MD is evaluated only by the generic 5/6-axis transformation.

If the programmed end orientation lies within the body cone and within the tolerance cone specified by this MD, the pole axis does not move and retains its starting positions. The other rotary axis, however, moves to the programmed angle.

This results in the end orientation deviating from the programmed orientation.

Another function of this MD is the handling of the programmed end orientation with non-orthogonal kinematics. As a rule, not all tool orientations can be set with these machine kinematics.

Alarm 14112 is output if an orientation is programmed that lies outside the settable range of the orientation cone (the programmed orientation path is not possible).

However, if the programmed orientation still lies within the range defined by MD24542 \$MC_TRAFO5_POLE_TOL, an alarm is not output, and the programmed orientation is accepted.

However, the programmed orientation is corrected so that the orientation remains stationary at the edge of the settable range.

The maximum active value of this MD is the value of MD TRAFO5_POLE_LIMIT_1, which is used to define the body cone.

24550	TRAFO5_BASE_TOOL_1	C07	F2, M1, W1
mm	Vector of base tool on activation of 5-axis transformation 1	DOUBLE	NEW CONF
-			
-	3	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, ...	-1.0E+301

Description: This MD specifies the vector of the base tool which takes effect when the first transformation is activated without a length compensation being selected. Programmed length compensations have an additive effect with respect to the base tool.

MD irrelevant:
if the "5-Axis Transformation" option is not installed.

24558	TRAFO5_JOINT_OFFSET_PART_1	C07	F2, M1, W1
mm	Vector of kinematic table offset	DOUBLE	NEW CONF
-			
-	3	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, ...	-1.0E+301

Description: This machine data is only evaluated for generic 5-axis transformations with rotatable workpiece and rotatable tool (TRAFO_TYPE = 56, mixed kinematics).

It indicates the part of the vector between table and turning head assigned to the table.

Only the sum of this MD and MD TRAF05_JOINT_OFFSET is entered in the transformation equations.

A difference results only when reading the whole tool length using the function GETTCOR. In this case, only the MD TRAF05_JOINT_OFFSET is considered.

On a machine with mixed kinematics, this machine data can be used to assign the machine data of the 5-axis transformation and the parameters of the orientable tool holder uniquely to one another as follows:

Orientable tool holder	5-axis transformation (1st transformation)
1	TRAF05_JOINT_OFFSET_1
2	TRAF05_BASE_TOOL_1
3	TRAF05_JOINT_OFFSET_PART_1
4	TRAF05_PART_OFFSET_1

24560	TRAFO5_JOINT_OFFSET_1			C07	F2, W1	
mm	Vector of the kinem.offset of the 1st 5-axis transf. in channel			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data designates the vector between first and second rotary joint for the first transformation of a channel and has a specific meaning for the various machine types:

Machine type 1 (two-axis swivel head for tool) and:

Machine type 2 (two-axis rotary table for workpiece):

Vector between first and second rotary joint of tool rotary head or workpiece rotary table.

Machine type 3 (single-axis rotary table for workpiece and single-axis swivel head for tool):

Vector from machine reference point to joint of workpiece table.

MD irrelevant:

if the "5-Axis Transformation" option is not installed. The same applies for 3-axis and 4-axis transformations.

24561	TRAF06_JOINT_OFFSET_2_3_1			C07	F2	
mm	Vector of kinematic offset			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: In the case of 6-axis transformations, defines the offset between the 2nd and third rotary axes for the 1st transformation of each channel.

24562	TRAFO5_TOOL_ROT_AX_OFFSET_1			C07	M1	
mm	Offset of swivel point of 1st rotary axis on 5-axis transform. 1			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: In the case of a 5-axis transformation with a swiveling linear axis, the value indicates the offset of the rotary axis which swivels the linear axis with reference to machine zero for the 1st transformation.

3.3 NC machine data

MD irrelevant for:
 other 5-axis transformations
 Related to:
 MD24662 \$MC_TRAFO5_TOOL_ROT_AX_OFFSET_2

24564	TRAFO5_NUTATOR_AX_ANGLE_1			C07	M1	
degrees	Nutating head angle in 5-axis transformation			DOUBLE	NEW CONF	
-						
-	-	45.0, 45.0, 45.0, 45.0, 45.0, 45.0, 45.0, 45.0...	-89.	89.	7/7	U

Description: Angle between the second rotary axis and the axis corresponding to it in the rectangular coordinate system
 MD irrelevant for a transformation type other than "universal milling head".
 Related to:
 MD2.... \$MC_TRAFO_TYPE...

24566	TRAFO5_NUTATOR_VIRT_ORIAX_1			C07	M1	
-	Virtual orientation axes			BOOLEAN	NEW CONF	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/7	U

Description: The MD has the following values:
 0: The axis angles of the orientation axes are machine axis angles.
 1: Virtual orientation axes are defined that form a rectangular coordinate system and the axis angles are rotations around these virtual axes.

24570	TRAFO5_AXIS1_1			C07	F2, M1, W1	
-	Direction of 1st rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: The MD indicates the vector that describes the direction of the first rotary axis in the general 5-axis transformation (TRAFO_TYPE_* = 24).
 The vector can have any magnitude.
 Example:
 Both with (0, 1, 0) and with (0, 7.21, 0), the same axis is described (in the direction of the 2nd geometry axis, i.e. usually Y).
 Valid for the first transformation of a channel.

24572	TRAFO5_AXIS2_1			C07	F2, M1, W1	
-	Direction of 2nd rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates the vector that describes the direction of the second rotary axis in the general 5-axis transformation (TRAFO_TYPE_* = 24, 40, 56).
 The vector can have any magnitude except zero.
 Example:

Both with (0, 1, 0) and with (0, 7.21, 0), the same axis is described (in the direction of the 2nd geometry axis, i.e. usually Y).

Valid for the first transformation of a channel.

24573	TRAFO5_AXIS3_1			C07	F2	
-	Direction of the 3rd rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates the vector which defines the direction of the third rotary axis in the case of the general 6-axis transformation (TRAFO_TYPE_* = 24, 40, 56, 57).

The vector may have any value except zero.

Example:

The same axis is defined with both (0, 1, 0) and (0, 7.21, 0) (in the direction of the 2nd geometry axis, that is as a rule Y).

Valid for the first orientation transformation of a channel.

24574	TRAFO5_BASE_ORIENT_1			C07	F2, M1	
-	Vector of the tool base orientation for 5-axis transformation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates the vector of the tool orientation in the general 5-axis transformation (TRAFO_TYPE_* = 24, 40, 56) if this is not defined on the transformation call or read from a programmed tool.

The vector can have any magnitude except zero.

24576	TRAFO6_BASE_ORIENT_NORMAL_1			C07	F2	
-	Normal tool vector in 6-axis transformation			DOUBLE	NEW CONF	
-						
-	3	0.0, 1.0 , 0.0, 0.0, 1.0 , 0.0, 0.0, 1.0 , 0.0, 0.0, 1.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates a vector that is perpendicular to the tool orientation (TRAFO5_BASE_ORIENTATION_1) in the case of the general 6-axis transformation (TRAFO_TYPE_* = 24, 40, 56, 57).

If TRAFO6_BASE_ORIENT_NORMAL_1 and TRAFO5_BASE_ORIENTATION_1 are neither orthogonal nor parallel, then the two vectors are orthogonalized by modifying the normal vector. The two vectors must not be parallel.

The vector may have any value other than zero.

Valid for the first orientation transformation of a channel.

24580	TRAFO5_TOOL_VECTOR_1			C07	F2	
-	Direction of orientation vector for the first 5-axis transf.			BYTE	NEW CONF	
-						
-	-	2, 2, 2, 2, 2, 2, 2, 2...	0	2	7/2	M

Description: Indicates the direction of the orientation vector for the first 5-axis transformation for each channel.

0: Tool vector in x direction

1: Tool vector in y direction

2: Tool vector in z direction

24582	TRAFO5_TCARR_NO_1			C07	F2	
-	TCARR number for the 1st 5-axis transformation			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: If the value of this machine data is not zero and if MD2.... \$MC_TRAFO_TYPE..., which points to the first orientation transformation, has the value 72, then the kinematics data (offsets etc.) that parameterize the first 5-axis transformation, will not be read from the machine data, but from the data of the orientable tool carrier to which this machine data refers.

24585	TRAFO5_ORIAX_ASSIGN_TAB_1			C07	F2, M1	
-	Orientation axis / channel axis assignment transformation 1			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/2	M

Description:	Assignment table of the orientation axes for 5-axis transformation 1 Only active with active 5-axis transformation 1.

24590	TRAFO5_ROT_OFFSET_FROM_FR_1			C01, C07	F2	
-	Offset of transformation rotary axes from WO.			BOOLEAN	NEW CONF	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: The positions (angles) of the rotary axes are defined by the offset for the orientation axes of the 5/6-axis transformation, whereby the tool orientation is in the basic position. This offset has 2 components. The first one is the value of MD24510 \$MC_TRAFO5_ROT_AX_OFFSET_1 for the 1st orientation transformation. For the other orientation transformations, these are the values of MD24610/25210/25310 \$MC_TRAFO5_ROT_AX_OFFSET_2/3/4/. The 2nd component is defined when the transformation is activated. Either directly as an optional parameter with the language command TRAORI(), or it can be taken from an active work offset of the rotary axes that are active when the transformation is activated. This is only taken into the offset of the orientation axes if this MD has the value TRUE, and if the work offsets are retained when the transformation is activated, this means that MD10602: \$MN FRAME GEOAX CHANGE MODE > 0.

Note: In the normal case, the automatic acceptance of active work offsets into the offset is only useful for the polar axis with table kinematics. This means, for example, with AC kinematics for the C-axis. If the offset is changed in another orientation axis, especially in the non-polar axis, this changes the kinematic behavior of the transformation, and may lead to the compensatory motions of the linear axes no longer being correct.

24594	TRAFO7_EXT_ROT_AX_OFFSET_1			C07	F2	
degrees	Position offset of the external rotary axes for 7-axis transformation 1			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0,...	-1.0E+301	1.0E+301	7/7	U

Description:	This machine data designates the angular offset of the external rotary axis in degrees for the first 7-axis transformation of a channel.

MD irrelevant:

if the "5-Axis Transformation" option is not installed.

24595	TRAFO7_EXT_AXIS1_1			C07	F2	
-	Direction of the 1st external rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0, 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: The MD indicates the vector that describes the direction of the first external rotary axis in the general 5/6-axis transformation (TRAFO_TYPE_* = 24).

The vector can have any magnitude.

Example:

Both with (0, 1, 0) and with (0, 7.21, 0), the same axis is described (in the direction of the 2nd geometry axis, i.e. usually Y).

Valid for the first transformation of a channel.

24600	TRAFO5_PART_OFFSET_2			C07	M1	
mm	Offset vector of the 2nd 5-axis transformation in the channel			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data designates an offset of the workpiece carrier for the first (MD24500 \$MC_TRAFO5_PART_OFFSET_1) or second (MD24600 \$MC_TRAFO5_PART_OFFSET_2) 5-axis transformation of a channel, and has a specific meaning for the different machine types:

Machine type 1 (two-axis swivel head for tool):

Vector from machine reference point to zero point of workpiece table. This will generally be a zero vector if both coincide.

Machine type 2 (two-axis rotary table for workpiece):

Vector from second joint of workpiece rotary table to zero point of table.

Machine type 3 (single-axis rotary table for workpiece and single-axis swivel head for tool):

Vector from joint of workpiece table to zero point of table.

MD irrelevant:

if the "5-Axis Transformation" option is not installed.

24610	TRAFO5_ROT_AX_OFFSET_2			C07	M1	
degrees	Position offset of rotary axes 1/2/3			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0,				

Description: Indicates the offset for each channel of the rotary axes in degrees for the second orientation transformation.

3.3 NC machine data

24620	TRAFO5_ROT_SIGN_IS_PLUS_2			C07	F2, M1	
-	Sign of rotary axis 1/2/3 for 5-axis transformation 2			BOOLEAN	NEW CONF	
-						
-	3	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description:

This machine data designates the sign with which the two rotary axes are included in the second 5-axis transformation of a channel.

MD = 0 (FALSE):

Sign is reversed.

MD = 1 (TRUE) :

Sign is not reversed and the traversing direction is defined according to MD32100 \$MA_AX_MOTION_DIR.

This machine data does not mean that the rotational direction of the rotary axis concerned is to be reversed, but specifies whether its motion is in the mathematically positive or negative direction when the axis is moving in the positive direction.

The result of a change to this data is not therefore a change in the rotational direction, but a change in the compensatory motion of the linear axes.

However, if a directional vector and thus, implicitly, a compensatory motion is specified, the result is a change in the rotational direction of the rotary axis concerned.

On a real machine, therefore, the machine data may be set to FALSE (or zero) only if the rotary axis is turning in an anti-clockwise direction when moving in a positive direction.

MD irrelevant:

if the "5-Axis Transformation" option is not installed.

24630	TRAFO5_NON_POLE_LIMIT_2			C07	F2, M1	
degrees	Definition of pole range for 5-axis transformation 2			DOUBLE	NEW CONF	
-						
-	-	2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0...	-1.0E+301	1.0E+301	7/7	U

Description:

This MD designates a limit angle for the fifth axis of the second 5-axis transformation with the following properties: if the path runs past the pole below this angle, the traverse passes through the pole.

In a 5-axis transformation, the two orientation axes of the tool form a coordinate system of length and width circles on a spherical surface. If orientation programming (that is the orientation vector lies in a plane) leads the path so closely past the pole that the angle defined by this MD is undershot, then there is a deviation from the defined interpolation such that the interpolation runs through the pole.

Alarm 14112 is output if this modification of the path results in a deviation greater than a tolerance defined by MD24640 \$MC_TRAFO5_POLE_LIMIT_2.

MD irrelevant:

If the "5-Axis Transformation" option is not installed.

Also irrelevant with programming in the machine coordinate system ORIMKS.

Related to:

MD2.... \$MC_TRAFO5_POLE_LIMIT...

24640	TRAFO5_POLE_LIMIT_2			C07	F2, M1	
degrees	End angle tolerance for tool orientation			DOUBLE	NEW CONF	
-						
-	-	2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0...	-1.0E+301	1.0E+301	7/7	U

Description:

This MD designates an end angle tolerance for the fifth axis of the second 5-axis transformation with the following properties:

With the interpolation through the pole point, only the fifth axis moves, the fourth axis retains its starting position. If a motion is programmed that does not run exactly through the pole point but is to run near the pole within the area given by MD: TRAFO5_NON_POLE_LIMIT_n then there is a deviation from the defined path as the interpolation runs exactly through the pole point. This results in a deviation in the position of the end point of the fourth axis (the polar axis) from the programmed value.

This MD defines the angle by which the polar axis may deviate from the programmed value with 5-axis transformation when switching from the programmed interpolation to the interpolation through the pole point.

An error message (alarm 14112) is output if there is a greater deviation and the interpolation is not executed.

MD irrelevant:

If the "5-Axis Transformation" option is not installed.

Also irrelevant with programming in the machine coordinate system ORIMKS.

Related to:

MD24530 \$MC_TRAFO5_NON_POLE_LIMIT_1

24642	TRAFO5_POLE_TOL_2			C07	-	
degrees	End angle tolerance for pole interpolation			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0E+301	7/7	U

Description:

End angle tolerance for interpolation through the pole for the 2nd 5/6-axis transformation.

This MD is evaluated only by the generic 5/6-axis transformation.

If the programmed end orientation lies within the body cone and within the tolerance cone

specified by this MD, the pole axis does not move and retains its starting positions. However, the other rotary axis moves to the programmed angle.

This results in the end orientation deviating from the programmed orientation.

Another function of this MD is the handling of the programmed end orientation with non-orthogonal kinematics. As a rule, not all tool orientations can be set with these machine kinematics.

Alarm 14112 is output if an orientation is programmed that lies outside the settable range of the orientation cone (the programmed orientation path is not possible).

However, if the programmed orientation still lies within the range defined by MD24542 \$MC_TRAFO5_POLE_TOL,

an alarm is not output, and the programmed orientation is accepted.

However, the programmed orientation is corrected so that the orientation remains stationary at the edge of the settable range.

3.3 NC machine data

The maximum active value of this MD is the value of MD TRAF05_POLE_LIMIT_1, which is used to define the body cone.

24650	TRAF05_BASE_TOOL_2			C07	M1, W1	
mm	Vector of base tool on activation of 5-axis transformation 2			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: This MD indicates the vector of the base tool which takes effect when the second transformation is activated without a length compensation being selected. Programmed length compensations have an additive effect with respect to the base tool.

MD irrelevant:

if the "5-Axis Transformation" option is not installed.

24658	TRAFO5_JOINT_OFFSET_PART_2			C07	M1, W1	
mm	Vector of kinematic table offset			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Same as MD24558 \$MC_TRAFO5_JOINT_OFFSET_PART_1, but for the second transformation.

24660	TRAFO5_JOINT_OFFSET_2			C07	W1	
mm	Vector of the kinem.offset of the 2nd 5-axis transformation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data designates the vector between first and second rotary joint for the first transformation of a channel and has a specific meaning for the various machine types:

Machine type 1 (two-axis swivel head for tool) and:

Machine type 2 (two-axis rotary table for workpiece):

Vector between first and second rotary joint of tool rotary head or workpiece rotary table.

Machine type 3 (single-axis rotary table for workpiece and single-axis swivel head for tool):

Vector from machine reference point to joint of workpiece table.

MD irrelevant:

if the "5-Axis Transformation" option is not installed. The same applies for 3-axis and 4-axis transformations.

24661	TRAFO6_JOINT_OFFSET_2_3_2			C07	-	
mm	Vector of kinematic offset			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: As TRAF06_JOINT_OFFSET_2_3_1 but for the second transformation.

24662	TRAFO5_TOOL_ROT_AX_OFFSET_2			C07	M1	
mm	Offset swivel point of 2nd 5-axis transformation (swivelled linear axis)			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: In the case of 5-axis transformation with swiveled linear axis, the value indicates the offset of the rotary axis which swivels the linear axis with reference to machine zero for the 2nd transformation.

MD irrelevant for:

other 5-axis transformations

Related to:

MD24562 \$MC_TRAFO5_TOOL_ROT_AX_OFFSET_1

24664	TRAFO5_NUTATOR_AX_ANGLE_2			C07	M1	
degrees	Nutating head angle			DOUBLE	NEW CONF	
-						
-	-	45.0, 45.0, 45.0, 45.0, 45.0, 45.0, 45.0, 45.0...	-89.	89.	7/7	U

Description: Angle between the second rotary axis and the axis corresponding to it in the rectangular coordinate system

MD irrelevant for:

Transformation type other than "universal milling head"

Related to:

MD24564 \$MC_TRAFO5_NUTATOR_AX_ANGLE_1

24666	TRAFO5_NUTATOR_VIRT_ORIAX_2			C07	M1	
-	Virtual orientation axes			BOOLEAN	NEW CONF	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/7	U

Description: The MD has the following values:

0: The axis angles of the orientation axes are machine axis angles.

1: Virtual orientation axes are defined that form a rectangular coordinate system and the axis angles are rotations around these virtual axes.

24670	TRAF05_AXIS1_2			C07	F2, M1	
-	Direction of 1st rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: As for TRAF05_AXIS1_1 but for the second orientation transformation of a channel.

3.3 NC machine data

24672	TRAF05_AXIS2_2			C07	M1	
-	Direction of 2nd rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: As for TRAF05_AXIS2_1 but for the second transformation of a channel.

24673	TRAFO5_AXIS3_2			C07	-	
-	Direction of the 3rd rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: As TRAF05_AXIS3_1 but for the second orientation transformation of a channel.

24674	TRAF05_BASE_ORIENT_2			C07	F2, M1	
-	Basic tool orientation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: As for TRAF05_BASE_ORIENT_1 but for the second transformation of a channel.

24676	TRAFO6_BASE_ORIENT_NORMAL_2			C07	-	
-	Normal tool vector			DOUBLE	NEW CONF	
-						
-	3	0.0, 1.0 , 0.0, 0.0, 1.0 , 0.0, 0.0, 1.0 , 0.0, 0.0, 1.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: As TRAF06_BASE_ORIENT_NORMAL_1 but for the second orientation transformation

24680	TRAF05_TOOL_VECTOR_2			C07	F2	
-	Direction of orientation vector			BYTE	NEW CONF	
-						
-	-	2, 2, 2, 2, 2, 2, 2, 2...	0	2	7/2	M

Description: Indicates the direction of the orientation vector for the second 5-axis transformation for each channel.

0: Tool vector in x direction

1: Tool vector in y direction

2: Tool vector in z direction

24682	TRAF05_TCARR_NO_2			C07	F2	
-	TCARR number for the 2nd 5-axis transformation			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: Same as TRAF05_TCARR_NO_1, but for the second orientation transformation.

24685	TRAFO5_ORIAX_ASSIGN_TAB_2			C07	F2, M1	
-	Orientation axis / channel axis assignment transformation 2			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/2	M

Description: Assignment table of the orientation axes for 5-axis transformation 2
Only active with active 5-axis transformation 2.
Otherwise the meaning is the same as TRAF05_ORIAX_ASSIGN_TAB_1.

24690	TRAFO5_ROT_OFFSET_FROM_FR_2			C01, C07	-	
-	Offset of transformation rotary axes from WO.			BOOLEAN	NEW CONF	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: Same as TRAF05_ROT_OFFSET_FROM_FR_1, but for the 2nd transformation of a channel

24694	TRAFO7_EXT_ROT_AX_OFFSET_2			C07	F2	
degrees	Position offset of the external rotary axes for 7-axis transformation 2			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0,...	-1.0E+301	1.0E+301	7/7	U

Description:	This machine data designates the angular offset of the external rotary axis in degrees for the second 7-axis transformation of a channel. MD irrelevant: if the "5-Axis Transformation" option is not installed.

24695	TRAFO7_EXT_AXIS1_2			C07	F2	
-	Direction of the 1st external rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description:	The MD indicates the vector that describes the direction of the second external rotary axis in the general 5/6-axis transformation (TRAFO_TYPE_* = 24). The vector can have any magnitude. Example: Both with (0, 1, 0) and with (0, 7.21, 0), the same axis is described (in the direction of the 2nd geometry axis, i.e. usually Y). Valid for the first transformation of a channel.

24700	TRAANG_ANGLE_1			C07	M1	
degrees	Angle between Cartesian axis and real (inclined) axis			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/7	U

3.3 NC machine data

Description: Indicates for the first agreed TRAANG transformation of the channel the angle of the inclined axis in degrees between the 1st machine axis and the 1st basic axis while TRAANG is active. The angle is measured positively clockwise.

Related to:

MD24750 \$MC_TRAANG_ANGLE_2

24710	TRAANG_BASE_TOOL_1			C07	M1	
mm	Vector of base tool for 1st TRAANG transformation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates a basic offset of the tools zero for the 1st TRAANG transformation. The offset is referenced to the geometry axes valid when TRAANG is active. The basic offset is included with and without selection of the tool length compensation. Programmed length corrections have an additive effect with respect to the basic tool. The index i takes the values 0, 1, 2 for the 1st to 3rd geometry axes.

Related to:

MD24760 \$MC_TRAANG_BASE_TOOL_2

24720	TRAANG_PARALLEL_VELO_RES_1			C07	M1	
-	Velocity margin for 1st TRAANG transformation			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0	7/7	U

Description: Indicates the axis velocity reserve for jog, positioning and oscillating movements for each channel for the first TRAANG transformation which is held ready on the parallel axis (see MD2.... \$MC_TRAFO_AXES_IN_...[1]) for the compensating movement. Velocity reserve to be provided for jog, positioning and oscillating movements on the parallel axis to handle the compensating movement as a consequence of the inclined axis.

0.0 means that the control or the transformation itself determines the reserve according to the angle of the inclined axis and the velocity capacity of the inclined and parallel axes. - The criterion for this is that the same velocity limit has to be maintained in the direction of the parallel axis and the (virtual) axis at right-angles to it.

>0.0 means that a fixed reserve has been set (MD24720 \$MC_TRAANG_PARALLEL_VELO_RES_1 * MD32000 \$MA_MAX_AX_VELO of the parallel axis). The velocity capacity in the virtual axis is determined by this. The lower MD24720 \$MC_TRAANG_PARALLEL_VELO_RES_1 has been set, the lower it is

Related to:

MD24771 \$MC_TRAANG_PARALLEL_ACCEL_RES_2

24721	TRAANG_PARALLEL_ACCEL_RES_1			C07	M1	
-	Acceleration margin of parallel axis for the 1st TRAANG transf.			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0	7/7	U

Description: Indicates the acceleration margin for jog, positioning and oscillating movements for each channel for the first TRAANG transformation which is held ready on the parallel axis (see MD2.... \$MC_TRAFO_AXES_IN_...[1]) for the compensating movement.

Related to:

MD24720 \$MC_TRAANG_PARALLEL_VELO_RES_1

24750	TRAANG_ANGLE_2			C07	M1	
degrees	Angle between Cartesian axis and real (inclined) axis			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates for the second agreed TRAANG transformation of the channel the angle of the inclined axis in degrees between the 1st machine axis and the 1st basic axis while TRAANG is active. The angle is measured positively clockwise.

Related to:

MD24700 \$MC_TRAANG_ANGLE_1

24760	TRAANG_BASE_TOOL_2			C07	M1	
mm	Vector of base tool for 2nd TRAANG transformation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates a basic offset of the tools zero for the 2nd TRAANG transformation. The offset is referenced to the geometry axes valid when TRAANG is active. The basic offset is included with and without selection of the tool length compensation. Programmed length corrections have an additive effect with respect to the basic tool.

The index i takes the values 0, 1, 2 for the 1st to 3rd geometry axes.

Related to:

MD24710 \$MC_TRAANG_BASE_TOOL_1

24770	TRAANG_PARALLEL_VELO_RES_2			C07	M1	
-	Velocity margin for 2nd TRAANG transformation			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0	7/7	U

Description: Indicates the axis velocity reserve for jog, positioning and oscillating movements for each channel for the second TRAANG transformation which is held ready on the parallel axis (see MD2.... \$MC_TRAFO_AXES_IN_...[1]) for the compensating movement.

Related to:

MD24771 \$MC_TRAANG_PARALLEL_ACCEL_RES_2

24771	TRAANG_PARALLEL_ACCEL_RES_2			C07	M1	
-	Acceler. margin of parallel axis for the 2nd TRAANG transform.			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0	7/7	U

Description: Indicates the axis acceleration margin for jog, positioning and oscillating movements which is held ready on the parallel axis (see MD2.... \$MC_TRAFO_AXES_IN_...[1]) for the compensatory movement; MD setting applies to the second TRAANG transformation for each channel.

Related to:

\$MC_TRAANG_PARALLEL_RES_1

3.3 NC machine data

24800	TRACYL_ROT_AX_OFFSET_1	C07	M1, K2
degrees	Offset of rotary axis for the 1st TRACYL transformation	DOUBLE	NEW CONF
-			
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301 1.0E+301 7/7 U

Description: Indicates the offset of the rotary axis for the first agreed TRACYL transformation in degrees in relation to the neutral position while TRACYL is active.

Related to:

MD24850 \$MC_TRACYL_ROT_AX_OFFSET_2

24805	TRACYL_ROT_AX_FRAME_1	C07	M1
-	Rotary axis offset TRACYL 1	BYTE	NEW CONF
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 2 7/7 U

Description:

- 0: axial rotary axis offset is not considered.
- 1: axial rotary axis offset is considered.
- 2: axial rotary axis offset is considered until SZS.

SZS frames include transformed axial rotary axis offsets.

24806	TRACYL_BASE_TOOL_COMP_1	C07	M1, K2
-	Compensation of the BASE_TOOL in the TRACYL frame 1	UBYTE	NEW CONF
-			
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0x0 0x7 7/7 U

Description: Components of the base tool can be compensated by using this bit-coded machine data via the transformation frame so that for transformation selection, no change is made in the Work component.

Bit0: MD24820 \$MC_TRACYL_BASE_TOOL_1[0] is compensated using \$P_TRAFRAME.

Bit1: MD24820 \$MC_TRACYL_BASE_TOOL_1[1] is compensated using \$P_TRAFRAME.

Bit2: MD24820 \$MC_TRACYL_BASE_TOOL_1[2] is compensated using \$P_TRAFRAME.

This function is only available if the system frame \$P_TRAFRAME has been configured using MD28082 \$MC_MM_SYSTEM_FRAME_MASK bit6.

24808	TRACYL_DEFAULT_MODE_1	C07	M1
-	TRACYL mode selection	BYTE	NEW CONF
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 1 7/7 U

Description: Default setting of TRACYL type 514:

0: without groove side offset (i.e. TRACYL type 514 - equals 512)

1: with groove side offset (i.e. TRACYL type 514 - equals 513)

MD2.... \$MC_TRAFO_TYPE... = 514 can be used to decide, via the selection parameters, whether calculation is made with or without groove side offset. The parameter defines the variable to be selected if no selection is made in the call parameters.

If MD24808 \$MC_TRACYL_DEFAULT_MODE_1 = 1, it is sufficient to program TRACYL(30) in the part program instead of TRACYL(30,1,1).

24810	TRACYL_ROT_SIGN_IS_PLUS_1			C07	M1	
-	Sign of rotary axis for 1st TRACYL transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: Indicates the sign with which the rotary axis is taken into account in the TRACYL transformation for the first agreed TRACYL transformation.

Related to:

MD24860 \$MC_TRACYL_ROT_SIGN_IS_PLUS_2

24820	TRACYL_BASE_TOOL_1			C07	M1	
mm	Vector of base tool for 1st TRACYL transformation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates a basic offset of the tools zero for the 1st TRACYL transformation. The offset is referenced to the geometry axes valid when TRACYL is active. The basic offset is included with and without selection of the tool length compensation. Programmed length corrections have an additive effect with respect to the basic tool.

The index i takes the values 0, 1, 2 for the 1st to 3rd geometry axes.

Related to:

MD24870 \$MC_TRACYL_BASE_TOOL_2

24850	TRACYL_ROT_AX_OFFSET_2			C07	M1	
degrees	Offset of rotary axis for the 2nd TRACYL transformation			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates the offset of the rotary axis in degrees in relation to the neutral position for the 2nd agreed TRACYL transformation for each channel.

MD irrelevant:

If no TRACYL is active

Related to:

MD24800 \$MC_TRACYL_ROT_AX_OFFSET_1

24855	TRACYL_ROT_AX_FRAME_2			C07	M1, K2	
-	Rotary axis offset TRACYL 2			BYTE	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0...	0	2	7/7	U

Description:

- 0: axial rotary axis offset is not considered.
- 1: axial rotary axis offset is considered.
- 2: axial rotary axis offset is considered until SZS.

SZS frames include transformed axial rotary axis offsets.

3.3 NC machine data

24856	TRACYL_BASE_TOOL_COMP_2			C07	M1, K2	
-	Compensation of the BASE_TOOL in the TRACYL frame 2			UBYTE	NEW CONF	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0x0	0x7	7/7	U

Description: Components of the base tool can be compensated by using this bit-coded machine data via the transformation frame so that for transformation selection, no change is made in the Work

component.

Bit0: MD24870 \$MC_TRACYL_BASE_TOOL_2[0] is compensated using \$P_TRAFRAME.

Bit1: MD24870 \$MC_TRACYL_BASE_TOOL_2[1] is compensated using \$P_TRAFRAME.

Bit2: MD24870 \$MC_TRACYL_BASE_TOOL_2[2] is compensated using \$P_TRAFRAME.

This function is only available if the system frame \$P_TRAFRAME has been configured using MD28082 \$MC_MM_SYSTEM_FRAME_MASK bit6.

24858	TRACYL_DEFAULT_MODE_2			C07	M1	
-	TRACYL mode selection			BYTE	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	1	7/7	U

Description: Default setting of TRACYL type 514 for the 2nd TRACYL:

0: without groove side offset (i.e. TRACYL type 514 - equals 512)

1: with groove side offset (i.e. TRACYL type 514 - equals 513)

MD2.... \$MC_TRAFO_TYPE... = 514 can be used to decide, via the selection parameters, whether calculation is made with or without groove side offset. The parameter defines the variable to be selected if no selection is made in the call parameters.

If MD24858 \$MC_TRACYL_DEFAULT_MODE_2 = 1, it is sufficient to program TRACYL(30,2) in the part program instead of TRACYL(30,2,1).

24860	TRACYL_ROT_SIGN_IS_PLUS_2			C07	-	
-	Sign of rotary axis for 2nd TRACYL transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: Indicates the sign with which the rotary axis is taken into account in the TRACYL transformation for the 2nd agreed TRACYL transformation for each channel.

Related to:

MD24810 \$MC_TRACYL_ROT_SIGN_IS_PLUS_1

24870	TRACYL_BASE_TOOL_2			C07	M1	
mm	Vector of base tool for 2nd TRACYL transformation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates a basic offset of the tools zero for the 2nd TRACYL transformation. The offset is referenced to the geometry axes valid when TRACYL is active. The basic offset is included with and without selection of the tool length compensation. Programmed length corrections have an additive effect with respect to the basic tool.

The index i takes the values 0, 1, 2 for the 1st to 3rd geometry axes.

Related to:

MD24820 \$MC_TRACYL_BASE_TOOL_1

24900	TRANSMIT_ROT_AX_OFFSET_1			C07	M1	
degrees	Offset of rotary axis for the 1st TRANSMIT transformation			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates the offset of the rotary axis for the first agreed TRANSMIT transformation in degrees in relation to the neutral position while TRANSMIT is active.

Related to:

MD24950 \$MC_TRANSMIT_ROT_AX_OFFSET_2

24905	TRANSMIT_ROT_AX_FRAME_1			C07	M1, K2	
-	Rotary axis offset TRANSMIT 1			BYTE	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	2	7/7	U

Description:

- 0: axial rotary axis offset is not considered.
- 1: axial rotary axis offset is considered.
- 2: axial rotary axis offset is considered until SZS.

SZS frames include transformed rotations around the rotary axis.

24906	TRANSMIT_BASE_TOOL_COMP_1			C07	M1, K2	
-	Compensation of the BASE_TOOL in the TRANSMIT frame 1			UBYTE	NEW CONF	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0x0	0x7	7/7	U

Description: Components of the base tool can be compensated by using this bit-coded machine data via the transformation frame so that for transformation selection, no change is made in the Work component.

Bit0: MD24920 \$MC_TRANSMIT_BASE_TOOL_1[0] is compensated using \$P_TRAFRAME.

Bit1: MD24920 \$MC_TRANSMIT_BASE_TOOL_1[1] is compensated using \$P_TRAFRAME.

Bit2: MD24920 \$MC_TRANSMIT_BASE_TOOL_1[2] is compensated using \$P_TRAFRAME.

This function is only available if the system frame \$P_TRAFRAME has been configured using MD28082 \$MC_MM_SYSTEM_FRAME_MASK bit6.

24910	TRANSMIT_ROT_SIGN_IS_PLUS_1			C07	M1	
-	Sign of rotary axis for 1st TRANSMIT transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: Indicates the sign with which the rotary axis is taken into account in the TRANSMIT transformation for the first agreed TRANSMIT transformation for each channel.

Related to:

MD24960 \$MC_TRANSMIT_ROT_SIGN_IS_PLUS_2

3.3 NC machine data

24911	TRANSMIT_POLE_SIDE_FIX_1			C07	M1	
-	Restriction of working range in front of / behind the pole, 1. TRANSMIT			BYTE	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	2	7/7	U

Description: Restriction of the working area in front of/behind pole or no restriction, i.e. traversal through the pole.

The assigned values have the following meanings:

- 1: Working area of linear axis for positions ≥ 0 ,
(if tool length compensation parallel to linear axis equals 0)
- 2: Working area of linear axis for positions ≤ 0 ,
(if tool length compensation parallel to linear axis equals 0)
- 0: No restriction of working area. Traversal through pole.

24920	TRANSMIT_BASE_TOOL_1			C07	M1	
mm	Vector of base tool for 1st TRANSMIT transformation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates a basic offset of the tools zero for the 1st TRANSMIT transformation. The offset is referenced to the geometry axes valid when TRANSMIT is active. The basic offset is included with and without selection of the tool length compensation. Programmed length corrections have an additive effect with respect to the basic tool.

The index i takes the values 0, 1, 2 for the 1st to 3rd geometry axes.

Related to:

MD24970 \$MC_TRANSMIT_BASE_TOOL_2

24950	TRANSMIT_ROT_AX_OFFSET_2			C07	M1	
degrees	Offset of rotary axis for the 2nd TRANSMIT transformation			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates the offset of the rotary axis for the second agreed TRANSMIT transformation in degrees in relation to the neutral position while TRANSMIT is active.

Related to:

MD24900 \$MC_TRANSMIT_ROT_AX_OFFSET_1

24955	TRANSMIT_ROT_AX_FRAME_2			C07	M1	
-	Rotary axis offset TRANSMIT 2			BYTE	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	2	7/7	U

Description:

- 0: axial rotary axis offset is not considered.
- 1: axial rotary axis offset is considered.
- 2: axial rotary axis offset is considered until SZS.

SZS frames include transformed rotations around the rotary axis.

24956	TRANSMIT_BASE_TOOL_COMP_2			C07	M1, K2	
-	Compensation of the BASE_TOOL in the TRANSMIT frame 2			UBYTE	NEW CONF	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0x0	0x7	7/7	U

Description: Components of the base tool can be compensated by using this bit-coded machine data via the transformation frame so that for transformation selection, no change is made in the Work component.

Bit0: MD24970 \$MC_TRANSMIT_BASE_TOOL_2[0] is compensated using \$P_TRAFRAME.

Bit1: MD24970 \$MC_TRANSMIT_BASE_TOOL_2[1] is compensated using \$P_TRAFRAME.

Bit2: MD24970 \$MC_TRANSMIT_BASE_TOOL_2[2] is compensated using \$P_TRAFRAME.

This function is only available if the system frame \$P_TRAFRAME has been configured using MD28082 \$MC_MM_SYSTEM_FRAME_MASK bit6.

24960	TRANSMIT_ROT_SIGN_IS_PLUS_2			C07	M1	
-	Sign of rotary axis for 2nd TRANSMIT transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: Indicates the sign with which the rotary axis is taken into account in the TRANSMIT transformation for the second agreed TRANSMIT transformation for each channel.

Related to:

MD24910 \$MC_TRANSMIT_ROT_SIGN_IS_PLUS_1

24961	TRANSMIT_POLE_SIDE_FIX_2			C07	M1	
-	Restriction of working range before/behind the pole, 2. TRANSMIT			BYTE	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	2	7/7	U

Description: Restriction of working area in front of/behind pole or no restriction, i.e. traversal through pole.

The assigned values have the following meanings:

1: Working area of linear axis for positions ≥ 0 ,
(if tool length compensation parallel to linear axis equals 0)

2: Working area of linear axis for positions ≤ 0 ,
(if tool length compensation parallel to linear axis equals 0)

0: No restriction of working area. Traversal through pole.

24970	TRANSMIT_BASE_TOOL_2			C07	M1	
mm	Vector of base tool for 2nd TRANSMIT transformation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates a basic offset of the tools zero for the 2nd TRANSMIT transformation. The offset is referenced to the geometry axes valid when TRANSMIT is active. The basic offset is included with and without selection of the tool length compensation. Programmed length corrections have an additive effect with respect to the basic tool. The index i takes the values 0, 1, 2 for the 1st to 3rd geometry axes.

3.3 NC machine data

Related to:

MD24920 \$MC_TRANSMIT_BASE_TOOL_1

24995	TRACON_CHAIN_1			C07	M1	
-	Transformation grouping			DWORD	NEW CONF	
-						
-	4	0, 0,				

Description:

Transformation chain of the first concatenated transformation.

In the table, the numbers of the transformations which are to be concatenated are given in the order in which the transformation has to be executed from BCS into MCS.

Example:

A machine can be operated optionally either as a 5-axis machine or as a transmit machine. A linear axis is not arranged at a right-angles to the other linear axes (inclined axis).

5 transformations must be set via the machine data, e.g.

TRAFO_TYPE_1 = 16 (5-axis transformation)

TRAFO_TYPE_2 = 256 (Transmit)

TRAFO_TYPE_3 = 1024 (Inclined axis)

TRAFO_TYPE_4 = 8192 (Concatenated transformation)

TRAFO_TYPE_5 = 8192 (Concatenated transformation)

If the 4th transformation concatenates the 5-axis transformation / inclined axis and the 5th transformation concatenates the transmit / inclined axis, then (1, 3, 0, 0) is entered in the first table TRACON_CHAIN_1, and (2, 3, 0, 0) in the table TRACON_CHAIN_2. The entry 0 means no transformation.

The order in which the transformations are assigned (TRAFO_TYPE_1 to TRAFO_TYPE_20) is arbitrary. The linked transformations do not have to be the last. However, they must always stand behind all the transformations which occur in a transformation chain. In the previous example, this means that, e.g. the third and fourth transformations must not be switched.

However, it would be possible to define a further, sixth transformation, if this does not go into a linked transformation.

Transformations cannot be linked with one another at will.

The following limitations apply in SW version 5:

The first transformation in the chain must be an orientation transformation (3- , 4- , 5-axis transformation, nutator) transmit or peripheral curve transformation. The second transformation must be an inclined axis transformation.

No more than two transformations may be linked.

24996	TRACON_CHAIN_2			C07	M1	
-	Transformation grouping			DWORD	NEW CONF	
-						
-	4	0,0,0,0,0,0,0,0,0,0, 0,0,0,0,0,0,0,0,0,0, 0,0...	0	20	7/7	U

Description:

Transformation chain of the first concatenated transformation.

In the table, the numbers of the transformations which are to be concatenated are given in the order in which the transformation has to be executed from BCS into MCS.

Example:

A machine can be operated optionally either as a 5-axis machine or as a transmit machine. A linear axis is not arranged at a right-angles to the other linear axes (inclined axis).

No more than two transformations may be concatenated.

Description:	Transformation chain of the third concatenated transformation. See TRACON CHAIN 1 for documentation.

Description:	Transformation chain of the fourth concatenated transformation. See TRACON CHAIN 1 for documentation.

Description:	This MD defines for each channel, which transformation is available as 11th transformation in the channel. Other than that it has the same meaning as TRAFO TYPE 1.

3.3 NC machine data

25102	TRAFO_AXES_IN_11			C07	F2	
-	Axis assignment for transformation 11			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...	0	20	7/7	U

Description: Axis assignment at the input of the 11th transformation.
See TRAFO_AXES_IN_1 for explanation.

25104	TRAFO_GEOAX_ASSIGN_TAB_11			C07	F2	
-	Assignment of geometry axes to channel axes for transformation 11			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

Description: This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 11.
Otherwise the meaning corresponds to TRAFO_GEOAX_ASSIGN_TAB_1.

25106	TRAFO_INCLUDES_TOOL_11			C07	M1, F2	
-	Tool handling with active 11th transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This MD defines for each channel, whether the tool is treated in the 11th transformation or externally.
Other than that it has the same meaning as TRAFO_INCLUDES_TOOL_1.

25110	TRAFO_TYPE_12			C07	F2	
-	Definition of the 12th transformation in the channel			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: This MD defines for each channel, which transformation is available as 12th transformation in the channel.
Other than that it has the same meaning as TRAFO_TYPE_1.

25112	TRAFO_AXES_IN_12			C07	F2	
-	Axis assignment for transformation 12			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...	0	20	7/7	U

Description: Axis assignment at the input of the 12th transformation.
See TRAFO_AXES_IN_1 for explanation.

Description: This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 12.
Otherwise the meaning corresponds to TRAFO_GEOAX_ASSIGN_TAB_1.

Description: This MD defines for each channel, whether the tool is treated in the 12th transformation or externally.
Other than that it has the same meaning as TRAFO_INCLUDES_TOOL_1.

Description: This MD defines for each channel, which transformation is available as 13th transformation in the channel.
Other than that it has the same meaning as TRAFO TYPE 1.

Description:	Axis assignment at the input of the 13th transformation. See TRAFO_AXES_IN 1 for explanation.

Description:	This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 13. Otherwise the meaning corresponds to TRAFO GEOAX ASSIGN TAB 1.

3.3 NC machine data

25126	TRAFO_INCLUDES_TOOL_13			C07	M1, F2	
-	Tool handling with active 13th transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This MD defines for each channel, whether the tool is treated in the 13th transformation or externally.

Other than that it has the same meaning as TRAFO_INCLUDES_TOOL_1.

25130	TRAFO_TYPE_14			C07	F2	
-	Definition of the 14th transformation in the channel			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: This MD defines for each channel, which transformation is available as 14th transformation in the channel.

Other than that it has the same meaning as TRAFO_TYPE_1.

25132	TRAFO_AXES_IN_14			C07	F2	
-	Axis assignment for transformation 14			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,, ...	0	20	7/7	U

Description: Axis assignment at the input of the 14th transformation.

See TRAFO_AXES_IN_1 for explanation.

25134	TRAFO_GEOAX_ASSIGN_TAB_14			C07	F2	
-	Assignment of geometry axes to channel axes for transformation 14			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

Description: This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 14.

Otherwise the meaning corresponds to TRAFO_GEOAX_ASSIGN_TAB_1.

25136	TRAFO_INCLUDES_TOOL_14			C07	M1, F2	
-	Tool handling with active 14th transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This MD defines for each channel, whether the tool is treated in the 14th transformation or externally.

Other than that it has the same meaning as TRAFO_INCLUDES_TOOL_1.

25140	TRAFO_TYPE_15			C07	F2	
-	Definition of the 15th transformation in the channel			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: This MD defines for each channel, which transformation is available as 15th transformation in the channel.
Other than that it has the same meaning as TRAFO_TYPE_1.

25142	TRAFO_AXES_IN_15			C07	F2	
-	Axis assignment for transformation 15			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...	0	20	7/7	U

Description: Axis assignment at the input of the 15th transformation.
See TRAFO_AXES_IN_1 for explanation.

25144	TRAFO_GEOAX_ASSIGN_TAB_15			C07	F2	
-	Assignment of geometry axes to channel axes for transformation 15			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

Description: This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 15.
Otherwise the meaning corresponds to TRAFO_GEOAX_ASSIGN_TAB_1.

25146	TRAFO_INCLUDES_TOOL_15			C07	M1, F2	
-	Tool handling with active 15th transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This MD defines for each channel, whether the tool is treated in the 15th transformation or externally.
Other than that it has the same meaning as TRAFO_INCLUDES_TOOL_1.

25150	TRAFO_TYPE_16			C07	F2	
-	Definition of the 16th transformation in the channel			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: This MD defines for each channel, which transformation is available as 16th transformation in the channel.
Other than that it has the same meaning as TRAFO_TYPE_1.

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25152	TRAFO_AXES_IN_16			C07	F2	
-	Axis assignment for transformation 16			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...	0	20	7/7	U

Description: Axis assignment at the input of the 16th transformation.
See TRAFO_AXES_IN_1 for explanation.

25154	TRAFO_GEOAX_ASSIGN_TAB_16			C07	F2	
-	Assignment of geometry axes to channel axes for transformation 16			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

Description: This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 16.
Otherwise the meaning corresponds to TRAFO_GEOAX_ASSIGN_TAB_1.

25156	TRAFO_INCLUDES_TOOL_16			C07	M1, F2	
-	Tool handling with active 16th transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This MD defines for each channel, whether the tool is treated in the 16th transformation or externally.
Other than that it has the same meaning as TRAFO_INCLUDES_TOOL_1.

25160	TRAFO_TYPE_17			C07	F2	
-	Definition of the 17th transformation in the channel			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: This MD defines for each channel, which transformation is available as 17th transformation in the channel.
Other than that it has the same meaning as TRAFO_TYPE_1.

25162	TRAFO_AXES_IN_17			C07	F2	
-	Axis assignment for transformation 17			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...	0	20	7/7	U

Description: Axis assignment at the input of the 17th transformation.
See TRAFO_AXES_IN_1 for explanation.

Description: This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 17.
Otherwise the meaning corresponds to TRAFO_GEOAX_ASSIGN_TAB_1.

Description: This MD defines for each channel, whether the tool is treated in the 17th transformation or externally.
Other than that it has the same meaning as TRAFO_INCLUDES_TOOL_1.

Description: This MD defines for each channel, which transformation is available as 18th transformation in the channel.
Other than that it has the same meaning as TRAFO TYPE 1.

Description:	Axis assignment at the input of the 18th transformation. See TRAFO AXES IN 1 for explanation.

Description:	This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 18. Otherwise the meaning corresponds to TRAFO GEOAX ASSIGN TAB 1.

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25176	TRAFO_INCLUDES_TOOL_18			C07	M1, F2	
-	Tool handling with active 18th transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This MD defines for each channel, whether the tool is treated in the 18th transformation or externally.

Other than that it has the same meaning as TRAFO_INCLUDES_TOOL_1.

25180	TRAFO_TYPE_19			C07	F2	
-	Definition of the 19th transformation in the channel			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: This MD defines for each channel, which transformation is available as 19th transformation in the channel.

Other than that it has the same meaning as TRAFO_TYPE_1.

25182	TRAFO_AXES_IN_19			C07	F2	
-	Axis assignment for transformation 19			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,, ...	0	20	7/7	U

Description: Axis assignment at the input of the 19th transformation.

See TRAFO_AXES_IN_1 for explanation.

25184	TRAFO_GEOAX_ASSIGN_TAB_19			C07	F2	
-	Assignment of geometry axes to channel axes for transformation 19			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

Description: This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 19.

Otherwise the meaning corresponds to TRAFO_GEOAX_ASSIGN_TAB_1.

25186	TRAFO_INCLUDES_TOOL_19			C07	M1, F2	
-	Tool handling with active 19th transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This MD defines for each channel, whether the tool is treated in the 19th transformation or externally.

Other than that it has the same meaning as TRAFO_INCLUDES_TOOL_1.

25190	TRAFO_TYPE_20			C07	F2	
-	Definition of the 20th transformation in the channel			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: This MD defines for each channel, which transformation is available as 20th transformation in the channel.
Other than that it has the same meaning as TRAFO_TYPE_1.

25192	TRAFO_AXES_IN_20			C07	F2	
-	Axis assignment for transformation 20			BYTE	NEW CONF	
-						
-	20	1, 2, 3, 4, 5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...	0	20	7/7	U

Description: Axis assignment at the input of the 20th transformation.
See TRAFO_AXES_IN_1 for explanation.

25194	TRAFO_GEOAX_ASSIGN_TAB_20			C07	F2	
-	Assignment of geometry axes to channel axes for transformation 20			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

Description: This MD states the channel axes on which the axes of the cartesian coordinate system are mapped for active transformation 20.
Otherwise the meaning corresponds to TRAFO_GEOAX_ASSIGN_TAB_1.

25196	TRAFO_INCLUDES_TOOL_20			C07	M1, F2	
-	Tool handling with active 20th transformation			BOOLEAN	NEW CONF	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This MD defines for each channel, whether the tool is treated in the 20th transformation or externally.
Other than that it has the same meaning as TRAFO_INCLUDES_TOOL_1.

25200	TRAFO5_PART_OFFSET_3			C07	F2	
mm	Offset vector of 5-axis transformation 3			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data designates an offset of the workpiece holder for the 3rd 5-axis transformation of a channel and has a special meaning for each of the various machine types:
Other than that it has the same meaning as TRAFO5_PART_OFFSET_1.

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25210	TRAFO5_ROT_AX_OFFSET_3			C07	F2	
degrees	Position offset of rotary axes 1/2/3 for 5-axis transformation 3			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0,...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data designates the angular offset of the first or second rotary axis in degrees for the 3rd 5-axis transformation of a channel.
Other than that it has the same meaning as TRAFO5_ROT_AX_OFFSET_1.

25220	TRAFO5_ROT_SIGN_IS_PLUS_3			C07	F2	
-	Sign of rotary axis 1/2/3 for 5-axis transformation 3			BOOLEAN	NEW CONF	
-						
-	3	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This machine data designates the sign with which the two rotary axes enter the 3rd 5-axis transformation of a channel.
Other than that it has the same meaning as TRAFO5_ROT_SIGN_IS_PLUS_1.

25230	TRAFO5_NON_POLE_LIMIT_3			C07	F2	
degrees	Definition of pole range for 5-axis transformation 3			DOUBLE	NEW CONF	
-						
-	-	2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data designates a limit angle for the fifth axis of the 3rd 5-axis transformation.
Other than that it has the same meaning as TRAFO5_NON_POLE_LIMIT_1.

25240	TRAFO5_POLE_LIMIT_3			C07	F2	
degrees	End angle tolerance with interpolation through pole for 5-axis transf.			DOUBLE	NEW CONF	
-						
-	-	2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data designates an end angle tolerance for the fifth axis of the 3rd 5-axis transformation with the following properties:
Other than that it has the same meaning as TRAFO5_POLE_LIMIT_1.

25242	TRAFO5_POLE_TOL_3			C07	-	
degrees	End angle tolerance for tool orientation			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0E+301	7/7	U

Description: End angle tolerance for interpolation through the pole for 5/6-axis transformation 3.
Other than that it has the same meaning as TRAFO5_POLE_TOL_1.

25250	TRAFO5_BASE_TOOL_3			C07	F2	
mm	Vector of base tool on activation of 5-axis transformation 3			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: This MD indicates the vector of the base tool which takes effect when the third transformation is activated without a length compensation being selected. Programmed length compensations have an additive effect with respect to the base tool.

MD irrelevant:
if the "5-axis transformation" option is not installed.

25258	TRAFO5_JOINT_OFFSET_PART_3			C07	F2	
mm	Vector of kinematic table offset			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data is only evaluated in generic 5-axis transformations with rotatable workpiece and rotatable tool (TRAFO_TYPE = 56, mixed kinematics).

Other than that it has the same meaning as TRAFO5_JOINT_OFFSET_PART_1.

25260	TRAFO5_JOINT_OFFSET_3			C07	F2	
mm	Vector of the kinem.offset of the 3rd 5-axis transf. in channel			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data designates the vector from the first to the second rotary joint for the 3rd transformation of a channel.

Other than that it has the same meaning as TRAFO5_JOINT_OFFSET_1.

25261	TRAFO6_JOINT_OFFSET_2_3_3			C07	-	
mm	Vector of kinematic offset			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: In the case of 6-axis transformations, defines the offset between the 2nd and third rotary axes for the 3rd transformation of each channel.

25262	TRAFO5_TOOL_ROT_AX_OFFSET_3			C07	F2	
mm	Offset of swivel point of the rotary axis on the 3rd 5-axis transformation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0, 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: In the case of a 5-axis transformation with a swiveling linear axis, the value indicates the offset of the rotary axis which swivels the linear axis with reference to machine zero for the 3th transformation.

Other than that it has the same meaning as >TRAFO5_TOOL_ROT_AX_OFFSET_1.

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25264	TRAFO5_NUTATOR_AX_ANGLE_3			C07	F2	
degrees	Nutating head angle in 5-axis transformation			DOUBLE	NEW CONF	
-						
-	-	45.0, 45.0, 45.0, 45.0, 45.0, 45.0, 45.0, 45.0...	-89.	89.	7/7	U

Description: Angle between the second rotary axis and the axis corresponding to it in the rectangular coordinate system
Other than that it has the same meaning as TRAFO5_NUTATOR_AX_ANGLE_1.

25266	TRAFO5_NUTATOR_VIRT_ORIAX_3			C07	-	
-	Virtual orientation axes			BOOLEAN	NEW CONF	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/7	U

Description: It has the same meaning as TRAFO5_NUTATOR_VIRT_ORIAX_1.

25270	TRAFO5_AXIS1_3			C07	F2	
-	Direction of 1st rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: The MD designates the vector that describes the direction of the first rotary axis with the general 5-axis transformation (TRAFO_TYPE_* = 24).
Other than that it has the same meaning as TRAFO5_AXIS1_1.

25272	TRAFO5_AXIS2_3			C07	F2	
-	Direction of 2nd rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: The MD designates the vector that describes the direction of the second rotary axis with the general 5-axis transformation (TRAFO_TYPE_* = 24, 40, 56).
Other than that it has the same meaning as TRAFO5_AXIS2_1.

25273	TRAFO5_AXIS3_3			C07	-	
-	Direction of the 3rd rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: The MD designates the vector that describes the direction of the third rotary axis with the general 6-axis transformation (TRAFO_TYPE_* = 24, 40, 56, 57).
Other than that it has the same meaning as TRAFO5_AXIS3_1.

25274	TRAFO5_BASE_ORIENT_3			C07	-	
-	Vector of the tool base orientation for 5-axis transformation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates the vector of the tool orientation in the general 5-axis transformation (TRAFO_TYPE_* = 24, 40, 56) if this is not defined on the transformation call or not read from a programmed tool.

Other than that it has the same meaning as TRAFO5_BASE_ORIENT_1.

25276	TRAFO6_BASE_ORIENT_NORMAL_3			C07	-	
-	Normal tool vector in 6-axis transformation			DOUBLE	NEW CONF	
-						
-	3	0.0, 1.0 , 0.0, 0.0, 1.0 , 0.0, 0.0, 1.0 , 0.0, 0.0, 1.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates the vector that stands vertically on the tool orientation (TRAFO5_BASE_ORIENTATION_1) in general 6-axis transformation (TRAFO_TYPE_* = 24, 40, 56, 57).

Other than that it has the same meaning as TRAFO6_BASE_ORIENT_NORMAL_1.

25280	TRAFO5_TOOL_VECTOR_3			C07	F2	
-	Direction of orientation vector for the first 5-axis transf.			BYTE	NEW CONF	
-						
-	-	2, 2, 2, 2, 2, 2, 2, 2...	0	2	7/2	M

Description: Indicates the direction of the orientation vector for the first 5-axis transformation for each channel.

Other than that it has the same meaning as TRAFO5_TOOL_VECTOR_1.1.

25282	TRAFO5_TCARR_NO_3			C07	-	
-	TCARR number for the 3rd 5-axis transformation			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: It has the same meaning as TRAFO5_TCARR_NO_1.

25285	TRAFO5_ORIAX_ASSIGN_TAB_3			C07	F2, M1	
-	Orientation axis / channel axis assignment transformation 3			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/2	M

Description: Assignment table of the orientation axes for 5-axis transformation 3
Only active with active 5-axis transformation 3.

Otherwise the meaning is the same as TRAFO5_ORIAX_ASSIGN_TAB_1.

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25290	TRAFO5_ROT_OFFSET_FROM_FR_3			C01, C07	-	
-	Offset of transformation rotary axes from WO.			BOOLEAN	NEW CONF	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: It has the same meaning as TRAFO5_ROT_OFFSET_FROM_FR_1.

25294	TRAFO7_EXT_ROT_AX_OFFSET_3			C07	F2	
degrees	Position offset of the external rotary axes for 7-axis transformation 3			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0,...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data designates the angular offset of the external rotary axis in degrees for the third 7-axis transformation of a channel.

MD irrelevant:

if the "5-Axis Transformation" option is not installed.

25295	TRAFO7_EXT_AXIS1_3			C07	F2	
-	Direction of the 1st external rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: The MD indicates the vector that describes the direction of the first external rotary axis in the third general 5/6-axis transformation (TRAFO_TYPE_* = 24).

The vector can have any magnitude.

Example:

Both with (0, 1, 0) and with (0, 7.21, 0), the same axis is described (in the direction of the 2nd geometry axis, i.e. usually Y).

Valid for the first transformation of a channel.

25300	TRAFO5_PART_OFFSET_4			C07	F2	
mm	Offset vector of 5-axis transformation 4			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data designates an offset of the workpiece holder for the 4th 5-axis transformation of a channel and has a special meaning for each of the various machine types:

Other than that it has the same meaning as TRAFO5_PART_OFFSET_1.

25310	TRAFO5_ROT_AX_OFFSET_4			C07	F2	
degrees	Position offset of rotary axes 1/2/3 for 5-axis transformation 4			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0,...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data designates the angular offset of the first or second rotary axis in degrees for the 4th 5-axis transformation of a channel.
Other than that it has the same meaning as TRAFO5_ROT_AX_OFFSET_1.

25320	TRAFO5_ROT_SIGN_IS_PLUS_4			C07	F2	
-	Sign of rotary axis 1/2/3 for 5-axis transformation 4			BOOLEAN	NEW CONF	
-						
-	3	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: This machine data designates the sign with which the two rotary axes enter the 4th 5-axis transformation of a channel.
Other than that it has the same meaning as TRAFO5_ROT_SIGN_IS_PLUS_1.

25330	TRAFO5_NON_POLE_LIMIT_4			C07	F2	
degrees	Definition of pole range for 5-axis transformation 4			DOUBLE	NEW CONF	
-						
-	-	2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data designates a limit angle for the fifth axis of the 4th 5-axis transformation.
Other than that it has the same meaning as TRAFO5_NON_POLE_LIMIT_1.

25340	TRAFO5_POLE_LIMIT_4			C07	F2	
degrees	End angle tolerance with interpolation through pole for 5-axis transf.			DOUBLE	NEW CONF	
-						
-	-	2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data designates an end angle tolerance for the fifth axis of the 4th 5-axis transformation with the following properties:
Other than that it has the same meaning as TRAFO5_POLE_LIMIT_1.

25342	TRAFO5_POLE_TOL_4			C07	-	
degrees	End angle tolerance for tool orientation			DOUBLE	NEW CONF	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0E+301	7/7	U

Description: End angle tolerance for interpolation through the pole for 5/6-axis transformation 4.
Other than that it has the same meaning as TRAFO5_POLE_TOL_1.

25350	TRAFO5_BASE_TOOL_4			C07	F2	
mm	Vector of base tool on activation of 5-axis transformation 4			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: This MD indicates the vector of the base tool which takes effect when the first transformation is activated without a length compensation being selected. Programmed length compensations have an additive effect with respect to the base tool.
MD irrelevant:

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if the "5-axis transformation" option is not installed.

25358	TRAFO5_JOINT_OFFSET_PART_4			C07	F2	
mm	Vector of kinematic table offset			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data is only evaluated in generic 5-axis transformations with rotatable workpiece and rotatable tool (TRAF0_TYPE = 56, mixed kinematics).
Other than that it has the same meaning as TRAF05_JOINT_OFFSET_PART_1.

25360	TRAFO5_JOINT_OFFSET_4			C07	F2	
mm	Vector of the kinem.offset of the 4th 5-axis transf. in channel			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: This machine data designates the vector from the first to the second rotary joint for the 4th transformation of a channel.
Other than that it has the same meaning as TRAF05_JOINT_OFFSET_1.

25361	TRAFO6_JOINT_OFFSET_2_3_4			C07	-	
mm	Vector of kinematic offset			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: In the case of 6-axis transformations, defines the offset between the 2nd and third rotary axes for the 4th transformation of each channel.

25362	TRAFO5_TOOL_ROT_AX_OFFSET_4			C07	F2	
mm	Offset of swivel point of the rotary axis on the 4th 5-axis transformation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: In the case of a 5-axis transformation with a swiveling linear axis, the value indicates the offset of the rotary axis which swivels the linear axis with reference to machine zero for the 4th transformation.
Other than that it has the same meaning as >TRAF05_TOOL_ROT_AX_OFFSET_1.

25364	TRAFO5_NUTATOR_AX_ANGLE_4			C07	F2	
degrees	Nutating head angle in 5-axis transformation			DOUBLE	NEW CONF	
-						
-	-	45.0, 45.0, 45.0, 45.0, 45.0, 45.0, 45.0...	-89.	89.	7/7	U

Description: Angle between the second rotary axis and the axis corresponding to it in the rectangular coordinate system
Other than that it has the same meaning as TRAF05_NUTATOR_AX_ANGLE_1.

25366	TRAFO5_NUTATOR_VIRT_ORIAX_4			C07	-	
-	Virtual orientation axes			BOOLEAN	NEW CONF	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/7	U

Description: It has the same meaning as TRAFO5_NUTATOR_VIRT_ORIAX_1.

25370	TRAFO5_AXIS1_4			C07	F2	
-	Direction of 1st rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0, 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: The MD designates the vector that describes the direction of the first rotary axis with the general 5-axis transformation (TRAFO_TYPE_* = 24).
Other than that it has the same meaning as TRAFO5_AXIS1_1.

25372	TRAFO5_AXIS2_4			C07	F2	
-	Direction of 2nd rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0, 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: The MD designates the vector that describes the direction of the second rotary axis with the general 5-axis transformation (TRAFO_TYPE_* = 24, 40, 56).
Other than that it has the same meaning as TRAFO5_AXIS2_1.

25373	TRAFO5_AXIS3_4			C07	-	
-	Direction of the 3rd rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: The MD designates the vector that describes the direction of the third rotary axis with the general 6-axis transformation (TRAFO_TYPE_* = 24, 40, 56, 57).
Other than that it has the same meaning as TRAFO5_AXIS3_1.

25374	TRAFO5_BASE_ORIENT_4			C07	-	
-	Vector of the tool base orientation for 5-axis transformation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates the vector of the tool orientation in the general 5-axis transformation (TRAFO_TYPE_* = 24, 40, 56) if this is not defined on the transformation call or not read from a programmed tool.
Other than that it has the same meaning as TRAFO5_BASE_ORIENT_1.

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25376	TRAFO6_BASE_ORIENT_NORMAL_4			C07	-	
-	Normal tool vector in 6-axis transformation			DOUBLE	NEW CONF	
-						
-	3	0.0, 1.0, 0.0, 0.0, 1.0 , 0.0, 0.0, 1.0 , 0.0, 0.0, 1.0, 0.0, ...	-1.0E+301	1.0E+301	7/7	U

Description: Indicates the vector that stands vertically on the tool orientation (TRAFO5_BASE_ORIENTATION_1) in general 6-axis transformation (TRAFO_TYPE_* = 24, 40, 56, 57).
Other than that it has the same meaning as TRAFO6_BASE_ORIENT_NORMAL_1.

25380	TRAFO5_TOOL_VECTOR_4			C07	F2	
-	Direction of orientation vector for the first 5-axis transf.			BYTE	NEW CONF	
-						
-	-	2, 2, 2, 2, 2, 2, 2...	0	2	7/2	M

Description: Indicates the direction of the orientation vector for the first 5-axis transformation for each channel.
Other than that it has the same meaning as TRAFO5_TOOL_VECTOR_1.1.

25382	TRAFO5_TCARR_NO_4			C07	-	
-	TCARR number for the 4th 5-axis transformation			DWORD	NEW CONF	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description: It has the same meaning as TRAFO5_TCARR_NO_1.

25385	TRAFO5_ORIAX_ASSIGN_TAB_4			C07	F2, M1	
-	Orientation axis / channel axis assignment transformation 4			BYTE	NEW CONF	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/2	M

Description: Assignment table of the orientation axes for 5-axis transformation 4
Only active with active 5-axis transformation 4.
Otherwise the meaning is the same as TRAFO5_ORIAX_ASSIGN_TAB_1.

25390	TRAFO5_ROT_OFFSET_FROM_FR_4			C01, C07	-	
-	Offset of transformation rotary axes from WO.			BOOLEAN	NEW CONF	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: It has the same meaning as TRAFO5_ROT_OFFSET_FROM_FR_1.

25394	TRAFO7_EXT_ROT_AX_OFFSET_4			C07	F2	
degrees	Position offset of the external rotary axes for 7-axis transformation 4			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, ...	-1.0E+301	1.0E+301	7/7	U

25395	TRAFO7_EXT_AXIS1_4			C07	F2	
-	Direction of the 1st external rotary axis			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0 , 0.0, 0.0, 0.0, 0.0, ...	-1.0E+301	1.0E+301	7/7	U

25495	TRACON_CHAIN_5			C07	M1	
-	Transformation grouping			DWORD	NEW CONF	
-						
-	4	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

25496	TRACON_CHAIN_6			C07	M1	
-	Transformation grouping			DWORD	NEW CONF	
-						
-	4	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

25497	TRACON_CHAIN_7			C07	M1	
-	Transformation grouping			DWORD	NEW CONF	
-						
-	4	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

25498	TRACON_CHAIN_8			C07	M1	
-	Transformation grouping			DWORD	NEW CONF	
-						
-	4	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/7	U

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Description: Transformation chain of the 8th concatenated transformation.
See TRACON_CHAIN_1 for documentation.

25500	IPT_AXIS_DYNAMIC_FACTORS			-	-	
-	Interpolation turning: Weighting of axis dynamic response			DOUBLE	NEW CONF	
-						
-	5	0.1, 0.5, 0.5, 0.8, 0.8, 0.1, 0.5, 0.5, 0.8, 0.8, 0.1, 0.5, 0.5,...	0.001	0.999	1/1	M

Description: Interpolation turning: Distribution of axis dynamic response between path and rotation component.
Meaning of the individual array elements:
MD25500 \$MC_IPT_AXIS_DYNAMIC_FACTORS[0]:
Proportion of axis acceleration limit \$MA_MAX_AX_ACCEL for the speed and acceleration of the rotary motion.
MD25500 \$MC_IPT_AXIS_DYNAMIC_FACTORS[1]:
Influence of axis acceleration \$MA_MAX_AX_ACCEL on the speed of the rotary motion. A higher value results in faster rotation.
MD25500 \$MC_IPT_AXIS_DYNAMIC_FACTORS[2]:
Influence of axis acceleration \$MA_MAX_AX_ACCEL on the speed of the rotary motion. A higher value results in faster rotation.
MD25500 \$MC_IPT_AXIS_DYNAMIC_FACTORS[3]:
Proportion of the axis speed limit for the speed of the rotary motion. The axis speed limit is generally MD32000 \$MA_MAX_AX_VELO, but a lower value may be relevant e.g. when Safe Limited Speed (SLS) is activated.
MD25500 \$MC_IPT_AXIS_DYNAMIC_FACTORS[4]:
Proportion of axis jerk limit \$MA_MAX_AX_JERK for the rotary motion at constant speed.

25800	COLLISION_EXT_CHAN_MASK			C01, EXP	-	
-	Settings of the external collision avoidance			UDWORD	PowerOn	
-						
-	-	0x1, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	1	7/2	M

Description: Settings of the external collision avoidance.
Bit 0 : Activate preview

26000	PUNCHNIB_ASSIGN_FASTIN			C01, C09	N4	
-	Hardware assignment for input byte for stroke control			UDWORD	PowerOn	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	0x7FFFFFFF	7/2	M

Description: Assignment of the high-speed input byte for "punching and nibbling"
Bit 0-7: Number of the input byte used
Bit 8-15: Free
Bit 16-23: Inversion mask for writing the hardware byte
Bit 24-30: Free
This data defines which input byte is to be used for the signal "travel active".
= 1:
On-board inputs (4 high-speed NC inputs) are used.
2, 3, 4, 5
The external digital NC inputs are used
128-129:

Comparator byte (results from high-speed analog inputs or VDI specification)

Related to:

MD26006 \$MC_NIBBLE_PUNCH_INMASK[n]

References:

/FB/, A4, Digital and Analog NC I/Os

The signal is high active as default from software 3.2. That is there is wire break monitoring. If the signal is low active then, e.g., the MD must be set to the value MD = "H 0001 0001" for the outboard inputs.

26002	PUNCHNIB_ASSIGN_FASTOUT	C01, C09	N4
-	Hardware assignment for output byte for stroke control	UDWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0

Description: This data defines which output byte is to be used for the stroke control.

Number of the high-speed output byte for "punching and nibbling"

Bit 0-7: Number of the output byte used

Bit 8-15: Free

Bit 16-23: Inversion mask for writing the hardware byte

Bit 24-30: Free

Possible inputs:

1:

840D on-board outputs (4 high-speed + 4 bits via VDI specification)

2, 3, 4, 5

External digital outputs (high-speed NC O/I or VDI specification)

Related to:

MD26004 \$MC_NIBBLE_PUNCH_OUTMASK[n]

References:

/FB/, A4, Digital and Analog NC I/Os

26004	NIBBLE_PUNCH_OUTMASK	C01, C09	N4
-	Mask for fast output bits	UBYTE	PowerOn
-			
-	8	1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0

Description: Mask for high-speed output bits for punching and nibbling.

Byte 1: Contains the bit for stroke release

Bytes 2-8: Currently free

Special cases:

Only NIBBLE_PUNCH_OUTMASK[0] is significant.

This is used to define the output bit for the signal "Release stroke".

Related to:

MD26002 \$MC_PUNCHNIB_ASSIGN_FASTOUT

26006	NIBBLE_PUNCH_INMASK	C01, C09	N4
-	Mask for fast input bits	UBYTE	PowerOn
-			
-	8	1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0

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Description: This data can define up to 8 byte masks for the output of the high-speed bits. The standard assignment of this data is as follows:

```

NIBBLE_PUNCH_INMASK[0]=1:
2° = first bit for the first punch interface (SPIF1)
NIBBLE_PUNCH_INMASK[1]=4:
Second punch interface (SPIF2), not available as standard
NIBBLE_PUNCH_INMASK[2]=0
...
NIBBLE_PUNCH_INMASK[7]=0
Note:
-

Special cases:
Only NIBBLE_PUNCH_INMASK[0] is relevant. This is used to define the input bit for the signal "Stroke active".
Related to:
MD26000 $MC_PUNCHNIB_ASSIGN_FASTIN

```

26008	NIBBLE_PUNCH_CODE			C09	H2, K1	
-	Definition of M functions			DWORD	PowerOn	
-						
-	8	0,23,22, 25, 26, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,...	-	-	7/2	M

Description: This data defines the special M functions for punching and nibbling.

	Standard value	Example
NIBBLE_PUNCH_CODE[0] = 0	20	End punching, nibbling with M20
NIBBLE_PUNCH_CODE[1] = 23	23	End punching, nibbling with M23
NIBBLE_PUNCH_CODE[2] = 22	22	Start nibbling
NIBBLE_PUNCH_CODE[3] = 25	25	Start punching
NIBBLE_PUNCH_CODE[4] = 26	26	Activate dwell time
NIBBLE_PUNCH_CODE[5] = 122	122	Start nibbling with pretension, stroke control at servo level
NIBBLE_PUNCH_CODE[6] = 125	125	Start punching with pretension, stroke control at servo level
NIBBLE_PUNCH_CODE[7] = 0	0	Not used (in preparation)

Special cases:

If MD26012 \$MC_PUNCHNIB_ACTIVATION = 2 (M functions are interpreted directly by the software), then MD26008 \$MC_NIBBLE_PUNCH_CODE[0] = 20 has to be set.

Related to:

MD26012 \$MC_PUNCHNIB_ACTIVATION

26010	PUNCHNIB_AXIS_MASK			C09	N4	
-	Definition of punching and nibbling axes			UDWORD	PowerOn	
-						
-	-	7, 0, 0, 0, 0, 0, 0, 0...	0	0x7FFFFFFF	7/2	M

Description: Defines the axes involved in punching and nibbling. That is all the axes defined here must be at rest during punching and nibbling.

Related to:

MD26016 \$MC_PUNCH_PARTITION_TYPE

26012	PUNCHNIB_ACTIVATION	C09	K1
-	Activation of punching and nibbling functions	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	- - 7/2 M

Description: This MD defines the ways in which punching and nibbling functions can be activated:
PUNCHNIB_ACTIVATION = 0
None of the punching or nibbling functions can be activated. The automatic path segmentation is the only exception - if it is enabled via MD26014
\$MC_PUNCH_PATH_SPLITTING.
PUNCHNIB_ACTIVATION = 1
The functions are activated via language commands. If M functions are to be used, then they must be programmed using macros.
PUNCHNIB_ACTIVATION = 2
The M functions are interpreted directly by the software. Language commands can still be used.
Note:
This option is intended only as a temporary solution.
Related to:
MD26014 \$MC_PUNCH_PATH_SPLITTING
MD26008 \$MC_NIBBLE_PUNCH_CODE[n]

26014	PUNCH_PATH_SPLITTING	C09	N4
-	Activation of automatic path segmentation	DWORD	PowerOn
-			
-	-	2, 2, 2, 2, 2, 2, 2, 2...	- - 7/2 M

Description: Activation data for automatic path segmentation.
Value Significance

0 =
Automatic path segmentation only active with punching and nibbling.
1 =
Automatic path segmentation can also be activated without punching and nibbling functions;
that is, it is programmable and be used NC internally
2 =
Automatic path segmentation can only be used NC internally;
that is it cannot be programmed.

26016	PUNCH_PARTITION_TYPE	C09	N4
-	Behavior of individual axes with automatic path segmentation	DWORD	PowerOn
-			
-	-	1, 0, 0, 0, 0, 0, 0, 0...	- - 7/2 M

Description: This machine data defines how single axes that are also nibbling axes within the meaning of MD26010 \$MC_PUNCHNIB_AXIS_MASK are to behave.
In this case, there are the following options for the behavior of the single axes during automatic path segmentation and stroke control:
PUNCH_PARTITION_TYPE = 0

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No special behavior during automatic path segmentation. If the single axes are programmed together with path axes in one block, then their total traversing path is split up corresponding to the path axes. That is the pure geometric relationship between the single axes and path axes is identical to the undivided motion. If the single axes are programmed without the path axes but with SPN=<value>, then the path is divided according to the programmed SPN value.

PUNCH_PARTITION_TYPE = 1

In this case, the path of the single axes, if they are programmed together with path axes, are generally traversed in the first section (that is independently of the currently active type of interpolation).

PUNCH_PARTITION_TYPE = 2

In this case, the single axes behave with linear interpolation in the same way as with PUNCH_PARTITION_TYPE = 1, and with all other types of interpolation in the same way as with PUNCH_PARTITION_TYPE = 0.

Related to:

MD26010 \$MC_PUNCHNIB_AXIS_MASK

26018	NIBBLE_PRE_START_TIME			C09	N4	
s	Delay time for nibbling/punching with G603			DOUBLE	PowerOn	
-						
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	-1.0E+301	1.0E+301	7/2	M

Description: To minimize any dead times due to the reaction time of the punching unit, it is possible to release the stroke before reaching the in-position window of the axes. The reference time for this is the interpolation end. Since there is normally a delay of some interpolation cycles after reaching the interpolation end (depending on the machine dynamics) until the axes actually come into position, the prestart time is a delay time with respect to reaching the interpolation end.

The function is therefore coupled to G603 (block change at the end of interpolation). The time can be set via the machine data NIBBLE_PRE_START_TIME).

Example:

With an interpolation cycle of 5 ms, a stroke shall be released 2 cycles after reaching the interpolation end. In this case, the value 0.010 s must be selected for NIBBLE_PRE_START_TIME. If a value that is not integrally divisible by the set interpolation time is selected, then the stroke is initiated in the interpolation cycle following the set time.

26020	NIBBLE_SIGNAL_CHECK			C09	N4	
-	Alarm on chattering punching signal			DWORD	PowerOn	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/2	M

Description: When stroke active signal is set, for example by punch overshoots between the strokes, then the interpolation is stopped. It is also possible to generate the message "unclean punch signal" as a function of machine data NIBBLE_SIGNAL_CHECK.

0: No error message when the punching signal is irregular

1: Alarm, when the punching signal is irregular between strokes

27100	ABSBLOCK_FUNCTION_MASK			N01	K1, P1	
-	Parameterize basic blocks with absolute values			UDWORD	PowerOn	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x1	7/2	M

Description: Parameterization of the "basic blocks with absolute values" function

Bit 0 = 1 :

The position values of the transverse axis are always displayed as diameter values.
 Transverse axes can be applied using MD20100 \$MC_DIAMETER_AX_DEF or MD30460
 \$MA_BASE_FUNCTION_MASK, bit 2.

27400	OEM_CHAN_INFO			A01, A11	-	
-	OEM version information			STRING	PowerOn	
-						
-	3		-	-	7/2	M

Description: A version information freely available to the user
 (is indicated in the version screen)

27850	PROG_NET_TIMER_MODE			C09	-	
-	Impact of the program runtime net counter			UDWORD	Reset	
-						
-	-	0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00...	0x00	0x03	7/2	M

Description: The program run time is measured using system variables and can be read out. It provides a means of outputting the current progress of the processing of a part program. This MD can be used to make the following settings on a channel-specific basis:

Bit 0 = 0
 \$AC_ACT_PROG_NET_TIME is not deleted on a jump to the start of the program with GOTOS

Bit 0 = 1
 \$AC_ACT_PROG_NET_TIME is deleted on a jump to the start of the program with GOTOS, the value is saved in \$AC_OLD_PROG_NET_TIMES, and the program counter \$AC_OLD_PROG_NET_TIME_COUNT is incremented.

Bit 1 = 0
 \$AC_ACT_PROG_NET_TIME ceases to be increased if override = 0 is set; in other words, the program run time is measured without the time for which the override was set to 0.

Bit 1 = 1
 \$AC_ACT_PROG_NET_TIME is increased if override = 0; in other words, the program run time is measured with the time for which the override was set to 0.

Bits 2 to 31
 Reserved

27860	PROCESSTIMER_MODE			C09	K1	
-	Activation and impact of program runtime measurement			UDWORD	Reset	
-						
-	-	0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00...	0	0x7FF	7/2	M

Description: Timers are provided as system variables under the function program runtime. While the NCK-specific timers are always activated (for time measurements since the last control power on), the channel-specific timers have to be started via this machine data.

Meaning:

Bit 0 = 0
 No measurement of total operating time for any part program

Bit 0 = 1

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Measurement of total operating time is active for all part programs (\$AC_OPERATING_TIME)

Bit 1 = 0
No measurement of current program runtime

Bit 1 = 1
Measurement of current program runtime is active (\$AC_CYCLE_TIME)

Bit 2 = 0
No measurement of tool operating time

Bit 2 = 1
Measurement of tool operating time is active (\$AC_CUTTING_TIME)

Bit 3
Reserved

Bits 4,5 only when bit 0, 1, 2 = 1:

Bit 4 = 0 No measurement with active dry run feed

Bit 4 = 1 Measurement also with active dry run feed

Bit 5 = 0 No measurement with program test

Bit 5 = 1 Measurement also with program test

Bit 6 only when Bit 1 = 1:

Bit 6 = 0
Delete \$AC_CYCLE_TIME also with start by ASUB and PROG_EVENTS

Bit 6 = 1
\$AC_CYCLE_TIME is not deleted on start by ASUB and PROG_EVENTS.

Bit 7 only when bit 2 = 1:

Bit 7 = 0 \$AC_CUTTING_TIME counts only with active tool

Bit 7 = 1 \$AC_CUTTING_TIME counts irrespective of tool

Bits 8 only when bit 1 = 1

Bit 8 = 0
\$AC_CYCLE_TIME is not deleted on jumping to program start with GOTOS

Bit 8 = 1
\$AC_CYCLE_TIME is deleted on jumping to program start with GOTOS.

Bit 9 only when bits 0, 1 = 1:

Bit 9 = 0
\$AC_OPERATING_TIME, \$AC_CYCLE_TIME: No measurement with override = 0.

Bit 9 = 1
\$AC_OPERATING_TIME, \$AC_CYCLE_TIME: Measurement also with override = 0.

Bits 10 to 31
Reserved

27880	PART_COUNTER			C09	K1	
-	Activation of workpiece counter			UDWORD	Reset	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x0FFFFFFF	7/2	M

Description:

The part counters can be configured with this machine data.

Note: with bit 0 = 1 and \$AC_REQUIRED_PARTS less than 0, all workpiece counts activated in this MD are frozen at the status reached.

Meaning of the individual bits:

Bits 0 - 3: Activating \$AC_REQUIRED_PARTS

```

Bit 0 = 1:    Counter $AC_REQUIRED_PARTS is activated
Further meaning of bits 1-3 only when bit 0 =1 and $AC_REQUIRED_PARTS > 0:
Bit 1 = 0:    Alarm/VDI output if $AC_ACTUAL_PARTS corresponds to $AC_REQUIRED_PARTS
Bit 1 = 1:    Alarm/VDI output if $AC_SPECIAL_PARTS corresponds to $AC_REQUIRED_PARTS
Bit 2    Reserved!
Bit 3    Reserved!
Bits 4 - 7:    Activating $AC_TOTAL_PARTS
-----

Bit 4 = 1:    Counter $AC_TOTAL_PARTS is active
Further meaning of bits 5-7 only when bit 4 =1 and $AC_REQUIRED_PARTS > 0:
Bit 5 = 0:    Counter $AC_TOTAL_PARTS is incremented by 1 with a VDI output of M02/M30
Bit 5 = 1:    Counter $AC_TOTAL_PARTS is incremented by 1 with output of the M command
from MD PART_COUNTER_MCODE[0]
Bit 6 = 0:    $AC_TOTAL_PARTS also active with program test/block search
Bit 6 = 1:    No machining $AC_TOTAL_PARTS with program test/block search
Bit 7 = 1:    Counter $AC_TOTAL_PARTS is incremented by 1 on a return with GOTOS
Bits 8 - 11:    Activating $AC_ACTUAL_PARTS
-----

Bit 8 = 1:    Counter $AC_ACTUAL_PARTS is active
Further significance of bits 9-11 only when bit 8 =1 and $AC_REQUIRED_PARTS > 0:
Bit 9 = 0:    Counter $AC_ACTUAL_PARTS is incremented by 1 with a VDI output of M02/M30
Bit 9 = 1:    Counter $AC_ACTUAL_PARTS is incremented by 1 with output of the M command
from MD PART_COUNTER_MCODE[1]
Bit 10 = 0:    $AC_ACTUAL_PARTS also active with program test/block search
Bit 10 = 1:    No machining $AC_ACTUAL_PARTS with program test/block search
Bit 11 = 1:    Counter $AC_ACTUAL_PARTS is incremented by 1 on a return with GOTOS
Bit 12 - 15:    Activating $AC_SPECIAL_PARTS
-----

Bit 12 = 1:    Counter $AC_SPECIAL_PARTS is active
Further significance of bits 13-15 only when bit 12 =1 and $AC_REQUIRED_PARTS > 0:
Bit 13 = 0:    Counter $AC_SPECIAL_PARTS is incremented by 1 with a VDI output of M02/
M30
Bit 13 = 1:    Counter $AC_SPECIAL_PARTS is incremented by 1 with output of the M
command from MD PART_COUNTER_MCODE[2]
Bit 14 = 0:    $AC_SPECIAL_PARTS also active with program test/block search
Bit 14 = 1:    No machining $AC_SPECIAL_PARTS with program test/block search
Bit 15 = 1:    Counter $AC_SPECIAL_PARTS is incremented by 1 on a return with GOTOS
Bit 16 - 19:    Extension $AC_TOTAL_PARTS
-----

Meaning of the bits 16-19 applies only if Bit4 =1 and $AC_REQUIRED_PARTS > 0:
Bit 16 = 0:    $AC_TOTAL_PARTS is active in MDI mode
Bit 16 = 1:    No machining $AC_TOTAL_PARTS in MDI mode
Bit 17    Reserved!
Bit 18    Reserved!
Bit 19    Reserved!
Bit 20 - 23:    Extension $AC_ACTUAL_PARTS
-----

Meaning of bits 20-23 only if bit8 =1 and $AC_REQUIRED_PARTS > 0:
Bit 20 = 0:    $AC_ACTUAL_PARTS is active in MDI mode
Bit 20 = 1:    No machining $AC_ACTUAL_PARTS in MDI mode

```

```

Bit 21      Reserved!
Bit 22      Reserved!
Bit 23      Reserved!
Bit 24 - 27:   Extension $AC_SPECIAL_PARTS
-----
Meaning of bits 24-27 only if bit12 =1 and $AC_REQUIRED_PARTS > 0:
Bit 24 = 0:    $AC_SPECIAL_PARTS is active in MDI mode
Bit 24 = 1:    No machining $AC_SPECIAL_PARTS in MDI mode
Bit 25      Reserved!
Bit 26      Reserved!
Bit 27      Reserved!
Related to:
MD27882 $MC_PART_COUNTER_MCODE

```

27882	PART_COUNTER_MCODE			C09	K1	
-	Workpiece counting with user-defined M command			BYTE	PowerOn	
-						
-	3	2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2...	0	99	7/2	M

Description:	If part counting is activated via MD27880 \$MC_PART_COUNTER, the count pulse can be triggered by a special M command. Only then are the values defined here taken into account: Meaning: The part counters are incremented by 1 in the NST signal output of the M command described, where: MD27882 \$MC_PART_COUNTER_MCODE[0] for \$AC_TOTAL_PARTS MD27882 \$MC_PART_COUNTER_MCODE[1] for \$AC_ACTUAL_PARTS MD27882 \$MC PART COUNTER MCODE[2] for \$AC SPECIAL PARTS

27920	TIME_LIMIT_NETTO_INT_TASK			EXP, C01	-	
s	Runtime limit of interpreter subtask			DOUBLE	PowerOn	
-						
-	-	0.005, 0.005, 0.005, 0.005, 0.005, 0.005, 0.005, 0.005...	0.001	0.100	ReadOnly	S

Description:	With MD27920 \$MC_TIME_LIMIT_NETTO_INT_TASK, the maximum runtime of the interpreter subtask is set. The interpreter subtask is started from the preprocessing task. If the interpreter task does not end on its own within the time set with MD27920 \$MC_TIME_LIMIT_NETTO_INT_TASK, it will be stopped and continued after a preprocessing cycle.

27930	TIME_LIMIT_NETTO_EES_TASK			EXP, C01	-	
s	Runtime limit of the EES async. subtask			DOUBLE	PowerOn	
-						
-	-	0.008, 0.008, 0.008, 0.008, 0.008, 0.008, 0.008, 0.008...	0.001	0.100	ReadOnly	S

Description:	The maximum runtime of the EES async. subtask is set with this machine data. The EES async. subtask is started from the preprocessing task. If the EES async. subtask does not end automatically within the time set in this machine data, it will be stopped and resumed after a preprocessing cycle.

28000	MM_REORG_LOG_FILE_MEM			EXP, C02	V2, K1	
-	Memory space for REORG (DRAM)			DWORD	PowerOn	
-						
-	-	50, 50, 50, 50, 50, 50, 50, 50...	1	500	7/2	M

Description: Definition of the size (in kbyte) of the dynamic memory for the REORG-LOG data. The size of the memory determines the quantity of the data available for the function REORG.

References:

/FB/, K1, "Mode Groups, Channel, Program Operation"

28010	MM_NUM_REORG_LUD_MODULES				EXP, C02	V2, K1	
-	Number of blocks for local user variables in REORG (DRAM)				DWORD	PowerOn	
-							
-	-	8, 8, 8, 8, 8, 8, 8, 8...	0	SLMAXNUMBER OF_USERMODUL ES	7/2	M	

Description: Defines the number of additional LUD data blocks available for the function REORG (see Description of Functions, Channels, Mode Groups, Program Operation (K1)).

This value can be 0 if the function REORG is not used. The CNC always opens 12 LUD data blocks, of which 8 are used for NC programs and 4 for the ASUBs.

An LUD data block is needed for each NC program and ASUB in which a local user variable is defined. This value may have to be increased for the function REORG if a large IPO buffer is present and a large number of short NC programs in which LUD variables are defined are active (prepared NC blocks of the programs are located in the IPO buffer).

An LUD data block is needed for each of these programs. The size of the reserved memory is affected by the number of LUDs per NC program and their individual memory requirements. The LUD data blocks are stored in the dynamic memory.

The memory requirement for managing the blocks for local user variables with REORG can be determined as follows:

The size of the LUD blocks depends on the number of active LUDs and their data type. The memory for the LUD blocks is limited by the MD28000 \$MC_MM_REORG_LOG_FILE_MEM (memory size for REORG).

28020	MM_NUM_LUD_NAMES_TOTAL			C02	V2, K1	
-	Number of local user variables (DRAM)			DWORD	PowerOn	
-						
-	-	4000, 4000, 4000, 4000, 4000, 4000, 4000, 4000...	4000	32000	7/3	U

Description: Defines the number of variables for the local user data (LUD) which are permitted to exist in the active sections of the program. Approximately 150 bytes of memory per variable are reserved for the names of the variables and the variable values. The memory required for the variable value is equal to the size of the data type. If the total of the local user variables from the active main program and the related subprograms is larger than the defined limit, the variables which are over the limit are not accepted during execution of the program. Dynamic memory is used for the variable names and variable values.

Overview of the memory used by the data types:

Data type Memory used

REAL 8 bytes

INT 4 bytes

3.3 NC machine data

BOOL	1 byte
CHAR	1 byte
STRING	1 byte per character, 200 characters per string are possible
AXIS	4 bytes
FRAME	400 bytes

28040	MM_LUD_VALUES_MEM			C02	V2, K1	
-	Memory space for local user variables (DRAM)			DWORD	PowerOn	
-						
-	-	250, 250, 250, 250, 250, 250, 250, 250...	250	32000	7/3	U

Description: This MD defines the amount of memory space available for LUD variables.
The maximum number of available LUDs is given by one of the limit values of MD28020 \$MC_MM_NUM_LUD_NAMES_TOTAL or MD28040 \$MC_MM_LUD_VALUES_MEM.
It should be remembered that several part programs requiring memory can be open simultaneously in the NCK. The number depends on the type of programming, the program length, and the size of the internal NCK block memory upwards of (MD28060 \$MC_MM_IPO_BUFFER_SIZE, MD28070 \$MC_MM_NUM_BLOCKS_IN_PREP).
Related to:
MD28020 \$MC_MM_NUM_LUD_NAMES_TOTAL
(number of local user variables (DRAM))

28050	MM_NUM_R_PARAM			C02	K1	
-	Number of channel-specific R variables (SRAM)			DWORD	PowerOn	
-						
-	-	100, 100, 100, 100, 100, 100, 100, 100...	0	32535	7/2	M

Description: Defines the number of R variables available in the channel. This machine data reserves 8 bytes of buffered user memory per R variable.

28060	MM_IPO_BUFFER_SIZE			C02	B1, K1	
-	Number of NC blocks in IPO buffer (DRAM)			DWORD	PowerOn	
-						
-	-	10, 10, 10, 10, 10, 10, 10, 10...	2	1000	7/2	M

Description: Defines the number of blocks for the interpolation buffer. This buffer contains prepared NC blocks available for the interpolation. A number of kbytes of the dynamic user memory are reserved for each NC block. The data also limits the number of blocks for look ahead consideration of speed limitation for the LookAhead function.
MD28060 \$MC_MM_IPO_BUFFER_SIZE is set by the system.
Related to:
MD28070 \$MC_MM_NUM_BLOCKS_IN_PREP
(number of blocks for block preparation)

28070	MM_NUM_BLOCKS_IN_PREP			EXP, C02	B1, K1	
-	Number of blocks for block preparation (DRAM)			DWORD	PowerOn	
-						
-	-	50, 50, 50, 50, 50, 50, 50, 50...	20	1000	7/2	M

Description: Defines the number of NC blocks available for NC block preparation. This figure is determined mainly by the system software and is used largely for optimization. Approximately 10 Kbytes of dynamic memory is reserved per NC block.

Related to:

MD28060 \$MC_MM_IPO_BUFFER_SIZE

(number of NC blocks with IPO buffer)

28071	MM_NUM_SURF_LEVELS	EXP, C02	-
-	Dimensioning of the COMPSURF function (DRAM)	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 10 7/1 M

Description: Defines the size of the internal data structures of the COMPSURF function. A larger value means a better surface finish is achieved but also that more CPU time and memory space are required.

With the value 0, the COMPSURF function is not present in a channel, and therefore occupies no memory space.

The machine data only has an effect if the Top Surface option is used.

28072	MM_MAXNUM_SURF_GROUPS	EXP, C02	-
-	Dimensioning of the COMPSURF function in respect of axis groups (DRAM)	DWORD	PowerOn
-			
-	-	1, 1, 1, 1, 1, 1, 1, 1...	1 3 7/2 M

Description: Defines the size of the internal data structures of the COMPSURF function in respect of various axis groups, such as geometry, orientation, and other axis types. Larger values mean better quality smoothing, but also more use of CPU time and memory space.

The machine data only has an effect if the Top Surface option is used.

Related to:

SD42473 \$SC_ACTNUM_SURF_GROUPS

28079	MM_NUM_G_FRAMES	C11, C02	K1, K2
-	Number of grinding frames (SRAM)	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 100 7/2 M

Description: Specifies the number of predefined grinding frames.

The buffered data are lost when this machine data is changed!

28080	MM_NUM_USER_FRAMES	C11, C02	K1, K2
-	Number of settable frames (SRAM)	DWORD	PowerOn
-			
-	-	5, 5, 5, 5, 5, 5, 5, 5...	5 100 7/2 M

Description: Defines the number of predefined user frames. The standard system configuration provides four frames for G54 to G57 and one frame for G500.

The backup data are lost if this machine data is altered!

28081	MM_NUM_BASE_FRAMES	C02	M5, K2
-	Number of base frames (SRAM)	DWORD	PowerOn
-			
-	-	1, 1, 1, 1, 1, 1, 1, 1...	0 16 7/2 M

Description: Number of channel-specific base frames per channel.

The value corresponds to the number of field elements for the predefined field \$P_CHBFR[].

Buffered memory is reserved for this.

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28082	MM_SYSTEM_FRAME_MASK			C02	M5, K2, W1	
-	System frames (SRAM)			UDWORD	PowerOn	
-						
-	-	0x21, 0x21, 0x21, 0x21, 0x21, 0x21, 0x21, 0x21...	0	0x00000FFF	7/2	S

Description: Bit mask for configuring channel-specific system frames included in the channel.

- Bit 0: System frame for setting actual value and scratching
- Bit 1: System frame for external work offset
- Bit 2: System frame for TCARR and PAROT
- Bit 3: System frame for TOROT and TOFRAME
- Bit 4: System frame for workpiece reference points
- Bit 5: System frame for cycles
- Bit 6: System frame for transformations
- Bit 7: System frame \$P_ISO1FR for ISO G51.1 Mirror
- Bit 8: System frame \$P_ISO2FR for ISO G68 2DROT
- Bit 9: System frame \$P_ISO3FR for ISO G68 3DROT
- Bit 10: System frame \$P_ISO4FR for ISO G51 Scale
- Bit 11: System frame \$P_RELFR for relative coordinate systems

28083	MM_SYSTEM_DATAFRAME_MASK			C02	-	
-	System frames (SRAM)			UDWORD	PowerOn	
-						
-	-	0xF9F, 0xF9F, 0xF9F, 0xF9F, 0xF9F, 0xF9F, 0xF9F, 0xF9F...	0	0x00000FFF	7/2	S

Description: Bit mask for configuring channel-specific system frames in the data storage (SRAM).

- Bit 0: System frame for setting actual value and scratching
- Bit 1: System frame for external work offset
- Bit 2: System frame for TCARR and PAROT
- Bit 3: System frame for TOROT and TOFRAME
- Bit 4: System frame for workpiece reference points
- Bit 5: System frame for cycles
- Bit 6: System frame for transformations
- Bit 7: System frame \$P_ISO1FR for ISO G51.1 Mirror
- Bit 8: System frame \$P_ISO2FR for ISO G68 2DROT
- Bit 9: System frame \$P_ISO3FR for ISO G68 3DROT
- Bit 10: System frame \$P_ISO4FR for ISO G51 Scale
- Bit 11: System frame \$P_RELFR for relative coordinate systems

28085	MM_LINK_TOA_UNIT			C02, C09	FBWsl, S7	
-	Assignment of a TO unit to a channel (SRAM)			DWORD	PowerOn	
-						
-	-	1, 2, 3, 4, 5, 6, 7, 8...	1	10	7/2	M

Description: The T0 area covers all tool, magazine, ... data blocks known to the NCK. The maximum number of units in the T0 area is equal to the number of channels.

If MD28085 \$MC_MM_LINK_TOA_UNIT = default setting, then each channel is assigned a TO unit individually.

If MD28085 \$MC_MM_LINK_TOA_UNIT = i, the channel is assigned TO unit i. This enables one TO unit to be assigned to multiple channels.

Notice

The upper limit does not indicate that this value is always practical or free of conflicts. If one channel (the first) is active in a system with a maximum of 2 channels, and the other is not, the MD on channel 1 can formally be given the value 2, but the NCK cannot work with it. This setting would mean that channel 1 did not have any blocks for tool offsets, as the channel with ID=2 did not exist.

The NCK detects this conflict at Power On and restart, and responds by autonomously changing the (incorrect) value to the default value of the MD.

28090	MM_NUM_CC_BLOCK_ELEMENTS	EXP, C02	TE1, TE7, TE8, K1
-	Number of block elements for compile cycles (DRAM)	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 64 7/1 M

Description: The input value defines the number of block elements that can be used for compile cycles.

In the case of software version 2, approximately 1.2KB of dynamic memory is required per block element.

28100	MM_NUM_CC_BLOCK_USER_MEM	EXP, C02	TE1, TE7, TE8, K1
-	Size of block memory for compile cycles (DRAM), in KB	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 64000 7/1 M

Description: The value defines the total capacity of block memory available to the user in the dynamic memory area for the compile cycles. The memory is allocated in staggered blocks of 128 bytes.

28105	MM_NUM_CC_HEAP_MEM	EXP, C02	TE7
-	Heap memory in kbytes for compile-cycle applications (DRAM)	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 64000 7/2 M

Description: Size of the heap memory in kbytes which can be used by the compile cycle user.

Dynamic memory is reserved.

The memory is allocated in subdivisions of 128 byte groups.

The start address and the size of the reserved memory is made available via a binding, the management lies in the hands of the CC user.

28150	MM_NUM_VDIVAR_ELEMENTS	C02	A2, P3 pl, P3 sl
-	Number of elements for writing PLC variables	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 32000 7/2 M

Description: The MD defines the number of elements which the user has available for writing PLC variables (\$A_DBx=...). This number also applies to block search, but not to synchronized actions.

The memory requirement is ca. 24 bytes per element.

One element is needed for each write action when writing PLC variables in quick succession.

If more writing actions are to be performed than elements are available, block transport must be guaranteed (trigger preprocessing stop, if required)

However, the number of elements can be reduced if the accessing actions are made separately (block transport has already been accomplished). Writing accesses (var=\$A_DBx) are unlimited.

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28160	MM_NUM_LINKVAR_ELEMENTS			C02	B3	
-	Number of elements for writing NCU-link variables			DWORD	PowerOn	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	32000	7/2	M

Description: Defines the number of elements which the user has available for programming link variables (\$A_DLx=...). This number also applies to block search, but not to synchronized actions.

The memory requirement is approx. 24 bytes per element.

One element is needed for each write action when writing NCU-link variables in quick succession.

However, the number of elements can be reduced if the accessing actions are made separately (block transport has already been accomplished).

If more writing actions are to be performed than elements are available, block transport must be guaranteed (trigger preprocessing stop, if required).

28180	MM_MAX_TRACE_DATAPOINTS			EXP, C02, C06	-	
-	Length of the trace data buffer			DWORD	PowerOn	
NBUP						
-	-	100, 100, 100, 100, 100, 100, 100, 100...	0	20000	2/2	M

Description: MM_MAX_TRACE_DATAPOINTS defines the size of an internal data buffer which contains the trace recordings.

28200	MM_NUM_PROTECT_AREA_CHAN			C02, C06, C09	A3	
-	Number of channel-specific protection zones (SRAM)			DWORD	PowerOn	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	10	7/2	M

Description: This machine data defines how many channel-specific protection areas are set up.

Related to:

MD28210 \$MC_MM_NUM_PROTECT_AREA_ACTIVE (number of simultaneously active protection areas)

MD18190 \$MN_MM_NUM_PROTECT_AREA_NCK (number of control-specific protection areas (SRAM))

References:

/FB/, A3, "Axis/Contour Tunnel Monitoring, Protection Areas"

28210	MM_NUM_PROTECT_AREA_ACTIVE			C11, C02, C06, C09	A3	
-	Number of simultaneously active protection zones in one channel			DWORD	PowerOn	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/2	M

Description: This machine data defines the number of protection areas that may be activated simultaneously for each channel.

It is not practical to enter a numerical value greater than MD18190 \$MN_MM_NUM_PROTECT_AREA_NCK + MD28200 \$MC_MM_NUM_PROTECT_AREA_CHAN.

Related to:

MD28200 \$MC_MM_NUM_PROTECT_AREA_CHAN (Number of blocks for channel-specific protection areas)

MD18190 \$MN_MM_NUM_PROTECT_AREA_NCK (Number of control-specific protection areas (SRAM))

References:

/FB1/ Function Manual Basic Functions; Axis Monitoring, Protection Areas (A3)

28212	MM_NUM_PROTECT_AREA_CONTOUR			C11, C02, C06, C09	A3	
-	Elements for active protection zones (DRAM)			DWORD	PowerOn	
-						
-	-	30, 30, 30, 30, 30, 30, 30, 30...	0	50	7/2	M

Description: This machine data defines for each channel how many internal contour elements in total are held available for active protection zones.

Dynamic memory is used.

The MD affects the memory requirements for the activated protection zones.

This machine data is active only if MD28210 \$MC_MM_NUM_PROTECT_AREA_ACTIVE is not equal to 0.

28240	MM_NUM_SYNC_DIAG_ELEMENTS			N05, C02	-	
-	Number of diagnostic elements for expressions in synchronized actions			DWORD	PowerOn	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	32000	7/2	M

Description: The values of the variables and machine data during diagnostics of the motion-synchronous actions are saved to memory elements for storage in the control. A motion-synchronous action uses up to the number of elements for as many variables as are set with MD28241 \$MC_MAXNUM_SYNC_DIAG_VAR.

The following are assigned:

- 1 element for each variable
- 1 element for each index

Example:

```
WHEN $R1 == 1 DO $R2 = $R[AC_MARKER[1]]
```

R1 = 2 elements, variable with written value 1 element, index "1" an element
R2 = 2 elements, variable with written value 1 Element, index "2" an element
AC_MARKER = 2 elements, variable with read value 1 element, index "1" an element
R = 2 elements, variable with written value 1 element, index "1" an element
Total 8 elements.

28241	MAXNUM_SYNC_DIAG_VAR			N05	-	
-	Maximum number of diagnostics variables per synchronized action			DWORD	PowerOn	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	10000	7/2	M

Description: Maximum number of diagnostics variables per synchronized action.

28250	MM_NUM_SYNC_ELEMENTS			C02	2.8, 6.1	
-	Number of elements for expressions in synchronized actions			DWORD	PowerOn	
-						
-	-	159, 159, 159, 159, 159, 159, 159, 159...	0	32000	7/2	M

Description: The expressions of the motion-synchronous actions are stored in memory elements in the control. A motion-synchronous action occupies at least 4 elements.

It occupies:

3.3 NC machine data

- 1 element for each operand in the condition
- ≥ 1 element for each action
- 2 elements for each assignment
- 1 element for each further operand in complex expressions.

One element occupies approx. 64 bytes.

The option "Synchronous actions stage 2" is required if the MD can be written to.

28251	MM_NUM_SAFE_SYNC_ELEMENTS	C02	-
-	Number of elements for expressions in Safety synchr. actions	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 32000 7/2 M

Description: The expressions of motion-synchronous actions are stored in memory elements of the control. A motion-synchronous action assigns at least 4 elements.

Assignments:

Each operand in the condition: 1 element

Each action: ≥ 1 element

Each assignment: 2 elements

Each additional operand in complex expressions: 1 element

Also see:

MD28250 \$MC_MM_NUM_SYNC_ELEMENTS

28252	MM_NUM_FCTDEF_ELEMENTS	C02	2.4, 2.8, 6.1
-	Number of FCTDEF elements	DWORD	PowerOn
-			
-	-	3, 3, 3, 3, 3, 3, 3, 3...	0 100 7/2 M

Description: Defines the number of FCTDEF elements.

28253	MM_NUM_SYNC_STRINGS	C02	-
-	Number of strings for expressions in synchronized actions	DWORD	PowerOn
-			
-	-	200, 200, 200, 200, 200, 200, 200, 200...	0 32000 7/2 M

Description: The expressions of motion-synchronous actions are saved in memory elements for storage in the control. Elements have to be reserved specifically for strings within expressions.

28254	MM_NUM_AC_PARAM	C02	-
-	Dimension of \$AC_PARAM.	DWORD	PowerOn
-			
-	-	50, 50, 50, 50, 50, 50, 50, 50...	0 20000 7/2 M

Description: Panel size of \$AC_PARAM.

28255	MM_BUFFERED_AC_PARAM	C02	2.3, 6.1
-	\$AC_PARAM[] is stored in SRAM.	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 1 7/2 M

Description: \$AC_PARAM[] is stored in SRAM.

28256	MM_NUM_AC_MARKER	C02	2.3, 6.1
-	Dimension of \$AC_MARKER	DWORD	PowerOn
-			
-	-	8, 8, 8, 8, 8, 8, 8, 8...	0 20000 7/2 M

Description: Number of channel-specific markers \$AC_MARKER for motion-synchronous actions.
 DRAM or SRAM is required depending on MD28257 \$MC_MM_BUFFERED_AC_MARKER.

28257	MM_BUFFERED_AC_MARKER	C02	2.3, 6.1
-	\$AC_MARKER[] is stored in SRAM.	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 1 7/2 M

Description: \$AC_MARKER[] is stored in SRAM.

28258	MM_NUM_AC_TIMER	C02	2.3, 2.4, 6.1
-	Number of time variables \$AC_TIMER (DRAM)	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 10000 7/2 M

Description: Number of channel-specific time variables \$AC_TIMER for motion-synchronous actions (DRAM)

28260	NUM_AC_FIFO	C01	2.3, 2.4, 6.1
-	Number of FIFO variable for synchronized actions	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 10 7/2 M

Description: Number of FIFO variables \$AC_FIFO1 - \$AC_FIFO10 for motion-synchronous actions.
 FIFO variables are used for product tracking. A piece of information (e.g. the product length) for each part on a conveyor belt can be temporarily stored in each FIFO variable.
 FIFO variables are stored in R variables.
 MD28262 \$MC_START_AC_FIFO defines the number of the R variable as from which the FIFO variables can be stored. All R variables with lower numbers can be used freely in the part program.
 R variables above the FIFO range cannot be written from the part program.
 The number of R variables must set via MD28050 \$MC_MM_NUM_R_PARAM so that all FIFO variables can be accommodated from the start of the R variables:

$$MD28050 \text{ } \$MC\_MM\_NUM\_R\_PARAM = MD28262 \text{ } \$MC\_START\_AC\_FIFO + MD28260 \text{ } \$MC\_NUM\_AC\_FIFO * (MD28264 \text{ } \$MC\_LEN\_AC\_FIFO + 6)$$

 The FIFO variables bear the names \$AC_FIFO1 to \$AC_FIFO_n.
 They are stored as arrays.
 The indices 0 - 5 have special meanings:
 n= 0:
 A new value is stored in the FIFO when writing with index 0.
 The oldest element is read and removed from the FIFO when writing with index 0.
 n=1: Access to the first element read in
 n=2: Access to the last element 1 read in
 n=3: Sum of all FIFO elements
 n=4: Number of elements available in the FIFO
 n=5: Current write index relative to FIFO start
 n=6: 1st element read in

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28262	START_AC_FIFO	C01	2.3, 2.4, 6.1
-	FIFO variables store from R variable	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 32535 7/2 M

Description: Number of the R variable as from which FIFO variables are stored. All R variables with lower numbers can be used freely in the part program. R variables above the FIFO range cannot be written from the part program.

The number of R variables must set via MD28050 \$MC_MM_NUM_R_PARAM so that all FIFO variables can be accommodated from the start of the R variables:

MD28050 \$MC_MM_NUM_R_PARAM = MD28262 \$MC_START_AC_FIFO + MD28260 \$MC_NUM_AC_FIFO * (MD28264 \$MC_LEN_AC_FIFO + 6)

The FIFO variables bear the names \$AC_FIFO1 to \$AC_FIFO_n. They are stored as arrays.

The indices 0 - 5 have special meanings:

n= 0:

A new value is stored in the FIFO when writing with index 0.

The oldest element is read and removed from the FIFO when reading with index 0.

n=1: Access to the first element read in

n=2: Access to the last element read in

n=3: Sum of all FIFO elements

n=4: Number of elements available in the FIFO

n=5: Current write index relative to FIFO start

Related to:

MD28260 \$MC_NUM_AC_FIFO

28264	LEN_AC_FIFO	C01	2.3, 2.4, 6.1, M5
-	Length of FIFO variables \$AC_FIFO1-\$AC_FIFO10	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 32535 7/2 M

Description: Length of the FIFO variables \$AC_FIFO1 to \$AC_FIFO10.

All FIFO variables are the same length.

28266	MODE_AC_FIFO	C01	2.3, 2.4, 6.1
-	Mode of FIFO processing	BYTE	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 - 7/2 M

Description: Mode of FIFO processing:

Bit 0 = 1:

The sum of all FIFO contents is updated at each write access.

Bit 0 = 0:

No summation

Related to:

MD28260 \$MC_NUM_AC_FIFO

28274	MM_NUM_AC_SYSTEM_PARAM	EXP, C02	-
-	Number of \$AC_SYSTEM_PARAM for motion-synchronous actions	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 20000 7/2 M

Description: Number of \$AC_SYSTEM_PARAM parameters for motion-synchronous actions.

Depending on MD28255 \$MC_MM_BUFFERED_AC_PARAM, DRAM or SRAM is required.

Reserved for SIEMENS applications.

28276	MM_NUM_AC_SYSTEM_MARKER			EXP, C02	-	
-	Number of \$AC_SYSTEM_MARKER for motion-synchronous actions			DWORD	PowerOn	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	20000	7/2	M

Description: Number of \$AC_SYSTEM_MARKER markers for motion-synchronous actions.
Depending on MD28257 \$MC_MM_BUFFERED_AC_MARKER, DRAM or SRAM is required.
Reserved for SIEMENS applications.

28290	MM_SHAPED_TOOLS_ENABLE			C01, C08, C02	-	
-	Enable tool radius compensation for contour tools			BOOLEAN	PowerOn	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: The function "Tool radius compensation for contour tools" is enabled with this tool.

28291	MM_SMOOTH_SURFACE_NORMALS			C01, C08, C02	-	
-	Enable interpolation of the surface normals via polynomials.			BOOLEAN	PowerOn	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/2	M

Description: This machine data enables the handling of surface normals with polynomials. It is needed, among other things, for smoothing the surface normals with the COMPSURF function.

28300	MM_PROTOC_USER_ACTIVE			C02	-	
-	Activation of logging for a user			BOOLEAN	PowerOn	
-						
-	10	TRUE, TRUE, FALSE, FALSE, FALSE, TRUE, TRUE, TRUE, FALSE,, T...	0	-	1/1	M

Description: Activation of recording for a user.
Users 0 and 1, and 5 to 9 are reserved for system functions.
Users 2, 3 and 4 can be used by OEM.
The individual values concern the users of the log function, the values are assigned to the following functions:
0: Reserved for system functions: simultaneous recording, simulation, synchronized action analysis
1: Reserved for system functions: determining program runtimes, multistep editor
2: Reserved for OEM applications
3: Reserved for OEM applications
4: Reserved for OEM applications
5: Reserved for system functions: Trace
6: Reserved for system functions: Trace
7: Reserved for system functions: Trace
8: Reserved for system functions: Trace
9: Reserved for system functions: Action log

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28301	MM_PROTOK_NUM_ETP_OEM_TYP			C02	-	
-	Number of OEM event types ETP.			DWORD	PowerOn	
-						
-	10	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	0	20	1/1	M

Description:

Number of OEM event types in OPI module ETP.

The individual values concern the users of the log function, which are assigned to the following functions:

0: Reserved for system functions: simultaneous recording, simulation, synchronized action analysis

1: Reserved for system functions: determining program runtimes, multistep editor

2: Reserved for OEM applications

3: Reserved for OEM applications

4: Reserved for OEM applications

5: Reserved for system functions: Trace

6: Reserved for system functions: Trace

7: Reserved for system functions: Trace

8: Reserved for system functions: Trace

9: Reserved for system functions: Action log

28302	MM_PROTOK_NUM_ETP_STD_TYP			C02	-	
-	Number of standard event types ETP			DWORD	PowerOn	
-						
-	10	28, 6, 0, 0, 0, 20, 20, 20, 0, 3, 28, 6, 0, 0, 0, 20, 20, 20, 0,...	28, 6, 0, 0, 0, 20, 20, 20...	67, 67, 67, 67, 67, 67, 67, 67...	1/1	M

Description:

Number of standard event types required in the ETP OPI block.

The individual values concern the users of the log function, which are assigned to the following functions:

0: Reserved for system functions: simultaneous recording, simulation, synchronized action analysis

1: Reserved for system functions: determining program runtimes, multistep editor

2: Reserved for OEM applications

3: Reserved for OEM applications

4: Reserved for OEM applications

5: Reserved for system functions: Trace

6: Reserved for system functions: Trace

7: Reserved for system functions: Trace

8: Reserved for system functions: Trace

9: Reserved for system functions: Action log

28400	MM_ABSBLOCK			EXP, C02	K1	
-	Activate basic blocks with absolute values			DWORD	PowerOn	
-						
-	-	1, 1, 1, 1, 1, 1, 1, 1...	0	512	7/2	M

Description:

Value:

0: Basic blocks with absolute values deactivated.

1: Basic blocks with absolute values activated;

A display buffer of the following size is created:

(MD28257 \$MC_MM_BUFFERED_AC_MARKER + MD28070 \$MC_MM_NUM_BLOCKS_IN_PREP) * 256 bytes
 >= 128: Basic blocks with absolute values activated.
 A display buffer of the following size is created:
 (MD28060 \$MC_MM_IPO_BUFFER_SIZE + MD28070 \$MC_MM_NUM_BLOCKS_IN_PREP) * <value>

28402	MM_ABSBLOCK_BUFFER_CONF			EXP, C02	K1	
-	Setting of upload buffer size			DWORD	PowerOn	
-						
-	2	2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4...	0	32000	7/2	M

Description: Dimensioning the size of the upload buffer:
 MD28402 \$MC_MM_ABSBLOCK_BUFFER_CONF[0] : Number of blocks before the current block
 MD28402 \$MC_MM_ABSBLOCK_BUFFER_CONF[1] : Number of blocks after the current block
 The machine data is tested for the following upper / lower limits during startup:
 0 <= MD28402 \$MC_MM_ABSBLOCK_BUFFER_CONF[0] <= 8
 0 <= MD28402 \$MC_MM_ABSBLOCK_BUFFER_CONF[1] <= (MD28060 \$MC_MM_IPO_BUFFER_SIZE + MD28070 \$MC_MM_NUM_BLOCKS_IN_PREP)
 Alarm 4152 is issued when the limits are violated.

28450	MM_TOOL_DATA_CHG_BUFF_SIZE			, C02, C06	-	
-	Buffer for tool data changes (DRAM)			DWORD	PowerOn	
-						
-	-	400, 400, 400, 400, 400, 400, 400, 400...	0	2500	7/2	M

Description: Number of entries in the buffer for the OPI change service for tool data.
 Dynamic memory is used.
 This buffer is created only if bit 2 or bit 3 is set in MD17530 \$MN_TOOL_DATA_CHANGE_COUNTER.

28520	MM_MAX_AXISPOLY_PER_BLOCK			C02	B1	
-	Maximal number of axial polynomials per block			DWORD	PowerOn	
-						
-	-	3, 3, 3, 3, 3, 3, 3, 3...	1	15	7/2	M

Description: Maximum number of axis polynomials which can be contained in a block.
 In the standard case, each block contains only one polynomial per axis, i.e. this data can be set to 1 immediately.
 More polynomials are required in the following cases:
 This data must have a value of at least 3 for smoothing with G642 to G645.
 A value of 5 is recommended if COMPCAD (Advanced Surface) is used.
 A value of 15 is recommended if COMPSURF is used.

28530	MM_PATH_VELO_SEGMENTS			C02	A2, B1	
-	Number of memory elements for path velocity limitation			DWORD	PowerOn	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	100	7/2	M

Description: Number of memory elements available for limiting the path velocity and changing it in the block.
 0 : Each block is limited by a maximum path velocity.
 > 0 : If required, a profile of the permissible path velocity
 ; and its modification options is generated and monitored

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```
; in the block.
; This results in a smoother axis velocity progression and
; a shorter travel time.
; MD28530 $MC_MM_PATH_VELO_SEGMENTS defines the average
; number of segments available in the block.
; The necessary setting essentially depends
; on the requirements.
```

The following values are recommended:

```
3:   for G643 and G644, if only geometry axes are traversed
5:   for G643 and G644, if geometry and rotary axes are traversed
5:   for COMPCAD
5:   for dyn. transformation
8:   for COMPSURF
```

A value that is too low may lead to additional velocity limitations if a sufficient number of blocks cannot be made available for interpolation.

MD28530 \$MC_MM_PATH_VELO_SEGMENTS additionally increases the memory requirement of dyn. Look Ahead. Values higher than 8 are only practical in exceptional cases.

3 ... 8 :

Recommended setting.

28533	MM_LOOKAH_FFORM_UNITS	C02	-
-	Memory for extended LookAhead	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 100000 7/2 M

Description:

The machine data is used to configure the work memory for extended LookAhead.

The MD scales the value defined internally through MD28060 \$MC_MM_IPO_BUFFER_SIZE, MD28520 \$MC_MM_MAX_AXISPOLY_PER_BLOCK, MD28530 \$MC_MM_PATH_VELO_SEGMENTS, MD28535 \$MC_MM_FEED_PROFILE_SEGMENTS, MD28540 \$MC_MM_ARCLENGTH_SEGMENTS).

Its practical size depends on the part program, the block lengths, the axis dynamics, and an active kinematic transformation.

The MD should only be set for those channels in which free-form surfaces are also machined.

0 : default LookAhead is active.

> 0 : extended LookAhead is active if switched on by MD20443 \$MC_LOOKAH_FFORM.

The set value for free-form surface applications is: 18.

28535	MM_FEED_PROFILE_SEGMENTS	C02	-
-	Number of memory element for feed profiles	DWORD	PowerOn
-			
-	-	1, 1, 1, 1, 1, 1, 1, 1...	1 10 7/2 M

Description:

Number of memory elements available for feed profile per block.

The default value 1 is adequate for a programmable feed profile (FLIN, FCUB, FPO()).

If compile cycle applications require more segments per block, this machine data must be increased accordingly.

If, for example, a feed profile is to be activated in which there is deceleration at both the beginning and the end of the block, 3 segments will be required for the feed profile in the block, i.e. this MD must have value 3.

28540	MM_ARCLENGTH_SEGMENTS	C02	B1
-	Number of memory elements for arc length function representation	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 100 7/2 M

Description: Number of memory elements available for the arc length function for parameterizing polynomials.

If this machine data is equal to zero, a fixed interval division is used to represent the arc length function. In this case, the calculated function is only tangent-continuous. This can lead to discontinuities in the axis accelerations.

If the function G643 or G644 is used for smoothing and/or COMPCAD or COMPSURF, this MD should be assigned a value of at least 10. In this case, the function also has a constant curvature which results in a smoother progression of the path velocity, as well as the axis velocities and accelerations.

A value of 10 is sufficient when using COMPSURF and 3-axis applications.

Up to 20 may be useful for COMPSURF and 5-axis applications.

Not only the value of MD28540 \$MC_MM_ARCLENGTH_SEGMENTS but also that of MD20262 \$MC_SPLINE_FEED_PRECISION are crucial for accuracy.

28560	MM_SEARCH_RUN_RESTORE_MODE	C02	K2
-	Data restore after simulation	UDWORD	PowerOn
-			
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0 0x00000001 7/2 M

Description: Bit mask to restore data after cancellation of a simulated program execution. The following applies:

Bit 0: All frames in the data storage are restored.

28580	MM_ORIPATH_CONFIG	C02	-
-	Setting for ORIPATH path-relative orientation	BYTE	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 1 1/1 M

Description: This MD is used to configure the behavior with ORIPATH, that is path-relative interpolation of the tool orientation. Furthermore, orientation smoothing is enabled with the G codes OSD or OST.

The following options are available:

0: MD21094 \$MC_ORIPATH_MODE has no effect. G codes OSD and OST have no effect.

1: The "genuine" path-relative orientation interpolation can be activated with MD21094 \$MC_ORIPATH_MODE = 1. The reference of the tool orientation to the path tangent and to the vector normal to the surface programmed with LEAD/TILT is retained throughout the block.

Note:

Alarm 10980 is output if ORIPATH is programmed with MD21094 \$MC_ORIPATH_MODE = 1 or OSD or OST without MD28580 \$MC_MM_ORIPATH_CONFIG = 1.

28590	MM_ORISON_BLOCKS	C02	-
-	Setting for orientation smoothing	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 1000 1/1 M

Description: This MD is used to activate and reserve memory for the function "orientation smoothing with ORISON". If this data has a value of "zero", no orientation smoothing will be possible.

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The value of this machine data indicates the maximum number of blocks over which the orientation is smoothed. The value of this MD should be at least high enough that the blocks to be averaged fit in the buffer. This is dependent upon the maximum set tolerance and the average distance traversed by the programmed blocks or the length of the part blocks generated (see MD20476 \$MC_ORISON_STEP_LENGTH).

.Setting this MD to higher values will significantly increase the memory requirement in the DRAM.

A value of 4 should be entered as a minimum.

If this MD is < 4 and if G code ORISON is programmed, alarm 10982 will be displayed.

28592	MM_NUM_SINGULARITY_BLOCKS	C02	-
-	Number of blocks for singularity handling. (DRAM)	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 1 1/1 M

Description: The "Singularity handling" function is activated with this MD, and memory is reserved for it. If this data has the value "zero", singularity handling is not possible.

28600	MM_NUM_WORKAREA_CS_GROUPS	C02	-
-	Number of coordinate system-specific operating range limits	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 10 7/2 M

Description: Number of data sets in the channel that are created for coordinate system-specific operating range limits.

It indicates the maximum value of the 1st index of system variable \$P_WORKAREA_CS... [WALimNo, Ax]. It furthermore defines the number of the programmable G functions "WALCS1, WALCS2, ... WALCS10" as well as the maximum value of the system variable \$AC_WORKAREA_CS_GROUP".

= 0: Function "Monitoring of coordinate system-specific operating range limits" cannot be activated.

28610	MM_PREPDYN_BLOCKS	C02	-
-	Number of blocks for velocity preparation	BYTE	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 30 1/1 M

Description: This MD is used to define the number of blocks that are considered when defining the path velocity (velocity preparation). If the value of this MD is zero, only the relevant axis motions are considered in this block in order to define the maximum path velocity of a block. If the geometry in adjacent blocks is also considered when defining the path velocity, the path velocity will be more homogenous.

28620	MM_NUM_FEATURE_BLOCKS	C02	W1
-	No. blocks for look-ahead characteristic recognition e.g. slot recognition.	DWORD	PowerOn
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 20 7/2 M

Description: Indicates the minimum number of blocks that are considered simultaneously for characteristic recognition.

3.3.3 Axis-specific machine data

30110	CTRLOUT_MODULE_NR			A01, A11	G2, S9	
-	Setpoint assignment: module number			BYTE	PowerOn	
-						
-	1	1, 2, 3, 4, 5, 6, 7, 8...	1	31	7/2	M

Description: In this MD, enter the number of the module within a bus segment through which the output is addressed.

For an axis on the PROFIBUS/PROFINET, the logical I/O address from MD13050 \$MN_DRIVE_LOGIC_ADDRESS[index] is assigned by entering index+1 in MD30110 \$MA_CTRLOUT_MODULE_NR.

30120	CTRLOUT_NR			EXP, A01	G2	
-	Setpoint assignment: Setpoint output on drive submodule/module			BYTE	PowerOn	
-						
-	1	1, 1, 1, 1, 1, 1, 1...	1	3	2/2	M

Description: Number of the output on a module which is used to address the setpoint output.
The value is always 1 for modular drives.

30130	CTRLOUT_TYPE			A01, A11	G2, M3, S9	
-	Output type of setpoint			BYTE	PowerOn	
-						
-	1	0	0	3	7/2	M

Description: The type of speed setpoint output is entered into this MD:

- 0: Simulation (no HW required)
- 1: Setpoint output active (differentiation via hardware configuration)
- 2: Semi servo -only when the hardware is available onboard
- 3: Reserved
- 4: Reserved

Note: instead of value 4, MD30132 \$MA_IS_VIRTUAL_AX should now be used.

30132	IS_VIRTUAL_AX			A01	M3, TE1, TE3	
-	Axis is a virtual axis			BOOLEAN	PowerOn	
CTEQ						
-	1	FALSE	0	-	7/2	M

Description: Virtual axis. An axis that is also interpolated in follow-up mode. (Electronic transfer technology; virtual and real master values.)

This MD is the successor to MD30130 \$MA_CTRLOUT_TYPE=4. MD30130 \$MA_CTRLOUT_TYPE=0 and MD30132 \$MA_IS_VIRTUAL_AX=1 must now be used instead of MD30130 \$MA_CTRLOUT_TYPE=4.

Related to:
MD30130 \$MA_CTRLOUT_TYPE

30134	IS_UNIPOLAR_OUTPUT			A01	G2	
-	Setpoint output is unipolar			BYTE	PowerOn	
-						
-	1	0	0	2	7/2	M

Description: Only for PROFIdrive, special application of analog additional drives:
Unipolar output driver (for unipolar analog drive actuator):

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Only positive set speeds are supplied to the drive, the sign of the set speed is separately output in its own digital control signal.

Input value "0":

Bipolar output with pos./neg. set speed (this is the normal case)

Input value "1":

0. Digital bit = servo enable

1. Digital bit = neg. direction of travel

Input value "2": (linking of enable and direction of travel signals):

0. Digital bit = servo enable pos. direction of travel

1. Digital bit = servo enable neg. direction of travel

30200	NUM_ENCS			A01, A02	G2, R1, Z1	
-	Number of encoders			BYTE	PowerOn	
-						
-	-	1	0	2	7/2	M

Description: The number of encoders of the axis or spindle is to be entered in the MD for actual position value sensing (the differentiation between direct and indirect measuring systems, i.e. the locations at which these encoders are installed, is then specified, for example, in MD31040 \$MA_ENC_IS_DIRECT).

For simulation axes/spindles, MD30200 \$MA_NUM_ENCS > 0 must be specified for referencing.

30220	ENC_MODULE_NR			A01, A02, A11	G2	
-	Actual value assignment: Drive number/measuring circuit number			BYTE	PowerOn	
-						
-	2	1, 1, 2, 2, 3, 3, 4, 4, 5, 5, 6, 6, 7, 7, 8, 8...	1	31	7/2	M

Description: For an axis on the PROFIBUS/PROFINET, the logical I/O address from MD13050 \$MN_DRIVE_LOGIC_ADDRESS[index] is assigned by entering index+1 in MD30220 \$MA_ENC_MODULE_NR.

The index[n] of the machine data has the following coding:

[Encoder no.]: 0 or 1

Related to:

MD30110 \$MA_CTRLOUT_MODULE_NR (setpoint assignment)

30230	ENC_INPUT_NR			A01, A02, A11	G2, S9	
-	Actual value assignm.: Input on drive module/meas. circuit board			BYTE	PowerOn	
-						
-	2	1, 2, 1, 2, 1, 2, 1, 2, 1, 2, 1, 2, 1, 2...	1	2	7/2	M

Description: For PROFIdrive:

Number of the encoder within the PROFIdrive message frame through which the encoder is addressed.

For example telegram 103: 1 (=G1_ZSW etc.) or 2 (=G2_ZSW etc.).

The index[n] of the machine data has the following coding:

[Encoder no.]: 0 or 1

If an input is selected, to which no encoder is connected, alarm 300008 "Measuring circuit not available on drive" is output.

30240	ENC_TYPE			A01, A02, A11	A3,, G2, R1	
-	Encoder type of actual value acquisition (actual position value).			BYTE	PowerOn	
-						
-	2	0, 0	0	5	7/2	M

Description: Encoder type:
0: Simulation
1: Raw signal encoder (high resolution)
2: Square-wave encoder - only when the onboard hardware is available
3: Encoder for semi servo - only when the onboard hardware is available
4: General absolute encoders (e.g. EnDat interface)
5: Reserved
Corresponds with
PROFIdrive parameter P979 (refer there)

30242	ENC_IS_INDEPENDENT			A02, A11	G2, R1	
-	Encoder is independent			BYTE	NEW CONF	
-						
-	2	0, 0	0	3	7/2	M

Description: If actual value corrections performed by the NC on the encoder selected for position control are not to influence the actual value of any other encoder defined in the same axis, then the position control encoder must be declared to be "independent".
Actual value corrections include the following:

- Modulo treatment,
- Reference point approach,
- Measuring system calibration,
- PRESET

Example:
MD30200 \$MA_NUM_ENCS[AX1] = 2
MD30242 \$MA_ENC_IS_INDEPENDENT[0, AX1] = 0
MD30242 \$MA_ENC_IS_INDEPENDENT[1, AX1] = 1

When the VDI interface has selected the first encoder for position control, the above mentioned actual value corrections will be executed on this encoder only.
When the VDI interface has selected the second encoder for position control, the above mentioned actual value corrections will be executed on both encoders.
The machine data is therefore only valid for encoders that have not been selected by the VDI interface for position control (passive encoders).
As from SW5, the scope of functions has been extended:
MD30242 \$MA_ENC_IS_INDEPENDENT = 2

The passive encoder is dependent. The active encoder changes the actual encoder value. In combination with MD34102 \$MA_REFP_SYNC_ENCS = 1, the passive encoder is adjusted to the active encoder during reference point approach, but is NOT referenced.
In reference mode MD34200 \$MA_ENC_REFP_MODE = 3 (distance-coded reference marks), the passive encoder is automatically referenced with the next traversing movement after zero mark distance overtravel. This is done independently of the current mode setting.
MD30242 \$MA_ENC_IS_INDEPENDENT = 3

In contrast to MD30242 \$MA_ENC_IS_INDEPENDENT = 1, modulo actual value corrections are executed in the passive encoder of modulo rotary axes.

3.3 NC machine data

30244	ENC_MEAS_TYPE			A01, A02, A11	-	
-	Encoder measurement type			BYTE	PowerOn	
-						
-	2	1, 1	0	1	7/2	M

Description:

For PROFIdrive only:

In combination with the MD13210 \$MN_MEAS_TYPE = 1 (decentralized measurement), this MD can be used to set the type of axial measuring function for drives.

Encoder measurement type:

0: encoder measurement type central (global) measurement

1: encoder measurement type decentral (local) measurement

MEAS_TYPE ENC_MEAS_TYPE measuring sensor input used

0 0 central

0 1 central

1 0 central

1 1 decentralized

30250	ACT_POS_ABS			EXP, A02, A08	R1	
-	Internal encoder position			DOUBLE	PowerOn	
ODLD, -, -						
-	2	0.0, 0.0	-1.0E+301	1.0E+301	7/2	I

Description:

The actual position (hardware counter status only without machine reference) is stored (in internal format display) in this MD.

At power ON (or encoder activation), it acts with:

- Absolute encoders:
To restore the current position (in combination with the position, possibly with several meanings, buffered in the encoder).
- Incremental encoders:
To buffer the actual value beyond power OFF when the functionality is activated MD34210 \$MA_ENC_REFP_STATE = 1 or. 2 (i.e. as a reference point replacement).
To buffer the actual value beyond power OFF when the functionality is activated MD34210 \$MA_ENC_REFP_STATE = 3 (i.e. as a restored position value).

Note:

This MD is changed internally by the control during traversing movements. Loading a previously saved MD data block can therefore destroy the encoder calibration (machine position reference) of absolute encoders.

For software conversions, we recommend removing the MD data block from the old software release prior to conversion and reloading it into the new software release without moving any axis in the meantime. Protection level 1 should be set for SW 3.6; protection level 2 suffices for SW 4 and higher. The encoder calibration must be explicitly verified (controlled, calibrated) after the software conversion.

30260	ABS_INC_RATIO			EXP, A01, A02	-	
-	Absolute encoder: Ratio of absolute to incremental resolution			DWORD	PowerOn	
-						
-	2	4, 4	0	-	7/2	M

Description:

Absolute track resolution in relation to the incremental track resolution.

This MD only applies for absolute encoders:

- PROFIdrive drives:

Absolute information XIST2 related to incremental information XIST1.

In the case of plausible drive parameters (e.g. in PROFIdrive parameter P979) the value of this MD is automatically calculated and updated from drive parameters (if parameter read-out has not been deactivated with MD13070 \$MN_DRIVE_FUNCTION_MASK, bit2)

Implausible drive parameters (e.g. multiplication of absolute track higher than that of the incremental track) are rejected and replaced by the value entered in the current MD.

Implausible input values in the current MD (e.g. value=0) are reset to the default value. In addition, alarm 26025 or 26002 is output to inform the user accordingly.

If MD31700 \$MA_ENC_EDS_ACTIVE = 1, this machine data has no function and is replaced by MD31730 \$MA_ABS_INC_RATIO_EDS.

Related to:

MD31700 \$MA_ENC_EDS_ACTIVE

MD31730 \$MA_ABS_INC_RATIO_EDS

30270	ENC_ABS_BUFFERING			EXP, A01, A02	R1	
-	Absolute encoder: Traversing range extension			BYTE	PowerOn	
-						
-	2	0, 0	0	1	7/2	M

Description:

This MD defines the way in which the absolute encoder position is buffered, and whether a traversing range extension is active in the software (exceeding the limits of the absolute encoder range that can be displayed on the hardware).

"0" = standard = traversing range extension (compare ACT_POS_ABS) is active.

"1" = traversing range extension in the software is inactive.

When using an absolute linear scale, there will not be a traversing range overflow for mechanical reasons. This MD is therefore only valid for rotary absolute encoders.

For rotary absolute encoders, the traversing range that can be clearly displayed on the encoder side is stored in MD34220 \$MA_ENC_ABS_TURNS_MODULO. You can do without a traversing range extension without any problems (a hardware counter overflow that might be within the traversing range is concealed in the software via shortest-path decision):

a. in linear axes or limited rotary axes, if the actual traversing range on the load side is smaller than the traversing range on the load side that corresponds to MD34220 \$MA_ENC_ABS_TURNS_MODULO.

b. in endlessly turning rotary axes (ROT_IS_MODULO = TRUE), if the absolute encoder is connected on the load side (no gear to be considered) or if "without remainder" can be calculated:

Number of rotations on the load side = ENC_ABS_TURNS_MODULO * gear ratio

(Example: ENC_ABS_TURNS_MODULO = 4096 encoder rotations, gear 25:32, i.e. number of rotations on load side = 4096*(25/32)=3200).

Notice:

If the conditions under a. or b. are not met, there is a risk of getting a wrong absolute encoder position at next Power ON or encoder activation after parking without prewarning if the traversing range extension is not working. Therefore, the traversing range extension remains active in the standard version.

If MD31700 \$MA_ENC_EDS_ACTIVE = 1, a traversing range extension is not possible. Alarm 26017 therefore requests the traversing range extension to be switched off with a rotary absolute encoder with reference to this machine data.

If the traversing range extension is essential (because for example the conditions stated under b. for deactivation are not fulfilled), MD31700 \$MA_ENC_EDS_ACTIVE must not be activated.

Related to:

MD30240 \$MA_ENC_TYPE

MD30300 \$MA_IS_ROT_AX

MD30310 \$MA_ROT_IS_MODULO

3.3 NC machine data

MD30250 \$MA_ACT_POS_ABS
MD34220 \$MA_ENC_ABS_TURNS_MODULO
MD34090 \$MA_REFP_MOVE_DIST_CORR
MD31700 \$MA_ENC_EDS_ACTIVE

30300	IS_ROT_AX	A01, A06, A11	G1, K3, R2, T1, G2, K2, R1, S1, V1
-	Rotary axis / spindle	BOOLEAN	PowerOn
SCAL, CTEQ			
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	FALSE TRUE 7/2 M

Description:

1: Axis: The axis is defined as a "rotary axis".

- The special functions of the rotary axis are active or can be activated by means of additional machine data according to the type of machine required (see below).
- The unit of measurement is degrees.
- The units of the axis-specific machine and setting data are interpreted as follows with the standard control setting:
 - Positions in "degrees"
 - Speeds in "rev/minute"
 - Acceleration in "rev/second²"
 - Jerk limitation in "rev/second³"

Spindle:

The machine data should always be set to "1" for a spindle, otherwise alarm 4210 "Rotary axis declaration missing" is output.

0: The axis is defined as a "linear axis".

Special cases:

- For an axis: Alarm 4200 if the axis is already defined as a geometry axis.
- For a spindle: Alarm 4210

Related to:

The following machine data are active only after activation of MD30300 \$MA_IS_ROT_AX = "1":

- MD30310 \$MA_ROT_IS_MODULO "Modulo conversion for rotary axis"
- MD30320 \$MA_DISPLAY_IS_MODULO "Position display is modulo"
- MD10210 \$MN_INT_INCR_PER_DEG "Calculation precision for angular positions"

30310	ROT_IS_MODULO	A01, A06, A11	TE3, K3, R2, T1, A3, R1, R2, S1
-	Modulo conversion for rotary axis / spindle	BOOLEAN	PowerOn
CTEQ			
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	FALSE TRUE 7/2 M

Description:

1: A modulo conversion is performed on the setpoints for the rotary axis. The software limit switches and the working area limitations are inactive; the traversing range is therefore unlimited in both directions. MD30300 \$MA_IS_ROT_AX must be set to "1"

0: No modulo conversion

MD irrelevant for:

MD30300 \$MA_IS_ROT_AX = "0" (linear axes)

Related to:

MD30320 \$MA_DISPLAY_IS_MODULO "Position display is modulo 360°"
MD30300 \$MA_IS_ROT_AX = 1 "Rotary axis"
MD36100 \$MA_POS_LIMIT_MINUS "Software limit switch minus"
MD36110 \$MA_POS_LIMIT_PLUS "Software limit switch plus"

SD43430 \$SA_WORKAREA_LIMIT_MINUS "Working area limitation minus"
 SD43420 \$SA_WORKAREA_LIMIT_PLUS "Working area limitation plus"

30320	DISPLAY_IS_MODULO	A01, A06, A11	R2, T1, K2
-	Modulo 360 degrees displayed for rotary axis or spindle.	BOOLEAN	PowerOn
CTEQ			
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	FALSE TRUE 7/2 M

Description: 1: "Modulo 360 degrees" position display is active:
 The position display of the rotary axis or spindle (for basic or machine coordinate system) is defined as "Modulo 360 degrees". In the case of a positive direction of rotation, the control resets the position display internally to 0.000 degrees following each cycle of 359.999 degrees. The display range is always positive and lies between 0 and 359.999 degrees.
 0: Absolute position display is active:
 In contrast to the modulo 360 degrees position display, absolute positions are indicated by the absolute position display, e.g. +360 degrees after 1 rotation, and +720 degrees after 2 rotations, etc in the positive direction. In this case, the display range is limited by the control in accordance with the linear axes.
 MD irrelevant for:
 Linear axes MD30300 \$MA_IS_ROT_AX = "0"
 Related to:
 MD30300 \$MA_IS_ROT_AX = 1 "Axis is rotary axis"

30330	MODULO_RANGE			EXP, A01	R2, T1, R1	
degrees	Size of modulo range.			DOUBLE	Reset	
CTEQ						
-	-	360.0	1.0	3600000000.0	7/2	M

Description: Defines the size of the modulo range. Default positions are accepted and displayed within this range. Useful modulo ranges are $n * 360$ degrees with integer n . Other settings are equally possible in principle. Attention should be paid to having a useful relationship between the positions in the NC and the mechanics (ambiguity). Velocity definitions are not affected by settings in this MD.

30340	MODULO_RANGE_START			EXP, A01	R1, R2	
degrees	Modulo range start position			DOUBLE	Reset	
CTEQ						
-	-	0.0	-1.0E+301	1.0E+301	7/2	M

Description: Defines the start position for the modulo range.
 Example:
 Start = 0 degree -> modulo range 0 <-> 360 degrees
 Start = 180 degrees -> modulo range 180 <-> 540 degrees
 Start = -180 degrees -> modulo range -180 <-> 180 degrees

30350	SIMU_AX_VDI_OUTPUT			A01, A06	A2, G2, Z1	
-	Axis signals output for simulation axes			BOOLEAN	PowerOn	
CTEQ						
-	-	FALSE	FALSE	TRUE	7/2	M

Description: The machine data defines whether axis-specific interface signals are output to the PLC while an axis is being simulated.

3.3 NC machine data

1: The axis-specific NC/PLC interface signals for a simulated axis are output to the PLC.

This means that the user PLC program can be tested without the drives having to be available.

0: The axis-specific NC/PLC interface signals for a simulated axis are not output to the PLC.

All axis-specific NC/PLC interface signals are set to "0".

Not relevant for:

MD30130 \$MA_CTRL_OUT_TYPE (setpoint output type) = 1

30450	IS_CONCURRENT_POS_AX			EXP, A01	G1	
-	Default for reset: neutral/channel axis			BOOLEAN	Reset	
CTEQ						
-	-	FALSE	FALSE	TRUE	7/2	M

Description:

For SW4.3:

If FALSE: On RESET, a neutral axis is reassigned to the NC program.

If TRUE: On RESET, a neutral axis remains in the neutral axis state and an axis assigned to the NC program becomes a neutral axis

30455	MISC_FUNCTION_MASK			A06, A10	R2, S3, R1	
-	Axis functions			UDWORD	Reset	
CTEQ						
-	-	0x00	0	0x7FFF	7/2	M

Description:

Bit 0 = 0:

Modulo rotary axis/spindle: programmed positions must be in the modulo range. Otherwise an alarm is output.

Bit 0 = 1:

When programming positions outside the modulo range, an alarm is not signaled. The position is modulo-converted internally.

Example: B-5 has the same significance as B355, POS[A]=730 is identical to POS[A]=10 and SPOS=-360 behaves the same as SPOS=0 (modulo range 360 degrees)

Bit 1 = 0:

Determination of reference point position of rotary, distance-coded encoders analog (1:1) in relation to the mechanical absolute position.

Bit 1 = 1:

Determination of reference point position of rotary, distance-coded encoders within the configured modulo range.

For rotary axes with MD30310 \$MA_ROT_IS_MODULO=0, which use rotary, distance-coded encoder MD34200 \$MA_ENC_REFP_MODE=3, the reference point position is determined in response to MD30330 \$MA_MODULO_RANGE and MD30340 \$MA_MODULO_RANGE_START. This is automatically adapted to the traversing limits of the modulo range. For rotary axes with MD30310 \$MA_ROT_IS_MODULO=1, this bit has no significance, as the reference point position is always determined within the modulo range.

Bit 2 = 0:

Modulo rotary axis positioned at G90 with AC as default.

Bit 2 = 1:

Modulo rotary axis positioned at G90 with DC as default (shortest path).

Bit 3 = 0:

For spindle/axis disable \$VA_IM, \$VA_IM1, \$VA_IM2 supply the setpoint value.

Bit 3 = 1:

For spindle/axis disable \$VA_IM, \$VA_IM1, \$VA_IM2 supply the actual value.

Bit 4 = 0:

Synchronous spindle coupling, slave spindle: cancellation of feedrate enable will brake the coupled group.

Bit 4 = 1:

Slave spindle: Feedrate enable only applies to the interpolation portion of the overlaid motion (SPOS, etc.) and has no impact on the coupling.

Bit 5 = 0:

Synchronous spindle coupling, slave spindle: Position control, feedforward control, and parameter block are set in response to the master spindle.

Bit 5 = 1:

Synchronous spindle coupling: The parameters of the slave spindle are set as they would be without coupling.

Bit 6 = 0:

Programming of FA, OVRA, ACC, and VELOLIM is applied separately to spindle and axis modes. The assignment is made by the programmed axis or spindle identifier.

Bit 6 = 1:

Programming of FA, OVRA, ACC, and VELOLIM is applied jointly to spindle and axis modes, irrespective of the programmed identifier.

Bit 7 = 0:

Synchronous spindle, correct synchronism error: Correction value \$AA_COUP_CORR[Sn] is continuously calculated as long as the NC/PLC interface signal DB31, ... DBX31.6 (Correct synchronism) is set and setpoint-related synchronism is present.

Bit 7 = 1:

Synchronous spindle, correct synchronism error: Correction value \$AA_COUP_CORR[Sn] is calculated only at the moment the NC/PLC interface signal DB31, ... DBX31.6 (Correct synchronism) is set from 0 to 1.

Bit 8 = 0:

Absolute encoders can only be readjusted in the enabled state MD34210
\$MA_ENC_REFP_STATE = 1.

Bit 8 = 1:

Absolute encoders can also be readjusted in the adjusted state MD34210
\$MA_ENC_REFP_STATE = 2.

Bit 9 = 0:

Coupled axes (e.g. gantry) jointly delete their pulse enable if an error occurs.

Bit 9 = 1:

Coupled axes (e.g. gantry) only delete their pulse enable for their own errors.

Bit 10 = 0:

The maximum dynamic performance of a TRAIL or TANGON axis limits the maximum dynamic path response.

Bit 10 = 1:

The maximum dynamic performance of a TRAIL or TANGON axis has no effect on the dynamic path response. This can result in a longer overtravel of the dependent axis.

Bit 11 = 0:

Deactivation of the CP software limit monitoring

Bit 11 = 1:

Activation of the CP software limit monitoring for the following slave axes/spindles:

- coupling, type CP with CPSETTYPE[FAX] = "CP"
- coupling, type CP, TRAIL, EG, LEAD, or COUP with a maximum of one active master axis/spindle

Bit 12 = 0:

When resetting the control enable of the stationary axis/spindle (in respect of this master axis/spindle), you must always switch over to actual value coupling, just as for a fast stop after resetting the control enable during motion (alarm 21612). This applies to generic couplings (with replacement cycles or for CP programming).

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Bit 12 = 1:

When resetting the control enable of the stationary axis/spindle (in respect of this master axis/spindle), changeover to actual value coupling is inhibited. This applies to generic couplings (with replacement cycles or for CP programming).

Bit 13 = 0:

An axis-specific DRIVE setting by means of MD35240 \$MA_ACCEL_TYPE_DRIVE[] or by programming DRIVEA() of an axis is ignored by the path dynamic response if the relevant axis is interpolated with the path.

Bit 13 = 1:

An acceleration characteristic of an axis activated by MD35240 \$MA_ACCEL_TYPE_DRIVE[] or by programming of DRIVEA() is taken into account when defining the path dynamic response if the relevant axis is interpolated with the path.

Bit 14 = 0:

During cartesian PTP traversing, the "shortest path" strategy for software limit crossing of a rotary axis is retained.

Bit 14 = 1:

The "long path" strategy for avoiding the software limit crossing is used if a rotary axis were to cross the software limit switch during cartesian PTP traversing with the "shortest path" strategy.

30460	BASE_FUNCTION_MASK			A01	K5, P2, P1	
-	Axis functions			UDWORD	PowerOn	
CTEQ						
-	-	0x00	0	0x3FF	7/2	M

Description:

Axis-specific functions can be set using this MD.

The MD is bit-coded; the following bits are assigned:

Bit 0 = 0:

"Axis control" is not permissible.

Bit 0 = 1:

"Axis control" is permissible (the axis moves in the speed mode, if the NC/PLC interface signal DB31, ... DBX24.1 (Axis control) is set).

Bit 1:

Reserved for "Axis control".

Bit 2 = 0:

Axis-specific diameter programming not permitted.

Bit 2 = 1:

Axis-specific diameter programming permitted.

Bit 3:

Reserved for "Axis control".

Bit 4 = 0:

For control purposes, the axis can be used by NC and PLC.

Bit 4 = 1:

The axis is exclusively controlled by the PLC.

Bit 5 = 0:

The axis can be used by the NC and PLC.

Bit 5 = 1:

The axis is a permanently assigned PLC axis. However, the axis can be jogged and referenced.

Axis exchange between channels is not possible. The axis cannot be assigned to the NC program.

Bit 6 = 0:

The channel-specific interface signal DB21-30 DBX6.0 (feedrate disable) has an effect on the axis, even though it is a PLC-controlled axis.

Bit 6 = 1:

The channel-specific interface signal DB21-30 DBX6.0 (feedrate disable) has no effect on the axis, if it is a PLC-controlled axis.

Bit 7 = 0:

The channel-specific interface signal DB21-30 DBX36.3 (all axes stationary) is set dependent on the axis, even though it is PLC-controlled.

Bit 7 = 1:

The channel-specific interface signal DB21-30 DBX36.3 (all axes stationary) is set independent of the axis, if this axis is PLC-controlled..

Bit 8 = 0:

The axis is an 'interpolating (full) axis' (path/GEO/additional path axis/GEOAX()) / spindle for thread cutting/tapping)

Bit 8 = 1:

The axis is a positioning axis / auxiliary spindle

Bit 9 = 0:

The PRESETON is enabled. PRESETONS is inhibited.

Bit 9 = 1:

The PRESETON is inhibited. PRESETONS is enabled.

30465	AXIS_LANG_SUB_MASK			N01	K1	
-	Substitution of NC language commands			UDWORD	PowerOn	
-						
-	-	0x0	0x0	0xF	7/2	M

Description: MD30465 \$MA_AXIS_LANG_SUB_MASK defines for the leading spindle(s) of a coupling (synchronous spindle coupling, electronic gear, coupled motion, master value coupling, master-slave) which language constructs/functions are to be substituted by the user program set by MD15700 \$MN_LANG_SUB_NAME / MD15702 \$MN_LANG_SUB_PATH (default: /_N_CMA_DIR/_N_LANG_SUB_SPF).

The substitution is executed only if a coupling is active for the relevant spindle and, in the case of a gear stage change, only if a gear stage change is actually pending.

Bit 0 and bit 1 are relevant for the axis coupling types: synchronous spindle coupling, electronic gear, coupled motion and master value coupling.

Bit 2 and bit 3 are relevant for the master-slave coupling

Bit 0 = 1:

Axis coupling: Automatic (M40) and direct (M41-M45) gear stage change

Bit 1 = 1:

Axis coupling: Spindle positioning with SPOS/SPOSA/M19

Bit 2 = 1:

Master-slave coupling: Automatic (M40) and direct (M41-M45) gear stage change

Bit 3 = 1:

Master-slave coupling: Spindle positioning with SPOS/SPOSA/M19

30500	INDEX_AX_ASSIGN_POS_TAB			A01, A10	T1, H1	
-	Axis is an indexing axis			BYTE	Reset	
-						
-	-	0	0	3	7/2	M

Description: The axis is declared as an indexing axis by assignment of indexing position table 1 or 2.

0: The axis is not declared as an indexing axis

3.3 NC machine data

1: The axis is an indexing axis. The associated indexing positions are stored in table 1 (MD10910 \$MN_INDEX_AX_POS_TAB_1).

2: The axis is an indexing axis. The associated indexing positions are stored in table 2 (MD10930 \$MN_INDEX_AX_POS_TAB_2).

3: Equidistant indexing with SW 4.3 and higher (840D) and SW 2.3 and higher (810D)

>3: Alarm 17090 "Value violates upper limit"

Special cases:

Several axes can be assigned to an indexing position table on the condition that all these indexing axes are of the same type (linear axis, rotary axis, modulo 360° function). If they are not, alarm 4000 is output during power-up.

Alarm 17500 "Axis is not an indexing axis"

Alarm 17090 "Value violates upper limit"

Related to:

MD10910 \$MN_INDEX_AX_POS_TAB_1 (indexing position table 1)

MD10900 \$MN_INDEX_AX_LENGTH_POS_TAB_1

(no. of indexing positions used in table 1)

MD10930 \$MN_INDEX_AX_POS_TAB_2 (indexing position table 2)

MD10920 \$MN_INDEX_AX_LENGTH_POS_TAB_2

(no. of indexing positions used in table 2)

For equidistant indexings with value 3:

MD30501 \$MA_INDEX_AX_NUMERATOR Numerator

MD30502 \$MA_INDEX_AX_DENOMINATOR Denominator

MD30503 \$MA_INDEX_AX_OFFSET First indexing position

MD30505 \$MA_HIRTH_IS_ACTIVE Hirth tooth system

30501	INDEX_AX_NUMERATOR			A01, A10	T1	
mm, degrees	Indexing axis equidistant positions numerator			DOUBLE	Reset	
-						
-	-	0.0	0.0	1.0E+301	7/2	M

Description: Defines the value of the numerator for calculating the distances between two indexing positions when the positions are equidistant. Modulo axes ignore this value and use MD30330 \$MA_MODULO_RANGE instead.

MD irrelevant for non-equidistant indexes in accordance with tables.

Related to:

MD30502 \$MA_INDEX_AX_DENOMINATOR,

MD30503 \$MA_INDEX_AX_OFFSET;

MD30500 \$MA_INDEX_AX_ASSIGN_POS_TAB

30502	INDEX_AX_DENOMINATOR			A01, A10	T1	
-	Indexing axis equidistant positions denominator			DWORD	Reset	
-						
-	-	1	1	-	7/2	M

Description: Defines the value of the denominator for calculating the distances between two indexing positions when the positions are equidistant. For modulo axes it therefore specifies the number of indexing positions.

MD irrelevant for non-equidistant indexes in accordance with tables.

Related to:

MD30501 \$MA_INDEX_AX_NUMERATOR,

MD30503 \$MA_INDEX_AX_OFFSET,

MD30500 \$MA_INDEX_AX_ASSIGN_POS_TAB

30503	INDEX_AX_OFFSET			A01, A10	T1, R2	
mm, degrees	Indexing axis with equidistant positions first index position			DOUBLE	Reset	
-						
-	-	0.0	-1.0E+301	1.0E+301	7/2	M

Description: Defines the position of the first indexing position from zero for an indexing axis with equidistant positions.
MD irrelevant for non-equidistant indexes in accordance with tables.
Related to:
MD30501 \$MA_INDEX_AX_NUMERATOR
MD30502 \$MA_INDEX_AX_DENOMINATOR
MD30500 \$MA_INDEX_AX_ASSIGN_POS_TAB

30505	HIRTH_IS_ACTIVE			A01, A10	T1	
-	Axis is an indexing axis with Hirth tooth system			BOOLEAN	Reset	
CTEQ						
-	-	FALSE	FALSE	TRUE	7/2	M

Description: Hirth tooth system is active when value 1 is set.
MD irrelevant if axis is not an indexing axis.
Related to:
MD30500 \$MA_INDEX_AX_ASSIGN_POS_TAB, MD30501 \$MA_INDEX_AX_NUMERATOR, MD30502 \$MA_INDEX_AX_DENOMINATOR, MD30503 \$MA_INDEX_AX_OFFSET

30550	AXCONF_ASSIGN_MASTER_CHAN			A01, A06, A10	K5, TE3, B3, S3, K1, R1	
-	Initial setting of channel for change of axis			BYTE	PowerOn	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	10	7/2	M

Description: Definition of the channel to which the axis is assigned after Power ON.
Related to:
MD20070 \$MC_AXCONF_MACHAX_USED

30552	AUTO_GET_TYPE			EXP, A06, A10	K5, M3, TE6, P2, P5, 2.4	
-	Automatic GET for get axis			BYTE	PowerOn	
-						
-	-	1, 1, 1, 1, 1, 1, 1, 1...	0	2	7/2	M

Description: 0 = No automatically created GET -> Alarm in response to incorrect programming.
1 = GET is output when GET is generated automatically.
2 = GETD is output when GET is generated automatically.

30554	AXCONF_ASSIGN_MASTER_NCU			A01, A06, A10	B3	
-	Initial setting which NCU creates setpoints for the axis			BYTE	PowerOn	
-						
-	-	0	0	16	7/2	M

Description: This machine data is evaluated only if the NCU is linked with other NCUs via the NCU link communication.
Assignment of master NCU:

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If a machine axis is activated via MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB in several NCUs in an NCU cluster, then a MASTER NCU must be assigned to it. This NCU takes over the setpoint creation for the axis after the runup. For axes which are only activated in one NCU, the number of this NCU or 0 must be entered. Other entries initiate a runup interrupt.

30560	IS_LOCAL_LINK_AXIS			EXP, A01	B3	
-	Axis is a local link axis			BOOLEAN	PowerOn	
-						
-	-	FALSE	0	-	7/2	M

Description: An axis for which this MD is set to 1 is not addressed by the local NCU at runup. The associated drive is put into operation.

The axis is traversed by another NCU. The evaluation is made only if link communication exists.

Not relevant for:

Systems without link modules

Related to:

MD18780 \$MN_MM_NCU_LINK_MASK

30600	FIX_POINT_POS			A03, A10	K1, W3	
mm, degrees	Fixed-value positions of axis with G75			DOUBLE	PowerOn	
-						
-	4	0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/2	I

Description: The fixed-point positions (4 max.) for each axis which can be approached when G75 is programmed or via JOG are entered in these machine data.

References:

/PA/, "Programming Guide: Fundamentals"

30610	NUM_FIX_POINT_POS			A03, A10	K1	
-	Number of fixed-value positions of an axis			DWORD	PowerOn	
-						
-	-	0	0	4	7/2	M

Description: Number of fixed point positions set, i.e. the number of valid entries in MD30600 \$MA_FIX_POINT_POS.

For G75, two (2) fixed point positions are assumed in MD30600 \$MA_FIX_POINT_POS for reasons of compatibility, even if '0' has been entered in this machine data.

30800	WORKAREA_CHECK_TYPE			-	A3	
-	Type of check of working area limitations.			BOOLEAN	NEW CONF	
CTEQ						
-	-	FALSE	0	-	7/2	M

Description: With this machine data you can specify whether only the working area limitations of traversing axes are to be checked (0)

or

whether the stationary axes in a traversing block are also to be checked (1).

The value 0 corresponds to the behavior up to SW5.

31000	ENC_IS_LINEAR			A02, A11	G2	
-	Linear scale			BOOLEAN	PowerOn	
-						
-	2	FALSE, FALSE	0	-	7/2	M

Description: MD = 1: Encoder for actual position value acquisition is linear (linear scale).
MD = 0: Encoder for actual position value acquisition is rotary.
The index [n] of the machine data has the following coding:
[encoder no.]: 0 or 1

31010	ENC_GRID_POINT_DIST			A02, A11	G2	
mm	Division period for linear scales			DOUBLE	PowerOn	
-						
-	2	0.01, 0.01	0.0	1.0E+301	7/2	M

Description: For linear measuring system only:
The distance between the reference marks on the linear scale must be entered in this MD.
Index [n] of the machine data has the following coding:
[encoder no.]: 0 or 1

31020	ENC_RESOL			A02, A11	G2, R1	
-	Encoder lines per revolution			DWORD	PowerOn	
-						
-	2	2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048...	1	-	7/2	M

Description: For rotary measuring system only:
The number of encoder lines per encoder revolution must be entered in this MD.
Index [n] of the machine data has the following coding:
[Encoder no.]: 0 or 1
If MD31700 \$MA_ENC_EDS_ACTIVE = 1, this machine data has no function, and is replaced by MD31710 \$MA_ENC_RESOL_EDS.
Related to:
MD31700 \$MA_ENC_EDS_ACTIVE
MD31710 \$MA_ENC_RESOL_EDS

31025	ENC_PULSE_MULT			EXP, A01, A02	-	
-	Encoder multiplication (high-resolution)			DWORD	PowerOn	
-						
-	2	2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048...	0	-	7/2	M

Description: For PROFIdrive only:
This MD describes the measuring system multiplication on PROFIBUS/PROFINET.
Default value 2048 means: changing by just one encoder line can be seen in bit11 of the actual PROFIdrive value XIST1, that is, the actual encoder value is multiplied by 2 to the power of 11= 2048.
If MD31700 \$MA_ENC_EDS_ACTIVE = 1, this machine data has no function, and is replaced by MD31720 \$MA_ENC_PULSE_MULT_EDS.
Related to:
MD31700 \$MA_ENC_EDS_ACTIVE
MD31720 \$MA_ENC_PULSE_MULT_EDS

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31030	LEADSCREW_PITCH			A02, A11	G2, A3	
mm	Pitch of leadscrew			DOUBLE	PowerOn	
-						
-	-	10.0	0.0	1.0E+301	7/2	M

Description: The ball screw lead must be entered in the MD (see data sheet: mm/rev or inch/rev).
Special meaning for hydraulic linear drives:
If a hydraulic linear drive (HLA) is configured as rotary axis, it must be specified in this MD, which drive feedrate in mm corresponds to a programmed revolution (360 degrees).

31040	ENC_IS_DIRECT			A02, A11	G2, S1	
-	Direct measuring system (no compilation to load position)			BOOLEAN	PowerOn	
-						
-	2	FALSE, FALSE	0	-	7/2	M

Description: MD = 1:
Encoder for actual position value acquisition is attached directly to the machine (without an intermediate gear unit).
MD = 0:
Encoder for actual position value acquisition is attached to the motor (MD31060 \$MA_DRIVE_AX_RATIO_NUMERA and MD31050 \$MA_DRIVE_AX_RATIO_DENOM are included in the encoder valuation).
The index[n] of the machine data has the following coding:
[encoder no.]: 0 or 1
Special cases:
An incorrect entry may result in an incorrect encoder resolution, as, for example, the gear ratios would be calculated incorrectly.

31044	ENC_IS_DIRECT2			A02	G2, S1	
-	Encoder mounted on the additional gearbox			BOOLEAN	NEW CONF	
-						
-	2	FALSE, FALSE	0	-	7/2	M

Description: When using a load intermediate gearbox (for example for rotating tools, compare MD31066 \$MA_DRIVE_AX_RATIO2_NUMERA and MD31064 \$MA_DRIVE_AX_RATIO2_DENOM), the encoder installation location can be defined as "on the output" of this load intermediate gearbox:
Encoder installation "on the output of the load intermediate gearbox" is configured by MD31040 \$MA_ENC_IS_DIRECT=1 and MD31044 \$MA_ENC_IS_DIRECT2=1 at the same time.
Encoder installation "on the input of the load intermediate gearbox" is configured by MD31040 \$MA_ENC_IS_DIRECT=1 together with MD31044 \$MA_ENC_IS_DIRECT2=0.
A parameterization alarm will be output if MD31044 \$MA_ENC_IS_DIRECT2=1 is set without MD31040 \$MA_ENC_IS_DIRECT=1 (this combination has not been defined).

31046	ENC_PASSIVE_PARKING			A02	-	
-	Park passive measuring system			BOOLEAN	NEW CONF	
-						
-	2	FALSE, FALSE	-	-	7/2	M

Description: The machine data can be used to configure the behavior for the passive measuring system:
MD = 0:
The passive measuring system is continuously monitored and updated.
MD = 1:

Description:	The load gearbox numerator is entered in this MD. The index [n] of the machine data has the following coding: [control parameter set no.]: 0-5

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The load intermediate gearbox is inactive with the default values 1:1.

Please consider MD31044 \$MA_ENC_IS_DIRECT2 for encoder installation.

When the Safety Integrated functionality (see MD36901 \$MA_SAFE_FUNCTION_ENABLE) is active, the intermediate gearbox can be used, if

- the effectively active gear ratio from the motor to the tool is considered in the safety-relevant machine data and if
- the safety-relevant supplementary conditions for gear ratios are considered.

For more detailed information see the Safety Integrated Description of Functions.

31066	DRIVE_AX_RATIO2_NUMERA			A02	G2, S1	
-	Numerator additional gearbox			DWORD	NEW CONF	
-						
-	-	1	-2147000000	2147000000	7/2	M

Description: Intermediate gearbox numerator
Related to:
MD31064 \$MA_DRIVE_AX_RATIO2_DENOM

31070	DRIVE_ENC_RATIO_DENOM			A02, A11	A3, G2, S1	
-	Denominator measuring gearbox			DWORD	NEW CONF	
-						
-	2	1, 1	1	2147000000	7/2	M

Description: The measuring gearbox denominator is entered in this MD.
The index [n] of the machine data has the following coding:
[encoder no.]: 0 or 1

31080	DRIVE_ENC_RATIO_NUMERA			A02, A11	A3, G2, S1	
-	Numerator measuring gearbox			DWORD	NEW CONF	
-						
-	2	1, 1	1	2147000000	7/2	M

Description: The measuring gearbox numerator is entered in this MD.
The index [n] of the machine data has the following coding:
[encoder no.]: 0 or 1

31090	JOG_INCR_WEIGHT			A01, A12	H1, G2	
mm, degrees	Evaluation of an increment with INC/handwheel			DOUBLE	Reset	
CTEQ						
-	2	0.001, 0.00254	-1.0E+301	1.0E+301	7/2	M

Description: The value entered in this MD defines the path of an increment which applies when an axis is traversed with the JOG keys in incremental mode or with the handwheel.
The path traveled by the axis on each increment each time the traversing key is pressed or for each handwheel detent position is defined by the following parameters:

- MD31090 \$MA_JOG_INCR_WEIGHT
(Weighting of an increment of a machine axis for INC/handwheel)
- Selected increment size (INC1, ..., INCvar)

The possible increment stages are defined globally for all axes in MD11330 \$MN_JOG_INCR_SIZE_TAB [n] and in SD41010 \$SN_JOG_VAR_INCR_SIZE.
Entering a negative value reverses the direction of evaluation of the traverse keys and the handwheel rotation.
Related to:
MD11330 \$MN_JOG_INCR_SIZE_TAB

SD41010 \$SN_JOG_VAR_INCR_SIZE

31092	JOG_INCR_WEIGHT_TRAFO	A01, A12	H1, G2
mm, degrees	Evaluation of an increment for INC/handwheel for active transformation	DOUBLE	Reset
CTEQ			
-	2	0.0, 0.0	- - 7/2 M

Description:

The input value is used to define the distance of an increment which, when traversing an axis during active transformation using the JOG keys, is valid for the incremental dimension or via handwheel.

The distance, through which the axis traverses when executing the incremental dimension with transformation active, depending on the traversing key actuated or handwheel grid position, is defined by the following parameters:

- MD31092 \$MA_JOG_INCR_WEIGHT_TRAFO
(Evaluating an increment of a machine axis for INC/handwheel)
- selected increment size (INC1, ..., INCvar)

The possible increment steps are globally defined for all axes in MD11330 \$MN_JOG_INCR_SIZE_TAB [n] or in SD41010 \$SN_JOG_VAR_INCR_SIZE.

Entering a negative value reverses the direction evaluation of the traversing keys and/or the handwheel direction of rotation.

The set value is only effective, if this is > 0 ist. For values of zero, then MD31090 \$MA_JOG_INCR_WEIGHT is effective

Corresponds with:

MD11330 \$MN_JOG_INCR_SIZE_TAB

MD31090 \$MA_JOG_INCR_WEIGHT

SD41010 \$SN_JOG_VAR_INCR_SIZE

31122	BERO_DELAY_TIME_PLUS	A02, A06	S1, R1
s	BERO delay time Plus	DOUBLE	NEW CONF
-			
-	2	0.000110, 0.000110	0.0 1.0E+301 7/2 M

Description:

This machine data in combination with the setting in MD34200 \$MA_ENC_REFP_MODE (referencing mode) = 7 causes a signal runtime compensation in the positive direction of movement at a position determined by a BERO (zero mark).

The typical total delay time of the BERO message path for overtravel in the positive direction of movement is entered.

This time includes:

- the BERO edge delay time
- the time for digitizing the signal
- the time for processing the measured value, etc.

The periods of time depend on the hardware used. The default value is typical for SIEMENS products. Adjustment by the customer is only required in exceptional cases.

Input of the minimum value "0.0" deactivates the compensation (only active in combination with MD34200 \$MA_ENC_REFP_MODE = 7).

The machine data is available for all encoders.

Related to:

MD34200 \$MA_ENC_REFP_MODE (referencing mode)

MD34040 \$MA_REFP_VELO_SEARCH_MARKER[n]

(reference point shutdown velocity [Enc. no.])

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31123	BERO_DELAY_TIME_MINUS			A02, A06	S1, R1	
s	BERO delay time minus			DOUBLE	NEW CONF	
-						
-	2	0.000078, 0.000078	0.0	1.0E+301	7/2	M

Description: This machine data in combination with the setting in MD34200 \$MA_ENC_REFP_MODE (referencing mode) = 7 causes a signal runtime compensation in the negative direction of movement at a position determined by a BERO (zero mark).

The typical total delay time of the BERO message path for overtravel in the negative direction of movement is entered.

The time includes:

- the BERO edge delay time
- the time for digitizing the signal
- the time for processing the measured value, etc.

The periods of time depend on the hardware used. The default value is typical for SIEMENS products. Adjustment by the customer is only required in exceptional cases.

Input of the minimum value "0.0" deactivates the compensation (only active in combination with MD34200 \$MA_ENC_REFP_MODE = 7).

The machine data is available for all encoders.

Related to:

MD34200 \$MA_ENC_REFP_MODE (referencing mode)

MD34040 \$MA_REFP_VELO_SEARCH_MARKER[n]

(shutdown velocity [Enc. no.])

31200	SCALING_FACTOR_G70_G71			EXP, A01	G2	
-	Factor for converting values while G70/G71 is active			DOUBLE	PowerOn	
CTEQ						
-	-	25.4	1.e-9	1.0E+301	7/2	M

Description: The inch/metric conversion factor by which the programmed geometry of an axis (position, polynomial coefficients, radius for circle programming,...) is multiplied when the programmed value for G code group G70/G71 differs from the initial setting value (set in MD20150 \$MC_GCODE_RESET_VALUES[n]) is entered in this MD.

The factor can be set for each axis individually, so that pure positioning axes are not dependent on G70/G71. The factors within the three geometry axes should not be different.

The data influenced by G70/G71 are described in the Programming Guide.

Related to:

MD20150 \$MC_GCODE_RESET_VALUES[n] (G group initial setting).

31600	TRACE_VDI_AX			EXP, N06	-	
-	Trace-specification for axial VDI signals			BOOLEAN	PowerOn	
NBUP						
-	-	FALSE	0	-	2/2	M

Description: This machine data determines whether the axial VDI signals for this axis are recorded in the NCSC trace (according to MD18794 \$MN_MM_TRACE_VDI_SIGNAL).

31700	ENC_EDS_ACTIVE			A02, A11	G2	
-	Activate EDS use			BOOLEAN	PowerOn	
-						
-	2	FALSE, FALSE	0	-	7/2	M

Description: For SINAMICS only:

MD = 0: encoder data set switchover, EDS is not used, POWERON-MDs \$MA_ENC_RESOL etc. are active

MD = 1: encoder data set switchover, EDS is used, NEWCONF-MDs \$MA_ENC_RESOL_EDS etc. are active

The index[n] of the machine data has the following coding:

[Encoder no.]: 0 or 1

Related to:

MD31020 \$MA_ENC_RESOL

MD31710 \$MA_ENC_RESOL_EDS

MD31025 \$MA_ENC_PULSE_MULT

MD31720 \$MA_ENC_PULSE_MULT_EDS

MD30260 \$MA_ABS_INC_RATIO

MD31730 \$MA_ABS_INC_RATIO_EDS

31710	ENC_RESOL_EDS			A02, A11	G2, R1	
-	Encoder marks per revolution with EDS use			DWORD	NEW CONF	
-						
-	2	2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048...	1	-	7/2	M

Description:

For SINAMICS only:

The machine data is only active if MD31700 \$MA_ENC_EDS_ACTIVE = 1 and replaces MD31020 \$MA_ENC_RESOL

Only with rotating measuring system:

The encoder marks per encoder revolution with EDS use are to be entered in the MD.

The index[n] of the machine data has the following coding:

[Encoder no.]: 0 or 1

Related to :

MD31700 \$MA_ENC_EDS_ACTIVE

MD31020 \$MA_ENC_RESOL

31720	ENC_PULSE_MULT_EDS			EXP, A01, A02	-	
-	Encoder multiplication (high resolution) with EDS use			DWORD	NEW CONF	
-						
-	2	2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048, 2048...	1	-	7/2	M

Description:

For SINAMICS only:

The machine data is only active if MD31700 \$MA_ENC_EDS_ACTIVE = 1, and replaces MD31025 \$MA_ENC_PULSE_MULT

This MD describes the measuring system multiplication with EDS use on the PROFIBUS/PROFINET.

The standard value 2048 means: A change by one single encoder mark is visible in bit11 of the PROFIdrive actual value XIST1, the encoder actual value is therefore multiplied by 2 to the power of 11=2048.

Related to:

MD31700 \$MA_ENC_EDS_ACTIVE

MD31025 \$MA_ENC_PULSE_MULT

Description: For SINAMICS only:

The machine data is only active if MD31700 \$MA_ENC_EDS_ACTIVE = 1, and replaces MD30260 \$MA_ABS_INC_RATIO

Ratio of the absolute track resolution to the incremental track resolution with EDS use.

This MD only applies with an absolute encoder:

- PROFIdrive drives:

Ratio of the absolute information XIST2 to the incremental information XIST1.

Related to:

MD31700 \$MA_ENC_EDS_ACTIVE

MD30260 \$MA_ABS_INC_RATIO

Description:	Maximum velocity at which the axis can permanently travel. The value limits both the positive and the negative axis velocity. The axis traverses at this velocity, if rapid traverse has been programmed. Depending on the MD30300 \$MA_IS_ROT_AX, the maximum rotary or linear axis velocity has to be entered. In the machine data, the dynamic behavior of the machine and drive and the limit frequency of the actual value acquisition must be taken into account.

Description:	The axis velocity entered applies when the rapid traverse override key is pressed in JOG mode and when the axial feedrate override is set to 100%. The value entered must not exceed the maximum permissible axis velocity (MD32000 \$MA_MAX_AX_VELO). This machine data is not used for the programmed rapid traverse G0. MD irrelevant to: Operating modes AUTOMATIC and MDI Related to:

MD32000 \$MA_MAX_AX_VELO (maximum axis velocity)
 MD32040 \$MA_JOG_REV_VELO_RAPID
 (revolutional feedrate for JOG with rapid traverse override)
 NC/PLC interface signal DB21-30 DBX12.5, DBX16.5, DBX20.5 (Rapid traverse override)
 NC/PLC interface signal DB21-30 DBB4 (Feedrate override A-H)

32020	JOG_VELO	A11, A04	H1
mm/min, rev/min	Jog axis velocity	DOUBLE	Reset
CTEQ			
-	-	(2000./30), (2000./30), (2000./30), (2000./30), (2000./30), (200...	(0./0.) (MD_DBLMAX/ MD_DBLMAX) 7/2 M

Description:

The velocity entered applies to traversing in JOG mode when the axial feedrate override switch position is 100%.

This velocity is only used when general SD41110 \$SN_JOG_SET_VELO = 0 for linear axes, and linear feedrate is selected (SD41100 \$SN_JOG_REV_IS_ACTIVE = 0) or SD41130 \$SN_JOG_ROT_AX_SET_VELO = 0 for rotary axes.

If this is the case, the axis velocity is active for

- continuous jogging
- incremental jogging (INC1, ... INCvar)
- handwheel jogging

The value entered must not exceed the maximum permissible axis velocity (MD32000 \$MA_MAX_AX_VELO).

If DRF is active, the axis velocity for JOG must be reduced with MD32090 \$MA_HANDWH_VELO_OVERLAY_FACTOR.

Spindles in JOG mode:

This machine data can also be used to define the JOG mode speed for specific spindles (if SD41200 \$SN_JOG_SPIND_SET_VELO = 0). However, the speed can be modified with the spindle override switch.

Related to:

MD32000 \$MA_MAX_AX_VELO
 (maximum axis velocity)

MD32050 \$MA_JOG_REV_VELO
 (revolutional feedrate for JOG)

MD32090 \$MA_HANDWH_VELO_OVERLAY_FACTOR
 (ratio of JOG velocity to handwheel velocity (DRF))

SD41110 \$SN_JOG_SET_VELO
 (JOG velocity for G94)

SD41130 \$SN_JOG_ROT_AX_SET_VELO
 (JOG velocity for rotary axes)

NC/PLC interface signal DB21-30 DBB4 (Feedrate override A-H)

32040	JOG_REV_VELO_RAPID	A11, A04	H1, P2, R2, T1, V1, Z1
mm/rev	Revolutional feedrate in JOG with rapid traverse override	DOUBLE	Reset
CTEQ			
-	-	2.5, 2.5, 2.5, 2.5, 2.5, 2.5, 2.5, 2.5...	0.0 1.0E+301 7/2 M

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Description: The value entered defines the revolutional feedrate of the axis in JOG mode with rapid traverse override in relation to the revolutions of the master spindle. This feedrate is active when SD41100 \$SN_JOG_REV_IS_ACTIVE = 1. (Revolutional feedrate active with JOG)

MD irrelevant for:

SD41100 \$SN_JOG_REV_IS_ACTIVE = "0"

Related to:

SD41100 \$SN_JOG_REV_IS_ACTIVE (revolutional feedrate with JOG active)

MD32050 \$MA_JOG_REV_VELO (revolutional feedrate with JOG)

32050	JOG_REV_VELO			A11, A04	H1, P2, R2, T1, V1, Z1	
mm/rev	Revolutional feedrate in JOG			DOUBLE	Reset	
CTEQ						
-	-	0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5...	0.0	1.0E+301	7/2	M

Description: The value entered defines the revolutional feedrate of the axis in JOG mode in relation to the revolutions of the master spindle.

This feedrate is active when SD41100 \$SN_JOG_REV_IS_ACTIVE= 1 (revolutional feedrate active with JOG).

MD irrelevant for:

Linear feedrate; i.e. SD41100 \$SN_JOG_REV_IS_ACTIVE = 0

Related to:

SD41100 \$SN_JOG_REV_IS_ACTIVE
(revolutional feedrate for JOG active)

MD32040 \$MA_JOG_REV_VELO_RAPID
(JOG revolutional feedrate with rapid traverse override)

32060	POS_AX_VELO			A12, A04	H1, P2, K1, V1, 2.4, 6.2	
mm/min, rev/min	Initial setting for positioning axis velocity			DOUBLE	Reset	
CTEQ						
-	-	(10000./30), (10000./30), (10000./30), (10000./30), (10000./30),...	(0./ 0.)	(MD_DBLMAX/ MD_DBLMAX)	7/2	M

Description: If a positioning axis is programmed in the part program without specifying the axis-specific feedrate, the feedrate entered in MD32060 \$MA_POS_AX_VELO is automatically used for this axis. The feedrate in MD32060 \$MA_POS_AX_VELO applies until an axis-specific feedrate is programmed in the part program for this positioning axis.

MD irrelevant for:

MD32060 \$MA_POS_AX_VELO is irrelevant for all axis types other than positioning axis.

Special cases:

If a ZERO velocity is entered in MD32060 \$MA_POS_AX_VELO, the positioning axis does not traverse if it is programmed without feed. If a velocity is entered in MD32060 \$MA_POS_AX_VELO that is higher than the maximum velocity of the axis (MD32000 \$MA_MAX_AX_VELO), the velocity is automatically restricted to the maximum rate.

32070	CORR_VELO			A04	2.4, 6.2	
%	Axis velocity for override			DOUBLE	Reset	
CTEQ						
-	-	50.0	0.0	1.0E+301	7/2	M

Description: Limitation of axis velocity for handwheel override, external work offset, continuous dressing, distance control \$AA_OFF via synchronized actions related to the JOG velocity

MD32020 \$MA_JOG_VELO,
MD32010 \$MA_JOG_VELO_RAPID,
MD32050 \$MA_JOG_REV_VELO,
MD32040 \$MA_JOG_REV_VELO_RAPID.

The maximum permissible velocity is the maximum velocity in MD32000 \$MA_MAX_AX_VELO. Velocity is limited to this value.

The conversion into linear or rotary axis velocity is made according to MD30300 \$MA_IS_ROT_AX.

32074	FRAME_OR_CORRPOS_NOTALLOWED			A01	K5, K2, 2.4, 6.2	
-	Frame or tool length compensation are not permissible			UDWORD	PowerOn	
CTEQ						
-	-	0	0	0xFFF	7/2	M

Description: This machine data is used to define the effectiveness of the frames and tool length compensations for indexing axes, PLC axes and command axes started from synchronized actions.

Bit assignment:

Bit 0 = 0:
Programmable work offset (TRANS) allowed for indexing axis

Bit 0 = 1:
Programmable work offset (TRANS) forbidden for indexing axis

Bit 1 = 0:
Scale modification (SCALE) allowed for indexing axis

Bit 1 = 1:
Scale modification (SCALE) forbidden for indexing axis

Bit 2 = 0:
Direction change (MIRROR) allowed for indexing axis

Bit 2 = 1:
Direction change (MIRROR) forbidden for indexing axis

Bit 3 = 0:
DRF offset allowed for axis

Bit 3 = 1:
DRF offset forbidden for axis

Bit 4 = 0:
External work offset allowed for axis

Bit 4 = 1:
External work offset forbidden for axis

Bit 5 = 0:
Online tool compensation allowed for axis

Bit 5 = 1:
Online tool compensation forbidden for axis

Bit 6 = 0:
Synchronized action offset allowed for axis

Bit 6 = 1:
Synchronized action offset forbidden for axis

Bit 7 = 0:
Compile cycles offset allowed for axis

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Bit 7 = 1:

Compile cycles offset forbidden for axis

Bit 8 = 0:

Axial frames and tool length compensation are NOT considered for PLC axes (bit evaluation for compatibility reasons)

Bit 8 = 1:

Axial frames are considered for PLC axes and tool length compensation is considered for PLC axes which are geometry axes.

Bit 9 = 0:

Axial frames are considered for command axes, and tool length compensation is considered for command axes which are geometry axes.

Bit 9 = 1:

Axial frames and tool length compensation are NOT considered for command axes

If the tool is treated in an active transformation, the tool length compensation is taken into account for geometry axes (as for bit9=0, see also MD24130

\$MC_TRAFO_INCLUDES_TOOL_1).

Bit 10 = 0:

In JOG mode, too, traversing of a geometry axis as a PLC or command axis is NOT allowed with active rotation.

Bit 10 = 1:

In JOG mode, traversing of a geometry axis as a PLC axis or command axis (static synchronized action) is allowed with active rotation (ROT frame). Traversing must be terminated prior to returning to AUTOMATIC mode (neutral axis state), as otherwise alarm 16908 would be output when the mode is changed.

Bit 11 = 0:

In 'Program interrupted' status, repositioning to the interrupt position (AUTO - JOG) takes place when changing from JOG to AUTO.

Bit 11 = 1:

Prerequisite: Bit 10 == 1 (PLC or command axis motion with active rotation in JOG mode).

In 'Program interrupted' status, the end point of the PLC or command axis motion is taken over when changing from JOG to AUTOMATIC and the geometry axes are positioned according to the rotation

32075	MAPPED_FRAME			A01	-	
-	Mapping an axial frame			STRING	PowerOn	
-						
-	-	NO_AXIS, NO_AXIS, NO_AXIS, NO_AXIS, NO_AXIS, NO_AXIS, NO_AXIS, N...	-	-	7/2	M

Description: This machine data can be used to map an axial frame onto an axial frame of another axis. This means that the description of a frame in the data management can simultaneously describe the frame of another axis with the same values. Selected data management frames can be enabled for the mapping in MD10616 \$MN_MAPPED_FRAME_MASK.

32080	HANDWH_MAX_INCR_SIZE			A05, A10	H1	
mm, degrees	Limitation of selected increment			DOUBLE	Reset	
CTEQ						
-	-	0.0	0.0	1.0E+301	7/2	M

Description: > 0: Limitation of size of selected increment MD11330 \$MN_JOG_INCR_SIZE <Increment/VDI signal>Ü or SD41010 \$SN_JOG_VAR_INCR_SIZE for the associated machine axis
0: No limitation

32082	HANDWH_MAX_INCR_VELO_SIZE			A05, A10, A04	-	
mm/min, rev/min	Limitation for velocity override			DOUBLE	Reset	
CTEQ						
-	-	(500.0/1.0), (500.0/1.0), (500.0/1.0), (500.0/1.0), (500.0/1.0),...	(0./ 0.)	(MD_DBLMAX/ MD_DBLMAX)	7/2	M

Description: For the velocity override of positioning axes:

>0: Limitation of size of selected increment \$MN_JOG_INCR_SIZE<Increment/VDI signal> 0 or SD41010 \$SN_JOG_VAR_INCR_SIZE for the associated machine axis

0: No limitation

32084	HANDWH_STOP_COND			EXP, A10	H1	
-	Handwheel travel behavior			UDWORD	Reset	
CTEQ						
-	-	0x10FF	0	0x1FFF	7/2	M

Description: Definition of the response of the handwheel travel to axis-specific VDI interface signals or the CP-SW limit stop or a stop from an OEM application:

Bit = 0:
Interruption or collection of the distances preset via the handwheel.

Bit = 1:
Cancellation of the traversing motion or no collection.

Bit assignment:

Bit 0: feedrate override

Bit 1: spindle speed override

Bit 2: feedrate stop/spindle stop or CP-SW limit stop or stop from an OEM application

Bit 3: clamping procedure running (= 0 no effect)

Bit 4: servo enable

Bit 5: pulse enable

For machine axis:

Bit 6 = 0
For handwheel travel, the maximum velocity at which the relevant machine axis can be traversed is the feedrate set in MD32020 \$MA_JOG_VELO.

Bit 6 = 1
For handwheel travel, the maximum velocity at which the relevant machine axis can be traversed is the feedrate set in MD32000 \$MA_MAX_AX_VELO.

Bit 7 = 0
The override is active in handwheel travel.

Bit 7 = 1
The override is always assumed to be 100% for handwheel travel, regardless of how the override switch is set.
Exception: override 0% is always active.

Bit 8 = 0
The override is active with DRF

Bit 8 = 1
The override is always assumed to be 100% for DRF, regardless of how the override switch is set.
Exception: override 0% is always active.

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Bit 9 = 0

For handwheel travel, the maximum possible velocity with revolutional feedrate is

- with the feedrate in SD41120 \$SN_JOG_REV_SET_VELO or
- the feedrate in MD32050 \$MA_JOG_REV_VELO or
- in the case of rapid traverse with MD32040 \$MA_JOG_REV_VELO_RAPID of the relevant machine axis calculated with the spindle or rotary axis feedrate.

Bit 9 = 1

For handwheel travel, the maximum possible velocity is with the revolutional feedrate in MD32000 \$MA_MAX_AX_VELO of the relevant machine axis. (see also bit 6)

Bit 10 = 0

For overlaid motions, \$AA_OVR is not active.

Bit 10 = 1

For overlaid motions (DRF, \$AA_OFF, external work offset, online tool offset), the override \$AA_OVR settable via synchronized actions is active.

Bit 11 = 0

With the VDI interface signal DB31, ... DBX93.5 (Drive Ready) missing, paths defined by the handwheel are not collected, but a traversing request is displayed. Start of a continuous JOG motion in continuous mode (MD41050 \$SN_JOG_CONT_MODE_LEVELTRIGGRD 41050 = 0) or an incremental JOG motion in continuous mode (MS11300 \$MN_JOG_INC_MODE_LEVELTRIGGRD 11300 = 0) is displayed as a traversing request. With "driveReady" = 1, however, the tool is not traversed, but the procedure is canceled and must be started again.

Bit 11 = 1

With the VDI interface DB31, ... DBX93.5 (Drive Ready) missing, the paths defined by the handwheel are collected. Start of a continuous JOG motion in continuous mode (MD41050 \$SN_JOG_CONT_MODE_LEVELTRIGGRD 41050 = 0) or an incremental JOG motion in continuous mode (MS11300 \$MN_JOG_INC_MODE_LEVELTRIGGRD 11300 = 0) is displayed and saved as a traversing request. With "driveReady" = 1 the traversing motion is started.

Bit 12 = 0

Interruption or collection of the distances preset via the handwheel with safe operational stop.

Bit 12 = 1

Cancellation of the traversing motion or no collection with safe operational stop.

32090	HANDWH_VELO_OVERLAY_FACTOR			A10, A04	H1	
-	Ratio of JOG velocity to handwheel velocity (DRF)			DOUBLE	Reset	
CTEQ						
-	-	0.5	0.0	1.0E+301	7/2	M

Description:

The velocity active with the handwheel in DRF can be reduced from the JOG velocity with this machine data.

The following applies to linear axes for the velocity active with DRF:

$v_{DRF} = SD41110 \$SN\_JOG\_SET\_VELO * MD32090 \$MA\_HANDWH\_VELO\_OVERLAY\_FACTOR$

or when SD41110 \$SN_JOG_SET_VELO = 0:

$v_{DRF} = MD32020 \$MA\_JOG\_VELO * MD32090 \$MA\_HANDWH\_VELO\_OVERLAY\_FACTOR$

The velocity setting in SD41130 \$SN_JOG_ROT_AX_SET_VELO applies for DRF on rotary axes instead of the value in SD41110 \$SN_JOG_SET_VELO.

MD irrelevant for:

JOG handwheel

Related to:

MD32020 \$MA_JOG_VELO (JOG axis velocity)

SD41110 \$SN_JOG_SET_VELO (JOG velocity for G94)

SD41130 \$SN_JOG_ROT_AX_SET_VELO (JOG velocity for rotary axes)

32100	AX_MOTION_DIR				A07, A03, A11	G1, TE3, G2	
-	Traversing direction (not control direction)				DWORD	PowerOn	
-							
-	-	1, 1, 1, 1, 1, 1, 1...	-1, -1, -1, -1, -1, -1, -1...	1, 1, 1, 1, 1, 1, 1, 1...	7/2	M	

Description: The direction of movement of the machine can be reversed with this MD.
The control direction is, however, not destroyed; i.e. closed-loop control remains stable.
-1: Direction reversal
0, 1: No direction reversal

32110	ENC_FEEDBACK_POL			A07, A02, A11	G2	
-	Sign actual value (control direction)			DWORD	PowerOn	
-						
-	2	1, 1	-1	1	7/2	M

Description: The evaluation direction of the shaft encoder signals is entered in the MD.
-1: Actual value reversal
0, 1: No actual value reversal
The index[n] of the machine data is encoded as follows:
[Encoder no.]: 0 or 1
Special cases:
The axis can run off if an incorrect control direction is entered.
Depending on the setting of the corresponding limit values, one of the following alarms is displayed:
Alarm 25040 "Standstill monitoring"
Alarm 25050 "Contour monitoring"
Alarm 25060 "Speed setpoint limitation"
If an uncontrolled setpoint step change occurs on connection of a drive, the control direction might be incorrect.
Note:
In the case of SINAMICS drives, we recommend that the direction of motion is reversed in the drive (see P410).
This is obligatory if you are using DSC (see also MD32640 \$MA_STIFFNESS_CONTROL_ENABLE).

32200	POSCTRL_GAIN			A07, A11	G1, TE1, TE9, K3, S3, A2, A3, D1, G2, S1, V1	
1000/min	Servo gain factor			DOUBLE	NEW CONF	
CTEQ, -						
-	6	16.66666667, 16.66666667, 16.66666667, 16.66666667, 16.66666667,	0	2000.	7/2	M

Description: Position controller gain, or servo gain factor.
The input/output unit for the user is [(m/min)/mm].
I.e. MD32200 \$MA_POSCTRL_GAIN[n] = 1 corresponds to a 1 mm following error at V = 1m/min.
The following machine data have default settings for adapting the standard selected input/output unit to the internal unit [rev/s].

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- MD10230 \$MN_SCALING_FACTORS_USER_DEF[9] = 16.666667S
- MD10220 \$MN_SCALING_USER_DEF_MASK = 0x200; (bit no 9 as hex value).

If the value "0" is entered the position controller is opened.

When entering the servo gain factor it is important to take into account that the gain factor of the whole position control loop is still dependent on other parameters of the controlled system. A distinction should be made between a "desired servo gain factor" (MD32200 \$MA_POSCTRL_GAIN) and an "actual servo gain factor" (produced by the machine). Only when all the parameters of the control loop are matched will these servo gain factors be the same.

Other factors are:

- Speed setpoint adjustment (MD32260 \$MA_RATED_VELO, MD32250 \$MA_RATED_OUTVAL) or automatic speed setpoint interface adjustment (with MD32250 \$MA_RATED_OUTVAL = 0 etc.)
- Correct actual value recording of the position encoder (no. of encoder pulses, high resolution, encoder mounting location, gear etc.)
- Correct actual speed recording on the drive (standardization, possibly tacho compensation, tacho generator)

Note:

Axes which interpolate together and are to perform a machining operation, must either have the same gain setting (i.e. have the identical following error = 45° slope at the same velocity) or they must be matched via MD32910 \$MA_DYN_MATCH_TIME.

The actual servo gain factor can be checked by means of the following error (in the service display).

In the case of analog axes, a drift compensation must be performed prior to the control.

The index [n] of the machine data has the following coding:

[control parameter set no.]: 0-5

32210	POSCTRL_INTEGR_TIME			A07	G2	
s	Position controller integral time			DOUBLE	NEW CONF	
-						
-	-	1.0	0	10000.0	7/2	M

Description: Position controller integral action time for the integral component in s
The MD is only active if MD32220 \$MA_POSCTRL_INTEGR_ENABLE = TRUE.
A value of the MD less than 0.001 disables the integral component of the PI controller. The controller is then a P controller, which works with disabled manipulated variable clamping (see also MD32230 \$MA_POSCTRL_CONFIG, bit0 = 1).

32220	POSCTRL_INTEGR_ENABLE			A07	G2	
-	Enable integral component position controller			BOOLEAN	PowerOn	
-						
-	-	FALSE	0	-	7/2	M

Description: Enable of the integral component position controller; the position controller is then a PI controller in which the manipulated variable clamping is disabled (s.a. MD32230 \$MA_POSCTRL_CONFIG, bit0 = 1).
Position overshoots may occur if the integral component is used. For this reason, this functionality may only be used in special cases.

32230	POSCTRL_CONFIG			A07	TE1	
-	Configuration of the position controller structure			UBYTE	PowerOn	
-						
-	-	0	0	0x1f	7/2	M

Description: Configuration of the position controller structure:

Bit0 = 1: Manipulated variable clamping inactive

Bit4 = 1: Accelerated exact stop signal active

32250	RATED_OUTVAL			A01, A11	A3, D1, G2	
%	Rated output voltage			DOUBLE	NEW CONF	
CTEQ						
-	1	0.0	0.0	200	7/2	M

Description:

a.)

Scaling of the manipulated variable with analog drives:

The value of the speed setpoint in percent is to be entered in this MD, in relation to the maximum speed setpoint at which the motor speed specified in MD32260 \$MA_RATED_VELO[n] is reached.

Related to:

MD32250 \$MA_RATED_OUTVAL[n] only makes sense in combination with MD32260 \$MA_RATED_VELO[n].

Example:

1. At a voltage of 5V, the drive reaches a speed of 1875 rpm ==> RATED_OUTVAL = 50%, RATED_VELO = 11250 [degrees/s]
2. At a voltage of 8V, the drive reaches a speed of 3000 rpm ==> RATED_OUTVAL = 80%, RATED_VELO = 18000 [degrees/s]
3. At a voltage of 1.5V, the drive reaches a speed of 562.5 rpm ==> RATED_OUTVAL = 15%, RATED_VELO = 3375 [degrees/s]

All three examples are possible for one and the same drive/converter. The ratio of the two values is decisive; it is the same in all three examples.

MD32250 \$MA_RATED_OUTVAL and MD32260 \$MA_RATED_VELO describe physical properties of converter and drive; they can therefore only be determined by means of a measurement or commissioning instructions (converter, drive).

b.)

Scaling of the manipulated variable with digital PROFIdrive drives:

Default value "0" declares MD32250 \$MA_RATED_OUTVAL and MD32260 \$MA_RATED_VELO as invalid. Scaling of the manipulated variable is automatically determined and adjusted from the drive parameters instead.

Otherwise (MD32250 \$MA_RATED_OUTVAL unequal to zero), the scaling of the manipulated variable is not determined from the drive (for example non-Siemens PROFIdrive drives), but set with RATED_VELO and RATED_OUTVAL, even in the case of these, irrespective of the scaling active on the drive side. In this case, the following applies:

Scaling of the manipulated variable on the drive = $\text{RATED\_VELO} / \text{RATED\_OUTVAL}$

Further scalings from drive parameters, such as torque scaling, are not active if MD32250 \$MA_RATED_OUTVAL is not equal to zero, the values based on it remain zero.

In the case of simultaneous operation of analog and PROFIdrive drives, the settings for the analog axes must be adjusted as described in a.).

32260	RATED_VELO			A01, A11	A3, D1, G2	
rev/min	Rated motor speed			DOUBLE	NEW CONF	
CTEQ						
-	1	3000.0, 3000.0, 3000.0, 3000.0, 3000.0, 3000.0, 3000.0, 3000.0...	0.0	1.0E+301	7/2	M

Description:

Only applies when:

MD32250 \$MA_RATED_OUTVAL is set greater than 0.

MD32260 \$MA_RATED_VELO[n] only makes sense in combination with MD32250 \$MA_RATED_OUTVAL[n].

Description:

Maximum acceleration, i.e. change in setpoint velocity, which is to act upon the axis. The value limits both positive and negative axis acceleration.

The maximum angular or linear axis acceleration must be entered dependent upon machine data MD30300 \$MA_IS_ROT_AX.

In the case of linear interpolation of the axes in a grouping, the grouping is limited in such a way that no axis is overloaded. With regard to contour accuracy, the control dynamic behavior has to be taken into account.

Not relevant for error states that lead to quick stop.

Each field element corresponds to a G code in the 59th G code group.

Note:

This MD defines the acceleration with which the maximum load can be moved.

Functions such as "Intelligent Load Control, ILC") enable the maximum acceleration of the axis parameterized in this machine data to be exceeded for a specific axis.

Related to:

Description:	The factor defines the acceleration of the braking ramp of the real-time software limit switch check relative to MD32300 \$MA_MAX_AX_ACCEL[0]. With the value 0, the function behaves compatibly to older software versions, in which the factor was calculated internally. The value 0.9 is recommended. Related to: MD32300 \$MA_MAX_AX_ACCEL (axis acceleration)

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Description: The overload factor limits the velocity jump of the machine axis on block transition. The value entered is related to the value of MD32300 \$MA_MAX_AX_ACCEL (axis acceleration) and states by how much the maximum acceleration can be exceeded for one IPO cycle.

Related to:

MD32300 \$MA_MAX_AX_ACCEL (axis acceleration)

MD10070 \$MN_IPO_SYSCLOCK_TIME_RATIO (interpolator clock)

Each field element corresponds to a G code in the 59th G group.

32320	DYN_LIMIT_RESET_MASK			A05, A06, A10, A04	-	
-	Reset behavior of dynamic response limitation.			UDWORD	Reset	
CTEQ						
-	-	0	0	0x03	7/2	M

Description: MD32320 \$MA_DYN_LIMIT_RESET_MASK is used to set the reset response of functions limiting dynamic response for specific axes and groups.

The MD is bit-coded, bit 0 (LSB) and bit 1 are currently allocated.

Bit 0 = 0:

Programmed ACC, VELOLIM and JERKLIM are reset to 100% with channel reset/M30 if the channel-specific MD22410 \$MC_F_VALUES_ACTIVE_AFTER_RESET is also zero.

For spindle mode, programmed ACC and VELOLIM are reset to 100% with channel reset/M30 if MD35040 \$MA_SPIND_ACTIVE_AFTER_RESET is zero and the channel-specific MD22400 \$MC_S_VALUES_ACTIVE_AFTER_RESET is also zero.

Bit 0 = 1:

Programmed ACC, VELOLIM and JERKLIM are retained beyond channel reset/M30.

Bit 1 = 0:

Programmed ACCLIMA, VELOLIMA and JERKLIMA are reset to 100% with channel reset/M30, if MD22410 \$MC_F_VALUES_ACTIVE_AFTER_RESET is also zero.

Bit 1 = 1:

Programmed ACCLIMA, VELOLIMA and JERKLIMA are retained beyond channel reset//M30.

Notes:

In MD22410 \$MC_F_VALUES_ACTIVE_AFTER_RESET, the reset responses of the dynamic instructions ACC, VELOLIM, JERKLIM, ACCLIMA, VELOLIMA and JERKLIMA are set channel specifically. If the MD is set, then the values are also retained.

For spindle mode, the values for ACC and VELOLIM are also retained if MD35040 \$MA_SPIND_ACTIVE_AFTER_RESET is not equal to zero or the channel-specific MD22400 \$MC_S_VALUES_ACTIVE_AFTER_RESET is not equal to zero.

32330	AFIS_G00_JERK_FACTOR			A04	B1, B2	
-	Scaling of jerk limitation for Automatic Filter Switching function (AFIS)			DOUBLE	Reset	
-						
-	-	1.	1e-9	3.4E+38	3/3	I

Description: Scaling of jerk limitation for G00 with the Automatic Filter Switching (AFIS) function switched on.

The relevant axial jerk limiting value is obtained by:

(MD32435 \$MA_AFIS_G00_JERK_FACTOR * MD32431 \$MA_MAX_AX_JERK[DYNORM])

32331	AFIS_DELTA_POS			A04	B1, B2	
mm, degrees	Exact stop window for the Automatic Filter Switching function			DOUBLE	Reset	
-						
-	-	1.	1e-9	10.	3/3	I

3.3 NC machine data

Description: The Automatic Filter Switching function switches the filters when the absolute value of the difference between the first and second filter banks of the axis is less than or equal to the value of MD32331 \$MA_AFIS_DELTA_POS. Larger values result in a productivity benefit, but also produce a greater jump when switching.

32400	AX_JERK_ENABLE			A07, A04	B2	
-	Axial jerk limitation			BOOLEAN	NEW CONF	
CTEQ, -						
-	-	FALSE	0	-	7/2	M

Description: Enables the function of an axial jerk limitation.
The limitation is set via a time constant; it is always active.
The limitation works independently of the limitations "path-related maximum jerk", "knee-shaped acceleration characteristic" and the axial jerk limitation of the axes that are operated in JOG mode or positioning axis mode.
Related to:
MD32410 \$MA_AX_JERK_TIME (time constant for axial jerk limitation)

32402	AX_JERK_MODE			A07, A04	B2, G2, B3	
-	Filter type for axial jerk limitation			BYTE	PowerOn	
CTEQ, -						
-	-	1	1	55	7/2	M

Description: Filter type for axial jerk limitation:
1: 2nd order filter
2: Moving averaging
3: Bandstop filter
4: Double moving averaging
5: FIR low pass
Two-character parameterization activates switchable filter chains e.g.
25: switchable filter chain with jerk filters of type 5 and type 2
Notes on parameterization:
MD32402 \$MA_AX_JERK_MODE is only effective if MD32400 \$MA_AX_JERK_ENABLE is set to 1.
Type1 requires the setting of
MD32410 \$MA_AX_JERK_TIME
Recommended values from min: 0.03 s to max. 0.06 s
Type 1 is offered for compatibility reasons, type 2 is recommended
Type 2 requires the setting of
MD32410 \$MA_AX_JERK_TIME
Recommended values from min: 1 position-control cycle to max: 127 position-control cycles. At 2 ms for a position-control cycle this corresponds to from 0.002 s to 0.254 s.
Type 2 requires more computing time than type 1, but causes smaller contour errors for the same smoothing effect, or smoother movements with the same accuracy.
Type 3 requires the setting of
MD32410 \$MA_AX_JERK_TIME
MD32412 \$MA_AX_JERK_FREQ
MD32414 \$MA_AX_JERK_DAMP.
To parameterize a pure bandstop filter, it is recommended to set MD32410 \$MA_AX_JERK_TIME=0
, whereby "denominator frequency = numerator frequency = blocking frequency = MD32412 \$MA_AX_JERK_FREQ" is set automatically.

Whereas with MD32410 \$MA_AX_JERK_TIME > 0 a separate denominator frequency is set so that a bandstop filter can be implemented with an increased amplitude at frequencies above the blocking frequency.

Type 4 corresponds to two type 2 filters connected in series, and therefore requires the setting of

MD32410 \$MA_AX_JERK_TIME

MD32411 \$MA_AX_JERK_TIME_ADD

Type 5 requires the setting of

MD32407 \$MA_AX_JERK_FIR_FREQ

MD32408 \$MA_AX_JERK_FIR_ORDER

MD32409 \$MA_AX_JERK_FIR_WINDOW

Two character parameterization activates switchable filter chains, e.g.

type 25 complements type 5 with a switchable alternative type 2

The parameterization is made in index 0 of the parameters for type 5 and in index 1 of the parameters for type 2.

A runtime adaptation of the switchable filter chains is possible in the indices 0 and 1 of MD32895 \$MA_DESVAL_DELAY_TIME if this is enabled by MD32890 \$MA_DESVAL_DELAY_ENABLE.

Related to:

MD32400 \$MA_AX_JERK_ENABLE

MD32407 \$MA_AX_JERK_FIR_FREQ

MD32408 \$MA_AX_JERK_FIR_ORDER

MD32409 \$MA_AX_JERK_FIR_WINDOW

MD32410 \$MA_AX_JERK_TIME

MD32411 \$MA_AX_JERK_TIME_ADD

MD32412 \$MA_AX_JERK_FREQ and

MD32414 \$MA_AX_JERK_DAMP

MD32890 \$MA_DESVAL_DELAY_ENABLE

MD32895 \$MA_DESVAL_DELAY_TIME

32404	CALCFIR_SELECT			A07, A04	-	
-	CALCFIR activation			BYTE	NEW CONF	
-						
-	-	0	0	2	7/2	M

Description: Activation of the calculation of FIR filters via CALCFIR for the active dynamic response mode.

0 = CALCFIR calculation is inactive

1 = CALCFIR (Standard) is active for filter chain [0]

2 = CALCFIR (Standard) is active for filter chain [1]

Related to:

MD32400 \$MA_AX_JERK_ENABLE (Axial jerk limitation)

MD32402 \$MA_AX_JERK_MODE

MD32405 \$MA_CALC_FIR_FREQ

MD32406 \$MA_CALC_FIR_TOL

MD32407 \$MA_AX_JERK_FIR_FREQ

MD32408 \$MA_AX_JERK_FIR_ORDER

MD32409 \$MA_AX_JERK_FIR_WINDOW

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32405	CALCFIR_FREQ			A07, A04	-	
-	CALCFIR frequency			DOUBLE	NEW CONF	
-						
-	6	0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0	100.0	7/2	M

Description: Frequency for the calculation of FIR filters via CALCFIR. A frequency can be entered for each dynamic response mode from G code group 59. Frequency = 0.0 disables the CALCFIR calculation for this dynamic response mode. Typical frequencies lie in the range from 10.0 to 100.0 Hz.

Each field element corresponds to a G code from the 59th G code group.

Related to:

MD32400 \$MA_AX_JERK_ENABLE (Axial jerk limitation)

MD32402 \$MA_AX_JERK_MODE

MD32404 \$MA_CALCFIR_SELECT

MD32406 \$MA_CALCFIR_TOL

MD32407 \$MA_AX_JERK_FIR_FREQ

MD32408 \$MA_AX_JERK_FIR_ORDER

MD32409 \$MA_AX_JERK_FIR_WINDOW

32406	CALCFIR_TOL			A07, A04	-	
mm, degrees	CALCFIR position tolerance			DOUBLE	NEW CONF	
-						
-	6	0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0	0.05	7/2	M

Description: Position tolerance for the calculation of FIR filters via CALCFIR. A position tolerance can be entered for each dynamic response mode from G code group 59.

Each field element corresponds to a G code from the 59th G code group.

Related to:

MD32400 \$MA_AX_JERK_ENABLE (Axial jerk limitation)

MD32402 \$MA_AX_JERK_MODE

MD32404 \$MA_CALCFIR_SELECT

MD32405 \$MA_CALCFIR_FREQ

MD32407 \$MA_AX_JERK_FIR_FREQ

MD32408 \$MA_AX_JERK_FIR_ORDER

MD32409 \$MA_AX_JERK_FIR_WINDOW

32407	AX_JERK_FIR_FREQ			A07, A04	-	
-	Cutoff frequency of axial jerk filter type 5			DOUBLE	NEW CONF	
-						
-	2	20.0, 20.0	1.0	1000.0	7/2	M

Description: Cutoff frequency of axial FIR jerk filter smoothing. The MD is only active if MD32402 \$MA_AX_JERK_MODE = 5

Note: With MD32404 \$MA_CALCFIR_SELECT > 0, the value of the machine data can change automatically.

Related to:

MD32400 \$MA_AX_JERK_ENABLE (axial jerk limitation)

MD32402 \$MA_AX_JERK_MODE

MD32404 \$MA_CALCFIR_SELECT

MD32408 \$MA_AX_JERK_FIR_ORDER

MD32409 \$MA_AX_JERK_FIR_WINDOW

32408	AX_JERK_FIR_ORDER			A07, A04	-	
-	Filter order of axial jerk filter type 5			DWORD	NEW CONF	
-						
-	2	80, 80	0	200	7/2	M

Description: Filter order of axial FIR jerk filter smoothing. The MD is only active if MD32402 \$MA_AX_JERK_MODE = 5

Note: With MD32404 \$MA_CALC_FIR_SELECT > 0, the value of the machine data can change automatically.

Related to:

MD32400 \$MA_AX_JERK_ENABLE (axial jerk limitation)

MD32402 \$MA_AX_JERK_MODE

MD32404 \$MA_CALC_FIR_SELECT

MD32407 \$MA_AX_JERK_FIR_FREQ

MD32409 \$MA_AX_JERK_FIR_WINDOW

32409	AX_JERK_FIR_WINDOW			A07, A04	-	
-	Filter window type of axial jerk filter type 5			DWORD	NEW CONF	
-						
-	2	1, 1	0	3	7/2	M

Description: Filter window type of axial FIR jerk filter smoothing. The MD is only active if MD32402 \$MA_AX_JERK_MODE = 5

Window type 0 does not use a window

Window type 1 uses Hamming window

Window type 2 uses Blackman-Harris window

Window type 3 uses Gauss window

Related to:

MD32400 \$MA_AX_JERK_ENABLE (axial jerk limitation)

MD32402 \$MA_AX_JERK_MODE

MD32407 \$MA_AX_JERK_FIR_FREQ

MD32408 \$MA_AX_JERK_FIR_ORDER

32410	AX_JERK_TIME			A07, A04	G1, TE1, S3, B2, G2	
s	Time constant for axial jerk filter			DOUBLE	NEW CONF	
-						
-	2	0.001, 0.001	0.0	1.0E+301	7/2	M

Description: Time constant of the axial jerk filter which causes a smoother axis setpoint characteristic. The jerk filter will only be active if the time constant is greater than a position control cycle.

This MD is not active in case of errors that cause a change in follow-up mode (for example EMERGENCY STOP)

Special cases:

Machine axes that are supposed to be interpolating with each other must have the same effective jerk filtering (for example the same time constant for tapping without compensating chuck).

Related to:

MD32400 \$MA_AX_JERK_ENABLE (axial jerk limitation)

MD32402 \$MA_AX_JERK_MODE

3.3 NC machine data

32411	AX_JERK_TIME_ADD			A07, A04	G1, TE1, S3, B2, G2	
s	Time constant for the second axial jerk filter type 4			DOUBLE	NEW CONF	
-						
-	2	0.001, 0.001	0.0	1.0E+301	7/2	M

Description: Time constant of the second moving averaging. This MD is only active if MD32402 \$MA_AX_JERK_MODE = 4 and if the time constant is greater than a position control cycle. This MD is not active in case of errors that cause a change in follow-up mode (for example EMERGENCY STOP)

Special cases:

Machine axes that are supposed to be interpolating with one another must have the same effective jerk filtering (for example the same time constant for tapping without compensating chuck).

Related to:

MD32400 \$MA_AX_JERK_ENABLE (axial jerk limitation)

MD32402 \$MA_AX_JERK_MODE

MD32410 \$MA_AX_JERK_TIME

32412	AX_JERK_FREQ			A07, A04	-	
-	Blocking frequency of axial jerk filter			DOUBLE	NEW CONF	
-						
-	2	10.0, 10.0	0.0	1.0E+301	7/2	M

Description: Blocking frequency of axial jerk filter bandstop MD is only active if MD32402 \$MA_AX_JERK_MODE = 3

32414	AX_JERK_DAMP			A07, A04	-	
-	Damping of axial jerk filter			DOUBLE	NEW CONF	
-						
-	2	0.0, 0.0	0.0	1.0E+301	7/2	M

Description: Damping of axial jerk filter bandstop:

Input value 0 means complete blocking with MD32412 \$MA_AX_JERK_FREQ, input values >0 can attenuate the blocking effect.

MD is only active if MD32402 \$MA_AX_JERK_MODE = 3

32415	EQUIV_CPREC_TIME			A07, A04	MD32410 \$MA_AX_JERK_TIME, \$MC_CPREC_WITH_FFW	
s	Time constant for the programmable contour accuracy			DOUBLE	NEW CONF	
-						
-	-	0	-1.0E+301	1.0E+301	7/2	M

Description: The data states the jerk filter time constant at which the contour error with active feedforward control is negligibly small.

32420	JOG_AND_POS_JERK_ENABLE			A04	G1, H1, P2, S3, B2	
-	Default setting of axis jerk limitation			BOOLEAN	Reset	
CTEQ						
-	-	FALSE	0	-	7/2	M

Description: Enables the function of the axis-specific jerk limitation for the operating modes JOG, REF and positioning axis mode.

1: Axial jerk limitation for JOG mode and positioning axis mode

0: No jerk limitation for JOG mode and positioning axis mode

The maximum jerk occurring is defined in MD32430 \$MA_JOG_AND_POS_MAX_JERK.

Related to:

MD32430 \$MA_JOG_AND_POS_MAX_JERK (axial jerk)

32430	JOG_AND_POS_MAX_JERK			A04	G1, P2, S3, B2	
m/s³, rev/s³	Axial jerk			DOUBLE	NEW CONF	
CTEQ						
-	-	1000.0, 1000.0, 1000.0, 1000.0, 1000.0, 1000.0, 1000.0, 1000.0...	1.e-9	1.0E+301	7/2	M

Description: The jerk limit value limits the rate of change of axis acceleration in JOG and REF modes as well as in positioning axis mode with MD18960 \$MN_POS_DYN_MODE=0.

The setting and time calculation are made as for MD20600 \$MC_MAX_PATH_JERK (path-related maximum jerk).

Not relevant for:

- Path interpolation
- Error states that lead to quick stop.

Related to:

MD32420 \$MA_JOG_AND_POS_JERK_ENABLE (initial setting of axial jerk limitation)

MD18960 \$MN_POS_DYN_MODE

32431	MAX_AX_JERK			A04	B1, B2	
m/s³, rev/s³	Maximum axial jerk for path movement			DOUBLE	NEW CONF	
-						
-	6	1.e6, 1.e6, 1.e6, 1.e6, 1.e6, 1.e6, 1.e6, 1.e6, 1.e6, 1.e6, 1.e6...	1.e-9	3.4E+38	3/3	I

Description: Maximum axial jerk for path motion

Each field element corresponds to a G code in the 59th G code group.

Note:

This MD defines the jerk with which the maximum load can be moved.

The maximum jerk of the axis parameterized in this machine data can be exceeded with functions like "Intelligent Load Control, ILC".

32432	PATH_TRANS_JERK_LIM			A04	B1, B2	
m/s³, rev/s³	Maximum axial jerk at block transition in continuous-path mode			DOUBLE	NEW CONF	
CTEQ						
-	6	1.e6, 1.e6, 1.e6, 1.e6, 1.e6, 1.e6, 1.e6, 1.e6, 1.e6, 1.e6, 1.e6...	0.0	1.0E+301	3/3	I

Description: The control limits the jerk (acceleration jump) at a block transition between contour sections of different curvature to the value set with active jerk limitation.

Not relevant for:

Exact stop

There is an entry for each G code from the 59th G code group (dynamic G code group).

Related to:

Path control, SOFT type of acceleration

3.3 NC machine data

32433	SOFT_ACCEL_FACTOR			A04	TE9, B1, B2	
-	Scaling of acceleration limitation with SOFT			DOUBLE	NEW CONF	
-						
-	6	1., 1., 1., 1., 1., 1.	1e-9	3.4E+38	3/3	I

Description: Scaling of acceleration limitation with SOFT.
 Relevant axial acceleration limitation for SOFT =:
 (MD32433 \$MA_SOFT_ACCEL_FACTOR[...] * MD32300 \$MA_MAX_AX_ACCEL[...])
 Each field element corresponds to a G code in the 59th G code group.

32434	G00_ACCEL_FACTOR			A04	TE9, B1, B2	
-	Scaling of acceleration limitation with G00.			DOUBLE	NEW CONF	
-						
-	-	1.	1e-9	3.4E+38	3/3	I

Description: Scaling of the acceleration limitation with G00.
 Relevant axial acceleration limitation for G00 =:
 (MD32433 \$MA_G00_ACCEL_FACTOR[...] * MD32300 \$MA_MAX_AX_ACCEL[...])

32435	G00_JERK_FACTOR			A04	B1, B2	
-	Scaling of jerk limitation with G00.			DOUBLE	NEW CONF	
-						
-	-	1.	1e-9	3.4E+38	3/3	I

Description: Scaling of the jerk limitation with G00.
 Relevant axial jerk limitation for G00 =:
 (MD32435 \$MA_G00_JERK_FACTOR[...] * MD32431 \$MA_MAX_AX_JERK[...])

32437	AX_JERK_VELO			A04	B1	
mm/min, rev/min	Velocity threshold for linear jerk adjustment			DOUBLE	NEW CONF	
-						
-	6	3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000...	0.0	1.0E+301	3/3	I

Description: Velocity at and above which the permissible jerk of an axis increases in a linear fashion.
 Jerk adjustment only becomes active if MD32439 \$MA_MAX_AX_JERK_FACTOR is > 1.0.
 There is an entry for each dynamic G code group.
 See also MD32438 \$MA_AX_JERK_VELO1 and \$MA_MAX_AX_JERK_FACTOR.

32438	AX_JERK_VEL1			A04	B1	
mm/min, rev/min	Velocity threshold for linear jerk adjustment			DOUBLE	NEW CONF	
-						
-	6	6000, 6000, 6000, 6000, 6000, 6000, 6000, 6000, 6000, 6000, 6000...	0.0	1.0E+301	3/3	I

Description: Velocity at and above which the permissible jerk of an axis switches from increasing in a linear fashion to the saturation defined in MD32439 \$MA_MAX_AX_JERK_FACTOR.
 The value of this velocity must be greater than the value set with MD32437 \$MA_AX_JERK_VELO.

Jerk adjustment becomes active only if MD32439 \$MA_MAX_AX_JERK_FACTOR is > 1.0.

There is an entry for each dynamic G code group.

See also MD32437 \$MA_AX_JERK_VEL0 and MD32439 \$MA_MAX_AX_JERK_FACTOR

32439	MAX_AX_JERK_FACTOR	A04	B1
-	Factor for jerk adjustment at high velocities	DOUBLE	NEW CONF
-			
-	6	1.0, 1.0, 1.0, 1.0, 1.0, 1.0	1.0 3.4E+38 3/3 I

Description: Factor for setting adaptive jerk adjustment for an axis.
 Jerk adjustment becomes active only if the value of this MD is greater than 1.
 The speed-dependent axial jerk is only used for defining the maximum path velocity and does not affect the maximum path acceleration and maximum path jerk. Therefore, speed-dependent jerk adaptation only affects traversing that includes geometric torsion (change of the curvature). Both the curvature and torsion of linear movements are zero, and jerk adaptation has no effect.
 There is an entry for each dynamic G code group.
 See also MD32437 \$MA_AX_JERK_VEL0 and MD32438 \$MA_AX_JERK_VEL1.

32440	LOOKAH_FREQUENCY	EXP, A04	B1
-	Smoother frequency for LookAhead	DOUBLE	NEW CONF
-			
-	-	10.	0.0 1.0E+301 7/2 M

Description: It is always the minimum of all the axes participating in the path which is determined.
 If vibrations are aroused in the mechanics of this axis and if their frequency is known, then this MD should be set to a lower value than this frequency.

32450	BACKLASH	A09	K3, G2
mm, degrees	Backlash	DOUBLE	NEW CONF
-			
-	2	0.0, 0.0	-1.0E+301 1.0E+301 7/2 I

Description: Backlash on reversal between positive and negative travel directions.
 Input of the compensation value is

- positive, if the encoder is leading the machine part (normal situation)
- negative, if the encoder is behind the machine part.

Backlash compensation is not active when 0 is entered.
 Backlash compensation is always active after reference point approach in all operating modes.
 Special cases:
 A specific backlash on reversal must be entered for each measuring system.
 Related to:
 MD30200 \$MA_NUM_ENCS (number of measuring systems)
 MD36500 \$MA_ENC_CHANGE_TOL
 (Maximum tolerance at actual position value change)

32452	BACKLASH_FACTOR	A09	K3, G2, S1, V1
-	Evaluation factor for backlash	DOUBLE	NEW CONF
-			
-	6	1.0, 1.0, 1.0, 1.0, 1.0, 1.0	0.01 100.0 7/2 I

Description: Evaluation factor for backlash.

3.3 NC machine data

The machine data enables the backlash defined in MD32450 \$MA_BACKLASH to be changed as a function of the parameter set, in order to take a gear stage dependent backlash into account, for example.

Related to:

MD32450 \$MA_BACKLASH[n]

32454	BACKLASH_MODE			A09	-	
-	Backlash compensation mode			UBYTE	NEW CONF	
-						
-	2	0, 0	0	0x3	7/2	1

Description:

Bit 0 = 0:

The backlash compensation value is not restored at Power On.

Bit 0 = 1:

The backlash compensation value is restored at Power On.

Bit 1 = 0:

The backlash compensation responds to other compensation movements (temperature compensation, sag and angularity error compensation).

Bit 1 = 1:

The backlash compensation does not respond to other compensation movements (temperature compensation, sag and angularity error compensation).

32456	BACKLASH_DYN			A09	-	
mm, degrees	Compensation value of dynamic backlash compensation			DOUBLE	NEW CONF	
-						
-	2	0.0, 0.0	-	-	7/2	I

Description:

Compensation value for dynamic backlash compensation value

The entry of the compensation value is

- positive if the encoder leading the machine part (normal case)
- negative if the encoder is following the machine part.

Backlash compensation becomes ineffective if 0 is entered.

The dynamic backlash compensation can only be activated after the reference point approach. Activation takes place via PLC user interface signals.

Special cases:

A separate compensation value must be entered for each measuring system.

Corresponds to:

MD32457 \$MA_BACKLASH_DYN_MAX_VELO

(limitation of the compensation value change)

MD32000 \$MA_MAX_AX_VELO

(maximum axis velocity)

MD30200 \$MA_NUM_ENCS

(number of measuring systems)

MD30200 \$MA_NUM_ENCS (number of measuring systems)

32457	BACKLASH_DYN_MAX_VELO			A09	-	
%	Limitation of dynamic backlash compensation value change			DOUBLE	NEW CONF	
-						
-	-	1.0	-	-	7/2	I

Description:

Relative velocity at which a dynamic backlash compensation value is retracted.

Limitation of compensation value change. This is entered as percentage of MD32000 \$MA_MAX_AX_VELO.

Corresponds to:

MD32456 \$MA_BACKLASH_DYN

(compensation value of dynamic backlash compensation)

MD32000 \$MA_MAX_AX_VELO

(maximum axis velocity)

32490	FRICT_COMP_MODE			A09	K3	
-	Type of friction compensation			BYTE	PowerOn	
-						
-	1	1	0	4	7/2	I

Description:

0: No friction compensation

1: Friction compensation with constant injected value or adaptive characteristic

2: Friction compensation with learned characteristic via neural network

3: Friction compensation with adaptive characteristics, injection time depends on velocity setpoint

4: Friction compensation with adaptive characteristics, injection time depends on position controller output

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

Modes 1 and 2 related to:

MD32490 \$MA_FRICT_COMP_MODE

MD32510 \$MA_FRICT_COMP_ADAPT_ENABLE

MD32520 \$MA_FRICT_COMP_CONST_MAX

MD32540 \$MA_FRICT_COMP_TIME

MD38010 \$MA_MM_QEC_MAX_POINTS

Modes 3 and 4 related to:

MD32571 \$MA_FRICT_VELO_STEP

MD32572 \$MA_FRICT_V_PULSE_DELAY_TIME

MD32573 \$MA_FRICT_V_PULSE_CONST_TIME

MD32574 \$MA_FRICT_V_PULSE_DECAY_TIME

MD32575 \$MA_FRICT_V_PULSE_SMOOTH_TIME

MD32576 \$MA_FRICT_TORQUE_STEP

MD32577 \$MA_FRICT_T_PULSE_DELAY_TIME

MD32578 \$MA_FRICT_T_PULSE_SMOOTH_TIME

MD32581 \$MA_FRICT_ADAPT_TABLE_ACCEL

MD32582 \$MA_FRICT_ADAPT_V_STEP_PLUS

MD32583 \$MA_FRICT_ADAPT_V_STEP_MINUS

MD32584 \$MA_FRICT_ADAPT_V_CONST_PLUS

MD32585 \$MA_FRICT_ADAPT_V_CONST_MINUS

MD32586 \$MA_FRICT_ADAPT_V_DECAY_PLUS

MD32587 \$MA_FRICT_ADAPT_V_DECAY_MINUS

MD32588 \$MA_FRICT_ADAPT_T_STEP

32500	FRICT_COMP_ENABLE			A09	K3, G2	
-	Friction compensation active			BOOLEAN	NEW CONF	
-						
-	-	FALSE	0	-	7/2	I

Description:

1: Friction compensation is enabled for this axis.

3.3 NC machine data

The corresponding friction compensation is active as function of the setting of MD32490 \$MA_FRICT_COMP_MODE.

In the case of neural QEC, the machine data should not be set to "1" until a valid characteristic has been "learnt".

During the learning stage, the compensation values are added on independently of the contents of this machine data.

0: Friction compensation is not enabled for this axis.

Thus, no friction compensation values are entered.

Related to:

MD32490 \$MA_FRICT_COMP_MODE

32510	FRICT_COMP_ADAPT_ENABLE			EXP, A09	K3	
-	Adaptation friction compensation active			BOOLEAN	NEW CONF	
-						
-	1	FALSE	0	-	7/2	1

Description:

1: Friction compensation with amplitude adaptation is enabled for the axis. Quadrant errors on circular contours can be compensated with friction compensation. The amplitude of the friction compensation value required to be added on is frequently not constant over the entire acceleration range. That is, a lower compensation value needs to be entered for optimum friction compensation for higher accelerations than for lower accelerations.

The parameters of the adaptation curve have to be determined, and entered in the machine data.

0: Friction compensation with amplitude adaptation is not enabled for the axis.

MD irrelevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE

Friction compensation active

MD32520 \$MA_FRICT_COMP_CONST_MAX

Maximum friction compensation value

MD32530 \$MA_FRICT_COMP_CONST_MIN

Minimum friction compensation value

MD32550 \$MA_FRICT_COMP_ACCEL1

Adaptation acceleration value 1

MD32560 \$MA_FRICT_COMP_ACCEL2

Adaptation acceleration value 2

MD32570 \$MA_FRICT_COMP_ACCEL3

Adaptation acceleration value 3

MD32540 \$MA_FRICT_COMP_TIME

Friction compensation time constant

32520	FRICT_COMP_CONST_MAX			EXP, A09	K3	
mm/min, rev/min	Maximum friction compensation value			DOUBLE	NEW CONF	
-						
-	1	0.0	-1.0E+301	1.0E+301	7/2	I

Description:

If adaptation is inactive (MD32510 \$MA_FRICT_COMP_ADAPT_ENABLE=0), the maximum friction compensation is applied throughout the entire acceleration range.

If adaptation is active (MD32510 \$MA_FRICT_COMP_ADAPT_ENABLE=1), the maximum friction compensation is applied in accordance with the adaptation curve.

In the 1st acceleration range ($a < MD32550$), the switching amplitude = $MD32520 * (a / MD32550)$.

In the 2nd acceleration range ($MD32550 \leq a \leq MD32560$), the switching amplitude = $MD32520$.

In the 3rd acceleration range ($MD32560 < a < MD32570$), the switching amplitude = $MD32520 + (MD32530 - MD32520) / (MD32570 - MD32560) * (a - MD32560)$.

In the 4th acceleration range ($MD32570 \leq a$), the switching amplitude = $MD32530$.

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 2 (neural QEC)

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE

Friction compensation active

MD32510 \$MA_FRICT_COMP_ADAPT_ENABLE

Friction compensation adaptation active

MD32530 \$MA_FRICT_COMP_CONST_MIN

Minimum friction compensation value

MD32550 \$MA_FRICT_COMP_ACCEL1

Adaptation acceleration value 1

MD32560 \$MA_FRICT_COMP_ACCEL2

Adaptation acceleration value 2

MD32570 \$MA_FRICT_COMP_ACCEL3

Adaptation acceleration value 3

MD32540 \$MA_FRICT_COMP_TIME

Friction compensation time constant

32530	FRICT_COMP_CONST_MIN			EXP, A09	K3	
mm/min, rev/min	Minimum friction compensation value			DOUBLE	NEW CONF	
-						
-	1	0.0	-1.0E+301	1.0E+301	7/2	I

Description: The minimum friction compensation value is active only if "Friction compensation with adaptation" (MD32510 \$MA_FRICT_COMP_ADAPT_ENABLE=1) is active.

The amplitude of the friction compensation value is entered in the 4th acceleration range ($MD32570 \leq a$).

MD irrelevant for:

MD32510 \$MA_FRICT_COMP_ADAPT_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 2 (neural QEC)

Special cases:

In special cases, the value for FRICT_COMP_CONST_MIN may be even higher than for MD32520 \$MA_FRICT_COMP_CONST_MAX.

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE

Friction compensation active

MD32510 \$MA_FRICT_COMP_ADAPT_ENABLE

Friction compensation adaptation active

MD32520 \$MA_FRICT_COMP_CONST_MAX

Maximum friction compensation value

MD32550 \$MA_FRICT_COMP_ACCEL1

Adaptation acceleration value 1

3.3 NC machine data

MD32560 \$MA_FRICT_COMP_ACCEL2
Adaptation acceleration value 2
MD32570 \$MA_FRICT_COMP_ACCEL3
Adaptation acceleration value 3
MD32540 \$MA_FRICT_COMP_TIME
Friction compensation time constant

32540	FRICT_COMP_TIME			EXP, A09	K3	
s	Friction compensation time constant			DOUBLE	NEW CONF	
-						
-	1	0.015	0.0	1.0E+301	7/2	I

Description: The friction compensation value is entered via a DT1 filter.
The add-on amplitude decays in accordance with the time constant.
MD irrelevant for:
MD32500 \$MA_FRICT_COMP_ENABLE = 0
Related to:
MD32500 \$MA_FRICT_COMP_ENABLE
Friction compensation active
MD32520 \$MA_FRICT_COMP_CONST_MAX
Maximum friction compensation value

32550	FRICT_COMP_ACCEL1			EXP, A09	K3	
m/s², rev/s²	Adaptation acceleration value 1			DOUBLE	NEW CONF	
-						
-	1	0.0	0.0	1.0E+301	7/2	I

Description: The adaptation acceleration value is only required if "Friction compensation with adaptation" (MD32510=1) is active.
The adaptation acceleration values 1 to 3 are interpolation points for defining the adaptation curve. The adaptation curve is subdivided into 4 ranges, in each of which a different friction compensation value applies.
For the 1st range ($a < MD32550$), the add-on amplitude = $a * MD32520 / MD32550$
MD irrelevant for:
MD32510 \$MA_FRICT_COMP_ADAPT_ENABLE = 0
MD32490 \$MA_FRICT_COMP_MODE = 2
Related to:
MD32500 \$MA_FRICT_COMP_ENABLE
Friction compensation active
MD32510 \$MA_FRICT_COMP_ADAPT_ENABLE
Friction compensation adaptation active
MD32520 \$MA_FRICT_COMP_CONST_MAX
Maximum friction compensation value
MD32530 \$MA_FRICT_COMP_CONST_MIN
Minimum friction compensation value
MD32560 \$MA_FRICT_COMP_ACCEL2
Adaptation acceleration value 2
MD32570 \$MA_FRICT_COMP_ACCEL3
Adaptation acceleration value 3
MD32540 \$MA_FRICT_COMP_TIME
Friction compensation time constant

32560	FRICT_COMP_ACCEL2			EXP, A09	K3	
m/s ² , rev/s ²	Adaptation acceleration value 2			DOUBLE	NEW CONF	
-						
-	1	0.0	0.0	1.0E+301	7/2	I

Description:

The adaptation acceleration value is only required if "Friction compensation with adaptation" (MD32510 \$MA_FRICT_COMP_ADAPT_ENABLE=1) is active.

Adaptation acceleration values 1 to 3 are interpolation points for defining the adaptation curve. The adaptation curve is subdivided into 4 ranges, in each of which a different friction compensation value applies.

In the 1st acceleration range ($a < MD32550$), the switching amplitude = $MD32520 * (a / MD32550)$.

In the 2nd acceleration range ($MD32550 \leq a \leq MD32560$), the switching amplitude = $MD32520$.

In the 3rd acceleration range ($MD32560 < a < MD32570$), the switching amplitude = $MD32520 + (MD32530 - MD32520) / (MD32570 - MD32560) * (a - MD32560)$.

In the 4th acceleration range ($MD32570 \leq a$), the switching amplitude = $MD32530$.

Not relevant for:

MD32510 \$MA_FRICT_COMP_ADAPT_ENABLE = 0
MD32490 \$MA_FRICT_COMP_MODE = 2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE
Friction compensation active

MD32510 \$MA_FRICT_COMP_ADAPT_ENABLE
Friction compensation adaptation active

MD32520 \$MA_FRICT_COMP_CONST_MAX
Maximum friction compensation value

MD32530 \$MA_FRICT_COMP_CONST_MIN
Minimum friction compensation value

MD32550 \$MA_FRICT_COMP_ACCEL1
Adaptation acceleration value 1

MD32570 \$MA_FRICT_COMP_ACCEL3
Adaptation acceleration value 3

MD32540 \$MA_FRICT_COMP_TIME
Friction compensation time constant

32570	FRICT_COMP_ACCEL3			EXP, A09	K3	
m/s ² , rev/s ²	Adaptation acceleration value 3			DOUBLE	NEW CONF	
-						
-	1	0.0	0.0	1.0E+301	7/2	I

Description:

The adaptation acceleration value is only required if "Friction compensation with adaptation" (MD32510=1) is active.

Adaptation acceleration values 1 to 3 are interpolation points for defining the adaptation curve. The adaptation curve is subdivided into 4 ranges, in each of which a different friction compensation value applies.

In the 1st acceleration range ($a < MD32550$), the switching amplitude = $MD32520 * (a / MD32550)$.

In the 2nd acceleration range ($MD32550 \leq a \leq MD32560$), the switching amplitude = $MD32520$.

In the 3rd acceleration range ($MD32560 < a < MD32570$), the switching amplitude = $MD32520 + (MD32530 - MD32520) / (MD32570 - MD32560) * (a - MD32560)$.

3.3 NC machine data

In the 4th acceleration range (MD32570 <= a), the switching amplitude = MD32530.

Not relevant for:

MD32510 \$MA_FRICT_COMP_ADAPT_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE

Friction compensation active

MD32510 \$MA_FRICT_COMP_ADAPT_ENABLE

Friction compensation adaptation active

MD32520 \$MA_FRICT_COMP_CONST_MAX

Maximum friction compensation value

MD32530 \$MA_FRICT_COMP_CONST_MIN

Minimum friction compensation value

MD32550 \$MA_FRICT_COMP_ACCEL1

Adaptation acceleration value 1

MD32560 \$MA_FRICT_COMP_ACCEL2

Adaptation acceleration value 2

MD32540 \$MA_FRICT_COMP_TIME

Friction compensation time constant

32571	FRICT_VELO_STEP	EXP, A09	K3
mm/min, rev/min	Amplitude of the velocity injection pulse of the friction compensation	DOUBLE	NEW CONF
-			
-	-	0.0	0.0
		1.0E+301	7/2
			1

Description:

The amplitude of the velocity injection pulse of the friction compensation is adapted as a function of the acceleration via weighting factors from the characteristics.

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD32582 \$MA_FRICT_ADAPT_V_STEP_PLUS

MD32583 \$MA_FRICT_ADAPT_V_STEP_MINUS

32572	FRICT_V_PULSE_DELAY_TIME	EXP, A09	K3
s	Delay time of the velocity injection pulse of the friction compensation	DOUBLE	NEW CONF
-			
-	-	0.0	0
		0.1	7/2
			1

Description:

The velocity injection pulse of the friction compensation is delayed by this time. The delay time is not adapted and is limited to 16 position controller cycles.

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD10050 \$MN_SYSCLOCK_CYCLE_TIME
MD10060 \$MN_POSCTRL_SYSCLOCK_TIME_RATIO

32573	FRICT_V_PULSE_CONST_TIME	EXP, A09	K3
s	Active time of the velocity injection pulse of the friction compensation	DOUBLE	NEW CONF
-			
-	-	0.0	0
-	-	10.0	7/2
-	-		I

Description: The active time of the velocity injection pulse of the friction compensation is adapted as a function of the acceleration via weighting factors from the characteristics.

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD32584 \$MA_FRICT_ADAPT_V_CONST_PLUS

MD32585 \$MA_FRICT_ADAPT_V_CONST_MINUS

32574	FRICT_V_PULSE_DECAY_TIME	EXP, A09	K3
s	Decay time of the velocity injection pulse of the friction compensation	DOUBLE	NEW CONF
-			
-	-	0.0	0
-	-	10.0	7/2
-	-		I

Description: The decay time of the velocity injection pulse of the friction compensation is smoothed and adapted as a function of the acceleration via weighting factors from the characteristics.

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD32586 \$MA_FRICT_ADAPT_V_DECAY_PLUS

MD32587 \$MA_FRICT_ADAPT_V_DECAY_MINUS

32575	FRICT_V_PULSE_SMOOTH_TIME	EXP, A09	K3
s	Rise time of the velocity injection pulse of the friction compensation	DOUBLE	NEW CONF
-			
-	-	0.0	0
-	-	10.0	7/2
-	-		I

Description: The rise time of the velocity injection pulse of the friction compensation. The rise time is smoothed and is not adapted.

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD32571 \$MA_FRICT_VELO_STEP

3.3 NC machine data

MD32573 \$MA_FRICT_V_PULSE_CONST_TIME

MD32574 \$MA_FRICT_V_PULSE_DECAY_TIME

32576	FRICT_TORQUE_STEP			EXP, A09	K3	
-	Amplitude of the torque injection pulse of the friction compensation			DOUBLE	NEW CONF	
-						
-	-	0.0	0.0	1.0E+301	7/2	I

Description:

The amplitude of the torque injection pulse of the friction compensation is adapted as a function of the acceleration via weighting factors from the characteristics.

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD32588 \$MA_FRICT_ADAPT_T_STEP

32577	FRICT_T_PULSE_DELAY_TIME			EXP, A09	K3	
s	Delay time of the torque injection pulse of the friction compensation			DOUBLE	NEW CONF	
-						
-	-	0.0	0	0.1	7/2	I

Description:

The torque injection pulse of the friction compensation is delayed by this time. The delay time is not adapted and is limited to 16 position controller cycles.

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD10050 \$MN_SYSCLOCK_CYCLE_TIME

MD10060 \$MN_POSCTRL_SYSCLOCK_TIME_RATIO

32578	FRICT_T_PULSE_SMOOTH_TIME			EXP, A09	K3	
s	Rise time of the torque injection pulse of the friction compensation			DOUBLE	NEW CONF	
-						
-	-	0.0	0	10.0	7/2	I

Description:

The rise time of the torque injection pulse of the friction compensation. The rise time is smoothed and is not adapted.

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32576 \$MA_FRICT_TORQUE_STEP = 1

32579	FRICT_PRETRIGGER_TIME			EXP, A09	K3	
s	Rate time for the friction compensation pulses			DOUBLE	NEW CONF	
-						
-	-	0.0	-0.250	0.250	7/2	I

Description:

The rate and delay times can be set within the range from 0 to 256 position control cycles. The phase filter (compare MD32895 \$MA_DESVAL_DELAY_TIME can delay the setpoints by 0 to 256 ms in total with, for example, a 2 ms position control cycle.

The rate and delay times are not adapted for the friction compensation pulse.

a. Positive input values: The friction compensation pulses are injected prematurely by this time. The rate time is not adapted and is limited to MD32895 \$MA_DESVAL_DELAY_TIME.

b. Negative input values: The friction compensation pulses are injected with a delay of this time (in addition to MD32895 \$MA_DESVAL_DELAY_TIME).

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD32890 \$MA_DESVAL_DELAY_ENABLE

MD32895 \$MA_DESVAL_DELAY_TIME

32581	FRICT_ADAPT_TABLE_ACCEL			EXP, A09	K3	
m/s², rev/s²	Acceleration interpolation points of friction compensation characteristics			DOUBLE	NEW CONF	
-						
-	10	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0	1000000.0	7/2	I

Description:

Up to ten different acceleration values can be input for which the friction compensation values are to be adapted. The acceleration values must be entered in strictly monotonously increasing order. The first acceleration value must always be zero. A final acceleration value equal to zero reduces the number of adaptation interpolation points.

The following friction compensation values are adapted as a function of the acceleration:

- Amplitude of the velocity injection pulse
- Active time of the velocity injection pulse
- Decay time of the velocity injection pulse
- Amplitude of the torque injection pulse

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD32582 \$MA_FRICT_ADAPT_V_STEP_PLUS

MD32583 \$MA_FRICT_ADAPT_V_STEP_MINUS

MD32584 \$MA_FRICT_ADAPT_V_CONST_PLUS

MD32585 \$MA_FRICT_ADAPT_V_CONST_MINUS

MD32586 \$MA_FRICT_ADAPT_V_DECAY_PLUS

3.3 NC machine data

MD32587 \$MA_FRICT_ADAPT_V_DECAY_MINUS

MD32588 \$MA_FRICT_ADAPT_T_STEP

32582	FRICT_ADAPT_V_STEP_PLUS			EXP, A09	K3	
-	Weighting factor for the amplitude of the velocity injection pulse			DOUBLE	NEW CONF	
-						
-	10	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0	1.0	7/2	I

Description:

A factor between -1.0 and 1.0 can be entered for each acceleration value from MD32581 \$MA_FRICT_ADAPT_TABLE_ACCEL with which the amplitude of the velocity injection pulse of the friction compensation is weighted. The weighting factors are active on sign change of the velocity in the positive direction.

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD32581 \$MA_FRICT_ADAPT_TABLE_ACCEL

MD32571 \$MA_FRICT_VELO_STEP

32583	FRICT_ADAPT_V_STEP_MINUS			EXP, A09	K3	
-	Weighting factor for the amplitude of the velocity injection pulse			DOUBLE	NEW CONF	
-						
-	10	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0	1.0	7/2	I

Description:

A factor between -1.0 and 1.0 can be entered for each acceleration value from MD32581 \$MA_FRICT_ADAPT_TABLE_ACCEL with which the amplitude of the velocity injection pulse of the friction compensation is weighted. The weighting factors are active on sign change of the velocity in the negative direction.

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD32581 \$MA_FRICT_ADAPT_TABLE_ACCEL

MD32571 \$MA_FRICT_VELO_STEP

32584	FRICT_ADAPT_V_CONST_PLUS			EXP, A09	K3	
-	Weighting factor for the active time of the velocity injection pulse			DOUBLE	NEW CONF	
-						
-	10	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0	1.0	7/2	I

Description:

A factor between 0.0 and 1.0 can be entered for each acceleration value from MD32581 \$MA_FRICT_ADAPT_TABLE_ACCEL with which the active time of the velocity injection pulse of the friction compensation is weighted. The weighting factors are active on sign change of the velocity in the positive direction.

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD32581 \$MA_FRICT_ADAPT_TABLE_ACCEL

MD32573 \$MA_FRICT_V_PULSE_CONST_TIME

32585	FRICT_ADAPT_V_CONST_MINUS			EXP, A09	K3	
-	Weighting factor for the active time of the velocity injection pulse			DOUBLE	NEW CONF	
-						
-	10	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0	1.0	7/2	I

Description: A factor between 0.0 and 1.0 can be entered for each acceleration value from MD32581 \$MA_FRICT_ADAPT_TABLE_ACCEL with which the active time of the velocity injection pulse of the friction compensation is weighted. The weighting factors are active on sign change of the velocity in the negative direction.

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD32581 \$MA_FRICT_ADAPT_TABLE_ACCEL

MD32573 \$MA_FRICT_V_PULSE_CONST_TIME

32586	FRICT_ADAPT_V_DECAY_PLUS			EXP, A09	K3	
-	Weighting factor for the decay time of the velocity injection pulse			DOUBLE	NEW CONF	
-						
-	10	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0	1.0	7/2	I

Description: A factor between 0.0 and 1.0 can be entered for each acceleration value from MD32581 \$MA_FRICT_ADAPT_TABLE_ACCEL with which the decay time of the velocity injection pulse of the friction compensation is weighted. The weighting factors are active on sign change of the velocity in the positive direction.

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD32581 \$MA_FRICT_ADAPT_TABLE_ACCEL

MD32574 \$MA_FRICT_V_PULSE_DECAY_TIME

32587	FRICT_ADAPT_V_DECAY_MINUS			EXP, A09	K3	
-	Weighting factor for the decay time of the velocity injection pulse			DOUBLE	NEW CONF	
-						
-	10	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0	1.0	7/2	I

Description: A factor between 0.0 and 1.0 can be entered for each acceleration value from MD32581 \$MA_FRICT_ADAPT_TABLE_ACCEL with which the decay time of the velocity injection pulse of the friction compensation is weighted. The weighting factors are active on sign change of the velocity in the negative direction.

3.3 NC machine data

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD32581 \$MA_FRICT_ADAPT_TABLE_ACCEL

MD32574 \$MA_FRICT_V_PULSE_DECAY_TIME

32588	FRICT_ADAPT_T_STEP			EXP, A09	K3	
-	Weighting factor for the amplitude of the torque injection pulse			DOUBLE	NEW CONF	
-						
-	10	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0	1.0	7/2	I

Description: A factor between -1.0 and 1.0 can be entered for each acceleration value from MD32581 \$MA_FRICT_ADAPT_TABLE_ACCEL with which the amplitude of the torque injection pulse of the friction compensation is weighted.

Not relevant for:

MD32500 \$MA_FRICT_COMP_ENABLE = 0

MD32490 \$MA_FRICT_COMP_MODE = 1/2

Related to:

MD32500 \$MA_FRICT_COMP_ENABLE = 1

MD32490 \$MA_FRICT_COMP_MODE = 3/4

MD32581 \$MA_FRICT_ADAPT_TABLE_ACCEL

MD32576 \$MA_FRICT_TORQUE_STEP

32610	VELO_FFW_WEIGHT			A07, A09	G1, TE1, K3, S3, A3, G2, S1, V1	
-	Feedforward control factor f. velocity/speed feedforward control			DOUBLE	NEW CONF	
-						
-	6	1.0, 1.0, 1.0, 1.0, 1.0, 1.0	0.0	1.0E+301	7/2	M

Description: Weighting factor for feedforward control. Is normally = 1.0 on digital drives, since these keep the setpoint speed exactly .

On analog drives, this factor can be used to compensate the gain error of the drive actuator, so that the actual speed becomes exactly equal to the setpoint speed (this reduces the following error with feedforward control).

On both drive types, the effect of the feedforward control can be continuously reduced with a factor of < 1.0, if the machine moves too abruptly and other measures (e.g. jerk limitation) are not to be used. This also reduces possibly existing overshoots; however, the error increases on curved contours, e.g. on a circle. With 0.0, you have a pure position controller without feedforward control.

Contour monitoring takes into account factors < 1.0.

In individual cases, it can, however, become necessary to increase MD CONTOUR_TOL.

32620	FFW_MODE			A07, A09	G1, K3, S3, G2, S1	
-	Feedforward control mode			BYTE	Reset	
-						
-	-	3	0	4	7/2	M

Description: FFW_MODE defines the feedforward control mode to be applied on an axis-specific basis:

0 = No feedforward control

1 = Speed feedforward control with PT1 balancing

2 = Torque feedforward control (only for SINAMICS) with P_{T1} balancing

3 = Speed feedforward control with T_t balancing

4 = Torque feedforward control (only for SINAMICS) with T_t balancing

The high-level language instructions FFWON and FFWOF are used to activate and deactivate feedforward control for specific channels on all axes.

To prevent feedforward control from being affected by these instructions on individual axes, you can define that it is always activated or always deactivated in machine data FFW_ACTIVATION_MODE (see also FFW_ACTIVATION_MODE).

If a feedforward control mode is selected (speed or torque feedforward control), MD32630 \$MA_FFW_ACTIVATION_MODE can be used to program in addition whether feedforward control can be activated or deactivated by the part program.

Note for SINAMICS drives with torque feedforward control selected:

Alarm 26016 refers to the current machine data if

the telegram used (see MD13060 \$MN_DRIVE_TELEGRAM_TYPE) does not support the torque feedforward control function. Remedy: Use telegram 136.

Related to:

MD32630 \$MA_FFW_ACTIVATION_MODE

MD32610 \$MA_VELO_FFW_WEIGHT

MD32650 \$MA_AX_INERTIA

32630	FFW_ACTIVATION_MODE			A07, A09	K3, G2	
-	Activate feedforward control from program			BYTE	Reset	
CTEQ, -						
-	-	1	0	2	7/2	M

Description:

MD32630 \$FFW_ACTIVATION_MODE can be used to define whether the feedforward control for this axis/spindle can be switched on and off by the part program.

0 = The feedforward control cannot be switched on or off by the high-level language elements FFWON and FFWOF respectively.

For the axis/spindle, the state specified by MD32620 \$MA_FFW_MODE is therefore always effective.

1 = The feedforward control can be switched on and off by the part program with FFWON and FFWOF respectively.

The instruction FFWON/FFWOF becomes active immediately

2 = The feedforward control can be switched on and off by the part program with FFWON and FFWOF respectively.

The instruction FFWON/FFWOF does not become active until the next axis standstill

The default setting is specified by the channel-specific MD20150

\$MC_GCODE_RESET_VALUES. This setting is valid even before the first NC block is executed.

Notes:

The last valid state continues to be active even after Reset (and therefore also with JOG).

As the feedforward control of all axes of the channel is switched on and off by FFWON and FFWOF respectively, MD32630 \$MA_FFW_ACTIVATION_MODE should be set identically for axes interpolating with one another.

Switching feedforward control on or off while the axis/spindle is traversing may cause compensation operations in the control loop. Interpolating axes are therefore stopped by the part program if such switching operations occur (internal stop Stop G09 is triggered).

Related to:

MD32620 \$MA_FFW_MODE

MD20150 \$MC_GCODE_RESET_VALUES

3.3 NC machine data

32640	STIFFNESS_CONTROL_ENABLE			A01, A07	TE3, G2	
-	Dynamic stiffness control			BOOLEAN	NEW CONF	
CTEQ, -						
-	1	FALSE	0	-	7/2	M

Description:

Activate dynamic stiffness control, if bit is set.

Higher servo gain factors are possible if stiffness control is active (MD32200 \$MA_POSCTRL_GAIN).

Notes:

The availability of this function is determined by the drive used (the drive has to support the DSC function).

Note on PROFIdrive drives:

Alarm 26017 refers to this machine data if:

a. The PROFIdrive telegram used (see MD13060 \$MN_DRIVE_TELEGRAM_TYPE) does not support the DSC function or does not contain an encoder 1 (such as Tel. 118), to which the DSC scaling for PZD XERR refers. Remedy: Use a sufficiently powerful telegram which also includes encoder 1 (e.g. Tel. 106, 116).

b. Specifically for SINAMICS drives, if inversion of the encoder signal is parameterized in MD32110 \$MA_ENC_FEEDBACK_POL=-1 with active DSC. Remedy: Remove inversion of the encoder signal from MD32110 \$MA_ENC_FEEDBACK_POL, and enter it in SINAMICS parameter P410 instead.

32642	STIFFNESS_CONTROL_CONFIG			A01, A07	-	
-	Dynamic stiffness control configuration (DSC)			BYTE	NEW CONF	
CTEQ, -						
-	1	0	0	1	7/2	M

Description:

Configuration of the dynamic stiffness control (DSC):

0: DSC in drive works with indirect measuring system, i.e. motor measuring system (default scenario).

1: DSC in drive works with direct measuring system.

Notes:

The availability of this function is determined by the drive used (the drive must support the DSC function).

With SINAMICS (P1193 not equal to 0), the value of this machine data must be set to 0.

32644	STIFFNESS_DELAY_TIME			A01, A07	-	
s	Dynamic stiffness control: Delay			DOUBLE	PowerOn	
-, CTEQ						
-	1	0.0	-0.02	0.02	7/2	M

Description:

Configuration of compensation dead time of the dynamic stiffness control (DSC) with optimized PROFIBUS/PROFINET cycle, unit: seconds

32650	AX_INERTIA			EXP, A07, A09	G1, K3, S3, G2	
kgm²	Inertia for torque feedforward control			DOUBLE	NEW CONF	
-						
-	-	0.0	0.0	1.0E+301	7/2	M

Description:

SINAMICS only:

Inertia of axis. Used for torque feedforward control.

With torque feedforward control, an additional current setpoint proportional to the torque is directly injected at the input of the current controller. This value is formed using the acceleration and the moment of inertia. The equivalent time constant of the current control loop must be defined for this purpose and entered in MD32800 \$MA_EQUIV_CURRCTRL_TIME.

The total moment of inertia of the axis (drive + load) must also be entered in MD32650 \$MA_AX_INERTIA (total moment of inertia referred to motor shaft according to data supplied by machine manufacturer).

When MD32650 \$MA_AX_INERTIA and MD32800 \$MA_EQUIV_CURRCTRL_TIME are set correctly, the following error is almost zero even during acceleration (check this by looking at the "following error" in the service display).

The torque feedforward control is deactivated if MD32650 \$MA_AX_INERTIA is set to 0. However, because the calculations are performed anyway, torque feedforward control must always be deactivated with MD32620 \$MA_FFW_MODE = 0 or 1 or 3 (recommended). Because of the direct current setpoint injection, torque feedforward control is only possible on digital drives.

MD irrelevant for:

MD32620 \$MA_FFW_MODE = 0 or 1 or 3

Related to:

MD32620 \$MA_FFW_MODE

MD32630 \$MA_FFW_ACTIVATION_MODE

MD32800 \$MA_EQUIV_CURRCTRL_TIME

32652	AX_MASS	EXP, A07, A09	-
kg	Axis mass for torque feedforward control	DOUBLE	NEW CONF
-			
-	-	0.0	0.0
		1.0E+301	7/2
			M

Description: SINAMICS only:
Mass of axis for torque feedforward control.
The MD is used on linear drives (MD13080 \$MN_DRIVE_TYPE_DP=3) instead of MD32650 \$MA_AX_INERTIA.

32700	ENC_COMP_ENABLE	A09	K3
-	Encoder/spindle error compensation.	BOOLEAN	NEW CONF
-			
-	2	FALSE, FALSE	0
		-	7/2
			M

Description: 1: LEC (leadscrew error compensation) is activated for the measuring system.
This enables leadscrew and measuring system errors to be compensated.
The function is not enabled internally until the relevant measuring system has been referenced (NC/PLC interface signal DB31, ... DBX60.4 / 60.5 (Referenced/synchronized 1 or 2) = 1).
write protect function (compensation values) active.
0: LEC is not active for the axis/measuring system.
Related to:
MD38000 \$MA_MM_ENC_COMP_MAX_POINTS number of interpolation points with LEC
NC/PLC interface signal DB31, ... DBX60.4 (Referenced/synchronized 1)
NC/PLC interface signal DB31, ... DBX60.5 (Referenced/synchronized 2)

32710	CEC_ENABLE	A09	K3
-	Enable of sag compensation	BOOLEAN	NEW CONF
-			
-	-	FALSE	0
		-	7/2
			M

3.3 NC machine data

Description: 1: Sag compensation is enabled for this axis.
 Inter-axis machine geometry errors (e.g. sag and angularity errors) can be compensated with sag compensation.
 The function is not activated until the following conditions have been fulfilled:

- The "Interpolatory compensation" option is set
- The associated compensation tables have been loaded into the NC user memory and enabled (SD41300 \$SN_CEC_TABLE_ENABLE[t] = 1)
- The relevant position measuring system is referenced (NC/PLC interface signal DB31, ... DBX60.4 / 60.5 = 1 (Referenced/synchronized 1 or 2)):

0: Sag compensation is not enabled for the compensation axis.
 Related to:
 MD18342 \$MN_MM_CEC_MAX_POINTS[t]
 Number of interpolation points for sag compensation
 SD41300 \$SN_CEC_TABLE_ENABLE[t]
 Enable evaluation of sag compensation table t
 SD41310 \$SN_CEC_TABLE_WEIGHT[t]
 Weighting factor of the sag compensation table t
 NC/PLC interface signal DB31, ... DBX60.4 / 60.5
 (referenced/synchronized 1 or 2)

32711	CEC_SCALING_SYSTEM_METRIC			A09	K3, G2	
-	Measuring system of sag compensation			BOOLEAN	NEW CONF	
-						
-	-	TRUE	0	-	7/2	M

Description: Compensation data exist in:
 0: inch system
 1: metric system

32720	CEC_MAX_SUM			A09	K3	
mm, degrees	Maximum compensation value for sag compensation			DOUBLE	NEW CONF	
-						
-	-	1.0	0	10.0	7/2	M

Description: In sag compensation, the absolute value of the total compensation value (sum of compensation values of all active compensation relations) is monitored axially with machine data value CEC_MAX_SUM.
 If the identified total compensation value is larger than the maximum value, alarm 20124 is triggered. Program processing is not interrupted. The compensation value output as the additional setpoint is limited to the maximum value.
 MD irrelevant to:

- MSEC
- Backlash compensation
- Temperature compensation

Related to:
 MD32710 \$MA_CEC_ENABLE
 Enable sag compensation
 SD41300 \$SN_CEC_TABLE_ENABLE[t]
 Enable evaluation of sag compensation table t
 NC/PLC interface signal DB31, ... DBX60.4 / 60.5
 (referenced/synchronized 1 or 2)
 Note: The input range is restricted for systems not subject to export restriction.

32730	CEC_MAX_VELO			EXP, A09, A04	K3	
%	Change in velocity at CEC			DOUBLE	NEW CONF	
-						
-	-	10.0	0	100.0	7/2	M

Description:

In sag compensation, modification of the total compensation value (sum of the compensation values of all active compensation relations) is limited axially. The maximum change value is defined in this machine data as a percentage of MD32000 \$MA_MAX_AX_VELO (maximum axis velocity).

If the change in the total compensation value is greater than the maximum value, alarm 20125 is output. Program processing is however continued. The path not covered because of the limitation is made up as soon as the compensation value is no longer subject to limitation.

MD irrelevant to:

- MSEC
- Backlash compensation
- Temperature compensation

Related to:

MD32710 \$MA_CEC_ENABLE

Enable sag compensation

MD32000 \$MA_MAX_AX_VELO

Maximum axis velocity

SD41300 \$SN_CEC_TABLE_ENABLE[t]

Enable evaluation of sag compensation table t

NC/PLC interface signal DB31, ... DBX60.4 / 60.5

(referenced/synchronized 1 or 2)

32750	TEMP_COMP_TYPE				A09	K3, W1	
-	Temperature compensation type				UBYTE	PowerOn	
CTEQ							
-	-	0	0	0x7	7/2	M	

Description:

The type of temperature compensation applicable to the machine axis is activated in MD32750 \$MA_TEMP_COMP_TYPE.

A distinction is made between the following types:

Bit 0 = 0:

Position-independent temperature compensation not active

Bit 0 = 1:

Position-independent temperature compensation active

Bit 1 = 0:

Position-dependent temperature compensation not active

Bit 1 = 1:

Position-dependent temperature compensation active

Bit 2 = 0:

Temperature compensation not active in tool direction

Bit 2 = 1:

Temperature compensation active in tool direction

Related to:

SD43900 \$SA_TEMP_COMP_ABS_VALUE

Position-dependent temperature compensation value

SD43920 \$SA_TEMP_COMP_REF_POSITION

3.3 NC machine data

Reference point for position-dependent temperature compensation

SD43910 \$SA_TEMP_COMP_SLOPE

Gradient for position-dependent temperature compensation

MD32760 \$MA_COMP_ADD_VELO_FACTOR

Excessive velocity due to compensation

32760	COMP_ADD_VELO_FACTOR			EXP, A09, A04	K3	
-	Excessive velocity due to compensation			DOUBLE	NEW CONF	
CTEQ						
-	-	0.01	0.	0.10	7/2	M

Description:

The maximum distance that can be traversed because of temperature compensation in one IPO cycle can be limited by the axial MD32760 \$MA_COMP_ADD_VELO_FACTOR.

If the resulting temperature compensation value is above this maximum, it is traversed over several IPO cycles. There is no alarm.

The maximum compensation value per IPO cycle is specified as a factor referring to the maximum axis velocity (MD32000 \$MA_MAX_AX_VELO).

The maximum gradient of the temperature compensation tanbmax is also limited with this machine data.

Example of calculation of the maximum gradient tanb(max):

1. Calculation of the interpolator cycle time (see Description of Functions Velocities, Setpoint/Actual Value Systems, Cycle Times (G2))

Interpolator cycle time = Basic system clock rate * factor for interpolation cycle

Interpolator cycle time = MD10050 \$MN_SYSCLOCK_CYCLE_TIME ^ MD10070

\$MN_IPO_SYSCLOCK_TIME_RATIO

Example:

MD10050 \$MN_SYSCLOCK_CYCLE_TIME = 0.004 [s]

MD10070 \$MN_IPO_SYSCLOCK_TIME_RATIO = 3

-> Interpolator cycle time = 0.004 * 3 = 0.012 [s]

2. Calculation of the maximum velocity increase resulting from a change made to the temperature compensation parameter DvTmax

DvTmax = MD32000 \$MA_MAX_AX_VELO * MD32760 \$MA_COMP_ADD_VELO_FACTOR

Example: MD32000 \$MA_MAX_AX_VELO = 10 000 [mm/min]

MD32760 \$MA_COMP_ADD_VELO_FACTOR = 0.01

-> DvTmax = 10 000 * 0.01 = 100 [mm/min]

3. Calculation of the traverse distances per interpolator cycle

0.012

S1 (at vmax) = 10 000 x $\frac{0.012}{60}$ = 2.0 [mm]

0.012

ST (at DvTmax) = 100 x $\frac{0.012}{60}$ = 0.02 [mm]

4. Calculation of tanbmax

ST 0.02

tanbmax = $\frac{ST}{S1}$ = $\frac{0.02}{2}$ = 0.01 (corresponds to value for COMP_ADD_VELO_FACTOR)

-> bmax = arc tan 0.01 = 0.57 degrees

With larger values of SD43910 \$SA_TEMP_COMP_SLOPE, the maximum gradient (here 0.57 degrees) for the position-dependent temperature compensation value is used internally. There is no alarm.

Note:

Any additional excessive velocity resulting from temperature compensation must be taken into account when defining the limit value for velocity monitoring (MD36200 \$MA_AX_VELO_LIMIT).

MD irrelevant for:

MD32750 \$MA_TEMP_COMP_TYPE = 0, sag compensation, LEC, backlash compensation

Related to:

MD32750 \$MA_TEMP_COMP_TYPE

SD43900 \$SA_TEMP_COMP_ABS_VALUE

SD43910 \$SA_TEMP_COMP_SLOPE

MD32000 \$MA_MAX_AX_VELO

MD36200 \$MA_AX_VELO_LIMIT

MD10070 \$MN_IPO_SYSCLOCK_TIME_RATIO

MD10050 \$MN_SYSCLOCK_CYCLE_TIME

32800	EQUIV_CURRCTRL_TIME			EXP, A07, A09	G1, K3, S3, A2, A3, G2, S1, V1	
s	Equiv. time const. current control loop for feedforward control			DOUBLE	NEW CONF	
-						
-	6	0.0005, 0.0005, 0.0005, 0.0005, 0.0005, 0.0005	-1.0E+301	1.0E+301	7/2	M

Description:

The time constant is used for parameterizing the torque feedforward control and for calculating the dynamic following error model (contour monitoring).

In order to set the torque feedforward control correctly, the equivalent time constant of the current control loop must be determined exactly by measuring the step response of the current control loop.

Closed-loop control free of following errors can be set by inputting negative values when MD32620 \$MA_FFW_MODE=4 (but positioning overshoots may then occur).

Delay values taken into account automatically by the software internally are thus compensated again until the actually active minimum symmetrizing time "0" is reached.

Any other negative input values have no further effect.

Negative values input when MD32620 \$MA_FFW_MODE=2 are automatically converted internally to the input value "0", which means that they are not active in this case.

Related to:

MD32620 \$MA_FFW_MODE

Type of feedforward control

MD32650 \$MA_AX_INERTIA

Moment of inertia for torque feedforward control

or MD32652 \$MA_AX_MASS

Axis mass for torque feedforward control

MD36400 \$MA_CONTOUR_TOL

Tolerance band contour monitoring

32810	EQUIV_SPEEDCTRL_TIME			A07, A09	G1, K3, S3, A2, A3, G2, S1, V1	
s	Equiv. time constant speed control loop for feedforward control			DOUBLE	NEW CONF	
-						
-	6	0.003, 0.003, 0.003, 0.003, 0.003, 0.003, 0.003, 0.003, 0.003, 0...	-1.0E+301	1.0E+301	7/2	M

Description:

This time constant must be equal to the equivalent time constant of the closed current control loop.

3.3 NC machine data

It is used for parameterizing the speed feedforward control and for calculating the dynamic following error model (contour monitoring).

In addition, this MD determines the time behavior of the closed-loop speed control circuit for simulated drives (MD30130 \$MA_CTRLOUT_TYPE 0).

In order to set the speed feedforward control correctly, the equivalent time constant of the current control loop must be determined exactly by measuring the step response of the current control loop.

Closed-loop control free of following errors can be set by inputting negative values when MD32620 \$MA_FFW_MODE=3 (but positioning overshoots may then occur).

Delay values taken into account automatically by the software internally are thus compensated again until the actually active minimum symmetrizing time "0" is reached.

Any other negative input values have no further effect.

Negative values input when MD32620 \$MA_FFW_MODE=1 are automatically converted internally to the input value "0", which means that they are not active in this case.

Related to:

MD32620 \$MA_FFW_MODE (type of feedforward control)

MD32610 \$MA_VELO_FFW_WEIGHT (moment of inertia for speed feedforward control)

MD36400 \$MA_CONTOUR_TOL (tolerance band contour monitoring)

32890	DESVAL_DELAY_ENABLE	A07	-
-	Axial setpoint phase filter	BOOLEAN	NEW CONF
CTEQ, -			
-	-	FALSE	-
-	-	-	7/2
-	-	-	M

Description: With the axial setpoint phase filter (deadtime/delay), the phase response can be changed independent of the amplitude response (on the other hand, the conventional jerk filter - refer to MD32402 \$MA_AX_JERK_MODE - influences the amplitude and phase response simultaneously).

1: Setpoint phase filter (delay) is active.

0: Setpoint phase filter (delay) is inactive.

Corresponds with:

MD32895 \$MA_DESVAL_DELAY_TIME (time constant for the axial setpoint phase filter)

32895	DESVAL_DELAY_TIME	A07	-
s	Time constant for the axial setpoint phase filter	DOUBLE	NEW CONF
-			
-	2	0.0, 0.0	0.0
-	-	1.0E+301	7/2
-	-	-	M

Description: The time constant for the phase filter (deadtime/delay) should be entered into the MD. This means that the actual setpoint phase response can be set independently of the amplitude response

Time constants in the range of 0 to 128 position control cycles can be set, the phase filter for 2ms position control cycle, for example, can delay setpoints by 0 to 256ms. Values entered outside these limits are implicitly limited to the specified limits (without alarm).

Note: delays in the setpoint circuit, as a result of the system, slow down or have a negative impact on the response, e.g. for thread tapping, safety retraction motion or exact stop/block change; this means that the smallest time constants possible should be set in the MD.

Index 1 of the MD is only needed for a switchable jerk filter (two-digit input values in MD32402 \$MA_AX_JERK_MODE).

The MD is only effective, if MD32890 \$MA_DESVAL_DELAY_ENABLE = 1.

Related to:

MD32890 \$MA_DESVAL_DELAY_ENABLE (axial setpoint phase filter)

MD32402 \$MA_AX_JERK_MODE

MD32404 \$MA_CALC FIR_SELECT

32900	DYN_MATCH_ENABLE	A07	G21, S3, G2
-	Dynamic response adaptation	BOOLEAN	NEW CONF
CTEQ, -			
-	-	FALSE	0
-	-	-	7/2
-	-	-	M

Description: With dynamic response adaptation, axes with different servo gain factors can be set to the same following error with MD32910 \$MA_DYN_MATCH_TIME.

1: Dynamic response adaptation active.
0: Dynamic response adaptation inactive.

Related to:
MD32902 \$MA_DYN_MATCH_MODE
MD32910 \$MA_DYN_MATCH_TIME[n]
(time constant of dynamic response adaptation)

32902	DYN_MATCH_MODE	A07, A04	B2, G2, B3
-	Filter type for dynamic response	BYTE	PowerOn
CTEQ, -			
-	-	0	0
-	-	1	7/2
-	-	-	M

Description: Filter type for dynamic response

0: PT1 filter
1: Phase filter

Notes on parameterization:
MD32902 \$MA_DYN_MATCH_MODE is only active if MD32900 \$MA_DYN_MATCH_ENABLE is set to 1.
MD32910 \$MA_DYN_MATCH_TIME sets the time constant of the dynamic response

Related to:
MD32900 \$MA_DYN_MATCH_ENABLE
MD32910 \$MA_DYN_MATCH_TIME

32910	DYN_MATCH_TIME	A07	G1, K3, S3, A2, A3, G2, S1, V1
s	Time constant of dynamic response adaptation	DOUBLE	NEW CONF
-			
-	6	0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0
-	-	1.0E+301	7/2
-	-	-	M

Description: The time constant of the dynamic response adaptation of an axis has to be entered in this MD.

Axes interpolating with each other but having different dynamic responses can be adapted to the "slowest" control loop by means of this value.

The difference of the equivalent time constant of the "slowest" control loop to the individual axis has to be entered here as the time constant of the dynamic response adaptation.

The MD is only active if MD32900 \$MA_DYN_MATCH_ENABLE = 1.

If MD32902=1: Time constants can be set within the range from 0 to 16. With a position controller cycle of 2 ms, the delay time for the setpoints lies between 0 and 32 ms.

Input values outside these limits are implicitly limited to the stated limits (without alarm).

Related to:
MD32900 \$MA_DYN_MATCH_ENABLE (dynamic response adaptation)
MD32902 \$MA_DYN_MATCH_MODE

3.3 NC machine data

32920	AC_FILTER_TIME	A10	-
s	Smoothing filter time constant for adaptive control	DOUBLE	PowerOn
-			
-	-	0.0	0.0
		1.0E+301	7/2
			M

Description: In the case of PROFIdrive drives (provided that they transport the following drive actual values in the PROFIdrive message frame, e.g. MD13060 \$MN_DRIVE_TELEGRAM_TYPE = 116):

With the main run variables \$AA_LOAD, \$AA_POWER, \$AA_TORQUE, and \$AA_CURR, the following drive actual values can be measured:

- Drive utilization
- Drive active power
- Drive torque setpoint value
- Current actual value of the axis or spindle

To compensate any peaks, the measured values can be smoothed with a PT1 filter. The filter time constant is defined with MD32920 \$MA_AC_FILTER_TIME (filter smoothing time constant for adaptive control).

When measuring the drive torque setpoint value or the actual current value, the filter is active in addition to the filters available in the drive. The two filters are connected in series, if both significantly and slightly smoothed values are required in the system. The filter is switched off when a smoothing time of 0 seconds is entered.

32925	LOAD_SMOOTH_FILTER_TIME	A10	-
s	Filter time constant for smoothed drive utilization	DOUBLE	Immediately
-			
-	-	0.0	0.0
		1.0E+301	7/2
			M

Description: For PROFIdrive drives (assuming that these can communicate the drive utilization in the PROFIdrive telegram, e.g. MD13060 \$MN_DRIVE_TELEGRAM_TYPE = 116):

In order to equalize peaks, the measured data values can be smoothed using a PT1 filter.

32926	POWER_SMOOTH_FILTER_TIME	A10	-
s	Filter time constant for smoothed active drive power	DOUBLE	Immediately
-			
-	-	0.0	0.0
		1.0E+301	7/2
			M

Description: For PROFIdrive drives (assuming that these can communicate the active drive power in the PROFIdrive telegram, e.g. MD13060 \$MN_DRIVE_TELEGRAM_TYPE = 116):

In order to equalize peaks, the measured values can be smoothed using a PT1 filter.

32930	POSCTRL_OUT_FILTER_ENABLE	A07	G2
-	Activation of low-pass filter at position controller output	BOOLEAN	NEW CONF
CTEQ, -			
-	-	FALSE	0
		-	7/2
			M

Description: Activation of low-pass filter at position controller output.

Note:

If the function DSC (MD32640 \$MA_STIFFNESS_CONTROL_ENABLE=1) is used, activation of the low-pass filter is strongly inadvisable.

Related to:

MD32940 \$MA_POSCTRL_OUT_FILTER_TIME

MD32640 \$MA_STIFFNESS_CONTROL_ENABLE (dynamic stiffness control)

32940	POSCTRL_OUT_FILTER_TIME	A07	G2
s	Time constant of low-pass filter at position controller output	DOUBLE	NEW CONF
-			
-	-	0.0	0.0
		1.0E+301	7/2
			M

Description: Time constant of low-pass filter at position controller output
 Related to:
 MD32930 \$MA_POSCTRL_OUT_FILTER_ENABLE
 MD32640 \$MA_STIFFNESS_CONTROL_ENABLE (dynamic stiffness control)

32950	POSCTRL_DAMPING	EXP, A07	G2
%	Damping of the speed control circuit.	DOUBLE	NEW CONF
-			
-	-	0.0	-
		-	7/2
			M

Description: Factor to additionally dampen the speed control loop
 Purpose:
 Damping an oscillating axis by additionally entering a differential position, which is derived from the difference of the two measuring systems.
 Prerequisite: the axis must have two measuring systems, one encoder must be directly connected, the other indirectly.
 Explanation of the scaling:
 An input value of "100%" means the following: An additional torque corresponding to SINAMICS-p2003 is input, if

- for linear motors, there is a position difference of 1mm
- for rotary axes, there is a position difference of 360 degrees on the load side
- for linear axes (rot. drive), there is a position difference corresponding to MD31030 \$MA_LEADSCREW_PITCH (e.g. standard 10mm).

32960	POSCTRL_DUAL_FEEDBACK_TIME	EXP, A07	G2
s	Time constant for dual-position feedback	DOUBLE	NEW CONF
-			
-	-	0.0	0.0
		1.0E+301	7/2
			M

Description: Position control with position information from two measuring systems (only active if time constant is set > 0).
 The direct measuring system (DM) becomes active with the delay time that can be set in this MD by means of PT1 filtering, at the same time the indirect measuring system (IM) becomes increasingly ineffective, so that, in total, exactly one measuring system acts at the position controller input at all times
 Conditions:

- The axis must have two coupled measuring systems, of which one must be connected directly and the other indirectly to an encoder.
- The measuring systems must be calibrated, MD34102 \$MA_REFP_SYNC_ENCS = 1

33000	FIPO_TYPE	EXP, A07	G1, G3, S3, G2
-	Fine interpolator type	BYTE	PowerOn
CTEQ, -			
-	-	2	1
		3	7/2
			M

Description: The type of the fine interpolator has to be entered in this MD:

- 1: differential FIPO
- 2: cubic FIPO
- 3: cubic FIPO, optimized for operation with feedforward control

3.3 NC machine data

Calculation time required and contour quality increase with increasing type of FIPO.

- The default setting is the cubic FIPO.
- If no feedforward control is used in the position control loop, the use of the differential FIPO reduces the calculation time while slightly increasing the contour error.
- If the position control cycle and the interpolation cycle are identical, fine interpolation does not take place, i.e. the different types of fine interpolator do not have different effects.

33050	LUBRICATION_DIST			A03, A10	A2, Z1	
mm, degrees	Traversing path for lubrication from PLC			DOUBLE	NEW CONF	
-						
-	-	1.0e8	0.0	1.0E+301	7/2	I

Description: After the traversing path defined in the MD has been covered, the state of the axial interface signal "Lubrication pulse" is inverted, this can activate an automatic lubrication device.

The traversing path is summated after Power on.

The "Lubrication pulse" can be used with axes and spindles.

Application example(s):

The machine bed lubrication can be carried out as a function of the relevant traversed path.

Note:

When 0 is entered, the NC/PLC interface signal DB31, ... DBX76.0 (lubrication pulse) is set in every cycle.

Related to:

MD33052 \$MA_LUBRICATION_MODE

NC/PLC interface signal DB31, ... DBX76.0 (lubrication pulse)

33060	MAINTENANCE_DATA			A10	W6, 2.4, 6.2	
-	Configuration of maintenance data recording			DWORD	Reset	
-						
-	-	1	0	-	7/2	M

Description: Configuration of axis maintenance data recording:

Bit 0:

Recording the entire traversing path, entire traversing time and number of axis traversing procedures

Bit 1:

Recording the entire traversing path, entire traversing time and number of traversing procedures at high axis speed

Bit 2:

Recording the total sum of axis jerks, the time in which the axis is traversed with jerk, and the number of traversing procedures with jerk.

33100	COMPRESS_POS_TOL			A10	F2, B1, K1	
mm, degrees	Maximum deviation during compression			DOUBLE	NEW CONF	
CTEQ						
-	-	0.1	1.e-9	1.0E+301	7/7	I

Description: The value specifies the maximum permissible path deviation for each axis with compression.

The higher the value, the more short blocks can be compressed into a long block.

Not relevant for:

Active programmable contour/orientation tolerance (CTOL, OTOL, ATOL)

33120	PATH_TRANS_POS_TOL	A10	K1, PGA
mm, degrees	Maximum deviation for smoothing with G645	DOUBLE	NEW CONF
CTEQ			
-	-	0.005	1.e-9
		1.0E+301	7/7
			U

Description: The value specifies the maximum permitted path deviation for smoothing with G645. This is only relevant to tangential block transitions that are not acceleration-continuous.

For smoothing of corner with G645 tolerance MD33100 \$MA_COMPRESS_POS_TOL becomes active like with G642.

34000	REFP_CAM_IS_ACTIVE	A03, A11	G1, R1
-	Axis with reference point cam	BOOLEAN	Reset
-			
-	-	TRUE	0
		-	7/2
			M

Description: 1: There is at least one reference point cam for this axis
0: This axis does not have a reference point cam (e.g. rotary axis)
The referencing cycle starts immediately with phase 2 (see documentation)
Machine axes that have only one zero mark over the whole travel range or rotary axes that have only one zero mark per revolution do not require an additional reference cam that selects the zero mark (select MD34000 \$MA_REFP_CAM_IS_ACTIVE = 0).
The machine axis marked this way accelerates to the velocity specified in MD34040 \$MA_REFP_VELO_SEARCH_MARKER (reference point shutdown velocity) when the plus/minus traversing key is pressed, and synchronizes with the next zero mark.

34010	REFP_CAM_DIR_IS_MINUS	A03, A11	G1, R1
-	Approach reference point in minus direction	BOOLEAN	Reset
-			
-	-	FALSE	0
		-	7/2
			M

Description: 0: MD34010 \$MA_REFP_CAM_DIR_IS_MINUS Reference point approach in plus direction
1: MD34010 \$MA_REFP_CAM_DIR_IS_MINUS Reference point approach in minus direction
For incremental measuring systems:
If the machine axis is positioned in front of the reference cam, it accelerates, depending on the plus/minus traversing key pressed, to the velocity specified in MD34020 \$MA_REFP_VELO_SEARCH_CAM (reference point approach velocity) in the direction specified in MD34010 \$MA_REFP_CAM_DIR_IS_MINUS. If the wrong traversing key is pressed, reference point approach is not started.
If the machine axis is positioned on the reference cam, it accelerates to the velocity specified in MD34020 \$MA_REFP_VELO_SEARCH_CAM and travels in the direction opposite to that specified in MD34010 \$MA_REFP_CAM_DIR_IS_MINUS.
For linear measuring systems with distance-coded reference marks:
If the machine axis has a reference cam (linear measuring systems with distance-coded reference marks do not necessarily require a reference cam) and the machine axis is positioned on the reference cam, it accelerates, irrespectively of the plus/minus traversing key pressed, to the velocity specified in MD34040 \$MA_REFP_VELO_SEARCH_MARKER (reference point creep velocity) in the direction opposite to that specified in MD34010 \$MA_REFP_CAM_DIR_IS_MINUS.

3.3 NC machine data

34020	REFP_VELO_SEARCH_CAM			A03, A11, A04	G1, R1	
mm/min, rev/min	Reference point approach velocity			DOUBLE	Reset	
-						
-	-	(5000.0/10.0), (5000.0/10.0), (5000.0/10.0), (5000.0/10.0), (500...	(0./ 0.)	(MD_DBLMAX/ MD_DBLMAX)	7/2	M

Description: The reference point approach velocity is the velocity at which the machine axis travels in the direction of the reference cam after the traversing key has been pressed (phase 1). This value should be set at a magnitude large enough for the axis to be stopped to 0 before it reaches a hardware limit switch.

MD irrelevant for:

Linear measuring systems with distance-coded reference marks

34030	REFP_MAX_CAM_DIST			A03, A11	G1, R1	
mm, degrees	Maximum distance to reference cam			DOUBLE	Reset	
-						
-	-	10000.0	0.0	1.0E+301	7/2	M

Description: If the machine axis travels a maximum distance defined in MD34030 \$MA_REFP_MAX_CAM_DIST from the starting position in the direction of the reference cam, without reaching the reference cam (NC/PLC interface signal DB31, ... DBX12.7 (Reference point approach delay) is reset), the axis stops and alarm 20000 "Reference cam not reached" is output.

Irrelevant to:

Linear measuring systems with distance-coded reference marks

34040	REFP_VELO_SEARCH_MARKER			A03, A11, A04	G1, R1, S1	
mm/min, rev/min	Shutdown velocity			DOUBLE	Reset	
-						
-	2	(300.0/ 300.0)/ (1.0/ 1.0), (300.0/ 300.0)/ (1.0/ 1.0), (300.0/ ...	(0./ 0.)	(MD_DBLMAX/ MD_DBLMAX)	7/2	M

Description: 1) For incremental measuring systems:
This is the velocity at which the axis travels during the time between initial detection of the reference cam and synchronization with the first zero mark (phase 2).

Traversing direction: Opposite to the direction specified for the cam search (MD34010 \$MA_REFP_CAM_DIR_IS_MINUS)

If MD34050 \$MA_REFP_SEARCH_MARKER_REVERSE (direction reversal on reference cam) is enabled, then if the axis is synchronized with a rising reference cam signal edge on the cam, the axis traverses at the velocity defined in MD34020 \$MA_REFP_VELO_SEARCH_CAM.

2) Indirect measuring system with BERO on the load-side (preferred for spindles):

At this velocity, a search is made for the zero mark associated with the BERO (zero mark selection per VDI signal). The zero mark is accepted if the actual velocity lies within the tolerance range defined in MD35150 \$MA_SPIND_DES_VELO_TOL as a deviation from the velocity specified in MD34040 \$MA_REFP_VELO_SEARCH_MARKER[n].

3) For linear measuring systems with distance-coded reference marks:

The axis crosses the two reference marks at this velocity. The maximum velocity must be low enough to ensure that the time required to travel the smallest possible reference mark distance [(x(minimum))] on the linear measuring system is longer than one position controller cycle.

The formula

Basic dist.

Meas.length

- as defined in MD34010 \$MA_REFP_CAM_DIR_IS_MINUS;
- if the axis is already positioned on the cam, the axis is traversed in the opposite direction

Description:

This MD can be used to set the direction of search for the zero mark:

MD34050 \$MA_REFP_SEARCH_MARKER_REVERSE = 0

Synchronization with falling reference cam signal edge

The machine axis accelerates to the velocity specified in MD34040 \$MA_REFP_VELO_SEARCH_MARKER (reference point shutdown velocity) in the opposite direction to that specified in MD34010 \$MA_REFP_CAM_DIR_IS_MINUS (reference point approach in minus direction).

If the axis leaves the reference cam (NC/PLC interface signal DB31, ... DBX12.7 (Reference point approach delay) is reset) the control is synchronized with the first zero mark.

MD34050 \$MA_REFP_SEARCH_MARKER_REVERSE = 1

Synchronization with rising reference cam signal edge

The machine axis accelerates to the velocity defined in MD34020 \$MA_REFP_VELO_SEARCH_CAM (reference point creep velocity) in the opposite direction to that specified in the MD34010 \$MA_REFP_CAM_DIR_IS_MINUS. If the axis leaves the reference cam (NC/PLC interface signal DB31, ... DBX12.7 (Reference point approach delay) is reset), the machine axis decelerates to a halt and accelerates in the opposite direction towards the reference cam at the velocity specified in MD34040: \$MA_REFP_VELO_SEARCH_MARKER. When the reference cam is reached (NC/PLC interface signal DB31, ... DBX12.7 (Reference point approach delay) is enabled) the control is synchronized with the first zero mark.

MD irrelevant to:

Linear measuring systems with distance-coded reference marks

Description:	For incremental measuring systems: If, after leaving the reference cam (NC/PLC interface signal DB31, ... DBX12.7 (Reference point approach delay) is reset), the machine axis travels a distance defined in MD34060: \$MA_REFF_MAX_MARKER_DIST without detecting the zero mark, the axis stops and alarm 20002 "Zero mark missing" is output.

3.3 NC machine data

For linear measuring systems with distance-coded reference marks:

If the machine axis travels a distance defined in MD34060 \$MA_REFP_MAX_MARKER_DIST from the starting position without crossing two zero marks, the axis stops and alarm 20004 "Reference mark missing" is output.

34070	REFP_VELO_POS			A03, A11, A04	G1, R1	
mm/min, rev/min	Reference point positioning velocity			DOUBLE	Reset	
-						
-	-	(10000.0/ 20.0), (10000.0/ 20.0), (10000.0/ 20.0), (10000.0/ 20....	(0./ 0.)	(MD_DBLMAX/ MD_DBLMAX)	7/2	M

Description:

For incremental measuring systems:

The axis travels at this velocity between the time of synchronization with the first zero mark and arrival at the reference point.

For linear measuring systems with distance-coded reference marks:

The axis travels at this velocity between the time of synchronization (crossing two zero marks) and arrival at the target point.

34080	REFP_MOVE_DIST			A03, A11	G1, R1, S1, S3, G2	
mm, degrees	Reference point distance			DOUBLE	NEW CONF	
-						
-	2	-2.0, -2.0	-1e15	1e15	7/2	I

Description:

1. Standard measuring system (incremental with equidistant zero marks)

Reference point positioning movement: 3rd phase of the reference point approach:

The axis traverses from the position at which the zero mark is detected with the velocity REFP_AX_VELO_POS along the path REFP_MOVE_DIST + REFP_MOVE_DIST_CORR (relative to the marker).

REFP_SET_POS is set as the current axis position at the target point.

2. Irrelevant for distance-coded measuring system.

Override switch and selection jog/continuous mode (MD JOG_INC_MODE_IS_CONT) are active.

34090	REFP_MOVE_DIST_CORR			A03, A02, A08, A11	G1, R1, S1, S3, G2	
mm, degrees	Reference point offset/absolute offset			DOUBLE	NEW CONF	
-, -						
-	2	0.0, 0.0	-1e12	1e12	7/2	I

Description:

- Incremental encoder with zero mark(s):

After detection of the zero mark, the axis is positioned away from the zero mark by the distance specified in MD34080 \$MA_REFP_MOVE_DIST + MD34090 \$MA_REFP_MOVE_DIST_CORR. After traversing this distance, the axis has reached the reference point. MD34100 \$MA_REFP_SET_POS is transferred into the actual value.

During traversing by MD34080 \$MA_REFP_MOVE_DIST + MD34090 \$MA_REFP_MOVE_DIST_CORR, the override switch and MD11300 \$MN_JOG_INC_MODE_LEVELTRIGGRD (jog/continuous mode) are active.

- Distance-coded measuring system:

MD34090 \$MA_REFP_MOVE_DIST_CORR acts as an absolute offset. It describes the offset between the machine zero and the first reference mark of the measuring system.

- Absolute encoder:

MD34090 \$MA_REFP_MOVE_DIST_CORR acts as an absolute offset.

It describes the offset between the machine zero and the zero point of the absolute measuring system.

Note:

In conjunction with absolute encoders, this MD is modified by the control during calibration processes and modulo offset.

With rotary absolute encoders (on linear and rotary axes), the modification frequency also depends on the setting of MD34220 \$MA_ENC_ABS_TURNS_MODULO.

Manual input or modification of this MD via the part program should therefore be followed by a Power ON Reset to activate the new value and prevent it from being lost.

The following applies to an NCU-LINK:

If a link axis uses an absolute encoder, every modification of MD34090 \$MA_REFP_MOVE_DIST_CORR on the home NCU (servo physically available) is updated only locally and not beyond the limits of the NCU. The modification is therefore not visible to the link axis. Writing MD34090 \$MA_REFP_MOVE_DIST_CORR through the link axis is rejected with alarm 17070.

34092	REFP_CAM_SHIFT			A03, A11	G1, R1	
mm, degrees	Electronic cam offset for incremental measuring systems			DOUBLE	Reset	
-						
-	2	0.0, 0.0	0.0	1.0E+301	7/2	I

Description: Electronic cam offset for incremental measuring systems with equidistant zero marks. When the reference cam signal occurs, the zero mark search does not start immediately but is delayed until after the distance from REFP_CAM_SHIFT.

This ensures the reproducibility of the zero mark search through a defined selection of a zero mark, even with temperature-dependent expansion of the reference cam.

Because the reference cam offset is calculated by the control in the interpolation cycle, the actual cam offset is at least REFP_CAM_SHIFT and at most REFP_CAM_SHIFT+ (MD34040 \$MA_REFP_VELO_SEARCH_MARKER*interpolation cycle)

The reference cam offset is effective in the search direction of the zero mark.

The reference cam offset is only active if existing cam MD34000 \$MA_REFP_CAM_IS_ACTIVE=1.

34093	REFP_CAM_MARKER_DIST			A03, A11	R1	
mm, degrees	Reference cam/reference mark distance			DOUBLE	PowerOn	
-						
-	2	0.0, 0.0	-1.0E+301	1.0E+301	ReadOnly	I

Description: The value displayed corresponds to the distance between exiting the reference cam and the occurrence of the reference mark. If the values are too small, there is a risk of not being able to determine the reference point due to temperature reasons or varying operating times of the cam signal. The distance travelled may serve as a clue for setting the electronic reference cam offset.

This machine data is a display data and can therefore not be changed.

34100	REFP_SET_POS			A03, A11	G1, S3, G2, R1, S1	
mm, degrees	Reference point for incremental system			DOUBLE	Reset	
-						
-	4	0., 0., 0., 0.	-45000000	45000000	7/2	I

Description:

- Incremental encoder with zero mark(s):
The position value which is set as the current axis position after detection of the zero mark and traversal of the distance REFP_MOVE_DIST + REFP_MOVE_DIST_CORR (relative to zero mark). REFP_SET_POS of the reference point number, which is set at the instant that the edge of the reference cam signal rises (NC/PLC interface signal DB31, _DBX2.4 - 2.7 (Reference point value 1 to 4)), is set as the axis position.
- Distance-coded measuring system:

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Target position which is approached when MD34330 \$MA_REFP_STOP_AT_ABS_MARKER is set to 0 (FALSE) and two zero marks have been crossed.

- Absolute encoder:

MD34100 \$MA_REFP_SET_POS corresponds to the correct actual value at the calibration position.

The reaction on the machine depends on the status of MD34210 \$MA_ENC_REFP_STATE: When MD34210 \$MA_ENC_REFP_STATE = 1, the value of MD34100 \$MA_REFP_SET_POS is transferred as the absolute value.

When MD34210 \$MA_ENC_REFP_STATE = 2 and MD34330 \$MA_REFP_STOP_AT_ABS_MARKER = 0 (FALSE), the axis approaches the target position stored in MD34100 \$MA_REFP_SET_POS.

The value of MD34100 \$MA_REFP_SET_POS that has been set via NC/PLC interface signal DB31, _DBX2.4 - 2.7 (Reference point value 1 to 4) is used.

Related to:

NC/PLC interface signal DB31, _DBX2.4 - 2.7 (Reference point value 1 to 4)

34102	REFP_SYNC_ENCS			A03, A02	R1, Z1	
-	Calibration of measuring systems			BYTE	Reset	
-						
-	-	0	0	1	7/2	M

Description:

Calibrating the measuring system to the reference measuring system can be activated for all measuring systems of this axis with this machine data.

The calibration procedure is made during reference point approach or when calibrated absolute encoders selected for the closed-loop control are switched on.

Values:

0: No measuring system calibration, measuring systems must be referenced individually

1: Calibration of all measuring systems of the axis to the position of the reference measuring system

In combination with MD30242 \$MA_ENC_IS_INDEPENDENT = 2, the passive encoder is calibrated to the active encoder but NOT referenced.

34104	REFP_PERMITTED_IN_FOLLOWUP			A03, A02	R1	
-	Enable referencing in follow-up mode			BOOLEAN	Reset	
-						
-	-	FALSE	0	-	7/2	M

Description:

An axis can also be referenced in the follow-up mode under JOG+REF mode by means of an external motion.

34110	REFP_CYCLE_NR			A03	G1, TE3, D1, R1, Z1	
-	Sequence of axes in channel-specific referencing			DWORD	Reset	
-						
-	-	1, 2, 3, 4, 5, 6, 7, 8...	-1	31	7/2	M

Description:

MD34110 \$MA_REFP_CYCLE_NR = 0 -----> axis-specific referencing

Axis-specific referencing is started separately for each machine axis with the NC/PLC interface signal DB31, ... DBX4.7 / 4.6 (Plus/minus travel keys).

Up to 8 axes (840D) can be referenced simultaneously.

The following alternatives are provided for referencing the machine axes in a specific sequence:

- The operator has to observe the correct sequence on startup.
- The PLC checks the sequence on startup or defines the sequence itself.
- The channel-specific referencing function is used.

MD34110 \$MA_REFP_CYCLE_NR = 1 -----> channel-specific referencing

Channel-specific referencing is started with the NC/PLC interface signal DB21-30 DBX1.0 (Activate referencing). The control acknowledges a successful start with the NC/PLC interface signal DB21-30 DBX33.0 (Referencing active). Each machine axis assigned to the channel can be referenced with channel-specific referencing (this is achieved internally on the control by simulating the plus/minus traversing keys). The axis-specific MD34110 \$MA_REFP_CYCLE_NR can be used to define the sequence in which the machine axes are referenced:

-1 means:

The machine axis is not started by channel-specific referencing, and NC start is possible without referencing this axis.

0 means:

The machine axis is not started by channel-specific referencing, and NC start is not possible without referencing this axis.

1 means:

The machine axis is started by channel-specific referencing.

2 means:

The machine axis is started by channel-specific referencing if all machine axes identified by a 1 in MD34110 \$MA_REFP_CYCLE_NR are referenced.

3 means:

The machine axis is started by channel-specific referencing if all machine axes identified by a 2 in MD34110 \$MA_REFP_CYCLE_NR are referenced.

4 to 8 :

As above for further machine axes.

Setting the channel-specific MD20700 \$MC_REF_NC_START_LOCK (NC start disable without reference point) to zero has the effect of entering -1 for all the axes of a channel.

MD irrelevant to:

Axis-specific referencing

Related to:

NC/PLC interface signal DB21-30 DBX1.0 (Activate referencing)

NC/PLC interface signal DB21-30 DBX33.0 (Referencing active)

34200	ENC_REFP_MODE			A03, A02	G1, R1, S1	
-	Referencing mode			BYTE	PowerOn	
-						
-	2	1, 1	0	8	7/2	M

Description: The mounted position measuring systems can be classified for referencing as follows with MD34200 \$MA_ENC_REFP_MODE:

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- MD34200 \$MA_ENC_REFP_MODE = 0
If an absolute encoder is available: MD34100 \$MA_REFP_SET_POS is applied
Other encoders: Reference point approach not possible (SW2.2 and higher)
- MD34200 \$MA_ENC_REFP_MODE = 1
Referencing of incremental, rotary or linear measuring systems:
Zero pulse on the encoder track
Referencing of absolute, rotary measuring systems:
Replacement zero pulse based on the absolute information
- MD34200 \$MA_ENC_REFP_MODE = 2
BERO with 1-edge detection. Also possible with absolute encoder. After referencing, the absolute encoder is additionally marked as "adjusted".
Note: With PROFIdrive, the drive handles the Bero evaluation
- MD34200 \$MA_ENC_REFP_MODE = 3
Referencing of rotary or linear measuring systems with distance-coded reference marks:
Measuring system with distance-coded reference marks (as specified by Heidenhain)
- MD34200 \$MA_ENC_REFP_MODE = 4
reserved
- MD34200 \$MA_ENC_REFP_MODE = 5
When overtraveling the Bero, the zero mark search is started when the edge is detected and referenced to the next detected zero mark.
Note: With PROFIdrive, the drive handles the Bero and zero mark evaluation
- MD34200 \$MA_ENC_REFP_MODE = 6
reserved
- MD34200 \$MA_ENC_REFP_MODE = 7
BERO with configured approach speed for axis and spindle applications according to MD34040 \$MA_REFP_VELO_SEARCH_MARKER (reference point switch-off speed)
Note: With PROFIdrive, the drive handles the Bero evaluation
- MD34200 \$MA_ENC_REFP_MODE = 8
Referencing of rotary or linear measuring systems with distance-coded reference marks:
Measuring system with distance-coded reference marks (according to specification of Heidenhain) over 4 zero marks (increased safety).

34210	ENC_REFP_STATE			A07, A03, A02	R1	
-	Adjustment status of absolute encoder			BYTE	Immediately	
-						
-	2	0, 0	0	3	7/4	1

Description:

- Absolute encoder:
This machine data contains the absolute encoder status
0: Encoder is not calibrated
1: Encoder calibration enabled (but not yet calibrated)
2: Encoder is calibrated
Default setting for recommissioning: Encoder is not calibrated.
3: No significance, has the same effect as "0"
- Incremental encoder:
This machine data contains the "Referenced status", which can be saved beyond Power On:
0: Default setting: No automatic referencing
1: Automatic referencing enabled, but encoder not yet referenced
2: Encoder is referenced and at exact stop, automatic referencing becomes active at the next encoder activation
3: The last axis position buffered before switch off is restored, no automatic referencing
Default setting for recommissioning: No automatic referencing

34220	ENC_ABS_TURNS_MODULO			A03, A02	R1	
-	Modulo range for rotary absolute encoder			DWORD	PowerOn	
-						
-	2	4096, 4096	1	100000	7/2	M

Description: Number of encoder revolutions a rotary absolute encoder is able to resolve (see also the maximum multiturn information of the absolute encoder, see encoder data sheet or PROFIdrive parameter P979).

The absolute position of a rotary axis is reduced to this resolvable range when an absolute encoder is switched on:

In other words, a MODULO transformation takes place if the actual position sensed is larger than the position permitted by MD ENC_ABS_TURNS_MODULO.

0 degrees <= position <= n*360 degrees (with n = ENC_ABS_TURNS_MODULO)

Note:

With SW 2.2, the position is reduced to this range when the control/encoder is switched on. With SW 3.6 and higher, half of this value represents the maximum permissible travel distance with the control switched off/the encoder inactive.

Special cases:

For PROFIdrive, any integer value is permissible.

The MD is relevant only for rotary encoders (on linear and rotary axes).

Corresponds to:

PROFIdrive parameter P979

34230	ENC_SERIAL_NUMBER			A02	R1	
-	Encoder serial number			UDWORD	PowerOn	
-						
-	2	0, 0	0	0xFFFFFFFF	7/2	I

Description: The encoder serial number (EnDat encoders) can be read out here.

It is updated at PowerOn or when parking is deselected.

"0" is supplied for encoders which do not have a serial number available.

Manipulating this MD normally causes automatic absolute encoder maladjustment (MD34210 \$MA_ENC_REFP_STATE returns to "0").

34300	ENC_REFP_MARKER_DIST			A03, A02	R1	
mm, degrees	Basic distance of reference marks of distance-coded encoders.			DOUBLE	NEW CONF	
-						
-	2	10.0, 10.0	0.0	1.0E+301	7/2	M

Description: In addition to the incremental encoder track, a further encoder track is available with distance-coded measuring systems for determining the absolute encoder position. This encoder track has reference marks at defined, different distances. The basic distance between the fixed reference marks (which are the reference marks that are always the same distance from one another) can be taken from the data sheet, and directly transferred into machine data MD34300 \$MA_ENC_REFP_MARKER_DIST.

With the basic distance between the fixed reference marks (MD34300 \$MA_ENC_REFP_MARKER_DIST), the distance between two reference marks (MD34310 \$MA_ENC_MARKER_INC), and the number of encoder pulses (MD31020 \$MA_ENC_RESOL) on angular measuring systems or the graduation cycle (MD31010 \$MA_ENC_GRID_POINT_DIST) on linear measuring systems, the absolute encoder position can be determined once two successive reference marks have been crossed.

MD34300 \$MA_ENC_REFP_MARKER_DIST is also used for a plausibility check of reference mark distances.

Examples of application:

For example: Heidenhain LS186 C

3.3 NC machine data

MD 31010 = 0.02mm (graduation cycle)

MD 34300 = 20.00mm (basic distance between the reference marks)

MD 34310 = 0.02mm (distance between two reference marks corresponds to one graduation cycle).

34310	ENC_MARKER_INC			A03, A02	R1	
mm, degrees	Interval between two reference marks for distance-coded encoders			DOUBLE	NEW CONF	
-						
-	2	0.02, 0.02	0.0	1.0E+301	7/2	M

Description:

The distances between two reference marks are defined variably, so that the position of the crossed reference marks can be determined accurately in measuring systems with distance-coded reference marks.

The difference between two reference mark distances is entered in MD34310 \$MA_ENC_MARKER_INC.

MD irrelevant for:

Incremental measuring systems

Special cases:

On measuring systems with distance-coded reference marks supplied by Heidenhain, the interval between two reference marks is always equal to one graduation cycle.

34320	ENC_INVERS			A03, A02	G2, R1	
-	Distance-coded encoder is inverse to the axis movement			BOOLEAN	NEW CONF	
-						
-	2	FALSE, FALSE	0	-	7/2	M

Description:

- In the case of a distance-coded measuring system:

When setting a reference point, the actual position (determined by the distance-coded reference marks) on the measuring system is assigned to an exact machine axis position (referred to the machine zero point). The absolute offset between the machine zero point and the position of the 1st reference mark on the measuring system must therefore be entered in MD34090 \$MA_REFP_MOVE_DIST_CORR (reference point/absolute offset). In addition, MD34320 \$MA_ENC_INVERS must be used to set whether the measuring system is connected in the same or the opposite direction to the machine system.

MD irrelevant to:

Incremental encoders without distance-coded reference marks.

34330	REFP_STOP_AT_ABS_MARKER			A03	G1, R1	
-	Distance-coded linear measuring system without target point			BOOLEAN	Reset	
-						
-	2	TRUE, TRUE	0	-	7/2	M

Description:

- Distance-coded measuring system:

REFP_STOP_AT_ABS_MARKER = 0:

At the end of the reference cycle, the position entered in MD34100 \$MA_REFP_SET_POS is approached (normal case for phase 2).

REFP_STOP_AT_ABS_MARKER = 1:

The axis is braked after detection of the second reference mark (shortening of phase 2)

- Absolute encoder:

MD34330 \$MA_REFP_STOP_AT_ABS_MARKER defines the response of an axis with a valid calibration identifier (MD34210 \$MA_ENC_REFP_STATE = 2) with G74 or when a traversing key is actuated in JOG-REF:

REFP_STOP_AT_ABS_MARKER = 0:

Axis traverses to the position entered in MD34100 \$MA_REFP_SET_POS

REFP_STOP_AT_ABS_MARKER = 1:
 Axis does not traverse.
 MD irrelevant for:
 Incremental encoders with zero mark (standard encoders)
 Related to:
 MD34100 \$MA_REFP_SET_POS
 (reference point distance/target point for distance-coded system)

34800	WAIT_ENC_VALID			A01	-	
-	Parameter setting for part program command WAITENC			DWORD	PowerOn	
-						
-	-	0	0	1	7/2	M

Description: Parameter setting for part program command WAITENC:
 0: Axis is not taken into account when waiting for synchronized / referenced or restored position with part program command WAITENC.
 1: A delay is applied in part program command WAITENC until a synchronized / referenced or restored position is available for this axis.

34990	ENC_ACTVAL_SMOOTH_TIME			A02	V1	
s	Smoothing time constant for actual values.			DOUBLE	Reset	
-						
-	2	0.0, 0.0	0.0	0.5	7/2	I

Description: Using low-resolution encoders, a more continuous motion of coupled path or axis motions can be achieved with smoothed actual values. The bigger the time constant, the better the smoothing of actual values and the larger the overtravel.
 Smoothed actual values are used for:

- Thread-cutting (G33, G34, G35)
- Revolutional feedrate (G95, G96, G97, FPRAON)
- Display of actual position and velocity, or speed respectively.

35000	SPIND_ASSIGN_TO_MACHAX			A01, A06, A11	M1, S3, K2, S1	
-	Assignment of spindle to machine axis			BYTE	PowerOn	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	20	7/2	M

Description: Spindle definition. The spindle is defined when the spindle number has been entered in this MD.
 Example:
 If the corresponding axis is to be spindle 1, value "1" must be entered in this MD.
 The spindle functions are possible only for modulo rotary axes. For this purpose MD30300 \$MA_IS_ROT_AX and MD30310 \$MA_ROT_IS_MODULO must be set.
 The axis functionality is maintained; transition to axis operation can be performed with M70.
 The gear stage-specific spindle data are set in parameter blocks 1 to 5; parameter block 0 is used for axis operation (MD35590 \$MA_PARAMSET_CHANGE_ENABLE).
 The lowest spindle number is 1, the highest number depends on the number of axes in the channel.
 If other spindle numbers are to be assigned, the function "spindle converter" must be used.
 With multi-channel systems, the same numbers can be assigned in all channels, except for those spindles active in several channels (replacement axes/spindles MD 30550: \$MA_AXCONF_ASSIGN_MASTER_CHAN).

3.3 NC machine data

35010	GEAR_STEP_CHANGE_ENABLE			A06, A11	P3 pl, P3 sl, S1	
-	Parameterize gear stage change			UDWORD	Reset	
CTEQ						
-	-	0x00	0	0x2B	7/2	M

Description:

Meaning of bit places:

Bit 0 = 0 and bit 1 = 0:

There is an invariable gear ratio between motor and load. The MD of the first gear stage is active. Gear stage change is not possible with M40 to M45.

Bit 0 = 1:

Gear stage change at undefined change position. The gear can have up to 5 gear stages, which can be selected with M40, M41 to M45. To support the gear stage change, the motor can carry out oscillating motions, which must be enabled by the PLC program.

Bit 1 = 1:

Same meaning as bit 0 = 1, although the gear stage change is carried out in a configured spindle position (SW 5.3 and higher). The change position is configured in MD35012 \$MA_GEAR_STEP_CHANGE_POSITION. The position is approached in the current gear stage before the gear stage change. If this bit is set, bit 0 is not taken into account!

Bit 2: Reserved

Bit 3 = 1:

The gear stage change dialog between NCK and PLC is simulated. The setpoint gear stage is output to the PLC. A checkback signal from the PLC is not awaited. The acknowledgment is generated internally in the NCK.

Bit 4: Reserved

Bit 5 = 1:

The second gear stage data set is used for tapping with G331/G332. The bit must be set for the master spindle used for tapping. Bit 0 or bit 1 must be set.

Related to:

MD35090 \$MA_NUM_GEAR_STEPS (number of gear stages 1st data set, see bit 5)

MD35092 \$MA_NUM_GEAR_STEPS2 (number of gear stages 2nd data set, see bit 5)

MD35110 \$MA_GEAR_STEP_MAX_VELO (max. speed for autom. gear stage change)

MD35112 \$MA_GEAR_STEP_MAX_VELO2 (max. speed for autom. gear stage change 2nd data set, see bit 5)

MD35120 \$MA_GEAR_STEP_MIN_VELO (min. speed for autom. gear stage change)

MD35122 \$MA_GEAR_STEP_MIN_VELO2 (min. speed for autom. gear stage change 2nd data set, see bit 5)

35012	GEAR_STEP_CHANGE_POSITION			A06, A11	S1	
mm, degrees	Gear stage change position			DOUBLE	NEW CONF	
CTEQ						
-	6	0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0	1.0E+301	7/2	M

Description:

Gear stage change position.

The value range must be within the configured modulo range.

Related to:

MD35010 \$MA_GEAR_STEP_CHANGE_ENABLE, bit 1

MD30330 \$MA_MODULO_RANGE

35014	GEAR_STEP_USED_IN_AXISMODE			A01, A06, A11	-	
-	Gear stage for axis mode with M70			DWORD	NEW CONF	
CTEQ						
-	-	0	0	5	7/2	M

Description: With this MD, a gear stage can be defined which can be loaded into the axis mode during the transition with M70. The parameter set zero used in axis mode is to be optimized on this gear stage.

Significance of the values:

0: There is no implicit gear stage change with M70.
The current gear stage is retained.

1 ... 5:
There is a change into gear stage (1...5) during the execution of M70.

During the transition into axis mode without M70, there is monitoring for this gear stage and alarm 22022 is issued if necessary. The condition for a gear stage change is the general release of the function in MD35010 \$MA_GEAR_STEP_CHANGE_ENABLE.

Secondary conditions:

When changing from axis mode into spindle mode, the configured gear stage continues to remain active. There is no automatic return to the last active gear stage in spindle mode.

35020	SPIND_DEFAULT_MODE			A06, A10	S1	
-	Initial spindle setting			BYTE	Reset	
CTEQ						
-	-	0	0	3	7/2	M

Description: SPIND_DEFAULT_MODE activates the set operating mode of the spindle at the time specified in MD35030 \$MA_SPIND_DEFAULT_ACT_MASK. The appropriate spindle operating modes can be set with the following values:

0 Speed mode, position control deselected
1 Speed mode, position control activated
2 Positioning mode, no check for synchronized/referenced position on NC start
3 Axis mode, MD34110 \$MA_REFP_CYCLE_NR can be used to configure / deactivate forced referencing on NC start

Corresponds with:

MD35030 \$MA_SPIND_DEFAULT_ACT_MASK (activate spindle initial setting)
MD20700 \$MC_REFP_NC_START_LOCK (NC start disable without reference point)

35030	SPIND_DEFAULT_ACT_MASK			A06, A10	S1	
-	Time at which initial spindle setting is effective			UBYTE	Reset	
CTEQ						
-	-	0x00	0	0x03	7/2	M

Description: SPIND_DEFAULT_ACT_MASK specifies the time at which the operating mode defined in MD35020 \$MA_SPIND_DEFAULT_MODE becomes effective. The initial spindle setting can be assigned the following values at the following points in time:

0 POWER ON
1 POWER ON and NC program start
2 POWER ON and RESET (M2/M30)

Special cases:

If MD35040 \$MA_SPIND_ACTIVE_AFTER_RESET = 1, the following supplementary conditions are applicable:

3.3 NC machine data

- SPIND_DEFAULT_ACT_MASK should be set to 0
- If this is not possible, the spindle must be at a standstill prior to activation.

Related to:

MD35020 \$MA_SPIND_DEFAULT_MODE (initial spindle setting)

MD35040 \$MA_SPIND_ACTIVE_AFTER_RESET (spindle active after reset)

35032	SPIND_FUNC_RESET_MODE			A06, A10	-	
-	Reset response of individual spindle functions			UDWORD	PowerOn	
CTEQ						
-	-	0x00	0	0x01	7/2	M

Description: This data allows the "GWPS in every operating mode" function to be selected/deselected.
 SPIND_FUNC_RESET_MODE, bit 0 = 0 : "GWPS in every operating mode" is deselected
 SPIND_FUNC_RESET_MODE, bit 0 = 1 : "GWPS in every operating mode" is selected

35035	SPIND_FUNCTION_MASK			A06, A10	K1, S1	
-	Spindle functions			UDWORD	Reset	
CTEQ						
-	-	0x510	0	0x7FFFFFFF	7/2	M

Description: This MD allows spindle-specific functions to be set.
 The MD is bit-coded, the following bits are assigned:
 Bit 0 = 1: Gear stage changes are suppressed with activated DryRun function for block programming (M40, M41 to M45), programming via FC18, and synchronized actions.
 Bit 1 = 1: Gear stage changes are suppressed with activated program test function for block programming (M40, M41 to M45), programming via FC18, and synchronized actions.
 Bit 2 = 1: Gear stage change for programmed gear stage will finally be carried out after deselection of DryRun or program test functions with REPOS.
 Bit 3: reserved
 Bit 4 = 1:
 The programmed speed is transferred to SD 43200 \$SA_SPIND_S (incl. speed default settings via FC18 and synchronized actions).
 S programmings that are not speed programmings are not written to the SD. These include, for example, S value with constant cutting speed (G96, G961), S value with revolution-related dwell time (G4).
 Bit 5 = 1:
 The content of SD 43200 \$SA_SPIND_S is applied as the speed setpoint for JOG. If the content is zero, then other JOG speed default settings become active (see SD 41200 JOG_SPIND_SET_VELO).
 Bit 6: reserved
 Bit 7: reserved
 Bit 8 = 1:
 The programmed cutting speed is transferred to SD 43202 \$SA_SPIND_CONSTCUT_S (incl. default settings via FC18). S programmings, that are not cutting speed programmings, are not written to the SD. These include, for example, S value outside of constant cutting speed (G96, G961, G962), S value with revolution-related dwell time (G4), S value in synchronized actions.
 Bit 9: reserved
 Bit 10 = 0:
 SD 43206 \$SA_SPIND_SPEED_TYPE is not changed by part program or channel settings,

= 1:

For the master spindle, the value of the 15th G group (type of feedrate) is transferred to SD 43206 \$SA_SPIND_SPEED_TYPE. For all other spindles, the corresponding SD remains unchanged.

Bit 11: reserved

Bit 12 = 1:

Spindle override is active with zero mark search for M19, SPOS, and SPOSA

= 0:

Previous response (default)

The following bits 16-20 can be used to set spindle-specific M functions which are output to the VDI interface

if the corresponding M functionality has been generated implicitly for the program sequence.

Bit 16: reserved

Bit 17: reserved

Bit 18: reserved

Bit 19: "Output implicit M19 to PLC"

= 0: If MD20850 \$MC_SPOS_TO_VDI = 0 too, no auxiliary function M19 is generated for SPOS and SPOSA. As a result, the acknowledgment time for the auxiliary function is also eliminated. This can cause problems in the case of short blocks.

= 1: The implicit auxiliary function M19 is generated with the programming of SPOS and SPOSA and output to the PLC. The address is expanded in accordance with the spindle number.

Bit 20: "Output implicit M70 to PLC"

= 0: No generation of implicit auxiliary function M70. Note: A programmed auxiliary function M70 is always output to the PLC.

= 1: Auxiliary function M70 is generated implicitly and output to the PLC on transition to axis mode. The address is expanded in accordance with the spindle number.

Bit 21: reserved

Bit 22 = 0: As of NCK version 78.00.00: The NC/PLC interface signal DB31, ... DBX17.6 (invert M3/M4) is applied to the function for interpolatory tapping G331/G332.

Bit 22 = 1: Response is compatible with SW releases prior to NCK version 78.00.00: The NC/PLC interface signal DB31, ... DBX17.6 (invert M3/M4) is not applied to the function for interpolatory tapping G331/G332.

Bit 23: "Calculation of the acceleration reduction with velocity control DRIVE"

= 0: The currently active spindle speed limit is used as the maximum speed to calculate the acceleration reduction (compatibility mode).

= 1: Only machine data MD35100 \$MA_SPIND_VELO_LIMIT, MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT and, with position control, MD35135 \$MA_GEAR_STEP_PC_MAX_VELO_LIMIT are used for the maximum speed to calculate the acceleration reduction."

MD corresponds with:

MD20850 \$MC_SPOS_TO_VDI

MD35040 \$MA_SPIND_ACTIVE_AFTER_RESET

MD35020 \$MA_SPIND_DEFAULT_MODE

SD43200 \$SA_SPIND_S

35040	SPIND_ACTIVE_AFTER_RESET	A06, A10	S1, Z1, 2.7
-	Own spindle RESET	BYTE	PowerOn
CTEQ			
-	-	0	0
-	-	2	7/2
-	-	0	M

3.3 NC machine data

Description:

MD35040 \$MA_SPIND_ACTIVE_AFTER_RESET defines the response of the spindle after channel reset NC/PLC interface signal DB21-30 DBX7.7 (Reset) and program end (M2, M30).

This MD is only active in the spindle mode open-loop control mode. In positioning mode or oscillation mode, the spindle is always stopped.

MD35040 \$MA_SPIND_ACTIVE_AFTER_RESET = 0:

- Spindle stops (with M2/M30 and channel and mode group reset).
- Program is canceled.
- For spindle mode, the programmed ACC and VELOLIM are reset to 100% if MD22400 \$MC_S_VALUES_ACTIVE_AFTER_RESET and the axis-specific MD32320 \$MA_DYN_LIMIT_RESET_MASK do not specify anything else.

MD35040 \$MA_SPIND_ACTIVE_AFTER_RESET= 1:

- Spindle does not stop.
- Program is canceled.
- For spindle mode, the programmed ACC and VELOLIM are retained.

MD35040 \$MA_SPIND_ACTIVE_AFTER_RESET= 2:

- Spindle does not stop at the M function configured via MD10714 \$MN_M_NO_FCT_EOP (e.g. M32).
- However, the spindle stops at channel or mode group reset.
- For spindle mode, the programmed ACC and VELOLIM are retained.

The NC/PLC interface signal DB31, ... DBX2.2 (Delete distance-to-go/Spindle reset) is always effective, independent of MD35040 \$MA_SPIND_ACTIVE_AFTER_RESET.

Not relevant to:

- Spindle modes other than open-loop control mode.

Related to:

NC/PLC interface signal DB21-30 DBX7.7 (Reset)

NC/PLC interface signal DB31, ... DBX2.2 (Delete distance-to-go/Spindle reset)

35090	NUM_GEAR_STEPS			A06, A10	S1	
-	Number of gear stages			DWORD	Reset	
-						
-	-	5	1	5	2/2	M

Description:

Number of set gear stages.

The first gear stage is always available.

Corresponding MDs:

MD35010 \$MA_GEAR_STEP_CHANGE_ENABLE (gear stages available/functions)

MD35012 \$MA_GEAR_STEP_CHANGE_POSITION (gear stage change position)

MD35014 \$MA_GEAR_STEP_USED_IN_AXISMODE (gear stage for axis mode with M70)

MD35110 \$MA_GEAR_STEP_MAX_VELO (max. speed for gear stage change)

MD35120 \$MA_GEAR_STEP_MIN_VELO (min. speed for gear stage change)

MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT (max. speed of gear stage)

MD35140 \$MA_GEAR_STEP_MIN_VELO_LIMIT (min. speed of gear stage)

MD35200 \$MA_GEAR_STEP_SPEEDCTRL_ACCEL (acceleration in speed control mode)

MD35210 \$MA_GEAR_STEP_POSCTRL_ACCEL (acceleration in position control mode)

MD35310 \$MA_SPIND_POSIT_DELAY_TIME (positioning delay time)

MD35550 \$MA_DRILL_VELO_LIMIT (maximum speeds for tapping)

MD35092 \$MA_NUM_GEAR_STEPS2 (number of gear stages 2nd gear stage data set)

35092	NUM_GEAR_STEPS2			A06, A10	S1	
-	Number of gear stages of 2nd gear stage data set			DWORD	Reset	
-						
-	-	5	1	5	2/2	M

Description: Number of set gear stages of the second gear stage data set for the function 'Tapping with G331/G332'.

Activation (only makes sense for master spindle on tapping): MD 35010
`$MA_GEAR_STEP_CHANGE_ENABLE`, bit 5.

The number of gear stages must not be the same in the first and second gear stage data sets.

Corresponding MD:

MD35010 `$MA_GEAR_STEP_CHANGE_ENABLE` (gear stages available/functions)
MD35112 `$MA_GEAR_STEP_MAX_VELO2` (2nd gear stage data set: max. speed for gear stage change)
MD35122 `$MA_GEAR_STEP_MIN_VELO2` (2nd gear stage data set: min. speed for gear stage change)
MD35212 `$MA_GEAR_STEP_POSCTRL_ACCEL2` (2nd gear stage data set: acceleration in position control mode)

35100	SPIND_VELO_LIMIT			A06, A11, A04	TE3, G2, S1, V1, Z1	
rev/min	Maximum spindle speed			DOUBLE	Reset	
CTEQ						
-	-	10000.0	1.0e-6	1.0E+301	7/2	M

Description: MD35100 `$MA_SPIND_VELO_LIMIT` defines the maximum spindle speed that the spindle (the spindle chuck with the workpiece or the tool) must not exceed. The NCK limits an excessive spindle setpoint speed to this value. If the maximum spindle actual speed is exceeded, even allowing for the spindle speed tolerance (MD35150 `$MA_SPIND_DES_VELO_TOL`), there is a fault with the drive and the NC/PLC interface signal DB31, ... DBX83.0 (speed limit exceeded) is set. Alarm 22100 "Maximum speed reached" is also output and all axes and spindles on the channel are decelerated (provided the encoder is still functioning correctly). The spindle has to be brought to a standstill before modifying the MD.

Corresponds with:

MD35150 `$MA_SPIND_DES_VELO_TOL` (spindle speed tolerance)
SD43235 `$SD_SPIND_USER_VELO_LIMIT` (speed limitation set by user)
NC/PLC interface signal DB31, ... DBX83.0 (speed limit exceeded)
Alarm 22100 "Maximum speed reached"

35110	GEAR_STEP_MAX_VELO			A06, A11, A04	A3, S1	
rev/min	Maximum speed for gear stage change			DOUBLE	NEW CONF	
CTEQ						
-	6	500., 500., 1000., 2000., 4000., 8000.	0.0	1.0E+301	7/2	M

Description: MD35110 `$MA_GEAR_STEP_MAX_VELO` defines the maximum speed (upper switching threshold) of the gear stage for automatic gear stage change M40 S... The speed ranges for the gear stages must be defined without gaps between them or can overlap.

Incorrect

MD35110 `$MA_GEAR_STEP_MAX_VELO` [gear stage1] =1000
MD35120 `$MA_GEAR_STEP_MIN_VELO` [gear stage2] =1200

Correct

MD35110 `$MA_GEAR_STEP_MAX_VELO` [gear stage1] =1000
MD35120 `$MA_GEAR_STEP_MIN_VELO` [gear stage2] = 950

3.3 NC machine data

Note:

- Programming a spindle speed which exceeds the highest numbered gear stage MD35110 \$MA_GEAR_STEP_MAX_VELO [MD35090] triggers a switch to the highest gear stage (MD35090).

Related to:

MD35120 \$MA_GEAR_STEP_MIN_VELO (min. speed for automatic gear stage selection M40)

MD35090 \$MA_NUM_GEAR_STEPS (number of gear stages)

MD35010 \$MA_GEAR_STEP_CHANGE_ENABLE (gear stage change is possible)

MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT (maximum speed of gear stage with speed control)

MD35135 \$MA_GEAR_STEP_PC_MAX_VELO_LIMIT (maximum speed of gear stage with position control)

MD35140 \$MA_GEAR_STEP_MIN_VELO_LIMIT (min. speed of gear stage)

35112	GEAR_STEP_MAX_VELO2			A06, A11, A04	S1	
rev/min	2nd data set: Maximum speed for gear stage change			DOUBLE	NEW CONF	
CTEQ						
-	6	500., 500., 1000., 2000., 4000., 8000.	0.0	1.0E+301	2/2	M

Description:

-

The 2nd gear stage data block for tapping with G331/G332 is activated with MD 35010:\$MA_GEAR_STEP_CHANGE_ENABLE bit 5 for the master spindle.

Related to:

MD35122 \$MA_GEAR_STEP_MIN_VELO2 (minimum speed for 2nd data block gear stage selection)

MD35092 \$MA_NUM_GEAR_STEPS2 (number of gear stages 2nd gear stage data block)

MD35010 \$MA_GEAR_STEP_CHANGE_ENABLE (gear stage change, 2nd data block is possible)

MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT (maximum speed of gear stage with speed control)

MD35135 \$MA_GEAR_STEP_PC_MAX_VELO_LIMIT (maximum speed of gear stage with position control)

MD35140 \$MA_GEAR_STEP_MIN_VELO_LIMIT (min. speed of gear stage)

35120	GEAR_STEP_MIN_VELO			A06, A11, A04	S1	
rev/min	Minimum speed for gear stage change			DOUBLE	NEW CONF	
CTEQ						
-	6	50., 50., 400., 800., 1500., 3000.	0.0	1.0E+301	7/2	M

Description:

-

See MD35110 \$MA_GEAR_STEP_MAX_VELO for more information.

Note:

- Programming a spindle speed which undershoots the lowest speed of the first gear stage MD35120 \$MA_GEAR_STEP_MIN_VELO[1] triggers a switch to the first gear stage.

Not relevant for:

- Programming of speed 0 (S0) if MD35120 \$MA_GEAR_STEP_MIN_VELO[1] > 0

Related to:

MD35110 \$MA_GEAR_STEP_MAX_VELO (maximum speed for automatic gear stage selection M40)

MD35090 \$MA_NUM_GEAR_STEPS (number of gear stages)

MD35010 \$MA_GEAR_STEP_CHANGE_ENABLE (gear stage change is possible)

MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT (maximum speed of the gear stage with speed control)

MD35135 \$MA_GEAR_STEP_PC_MAX_VELO_LIMIT (maximum speed of the gear stage with position control)

MD35140 \$MA_GEAR_STEP_MIN_VELO_LIMIT (min. speed of the gear stage)

35122	GEAR_STEP_MIN_VELO2			A06, A11, A04	S1	
rev/min	2nd data set: Minimum speed for gear stage change			DOUBLE	NEW CONF	
CTEQ						
-	6	50., 50., 400., 800., 1500., 3000.	0.0	1.0E+301	2/2	M

Description:

The minimum speed (lower switching threshold) of the gear stage for automatic gear stage change M40 G331 S.. is set in GEAR_STEP_MIN_VELO2 for interpolatory tapping G331, G332. The speed ranges of the gear stages must be defined so that there are no gaps between them or they can overlap.

The 2nd gear stage data block for tapping with G331/G332 is activated with MD35010 \$MA_GEAR_STEP_CHANGE_ENABLE bit 5 for the master spindle.

Related to:

MD35112 \$MA_GEAR_STEP_MAX_VELO2 (maximum speed for 2nd data block gear stage change)
MD35092 \$MA_NUM_GEAR_STEPS2 (number of gear stages 2nd gear stage data block)
MD35010 \$MA_GEAR_STEP_CHANGE_ENABLE (gear stage change, 2nd data block is possible)
MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT (maximum speed of gear stage with speed control)
MD35135 \$MA_GEAR_STEP_PC_MAX_VELO_LIMIT (maximum speed of gear stage with position control)
MD35140 \$MA_GEAR_STEP_MIN_VELO_LIMIT (min. speed of gear stage)

35130	GEAR_STEP_MAX_VELO_LIMIT			A06, A11, A04	A2, S1, V1	
rev/min	Maximum speed of gear stage			DOUBLE	NEW CONF	
CTEQ						
-	6	500., 500., 1000., 2000., 4000., 8000.	1.0e-6	1.0E+301	7/2	M

Description:

The maximum speed of the current gear stage for speed control mode (position control not active) is configured in MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT. The speed setpoints generated taking the override into account are limited to this speed.

Note:

- The configured speed cannot exceed the value from MD35100 \$MA_SPIND_VELO_LIMIT.
- If position control is active for the spindle, the speed is limited to the maximum speed of MD35135 \$MA_GEAR_STEP_PC_MAX_VELO_LIMIT.
- The NC/PLC interface signal "Setpoint speed limited" is set to indicate that the speed is being limited.
- The maximum speed entered here has no effect on the automatic gear stage selection M40 S..
- The upper switching threshold for the automatic gear stage selection M40 is configured in MD35110 \$MA_GEAR_STEP_MAX_VELO.

Related to:

MD35135 \$MA_GEAR_STEP_PC_MAX_VELO_LIMIT (maximum speed of the gear stage with position control)
MD35140 \$MA_GEAR_STEP_MIN_VELO_LIMIT (minimum speed of the gear stage)
MD35010 \$MA_GEAR_STEP_CHANGE_ENABLE (gear stage selection is possible)
MD35110 \$MA_GEAR_STEP_MAX_VELO (max. speed for automatic gear stage selection M40)
MD35120 \$MA_GEAR_STEP_MIN_VELO (min. speed for automatic gear stage selection M40)

35135	GEAR_STEP_PC_MAX_VELO_LIMIT			A06, A11, A04	S1	
rev/min	Maximum speed of the gear stage with position control			DOUBLE	NEW CONF	
CTEQ						
-	6	0., 0., 0., 0., 0., 0.	0	1.0E+301	7/2	M

3.3 NC machine data

Description:

The maximum speed of the current gear stage is configured in MD35135 \$MA_GEAR_STEP_PC_MAX_VELO_LIMIT with position control active. The speed setpoints generated taking the override into account are limited to this speed.

If a value of 0 is set (default), 90% of the value from MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT will become the maximum speed with position control active.

Note:

- The configured speed cannot exceed the value from MD35100 \$MA_SPIND_VELO_LIMIT.
- The NC/PLC interface signal "Setpoint speed limited" is set to indicate that the speed is being limited.
- The maximum speed entered here has no effect on the automatic gear stage selection M40 S..
- The upper switching threshold for the automatic gear stage selection M40 is configured in MD35110 \$MA_GEAR_STEP_MAX_VELO.

Related to:

MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT (maximum speed of the gear stage with speed control)

MD35140 \$MA_GEAR_STEP_MIN_VELO_LIMIT (minimum speed of the gear stage)

MD35010 \$MA_GEAR_STEP_CHANGE_ENABLE (gear stage selection is possible)

MD35110 \$MA_GEAR_STEP_MAX_VELO (max. speed for automatic gear stage selection M40)

MD35120 \$MA_GEAR_STEP_MIN_VELO (min. speed for automatic gear stage selection M40)

35140	GEAR_STEP_MIN_VELO_LIMIT				A06, A11, A04	S1, V1	
rev/min	Minimum speed of gear stage				DOUBLE	NEW CONF	
CTEQ							
-	6	5., 5., 10., 20., 40., 80.	0.0	1.0E+301	7/2	M	

Description:

The minimum speed of the current gear stage is configured in MD35140 \$MA_GEAR_STEP_MIN_VELO_LIMIT. The minimum speed is applied only if the spindle is in speed control mode. The speed setpoints generated taking the override into account do not undershoot the minimum speed.

Note:

- If an S value lower than the minimum speed is programmed, the setpoint speed is increased to the minimum speed.
- The NC/PLC interface signal "Setpoint speed increased" is set to indicate that the speed has been increased.
- The minimum speed entered here has no effect on the automatic gear stage selection M40 S..
- The lower switching threshold for the automatic gear stage selection M40 is configured in MD35120 \$MA_GEAR_STEP_MIN_VELO.

Not relevant for:

- Spindle oscillation mode (gear stage change)
- Positioning and axis spindle modes
- Signals which cause the spindle to stop

Related to:

MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT (maximum speed of gear stage with speed control)

MD35135 \$MA_GEAR_STEP_PC_MAX_VELO_LIMIT (maximum speed of gear stage with position control)

MD35010 \$MA_GEAR_STEP_CHANGE_ENABLE (gear stage change is possible)

MD35110 \$MA_GEAR_STEP_MAX_VELO (max. speed for automatic gear stage selection M40)

MD35120 \$MA_GEAR_STEP_MIN_VELO (min. speed for automatic gear stage selection M40)

35150	SPIND_DES_VELO_TOL			A03, A05, A06, A10, A04	R1, S1, Z1	
-	Spindle speed tolerance			DOUBLE	Reset	
-						
-	-	0.1	0.0	1.0	7/2	M

Description: In spindle control mode, the set speed (programmed speed x spindle offset, allowing for limits) is compared with the actual speed.

- If the actual speed deviates from the set speed by more than MD35150 \$MA_SPIND_DES_VELO_TOL, the NC/PLC interface signal is DB31, ... DBX83.5 (Spindle in setpoint range) is set to zero.
- If the actual speed deviates from the set speed by more than MD35150 \$MA_SPIND_DES_VELO_TOL, the path feed is disabled (positioning axes continue traversing).
- If the actual speed exceeds the maximum spindle speed (MD35100 \$MA_SPIND_VELO_LIMIT) by more than MD35150 \$MA_SPIND_DES_VELO_TOL, the NC/PLC interface signal is DB31, ... DBX83.0 (Speed limit exceeded) is enabled and alarm 22050 "Maximum speed reached" is output. All axes and spindles on the channel are decelerated.

MD irrelevant to:

- Spindle oscillation mode
- Spindle positioning mode

Example:

```
MD 35150 $MA_SPIND_DES_VELO_TOL = 0.1
```

The actual spindle speed must not deviate from the set speed by more than +/- 10%.

Related to:

```
MD35500 $MA_SPIND_ON_SPEED_AT_IPO_START
```

(feed enable for spindle in setpoint range)

```
MD35100 $MA_SPIND_VELO_LIMIT
```

(maximum spindle speed)

NC/PLC interface signal DB31, ... DBX83.5 (Spindle in setpoint range)

NC/PLC interface signal DB31, ... DBX83.0 (Speed limit exceeded)

Alarm 22050 "Maximum speed reached"

35160	SPIND_EXTERN_VELO_LIMIT			A06, A04	A3, S1, V1, Z1	
rev/min	Spindle speed limitation from PLC			DOUBLE	NEW CONF	
CTEQ						
-	-	1000.0	1.0e-6	1.0E+301	7/2	M

Description: A limiting value for the maximum spindle speed is entered in MD35160 \$MA_SPIND_EXTERN_VELO_LIMIT, which is taken into account exactly when the NC/PLC interface signal DB31, ... DBX3.6 (Velocity/speed limitation) is set.

The control limits a spindle speed which is too high to this value.

35200	GEAR_STEP_SPEEDCTRL_ACCEL			A06, A11, A04	S1	
rev/s²	Acceleration in speed control mode			DOUBLE	NEW CONF	
CTEQ						
-	6	30.0, 30.0, 25.0, 20.0, 15.0, 10.0	1.0e-7	1.0E+301	7/2	M

Description: If the spindle is in speed control mode, the acceleration is entered in MD35200 \$MA_GEAR_STEP_SPEEDCTRL_ACCEL.

The spindle is in speed control mode with the function SPCOF.

Special cases:

3.3 NC machine data

The acceleration in speed control mode (MD35200 \$MA_GEAR_STEP_SPEEDCTRL_ACCEL) can be set so that the electric current limit is reached.

Related to:

MD35210 \$MA_GEAR_STEP_POSCTRL_ACCEL (acceleration in position control mode)

MD35220 \$MA_ACCEL_REDUCTION_SPEED_POINT (speed limit for reduced acceleration)

35210	GEAR_STEP_POSCTRL_ACCEL			A06, A11, A04	S1	
rev/s²	Acceleration in position control mode			DOUBLE	NEW CONF	
CTEQ						
-	6	30.0, 30.0, 25.0, 20.0, 15.0, 10.0	1.0e-7	1.0E+301	7/2	M

Description: The acceleration in position control mode must be set so that the electric current limit is not reached.

Related to:

MD35200 \$MA_GEAR_STEP_SPEEDCTRL_ACCEL

MD35212 \$MA_GEAR_STEP_POSCTRL_ACCEL2

35212	GEAR_STEP_POSCTRL_ACCEL2			A06, A11, A04	S1	
rev/s²	2nd data set: Acceleration in position control mode			DOUBLE	NEW CONF	
CTEQ						
-	6	30.0, 30.0, 25.0, 20.0, 15.0, 10.0	1.0e-3	1.0E+301	2/2	M

Description: Second gear stage data set for maximum acceleration capability of the gear stages in position control mode.

The acceleration in position control mode must be set so that the electric current limit is not reached.

The 2nd data set for tapping with G331/G332 is activated by MD35010 \$MA_GEAR_STEP_CHANGE_ENABLE, bit 5 for the master spindle.

Related to:

MD35210 \$MA_GEAR_STEP_POSCTRL_ACCEL

MD35200 \$MA_GEAR_STEP_SPEEDCTRL_ACCEL

MD35220 \$MA_ACCEL_REDUCTION_SPEED_POINT

35220	ACCEL_REDUCTION_SPEED_POINT			A06, A04	S1, S3, B2	
-	Speed for reduced acceleration			DOUBLE	Reset	
-						
-	-	1.0	0.0	1.0	7/2	M

Description: This machine data defines the threshold speed/velocity for spindles/positioning/path axes from which the acceleration reduction is to start. The reference is the defined maximum speed/velocity. The starting point is a percentage of the maximum values.

The maximum speed for spindles is determined as the lowest value from machine data MD35100 \$MA_SPIND_VELO_LIMIT, MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT and, with position control, MD35135 \$MA_GEAR_STEP_PC_MAX_VELO_LIMIT.

Example: MD35220 \$MA_ACCEL_REDUCTION_SPEED_POINT = 0.7, the maximum speed is 3000 rpm. Acceleration reduction starts at $v_{on} = 2100$ rpm, i.e. the maximum acceleration capacity is utilized in the speed range 0...2099.99 rpm. Reduced acceleration is used from 2100 rpm to the maximum speed.

Related to:

MD32000 \$MA_MAX_AX_VELO (maximum axis velocity)

MD35100 \$MA_SPIND_VELO_LIMIT (maximum spindle speed)

MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT (maximum gear stage speed)

MD35135 \$MA_GEAR_STEP_PC_MAX_VELO_LIMIT (maximum gear stage speed with position control)

MD35230 \$MA_ACCEL_REDUCTION_FACTOR (reduced acceleration)

35230	ACCEL_REDUCTION_FACTOR	A06, A04	S1, S3, B2
-	Reduced acceleration	DOUBLE	Reset
CTEQ			
-	-	0.0	0.0
		0.95	7/2
			M

Description:

The machine data contains the factor by which the acceleration of the spindle/positioning/path axes is reduced with reference to the maximum speed/velocity. The acceleration is reduced by this factor between the threshold speed/velocity defined in MD35220 \$MA_ACCEL_REDUCTION_SPEED_POINT and the maximum speed/velocity.

Example:

$a = 10 \text{ rev/s}^2$, $v_{\text{on}} = 2100 \text{ rpm}$, MD35230 \$MA_ACCEL_REDUCTION_FACTOR = 0.3.

Acceleration and deceleration take place within the speed range 0...2099.99 rpm with an acceleration of 10 rev/s^2 . From a speed of 2100 rpm up to the maximum speed, the acceleration is reduced from 10 rev/s^2 to 7 rev/s^2 .

MD irrelevant to:

Errors that lead to rapid stop.

Related to:

MD32300 \$MA_MAX_AX_ACCEL (axis acceleration)

MD35200 \$MA_GEAR_STEP_SPEEDCTRL_ACCEL

(acceleration in speed control mode)

MD35210 \$MA_GEAR_STEP_POSCTRL_ACCEL

(acceleration in position control mode)

MD35242 \$MA_ACCEL_REDUCTION_SPEED_POINT

(speed for reduced acceleration)

35240	ACCEL_TYPE_DRIVE	A04	B1, B2
-	Acceleration curve DRIVE for axes ON/OFF	BOOLEAN	Reset
CTEQ			
-	-	FALSE	0
		-	7/2
			M

Description:

Basic setting of the acceleration response of the axis (positioning, oscillation, JOG, path motions):

FALSE: No acceleration reduction

TRUE: Acceleration reduction active

MD is active only when MD32420 \$MA_JOG_AND_POS_JERK_ENABLE = FALSE.

The settings in MD35220 \$MA_ACCEL_REDUCTION_SPEED_POINT and MD35230 \$MA_ACCEL_REDUCTION_FACTOR are always active for spindles (in spindle mode).

Remark:

This MD also influences the path motion with SOFT, BRISK, TRAFO

35242	ACCEL_REDUCTION_TYPE	A04	B1, B2
-	Type of acceleration reduction	BYTE	Reset
CTEQ			
-	-	1	0
		2	7/2
			M

Description:

Shape of acceleration reduction characteristic with DRIVE velocity control

0: Constant

1: Hyperbolic

2: Linear

3.3 NC machine data

The end point of the acceleration curve for spindles depending on MD35035 \$MA_SPIND_FUNCTION_MASK Bit23 is selected either from the maximum speed determined from MD35100 \$MA_SPIND_VELO_LIMIT, MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT and MD35135 \$MA_GEAR_STEP_PC_MAX_VELO_LIMIT or the relevant currently active speed limit.

35300	SPIND_POSCTRL_VELO			A06, A04	P3 pl, P3 sl, R1, S1	
rev/min	Position control activation speed			DOUBLE	NEW CONF	
CTEQ						
-	6	500.0, 500.0, 500.0, 500.0, 500.0, 500.0	0.0	1.0E+301	7/2	M

Description: When positioning a spindle that is not in position control mode from a high speed, the position control is not activated until the spindle has reached or falls below the velocity defined in MD35300 \$MA_SPIND_POSCTRL_VELO.

The speed can be changed with FA[Sn] from the part program. Please refer to the documentation:

/FB1/ Function Manual, Basic Functions; Spindles (S1), section "Spindle mode 'positioning operation" for a description of the spindle behavior under various supplementary conditions (positioning from rotation, positioning from standstill).

Note:

The active speed from MD35300 \$MA_SPIND_POSCTRL_VELO cannot exceed the max. speed set in MD35135 \$MA_GEAR_STEP_PC_MAX_VELO_LIMIT. If MD35135 \$MA_GEAR_STEP_PC_MAX_VELO_LIMIT = 0, the value is limited to 90% of MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT.

Related to:

MD35350 \$MA_SPIND_POSITIONING_DIR (direction of rotation during positioning from standstill, if no synchronization is available)

MD35100 \$MA_SPIND_VELO_LIMIT (chuck speed)

35310	SPIND_POSIT_DELAY_TIME			A06, A04	S1	
s	Positioning delay time			DOUBLE	NEW CONF	
CTEQ						
-	6	0.0, 0.05, 0.1, 0.2, 0.4, 0.8	0.0	1.0E+301	7/2	M

Description: Positioning delay time.

After reaching the positioning end (exact stop fine), there is a waiting time equal to the time set in this MD. The position matching the currently set gear stage is selected.

The delay time is activated for:

- Gear stage change at defined spindle position. After reaching the position configured in MD35012 \$MA_GEAR_STEP_CHANGE_POSITION, there is a waiting period equal to the time specified here. After expiry of this time, the position control is switched off for an active direct measuring system, and the NC/PLC interface signals DB31, ... DBX82.3 (Change gear) and DB31, ... DBX82.0 - .2 (Setpoint gear stage A-C) are output.
- Block search upon the output of an accumulated positioning block (SPOS, SPOSA, M19).

35350	SPIND_POSITIONING_DIR			A06	S1	
-	Direction of rotation when positioning			BYTE	Reset	
CTEQ						
-	-	3	3	4	7/2	M

Description: When SPOS or SPOSA is programmed, the spindle is switched to position control mode and accelerates with the acceleration defined in MD35210 \$MA_GEAR_STEP_POSCTRL_ACCEL (acceleration in position control mode) if the spindle is not synchronized. The direction of rotation is defined by MD35350 \$MA_SPIND_POSITIONING_DIR (direction of rotation for positioning from standstill).

MD35350 \$MA_SPIND_POSITIONING_DIR = 3 ---> Clockwise direction of rotation
MD35350 \$MA_SPIND_POSITIONING_DIR = 4 ---> Counterclockwise direction of rotation

Related to:
MD35300 \$MA_SPIND_POSCTRL_VELO (position control activation speed)

35400	SPIND_OSCILL_DES_VELO			A06, A04	P3 pl, P3 sl, S1	
rev/min	Oscillation speed			DOUBLE	NEW CONF	
CTEQ						
-	-	500.0	0.0	1.0E+301	7/2	M

Description: During oscillation, the NC/PLC interface signal DB31, ... DBX18.5 (Oscillation speed) is used to select a motor speed for the spindle motor. This motor speed is defined in MD35400 \$MA_SPIND_OSCILL_DES_VELO. The motor speed defined in this MD is independent of the current gear stage. In the AUTOMATIC and MDI displays, the oscillation speed is displayed in the "Spindle setpoint" window until the gear is changed.

MD irrelevant to:
All spindle modes except oscillation mode

Special cases:
The acceleration during oscillation (MD35410 \$MA_SPIND_OSCILL_ACCEL) is valid for the oscillation speed defined in this MD.

Related to:
MD35410 \$MA_SPIND_OSCILL_ACCEL (acceleration during oscillation)
NC/PLC interface signal DB31, ... DBX18.5 (Oscillation speed)
NC/PLC interface signal DB31, ... DBX18.4 (Oscillation via PLC)

35410	SPIND_OSCILL_ACCEL			A06, A04	S1, Z1	
rev/s ²	Acceleration during oscillation			DOUBLE	NEW CONF	
CTEQ						
-	-	16.0	1.0e-7	1.0E+301	7/2	M

Description: The acceleration specified here is only effective for the output of the oscillation speed (MD35400 \$MA_SPIND_OSCILL_DES_VELO) to the spindle motor. The oscillation speed is selected using the NC/PLC interface signal DB31, ... DBX18.5 (Oscillation speed).

MD irrelevant to:
All spindle modes except oscillation mode

Related to:
MD35400 \$MA_SPIND_OSCILL_DES_VELO (oscillation speed)
NC/PLC interface signal DB31, ... DBX18.5 (Oscillation speed)
NC/PLC interface signal DB31, ... DBX18.4 (Oscillation via PLC)

35430	SPIND_OSCILL_START_DIR			A06	S1	
-	Start direction during oscillation			BYTE	Reset	
CTEQ						
-	-	0	0	4	7/2	M

Description: With the NC/PLC interface signal DB31, ... DBX18.5 (Oscillation speed), the spindle motor accelerates to the speed specified in MD35400: \$MA_SPIND_OSCILL_DES_VELO.

The start direction is defined by MD35430 \$MA_SPIND_OSCILL_START_DIR if the NC/PLC interface signal DB31, ... DBX18.4 (Oscillation via PLC) is not enabled.

3.3 NC machine data

MD35430 \$MA_SPIND_OSCILL_START_DIR = 0 ---> Start direction same as the last direction of rotation
MD35430 \$MA_SPIND_OSCILL_START_DIR = 1 ---> Start direction counter to the last direction of rotation
MD35430 \$MA_SPIND_OSCILL_START_DIR = 2 ---> Start direction counter to the last direction of rotation
MD35430 \$MA_SPIND_OSCILL_START_DIR = 3 ---> Start direction is M3
MD35430 \$MA_SPIND_OSCILL_START_DIR = 4 ---> Start direction is M4
MD irrelevant to:
All spindle modes except oscillation mode
Related to:
MD35400 \$MA_SPIND_OSCILL_DES_VELO (oscillation speed)
NC/PLC interface signal DB31, ... DBX18.5 (Oscillation speed)
NC/PLC interface signal DB31, ... DBX18.4 (Oscillation via PLC)

35440	SPIND_OSCILL_TIME_CW			A06	S1, Z1	
s	Oscillation time for M3 direction			DOUBLE	NEW CONF	
CTEQ						
-	-	1.0	0.0	1.0E+301	7/2	M

Description: The oscillation time defined here is active in the M3 direction.
MD irrelevant to:

- All spindle modes except oscillation mode
- Oscillation via PLC (NC/PLC interface signal DB31, ... DBX18.4 (Oscillation via PLC) enabled)

Related to:
MD35450 \$MA_SPIND_OSCILL_TIME_CCW (oscillation time for M4 direction)
MD10070 \$MN_IPO_SYSCLOCK_TIME_RATIO (interpolator cycle)
NC/PLC interface signal DB31, ... DBX18.5 (Oscillation speed)
NC/PLC interface signal DB31, ... DBX18.4 (Oscillation via PLC)

35450	SPIND_OSCILL_TIME_CCW			A06	S1, Z1	
s	Oscillation time for M4 direction			DOUBLE	NEW CONF	
CTEQ						
-	-	0.5	0.0	1.0E+301	7/2	M

Description: The oscillation time defined here is active in the M4 direction.
MD irrelevant to:

- All spindle modes except oscillation mode
- Oscillation via PLC (NC/PLC interface signal DB31, ... DBX18.4 (Oscillation via PLC) enabled)

Related to:
MD35440 \$MA_SPIND_OSCILL_TIME_CW (oscillation time for M3 direction)
MD10070 \$MN_IPO_SYSCLOCK_TIME_RATIO (interpolator cycle)
NC/PLC interface signal DB31, ... DBX18.5 (Oscillation speed)
NC/PLC interface signal DB31, ... DBX18.4 (Oscillation via PLC)

35500	SPIND_ON_SPEED_AT_IPO_START			A03, A06, A10	S1, Z1	
-	Feedrate enable for spindle in the set range			BYTE	Reset	
CTEQ						
-	-	1	0	2	7/2	M

Description: For SW 4.2 and higher:

Byte = 0:

The path interpolation is not affected

Byte = 1:

The path interpolation is not enabled (positioning axes continue traversing) until the spindle has reached the specified speed. The tolerance range can be set in MD 35150: \$MA_SPIND_DES_VELO_TOL. If a measuring system is active, the actual speed is monitored, otherwise the set speed. Path axes traversing in continuous-path mode (G64) are not stopped.

Byte = 2:

In addition to 1, traversing path axes are also stopped before machining begins, e.g. continuous-path mode (G64) and the change from rapid traverse (G0) to a machining block (G1, G2,...). The path is stopped at the last G0 block, and does not start traversing until the spindle is within the set speed range. If the spindle speed is re-programmed between two machining blocks, and the spindle speed is not yet in the setpoint range during transition from the first to the second machining block, the traversing path axes are also braked.

Restriction:

If the spindle is re-programmed by the PLC (FC18) or a synchronized action "shortly" before the end of the last G0 block, the path decelerates on the basis of the dynamic limitations. Since the spindle programming is asynchronous, a traverse can be made into the machining block if necessary. If the spindle has reached the setpoint speed range, machining starts from this position.

Byte = 3:

No longer available for SW 5.3 and higher.

Related to:

MD35150 \$MA_SPIND_DES_VELO_TOL (Spindle speed tolerance)

NC/PLC interface signal DB31, ... DBX83.5 (Spindle in setpoint range)

35510	SPIND_STOPPED_AT_IPO_START			A03, A06, A10	S1	
-	Feedrate enable for spindle stopped			BOOLEAN	Reset	
CTEQ						
-	-	FALSE	0	-	7/2	M

Description: When a spindle is stopped (M5), the path feed is disabled (positioning axes continue traversing) if MD35510 \$MA_SPIND_STOPPED_AT_IPO_START is enabled and the spindle is in control mode.

When the spindle has come to a standstill (NC/PLC interface signal DB31, ... DBX61.4 (Axis/spindle stationary) enabled), the path feed is enabled.

Related to:

MD35500 \$MA_SPIND_ON_SPEED_AT_IPO_START (feed enable for spindle in setpoint range)

35550	DRILL_VELO_LIMIT			A06, A11, A04	-	
rev/min	Maximum speeds for tapping			DOUBLE	NEW CONF	
CTEQ						
-	6	10000., 10000., 10000., 10000., 10000., 10000.	0.1	1.0E+301	7/2	M

Description: Limit speed values for tapping without compensating chuck with G331/G332.

The maximum speed of the linear motor characteristic range (constant acceleration capacity) must be specified depending on the gear stage.

3.3 NC machine data

35590	PARAMSET_CHANGE_ENABLE			EXP, A05	TE3, A2, S1, Z1	
-	Parameter set can be changed			BYTE	PowerOn	
CTEQ						
-	-	0	0	2	7/2	M

Description: 0: Parameter set changes cannot be controlled.

For axes and spindles in axis mode: The first parameter set is always active. In the case of spindles the parameter set is set as appropriate for the gear stage (1st gear stage uses 2nd parameter set). Exceptions: See below.

1: The parameter set applied in the servo is defined via the VDI interface or SCPARA. Parameter sets 1 to 6 can be selected. Sets are selected using the NC/PLC interface signal DB31, ... DBX9.0 - .2 (selection of parameter set servo A, B, C) in the binary-coded value range 0 to 5. Binary values 6 and 7 select parameter set no. 6. Exceptions: See below.

For 0 and 1:

With G33, G34, G35, G331, G332, the parameter set number for the axes involved is activated in accordance with the master spindle gear stage, increased by one (corresponds with parameter set numbers 2 to 6).

For spindles, parameter sets 2 to 6 are always active, depending on the set gear stage plus one.

2: The parameter set is only ever defined via the VDI interface or SCPARA. Parameter sets 1 to 6 can be selected. Sets are selected using the NC/PLC interface signal DB31, ... DBX9.0 - .2 (selection of parameter set servo A, B, C) in the binary-coded value range 0 to 5. Binary values 6 and 7 select parameter set no. 6.

Secondary conditions:

Changeover response is determined by whether the KV factor differs between the active parameter set and the new parameter set.

Changing a parameter set where the load gearbox factors differ between the active parameter set and the new parameter set will reset the referenced signal, provided that the axis has an indirect measuring system.

The parameter set contains the following axial machine data:

MD36200 \$MA_AX_VELO_LIMIT

MD32200 \$MA_POSCTRL_GAIN

MD32800 \$MA_EQUIV_CURRCTRL_TIME

MD32810 \$MA_EQUIV_SPEEDCTRL_TIME

MD32910 \$MA_DYN_MATCH_TIME

MD31050 \$MA_DRIVE_AX_RATIO_DENOM

MD31060 \$MA_DRIVE_AX_RATIO_NUMERA

Corresponds with:

NC/PLC interface signals DB31, ... DBX9.0 - .2 (selection of parameter set servo A, B, C) and DB31, ... DBX69.0 - .2 (selected parameter set servo A, B, C)

References:

/FB/, H2, "Output of Auxiliary Functions to PLC"

36000	STOP_LIMIT_COARSE			A05	TE1, A3, B1, G2, S1, Z1	
mm, degrees	Exact stop coarse			DOUBLE	NEW CONF	
-						
-	-	0.04, 0.04, 0.04, 0.04, 0.04, 0.04, 0.04, 0.04...	0.0	1.0E+301	7/2	M

Description: Threshold for exact stop coarse

An NC block is considered as terminated if the actual position of the path axes is away from the setpoint position by the value entered for the exact stop limit. If the actual position of a path axis is not within this limit, the NC block is considered as not terminated, and further part program execution is not possible. The magnitude of the value entered influences the transition to the next block. The larger the value, the earlier the block change is initiated.

If the specified exact stop limit is not reached, then

- the block is considered as not terminated,
- further traversing of the axis is not possible,
- alarm 25080 Positioning monitoring is output after expiry of the time specified in MD36020 \$MA_POSITIONING_TIME (monitoring time for exact stop fine),
- the direction of movement +/- is indicated for the axis in the positioning display. The exact stop window is also evaluated for spindles in position control mode (SPCON instruction).

Special cases:

MD36000 \$MA_STOP_LIMIT_COARSE must not be set smaller than MD36010 \$MA_STOP_LIMIT_FINE (exact stop fine). To achieve the identical block change behavior as with the "exact stop fine" criterion, the exact stop coarse window may be identical to the exact stop fine window. MD36000 \$MA_STOP_LIMIT_COARSE must not be set equal to or greater than MD36030 \$MA_STANDSTILL_POS_TOL (standstill tolerance).

Related to:

MD36020 \$MA_POSITIONING_TIME (delay time, exact stop fine)

36010	STOP_LIMIT_FINE			A05	TE1, A3, B1, D1, G2, S1, Z1		
mm, degrees	Exact stop fine			DOUBLE	NEW CONF		
-							
-	-	0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01...	0.0	1.0E+301	7/2	M	

Description:

Threshold for exact stop fine

See also MD36000 \$MA_STOP_LIMIT_COARSE (exact stop coarse)

Special cases:

MD36010 \$MA_STOP_LIMIT_FINE must not be set greater than MD36000

\$MA_STOP_LIMIT_COARSE (exact stop coarse).

MD36010 \$MA_STOP_LIMIT_FINE must not be set greater than or equal to MD36030

\$MA_STANDSTILL_POS_TOL (standstill tolerance).

Related to:

MD 36020: \$MA_POSITIONING_TIME (delay time, exact stop fine)

36012	STOP_LIMIT_FACTOR			A05	G1, A3, B1, G2, S1, Z1	
-	Factor for exact stop coarse/fine and standstill			DOUBLE	NEW CONF	
-						
-	6	1.0, 1.0, 1.0, 1.0, 1.0, 1.0	0.001	1000.0	7/2	M

Description:

With this factor,

MD36000 \$MA_STOP_LIMIT_COARSE,

MD36010 \$MA_STOP_LIMIT_FINE,

MD36030 \$MA_STANDSTILL_POS_TOL

can be re-assessed as a function of the parameter set. The relationship between these three values always remains the same.

Application examples:

Adapting the positioning behavior if the mass relationships change significantly with a gear change, or if it is desired to save on machine positioning time at the cost of accuracy in various operating conditions.

3.3 NC machine data

Related to:

MD36000 \$MA_STOP_LIMIT_COARSE,

MD36010 \$MA_STOP_LIMIT_FINE,

MD36030 \$MA_STANDSTILL_POS_TOL

36020	POSITIONING_TIME	A05	TE1, A3, B1, G2
s	Delay time exact stop fine	DOUBLE	NEW CONF
-			
-	-	1.0	0.0
-	-	1.0E+301	7/2
-	-		M

Description:

The following error must have reached the limit value for exact stop fine by the expiry of the time entered in this MD for traveling into the position (position setpoint has reached the destination).

The current following error is therefore continuously monitored for the time limit MD36010 \$MA_STOP_LIMIT_FINE. If this time is exceeded, alarm 25080 "Positioning monitoring" is output, and the axis stopped. The time entered in this MD should be long enough to ensure that the monitoring function is not triggered under normal operating conditions, taking into account any settling times.

Related to:

MD 36010: \$MA_STOP_LIMIT_FINE (exact stop fine)

36030	STANDSTILL_POS_TOL	A05	G1, A3, D1, G2
mm, degrees	Standstill tolerance	DOUBLE	NEW CONF
-			
-	-	0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2...	0.0
-	-	1.0E+301	7/2
-	-		M

Description:

This MD serves as a tolerance band for the following monitoring functions:

- After termination of a traversing block (position partial setpoint=0 at the end of the movement), whether the following error has reached the limit value for MD36030 \$MA_STANDSTILL_POS_TOL (standstill tolerance) is monitored after the programmable MD36040 \$MA_STANDSTILL_DELAY_TIME (delay time, standstill monitoring).
- After termination of a positioning action (exact stop fine reached), positioning monitoring is replaced by standstill monitoring. The axis is monitored for moving from its position by more than defined in MD36030 \$MA_STANDSTILL_POS_TOL (standstill tolerance).

If the setpoint position is over- or undershot by the standstill tolerance, alarm 25040 "Standstill monitoring" is output and the axis stopped.

Special cases:

The standstill tolerance must be greater than the "exact stop limit coarse".

Related to:

MD36040 \$MA_STANDSTILL_DELAY_TIME (delay time, standstill monitoring)

36040	STANDSTILL_DELAY_TIME	A05	TE1, A3, F1, G2
s	Delay time for standstill monitoring	DOUBLE	NEW CONF
-			
-	-	0.4	0.0
-	-	1.0E+301	7/2
-	-		M

Description:

See MD36030 \$MA_STANDSTILL_POS_TOL (standstill tolerance)

36042	FOC_STANDSTILL_DELAY_TIME	A05	F1
s	Delay time for standstill monitoring w/ active torque or force limitation.	DOUBLE	NEW CONF
-			
-	-	0.4	0.0
-	-	1.0E+301	7/2
-	-		M

Description: Only for PROFIdrive telegrams including a torque/force limiting value:
 Waiting time between the end of a movement and activation of standstill monitoring with active torque/force limitation.
 If the configurable end of block criterion occurs within this time, then standstill monitoring is activated.

36050	CLAMP_POS_TOL	A05	A3, D1, Z1
mm, degrees	Clamping tolerance	DOUBLE	NEW CONF
-			
-	-	0.5	0.0
		1.0E+301	7/2
			M

Description: With NC/PLC interface signal DB31, ... DBX2.3 (Blocking action active), blocking monitoring is activated. If the monitored axis is forced away from the setpoint position (exact stop limit) by more than the blocking tolerance, alarm 26000 "Blocking monitoring" is output and the axis stopped.
 Threshold value for clamping tolerance (half width of window).
 Special cases:
 The clamping tolerance must be greater than the "exact stop limit coarse".
 Related to:
 NC/PLC interface signal DB31, ... DBX2.3 (Blocking action active)

36051	CLAMP_POS_TOL_TIME	A05	A3, D1, Z1
s	Alarm delay time for clamping monitoring	DOUBLE	NEW CONF
-			
-	-	0.0	0.0
		1.0E+301	7/2
			M

Description: The MD defines the length of time for which the clamping tolerance can be exceeded before alarm 26000 "Clamping monitoring" is output.
 If the clamping tolerance is exceeded before the expiry of this time, the user is first informed via the NC/PLC interface signal DB31, ... DBX102.3 (Clamping tolerance exceeded) (without alarm)
 If the clamping tolerance is undershot before the expiry of this time, the clamping monitoring is reset with the NC/PLC interface signal DB31, ... DBX102.3 (Clamping tolerance exceeded) (without alarm)
 See MD36050 \$MA_CLAMP_POS_TOL (clamping tolerance).
 Related to:
 NC/PLC interface signal DB31, ... DBX2.3 (Clamping process active)
 NC/PLC interface signal DB31, ... DBX102.3 (Clamping tolerance exceeded)

36052	STOP_ON_CLAMPING	A10	A3
-	Special functions with clamped axis	UBYTE	NEW CONF
CTEQ			
-	-	0	0
		0x07	2/1
			M

Description: This MD defines how a blocked axis is taken into account.
 Bit 0 =0:
 If a blocked axis is to be traversed again in continuous-path mode, it must be ensured via the part program that the path axes are stopped and that there is time for releasing the blockage.
 Bit 0 =1:
 If a blocked axis is to be traversed again in continuous-path mode, the LookAhead function stops the path motion if required until the position controller is allowed to traverse the blocked axis again, i.e. until the controller enable is set again.
 Bit 1 is relevant only if bit 0 is set:
 Bit 1 =0:

3.3 NC machine data

If a blocked axis is to be traversed again in continuous-path mode, the LookAhead function does not release the blockage.

Bit 1 =1:

If a blocked axis is to be traversed again in continuous-path mode, a traversing command for the blocked axis is given in the preceding G0 blocks so that the PLC releases the axis blockage again.

Bit 2 =0:

If an axis is to be blocked in continuous-path mode, it must be ensured in the part program that the path axes are stopped to make sure that there is time for setting the blockage.

Bit 2 =1:

If an axis is to be blocked in continuous-path mode, the LookAhead function stops the path motion prior to or in the next non-G0 block, if the axis has not yet been blocked by that time, i.e. the PLC has not yet set the feedrate override to zero.

36060	STANDSTILL_VELO_TOL			A05, A04	TE1, A2, A3, D1, Z1	
mm/min, rev/min	Threshold velocity/speed 'Axis/spindle in stop'			DOUBLE	NEW CONF	
-						
-	-	(5.0/ 1.0), (5.0/ 1.0), (5.0/ 1.0), (5.0/ 1.0), (5.0/ 1.0), (5.0...	(0./ 0.)	(MD_DBLMAX/ MD_DBLMAX)	7/2	M

Description:

This MD defines the standstill range for the axis velocity / spindle speed. If the actual velocity of the axis or the actual speed of the spindle is less than the value entered in this MD, the NC/PLC interface signal DB31, ... DBX61.4 (Axis/spindle stationary) is set.

To bring the axis/spindle to a standstill under control, the pulse enable should not be removed until the axis/spindle is at a standstill. Otherwise it will coast down.

In order to obtain robust stationary information in the NC/PLC interface signal DB31, ... DBX61.4 (axis/spindle stationary), fluctuations in the axis velocity or the spindle speed in comparison to the average value in the software are more strongly evaluated by the ratio between MD10071 \$MN_IPO_CYCLE_TIME and MD10061 \$MN_POSCTRL_CYCLE_TIME.

For a robust threshold setting, the maximum fluctuation in axis velocity or spindle speed observed at a standstill must be multiplied by this ratio.

Related to:

NC/PLC interface signal DB31, ... DBX61.4 (Axis/spindle stationary)

36100	POS_LIMIT_MINUS			A03, A05, A11	TE1, R2, T1, A3, Z1	
mm, degrees	1st software limit switch minus			DOUBLE	NEW CONF	
CTEQ						
-	-	-1.0e8, -1.0e8, -1.0e8, -1.0e8, -1.0e8, -1.0e8, -1.0e8, -1.0e8...	-1.0E+301, -1.0E +301, -1.0E +301, -1.0E +301, -1.0E +301, -1.0E +301...	1.0E+301, 1.0E +301, 1.0E+301, 1.0E+301, 1.0E +301, 1.0E+301, 1.0E...	7/2	M

Description:

Same meaning as 1st software limit switch plus, however the traversing range limitation is in the negative direction.

The MD becomes active after reference point approach if the NC/PLC interface signal DB31, ... DBX12.2 (2nd software limit switch minus) is not set.

MD irrelevant:

if axis is not referenced.

Related to:

NC/PLC interface signal DB31, ... DBX12.2 (2nd software limit switch minus)

36110	POS_LIMIT_PLUS			A03, A05, A11	TE1, R2, T1, G2, A3, Z1	
mm, degrees	1st software limit switch plus			DOUBLE	NEW CONF	
CTEQ						
-	-	1.0e8, 1.0e8, 1.0e8, 1.0e8, 1.0e8, 1.0e8, 1.0e8, 1.0e8...	-1.0E+301, -1.0E +301, -1.0E +301, -1.0E +301, -1.0E +301, -1.0E +301...	1.0E+301, 1.0E +301, 1.0E+301, 1.0E+301, 1.0E +301, 1.0E+301, 1.0E...	7/2	M

Description: A software limit switch can be activated in addition to the hardware limit switch. The absolute position in the machine axis system of the positive range limit of each axis is entered.

The MD is active after reference point approach if NC/PLC interface signal DB31, ... DBX12.3 (2nd software limit switch plus) has not been set.

MD irrelevant:

if axis is not referenced.

Related to:

NC/PLC interface signal DB31, ... DBX12.3 (2nd software limit switch plus)

36120	POS_LIMIT_MINUS2			A03, A05	TE1, A3, Z1	
mm, degrees	2nd software limit switch minus			DOUBLE	NEW CONF	
CTEQ						
-	-	-1.0e8	-1.0E+301	1.0E+301	7/2	M

Description: Same meaning as 2nd software limit switch plus, but the traversing range limitation is in the negative direction.

The PLC can select whether software limit switch 1 or 2 is to be active by means of the interface signal.

For example:

DB31, ... DBX12.2 = 0 (1st software limit switch minus) active for 1st axis

DB31, ... DBX12.2 = 1 (2nd software limit switch minus) active for 1st axis

MD irrelevant:

if axis is not referenced.

Related to:

NC/PLC interface signal DB31, ... DBX12.2 (2nd software limit switch minus)

36130	POS_LIMIT_PLUS2			A03, A05	TE1, A3, Z1	
mm, degrees	2nd software limit switch plus			DOUBLE	NEW CONF	
CTEQ						
-	-	1.0e8	-1.0E+301	1.0E+301	7/2	M

Description: This machine data can define a 2nd software limit switch position in the positive direction in the machine axis system. The PLC can select which of the two software limit switches 1 or 2 is to be active by means of an interface signal.

For example:

DB31, ... DBX12.3 = 0 (1st software limit switch plus) active for 1st axis

DB31, ... DBX12.3 = 1 (2nd software limit switch plus) active for 1st axis

MD irrelevant:

if axis is not referenced.

Related to:

NC/PLC interface signal DB31, ... DBX12.3 (2nd software limit switch plus)

3.3 NC machine data

36200	AX_VELO_LIMIT			A05, A11, A04	TE3, A3, G2, S1, V1	
mm/min, rev/min	Threshold value for velocity monitoring			DOUBLE	NEW CONF	
CTEQ						
-	6	-	(0./ 0.)	(MD_DBLMAX/ MD_DBLMAX)	7/2	M

Description: The threshold value for actual velocity monitoring is entered in this machine data.
If the axis has at least one active encoder and if this encoder is below its limit frequency, alarm 25030 "Actual velocity alarm limit" is triggered when the threshold value is exceeded, and the axis is stopped.

Settings:

- For axes, a value should be selected that is 10-15 % higher than that in MD32000 \$MA_MAX_AX_VELO (maximum axis velocity).

When temperature compensation is active MD32750 \$MA_TEMP_COMP_TYPE, the maximum axis velocity is increased by an additional factor, which is obtained from MD32760 \$MA_COMP_ADD_VELO_FACTOR (velocity increase as a result of compensation). Therefore, the following should apply for the threshold value of the velocity monitoring:

MD36200 \$MA_AX_VELO_LIMIT[n] > MD32000 \$MA_MAX_AX_VELO * (1,1 ... 1,15 + MD32760 \$MA_COMP_ADD_VELO_FACTOR)

- For spindles, a value should be selected for each gear stage that is 10-15 % above MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT[n] (maximum speed of the gear stage).

The index of the machine data has the following coding: [control parameter set no.]: 0-5

36210	CTRLOUT_LIMIT			EXP, A05	A3, D1, G2	
%	Maximum speed setpoint			DOUBLE	NEW CONF	
CTEQ						
-	1	110.0	0	200	7/2	M

Description: This MD defines the maximum speed setpoint in percent. 100% is the maximum speed setpoint, this corresponds to 10 V for an analog interface or the maximum speed for PROFIdrive drives (manufacturer-specific adjustable parameter in the drive, e.g. p1082 and p2000 for SINAMICS).

The maximum speed setpoint depends on whether there are any setpoint limitations in the speed and current controller.

An alarm is output and the axis is stopped when the limit is exceeded.

The limit must be selected so that the maximum velocity (rapid traverse) can be reached, and an appropriate additional control margin is available.

Note: If a value corresponding to the upper limit (200%) is entered, this value is automatically corrected by the system to 199,9999%. This correction is made for technical reasons.

36220	CTRLOUT_LIMIT_TIME			EXP, A05	A3	
s	Delay time for speed setpoint monitoring			DOUBLE	NEW CONF	
-						
-	1	0.0	0.0	1.0E+301	7/2	M

Description: This MD defines how long the speed setpoint may be within the limit CTRLOUT_LIMIT[n] (max. speed setpoint) until the monitoring function is triggered.

Monitoring (and with it also this machine data) is always active.

Reaching the limit renders the position control loop non-linear, which results in contour errors provided that the speed setpoint limited axis is participating in contour generation. That is why this MD has default value 0, i.e. the monitoring function responds as soon as the speed setpoint reaches the limit.

36300	ENC_FREQ_LIMIT			EXP, A02, A05, A06	A3, D1, R1, Z1	
-	Encoder limit frequency			DOUBLE	PowerOn	
-						
-	2	3.0e5, 3.0e5	0.0	1.0E+301	7/2	M

Description: This MD is used to enter the encoder frequency, which, in general, is a manufacturer specification (type plate, documentation).
For PROFIdrive:
No automatic, software-internal limitation for encoders on the PROFIdrive drive; here, the limit values of the measuring circuit module depend on the drive hardware used, i.e. known only by the drive. Therefore, it is the user who is responsible for taking into account the limit frequency of the measuring circuit module.

36302	ENC_FREQ_LIMIT_LOW			EXP, A02, A05, A06	A3, R1, S1, Z1	
%	Encoder limit frequency for new encoder synchronization.			DOUBLE	NEW CONF	
-						
-	2	99.9, 99.9	0	100	7/2	M

Description: Encoder frequency monitoring uses a hysteresis.
MD36300 \$MA_ENC_FREQ_LIMIT defines the encoder limit frequency. The encoder is deactivated when this frequency is exceeded. The encoder is re-activated when the frequency falls below that defined in MD36302 \$MA_ENC_FREQ_LIMIT_LOW.
MD36300 \$MA_ENC_FREQ_LIMIT is entered directly in Hertz, whereas MD36302 \$MA_ENC_FREQ_LIMIT_LOW is a fraction, expressed as a percentage of MD36300 \$MA_ENC_FREQ_LIMIT.
MD36302 \$MA_ENC_FREQ_LIMIT_LOW is therefore already correctly preset for most of the encoders used.
Exception: In the case of absolute encoders with an En-Dat interface, the limit frequency of the absolute track is significantly lower than the limit frequency of the incremental track. A low value in MD36302 \$MA_ENC_FREQ_LIMIT_LOW ensures that the encoder is not re-activated until it falls below the limit frequency of the absolute track, and therefore is not referenced until permitted by the absolute track. For spindles, this referencing is carried out automatically.
Example EnDat encoder EQN 1325:
Limit frequency of the electronics of the incremental track: 430 kHz
====> MD36300 \$MA_ENC_FREQ_LIMIT = 430 kHz
The limit frequency of the absolute track is approx. 2000 encoder rpm at 2048 increments/encoder revolution, i.e. the limit frequency is $2000/60 * 2048 \text{ Hz} = 68 \text{ kHz}$
====> MD36302 \$MA_ENC_FREQ_LIMIT_LOW = $68/430 = 15\%$

36310	ENC_ZERO_MONITORING			EXP, A02, A05	A3, R1	
-	Zero mark monitoring			DWORD	NEW CONF	
-						
-	2	0, 0	0	-	7/2	M

Description: This MD is used to activate zero mark monitoring.
For PROFIdrive drives (the corresponding diagnostics system variables are not currently supplied for incremental measuring systems):
For PROFIdrive, the permissible deviation must be set in the drive, *not* in the NC. Zero mark monitoring reported by the drive is mapped to the NCK according to the following rule:
0: no zero mark monitoring

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100: no zero mark monitoring together with suppression of all encoder monitoring operations, i.e. not only alarm 25020 but also alarms 25000, 25010 etc. are suppressed.
 >0 but less than 100: direct triggering of power ON alarm 25000 (or 25001).
 >100: attenuated error message: reset alarm 25010 (25011) is output instead of power ON alarm 25000 (25001).

For absolute measuring systems (MD30240 \$MA_ENC_TYPE=4):

Permissible deviation in 1/2 coarse increments between the absolute and the incremental encoder track (one 1/2 coarse increment is sufficient).

36312	ENC_ABS_ZEROMON_WARNING			EXP, A02, A05	A3	
-	Zero mark monitoring warning level			DWORD	NEW CONF	
-						
-	2	10, 10	0	-	7/2	M

Description: Only for absolute measuring systems (MD30240 \$MA_ENC_TYPE=4):
 This MD activates the absolute encoder zero mark diagnostics.
 Only relevant if MD36310 \$MA_ENC_ZERO_MONITORING=0.
 0: No zero mark diagnostics
 >0: Permissible deviation in 1/2 coarse increments between the absolute and the incremental encoder track (one 1/2 coarse increment is sufficient).

36314	ENC_ABS_ZEROMON_INITIAL			EXP, A02, A05	A3	
-	Warning level for absolute encoder power ON			DWORD	NEW CONF	
-						
-	2	1000, 1000	0	-	7/2	M

Description: Only for absolute measuring systems (MD30240 \$MA_ENC_TYPE=4):
 Parameterization in 1/2 coarse increments
 At absolute encoder power ON (deselect parking and similar) this MD parameterizes the previously permissible position offset (comparison of the new absolute position with the information last saved in SRAM). When the warning level is exceeded, system variable \$VA_ENC_ZERO_MON_ERR_CNT is incremented in coarse increments by the value 10000.

36400	CONTOUR_TOL			A05, A11	A3, D1, G2	
mm, degrees	Tolerance band for contour monitoring			DOUBLE	NEW CONF	
-						
-	-	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0...	0.0	1.0E+301	7/2	M

Description: Tolerance band for axial contour monitoring (dynamic following error monitoring).
 The permissible deviation between the real and the modelled following error is entered in this MD.
 The input of the tolerance band is intended to avoid spurious tripping of the dynamic following error monitoring caused by minor speed fluctuations, which occur during normal closed-loop control operations (e.g. during first cut).
 Following error modelling and thus the input of this MD depend on the position control gain MD32200 \$MA_POSCTRL_GAIN
 and, in the case of precontrol or simulation, on the accuracy of the controlled system model MD32810 \$MA_EQUIV_SPEEDCTRL_TIME (equivalent time constant for precontrol of speed control loop), as well as on the accelerations and velocities used.

36500	ENC_CHANGE_TOL	A02, A05	G1, K6, K3, A3, D1, G2, Z1
mm, degrees	Tolerance at actual position value change.	DOUBLE	NEW CONF
-			
-	-	0.1	0.0
		1.0E+301	7/2
			M

Description:

The permissible deviation between the actual values of the two measuring systems is entered in this MD.

This difference must not be exceeded when switching over the measuring system used for closed-loop control, in order to avoid compensating processes that are too strong. Otherwise, the error message 25100 "Axis %1 Switchover of measuring system not possible" is generated and the switchover does not take place.

This MD is relevant only if MD30200 \$MA_NUM_ENC_S = 2.

MD36500 also limits, in the form of a ramp, the rate of change of the backlash compensation values in MD32450 \$MA_BACKLASH. The limitation depends on the setting of the position controller cycle. The lower the value in MD36500, the longer the duration of the backlash compensation during the change of direction.

This MD is relevant only if MD30200 \$MA_NUM_ENC_S = 1 or 2.

36510	ENC_DIFF_TOL	A02, A05	A3, G2
mm, degrees	Tolerance of measuring system synchronization	DOUBLE	NEW CONF
-			
-	-	0.0	0.0
		1.0E+301	7/2
			M

Description:

Permissible deviation between the actual values of the two measuring systems. This difference must not be exceeded during the cyclic comparison of the two measuring systems used, as otherwise error message 25105 (measuring systems deviate) would be generated.

The corresponding monitoring function is not active

- with MD input value=0,
- if less than 2 measuring systems are active/available in the axis
- or if the axis has not been referenced (at least act. closed-loop control meas. system).

With modulo axes, it is always the absolute value of the shortest/direct position difference that is monitored.

36520	DES_VELO_LIMIT	A02, A05	-
%	Threshold for setpoint velocity monitoring	DOUBLE	NEW CONF
-			
-	-	125.0	0.0
		1.0E+301	7/2
			M

Description:

Maximum permissible setpoint velocity as a percentage of the maximum axis velocity/spindle speed.

With MD36520 \$MA_DES_VELO_LIMIT, the position setpoint is monitored for abrupt changes. If the permissible limit value is exceeded, alarm 1016 error code 550010 is output.

With axes, this machine data refers to MD32000 \$MA_MAX_AX_VELO.

With spindles, this MD refers to the lower of the speeds set in

MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT of the current gear stage and MD35100 \$MA_SPIND_VELO_LIMIT.

36600	BRAKE_MODE_CHOICE	EXP, A05	A3, Z1
-	Deceleration response on hardware limit switch	BYTE	PowerOn
CTEQ			
-	-	1	0
		1	7/2
			M

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Description: If a rising edge of the axis-specific hardware limit switch is detected while the axis is traversing, the axis is braked immediately.

The type of braking is determined by this machine data:

Value = 0:

Controlled braking along the acceleration ramp defined by MD32300 \$MA_MAX_AX_ACCEL (axis acceleration).

Value = 1:

Rapid braking (selection of setpoint = 0) with reduction of following error.

Related to:

NC/PLC interface signal DB31, ... DBX12.1 / 12.0 (Hardware limit switch plus or minus)

36610	AX_EMERGENCY_STOP_TIME			A05	TE3, K3, A2, A3, N2, Z1	
s	Maximum time for braking ramp in case of error.			DOUBLE	NEW CONF	
-						
-	-	0.05	0.0	1.0e15	7/2	M

Description: This MD defines the braking ramp time that an axis or spindle requires to brake from maximum velocity/speed to a standstill in the event of errors (e.g. EMERGENCY STOP). At the same lead/brake acceleration, standstill is reached correspondingly earlier from lower velocities/speeds.

Mechanically robust axes are normally stopped abruptly with speed setpoint 0; values in the lower ms range are appropriate in these cases (default setting).

However, high moving masses or limited mechanical conditions (e.g. gear load capacity) often have to be taken into account for spindles. This means that the MD has to be changed to set a longer braking ramp.

Notice:

- With interpolating axes or axis/spindle couplings, it cannot be ensured that the contour or coupling will be maintained during the braking phase.
- If the time set for the braking ramp for error states is too long, the controller enable will be removed although the axis/spindle is still moving. Depending on the drive type used and the activation of the pulse enable, either an immediate stop with speed setpoint 0 will be initiated or the axis/spindle will coast down without power. The time selected in MD36610 \$MA_AX_EMERGENCY_STOP_TIME should therefore be shorter than the time in MD36620 \$MA_SERVO_DISABLE_DELAY_TIME (cutout delay, controller enable) so that the configured braking ramp can be fully active throughout the entire braking operation.
- The braking ramp may be ineffective or not maintained if the active drive follows its own braking ramp logic (e.g. SINAMICS).

Related to:

MD36620 \$MA_SERVO_DISABLE_DELAY_TIME (cutout delay controller enable)

MD36210 \$MA_CTRLOUT_LIMIT (maximum speed setpoint)

36620	SERVO_DISABLE_DELAY_TIME			A05	TE3, K3, A2, A3, N2, Z1	
s	Cutout delay servo enable			DOUBLE	NEW CONF	
-						
-	-	0.1	0.0	1.0e15	7/2	M

Description: Maximum time delay for removal of "controller enable" after faults. The speed enable (controller enable) of the drive is removed internally within the controller after the set delay time, at the latest.

The delay time entered becomes active as a result of the following events:

- Errors that lead to immediate stopping of the axes
- Removal of the interface signal DB31, ... DBX2.1 (Controller enable) from the PLC

As soon as the actual speed reaches the standstill range (MD36060 \$MA_STANDSTILL_VELO_TOL), the "controller enable" for the drive is removed. The time set should be long enough to enable the axis / spindle to brake down to a standstill from maximum traversing velocity or maximum speed. If the axis / spindle is stationary, the "controller enable" for the drive is removed immediately (i.e. the time defined in MD36620 \$MA_SERVO_DISABLE_DELAY_TIME is terminated prematurely).

Application example(s):

Speed control of the drive should be retained long enough to enable the axis / spindle to brake down to standstill from maximum traversing velocity or maximum speed.

Notice:

If the cutout delay controller enable is set too short, controller enable will be removed although the axis/spindle is still moving. This axis/spindle then coasts down without power (which may be appropriate for grinding wheels, for example); otherwise the time set in MD36620 \$MA_SERVO_DISABLE_DELAY_TIME should be longer than the duration of the braking ramp for error states (MD36610 \$MA_AX_EMERGENCY_STOP_TIME).

Related to:

NC/PLC interface signal DB31, ... DBX2.1 (Controller enable)

MD36610 \$MA_AX_EMERGENCY_STOP_TIME

For SINAMICS drives: Drive parameter P1082 (maximum speed / velocity)

36700	DRIFT_ENABLE			EXP, A07, A09	G2	
-	Automatic drift compensation			BOOLEAN	NEW CONF	
-						
-	-	FALSE	0	-	1/1	M

Description: Only for special analog and hydraulic drives (not active with PROFIdrive drives):
Automatic drift compensation is activated with MD36700 \$MA_DRIFT_ENABLE.
1: Automatic drift compensation active (only for position-controlled axes/spindles).
With automatic drift compensation, while the axis is at a standstill, the control continually calculates the additional drift value still required to ensure that the following error reaches the value 0 (compensation criterion). The total drift value is, therefore, formed from the drift basic value (MD36720 \$MA_DRIFT_VALUE) and the drift additional value.
0: Automatic drift compensation not active.
The drift value is formed only from the drift basic value (MD36720 \$MA_DRIFT_VALUE).
Not relevant for:
Non-position-controlled spindles
Related to:
MD36710 \$MA_DRIFT_LIMIT drift limit value for automatic drift compensation
MD36720 \$MA_DRIFT_VALUE drift basic value

36710	DRIFT_LIMIT			EXP, A07, A09	-	
%	Drift limit value for automatic drift compensation			DOUBLE	NEW CONF	
-						
-	1	0.0	0	1.e9	1/1	M

Description: Only for special analog and hydraulic drives (not active with PROFIdrive drives):
The magnitude of the drift additional value calculated during automatic drift compensation can be limited with MD36710 \$MA_DRIFT_LIMIT.
If the drift additional value exceeds the limit value entered in MD36710 \$MA_DRIFT_LIMIT, alarm 25070 "Drift value too large" is output and the drift additional value is limited to this value.
Not relevant for:
MD36700 \$MA_DRIFT_ENABLE = 0

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36720	DRIFT_VALUE			EXP, A07, A09	-	
%	Basic drift value			DOUBLE	NEW CONF	
-						
-	1	0.0	-1e15	1e15	1/1	M

Description: Only for special analog and hydraulic drives (not active with PROFIdrive drives):
The value entered in MD36720 \$MA_DRIFT_VALUE is always added as an offset to the manipulated variable. Whereas automatic drift compensation is active only for position-controlled axes, this machine data is always active.
Special case: the following applies to PROFIdrive drives:
This MD can also be used for "simple" drives that have drift problems due to drive-internal implementation as analog drives. To avoid erroneous settings, this static drift compensation only becomes active with PROFIdrive if MD32250 \$MA_RATED_OUTVAL != 0 (i.e. the MD has no effect in the case of automatic interface adjustment between the NC and the drive).
Note:
Drift compensation must not be active if the DSC function (MD32640 \$MA_STIFFNESS_CONTROL_ENABLE=1) is being used, otherwise unexpected speed oscillations will occur when DSC is enabled/disabled.
Standardization: The input value is related to the corresponding interface standardization in
MD32250 \$MA_RATED_OUTVAL,
MD32260 \$MA_RATED_VELO, and
MD36210 \$MA_CTRLOUT_LIMIT.

36730	DRIVE_SIGNAL_TRACKING			A10	B3	
-	Acquisition of additional drive actual values			BYTE	PowerOn	
-						
-	-	0	0	4	7/2	M

Description: MD36730 \$MA_DRIVE_SIGNAL_TRACKING = 1 activates the acquisition of the following drive actual values (if they are made available by the drive):

- \$AA_LOAD Drive load
- \$AA_POWER Drive active power
- \$AA_TORQUE Drive torque setpoint
- \$AA_CURR Smoothed current setpoint (q-axis current) of drive

MD36730 \$MA_DRIVE_SIGNAL_TRACKING = 2 activates the acquisition of the following drive actual values:

With PROFIdrive, it must be ensured that the stated values are also transmitted in the drive actual message frame (provide sufficient message frame length on the bus, assign the values to the message frame content in the drive, e.g. use message frame 116).

- \$VA_DP_ACT_TEL shows actual value message frame words

Note: Values 3 and 4 are reserved

Note: The value range of MD36730 \$MA_DRIVE_SIGNAL_TRACKING can be restricted because of reduced functions of control systems

36750	AA_OFF_MODE			A10	2.4, 5.3, 6.2	
-	Effect of value assignment for axial override of synchr. action.			UBYTE	PowerOn	
CTEQ						
-	-	0	0	0xF	7/2	M

Description: Mode setting for axial offset \$AA_OFF
Bit 0: Effect of value assignment within a synchronized action
0: Absolute value

1: Incremental value (integrator)
 Bit 1: Response of \$AA_OFF on RESET
 0: \$AA_OFF is deselected on RESET
 1: \$AA_OFF is retained beyond RESET
 Bit 2: \$AA_OFF in JOG mode
 0: No superimposed motion due to \$AA_OFF
 1: A superimposed motion due to \$AA_OFF is interpolated
 Bit 3: \$AA_OFF motion remains active on NC stop
 0: Motion is interrupted on NC stop
 1: Motion remains active on NC stop

36901	SAFE_FUNCTION_ENABLE			A05	FBSI	
-	Enable safety functions			UDWORD	PowerOn	
-						
-	-	0	0	0x81FFFB	7/2	M

Description: The safe operation functions can be enabled for an axis/spindle with this data.
 For each axis, only as many axes/spindles can be enabled for safe operation as are enabled by the global option.

The more subfunctions are set, the more CPU time the safety functions need.

Bit 0: Enables safe velocity, safe operational stop

Bit 1: Enables safe limit switches

Bit 2: Reserved for functions with absolute references (such as SE/SN)

Bit 3: Enables actual value synchronization, 2-encoder system

Bit 4: Enables external ESR activation (STOP E)

Bit 5: Enables SG offset

Bit 6: Enables external stop requests

Bit 7: Enables cam synchronization

Bit 8: Enables safe cams, pair 1, cam +

Bit 9: Enables safe cams, pair 1, cam -

Bit 10: Enables safe cams, pair 2, cam +

Bit 11: Enables safe cams, pair 2, cam -

Bit 12: Enables safe cams, pair 3, cam +

Bit 13: Enables safe cams, pair 3, cam -

Bit 14: Enables safe cams, pair 4, cam +

Bit 15: Enables safe cams, pair 4, cam -

Bit 16: Enables synchronization "n < nx", hysteresis and filtering

Bit 23: Enables deactivation of SBH/SG monitoring during external stop A

Special cases:

- When one of the bits from bit 1 is set, bit 0 also has to be set because the control switches to safe operational stop with STOP C, D, E (parameterization alarm 27033 is displayed if there is an error).
- If the global option does not enable enough axes/spindles for safe operation, then this data can be overwritten with the value 0 during runup.

Related to: Global option

36902	SAFE_IS_ROT_AX			A01, A06	FBSI	
-	Rotary axis			BOOLEAN	PowerOn	
-						
-	-	FALSE	-	-	7/2	M

Description: States whether the axis for safe operation is a rotary axis/spindle or a linear axis.

3.3 NC machine data

0: Linear axis

1: Rotary axis/spindle

The value in this MD must be equal to that in MD30300 \$MA_IS_ROT_AX. A parameterization error is displayed if there is a difference.

36903	SAFE_CAM_ENABLE			A05	-	
-	Function enable safe cam track			UDWORD	PowerOn	
-						
-	-	0	0	0x3FFFFFFF	7/2	M

Description:

With this data, 30 safe cams can be enabled for the "safe cam track" function for an axis/spindle.

The enables must only be set if the cam enable in MD36901 \$MA_SAFE_FUNCTION_ENABLE is not used.

If the "safe cam track" function is enabled, cam synchronization is automatically activated with it.

Bit 0: Enables safe cam track, cam 1

Bit 1: Enables safe cam track, cam 2

Bit 2: Enables safe cam track, cam 3

Bit 3: Enables safe cam track, cam 4

Bit 4: Enables safe cam track, cam 5

Bit 5: Enables safe cam track, cam 6

Bit 6: Enables safe cam track, cam 7

Bit 7: Enables safe cam track, cam 8

Bit 8: Enables safe cam track, cam 9

Bit 9: Enables safe cam track, cam 10

Bit 10: Enables safe cam track, cam 11

Bit 11: Enables safe cam track, cam 12

Bit 12: Enables safe cam track, cam 13

Bit 13: Enables safe cam track, cam 14

Bit 14: Enables safe cam track, cam 15

Bit 15: Enables safe cam track, cam 16

Bit 16: Enables safe cam track, cam 17

Bit 17: Enables safe cam track, cam 18

Bit 18: Enables safe cam track, cam 19

Bit 19: Enables safe cam track, cam 20

Bit 20: Enables safe cam track, cam 21

Bit 21: Enables safe cam track, cam 22

Bit 22: Enables safe cam track, cam 23

Bit 23: Enables safe cam track, cam 24

Bit 24: Enables safe cam track, cam 25

Bit 25: Enables safe cam track, cam 26

Bit 26: Enables safe cam track, cam 27

Bit 27: Enables safe cam track, cam 28

Bit 28: Enables safe cam track, cam 29

Bit 29: Enables safe cam track, cam 30

Related to:

MD36901: \$MA_SAFE_FUNCTION_ENABLE

36904	SAFE_ADD_FUNCTION_MASK			A05	FBSI	
-	Enable additional functions for Safety Integrated			UDWORD	PowerOn	
-						
-	-	0	0	0x1	7/2	M

Description: Bit 0: On the NCK side, braking is with stops B and C and not by the default "Speed setpoint 0". The braking on the drive side is based on the OFF3 ramp.

36905	SAFE_MODULO_RANGE			A01, A06	FBSI	
degrees	Modulo value Safe cams			DOUBLE	PowerOn	
-						
-	-	0.0	0.0	737280.0	7/2	M

Description: Actual value range in which the safe cams are calculated for rotary axes. The axis must be a rotary axis (MD36902 \$MA_SAFE_IS_ROT_AX = 1).
 0: Modulo compensation after +/- 2048 revolutions (that is after 737,280 degrees)
 >0 And multiples of 360 degrees: Modulo compensation after this value, for example: value = 360 --> then the actual value range lies between 0 and 359.999 degrees. That is modulo compensation is made after each revolution.

Special cases:

- If the value of this data is not 0 or a multiple of 360 degrees then a corresponding alarm is issued during power on.
- The parameterized actual value ranges of the cam positions are also checked during power on. A corresponding alarm is issued if there is a parameterization error.
- The actual value ranges set by MD36905 \$MA_SAFE_MODULO_RANGE and MD30330 \$MA_MODULO_RANGE must be integers and divisible without a remainder.

Related to:

MD30330: \$MA_MODULO_RANGE

MD36935: \$MA_SAFE_CAM_POS_PLUS[n]

MD36937: \$MA_SAFE_CAM_POS_MINUS[n]

36906	SAFE_CTRLOUT_MODULE_NR			A01	-	
-	SI drive assignment			BYTE	PowerOn	
-						
-	-	1, 2, 3, 4, 5, 6, 7, 8...	1	31	7/2	M

Description: Assignment of the drive for SI motion monitoring.
 The entry refers to data field MD10393 \$MN_SAFE_DRIVE_LOGIC_ADDRESS.
 The drive assigned must be the same as the one selected using MD30110 \$MA_CTRLOUT_MODULE_NR and MD13050 \$MN_DRIVE_LOGIC_ADDRESS.

36907	SAFE_DRIVE_PS_ADDRESS			A01	-	
-	PROFIsafe address of the drive			UDWORD	PowerOn	
-						
-	-	0	0x0	0x7FFFFFFF	ReadOnly	S

Description: This NCK MD contains the PROFIsafe address of the drive assigned to this axis. This MD is read from drive parameter r9810 during power on. This address must be unique across all axes.
 This MD cannot be written, the PROFIsafe address must be parameterized in the drive.
 The value of this MD is included in the calculation of MD36998 \$MA_SAFE_ACT_CHECKSUM[2].

3.3 NC machine data

36909	SAFE_ENC_MEAS_STEPS_RESOL			A02	FBSI	
mm	Resolving measurement steps for linear absolute encoders			DOUBLE	PowerOn	
-						
-	-	0.0001	0.0	4295	ReadOnly	S

Description: Sets the resolution of the absolute position for a linear absolute encoder.

When powering up, this information for linear DRIVE-CLiQ encoders is read from drive parameter r0469 and is compared with the value last saved. This MD is then overwritten. If not equal, then alarm 27036 is output.

The value of this MD is incorporated in the checksum calculation of MD36998 \$MA_SAFE_ACT_CHECKSUM[0].

Corresponds with:

MD36913: \$MA_SAFE_ENC_MEAS_STEPS_POS1

MD36917: \$MA_SAFE_ENC_GRID_POINT_DIST

36912	SAFE_ENC_INPUT_NR			A01, A02	FBSI	
-	Actual value assignment			BYTE	PowerOn	
-						
-	-	1	1	3	7/2	M

Description: Number of the actual value input through which the safe actual values are recorded.

Related to:

p9526, p0189

36913	SAFE_ENC_MEAS_STEPS_POS1			A02	FBSI	
-	Non-safety-relevant measurement steps POS1			DWORD	PowerOn	
-						
-	-	22000	0	-	ReadOnly	S

Description: Sets the non safety-relevant measurement steps of the position value POS1.

When powering up, this information for linear DRIVE-CLiQ encoders is read out of drive parameter r0473 and compared with the value last saved here. This MD is then overwritten. If not equal, then alarm 27036 is output.

The value of this MD is incorporated in the checksum calculation of MD36998 \$MA_SAFE_ACT_CHECKSUM[0].

Corresponds with:

MD36909: \$MA_SAFE_ENC_MEAS_STEPS_RESOL

MD36917: \$MA_SAFE_ENC_GRID_POINT_DIST

36914	SAFE_SINGLE_ENC			A01, A02	-	
-	SI single-encoder system			BOOLEAN	PowerOn	
-						
-	-	TRUE	-	-	7/2	M

Description: Identifier that SI is carried out with an encoder. This MD must be parameterized to 0 if different encoders are used for the Safety Integrated monitoring functions in the NCK and in the drive.

36916	SAFE_ENC_IS_LINEAR			A02	FBSI	
-	Linear encoder			BOOLEAN	PowerOn	
-						
-	-	FALSE	-	-	7/2	M

Description: Defines whether a linear or a rotary encoder is connected.

0: Rotary encoder is connected, its resolution is defined in MD36918 \$MA_SAFE_ENC_RESOL, and converted with MD36920 \$MA_SAFE_ENC_GEAR_PITCH, MD36921 \$MA_SAFE_ENC_GEAR_DENOM[n], and MD36922 \$MA_SAFE_ENC_GEAR_NUMERA[n] on the load side. MD36917 \$MA_SAFE_ENC_GRID_POINT_DIST has no meaning.

1: Linear encoder is connected, its resolution is defined in MD36917 \$MA_SAFE_ENC_GRID_POINT_DIST. MD36918 \$MA_SAFE_ENC_RESOL, MD36920 \$MA_SAFE_ENC_GEAR_PITCH, MD36921 \$MA_SAFE_ENC_GEAR_DENOM[n], and MD36922 \$MA_SAFE_ENC_GEAR_NUMERA[n] have no meaning. If the value changes, alarm 27036 is triggered.

Related to:

With 0:

MD36918 \$MA_SAFE_ENC_RESOL

MD36920 \$MA_SAFE_ENC_GEAR_PITCH

MD36921 \$MA_SAFE_ENC_GEAR_DENOM[n]

MD36922 \$MA_SAFE_ENC_GEAR_NUMERA[n]

With 1:

MD36917 \$MA_SAFE_ENC_GRID_POINT_DIST

36917	SAFE_ENC_GRID_POINT_DIST			A02	FBSI	
mm	Scale division for linear scale			DOUBLE	PowerOn	
-						
-	-	0.01	0.00001	250	7/2	M

Description: Definition of the grid spacing of the linear scale used.
Not relevant for a rotary encoder.
Alarm 27036 is triggered if the value changes.

36918	SAFE_ENC_RESOL			A02	FBSI	
-	Encoder lines per revolution			DWORD	PowerOn	
-						
-	-	2048	1	100000000	7/2	M

Description: Definition of the lines per revolution for a rotary encoder.
Not relevant for a linear encoder.
Alarm 27036 is triggered if the value changes.

36919	SAFE_ENC_PULSE_SHIFT			A02	-	
-	Shift factor of encoder multiplication			BYTE	PowerOn	
-						
-	-	11	2	18	ReadOnly	S

Description: Slide factor of the multiplication factor (high-resolution) of the encoder used for the Safety Integrated monitoring functions in the NCK. The encoder value must be divided by 2, the number of times needed to get the number of encoder lines. A slide factor of 11 corresponds to an encoder multiplication factor of 2048. If the drive provides this information (r0979[3,13,23]), this MD is automatically assigned internally after power ON of the drive. If the value changes during this process, alarm 27036 is triggered.

36920	SAFE_ENC_GEAR_PITCH			A02	FBSI	
mm	Leadscrew pitch			DOUBLE	PowerOn	
-						
-	-	10.0	0.1	10000.	7/2	M

Description: Gear ratio between encoder and load for a linear axis with a rotary encoder.

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36921	SAFE_ENC_GEAR_DENOM			A02	FBSI	
-	Denominator of gearbox encoder/load			DWORD	PowerOn	
-						
-	8	1, 1, 1, 1, 1, 1, 1, 1	1	2147000000	7/2	M

Description: Numerator of the gearbox between encoder and load, that is the numerator of the fraction: number of encoder revolutions / number of load revolutions
 $n = 0, 1, \dots, 7$ stand for gear stages 1, 2, ... 8
The current value is selected via safety-relevant input signals (SGE).
Related to:
MD36922: \$MA_SAFE_ENC_GEAR_NUMERA[n]

36922	SAFE_ENC_GEAR_NUMERA			A02	FBSI	
-	Numerator of gearbox encoder/load			DWORD	PowerOn	
-						
-	8	1, 1, 1, 1, 1, 1, 1, 1	1	2147000000	7/2	M

Description: Numerator of the gearbox between encoder and load, that is the numerator of the fraction: number of encoder revolutions / number of load revolutions
 $n = 0, 1, \dots, 7$ stand for gear stages 1, 2, ... 8
The current value is selected via safety-relevant input signals (SGE).
Related to:
MD36921: \$MA_SAFE_ENC_GEAR_DENOM[n]

36923	SAFE_INFO_ENC_RESOL			A02, A08	-	
mm, degrees	Safe encoder resolution			DOUBLE	PowerOn	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-	-	ReadOnly	S

Description: Display data:
Resolution of the encoder used in the relevant gear stage for the Safety Integrated monitoring functions. A single encoder system can monitor safe positions with this accuracy. This MD is 0 if different encoders are used in the drive and in the NCK for the Safety Integrated monitoring functions.

36924	SAFE_ENC_NUM_BITS			A02	-	
-	Bit information of the redundant actual value			DWORD	PowerOn	
-						
-	4	16,2,16,16	-16	32	ReadOnly	S

Description: Information about the redundant actual value:

- Array index 0: Number of valid bits of the redundant actual value
- Array index 1: Number of fine resolution bits of the redundant actual value
- Array index 2: Number of relevant bits of the redundant actual value
- Array index 3: Most significant bit of the redundant coarse position

This information is read out when powering up (for DRIVE-CLiQ encoders from drive parameters p0470, p0471, p0472, and p0475; the default values apply for SMI/SMC/SME encoders) and compared with the most recent values saved here. This MD is then overwritten. In the case of inequality, alarm 27035 or 27036 is output. The values from MD36924 \$MA_SAFE_ENC_NUM_BITS[0,1] are included in the calculation of MD36998 \$MA_SAFE_ACT_CHECKSUM[1]. The values from MD36924 \$MA_SAFE_ENC_NUM_BITS[2,3] are included in the calculation of MD36998 \$MA_SAFE_ACT_CHECKSUM[0].

If the combination of several values is incorrect or the number of relevant bits (index 2) is equal to 0, then alarm 27038 is output.

36925	SAFE_ENC_POLARITY			A02	FBSI	
-	Direction reversal of actual value			DWORD	PowerOn	
-						
-	-	1	-1	1	7/2	M

Description: A direction reversal of the actual value can be set with this data.
-1: Direction reversal
0: No direction reversal or
1: No direction reversal

36926	SAFE_ENC_IS_GEAR_REVERSAL			A02	FBSI	
-	Direction reversal of gear			BOOLEAN	PowerOn	
-						
-	8	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE	-	-	7/2	M

Description: Setting the direction reversal for the gear.
0 (FALSE): No direction reversal
1 (TRUE): Direction reversal
n = 0, 1, ... 7 stand for gear stages 1, 2, ... 8
The current value is selected via safety-related input signals (SGE).

36927	SAFE_ENC_MOD_TYPE			A02	-	
-	Encoder evaluation type			BYTE	PowerOn	
-						
-	-	1	-	-	ReadOnly	S

Description: Type of encoder evaluation used for Safety Integrated on this axis.
1 = Sensor Module (SMI, SMC, SME)
2 = DRIVE-CLiQ encoder
3 = EnDatV2.2 converter
This type is read out from drive parameter r9527 when powering up. If a valid value has not been entered, alarm 27038 is output. If the drive parameter contains a valid value, this is compared with the last value stored in this MD. This MD is then overwritten. In the event of inequality, alarm 27035 is output. The value of this MD is included in the calculation of MD36998 \$MA_SAFE_ACT_CHECKSUM[1].

36928	SAFE_ENC_IDENT			A02	-	
-	Encoder identification			UDWORD	PowerOn	
-						
-	3	0, 0, 0	0x0	0xFFFFFFFF	ReadOnly	S

Description: Identification of the encoder evaluation used for Safety Integrated on this axis. This identification is read out during power-on by the encoder evaluation (drive parameter r9881), and compared with the last value stored here. This MD is then overwritten. The value of this MD is included in the calculation of MD36998 \$MA_SAFE_ACT_CHECKSUM[1].
Related to:
r9881: SI Motion Sensor Module Node Identifier second channel

36929	SAFE_ENC_CONF			A02	-	
-	Configuration of the redundant actual value			UDWORD	PowerOn	
-						
-	-	0	0x0	0x7FFFFFFF	ReadOnly	S

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Description: Configuration of the redundant actual value for DRIVE-CLiQ encoders:

Bit 0: Up-down counter

= 0: Down counter

= 1: Up counter

Bit 1: Encoder CRC: Processing of redundant coarse position

= 0: Most significant byte first

= 1: Least significant byte first

Bit 2: Redundant coarse position MSB-/LSB-justified

= 0: Redundant coarse position LSB-justified

= 1: Redundant coarse position MSB-justified

Bit 4: Binary comparison not possible

= 0: Binary comparison possible

= 1: Binary comparison not possible

This information is read out from drive parameter r0474 during ramp-up for DRIVE-CLiQ encoders, and compared with the last value stored here (the default values apply to SMI/SMC/SME encoders). This MD is then overwritten. In the event of inequality, alarm 27035 is output. The value of this MD is included in the calculation of MD36998 \$MA_SAFE_ACT_CHECKSUM[1].

If an unknown bit is set in drive parameter r0474, alarm 27038 is output. The alarm output at this location can be suppressed using MD10096 \$MN_SAFE_DIAGNOSIS_MASK, bit 3 = 1.

36930	SAFE_STANDSTILL_TOL			A05	FBSI	
mm, degrees	Standstill tolerance			DOUBLE	PowerOn	
-						
-	-	1.	0.	100.	7/2	M

Description: Definition of the tolerance for safe operational stop.

The control triggers alarm 27010 with STOP B if the difference between position limit value and actual position value is greater than this tolerance when safe operational stop is selected. The position limit value is the actual position value at the time safe operational stop was selected.

Related to:

MD36956: \$MA_SAFE_PULSE_DISABLE_DELAY

36931	SAFE_VELO_LIMIT			A05, A04	FBSI	
mm/min, rev/min	Limit value for safe velocity			DOUBLE	PowerOn	
-						
-	4	2000., 2000., 2000., 2000.	0.0	1.0E+301	7/2	M

Description: Definition of the limit values for the safe velocities 1, 2, 3 and 4.

If SG1, SG2, SG3 or SG4 is selected and the current velocity exceeds this limit value, the control triggers alarm 27011 with the stop response configured in MD36961 \$MA_SAFE_VELO_STOP_MODE or MD36963 \$MA_SAFE_VELO_STOP_REACTION.

n = 0, 1, 2, 3 stand for the limit values of SG1, SG2, SG3, SG4

Special cases:

- In a 1-encoder system with SBH/SG active, the velocity is monitored according to the encoder frequency limit. A corresponding alarm is output if this is exceeded.

Related to:

MD36961: \$MA_SAFE_VELO_STOP_MODE

MD36963: \$MA_SAFE_VELO_STOP_REACTION

36932	SAFE_VELO_OVR_FACTOR			A05, A04	FBSI	
%	SG offset values			DOUBLE	PowerOn	
-						
-	16	100.0, 100.0, 100.0, 100.0, 100.0, 100.0, 100.0, 100.0, 100.0,	1.0	100.0	7/2	M

Description: Overrides for the limit value of safe velocities 2 and 4 can be selected via the SGEs, and the associated override value (percentage values) can be set with this MD.
 $n = 0, 1, \dots, 15$ stand for overrides 0, 1, ... 15
Note:
The function "Override safe speed" is enabled by MD 36901 \$MA_SAFE_FUNCTION_ENABLE.
This override is inactive for the limit values of velocities 1 and 3.
Related to:
MD36978: \$MA_SAFE_OVR_INPUT[n]
MD36931: \$MA_SAFE_VELO_LIMIT[n]

36933	SAFE_DES_VELO_LIMIT			A05, A04	FBSI	
%	SG setpoint speed limit			DOUBLE	Reset	
-						
-	4	0.0,0.0,0.0,0.0	0	100	7/2	M

Description: Weighting factors for determining the setpoint velocity limit.
The active weighting factor is selected via the axis-specific NC/PLC interface DB31, ... DBX34.0 - .1 .
Parameterization:
To set this MD optimally, it may be necessary to make a number of changes to take the dynamic performance of the drives into account.
Effect of SI monitoring with NCK involvement:

- When 0% is entered, the setpoint velocity limit is inactive.
- When 100% is entered, the setpoint is limited to the active SG stage.
- The active actual velocity limit is weighted with the selected factor, and specified to the interpolator as the setpoint limit.
- If SBH is selected, setpoint 0 is specified.
- This data is not included in the cross-check with the drive.
- This data is not included in the axis-specific checksum MD36998 \$MA_SAFE_ACT_CHECKSUM[], as it involves a 1-channel function.

Effect of drive-autonomous SI monitoring:

- The precondition is that the connection has been activated in the NCK via SIC (MD37950 \$MA_SAFE_INFO_ENABLE, bit 0).
- When 0% is entered, the NCK influence on the setpoint limit is inactive. The setpoint limit corresponds to the value read from the drive via SIC.
- When values > 0% are entered, the NCK influence on the setpoint velocity limit is active. It affects the setpoint limit read from the drive via SIC.
- The value read from the drive via SIC is weighted with the selected factor, and specified to the interpolator as the setpoint limit.
- The parameterizable setpoint limit in the drive (p9533) is active independently of the NCK limit.

Special cases:

- If the PLC user program does not contain any settings for selecting the weighting factor, the MD value from MD36933 \$MA_SAFE_DES_VELO_LIMIT[0] applies.

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36934	SAFE_POS_LIMIT_PLUS			A03, A05	FBSI	
mm, degrees	Upper limit of safe end position			DOUBLE	PowerOn	
-						
-	2	100000., 100000.	-2147000	2147000	7/2	M

Description: Definition of the upper limit value for safe end positions 1 and 2.

If SE1 or SE2 is selected and the current actual position is greater than this limit value, the control triggers alarm 27012 with the stop response configured in MD36962 \$MA_SAFE_POS_STOP_MODE and switches to SBH. Stop responses STOP B and A follow if SBH is violated.

n = 0, 1 stand for the upper limit values of SE1, SE2

Related to:

MD36962: \$MA_SAFE_POS_STOP_MODE

MD36935: \$MA_SAFE_POS_LIMIT_MINUS[n]

MD36901: \$MA_SAFE_FUNCTION_ENABLE

Special cases:

- A parameterization error is displayed if a value is entered in MD36934 \$MA_SAFE_POS_LIMIT_PLUS[n] which is less than or equal to that in MD36935 \$MA_SAFE_POS_LIMIT_MINUS[n].

36935	SAFE_POS_LIMIT_MINUS			A03, A05	FBSI	
mm, degrees	Lower limit of safe end position			DOUBLE	PowerOn	
-						
-	2	-100000., -100000.	-2147000	2147000	7/2	M

Description: Definition of the lower limit value for safe end positions 1 and 2.

If SE1 or SE2 is selected and the current actual position is less than this limit value, the control triggers alarm 27012 with the stop response configured in MD36962 \$MA_SAFE_POS_STOP_MODE and switches to SBH. Stop responses STOP B and A follow if SBH is violated.

n = 0, 1 stand for the lower limit values of SE1, SE2

Related to:

MD36962: \$MA_SAFE_POS_STOP_MODE

MD36934: \$MA_SAFE_POS_LIMIT_PLUS[n]

Special cases:

- A parameterization error is displayed if a value is entered in MD36934 \$MA_SAFE_POS_LIMIT_PLUS[n] which is less than or equal to that in MD36935 \$MA_SAFE_POS_LIMIT_MINUS[n].

36936	SAFE_CAM_POS_PLUS			A03, A05	FBSI	
mm, degrees	Plus cam position for safe cams			DOUBLE	PowerOn	
-						
-	30	10., 10., 10., 10., 10., 10., 10., 10., 10., 10., 10., 10., 10.,	-2147000	2147000	7/2	M

Description: Definition of the plus cam positions for the safe cams SN1 +, SN2 +, SN3 + and SN4 +, ...

The following applies to the function "Safe cams":

If, with activated safe cams (MD36901 \$MA_SAFE_FUNCTION_ENABLE), the actual position is greater than this value, the corresponding safety-relevant output signal (SGA) is set to 1. If the actual position falls below this value, the SGA is set to 0.

n = 0, 1, 2, 3 stand for plus cam positions of SN1 +, SN2 +, SN3 +, SN4 +

The following applies to the function "Safe cam track":

If the function "Safe cam track" has been enabled (MD36903 \$MA_SAFE_CAM_ENABLE), the safety-related output signals "Cam track" and "Cam range" are set in accordance with the parameterization in MD36938 \$MA_SAFE_CAM_TRACK_ASSIGN[n].

n = 0 ... 29 stand for plus cam positions of SN1+, SN2+, ..., SN30+.

Related to:

MD36901: \$MA_SAFE_FUNCTION_ENABLE[n]

MD36903: \$MA_SAFE_CAM_ENABLE

MD36937: \$MA_SAFE_CAM_POS_MINUS[n]

MD36938: \$MA_SAFE_CAM_TRACK_ASSIGN[n]

MD36988: \$MA_SAFE_CAM_PLUS_OUTPUT[n]

MD37900: \$MA_SAFE_CAM_TRACK_OUTPUT[n]

MD37901/37902/37903/37904: \$MA_SAFE_CAM_RANGE_OUTPUT_1/2/3/4[n]

MD37906/37907/37908/37909: \$MA_SAFE_CAM_RANGE_BIN_OUTPUT_1/2/3/4[n]

36937	SAFE_CAM_POS_MINUS			A03, A05	FBSI	
mm, degrees	Minus cam position for safe cams			DOUBLE	PowerOn	
-						
-	30	-10., -10., -10., -10., -10., -10., -10., -10., -10., -10.,	-2147000	2147000	7/2	M

Description:

Definition of the minus cam position for the safe cams SN1 -, SN2 -, SN3 -, ...

The following applies to the function "Safe cams":

If, with activated safe cams (MD36901 \$MA_SAFE_FUNCTION_ENABLE), the actual position is greater than this value, the corresponding safety-related output signal (SGA) is set to 1. If the actual position falls below this value, the SGA is set to 0.

n = 0, 1, 2, 3 stand for minus cam positions of SN1 -, SN2 -, SN3 -, SN4 -

The following applies to the function "Safe cam track":

If the function "Safe cam track" has been enabled (MD36903 \$MA_SAFE_CAM_ENABLE), the safety-related output signals "Cam track" and "Cam range" are set in accordance with the parameterization in MD36938 \$MA_SAFE_CAM_TRACK_ASSIGN[n].

n = 0 ... 29 stand for minus cam positions of SN1-, SN2-, ..., SN30-.

Related to:

MD36901: \$MA_SAFE_FUNCTION_ENABLE

MD36903: \$MA_SAFE_CAM_ENABLE

MD36936: \$MA_SAFE_CAM_POS_PLUS[n]

MD36938: \$MA_SAFE_CAM_TRACK_ASSIGN[n]

MD36989: \$MA_SAFE_CAM_MINUS_OUTPUT[n]

MD37900: \$MA_SAFE_CAM_TRACK_OUTPUT[n]

MD37901/37902/37903/37904: \$MA_SAFE_CAM_RANGE_OUTPUT_1/2/3/4[n]

MD37906/37907/37908/37909: \$MA_SAFE_CAM_RANGE_BIN_OUTPUT_1/2/3/4[n]

36938	SAFE_CAM_TRACK_ASSIGN			A01, A05	FBSI	
-	Cam track assignment			DWORD	PowerOn	
-						
-	30	100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112,	100	414	7/2	M

Description:

Assignment of the individual cams to the max. 4 cam tracks including definition of the numerical value for SGA "Cam range".

>The hundreds digit defines to which cam track the cam is assigned. Valid values are 1, 2, 3 or 4.

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The tens and ones digits include the numerical value that is to be reported to the safe logics as SGA "Cam range" and processed there. Valid values are 0 to 14, while each numerical value per cam track may be used only once.

Therefore the valid value range of this machine data is:

100...114, 200...214, 300...314, 400...414

Examples:

MD36938 \$MA_SAFE_CAM_TRACK_ASSIGN[0] = 207: cam 1 (index 0) is assigned to cam track 2.

If the position is within the range of this cam, a 7 is entered in SGA "Cam range" of the 2nd cam track.

MD36938 \$MA_SAFE_CAM_TRACK_ASSIGN[5] = 100: cam 6 (index 5) is assigned to cam track 1.

If the position is within the range of this cam, a 0 is entered in SGA "Cam range" of the 1st cam track.

Related to:

MD36903: \$MA_SAFE_CAM_ENABLE

MD36936: \$MA_SAFE_CAM_POS_PLUS[n]

MD36937: \$MA_SAFE_CAM_POS_MINUS[n]

MD37900: \$MA_SAFE_CAM_TRACK_OUTPUT[n]

MD37901/37902/37903/37904: \$MA_SAFE_CAM_RANGE_OUTPUT_1/2/3/4[n]

MD37906/37907/37908/37909: \$MA_SAFE_CAM_RANGE_BIN_OUTPUT_1/2/3/4[n]

36940	SAFE_CAM_TOL			A05	FBSI	
mm, degrees	Tolerance for safe cams			DOUBLE	PowerOn	
-						
-	-	0.1	0.001	10	7/2	M

Description:

As a result of differing encoder mounting positions and differing cycle and run times, the cam signals of the two monitoring channels never switch at exactly the same position or at exactly the same time.

This data defines the tolerance as a load-side path for all cams, within which the monitoring channels can have different signal states for the same cam without triggering alarm 27001.

Recommendation:

Enter a value equal to or slightly larger than that in MD36942 \$MA_SAFE_POS_TOL.

36942	SAFE_POS_TOL			A05	FBSI	
mm, degrees	Tolerance actual value cross-check			DOUBLE	PowerOn	
-						
-	-	(0.1/0.1)	(0.001/0.001)	(10/360)	7/2	M

Description:

Because of varying installation locations for the encoder, backlash, torsion, leadscrew error etc, the two actual positions acquired simultaneously by NCK and drive may differ from one another.

The tolerance for the cross-check of the actual positions in the two monitoring channels is entered in this data.

Special cases:

- The prime consideration for defining this tolerance are the values from the machine-specific risk analysis.
- If this tolerance is exceeded, stop reaction STOP F ensues.

36944	SAFE_REFP_POS_TOL			A05	FBSI	
mm, degrees	Tolerance actual value check (referencing)			DOUBLE	PowerOn	
-						
-	-	(0.01/0.01)	(0/0)	(1/36)	7/2	M

Description: This data defines the tolerance for checking the actual values after referencing (for an incremental encoder) or during power-on (for an absolute encoder).

Referencing determines an absolute actual position of the axis. A second absolute actual position is derived from the last stored standstill position before the control was switched off and the path traversed since power-on. The control checks the actual values after referencing with these two absolute positions, the path traversed and this data.

The following influences must be taken into account when determining the tolerance values:

backlash, leadscrew error, compensations (max. compensation values with LEC, sag and temperature compensation), temperature errors, torsion (2-encoder system), gear tolerance in variable gears, coarser resolution (2-encoder system), oscillation distance with variable gears.

Note:

If the two absolute actual positions differ by more than the value in this data when the user enable is given, alarm 27001 is displayed with error code 1003, and a new user enable is required for referencing.

36945	SAFE_VELO_X_FILTER_TIME			A04, A05	FBSI	
s	Filter n < nx			DOUBLE	PowerOn	
-						
-	-	0	0	0.5	7/2	M

Description: Setting the filter time to form the SGA "n < nx"

The filtering must be activated by setting bit 16 in MD36901 \$MA_SAFE_FUNCTION_ENABLE.

Filtering is not active with default value 0.

Parameterizing a filter time not equal to 0 increases the reaction time of SGA "n < nx".

Related to:

MD36946: \$MA_SAFE_VELO_X

MD36947: \$MA_SAFE_VELO_X_HYSTERESIS

36946	SAFE_VELO_X			A04, A05	FBSI	
mm/min, rev/min	Velocity limit n < nx			DOUBLE	PowerOn	
-						
-	-	(20./ 20)	(0./0.)	(1000./1000.)	7/2	M

Description: This data defines the limit velocity n_x for the SGA "n < nx".

SGA "n < nx" is set if this velocity limit is undershot.

If this machine data has the value 0, the function "n < nx" is not active.

Note:

To evaluate SGA "n < nx", an I/O assignment must be made in MD36985 \$MA_SAFE_VELO_X_STATUS_OUTPUT.

36947	SAFE_VELO_X_HYSTERESIS			A04, A05	FBSI	
mm/min, rev/min	Velocity hysteresis n < nx			DOUBLE	PowerOn	
-						
-	-	(10./10)	(0./0.)	(500./500.)	7/2	M

Description: Setting of the hysteresis threshold to form the SGA "n < nx".

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This MD is used in addition to the hysteresis to check the velocity in both monitoring channels at the threshold nx. The velocity must not differ more than the value of this MD, otherwise a Stop F will be output with error code 2.

MD36947 \$MA_SAFE_VELO_X_HYSTERESIS must be less than or equal to 3/4 MD36946 \$MA_SAFE_VELO_X.

The function "Synchronization "n < nx", hysteresis and filtering" must be active (MD36901 \$MA_SAFE_FUNCTION_ENABLE, bit 16 = 1).

Related to:

MD36945: \$MA_SAFE_VELO_X_FILTER_TIME

MD36946: \$MA_SAFE_VELO_X

36948	SAFE_STOP_VELO_TOL			A04, A05	FBSI	
mm/min, rev/min	Velocity tolerance for Safe monitoring of acceleration			DOUBLE	PowerOn	
-						
-	-	(300./ 50.)	(0./ 0.)	(120000./ 20000.)	7/2	M

Description: Tolerance of the actual velocity for safe monitoring of the acceleration (SBR).

This tolerance is added to the actual velocity after safe monitoring of the acceleration has been activated (by triggering a Stop B or C).

The actual velocity must not be greater than the limit thus defined.

Otherwise a Stop A is triggered. This reveals an acceleration of the drive as quickly as possible.

36949	SAFE_SLIP_VELO_TOL			A04, A05	FBSI	
mm/min, rev/min	Slip velocity tolerance			DOUBLE	PowerOn	
-						
-	-	(6./ 1.)	(0./ 0.)	(1000./ 1000.)	7/2	M

Description: Difference in velocity between the motor and load sides that is tolerated in a 2-encoder system, without the data cross-check between drive and NCK signaling an error. MD36949 \$MA_SAFE_SLIP_VELO_TOL is only evaluated if MD36901 \$MA_SAFE_FUNCTION_ENABLE, bit3 is set.

36950	SAFE_MODE_SWITCH_TIME			A05	FBSI	
s	Tolerance time for SGE switchover			DOUBLE	PowerOn	
-						
-	-	0.5	0	10.	7/2	M

Description: SGE switchovers are not active simultaneously because the data transfer runtimes of the SGEs differ in the two monitoring channels. The data cross-check would report an error in this case.

This data defines the length of time after SGE switchovers during which the actual values and the monitoring results are not cross-checked (the machine data continue to be compared!). The selected monitoring continues to run uninterrupted in both monitoring channels.

A safe function becomes active in a monitoring channel as soon as the selection or switchover is detected in this channel.

The differing runtime is mainly determined by the PLC cycle time.

System-related minimum tolerance time: 2 x PLC cycle time (maximum cycle) + 1 x IPO cycle time.

The runtime differences must also be taken into account in the external circuit (e.g. relay switching times).

36951	SAFE_VELO_SWITCH_DELAY			A05	FBSI	
s	Delay time for velocity changeover			DOUBLE	PowerOn	
-						
-	-	0.1	0	600.	7/2	M

Description:

A timer with this value is started on transition from a higher to a lower safe velocity or on selection of the safe operating stop when safe velocity is active. The parameterized value selected must be as low as possible.

The last selected velocity limit value continues to be monitored while the timer is running. During this time, the axis/spindle can be decelerated, for example via the PLC user program, without the monitoring reporting an error and triggering a stop response.

Special cases:

- The timer is canceled immediately on switching to a limit greater than or equal to the previously active SG limit.
- The timer is canceled immediately on switching to "Non-safe operation" (SGE "Deselect SBH/SG=1).
- The timer is retriggered (restarted) on switching to a limit less than the previously active SG limit or to SBH while the timer is running.

36952	SAFE_STOP_SWITCH_TIME_C			A05	FBSI	
s	Transition time STOP C to safe standstill			DOUBLE	PowerOn	
-						
-	-	0.1	0	600.	7/2	M

Description:

This data defines the time after which a switch is made to safe operational stop when a STOP C has been triggered.

The parameterized value selected must be as low as possible.

Safe operational stop is monitored after this time has expired. STOP A or B is triggered if the axis/spindle could not be stopped.

36953	SAFE_STOP_SWITCH_TIME_D			A05	FBSI	
s	Transition time STOP D to safe standstill			DOUBLE	PowerOn	
-						
-	-	0.1	0	600.	7/2	M

Description:

This data defines the time after which a switch is made to safe operational stop when a STOP D has been triggered.

The parameterized value selected must be as low as possible.

Safe operational stop is monitored after this time has expired. STOP B is triggered if the axis/spindle could not be stopped.

36954	SAFE_STOP_SWITCH_TIME_E			A05	FBSI	
s	Transitional period STOP E to safe standstill			DOUBLE	PowerOn	
-						
-	-	0.1	0	600.	7/2	M

Description:

Time period is specified in this data after which switchover to safe operating stop is performed if a STOP E is triggered.

The parameterized value selected must be as small as possible.

After the time has elapsed, monitoring for safe operating stop is performed. If the axis/spindle has still not been stopped, STOP B is triggered.

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36955	SAFE_STOP_SWITCH_TIME_F			A05	FBSI	
s	Transition time STOP F to STOP B			DOUBLE	PowerOn	
-						
-	-	0.0	0	600.	7/2	M

Description: Time period after which a switch over takes place from stop F to stop B with active monitoring functions.

The parameterized value selected must be as low as possible.

During this time, another deceleration reaction can be activated, e.g. by means of synchronized actions.

The switch over also takes place if a C/D/E stop occurs during this time.

36956	SAFE_PULSE_DISABLE_DELAY			A05	FBSI	
s	Delay time for pulse suppression			DOUBLE	PowerOn	
-						
-	-	0.1	0	600.	7/2	M

Description: On STOP B, deceleration is made with "speed setpoint 0" (or OFF3 ramp) , and changed to STOP A for pulse suppression after the delay time defined with this data.

The parameterized value selected must be as low as possible.

Special cases:

- The pulse suppression is performed earlier than defined in this data if the condition for pulse suppression is present via MD36960 \$MA_SAFE_STANDSTILL_VELO_TOL or via MD36620 \$MA_SERVO_DISABLE_DELAY_TIME.
- If the time is set in this data to ZERO, then on STOP B an immediate change is made to STOP A (immediate pulse suppression).

Relating to:

MD36960: \$MA_SAFE_STANDSTILL_VELO_TOL

MD36620: \$MA_SERVO_DISABLE_DELAY_TIME

MD36060: \$MA_STANDSTILL_VELO_TOL

36957	SAFE_PULSE_DIS_CHECK_TIME			A05	FBSI	
s	Time for checking pulse suppression			DOUBLE	PowerOn	
-						
-	-	0.1	0	10	7/2	M

Description: Definition of the time after which pulses have to be disabled after a request to disable pulses.

The time between resetting SGA "Enable pulse" and detecting the disabling of pulses via SGE "Status pulses disabled" must not exceed the value of this data.

Note:

STOP A is triggered if this time is exceeded.

36958	SAFE_ACCEPTANCE_TST_TIMEOUT			A05	FBSI	
s	Time limit for acceptance test duration			DOUBLE	PowerOn	
-						
-	-	40.0	5	100	7/2	M

Description: On the NCK side, a time limit can be specified for the duration of an acceptance test.

The NCK terminates the test if an acceptance test takes longer than the time defined in this MD.

The acceptance test status is set to zero on the NCK side. When the acceptance test status is reset, SI power-on alarms are reset again from reset-acknowledgeable to power-on-acknowledgeable on the NCK and drive sides.

The NCK clears alarm 27007 and the drive clears message C01799 .

This MD is also used to limit the duration of an SE (safe limit position) acceptance test. After the programmed time has elapsed, the SE acceptance test is canceled and alarm 27008 cleared. The software limit positions then again act as defined in the machine data.

36960	SAFE_STANDSTILL_VELO_TOL			A05, A04	FBSI	
mm/min, rev/min	Creep speed for pulse suppression			DOUBLE	PowerOn	
-						
-	-	(0./ 0.)	(0./ 0.)	(1000./ 1000.)	7/2	M

Description: Speed below which the axle/spindle is regarded as being at a standstill and the pulses are disabled with STOP B (through transition to STOP A).

Related to:

MD36956: \$MA_SAFE_PULSE_DISABLE_DELAY

36961	SAFE_VELO_STOP_MODE			A05	FBSI	
-	Stop reaction for safe velocity			BYTE	PowerOn	
-						
-	-	5	0	14	7/2	M

Description: The stop reaction defined in this data is triggered if the limit value for the safe velocity 1, 2, 3 or 4 is exceeded.

= 0, 1, 2, 3 correspond to STOP A, B, C, D, common to each safe velocity stage

= 5 means that the stop reaction can be configured specifically for each safe velocity in MD36963 \$MA_SAFE_VELO_STOP_REACTION.

The units digit defines the selection of the stop reaction when the safe velocity is exceeded.

The tens digit defines the behavior in the case of failure of communication to the drive if a time greater than 0 is parameterized in MD10089

\$MN_SAFE_PULSE_DIS_TIME_BUSFAIL.

0: Stop A

1: Stop B

2: Stop C

3: Stop D

4: Stop E

5: MD36961 \$MA_SAFE_VELO_STOP_MODE invalid, stop reaction is parameterized via MD36963 \$MA_SAFE_VELO_STOP_REACTION

10: Stop A, additionally, in the event of failure of communication to the drive, pulses are not disabled immediately if safe velocity is active

11: Stop B, additionally, in the event of failure of communication to the drive, pulses are not disabled immediately if safe velocity is active

12: Stop C, additionally, in the event of failure of communication to the drive, pulses are not disabled immediately if safe velocity is active

13: Stop D, additionally, in the event of failure of communication to the drive, pulses are not disabled immediately if safe velocity is active

14: Stop E, additionally, in the event of failure of communication to the drive, pulses are not disabled immediately if safe velocity is active

Special cases:

- If the value in this MD is 5, the stop reaction for each safe velocity stage is defined selectively in MD36963 \$MA_SAFE_VELO_STOP_REACTION.

Related to:

MD36931: \$MA_SAFE_VELO_LIMIT[n]

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MD36963: \$MA_SAFE_VELO_STOP_REACTION[n]

36962	SAFE_POS_STOP_MODE			A05	FBSI	
-	Stop reaction for safe end position			BYTE	PowerOn	
-						
-	-	2	2	4	7/2	M

Description: The stop reaction defined in this data is triggered if safe end position 1 or 2 is overrun.

2: Stop C

3: Stop D

4: Stop E

Related to:

MD36934: \$MA_SAFE_POS_LIMIT_PLUS[n]

MD36935: \$MA_SAFE_POS_LIMIT_MINUS[n]

36963	SAFE_VELO_STOP_REACTION			A05	FBSI	
-	Stop reaction for safe velocity			BYTE	PowerOn	
-						
-	4	2, 2, 2, 2	0	14	7/2	M

Description: The stop response defined in this data is triggered if the limit value for the safe velocity 1, 2, 3 or 4 is exceeded.

n = 0, 1, 2, 3 stand for SG1, SG2, SG3, SG4

The units digit defines the selection of the stop response for each specific safe velocity when the safe velocity is exceeded.

The tens digit defines the behavior in the case of a failure of communication to the drive for each specific safe velocity if a time greater than 0 has been parameterized in MD10089 \$MN_SAFE_PULSE_DIS_TIME_BUSFAIL.

Value Meaning

0: Stop A

1: Stop B

2: Stop C

3: Stop D

4: Stop E

10: Stop A, additionally, in the event of failure of communication to the drive, pulses are not disabled immediately if this safe velocity level is active

11: Stop B, additionally, in the event of failure of communication to the drive, pulses are not disabled immediately if this safe velocity level is active

12: Stop C, additionally, in the event of failure of communication to the drive, pulses are not disabled immediately if this safe velocity level is active

13: Stop D, additionally, in the event of failure of communication to the drive, pulses are not disabled immediately if this safe velocity level is active

14: Stop E, additionally, in the event of failure of communication to the drive, pulses are not disabled immediately if this safe velocity level is active

Note:

This MD is only active when MD36961 \$MA_SAFE_VELO_STOP_MODE and drive parameter p9561 have the value 5.

Related to:

MD10089: \$MN_SAFE_PULSE_DIS_TIME_BUSFAIL

MD36961: \$MA_SAFE_VELO_STOP_MODE

36964	SAFE_IPO_STOP_GROUP			A01, A05	FBSI	
-	Safety-integrated IPO-response grouping			BYTE	Reset	
-						
-	-	0	0	1	7/2	M

Description: This MD is only active with Safety Integrated axes and spindles.
It influences the channel-wide IPO response distribution of Safety Integrated:
0 = Default: All other axes/spindles in the channel are informed of the IPO stop response of this axis.
1 = For internal stops, the axes and machining spindles interpolating with the axis in question are also influenced via the triggered safety alarms.
Other axes/spindles in the channel, however, continue without disturbance. In the case of external stops (without an alarm) all other axes/spindles are not influenced by the safety axis/spindle stop. This allows, for example, the safe cancelation of the pulses of a spindle (using external Stop A) so that the spindle can be turned manually but still move the axes safely with monitoring.
If the other axes/spindles stop together with the safety axis/spindle in certain machining situations, the user must implement this at his own responsibility using the PLC or synchronous action operations.

36965	SAFE_PARK_ALARM_SUPPRESS			A01	FBSI	
-	Alarm suppression on parking axis			BOOLEAN	PowerOn	
-						
-	-	FALSE	-	-	7/2	M

Description: This MD is only active for Safety Integrated axes/spindles.
0 = Default setting: Alarms 27000/A01797 are displayed when parking is selected.
1 = Alarms 27000/A01797 are not displayed when parking is selected. This is necessary for axes that are disconnected on the encoder side during the machining process (e.g. dressing axes). The alarms are displayed when parking is deselected again.

36966	SAFE_BRACKETEST_TORQUE			A05	FBSI	
%	Holding torque for brake test (NC-controlled)			DOUBLE	PowerOn	
CTEQ						
-	-	5.0	0.0	800.0	7/2	M

Description: Definition of the torque and force for the NC-controlled functional test of the brake mechanism.
This torque and force is exerted on the applied brake during the test without the axis being allowed to move.
The percentage value entered here is related to drive parameter p2003 of the axis.
The following supplementary conditions apply:
If the current torque is more than 85% of the test torque when the brake test is selected (that is, with the brake off), the brake test is canceled with alarm 20095. This ensures that the motor can stop the axis even if the brake is defective.
If the brake test is performed with the drive parameter p1532 (MD36968 \$MA_SAFE_BRAKETEST_CONTROL bit0 = 0), the safety margin required is increased by double the difference between the current holding torque and the value in parameter p1532.
Release of the corresponding test function via MD37000 \$MA_FIXED_STOP_MODE bit 1.
Related to:
MD36969: \$MA_SAFE_BRAKETEST_TORQUE_NORM

Description: Maximum position tolerance for the functional test of the brake mechanics.
The functional test of the brake mechanics is canceled if the axis position deviates by more than this tolerance from the position at selection of the brake test.
The corresponding test function is enabled by MD37000 \$MA_FIXED_STOP_MODE, bit 1.MD37000 \$MA_FIXED_STOP_MODE bit 1.

Description:	Advanced settings for the NC-controlled and SINAMICS brake test. Bit 0: Selection of the average value for the torque limit = 0: Drive parameter p1532 is used as the average value of the torque limit = 1: The torque measured at the time of selection of the brake test is used as the average value of the torque limit Bit 1: Criterion for reaching the torque limit in the PLC = 0: The torque limit must be reached during the programmed traversing distance = 1: The torque limit must be reached during the programmed time (PLC) Bit 2: Selection of the positioning behavior at the end of the SINAMICS brake test = 0: Positioning at the current axis position = 1: Positioning at the last programmed axis position

Description:	Setting of the reference variable for torques All torques indicated as relative value refer to this reference variable. This MD is an image of drive parameter p2003

Description:	This data defines the NCK input for selecting/deselecting the functions SBH and SG.		
	Signal	Meaning	
	= 0	SG or SBH is selected	
	= 1	SG and SBH are deselected	
	Structure (general):		
	The machine data for assignment of the safe inputs are structured as follows:		
	\$MA_SAFE..._INPUT = is mm xx nnH		
	Bit position	Permissible values	Meaning
i	31...28	= 0	Do not invert signal before processing
		= 8	Invert signal before processing

s	27...24	= 4	Assignment to SPL interface
mm	23...16	= 1	Addressing of the internal SPL interface \$A_OUTSI
		= 2	Addressing of the external SPL interface \$A_INSE
xx	15...8	= 1...6	Number of the system variable word
nn	7...0	= 1...20H	Bit number in the system variable word

Special cases:

- Entry of 0 means there is no existing assignment, the input remains fixed at 0, SG and SBH cannot be deselected.
- Entry of 80 00 00 00 means there is no existing assignment, the input remains fixed at 1.
- Multiple input signals can be parameterized to the same system variable.

36971	SAFE_SS_DISABLE_INPUT			A01	FBSI	
-	Input assignment SBH deselection			UDWORD	PowerOn	
-						
-	-	0	0x00000000	0x8403073F	7/2	M

Description: Assignment of the NC input for deselecting the function safe operational stop.
Structure: See MD36970 \$MA_SAFE_SVSS_DISABLE_INPUT
Input assignment to the safe functions if either safe velocity or safe operational stop have been activated.
Signal Meaning
= 0 Safe operational stop is selected
= 1 Safe operational stop is deselected (only if other functions have not triggered a STOP C, D or E)
Special cases:
• This input is irrelevant if SG and SBH have been deselected (see MD36970 \$MA_SAFE_SVSS_DISABLE_INPUT).

36972	SAFE_VELO_SELECT_INPUT			A01	FBSI	
-	Input assignment SG selection			UDWORD	PowerOn	
-						
-	2	0, 0	0x00000000	0x8403073F	7/2	M

Description: This data defines the two inputs for selecting SG1, SG2, SG3 or SG4.
Structure: See MD36970 \$MA_SAFE_SVSS_DISABLE_INPUT
n = 1, 0 stand for bit 1, 0 for selecting SG1 to SG4
Assignment of the input bits to the safe velocities:
Bit 1 Bit 0 Selected SG
0 0 SG1
0 1 SG2
1 0 SG3
1 1 SG4

36973	SAFE_POS_SELECT_INPUT			A01	FBSI	
-	Input assignment SE selection			UDWORD	PowerOn	
-						
-	-	0	0x00000000	0x8403073F	7/2	M

Description: This data defines the input for selecting safe limit positions 1 or 2.
Structure see: MD36970 \$MA_SAFE_SVSS_DISABLE_INPUT
Signal Meaning
= 0 SE1 is active

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= 1 SE2 is active

36974	SAFE_GEAR_SELECT_INPUT			A01	FBSI	
-	Input assignment speed ratio selection			UDWORD	PowerOn	
-						
-	3	0, 0, 0	0x00000000	0x8403073F	7/2	M

Description: Input assignment for selecting the gear ratio (gear stage).
 Structure: See MD36970 \$MA_SAFE_SVSS_DISABLE_INPUT
 n = 2, 1, 0 stand for bit 2, 1, 0 for selecting gear stages 1 to 8

Bit 2	Bit 1	Bit 0	Active gear stage
0	0	0	Stage 1
0	0	1	Stage 2
0	1	0	Stage 3
...	...	...	...
1	1	1	Stage 8

36977	SAFE_EXT_STOP_INPUT			A01	FBSI	
-	Input assignment for external stop request			UDWORD	PowerOn	
-						
-	4	0, 0, 0, 0	0x00000000	0x8403073F	7/2	M

Description: This data defines the NC inputs for selecting/deselecting the external brake requests.
 n = 0, 1, 2, 3 stand for the various braking modes
 n = 0: Assignment for "Deselect external stop A" (SH, disabling of pulses)
 n = 1: Assignment for "Deselect external stop C" (braking at the current limit/OFF3 ramp)
 n = 2: Assignment for "Deselect external stop D" (path braking)
 n = 3: Assignment for "Deselect external stop E" (ESR + path braking)
 Structure: See MD36970 \$MA_SAFE_SVSS_DISABLE_INPUT
 Special cases:

- The signal "Deselect external stop A" cannot be parameterized inverted. A parameter error is reported if there is an error.

36978	SAFE_OVR_INPUT			A01	FBSI	
-	Input assignment for SG override			UDWORD	PowerOn	
-						
-	4	0, 0, 0, 0	0x00000000	0x8403073F	7/2	M

Description: Assignment of the NC inputs for the override of the limit values of safe velocities 2 and 4.
 Structure: See MD36970 \$MA_SAFE_SVSS_DISABLE_INPUT
 n = 3, 2, 1, 0 stand for the override selection bits 3, 2, 1, 0
 Assignment of the input bits to the SG override values:

Bit 3	Bit 2	Bit 1	Bit 0	
0	0	0	0	Override 0 is selected
0	0	0	1	Override 1 is selected
to ...				
1	1	1	1	Override 15 is selected

The following machine data defines the override factor itself (percentage value):
 MD36932: \$MA_SAFE_VELO_OVR_FACTOR[n]
 Note:

The function "Override safe velocity" is enabled in MD36901 \$MA_SAFE_FUNCTION_ENABLE, bit 5.

Related to:

MD36932: \$MA_SAFE_VELO_OVR_FACTOR[n]

36980	SAFE_SVSS_STATUS_OUTPUT			A01	FBSI	
-	Output assignment SBH/SG active			UDWORD	PowerOn	
-						
-	-	0	0x00000000	0x8403073F	7/2	M

Description:

Assignment of the output for reporting the status of the functions safe velocity and safe operating stop.

Signal Meaning

= 0 SG and SBH are not active

= 1 SG or SBH is active

Structure (general):

The machine data for assignment of the safe outputs have the following structure:

\$MA_SAFE_..._OUTPUT = is mm xx nnH

	Bit position	Permissible values	Meaning
i	31...28	= 0	Do not invert signal before output
		= 8	Invert signal before output
s	27...24	= 4	Assignment to SPL interface
mm	23...16	= 1	Addressing of the internal SPL interface \$A_INSI
xx	15...0	= 1...6	Number of the system variable word
nn	7...0	= 1...20H	Bit number in the system variable word

Special cases:

- Entry of 0 means
There is no existing assignment, the output is not affected.
- Entry of 80 00 00 00 means there is no existing assignment, the output remains fixed at 1.
- If a single output signal is placed on a system variable, then:
If MD bit 31 is set, the signal is processed inverted.
- If multiple output signals are placed on the same system variable, then:
If MD bit 31 is set, the signal in question is first inverted. The (possibly inverted) output signals are then ANDed. The result is written to the system variable.

36981	SAFE_SS_STATUS_OUTPUT			A01	FBSI	
-	Output assignment SBH active			UDWORD	PowerOn	
-						
-	-	0	0x00000000	0x8403073F	7/2	M

Description:

This data defines the output or the system variable for the message "SBH active".

Structure see: MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT

Signal Meaning

= 0 SBH is inactive

= 1 SBH is active

36982	SAFE_VELO_STATUS_OUTPUT			A01	FBSI	
-	Output assignment for active SG selection			UDWORD	PowerOn	
-						
-	2	0, 0	0x00000000	0x8403073F	7/2	M

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Description: This data defines the outputs or the system variables for the messages "SBH active bit 0" and "SBH active bit 1".

Structure see: MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT

n = 1, 0 stand for SG active bits 1, 0

Bit 1 Bit 0 Meaning:

= 0 = 0 SG1 active if SBH/SG are active and SBH is not active
 SBH active if SBH/SG are active and SBH is active
 = 1 = 0 SG2 active
 = 0 = 1 SG3 active
 = 1 = 1 SG4 active

36985	SAFE_VELO_X_STATUS_OUTPUT			A01	FBSI	
-	Output assignment n < n_x			UDWORD	PowerOn	
-						
-	-	0	0x00000000	0x8403073F	7/2	M

Description: This data defines the output or the system variable for the message "n < nx".

Structure see: MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT

Signal Meaning

= 0 Actual speed is greater than the limit speed in MD36946 \$MA_SAFE_VELO_X
 = 1 Actual speed is less than or equal to the limit speed in \$MA_SAFE_VELO_X

Related to:

MD36946 \$MA_SAFE_VELO_X

36987	SAFE_REFP_STATUS_OUTPUT			A01	FBSI	
-	Output assignment axis safely referenced			UDWORD	PowerOn	
-						
-	-	0	0x00000000	0x8403073F	7/2	M

Description: This data defines the output for the message "Axis safely referenced".

Structure see: MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT

Signal Meaning

= 0 Axis is not safely referenced (that is the safe limit monitoring is inactive!)
 = 1 Axis is safely referenced

36988	SAFE_CAM_PLUS_OUTPUT			A01	FBSI	
-	Output assignment SN1 + to SN4 +			UDWORD	PowerOn	
-						
-	4	0, 0, 0, 0	0x00000000	0x8403073F	7/2	M

Description: This data defines the outputs for the cam signals SN1 + to SN4 +.

Structure: See MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT

n = 0, 1, 2, 3 correspond to the assignments for plus cams SN1 +, SN2 +, SN3 +, SN4 +

Signal Meaning

= 0 Axis is left of the cam (actual value < cam position)
 = 1 Axis is right of the cam (actual value > cam position)

Special cases:

- If a cam is inverted and assigned to an output with another cam, the two cams are ANDed, resulting in a single cam signal for range detection.

36989	SAFE_CAM_MINUS_OUTPUT			A01	FBSI	
-	Output assignment SN1 - to SN4 -			UDWORD	PowerOn	
-						
-	4	0, 0, 0, 0	0x00000000	0x8403073F	7/2	M

Description: This data defines the outputs for the minus cams SN1 - to SN4 -.
 Structure see: MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT
 n = 0, 1, 2, 3 correspond to the assignments for minus cams SN1 -, SN2 -, SN3 -, SN4 -
 Signal Meaning
 = 0 Axis is left of the cam (actual value < cam position)
 = 1 Axis is right of the cam (actual value > cam position)
 Special cases:
 • If a cam is negated and placed with another cam on an output, it is AND-ed and a single cam signal is generated for range recognition.

36990	SAFE_ACT_STOP_OUTPUT			A01	FBSI	
-	Output assignment of active stop			UDWORD	PowerOn	
-						
-	4	0, 0, 0, 0	0x00000000	0x8403073F	7/2	M

Description: Assignment of the output signals for displaying the currently active stop.
 Structure: see MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT
 Index 0: Assignment for "Stop A/B active"
 Index 1: Assignment for "Stop C active"
 Index 2: Assignment for "Stop D active"
 Index 3: Assignment for "Stop E active"

36992	SAFE_CROSSCHECK_CYCLE			A01, A08	FBSI	
s	Display of axis-specific cross-check cycle			DOUBLE	PowerOn	
-						
-	-	0.0	-	-	ReadOnly	S

Description: Display data:
 Effective axis-specific cross-check cycle in seconds.
 The cycle derives from MD10091 \$MN_INFO_SAFETY_CYCLE_TIME and the number of data to be cross-checked.

36993	SAFE_CONFIG_CHANGE_DATE			A08	FBSI	
-	Date/time of last change of SI axis MD			STRING	PowerOn	
-						
-	7		-	-	ReadOnly	S

Description: Display data:
 Date and time of the last configuration change to safety related NCK axis machine data.
 Changes to the machine data included in the calculation of axis-specific checksums MD36998 \$MA_SAFE_ACT_CHECKSUM[] are recorded.

36995	SAFE_STANDSTILL_POS			EXP, A08	FBSI	
-	Standstill position			DWORD	PowerOn	
-						
-	-	0	-	-	ReadOnly	S

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Description: This MD displays the current standstill position.

In order to be able to test the referencing of the axis for plausibility at the next control Power ON, the current position of the axis is stored in non-volatile memory in the following cases:

- On selection of safe operational stop (SBH)
- Cyclically, if SE/SN are activated

Special cases:

- If the MD is changed manually, this will be detected at the next Power ON and plausibility test. Another user agreement is required after referencing.

36997	SAFE_ACKN			A08	FBSI	
-	User acknowledge			UDWORD	PowerOn	
-						
-	-	0	0x0	0xFFFFFFFF	7/2	M

Description: This data displays the status of the user agreement.

The user agreement can be given or withdrawn by the user by means of a corresponding screen.

If the software detects internally that the reference to the machine has been lost, then it is "automatically" withdrawn (e.g. on changing gear or if the plausibility comparison with the stored standstill position fails during referencing).

Special cases:

- If the MD is changed manually, then this will be detected at the next Power ON and plausibility test. Another user agreement is required after referencing.

36998	SAFE_ACT_CHECKSUM			A01, A08	FBSI	
-	Actual checksum			UDWORD	PowerOn	
-						
-	3	0, 0, 0	0x00000000	0xFFFFFFFF	ReadOnly	S

Description: The actual checksum calculated across the current values of the safety-related machine data after PowerOn or on RESET is entered here.

Assignment of the field indices:

Index 0: Axis-specific monitoring functions

Index 1: Hardware component recognition

Index 2: Drive assignment

36999	SAFE_DES_CHECKSUM			A01, A08	FBSI	
-	Desired (expected) checksum			UDWORD	PowerOn	
-						
-	3	0, 0, 0	0x00000000	0xFFFFFFFF	7/1	M

Description: This data contains the set checksum calculated across the current values of the safety-related machine data and stored at the last machine acceptance.

Assignment of the field indices:

Index 0: Axis-specific monitoring functions

Index 1: Hardware component recognition

Index 2: Drive assignment

37000	FIXED_STOP_MODE			A10	-	
-	Travel to fixed stop mode			UBYTE	PowerOn	
CTEQ						
-	-	0x0	0x0	0x3	7/2	M

Description: Activation of subfunctions of "Travel to fixed stop".

Bit 0: Reserved

Bit 1: Enable the Safe brake test (NC-controlled)

= 0: Safe brake test not available

= 1: Safe brake test can be executed under the control of the PLC

Note: The user must ensure that Travel to fixed stop and Safe brake test are not assigned simultaneously.

37002	FIXED_STOP_CONTROL			A10	F1	
-	Sequence control for travel to fixed stop			UBYTE	PowerOn	
-						
-	-	0x0	0x0	0x3	7/2	M

Description: Sequence control for travel to fixed stop.

Bit 0: behavior on pulse disable at fixed stop

= 0: travel to fixed stop is canceled

= 1: travel to fixed stop is interrupted, i.e. the drive is without power.

As soon as the pulse disable is canceled again, the drive continues with the limited torque.

Control of the torque injection see bit 1.

Bit 1: behavior after pulse disable at the fixed stop

= 0: the torque is applied in steps.

= 1: the torque is applied in ramps (see MD37012 \$MA_FIXED_STOP_TORQUE_RAMP_TIME)

37010	FIXED_STOP_TORQUE_DEF			A10	-	
%	Default fixed stop clamping torque			DOUBLE	PowerOn	
CTEQ						
-	-	5.0	0.0	100.0	7/2	M

Description: The clamping torque is set in this machine data as a % of the maximum motor torque (in the case of FDD this corresponds to the % of the max. current setpoint).

The clamping torque becomes active as soon as the fixed stop is reached or the NC/PLC interface signal DB31, ... DBX1.1 (Acknowledge fixed stop reached) has been set.

The entered value is a default and is active only as long as

- no clamping torque has been programmed with command FXST[x]
- the clamping torque set in SD 43510: FIXED_STOP_TORQUE was not changed after fixed stop had been reached.

In the case of "Travel to fixed stop" with an analog drive (611-A) and fixed clamping torque, the torque limit set in the drive should be the same as the limit entered in MD37070 \$MA_FIXED_STOP_ANA_TORQUE.

Related to:

MD37070 \$MA_FIXED_STOP_ANA_TORQUE

SD 43510: FIXED_STOP_TORQUE

37012	FIXED_STOP_TORQUE_RAMP_TIME			A10	-	
s	Time period until reaching the changed torque limit			DOUBLE	NEW CONF	
-						
-	-	0.0	0.0	1.0E+301	7/2	M

Description: Period in seconds until the changed torque limit is reached.

The value 0.0 deactivates the ramp function.

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37014	FIXED_STOP_TORQUE_FACTOR			A10	TE3	
-	Adaption factor torque limit			DOUBLE	NEW CONF	
-						
-	-	1.0	0.0	1.0E+301	7/2	M

Description: Interface factor torque limit.

With this factor, the torque limit of linked slave axes (MD 37250) can be weighted additionally.

Even with different motors, the torque limits can be kept equal in all linked axes.

37020	FIXED_STOP_WINDOW_DEF			A05, A10	-	
mm, degrees	Default fixed-stop monitoring window			DOUBLE	PowerOn	
CTEQ						
-	-	1.0	0.0	1.0e15	7/2	M

Description: This machine data is used to enter the default for the standstill monitoring window at fixed stop.

Fixed stop monitoring becomes active as soon as the fixed stop is reached, i.e. NC/PLC interface signal DB31, ... DBX62.5 (Fixed stop reached) is set.

If the position at which the fixed stop is detected is left by more than the tolerance specified in MD37020 \$MA_FIXED_STOP_WINDOW_DEF alarm 20093 "Fixed stop monitoring has responded" is output and the "FXS" function is deselected.

The value entered is a default setting and is active only as long as

- no fixed stop monitoring window is programmed with command FXSW[x],
- the fixed stop monitoring window is not changed via SD 43520: FIXED_STOP_WINDOW (after reaching of fixed stop).

Related to:

SD43520 \$SA_FIXED_STOP_WINDOW (fixed stop monitoring window)

37030	FIXED_STOP_THRESHOLD			A10	-	
mm, degrees	Threshold for fixed stop detection			DOUBLE	NEW CONF	
-						
-	-	2.0	0.0	1.0e15	7/2	M

Description: Threshold value for fixed stop detection.

The contour deviation is checked for this threshold as a criterion for reaching the fixed stop. Waiting until the set torque limit is reached is a further condition for digital drives.

This machine data is only active if MD37040 \$MA_FIXED_STOP_BY_SENSOR = 0.

The NC/PLC interface signal DB31, ... DBX62.5 (Fixed stop reached) is set if the axial contour deviation exceeds the threshold value set in MD37030 \$MA_FIXED_STOP_THRESHOLD.

MD irrelevant to:

MD37040 \$MA_FIXED_STOP_BY_SENSOR = 1

Related to:

NC/PLC interface signal DB31, ... DBX62.5 (Fixed stop reached)

37040	FIXED_STOP_BY_SENSOR			A10	-	
-	Fixed stop detection by sensor			BYTE	Immediately	
CTEQ						
-	-	0	0	3	7/2	M

Description: This machine data defines how the criterion "Fixed stop reached" is determined.

A change of this machine data becomes active with the next selection of travel to fixed stop.

MD=0

The criterion "Fixed stop reached" is determined internally on the basis of the axial FIXED_STOP_THRESHOLD.

MD=1

The criterion "Fixed stop reached" is determined via an external sensor and signalled to the NC via the NC/PLC interface signal DB31, ... DBX1.2 (Sensor fixed stop).

MD=2

The criterion "Fixed stop reached" is accepted if either the contour monitoring (MD = 0) or the signal of the external sensor (MD = 1) has responded.

MD=3

Triggering through movement analysis (only as an alternative to triggering via sensor)

Related to:

MD37030 \$MA_FIXED_STOP_THRESHOLD

(threshold for fixed stop detection)

NC/PLC interface signal DB31, ... DBX1.2 (Sensor fixed stop)

37050	FIXED_STOP_ALARM_MASK	A05, A10	-
-	Enable of the fixed stop alarms	BYTE	NEW CONF
-			
-	-	1	0
-	-	31	7/2
-	-		M

Description:

This machine data defines whether the alarms

20091 "Fixed stop not reached",

20094 "Fixed stop canceled" and

25042 "FOC: Standstill monitoring" are output.

MD= 0

Suppression of alarm 20091 "Fixed stop not reached"

MD= 2

Suppression of alarms

20091 "Fixed stop not reached" and

20094 "Fixed stop canceled" (SW 4 and higher)

MD=3

Suppression of alarm 20094 "Fixed stop canceled" (SW 4 and higher)

Add value 8

Suppression of alarm 25042 "FOC: Standstill monitoring" (SW 7 and higher)

Add value 16

Trigger alarm 20095 only if the brake test torque is less than the holding torque

Errors occurring during travel to fixed stop can be read out from the status variable

\$AA_FXS irrespective of the setting of the alarm screen.

Standard: 1 = Alarms 20091, 20094 and 25042 are triggered

37052	FIXED_STOP_ALARM_REACTION	A05, A10	-
-	Reaction with fixed stop alarms	UBYTE	PowerOn
-			
-	-	0	0
-	-	-	7/1
-	-		M

Description:

Behavior of VDI signal "Mode group ready" in case of fixed stop alarms:

Bit value = 0: "Mode group ready" will be deleted (drives de-energized)

Bit value = 1: "Mode group ready" remains active

Bit0: Alarm 20090 Travel to fixed stop not possible

Bit1: Alarm 20091 Fixed stop not reached

Bit2: Alarm 20092 Travel to fixed stop still active

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Bit3: Alarm 20093 Standstill monitoring at fixed stop has triggered

Bit4: Alarm 20094 Travel to fixed stop canceled

All other bits without meaning.

Standard: 0 = All alarms de-energize the drives

37060	FIXED_STOP_ACKN_MASK			A10	-	
-	Waiting for PLC acknowledgments during travel to fixed stop			UBYTE	PowerOn	
CTEQ						
-	-	0x0	0x0	0x3	7/2	M

Description:

This machine data defines whether or not the NC waits for acknowledgment messages from the PLC when the "Travel to fixed stop" function is active.

Bit 0 = 0

Once the NC has transmitted the interface signal DB31, ... DBX62.4 (Activate travel to fixed stop) to the PLC, it starts the programmed traversing.

Bit 0 = 1

After the NC has transmitted the interface signal DB31, ... DBX62.4 (Activate travel to fixed stop) to the PLC, it waits for the PLC to acknowledge with the interface signal DB31, ... DBX3.1 (Enable travel to fixed stop) and then starts the programmed traversing.

Bit 0 = 1 should be set for analog drives so that the motion is not started before the PLC has limited the torque in the drive.

Bit 1 = 0

Once the NC has transmitted the interface signal DB31, ... DBX62.5 (Fixed stop reached) to the PLC, the program advances to the next block.

Bit 1 = 1

After the NC has transmitted the interface signal DB31, ... DBX62.5 (Fixed stop reached) to the PLC, it waits for the PLC to acknowledge with the interface signal DB31, ... DBX1.1 (Acknowledge fixed stop reached), outputs the programmed torque and then advances to the next block.

Bit 1 should be set for analog drives so that the PLC can switch the drive to torque-controlled operation if a programmable clamping torque has to be specified.

With digital drives (PROFIdrive), the "Travel to fixed stop" function can be executed without any acknowledgments, thus allowing program run times to be reduced.

Related to:

NC/PLC interface signal DB31, ... DBX62.4 (Activate travel to fixed stop)

NC/PLC interface signal DB31, ... DBX3.1 (Enable travel to fixed stop)

NC/PLC interface signal DB31, ... DBX62.5 (Fixed stop reached)

NC/PLC interface signal DB31, ... DBX1.1 (Acknowledge fixed stop reached)

37070	FIXED_STOP_ANA_TORQUE			A10	-	
%	Torque limit when approaching the fixed stop for analog drives			DOUBLE	PowerOn	
CTEQ						
-	-	5.0	0.0	100.0	7/2	M

Description:

Only for analog drives (not relevant for PROFIdrive digital drives):

This machine data defines an internal NC torque limit for analog drives. It is specified as a percentage of the maximum drive torque (corresponds to % of max. current setpoint with FDD).

This torque limit is active in the NC from the start of the motion (acceleration torque) until the instant the fixed stop is reached.

The torque limit must have the same effect as the torque limit set in the drive.

This torque limit is required to ensure that:

- There are no step changes in torque during switchover from speed-controlled to current-controlled or torque-controlled operation
- The acceleration is reduced to the correct value in the NC

37080	FOC_ACTIVATION_MODE	A10	-
-	Initial setting of modal torque/force limitation	UBYTE	PowerOn
-			
-	-	0x0	0x0
-	-	0x3	7/2
-	-		M

Description: The initial setting of the modal torque/force limitation is set with this MD after reset and PowerOn:

Bit 0: Response after PowerON

= 0 : FOCOF

= 1 : FOCON (modal)

Bit 1: Response after reset

= 0 : FOCOF

= 1 : FOCON (modal)

Default setting: FOCOF after reset and PowerOn

37090	COLLISION_EXT_AXIS_MASK	EXP	-
-	Settings of the external collision avoidance	UDWORD	PowerOn
-			
-	-	0x1	0x0
-	-	0x3	7/2
-	-		M

Description: Settings of the external collision avoidance:

Bit 0: Braking response

= 0 : Braking signals are ignored

= 1 : Braking signals are effective

Bit 1: Preview

= 0: Axis is part of the preview

= 1: Axis does not provide preview values

37100	GANTRY_AXIS_TYPE	A01, A10	G1, TE1, Z3
-	Gantry axis definition	BYTE	PowerOn
CTEQ			
-	-	0	0
-	-	33	7/2
-	-		M

Description: General: decimal representation, with a b

a

0: Leading axis

1: Synchronized axis

b

0: No gantry axis

1: Axis in gantry grouping 1

2: Axis in gantry grouping 2

3: Axis in gantry grouping 3

...

A max. of 8 gantry groupings is possible.

Examples:

11: Axis is a synchronized axis in a gantry grouping 1

2: Axis is a leading axis in gantry a grouping 2

12: Axis is a synchronized axis in a gantry grouping 2

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3: Axis is a leading axis in a gantry grouping 3

13: Axis is a synchronized axis in a gantry grouping 3

Special cases:

Alarm 10650 "Incorrect gantry machine data" and 10651 "Gantry unit not defined" in the case of an incorrect gantry axis definition.

Related to:

MD37110 \$MA_GANTRY_POS_TOL_WARNING (gantry warning limit)

MD37120 \$MA_GANTRY_POS_TOL_ERROR (gantry trip limit)

MD37130 \$MA_GANTRY_POS_TOL_REF (gantry trip limit during referencing)

37110	GANTRY_POS_TOL_WARNING			A05, A10	G1, Z3	
mm, degrees	Gantry warning limit			DOUBLE	Reset	
-						
-	-	0.0	-1e15	1e15	7/2	M

Description:

Value > 0

With gantry axes, the difference between the actual position values of the leading and synchronized axes is constantly monitored.

MD37110 \$MA_GANTRY_POS_TOL_WARNING is used to define a limit value for the actual position value difference; when the limit is exceeded, warning 10652 "Warning limit exceeded" is output. However, the gantry axes are not stopped internally in the control. The warning threshold must therefore be selected so that the machine can withstand the actual position value deviation between the gantry axes without sustaining mechanical damage.

Furthermore, the NC/PLC interface signal DB31, ... DBX101.3 (Gantry warning limit exceeded) to the PLC is set to "1". The PLC user program can thus initiate the necessary measures (e.g. program interruption at block end) when the warning limit is exceeded.

As soon as the actual current position value difference has dropped below the warning limit again, the message is canceled and the interface signal "Gantry warning limit exceeded" is reset.

Effect of the gantry warning limit on the gantry synchronization process:

The actual position value difference between the leading and synchronized axes is determined during gantry synchronization. If the deviation is less than the gantry warning limit, the synchronizing motion of the gantry axes is automatically started internally in the control.

Otherwise the synchronizing motion has to be initiated via the PLC interface (interface signal DB31, ... DBX29.4 (Start gantry synchronization process))

Value = 0

The setting MD37110 \$MA_GANTRY_POS_TOL_WARNING = 0 is the monitoring for violation of the warning limit deactivated.

The gantry synchronization is not initiated internally in the control.

Special cases:

Alarm 10652 "Warning limit exceeded" in response to violation of the gantry warning limit.

Related to:

MD37100 \$MA_GANTRY_AXIS_TYPE Gantry axis definition

MD37120 \$MA_GANTRY_POS_TOL_ERROR Gantry trip limit

MD37130 \$MA_GANTRY_POS_TOL_REF

Gantry trip limit during referencing

NC/PLC interface signal DB31, ... DBX101.3 (Gantry warning limit exceeded)

NC/PLC interface signal DB31, ... DBX29.4 (Start gantry synchronization process)

37120	GANTRY_POS_TOL_ERROR			A05, A10	G1, Z3	
mm, degrees	Gantry trip limit			DOUBLE	PowerOn	
-						
-	-	0.0	-1e15	1e15	7/2	M

Description:

With gantry axes, the difference between the actual position values of the leading and synchronized axes is continuously monitored. MD37120 \$MA_GANTRY_POS_TOL_ERROR defines the maximum permissible deviation in actual position value between the synchronized axis and the leading axis in the gantry axis grouping. Violation of this limit value is monitored only if the gantry axis grouping is already synchronized (NC/PLC interface signal DB31, ... DBX101.5 (Gantry grouping is synchronized) = 1); otherwise the value set in MD37130 \$MA_GANTRY_POS_TOL_REF is used.

When this limit value is exceeded, alarm 10653 "Error limit exceeded" is output. The gantry axes are immediately stopped internally in the control to prevent any damage to the machine.

In addition, the NC/PLC interface signal DB31, ... DBX101.2 (Gantry trip limit exceeded) to the PLC is set to "1".

Special cases:

Alarm 10653 "Error limit exceeded" in response to violation of the gantry trip limit.

Related to:

MD37100 \$MA_GANTRY_AXIS_TYPE Gantry axis definition

MD37110 \$MA_GANTRY_POS_TOL_WARNING Gantry warning limit

MD37130 \$MA_GANTRY_POS_TOL_REF

Gantry trip limit during referencing

NC/PLC interface signal DB31, ... DBX101.5 (Gantry grouping is synchronized)

NC/PLC interface signal DB31, ... DBX101.2 (Gantry trip limit exceeded)

37130	GANTRY_POS_TOL_REF				A05, A10	G1, Z3	
mm, degrees	Gantry trip limit during referencing				DOUBLE	PowerOn	
-							
-	-	0.0	-1e15	1e15	7/2	M	

Description:

With gantry axes, the difference between the actual position values of the leading and synchronized axes is continuously monitored. MD37130 \$MA_GANTRY_POS_TOL_REF defines the maximum permissible difference between the actual position values of the synchronized axis and the leading axis that is monitored if the gantry axis grouping has not yet been synchronized (NC/PLC interface signal DB31, ... DBX101.5 (Gantry grouping is synchronized) = 0).

Alarm 10653 "Error limit exceeded" is output if the limit value is exceeded. The gantry axes are immediately stopped internally in the control to prevent any damage to the machine.

In addition, the NC/PLC interface signal DB31, ... DBX101.2 (Gantry trip limit exceeded) to the PLC is set to "1".

Special cases:

Alarm 10653 "Error limit exceeded" in response to violation of the gantry trip limit.

Related to:

MD37100 \$MA_GANTRY_AXIS_TYPE Gantry axis definition

MD37110 \$MA_GANTRY_POS_TOL_WARNING Gantry warning limit

MD37120 \$MA_GANTRY_POS_TOL_ERROR Gantry trip limit

NC/PLC interface signal DB31, ... DBX101.5 (Gantry grouping is synchronized)

NC/PLC interface signal DB31, ... DBX101.2 (Gantry trip limit exceeded)

3.3 NC machine data

37135	GANTRY_ACT_POS_TOL_ERROR			A05, A10	-	
mm, degrees	Current gantry trip limit			DOUBLE	Reset	
-						
-	-	0.0	-1.0E+301	1.0E+301	7/2	M

Description: Actual value difference between master axis and slave axis in the case of alarm 10653.
Leads to alarm 10657 after Power ON.

37140	GANTRY_BREAK_UP			EXP, A01, A10	G1, Z3	
-	Invalidate gantry axis grouping			BOOLEAN	Reset	
CTEQ						
-	-	FALSE	0	-	7/2	M

Description: GANTRY_BREAK_UP = "0"
The forced coupling of the gantry axis grouping remains valid! Monitoring of violation of the gantry warning or trip limit is active!
GANTRY_BREAK_UP = "1"
This breaks up the forced coupling of the gantry grouping, thus allowing all gantry axes in this grouping to be traversed individually in JOG, AUTOMATIC, and MDI modes. Monitoring for violation of the gantry warning or trip limit is deactivated! The NC/PLC interface signal DB31, ... DBX101.5 "gantry grouping is synchronized" is set to "0".
Notice:
In cases where the gantry axes continue to be mechanically coupled, the machine may sustain damage in this operating state when the leading or synchronized axis is traversed!
The gantry axes cannot be referenced individually.
Corresponds with:
MD 37100: \$MA_GANTRY_AXIS_TYPE Gantry axis definition
MD 37110: \$MA_GANTRY_POS_TOL_WARNING Gantry warning limit
MD 37130: \$MA_GANTRY_POS_TOL_REF
Gantry trip limit during referencing
NC/PLC interface signal DB31, ... DBX101.5 (gantry grouping is synchronized)
NC/PLC interface signal DB31, ... DBX101.2 (gantry trip limit exceeded)

37150	GANTRY_FUNCTION_MASK			A10	-	
-	Gantry functions			UDWORD	Reset	
-						
-	-	0x00	0	0x7	7/2	M

Description: Special gantry functions are set with this MD.
The MD is bit-coded, the following bits are assigned:
Bit 0 == 0:
Extended monitoring of the actual value difference is inactive.
An offset between master and slave axes occurring in tracking or BREAK_UP is not taken into account in the monitoring of the actual value difference.
Alarm 10657 is not output if alarm 10563 occurs before Power OFF.
Bit 0 = 1:
Extended monitoring of the actual value difference is active.
An offset between master and slave axes occurring in tracking or BREAK_UP is taken into account in the monitoring of the actual value difference.
Prerequisite: The gantry grouping must be rereferenced or resynchronized after control startup.

Alarm 10657 is output if alarm 10563 occurs before Power OFF.

Bit 1 = 0:

Zero mark search direction of the slave axis analogous to MD 34010

Bit 1 = 1:

Zero mark search direction of the slave axis same as for master axis

Bit 2 = 0 :

Alarm 10655 "Synchronization in progress" is output

Bit 2 = 1

Alarm 10655 "Synchronization in progress" is not output

37160	LEAD_FUNCTION_MASK			A10	M3	
-	Functions for master value coupling			UDWORD	NEW CONF	
CTEQ						
-	-	0x01	0	0x3	1/1	M

Description:

With this MD, special functions of master value coupling are set.

The MD is bit-coded, the following bits are assigned:

Bit 0 = 0:

Dead time compensation is not active at actual value coupling.

Bit 0 = 1:

Dead time compensation is active at actual value coupling.

During actual value coupling, a systematic position offset is created between master and following axis. It is caused by the IPO/position controller dead time between the actual values of master axis and following axis.

For SW 6.4 and higher, this position offset can be compensated by a linear extrapolation of the master value.

Possible velocity fluctuations in the master axis may have an increased impact on the following axis.

The bit must be set for the relevant master axis.

Bit 1 = 0:

The spindle/axis disable of the axis will not become effective with the master value coupling active.

The spindle/axis disable of the master axis becomes effective.

Bit 1 = 1:

The spindle/axis disable is effective for this axis even with the master value coupling active.

The bit must be set for the relevant following axis.

37200	COUPLE_POS_TOL_COARSE			A05, A10	M3, S3, 2.4, 6.2	
mm, degrees	Threshold value for 'Synchronism coarse'			DOUBLE	NEW CONF	
-						
-	-	1.0	0.0	1.0e15	7/2	M

Description:

In synchronous mode, the positional difference between the leading and following axis(axis)/spindle(s) is monitored (only DV and AV mode or cmdpos and actpos in the case of CP programming).

The NC/PLC interface signal DB31, ... DBX98.1 (synchronism coarse) is set if the current positional difference is within the tolerance band specified by the threshold value.

Furthermore, this threshold value can be used to define the criterion for block change on activation of synchronous mode or on modification of the speed ratio parameters when the coupling is active in cases where "synchronism coarse" is selected as the block change response condition (see channel-specific MD21320

\$MC_COUPLE_BLOCK_CHANGE_CTRL_1 or language instruction COUPDEF, WAITC, CPBC).

3.3 NC machine data

Entering a value of "0" always sets the NC/PLC interface signal DB31, ... DBX98.1 "synchronism coarse" to "1" in DV/AV mode or with cmd/actpos.

Corresponds with:

Channel-specific MD21320 \$MC_COUPLE_BLOCK_CHANGE_CTRL_1

(block change response in synchronous mode)

NC/PLC interface signal DB31, ... DBX98.1 (synchronism coarse)

37202	COUPLE_POS_TOL_COARSE_2			A05, A10	-	
mm, degrees	Second threshold value for 'synchronism monitoring coarse'			DOUBLE	NEW CONF	
-						
-	-	0.0	0.0	1.0e15	7/2	M

Description:

Generic coupling - second synchronism monitoring of the synchronism difference on the actual value side in the case of positional couplings - coarse threshold value.

Entering a value of "0" deactivates monitoring.

Entering a value other than "0" starts synchronism monitoring (2) once 'synchronism coarse' has been reached:

The NC/PLC interface signal DB31, ... DBX103.5 (synchronism 2 coarse) indicates whether the synchronism difference on the actual value side violates the threshold value.

If the threshold value is violated, this is indicated by show alarm 22026, which can be canceled.

Corresponds with:

MD37200 \$MA_COUPLE_POS_TOL_COARSE

NC/PLC interface signal DB31, ... DBX98.1 (synchronism coarse)

37210	COUPLE_POS_TOL_FINE			A05, A10	M3, S3, 2.4	
mm, degrees	Threshold value for 'Synchronism fine'			DOUBLE	NEW CONF	
-						
-	-	0.5	0.0	1.0e15	7/2	M

Description:

In synchronous mode, the positional difference between the leading and following axis(axis)/spindle(s) is monitored (only DV and AV mode or cmdpos and actpos in the case of CP programming).

The NC/PLC interface signal DB31, ... DBX98.0 (synchronism fine) is set if the current positional difference is within the tolerance band specified by the threshold value.

Furthermore, this threshold value can be used to define the criterion for block change on selection of synchronous mode or on modification of the speed ratio parameters when the coupling is active in cases where "synchronism fine" is selected as the block change response condition (see channel-specific MD21320

\$MC_COUPLE_BLOCK_CHANGE_CTRL_1 or language instruction COUPDEF, WAITC, CPBC).

Entering a value of "0" always sets the NC/PLC interface signal DB31, ... DBX98.0 (synchronism fine) to "1" in DV/AV mode or with cmd/actpos.

Corresponds with:

Channel-specific MD21320 \$MC_COUPLE_BLOCK_CHANGE_CTRL_1

(block change response in synchronous mode)

NC/PLC interface signal DB31, ... DBX98.0 (synchronism fine)

37212	COUPLE_POS_TOL_FINE_2			A05, A10	-	
mm, degrees	Second threshold value for 'synchronism monitoring fine'			DOUBLE	NEW CONF	
-						
-	-	0.0	0.0	1.0e15	7/2	M

Description:

Generic coupling - second synchronism monitoring of the synchronism difference on the actual value side in the case of positional couplings - fine threshold value.

Entering a value of "0" deactivates monitoring.

Entering a value other than "0" starts synchronism monitoring (2) once 'synchronism fine' has been reached:

The NC/PLC interface signal DB31, ... DBX103.4 (synchronism 2 fine) indicates whether the synchronism difference on the actual value side violates the threshold value.

If the threshold value is violated, this is indicated by show alarm 22025, which can be canceled.

Corresponds with:

MD37210 \$MA_COUPLE_POS_TOL_FINE

NC/PLC interface signal DB31, ... DBX98.0 (synchronism fine)

37220	COUPLE_VELO_TOL_COARSE			A05, A10	S3	
mm/min, rev/min	Velocity tolerance 'coarse'			DOUBLE	NEW CONF	
-						
-	-	60.0	0.0	1.0E+301	7/2	M

Description:

In synchronous mode, the velocity difference between the leading and following axis(axis)/spindle(s) is monitored (only VV mode or cmdvel in the case of CP programming).

The NC/PLC interface signal DB31, ... DBX98.1 (synchronism coarse) is set if the current velocity difference is within the tolerance band specified by the threshold value.

Furthermore, this threshold value can be used to define the criterion for block change on activation of synchronous mode or on modification of the speed ratio parameters when the coupling is active in cases where "synchronism coarse" is selected as the block change response condition (see channel-specific MD21320

\$MC_COUPLE_BLOCK_CHANGE_CTRL_1 or language instruction COUPDEF, WAITC, CPBC).

Entering a value of "0" always sets the NC/PLC interface signal DB31, ... DBX98.1 (synchronism coarse) to "1" in VV mode or with cmdvel.

Corresponds with:

Channel-specific MD21320 \$MC_COUPLE_BLOCK_CHANGE_CTRL_1
(block change response in synchronous mode)

NC/PLC interface signal DB31, ... DBX98.1 (synchronism coarse)

37230	COUPLE_VELO_TOL_FINE			A05, A10	S3	
mm/min, rev/min	Velocity tolerance 'fine'			DOUBLE	NEW CONF	
-						
-	-	30.0	0.0	1.0E+301	7/2	M

Description:

In synchronous mode, the velocity difference between the leading and following axis(axis)/spindle(s) is monitored (only VV mode or cmdvel in the case of CP programming).

The NC/PLC interface signal DB31, ... DBX98.0 (synchronism fine) is set if the current velocity difference is within the tolerance band specified by the threshold value.

Furthermore, this threshold value can be used to define the criterion for block change on activation of synchronous mode or on modification of the speed ratio parameters when the coupling is active in cases where "synchronism fine" is selected as the block change response condition (see channel-specific MD21320

\$MC_COUPLE_BLOCK_CHANGE_CTRL_1 or language instruction COUPDEF, WAITC, CPBC).

Entering a value of "0" always sets the NC/PLC interface signal DB31, ... DBX98.0 (synchronism fine) to "1" in VV mode or with cmdvel.

Corresponds with:

Channel-specific MD21320 \$MC_COUPLE_BLOCK_CHANGE_CTRL_1
(block change response in synchronous mode)

NC/PLC interface signal DB31, ... DBX98.0 (synchronism fine)

3.3 NC machine data

37240	COUP_SYNC_DELAY_TIME			A05, A10	-	
s	Delay time actual value synchronism			DOUBLE	NEW CONF	
-						
-	2	60, 30	0.0	1.0E+301	7/2	M

Description: Synchronous spindle coupling: delay time - monitors the time taken to reach actual value synchronism after reaching setpoint synchronism.

MD37240 \$MA_COUP_SYNC_DELAY_TIME[0]: time to reach 'Synchronism fine'

MD37240 \$MA_COUP_SYNC_DELAY_TIME[1]: time to reach 'Synchronism coarse'

If the value "0" is entered, the relevant monitoring is inactive

Related to:

MD 37200 \$MA_COUPLE_POS_TOL_COARSE

MD 37210 \$MA_COUPLE_POS_TOL_FINE

MD 37220 \$MA_COUPLE_VELO_TOL_COARSE

MD 37230 \$MA_COUPLE_VELO_TOL_FINE

37250	MS_ASSIGN_MASTER_SPEED_CMD			A10	TE3	
-	Master axis for speed setpoint coupling			DWORD	PowerOn	
-						
-	-	0	0	31	7/2	M

Description: A master/slave speed setpoint linkage is configured by indicating the machine axis number of the master axis belonging to this slave.

Related to:

MD37252 \$MA_MS_ASSIGN_MASTER_TORQUE_CTR

37252	MS_ASSIGN_MASTER_TORQUE_CTR			A10	TE3	
-	Master axis number for torque control			DWORD	PowerOn	
-						
-	-	0	0	31	7/2	M

Description: Torque distribution between master and slave axes is configured by stating the machine axis number of the master axis belonging to the slave.

Homogenous torque distribution is achieved by using the torque compensatory controller.

In order to do this, the controller has to know the torque actual values of the drives involved (with PROFIdrive, the message frame used must include and transfer these values, e.g. use message frame 116)

With default setting = 0, the same master axis is used for torque control as for speed setpoint coupling MD37250 \$MA_MS_ASSIGN_MASTER_SPEED_CMD.

Related to:

MD37250 \$MA_MS_ASSIGN_MASTER_SPEED_CMD

MD37254 \$MA_MS_TORQUE_CTRL_MODE

MD37256 \$MA_MS_TORQUE_CTRL_P_GAIN

MD37258 \$MA_MS_TORQUE_CTRL_I_TIME

MD37268 \$MA_MS_TORQUE_WEIGHT_SLAVE

37253	MS_FUNCTION_MASK			A10	TE3	
-	Master/slave settings			UDWORD	NEW CONF	
-						
-	-	0x0	0	0x7FFFFFFF	7/2	M

Description: Parameterizing a master/slave coupling

Bit 0 = 0:

The scaling of MD37256 \$MA_MS_TORQUE_CTRL_P_GAIN, MD37260 \$MA_MS_MAX_CTRL_VELO is smaller than described in the documentation by the factor 1s/IPO cycle.

Bit 0 = 1:

The scaling of MD37256 \$MA_MS_TORQUE_CTRL_P_GAIN, MD37260 \$MA_MS_MAX_CTRL_VELO corresponds to the documentation.

Bit 1 = 0:

With MASLDEF, the master axis for torque compensation control is the programmed axis

Bit 1 = 1:

With MASLDEF, the master axis for torque compensation control is the axis configured in MD37252 \$MA_MS_ASSIGN_MASTER_TORQUE_CTR.

Bit 2 = 0:

The torque precontrol value of the slave axis corresponds to the torque precontrol value of the master axis.

Bit 2 = 1:

The torque precontrol value of the slave axis corresponds to the torque precontrol value of the master axis weighted in relation to the MD32650 \$MA_AX_INERTIA of the two axes.

37254	MS_TORQUE_CTRL_MODE			A10	TE3	
-	Torque compensatory controller interconnection			DWORD	Immediately	
-						
-	-	0	0	3	7/2	M

Description: The output of the torque compensatory controller is connected to

0: Master and slave axis

1: Slave axis

2: Master axis

3: No axis

when the torque control is active.

Related to:

MD37252 \$MA_MS_ASSIGN_MASTER_TORQUE_CTR

MD37250 \$MA_MS_ASSIGN_MASTER_SPEED_CMD

MD37254 \$MA_MS_TORQUE_CTRL_MODE

37255	MS_TORQUE_CTRL_ACTIVATION			A10	TE3	
-	Torque compensatory controller activation			BYTE	NEW CONF	
-						
-	-	0	0	1	7/2	M

Description: The torque compensatory controller can be switched ON and OFF by means of MD37254 \$MA_MS_TORQUE_CTRL_MODE or via the NC/PLC interface signal DB31, ... DBX24.4 (torque compensatory controller on).

In order to do this, the controller has to know the torque actual values of the drives involved (with PROFIdrive, the message frame used must include and transfer these values, e.g. use message frame 116).

In the case of the PLC, MD37254 \$MA_MS_TORQUE_CTRL_MODE is only used for configuring the interconnection of the torque compensatory controller.

0: Switch ON/OFF via MD37254 \$MA_MS_TORQUE_CTRL_MODE

1: Switch ON/OFF via the NC/PLC interface signal DB31, ... DBX24.4 (torque compensatory controller on)

3.3 NC machine data

37256	MS_TORQUE_CTRL_P_GAIN			A10	TE3	
%	Torque compensatory controller gain factor			DOUBLE	NEW CONF	
-						
-	-	0.0	0.0	100.0	7/2	M

Description: Gain factor of the torque compensatory controller

The gain factor is entered as a percentage ratio between the maximum load-side axis velocity of the slave axis to the normalization torque.

The maximum axis velocity is derived from MD32000 \$MA_MAX_AX_VELO, the interface normalization torque e.g. from the SINAMICS parameter P2003.

If (for third-party drives), the torque interface normalization for the control software is unknown, then the torque equalization controller (master-slave) cannot be used.

Corresponds with:

MD37254 \$MA_MS_TORQUE_CTRL_MODE

MD37258 \$MA_MS_TORQUE_CTRL_I_TIME

MD32000 \$MA_MAX_AX_VELO

37258	MS_TORQUE_CTRL_I_TIME			A10	TE3	
s	Torque compensatory controller integral action time			DOUBLE	NEW CONF	
-						
-	-	0.0	0.0	100.0	7/2	M

Description: Integral time of the torque compensatory controller

The integral time does not become active until the P gain factor is greater than 0.

Related to:

MD37254 \$MA_MS_TORQUE_CTRL_MODE

MD37256 \$MA_MS_TORQUE_CTRL_P_GAIN

MD32000 \$MA_MAX_AX_VELO

37260	MS_MAX_CTRL_VELO			A10	TE3	
%	Torque compensatory controller limit			DOUBLE	NEW CONF	
-						
-	-	100.0	0.0	100.0	7/2	M

Description: Torque compensatory controller limitation

The speed setpoint value calculated by the torque compensatory controller is limited. The limit that can be entered as a percentage refers to MD32000 \$MA_MAX_AX_VELO of the slave axis.

Related to:

MD37254 \$MA_MS_TORQUE_CTRL_MODE

MD37256 \$MA_MS_TORQUE_CTRL_P_GAIN

MD37258 \$MA_MS_TORQUE_CTRL_I_TIME

MD32000 \$MA_MAX_AX_VELO

37262	MS_COUPLING_ALWAYS_ACTIVE			A10	TE3	
-	Permanent master/slave link			BYTE	NEW CONF	
-						
-	-	0	0	1	7/2	M

Description: Activation behavior of a master/slave coupling

0: Temporary coupling

The coupling is activated/deactivated via PLC interface signals and language commands.

1: Permanent coupling

This machine data activates the permanent coupling.

PLC interface signals and language commands do not have any effect.

Related to:

MD37252 \$MA_MS_ASSIGN_MASTER_TORQUE_CTR

MD37250 \$MA_MS_ASSIGN_MASTER_SPEED_CMD

37263	MS_SPIND_COUPLING_MODE			A10	TE3	
-	Link response of a spindle			BYTE	NEW CONF	
-						
-	-	0	0	1	7/2	M

Description: Link behavior of a speed-controlled spindle:

0: Link is closed/released in standstill only.

1: Link is closed/released already during motion.

The configuration is valid both for activation/deactivation via NC/PLC interface signal DB31, ... DBX24.7 (activate MS) and for MASLON, MASLOF, MASLOFs, MASLDEL

37264	MS_TENSION_TORQUE			A10	TE3	
%	Master-slave tension torque			DOUBLE	Immediately	
-						
-	-	0.0	-100.0	100.0	7/2	M

Description: A constant tension torque between the master and the slave axis can be entered as a percentage of the normalization torque of the slave axis.

The value entered here is derived from the SINAMICS parameter P2003

Use of a tension torque requires an active torque compensatory controller (compare MD37255 \$MA_MS_TORQUE_CTRL_ACTIVATION).

Related to:

MD37252 \$MA_MS_ASSIGN_MASTER_TORQUE_CTR

MD37266 \$MA_MS_TENSION_TORQ_FILTER_TIME

MD37255 \$MA_MS_TORQUE_CTRL_ACTIVATION

37266	MS_TENSION_TORQ_FILTER_TIME			A10	TE3	
s	Filter time constant tension torque			DOUBLE	NEW CONF	
-						
-	-	0.0	0.0	100.0	7/2	M

Description: The tension torque between the master and slave axes can be activated via a PT1 filter. Any change of MD37264 \$MA_MS_TENSION_TORQUE is then travelled out with the time constant of the filter.

As default, the filter is inactive; any torque change becomes active unfiltered.

Related to:

MD37264 \$MA_MS_TENSION_TORQUE

37268	MS_TORQUE_WEIGHT_SLAVE			A10	TE3	
%	Torque weighting of slave axis			DOUBLE	NEW CONF	
-						
-	-	50.0	1.0	100.0	7/2	M

Description: The torque share that the slave axis contributes to the total torque can be configured via the weighting. This enables different torque shares to be implemented between the master and slave axes.

In the case of motors with the same rated torque, a 50% to 50% torque sharing is suggested.

3.3 NC machine data

The torque share of the master axis results implicitly from 100% - MD37268
\$MA_MS_TORQUE_WEIGHT_SLAVE.

Related to:

MD37252 \$MA_MS_ASSIGN_MASTER_TORQUE_CTR

MD37266 \$MA_MS_TENSION_TORQ_FILTER_TIME

37270	MS_VELO_TOL_COARSE			A10	TE3, Z3	
%	Master/slave speed tolerance coarse			DOUBLE	NEW CONF	
-						
-	-	5.0	0.0	1.0E+301	7/2	M

Description: Tolerance window, coarse, for the differential speed between the master and the slave.
If the speed difference is within the tolerance window, the NC/PLC interface signal DB31, ... DBX96.4 (Master-Slave compensatory controller active) is set.
The tolerance value is entered as a percentage of MD32000 \$MA_MAX_AX_VELO.

37272	MS_VELO_TOL_FINE			A10	TE3, Z3	
%	Master/slave speed tolerance fine			DOUBLE	NEW CONF	
-						
-	-	1.0	0.0	1.0E+301	7/2	M

Description: Tolerance window, fine, for the differential speed between the master and the slave.
If the speed difference is within the tolerance window, the NC/PLC interface signal DB31, ... DBX96.3 (Master/Slave coarse) is set.
The tolerance value is entered as a percentage of MD32000 \$MA_MAX_AX_VELO.

37274	MS_MOTION_DIR_REVERSE			A10	-	
-	Inverting traversing direction slave axis			BYTE	NEW CONF	
-						
-	-	0	0	1	7/2	M

Description: Inverting the traversing direction of a slave axis in the linked status.
0: Equidirectional to the master axis
1: Inverse to the master axis

37300	NOCO_ENABLE			EXP, A01, A09	-	
-	Activation of the nodding compensation values			UDWORD	NEW CONF	
-						
-	-	0x07	0x00	0x07	2/2	M

Description: Activation of the injection values of the nodding compensation
Bit 0 = 0:
MD37318 \$MA_NOCO_COMPLIANCE_1 not active
Bit 0 = 1:
MD37318 \$MA_NOCO_COMPLIANCE_1 active
Bit 1 = 0:
MD37328 \$MA_NOCO_COMPLIANCE_2 not active
Bit 1 = 1:
MD37328 \$MA_NOCO_COMPLIANCE_2 active
Bit 2 = 0:
MD37338 \$MA_NOCO_COMPLIANCE_3 not active
Bit 2 = 1:
MD37338 \$MA_NOCO_COMPLIANCE_3 active

Related to:

MD37318 \$MA_NOCO_COMPLIANCE_1

MD37328 \$MA_NOCO_COMPLIANCE_2

MD37338 \$MA_NOCO_COMPLIANCE_3

37302	NOCO_FILTER_TIME			EXP, A01, A09	-	
s	Time constant for smoothing the nodding compensation values			DOUBLE	NEW CONF	
-						
-	-	0.002	0.0	1.0	2/2	M

Description: The time constant is used to smooth the injected values of the nodding compensation. The smoothing is not effective if the time constant is less than 0.1 of the position controller cycles.

Related to:

MD37310 \$MA_NOCO_INPUT_AX_1

MD37320 \$MA_NOCO_INPUT_AX_2

MD37330 \$MA_NOCO_INPUT_AX_3

MD37318 \$MA_NOCO_COMPLIANCE_1

MD37328 \$MA_NOCO_COMPLIANCE_2

MD37338 \$MA_NOCO_COMPLIANCE_3

37310	NOCO_INPUT_AX_1			EXP, A01, A09	-	
-	Machine axis that causes a nodding motion			DWORD	NEW CONF	
-						
-	-	0	0	31	2/2	M

Description: Number of the machine axis that causes a nodding motion in this axis in order to activate the nodding compensation. The nodding compensation acts in combination with MD37318 \$MA_NOCO_COMPLIANCE_1.

Related to:

MD37302 \$MA_NOCO_FILTER_TIME

MD37312 \$MA_NOCO_ADAPT_AX_1

MD37318 \$MA_NOCO_COMPLIANCE_1

37312	NOCO_ADAPT_AX_1			EXP, A01, A09	-	
-	Machine axis whose position affects the nodding motion			DWORD	NEW CONF	
-						
-	-	0	0	31	2/2	M

Description: Number of the machine axis whose position affects the nodding motion in this axis. The position-dependent adaptation of the nodding compensation takes place in combination with MD 37316 \$MA_NOCO_ADAPT_POS_1 and MD37318 \$MA_NOCO_COMPLIANCE_1. A position-dependent adaptation is only active if a machine axis number is parameterized and there is a value greater than 1 in MD37314 \$MA_NOCO_ADAPT_NUM_1.

Related to:

MD37310 \$MA_NOCO_INPUT_AX_1

MD37314 \$MA_NOCO_ADAPT_NUM_1

MD37316 \$MA_NOCO_ADAPT_POS_1

MD37318 \$MA_NOCO_COMPLIANCE_1

3.3 NC machine data

37314	NOCO_ADAPT_NUM_1	EXP, A01, A09	-
-	Number of positions of the adaptation curve of the nodding compensation	DWORD	NEW CONF
-			
-	-	1	1
-		3	2/2
-			M

Description: Number of the axis positions used for the position-dependent adaptation of the nodding compensation.

A position-dependent adaptation is only active if the number of positions is greater than 1 and a machine axis number is parameterized in MD37312 \$MA_NOCO_ADAPT_AX_1.

Related to:

MD37310 \$MA_NOCO_INPUT_AX_1

MD37312 \$MA_NOCO_ADAPT_AX_1

MD37316 \$MA_NOCO_ADAPT_POS_1

MD37318 \$MA_NOCO_COMPLIANCE_1

37316	NOCO_ADAPT_POS_1	EXP, A01, A09	-
mm	Positions of the adaptation curve of the nodding compensation	DOUBLE	NEW CONF
-			
-	3	0.0, 0.0, 0.0	-
-		-	2/2
-			M

Description: Positions of the machine axis from MD37312 \$MA_NOCO_ADAPT_AX_1 at which the compliance factors in MD37318 \$MA_NOCO_COMPLIANCE_1 are active.

A position-dependent adaptation is only active if the number of positions in MD37314 \$MA_NOCO_ADAPT_NUM_1 is greater than 1 and a machine axis number is parameterized in MD37312 \$MA_NOCO_ADAPT_AX_1.

Related to:

MD37310 \$MA_NOCO_INPUT_AX_1

MD37312 \$MA_NOCO_ADAPT_AX_1

MD37314 \$MA_NOCO_ADAPT_NUM_1

MD37318 \$MA_NOCO_COMPLIANCE_1

37318	NOCO_COMPLIANCE_1	EXP, A01, A09	-
-	Compliance factor for nodding compensation	DOUBLE	NEW CONF
-			
-	3	0.0, 0.0, 0.0	-0.000999
-		+0.000999	2/2
-			M

Description: Factor for compensating the nodding motion caused by MD37310 \$MA_NOCO_INPUT_AX_1.

Compliance factor = compliance in the position (m)/ acceleration (m/s²)

If no position-dependent adaptation is active, only the value in MD37318 \$MA_NOCO_COMPLIANCE_1[0] is active.

With active position-dependent adaptation, as many values from MD37318 \$MA_NOCO_COMPLIANCE_1 are active as are parameterized in MD37314 \$MA_NOCO_ADAPT_NUM_1.

Related to:

MD37300 \$MA_NOCO_ENABLE

MD37302 \$MA_NOCO_FILTER_TIME

MD37310 \$MA_NOCO_INPUT_AX_1

MD37312 \$MA_NOCO_ADAPT_AX_1

MD37314 \$MA_NOCO_ADAPT_NUM_1

MD37316 \$MA_NOCO_ADAPT_POS_1

37320	NOCO_INPUT_AX_2	EXP, A01, A09	-
-	Machine axis that causes a nodding motion	DWORD	NEW CONF
-			
-	-	0	0
-	-	31	2/2
-	-		M

Description: Number of the machine axis that causes a nodding motion in this axis in order to activate the nodding compensation. The nodding compensation acts in combination with MD37328 \$MA_NOCO_COMPLIANCE_2.

Related to:

MD37302 \$MA_NOCO_FILTER_TIME
MD37322 \$MA_NOCO_ADAPT_AX_2
MD37328 \$MA_NOCO_COMPLIANCE_2

37322	NOCO_ADAPT_AX_2	EXP, A01, A09	-
-	Machine axis whose position affects the nodding motion	DWORD	NEW CONF
-			
-	-	0	0
-	-	31	2/2
-	-		M

Description: Number of the machine axis whose position affects the nodding motion in this axis. The position-dependent adaptation of the nodding compensation takes place in combination with MD 37326 \$MA_NOCO_ADAPT_POS_2 and MD37328 \$MA_NOCO_COMPLIANCE_2. A position-dependent adaptation is only active if a machine axis number is parameterized and there is a value greater than 1 in MD37324 \$MA_NOCO_ADAPT_NUM_2.

Related to:

MD37320 \$MA_NOCO_INPUT_AX_2
MD37324 \$MA_NOCO_ADAPT_NUM_2
MD37326 \$MA_NOCO_ADAPT_POS_2
MD37328 \$MA_NOCO_COMPLIANCE_2

37324	NOCO_ADAPT_NUM_2	EXP, A01, A09	-
-	Number of positions of the adaptation curve of the nodding compensation	DWORD	NEW CONF
-			
-	-	1	1
-	-	3	2/2
-	-		M

Description: Number of the axis positions used for the position-dependent adaptation of the nodding compensation.

A position-dependent adaptation is only active if the number of positions is greater than 1 and a machine axis number is parameterized in MD37322 \$MA_NOCO_ADAPT_AX_2.

Related to:

MD37320 \$MA_NOCO_INPUT_AX_2
MD37322 \$MA_NOCO_ADAPT_AX_2
MD37326 \$MA_NOCO_ADAPT_POS_2
MD37328 \$MA_NOCO_COMPLIANCE_2

37326	NOCO_ADAPT_POS_2	EXP, A01, A09	-
mm	Positions of the adaptation curve of the nodding compensation	DOUBLE	NEW CONF
-			
-	3	0.0, 0.0, 0.0	-
-	-	-	2/2
-	-		M

Description: Positions of the machine axis from MD37322 \$MA_NOCO_ADAPT_AX_2 at which the compliance factors in MD37328 \$MA_NOCO_COMPLIANCE_2 are active.

3.3 NC machine data

A position-dependent adaptation is only active if the number of positions in MD37324 \$MA_NOCO_ADAPT_NUM_2 is greater than 1 and a machine axis number is parameterized in MD37322 \$MA_NOCO_ADAPT_AX_2.

Related to:

MD37320 \$MA_NOCO_INPUT_AX_2

MD37322 \$MA_NOCO_ADAPT_AX_2

MD37324 \$MA_NOCO_ADAPT_NUM_2

MD37328 \$MA_NOCO_COMPLIANCE_2

37328	NOCO_COMPLIANCE_2			EXP, A01, A09	-	
-	Compliance factor for nodding compensation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0	-0.000999	+0.000999	2/2	M

Description: Factor for compensating the nodding motion caused by MD37320 \$MA_NOCO_INPUT_AX_2.
 Compliance factor = compliance in the position (m) / acceleration (m/s²)
 If no position-dependent adaptation is active, only the value in MD37328 \$MA_NOCO_COMPLIANCE_2[0] is active.
 With active position-dependent adaptation, as many values from MD37328 \$MA_NOCO_COMPLIANCE_2 are active as are parameterized in MD37324 \$MA_NOCO_ADAPT_NUM_2.
 Related to:
 MD37300 \$MA_NOCO_ENABLE
 MD37302 \$MA_NOCO_FILTER_TIME
 MD37320 \$MA_NOCO_INPUT_AX_2
 MD37322 \$MA_NOCO_ADAPT_AX_2
 MD37324 \$MA_NOCO_ADAPT_NUM_2
 MD37326 \$MA_NOCO_ADAPT_POS_2

37330	NOCO_INPUT_AX_3			EXP, A01, A09	-	
-	Machine axis that causes a nodding motion			DWORD	NEW CONF	
-						
-	-	0	0	31	2/2	M

Description: Number of the machine axis that causes a nodding motion in this axis in order to activate the nodding compensation. The nodding compensation acts in combination with MD37338 \$MA_NOCO_COMPLIANCE_3.
 Related to:
 MD37302 \$MA_NOCO_FILTER_TIME
 MD37332 \$MA_NOCO_ADAPT_AX_3
 MD37338 \$MA_NOCO_COMPLIANCE_3

37332	NOCO_ADAPT_AX_3			EXP, A01, A09	-	
-	Machine axis whose position affects the nodding motion			DWORD	NEW CONF	
-						
-	-	0	0	31	2/2	M

Description: Number of the machine axis whose position affects the nodding motion in this axis.
 The position-dependent adaptation of the nodding compensation takes place in combination with MD 37336 \$MA_NOCO_ADAPT_POS_3 and MD37338 \$MA_NOCO_COMPLIANCE_3.
 A position-dependent adaptation is only active if a machine axis number is parameterized and there is a value greater than 1 in MD37334 \$MA_NOCO_ADAPT_NUM_3.
 Related to:
 MD37330 \$MA_NOCO_INPUT_AX_3
 MD37334 \$MA_NOCO_ADAPT_NUM_3

MD37336 \$MA_NOCO_ADAPT_POS_3
MD37338 \$MA_NOCO_COMPLIANCE_3

37334	NOCO_ADAPT_NUM_3			EXP, A01, A09	-	
-	Number of positions of the adaptation curve of the nodding compensation			DWORD	NEW CONF	
-						
-	-	1	1	3	2/2	M

Description: Number of the axis positions used for the position-dependent adaptation of the nodding compensation.

A position-dependent adaptation is only active if the number of positions is greater than 1 and a machine axis number is parameterized in MD37332 \$MA_NOCO_ADAPT_AX_3.

Related to:

MD37330 \$MA_NOCO_INPUT_AX_3
MD37332 \$MA_NOCO_ADAPT_AX_3
MD37336 \$MA_NOCO_ADAPT_POS_3
MD37338 \$MA_NOCO_COMPLIANCE_3

37336	NOCO_ADAPT_POS_3			EXP, A01, A09	-	
mm	Positions of the adaptation curve of the nodding compensation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0	-	-	2/2	M

Description: Positions of the machine axis from MD37332 \$MA_NOCO_ADAPT_AX_3 at which the compliance factors in MD37338 \$MA_NOCO_COMPLIANCE_3 are active.

A position-dependent adaptation is only active if the number of positions in MD37334 \$MA_NOCO_ADAPT_NUM_3 is greater than 1 and a machine axis number is parameterized in MD37332 \$MA_NOCO_ADAPT_AX_3.

Related to:

MD37330 \$MA_NOCO_INPUT_AX_3
MD37332 \$MA_NOCO_ADAPT_AX_3
MD37334 \$MA_NOCO_ADAPT_NUM_3
MD37338 \$MA_NOCO_COMPLIANCE_3

37338	NOCO_COMPLIANCE_3			EXP, A01, A09	-	
-	Compliance factor of the nodding compensation			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0	-0.000999	+0.000999	2/2	M

Description: Factor for compensating the nodding motion caused by MD37330 \$MA_NOCO_INPUT_AX_3.

Compliance factor = compliance in the position (m) / acceleration (m/s²)

If no position-dependent adaptation is active, only the value in MD37338 \$MA_NOCO_COMPLIANCE_3[0] is active.

With active position-dependent adaptation, as many values from MD37338 \$MA_NOCO_COMPLIANCE_3 are active as are parameterized in MD37334 \$MA_NOCO_ADAPT_NUM_3.

Related to:

MD37300 \$MA_NOCO_ENABLE
MD37302 \$MA_NOCO_FILTER_TIME
MD37330 \$MA_NOCO_INPUT_AX_3
MD37332 \$MA_NOCO_ADAPT_AX_3
MD37334 \$MA_NOCO_ADAPT_NUM_3
MD37336 \$MA_NOCO_ADAPT_POS_3

3.3 NC machine data

37400	EPS_TLIFT_TANG_STEP			A10	T3	
mm, degrees	Tangent angle for corner recognition			DOUBLE	Reset	
CTEQ						
-	-	5.0	-1.0E+301	1.0E+301	7/2	M

Description: If TLIFT has been programmed and the axis is tracked tangentially, a step of the position setpoint larger than MD37400 \$MA_EPS_TLIFT_TANG_STEP causes an intermediate block to be inserted. The intermediate block traverses the axis to the position corresponding to the start tangent in the next block.

MD irrelevant if: TLIFT not activated

Related to:

TLIFT instruction

37402	TANG_OFFSET			A10	T3	
mm, degrees	Default angle for tangential correction			DOUBLE	Reset	
CTEQ						
-	-	0.0	-1.0E+301	1.0E+301	7/2	M

Description: Default offset (angle), which the tracked axis forms with the tangent. The angle acts in addition to the angle programmed in the TANGON block.

MD irrelevant if tangential tracking not active.

Related to:

TANGON instruction

37500	ESR_REACTION			EXP, A01, A10	M3, P2	
-	Axial mode of "Extended Stop and Retract"			BYTE	NEW CONF	
CTEQ						
-	-	0	0	22	7/2	M

Description: Selection of the response to be triggered via system variable "\$AN_ESR_TRIGGER".

0 = No response Reaktion (or only external response through synchronized action programming of rapid digital outputs).

21 = NC-controlled retraction axis

22 = NC-controlled stopping axis

37510	AX_ESR_DELAY_TIME1			EXP, A01, A10	P2	
s	Delay time ESR single axis			DOUBLE	NEW CONF	
CTEQ						
-	-	0.0	0.0	1.0E+301	7/2	M

Description: If, for example, an alarm occurs, the deceleration time can be delayed by means of this MD, e.g. to allow in case of gear hobbing the retraction from the tooth gap first.

37511	AX_ESR_DELAY_TIME2			EXP, A01, A10	P2	
s	ESR time for interpolatory deceleration of single axis			DOUBLE	NEW CONF	
CTEQ						
-	-	0.0	0.0	1.0E+301	7/2	M

Description: The time for interpolatory braking specified here in MD37511 \$MA_AX_ESR_DELAY_TIME2 still remains after expiry of the time MD37510 \$MA_AX_ESR_DELAY_TIME1.

Rapid braking with subsequent tracking is initiated after expiry of the time MD37511 \$MA_AX_ESR_DELAY_TIME2.

37550	EG_VEL_WARNING			A05, A10	M3, Z3	
%	Threshold value for velocity warning threshold.			DOUBLE	NEW CONF	
-						
-	-	90.0	0	100	7/2	M

Description: Threshold value for VDI signals
 If, with active EG axis link, the maximum velocities stored in MD 32000: \$MA_MAX_AX_VELO have been reached for the current velocity of the axis by the percentage set here, a warning (signal) for velocity is output.
 Related to:
 MD32000 \$MA_MAX_AX_VELO

37560	EG_ACC_TOL			A05, A10	M3, Z3	
%	Threshold value for 'Axis accelerating'			DOUBLE	NEW CONF	
-						
-	-	25.0	0.0	1.0E+301	7/2	M

Description: Threshold value for VDI signal "Axis accelerates"
 If, with active EU axis link, the maximum accelerations stored in MD 32300: \$MA_MAX_AX_ACCEL have been reached for the current acceleration of the axis by the percentage set here, a warning (signal) for acceleration is output.
 Korrespondiert mit:
 MD32300 \$MA_MAX_AX_ACCEL

37620	PROFIBUS_TORQUE_RED_RESOL			EXP, A01	-	
%	Resolution PROFIdrive torque reduction			DOUBLE	NEW CONF	
-						
-	-	1.0	0.005	10.0	7/2	M

Description: For PROFIdrive only:
 Resolution of torque reduction on the PROFIdrive (LSB significance)
 The MD is only relevant for controls with PROFIdrive drives. For these controls, it defines the resolution of the cyclic interface data "Torque reduction value" (only exists for MD13060 \$MN_DRIVE_TELEGRAM_TYPE = 101 ff. or 201 ff.), which is required for the "Travel to fixed stop" functionality.
 The 1% default value corresponds to the original significance. The torque limit is transferred on the PROFIdrive with increments of 1%; the value 100 in the corresponding PROFIdrive message frame data cell corresponds to full torque reduction (i.e. without force).
 By changing this MD to 0.005%, for example, the value can be entered in increments of 0.005%, i.e. the increments for the torque limit value become finer by a factor of 200.
 For limitation to the rated torque, the value 0 is transmitted in this case; complete torque reduction (i.e. without force) characterizes the transmittable value 10000.
 To avoid misadaptation, the setting value of the MD must be selected to match the interpretation configured on the drive side or the firmly defined interpretation of the torque reduction value. If the setting of the control on the drive (manufacturer-specific drive parameter) is known (i.e. with SIEMENS drives), the software automatically sets the MD; in other words, in this case the MD is merely used for display purposes.

37800	OEM_AXIS_INFO			A01, A11	-	
-	OEM version information			STRING	PowerOn	
-						
-	2	,	-	-	7/2	M

3.3 NC machine data

Description: A version information freely available to the user
(is indicated in the version screen)

37900	SAFE_CAM_TRACK_OUTPUT			A01	FBSI	
-	Output assignment cam track 1 to 4			UDWORD	PowerOn	
-						
-	4	0, 0, 0, 0	0x00000000	0x8403073F	7/2	M

Description: This data defines the outputs for the cam tracks 1 to 4.
Structure see: MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT
n = 0, 1, 2, 3 correspond to the assignment for cam track 1 to 4
Signal Meaning
= 0 Axis is not placed on a cam of the cam track
= 1 Axis is placed on a cam of the cam track
Note:
The "Safe cam track" function is enabled in MD 36903 \$MA_SAFE_CAM_ENABLE.

37901	SAFE_CAM_RANGE_OUTPUT_1			A01	FBSI	
-	Output assignment cam range for cam track 1			UDWORD	PowerOn	
-						
-	4	0, 0, 0, 0	0x00000000	0x8403073F	7/2	M

Description: This data defines the outputs for the cam range of cam track 1.
Structure see: MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT
n = 0, 1, 2, 3 correspond to the 4 bits for the indicated range on cam track 1
Bit 3 Bit 2 Bit 1 Bit 0
 0 0 0 0 Cam range 0 active
 0 0 0 1 Cam range 1 active
to ...
 1 1 1 1 Cam range 15 active
The cam range is defined via the following machine data:
MD36938: \$MA_SAFE_CAM_TRACK_ASSIGN[n]
Signal Meaning
= 0...14 Axis is placed within the cam range, to which the range ID 0...14 on cam track 1 was assigned
= 15 Axis is placed within the range to the right of the cam with the highest position of cam track 1
Note:
The "Safe cam track" function is enabled in MD36903 \$MA_SAFE_CAM_ENABLE.
If not all 4 bits are assigned, it may not be possible to detect unequivocally which cam range is active.
Related to:
MD37900: \$MA_SAFE_CAM_TRACK_OUTPUT

37902	SAFE_CAM_RANGE_OUTPUT_2			A01	FBSI	
-	Output assignment cam range for cam track 2			UDWORD	PowerOn	
-						
-	4	0, 0, 0, 0	0x00000000	0x8403073F	7/2	M

Description: This data defines the outputs for the cam range of cam track 2.
Structure see: MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT
n = 0, 1, 2, 3 correspond to the 4 bits for the indicated range on cam track 2

Bit 3 Bit 2 Bit 1 Bit 0
 0 0 0 0 Cam range 0 active
 0 0 0 1 Cam range 1 active
 to ...
 1 1 1 1 Cam range 15 active

The cam range is defined via the following machine data:
 MD36938: \$MA_SAFE_CAM_TRACK_ASSIGN[n]
 Signal Meaning
 = 0...14 Axis is placed within the cam range, to which the range ID 0...14 on cam track 2 was assigned
 = 15 Axis is placed within the range to the right of the cam with the highest position of cam track 2

Note:
 The "Safe cam track" function is enabled in MD36903 \$MA_SAFE_CAM_ENABLE.
 If not all 4 bits are assigned, it may not be possible to detect unequivocally which cam range is active.

Related to:
 MD37900: \$MA_SAFE_CAM_TRACK_OUTPUT

37903	SAFE_CAM_RANGE_OUTPUT_3			A01	FBSI	
-	Output assignment cam range for cam track 3			UDWORD	PowerOn	
-						
-	4	0, 0, 0, 0	0x00000000	0x8403073F	7/2	M

Description: This data defines the outputs for the cam range of cam track 3.
 Structure see: MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT
 n = 0, 1, 2, 3 correspond to the 4 bits for the indicated range on cam track 3

Bit 3 Bit 2 Bit 1 Bit 0
 0 0 0 0 Cam range 0 active
 0 0 0 1 Cam range 1 active
 to ...
 1 1 1 1 Cam range 15 active

The cam range is defined via the following machine data:
 MD36938: \$MA_SAFE_CAM_TRACK_ASSIGN[n]
 Signal Meaning
 = 0...14 Axis is placed within the cam range, to which the range ID 0...14 on cam track 3 was assigned
 = 15 Axis is placed within the range to the right of the cam with the highest position of cam track 3

Note:
 The "Safe cam track" function is enabled in MD36903 \$MA_SAFE_CAM_ENABLE.
 If not all 4 bits are assigned, it may not be possible to detect unequivocally which cam range is active.

Related to:
 MD37900: \$MA_SAFE_CAM_TRACK_OUTPUT

37904	SAFE_CAM_RANGE_OUTPUT_4			A01	FBSI	
-	Output assignment cam range for cam track 4			UDWORD	PowerOn	
-						
-	4	0, 0, 0, 0	0x00000000	0x8403073F	7/2	M

Description: This data defines the outputs for the cam range of cam track 4.

3.3 NC machine data

Structure see: MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT

n = 0, 1, 2, 3 correspond to the 4 bits for the indicated range on cam track 4

Bit 3	Bit 2	Bit 1	Bit 0	
0	0	0	0	Cam range 0 active
0	0	0	1	Cam range 1 active
to ...				
1	1	1	1	Cam range 15 active

The cam range is defined via the following machine data:

MD36938: \$MA_SAFE_CAM_TRACK_ASSIGN[n]

Signal	Meaning

= 0...14	Axis is placed within the cam range, to which the range ID 0...14 on cam track 4 was assigned

= 15	Axis is placed within the range to the right of the cam with the highest position of cam track 4

Note:

The "Safe cam track" function is enabled in MD36903 \$MA_SAFE_CAM_ENABLE.

If not all 4 bits are assigned, it may not be possible to detect unequivocally which cam range is active.

Related to:

MD37900: \$MA_SAFE_CAM_TRACK_OUTPUT

37906	SAFE_CAM_RANGE_BIN_OUTPUT_1			A01	FBSI	
-	Output assignment cam range bit for cam track 1			UDWORD	PowerOn	
-						
-	15	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	0x00000000	0x8403073F	7/2	M

Description:

This data defines the outputs for the cam range bits of cam track 1.

Structure see: MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT

Field index n corresponds to the parameterizable cam range numbers on cam track 1.

The cam range number is defined via the following machine data:

MD36938: \$MA_SAFE_CAM_TRACK_ASSIGN[k]

Signal	Meaning

= 0	Axis is not placed on cam with cam range number n

= 1	Axis is placed on cam with cam range number n

Example:

The signal addressed with field index 5 changes to 1 if the axis is placed on the cam to which cam range number 5 on cam track 1 was assigned during parameterization.

Note:

- The "Safe cam track" function is enabled in MD 36903 \$MA_SAFE_CAM_ENABLE.
- If cam range number n on cam track 1 is not parameterized, the signal of the field index can never change to 1. In this case, the output MD with field index n does not have to be parameterized.

37907	SAFE_CAM_RANGE_BIN_OUTPUT_2			A01	FBSI	
-	Output assignment cam range bit for cam track 2			UDWORD	PowerOn	
-						
-	15	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	0x00000000	0x8403073F	7/2	M

Description:

This data defines the outputs for the cam range bits of cam track 2.

Structure see: MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT

Field index n corresponds to the parameterizable cam range numbers on cam track 2.

The cam range number is defined via the following machine data:

MD36938: \$MA_SAFE_CAM_TRACK_ASSIGN[k]

Signal Meaning

= 0 Axis is not placed on cam with cam range number n

= 1 Axis is placed on cam with cam range number n

Example:

The signal addressed with field index 5 changes to 1 if the axis is placed on the cam to which cam range number 5 on cam track 2 was assigned during parameterization.

Note:

- The "Safe cam track" function is enabled in MD 36903 \$MA_SAFE_CAM_ENABLE.
- If cam range number n on cam track 2 is not parameterized, the signal of the field index can never change to 1. In this case, the output MD with field index n does not have to be parameterized.

37908	SAFE_CAM_RANGE_BIN_OUTPUT_3			A01	FBSI	
-	Output assignment cam range bit for cam track 3			UDWORD	PowerOn	
-						
-	15	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	0x00000000	0x8403073F	7/2	M

Description:

This data defines the outputs for the cam range bits of cam track 3.

Structure see: MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT

Field index n corresponds to the parameterizable cam range numbers on cam track 3.

The cam range number is defined via the following machine data:

MD36938: \$MA_SAFE_CAM_TRACK_ASSIGN[k]

Signal Meaning

= 0 Axis is not placed on cam with cam range number n

= 1 Axis is placed on cam with cam range number n

Example:

The signal addressed with field index 5 changes to 1 if the axis is placed on the cam to which cam range number 5 on cam track 3 was assigned during parameterization.

Note:

- The "Safe cam track" function is enabled in MD 36903 \$MA_SAFE_CAM_ENABLE.
- If cam range number n on cam track 3 is not parameterized, the signal of the field index can never change to 1. In this case, the output MD with field index n does not have to be parameterized.

37909	SAFE_CAM_RANGE_BIN_OUTPUT_4			A01	FBSI	
-	Output assignment cam range bit for cam track 4			UDWORD	PowerOn	
-						
-	15	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	0x00000000	0x8403073F	7/2	M

Description:

This data defines the outputs for the cam range bits of cam track 4.

Structure see: MD36980 \$MA_SAFE_SVSS_STATUS_OUTPUT

Field index n corresponds to the parameterizable cam range numbers on cam track 4.

The cam range number is defined via the following machine data:

MD36938: \$MA_SAFE_CAM_TRACK_ASSIGN[k]

Signal Meaning

= 0 Axis is not placed on cam with cam range number n

= 1 Axis is placed on cam with cam range number n

Example:

3.3 NC machine data

The signal addressed with field index 5 changes to 1 if the axis is placed on the cam to which cam range number 5 on cam track 4 was assigned during parameterization.

Note:

- The "Safe cam track" function is enabled in MD 36903 \$MA_SAFE_CAM_ENABLE.
- If cam range number n on cam track 4 is not parameterized, the signal of the field index can never change to 1. In this case, the output MD with field index n does not have to be parameterized.

37920	SAFE_STANDSTILL_VELO_LIMIT			A05, A04	FBSI	
mm/min, rev/min	Switching speed SBH / SG			DOUBLE	PowerOn	
-						
-	-	(0./ 0.)	(0./ 0.)	(1000./ 1000.)	7/2	M

Description: Speed below which an axis/spindle is regarded as being at a "standstill". There is a switch to safe operating stop or to a lower Safely Limited Speed level at the latest after the expiry of the time parameterized in MD37922 \$MA_SAFE_STANDSTILL_DELAY. This premature switch occurs only if a speed > 0.0 is parameterized in this MD.

Related to:

MD37922: \$MA_SAFE_STANDSTILL_DELAY

p9567, p9569

37922	SAFE_STANDSTILL_DELAY			A05	FBSI	
s	Delay time switchover to SBH / SG			DOUBLE	PowerOn	
-						
-	-	0.1	0	10.	7/2	M

Description: If a standstill is detected during the switch to safe operating stop or a lower Safely Limited Speed level (see MD 37920 \$MA_SAFE_STANDSTILL_VELO_LIMIT), then SOS or the selected SLS level becomes active no later than after this transition time. In this case, the transition times of stops C, D, and E as well as SLS after SOS or a higher or lower SLS level are cancelled or replaced by this delay time.

Related to:

MD37920: \$MA_SAFE_STANDSTILL_VELO_LIMIT

p9567, p9569

37950	SAFE_INFO_ENABLE			A01, A05	FBSI	
-	SIC/SCC and PROFIsafe enable			UDWORD	PowerOn	
-						
-	-	0	0	0x07	7/2	M

Description: MD to enable the evaluation of the SIC/SCC telegram between the control and the drive, and to enable the transfer of the PROFIsafe telegram between the F-PLC and the drive.
Bit 0: Enables the evaluation of the Safety Info Channel / Safety Control Channel (SIC/SCC)

For axes with NC Safety functionality, only the drive-integrated brake test is supported via SIC/SCC.

Bit 1: Enables PROFIsafe communication between the F-PLC and the drive

Bit 2: Consideration of the STOP D/SS2E transition time in the braking response

37952	PROFISAFE_MODULE_NR			A01	FBSI	
-	PROFI-safe module number			BYTE	PowerOn	
-						
-	-	1, 2, 3, 4, 5, 6, 7, 8...	1	31	7/2	M

Description: Number to select a logical basis address from MD13372 \$MN_SAFE_PS_DRIVE_LOGIC_ADDR.

37954	SAFE_INFO_MODULE_NR			A01	FBSI	
-	SIC/SCC module number			BYTE	PowerOn	
-						
-	-	1, 2, 3, 4, 5, 6, 7, 8...	1	31	7/2	M

Description: Number to select a logical basis address from MD13374 \$MN_SAFE_INFO_DRIVE_LOGIC_ADDR.

37955	SAFE_STOP_SWITCH_TIME_D_DB			A05	FBSI	
s	Transition time STOP D to safe standstill (storage for p9553)			DOUBLE	Reset	
-						
-	-	0.1	0	1.0E+301	7/1	M

Description: This data stores drive parameter p9553 for the 'drive based' SI monitoring. It contains the transition time of STOP D to "Safe operating stop" (SOS). (see description of drive parameter p9553)

Note! Changes to this MD are active after Reset, after PowerOn the value from p9553 is accepted again.

38000	MM_ENC_COMP_MAX_POINTS			A01, A09, A02	K3	
-	Number of intermediate points for interpol. compensation (SRAM)			DWORD	PowerOn	
-						
-	2	0, 0	0	5000	7/2	M

Description: The number of interpolation points required per measuring system must be defined for the leadscrew error compensation.

The required number can be calculated as follows using the defined parameters:

$$\text{MD38000 } \$\text{MA\_MM\_ENC\_COMP\_MAX\_POINTS} = \frac{\$ \text{AA\_ENC\_COMP\_MAX} - \$ \text{AA\_ENC\_COMP\_MIN}}{\$ \text{AA\_ENC\_COMP\_STEP}} + 1$$

\$AA_ENC_COMP_MIN Initial position (system variable)

\$AA_ENC_COMP_MAX End position (system variable)

\$AA_ENC_COMP_STEP Distance between interpolation points (system variable)

When selecting the number of interpolation points and/or the distances between them, it is important to take into account the size of the resulting compensation table and the space required in the buffered NC user memory (SRAM). 8 bytes are required for each compensation value (interpolation point).

The index [n] has the following coding: [encoder no.]: 0 or 1

Special cases: Notice:

After any change in MD38000 \$MA_MM_ENC_COMP_MAX_POINTS, the buffered NC user memory is automatically re-allocated on system power-on.

All data in the buffered NC user memory are then lost (e.g. part programs, tool offsets etc.). Alarm 6020 "Machine data changed - memory reallocated" is output.

If reallocation of the NC user memory fails because the total memory capacity available is insufficient, alarm 6000 "Memory allocation made with standard machine data" is output.

In this case, the NC user memory division is allocated using the default values of the standard machine data.

References:

/FB/, S7, "Memory Configuration"

/DA/, "Diagnostics Guide"

Related to:

MD32700 \$MA_ENC_COMP_ENABLE[n] LEC active

References:

3.4 NC setting data

/FB/, S7, "Memory Configuration"

38010	MM_QEC_MAX_POINTS			A01, A09	K3	
-	Number of values for quadrant error compens. with neural network			DWORD	PowerOn	
-						
-	1	0	0	1040	7/2	M

Description:

In quadrant error compensation with neural networks (QEC), the number of compensation values required has to be entered for each axis that is to be compensated.

The required number can be calculated as follows using the defined parameters: MD38010
 $\$MA\_MM\_QEC\_MAX\_POINTS = (\$AA\_QEC\_COARSE\_STEPS + 1) \wedge \$AA\_QEC\_FINE\_STEPS$

$\$AA\_QEC\_COARSE\_STEPS$ Coarse quantization of the characteristic (system variable)

$\$AA\_QEC\_FINE\_STEPS$ Fine quantization of the characteristic (system variable)

For "direction-dependent" compensation, the number must be greater than or equal to double the value of this product.

When selecting coarse or fine quantization, the resulting size of the compensation table and its memory requirement in the buffered user memory must be taken into account. 4 bytes are required for each compensation value. If the value 0 is entered, no memory is reserved for the table; i.e. the table does not exist and the function cannot therefore be activated.

Special cases: Caution!

If MD38010 $\$MA\_MM\_QEC\_MAX\_POINTS$ is altered, the buffered NC user memory is automatically re-allocated on system power-on. This deletes all the user data in the buffered user memory (e.g. drive and HMI machine data, code, tool offsets, part programs etc.).

Note:

For better handling, a large number should be chosen initially, because the exact number of interpolation points that are required is not known when the compensation is started for the first time. This number can be reduced to the required size as soon as the characteristics have been recorded and saved. After performing another power-on, the saved characteristics can be reloaded.

References:

/FB/, S7, "Memory Configuration"

38020	MM_CPREC_FIR_POINTS			EXP, A07, A04	-	
-	No. of points for characteristic approximation of FIR filters for CPRECON			DWORD	PowerOn	
-						
-	2	0, 0	0	100	1/1	M

Description:

The function "Programmable contour accuracy" (G code CPRECON) uses a table for approximating the inverse characteristic of FIR filters. This data states the number of table values. The higher the value, the more exact the approximation.

$\$MA\_AX\_JERK\_FIR\_FREQ$ points are recommended.

3.4 NC setting data

41010	JOG_VAR_INCR_SIZE			-	H1	
-	Size of the variable increment for JOG			DOUBLE	Immediately	
-						
-	-	0.	-1.0E+301	1.0E+301	7/7	U

Description: This setting data defines the number of increments when variable increment (INCvar) is selected. This increment size is traversed by the axis in JOG mode each time the traverse key is pressed or the handwheel is turned one detent position and variable increment is selected (PLC interface signal "Active machine function: INC variable" for machine or geometry axes is set to 1). The defined increment size also applies to DRF.

Note:

Please note that the increment size is active for incremental jogging and handwheel jogging. So, if a large increment value is entered and the handwheel is turned, the axis might cover a large distance (depends on setting in MD31090 \$MA_JOG_INCR_WEIGHT).

SD irrelevant to

JOG continuous

Related to

NC/PLC interface signal DB21-30 DBX41.5,DBX47.5,DBX53.5 (Geometry axis 1-3 active machine function: INC variable) or NC/PLC interface signal DB31, ... DBX65.5 (Active machine function: INC variable)

MD31090 \$MA_JOG_INCR_WEIGHT (weighting of an increment for INC/handwheel)

41050	JOG_CONT_MODE_LEVELTRIGGRD			-	H1	
-	Jog mode / continuous operation with continuous JOG			BOOLEAN	Immediately	
-						
-	-	TRUE	0	-	7/7	U

Description: 1: Jog mode for JOG continuous
In jog mode (default setting) the axis traverses as long as the traverse key is held down and an axis limitation has not been reached. When the key is released the axis is decelerated to zero speed and the movement is considered complete.
0: Continuous operation for JOG continuous
In continuous operation the traverse movement is started with the first rising edge of the traverse key and continues to move even after the key is released. The axis can be stopped again by pressing the traverse key again (second rising edge).
SD irrelevant for
Incremental jogging (JOG INC)
Reference point approach (JOG REF)

41100	JOG_REV_IS_ACTIVE			-	-	
-	JOG mode: revolutional feedrate / linear feedrate			UBYTE	Immediately	
-						
-	-	0x0E	0	-	7/7	U

Description: Bit 0 = 0:
The behavior depends on the following:
- in the case of an axis/spindle:
on the axial SD43300 \$SA_ASSIGN_FEED_PER_REV_SOURCE
- in the case of a geometry axis with an active frame with rotation:
on the channel-specific SD42600 \$SC_JOG_FEED_PER_REV_SOURCE
- in the case of an orientation axis:
on the channel-specific SD42600 \$SC_JOG_FEED_PER_REV_SOURCE
Bit 0 = 1:
A JOG motion with revolutional feedrate shall be traversed depending on the master spindle.
The following must be considered:
- If a spindle is the master spindle itself, it will be traversed without revolutional feedrate.

3.4 NC setting data

- If the master spindle is in stop position and if SD43300
 \$SA_ASSIGN_FEED_PER_REV_SOURCE (with an axis/spindle) or SD42600
 \$SC_JOG_FEED_PER_REV_SOURCE (with a geometry axis with an active frame with rotation,
 or with an orientation axis) = -3, traversing will be carried out without revolutionary
 feedrate.

Bit 1 = 0:

The axis/spindle, geometry axis or orientation axis will be traversed with
 revolutionary feedrate even during rapid traverse (see bit 0 for selection).

Bit 1 = 1:

The axis/spindle, geometry axis or orientation axis is always traversed without
 revolutionary feedback during rapid traverse.

Bit 2 = 0:

The axis/spindle, geometry axis or orientation axis is traversed with revolutionary
 feedrate during JOG handwheel travel, too (see bit 0 for selection).

Bit 2 = 1:

The axis/spindle, geometry axis or orientation axis is always traversed without
 revolutionary feedrate during JOG handwheel travel.

Bit 3 = 0:

The axis/spindle is traversed with revolutionary feedrate during DRF handwheel travel,
 too (see bit 0 for selection).

Bit 3 = 1:

The axis/spindle is always traversed without revolutionary feedrate during DRF
 handwheel travel.

41110	JOG_SET_VELO	-	H1
mm/min	Axis velocity in JOG	DOUBLE	Immediately
-			
-	-	0.0	0.0
-	-	1.0E+301	7/7
-	-	U	

Description:

Value not equal to 0:

The velocity value entered applies to linear axes traversed in JOG mode if linear
 feedrate (G94) is active for the relevant axis (SD41100 \$SN_JOG_REV_IS_ACTIVE = 0).

The axis velocity is active for

- continuous jogging
- incremental jogging (INC1, ... INCvar)
- handwheel traversing.

The value entered is valid for all linear axes and must not exceed the maximum
 permissible axis velocity (MD32000 \$MA_MAX_AX_VELO).

In the case of DRF, the velocity defined by SD41110 \$SN_JOG_SET_VELO is reduced by
 MD32090 \$MA_HANDWH_VELO_OVERLAY_FACTOR.

Value = 0:

If 0 has been entered in the setting data, the active linear feedrate in JOG mode is
 MD32020 \$MA_JOG_VELO "Jog axis velocity". Each axis can be given its own JOG velocity
 with this MD (axial MD).

SD irrelevant for

- Linear axes if SD41100 \$SN_JOG_REV_IS_ACTIVE = 1
- Rotary axes (SD41130 \$SN_JOG_ROT_AX_SET_VELO is active here)

Application example(s)

The operator can thus define a JOG velocity for a specific application.

Related to

SD41100 \$SN_JOG_REV_IS_ACTIVE (revolutional feedrate with JOG active)

Axial MD32020 \$MA_JOG_VELO (JOG axis velocity)

Axial MD32000 \$MA_MAX_AX_VELO (maximum axis velocity)

Axial MD32090 \$MA_HANDWH_VELO_OVERLAY_FACTOR (ratio of JOG velocity to handwheel velocity (DRF))

SD41130 \$SN_JOG_ROT_AX_SET_VELO (JOG speed with rotary axes)

41120	JOG_REV_SET_VELO			-	H1	
mm/rev	Revolutional feedrate of axes in JOG mode			DOUBLE	Immediately	
-						
-	-	0.0	0.0	1.0E+301	7/7	U

Description:

Value not equal to 0:

The velocity value entered applies to axes traversed in JOG mode if revolutional feedrate (G95) is active for the relevant axis (SD41100 \$SN_JOG_REV_IS_ACTIVE = 1). The axis velocity is active for

- continuous jogging
- incremental jogging (INC1, ... INCvar)
- handwheel traversing. The value entered is valid for all axes and must not exceed the maximum permissible axis velocity (MD32000 \$MA_MAX_AX_VELO).

Value = 0:

If 0 has been entered in the setting data, the active revolutional feedrate in JOG mode is MD32050 \$MA_JOG_REV_VELO "revolutional feedrate with JOG".

Each axis can be given its own revolutional feedrate with this MD (axial MD).

SD irrelevant for

- For axes if SD41100 \$SN_JOG_REV_IS_ACTIVE = 0

Application example(s)

The operator can define a JOG velocity for a particular application.

Related to

Axial SD41100 \$SN_JOG_REV_IS_ACTIVE (revolutional feedrate for JOG active)

Axial MD32050 \$MA_JOG_REV_VELO (revolutional feedrate with JOG)

Axial MD32000 \$MA_MAX_AX_VELO (maximum axis velocity)

41130	JOG_ROT_AX_SET_VELO			-	H1	
rev/min	Axis velocity for rotary axes in JOG mode			DOUBLE	Immediately	
-						
-	-	0.0	0.0	1.0E+301	7/7	U

Description:

Value not equal to 0:

The velocity entered applies to rotary axes in JOG mode (to continuous jogging, incremental jogging, jogging with handwheel). The value entered is common to all rotary axes, and must not exceed the maximum permissible axis velocity (MD32000 \$MA_MAX_AX_VELO).

With DRF, the velocity set with SD41130 \$SN_JOG_ROT_AX_SET_VELO must be reduced by MD32090 \$MA_HANDWH_VELO_OVERLAY_FACTOR.

Value equal to 0:

If the value 0 is entered in the setting data, the velocity applied to rotary axes in JOG mode is the axial MD32020 \$MA_JOG_VELO (jog axis velocity). In this way, it is possible to define a separate JOG velocity for each axis.

Application example(s)

The operator can define a JOG velocity for a particular application.

Related to

MD32020 \$MA_JOG_VELO (JOG axis velocity)

MD32000 \$MA_MAX_AX_VELO (maximum axis velocity)

MD32090 \$MA_HANDWH_VELO_OVERLAY_FACTOR (ratio JOG velocity to handwheel velocity (DRF))

3.4 NC setting data

41200	JOG_SPIND_SET_VELO	-	H1
rev/min	Speed for spindle JOG mode	DOUBLE	Immediately
-			
-	-	0.0	0.0
		1.0E+301	7/7
			U

Description:

Value not equal to 0:

The speed entered applies to spindles in JOG mode if they are traversed manually by the "Plus and minus traversing keys" or the handwheel. The speed is active for

- continuous jogging
- incremental jogging (INC1, ... INCvar)
- handwheel traversing. The value entered is valid for all spindles, and must not exceed the maximum permissible speed (MD32000 \$MA_MAX_AX_VELO).

Value = 0:

If 0 has been entered in the setting data, MD32020 \$MA_JOG_VELO (JOG axis velocity) acts as the JOG velocity. Each axis can thus be given its own JOG velocity with this MD (axial MD).

The maximum speeds of the active gear stage (MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT) are taken into account when traversing the spindle with JOG.

SD irrelevant for

Application example(s). The operator can thus define a JOG speed for the spindles for a specific application.

Related to

Axial MD32020 \$MA_JOG_VELO (JOG axis velocity)

MD35130 \$MA_GEAR_STEP_MAX_VELO_LIMIT (maximum speeds of the gear stages)

41300	CEC_TABLE_ENABLE	-	K3
-	Compensation table enable	BOOLEAN	Immediately
-			
-	62	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0
			-
			7/7
			U

Description:

1: The evaluation of the compensation table [t] is enabled.

The compensation table is now included in the calculation of the compensation value for the compensation axis.

The compensation axis \$AN_CEC_OUTPUT_AXIS can be taken from the table configuration.

The effective total compensation value in the compensation axis can be adapted to the current machining by the targeted activation of tables (from NC part program or PLC user program).

The function does not become active until the following conditions have been fulfilled:

- The option "Interpolatory compensation" is set
- The associated compensation tables in the NC user memory have been loaded and enabled (SD41300 \$SN_CEC_TABLE_ENABLE[t] = 1)
- The current position measuring system is referenced (NC/PLC interface signal DB31, ... DBX60.4 / 60.5 (Referenced/synchronized 1 or 2) = 1).

0: The evaluation of the sag compensation table [t] is not enabled.

Related to

MD18342 \$MN_MM_CEC_MAX_POINTS[t] Number of interpolation points with sag compensation

SD41300 \$SN_CEC_TABLE_ENABLE[t] Evaluation of the sag compensation table t is enabled

SD41310 \$SN_CEC_TABLE_WEIGHT[t] Weighting factor of the sag compensation table

NC/PLC interface signal DB31, ... DBX60.4 (Referenced/synchronized 1)

NC/PLC interface signal DB31, ... DBX60.5 (Referenced/synchronized 2)

41310	CEC_TABLE_WEIGHT			-	K3	
-	Weighting factor compensation table			DOUBLE	Immediately	
-						
-	62	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0...	-1.0E+301	1.0E+301	7/7	U

Description: The compensation value stored in the table [t] is multiplied by the weighting factor. When selecting the weighting factor it should be ensured that the total compensation value in the compensation axis does not exceed the maximal value of (MD18342 \$MN_CEC_MAX_SUM). With [t] = index of the compensation table (see MD18342 \$MN_MM_CEC_MAX_POINTS)

If, for example, the weight of the tools used on the machine or the workpieces to be machined are too different and this affects the error curve by changing the amplitude, this can be corrected by changing the weighting factor. In the case of sag compensation, the weighting factor in the table can be changed for specific tools or workpieces from the PLC user program or the NC program by overwriting the setting data. However, different compensation tables are to be used if the course of the error curve is substantially changed by the different weights.

Related to

SD41300 \$SN_CEC_TABLE_ENABLE[t] Evaluation of the sag compensation table t is enabled

MD18342 \$MN_CEC_MAX_SUM Maximum compensation value for sag compensation

41320	CEC_0			-	K3	
-	Compensation value 1			DOUBLE	Immediately	
-						
-	62	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/7	U

Description: The value of this SD is added to the compensation value \$AN_CEC[t,0].

Related to

\$AN_CEC[t,0] compensation value

41321	CEC_1			-	K3	
-	Compensation value 2			DOUBLE	Immediately	
-						
-	62	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/7	U

Description: The value of this SD is added to the compensation value \$AN_CEC[t,1].

Related to

\$AN_CEC[t,1] compensation value

41330	CEC_BAS_0			-	K3	
-	Distance to measuring point 1 in the basic axis			DOUBLE	Immediately	
-						
-	62	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/7	U

Description: The value of the SD is used to calculate \$SN_CEC.

Is deleted after calculating \$SN_CEC.

Related to

\$SN_CEC_0[t], \$SN_CEC_1[t] compensation values

3.4 NC setting data

41331	CEC_BAS_1			-	K3	
-	Distance to measuring point 2 in the basic axis			DOUBLE	Immediately	
-						
-	62	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/7	U

Description: The value of the SD is used to calculate \$SN_CEC.
Is deleted after calculating \$SN_CEC.
Related to
\$SN_CEC_0[t], \$SN_CEC_1[t] compensation values

41335	CEC_BAS_STORE_0			-	K3	
-	Stored distance to measuring point 1 in the basic axis			DOUBLE	Immediately	
-						
-	62	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/7	U

Description: Saves the value of \$SN_CEC_BAS after calculating \$SN_CEC.
Related to
\$SN_CEC_0[t], \$SN_CEC_0[t] compensation values

41336	CEC_BAS_STORE_1			-	K3	
-	Stored distance to measuring point 2 in the basic axis			DOUBLE	Immediately	
-						
-	62	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/7	U

Description: Saves the value of \$SN_CEC_BAS after calculating \$SN_CEC.
Related to
\$SN_CEC_0[t], \$SN_CEC_1[t] compensation values

41340	CEC_COMP_0			-	K3	
-	Cylinder error 1 in the compensation axis			DOUBLE	Immediately	
-						
-	62	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/7	U

Description: The value of the SD is used to calculate \$SN_CEC.
Is deleted after calculating \$SN_CEC.
Related to
\$SN_CEC_0[t], \$SN_CEC_1[t] compensation values

41341	CEC_COMP_1			-	K3	
-	Cylinder error 2 in the compensation axis			DOUBLE	Immediately	
-						
-	62	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/7	U

Description: The value of the SD is used to calculate \$SN_CEC.
Is deleted after calculating \$SN_CEC.
Related to
\$SN_CEC_0[t], \$SN_CEC_1[t] compensation values

41350	CEC_COMP_STORE_0			-	K3	
-	Stored cylinder error 1 in the compensation axis			DOUBLE	Immediately	
-						
-	62	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/7	U

Description: Saves the value of \$SN_CEC_COMP after calculating \$SN_CEC.

Related to

\$SN_CEC_0[t], \$SN_CEC_1[t] compensation values

41351	CEC_COMP_STORE_1			-	K3	
-	Stored cylinder error 2 in the compensation axis			DOUBLE	Immediately	
-						
-	62	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	-1.0E+301	1.0E+301	7/7	U

Description: Saves the value of \$SN_CEC_COMP after calculating \$SN_CEC.

Related to

\$SN_CEC_0[t], \$SN_CEC_1[t] compensation values

41355	CEC_CALC			-	K3	
-	The 0/1 edge starts the calculation of \$SN_CEC_0[t] and \$SN_CEC_1[t].			BOOLEAN	Immediately	
-						
-	62	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/7	U

Description: Starts the calculation of \$SN_CEC.

Related to

\$SN_CEC_BAS_0[t], \$SN_CEC_BAS_1[t] distance to measuring point in basic axis

\$SN_CEC_COMP_0[t], \$SN_CEC_COMP_1[t] cylinder error in the compensation axis

41356	CEC_CALC_ADD			-	K3	
-	Absolute or additive calculation of \$SN_CEC_0[t] and \$SN_CEC_1[t]			BOOLEAN	Immediately	
-						
-	62	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/7	U

Description: \$SN_CEC_0[t] and \$SN_CEC_1[t] can be calculated absolutely or additively:

FALSE: Absolute, the calculated values of \$SN_CEC_0[t] and \$SN_CEC_1[t] are included as absolute values.

TRUE: Additive, the calculated values of \$SN_CEC_0[t] and \$SN_CEC_1[t] are added to the existing values.

Related to

\$SN_CEC_BAS_0[t], \$SN_CEC_BAS_1[t] distance to measuring point in the basic axis

\$SN_CEC_COMP_0[t], \$SN_CEC_COMP_1[t] cylinder error in the compensation axis

3.4 NC setting data

41500	SW_CAM_MINUS_POS_TAB_1			-	N3	
mm/inch, degrees	Trigger points at falling cam 1-8			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: The cam positions of minus cams 1 - 8 are entered in this machine data.
The positions are entered in the machine coordinate system.
Index [n] of the setting data addresses the cam pair:
n = 0, 1, ... , 7 corresponds to cam pair 1, 2, ... , 8
When the set switching points are overtraveled in the positive axis direction, the associated "minus" cam signals in the PLC interface (and any applied fast output signals) switch from 1 to 0.

41501	SW_CAM_PLUS_POS_TAB_1			-	N3	
mm/inch, degrees	Trigger points at rising cam edge 1-8			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: The cam positions of plus cams 1 - 8 are entered in this machine data.
The positions are entered in the machine coordinate system.
Index [n] of the setting data addresses the cam pair:
n = 0, 1, ... , 7 corresponds to cam pair 1, 2, ... , 8
When the set switching points are overtraveled in the positive axis direction, the associated "plus" cam signals in the PLC interface (and any applied fast output signals) switch from 0 to 1.

41502	SW_CAM_MINUS_POS_TAB_2			-	N3	
mm/inch, degrees	Trigger points at falling cam edge 9-16			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: The cam positions of minus cams 9-16 are entered in this machine data.
The positions are entered in the machine coordinate system.
Index [n] of the setting data addresses the cam pair:
n = 8, 9, ... , 15 corresponds to cam pair 9, 10, ... , 16
Switching points with falling edges of cams 9 - 16.
When the set switching points are overtraveled in the positive axis direction, the associated "minus" cam signals in the PLC interface (and any applied fast output signals) switch from 1 to 0.

41503	SW_CAM_PLUS_POS_TAB_2			-	N3	
mm/inch, degrees	Trigger points at rising cam edge 9-16			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: The cam positions of plus cams 9-16 are entered in this machine data.
The positions are entered in the machine coordinate system.

Index [n] of the setting data addresses the cam pair:

n = 8, 9, ... , 15 corresponds to cam pair 9, 10, ... , 16

Switching points with rising edges of cams 9 - 16.

When the set switching points are overtraveled in the positive axis direction, the associated "plus" cam signals in the PLC interface (and any applied fast output signals) switch from 0 to 1.

41504	SW_CAM_MINUS_POS_TAB_3			-	N3	
mm/inch, degrees	Trigger points at falling cam edge 17-24			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: The cam positions of minus cams 17 - 24 are entered in this machine data.

The positions are entered in the machine coordinate system.

Index [n] of the setting data addresses the cam pair:

n = 0, 1, ... , 7 corresponds to cam pair 17, 18, ... , 24

Switching points with falling edges of cams 17 - 24.

When the set switching points are overtraveled in the positive axis direction, the associated "minus" cam signals in the PLC interface (and any applied fast output signals) switch from 1 to 0.

41505	SW_CAM_PLUS_POS_TAB_3			-	N3	
mm/inch, degrees	Trigger points at rising cam edge 17-24			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: The cam positions of plus cams 17 - 24 are entered in this machine data.

The positions are entered in the machine coordinate system.

Index [n] of the setting data addresses the cam pair:

n = 0, 1, ... , 7 corresponds to cam pair 17, 18, ... , 24

Switching points with rising edges of cams 17 - 24

When the set switching points are overtraveled in the positive axis direction, the associated "plus" cam signals in the PLC interface (and any applied fast output signals) switch from 0 to 1.

41506	SW_CAM_MINUS_POS_TAB_4			-	N3	
mm/inch, degrees	Trigger points at falling cam edge 25-32			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: The cam positions of minus cams 25 - 32 are entered in this machine data.

The positions are entered in the machine coordinate system.

Index [n] of the setting data addresses the cam pair:

n = 8, 9, ... , 15 corresponds to cam pair 25, 26, ... , 32

Switching points with falling edges of cams 25 - 32.

When the set switching points are overtraveled in the positive axis direction, the associated "minus" cam signals in the PLC interface (and any applied fast output signals) switch from 1 to 0.

3.4 NC setting data

41507	SW_CAM_PLUS_POS_TAB_4			-	N3	
mm/inch, degrees	Trigger points at rising cam edge 25-32			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: The cam positions of plus cams 25 - 32 are entered in this machine data.
The positions are entered in the machine coordinate system.
Index [n] of the setting data addresses the cam pair:
n = 8, 9, ... , 15 corresponds to cam pair 25, 26, ... , 32
Switching points with rising edges of cams 25 - 32.
When the set switching points are overtraveled in the positive axis direction, the associated "plus" cam signals in the PLC interface (and any applied fast output signals) switch from 0 to 1.

41520	SW_CAM_MINUS_TIME_TAB_1			-	N3	
s	Rate time for '-' trigger points of cams 1-8			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: A lead or delay time can be assigned to each cam 1-8 in this setting data to compensate for delay times.
The switching edge of the associated cam signal is advanced or delayed by the time value entered.
Positive value: Lead time
Negative value: Delay time
Index [n] of the setting data addresses the cam pair:
n = 0, 1, ... , 7 corresponds to cam pair 1, 2, ... , 8
This setting data is added to MD: MD10460 \$MN_SW_CAM_MINUS_LEAD_TIME[n].
Related to
MD10460 \$MN_SW_CAM_MINUS_LEAD_TIME[n] (lead or delay time on minus cams 1 - 16)

41521	SW_CAM_PLUS_TIME_TAB_1			-	N3	
s	Rate time for '+' trigger points of cams 1-8			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: A lead or delay time can be assigned to each plus cam 1-8 in this setting data to compensate for delay times.
The switching edge of the associated cam signal is advanced or delayed by the time value entered.
Positive value: Lead time
Negative value: Delay time
Index [n] of the setting data addresses the cam pair:
n = 0, 1, ... , 7 corresponds to cam pair 1, 2, ... , 8
This setting data is added to MD10461 \$MN_SW_CAM_PLUS_LEAD_TIME[n].
Related to
MD10461 \$MN_SW_CAM_PLUS_LEAD_TIME[n] (lead or delay time on plus cams 1 - 16)

41522	SW_CAM_MINUS_TIME_TAB_2			-	N3	
s	Rate time for '-' trigger points of cams 9-16			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: A lead or delay time can be assigned to each minus cam 9 - 16 in this setting data to compensate for delay times.

The switching edge of the associated cam signal is advanced or delayed by the time value entered.

Positive value: Lead time

Negative value: Delay time

Index [n] of the setting data addresses the cam pair:

n = 8, 9, ... , 15 corresponds to cam pair 9, 10, ... , 16

This setting data is added to MD10460 \$MN_SW_CAM_MINUS_LEAD_TIME[n+8].

Related to

MD10460 \$MN_SW_CAM_MINUS_LEAD_TIME[n] (lead or delay time on minus cams 1 - 16)

41523	SW_CAM_PLUS_TIME_TAB_2			-	N3	
s	Rate time for '+' trigger points of cams 9-16			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: A lead or delay time can be assigned to each plus cam 9 - 16 in this setting data to compensate for delay times.

The switching edge of the associated cam signal is advanced or delayed by the time value entered.

Positive value: Lead time

Negative value: Delay time

Index [n] of the setting data addresses the cam pair:

n = 8, 9, ... , 15 corresponds to cam pair 9, 10, ... , 16

This setting data is added to MD10461 \$MN_SW_CAM_PLUS_LEAD_TIME[n+8].

Related to

MD10461 \$MN_SW_CAM_PLUS_LEAD_TIME[n] (lead or delay time on plus cams 1 - 16)

41524	SW_CAM_MINUS_TIME_TAB_3			-	N3	
s	Rate time for '-' trigger points of cams 17-24			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: A lead or delay time can be assigned to each minus cam 17-24 in this setting data to compensate for delay times.

The switching edge of the associated cam signal is advanced or delayed by the time value entered.

Positive value: Lead time

Negative value: Delay time

Index [n] of the setting data addresses the cam pair:

n = 0, 1, ... , 7 corresponds to cam pair 17, 18, ... , 24

This setting data is added to MD10460 \$MN_SW_CAM_MINUS_LEAD_TIME[n].

Related to

MD10460 \$MN_SW_CAM_MINUS_LEAD_TIME[n] (lead or delay time on minus cams 1 - 16)

3.4 NC setting data

41525	SW_CAM_PLUS_TIME_TAB_3			-	N3	
s	Rate time for '+' trigger points of cams 17-24			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: A lead or delay time can be assigned to each plus cam 17-24 in this setting data to compensate for delay times.

The switching edge of the associated cam signal is advanced or delayed by the time value entered.

Positive value: Lead time

Negative value: Delay time

Index [n] of the setting data addresses the cam pair:

n = 0, 1, ... , 7 corresponds to cam pair 17, 18, ... , 24

This setting data is added to MD10461 \$MN_SW_CAM_PLUS_LEAD_TIME[n].

Related to

MD10461 \$MN_SW_CAM_PLUS_LEAD_TIME (lead or delay time on plus cams 1 - 16)

41526	SW_CAM_MINUS_TIME_TAB_4			-	N3	
s	Rate time for '-' trigger points of cams 25-32			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: A lead or delay time can be assigned to each minus cam 25-32 in this setting data to compensate for delay times.

The switching edge of the associated cam signal is advanced or delayed by the time value entered.

Positive value: Lead time

Negative value: Delay time

Index [n] of the setting data addresses the cam pair:

n = 8, 9, ... , 15 corresponds to cam pair 25, 26, ... , 32

This setting data is added to MD10460 \$MN_SW_CAM_MINUS_LEAD_TIME[n+8].

Related to

MD10460 \$MN_SW_CAM_MINUS_LEAD_TIME[n] (lead or delay time on minus cams 1 - 16)

41527	SW_CAM_PLUS_TIME_TAB_4			-	N3	
s	Rate time for '+' trigger points of cams 25-32			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: A lead or delay time can be assigned to each plus cam 25 - 32 in this setting data to compensate for delay times.

The switching edge of the associated cam signal is advanced or delayed by the time value entered.

Positive value: Lead time

Negative value: Delay time

Index [n] of the setting data addresses the cam pair:

n = 8, 9, ... , 15 corresponds to cam pair 25, 26, ... , 32

This setting data is added to MD10461 \$MN_SW_CAM_PLUS_LEAD_TIME[n+8].

Related to

MD10461 \$MN_SW_CAM_PLUS_LEAD_TIME[n] (lead or delay time on plus cams 1 - 16)

41600	COMPAR_THRESHOLD_1			-	A4	
-	Threshold value of the 1st comparator			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: COMPAR_THRESHOLD_1[b] defines the threshold values for the individual input bits [b] of comparator byte 1.

The output bit n of the 1st comparator is created by comparing the threshold value n according to the comparison type defined in bit n of COMPAR_TYPE_1.

For example:

```

COMPAR_ASSIGN_ANA_INPUT_1[2] = 4
COMPAR_THRESHOLD_1[2]       = 5000.0
COMPAR_TYPE_1                = 5

```

The 3rd output bit of comparator 1 is set if the input value at AnalogIn 4 is greater than or equal to 5 volts.

Index [b]: Bits 0 - 7

Related to

```

MD10530 $MN_COMPAR_ASSIGN_ANA_INPUT_1
MD10531 $MN_COMPAR_ASSIGN_ANA_INPUT_2
MD10540 $MN_COMPAR_TYPE_1
MD10541 $MN_COMPAR_TYPE_2

```

41601	COMPAR_THRESHOLD_2			-	A4	
-	Threshold value of the 2nd comparator			DOUBLE	Immediately	
-						
-	8	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-1.0E+301	1.0E+301	7/7	U

Description: COMPAR_THRESHOLD_1[b] defines the threshold values for the individual input bits [b] of comparator byte 1.

Output bit n of the 1st comparator is created by comparing the threshold value n according to the comparison type defined in bit n of COMPAR_TYPE_2.

Index [b]: Bits 0 - 7

Related to

```

MD10530 $MN_COMPAR_ASSIGN_ANA_INPUT_1
MD10531 $MN_COMPAR_ASSIGN_ANA_INPUT_2
MD10540 $MN_COMPAR_TYPE_1
MD10541 $MN_COMPAR_TYPE_2

```

41610	CORR_TRAFO_LIN_MAX			EXP	-	
mm	Maximum permissible offset value for offset vectors with CORRTRAFO			DOUBLE	Immediately	
-						
-	-	1.0	0.0	1.0E+301	7/2	M

Description: With the CORRTRAFO function for machine measurement, offset vectors can be modified in the kinematic model of a machine.

This setting data limits the maximum permissible change in each component of such a vector to the specified maximum value.

3.4 NC setting data

41611	CORR_TRAFO_DIR_MAX			EXP	-	
degrees	Maximum permissible angle deviation for direction vectors with CORRTRAFO			DOUBLE	Immediately	
-						
-	-	1.0	0.0	90.0	7/2	M

Description: With the CORRTRAFO function for machine measurement, the direction vectors of rotary axes can be modified in the kinematic model of a machine.

This setting data limits the maximum permissible angle change of such a vector to the specified maximum value.

41612	CORR_TOCARR_LIN_MAX			EXP	-	
mm	Maximum permissible compensation value for offset vectors with CORRTC			DOUBLE	Immediately	
-						
-	-	1.0	0.0	1.0E+301	7/2	M

Description: Offset vectors in the kinematic model of a tool carrier can be modified using the CORRTC function for tool carrier measurement.

This setting data limits the maximum permissible change in each component of such a vector to the stated maximum value.

41670	SINGULARITY_THRESHOLD			-	-	
-	Threshold value for singularity detection.			DOUBLE	Immediately	
-						
-	-	2.0e-6	0.0	1.0E+301	7/7	U

Description: This SD specifies the threshold value for detecting singularities in the programmed blocks.

If the values of this SD are too high, unnecessary singularity handlings will be performed, which can also lead to unnecessary contour deviations.

If the values of this SD are too low, not all singular positions will be detected and handled.

The value 2.0e-6 is recommended.

41671	MIN_DIST_TO_SINGULARITY			-	-	
-	Minimum distance to singularity point.			DOUBLE	Immediately	
-						
-	-	1.0e-3	1.0e-5	1.0E+301	7/7	U

Description: This SD specifies the minimum distance to the singularity point in the programmed blocks.

Blocks which have the positions between the value in SD41670 \$SD_SINGULARITY_THRESHOLD and this SD are analyzed more intensively.

The value 1.0e-3 is recommended.

41700	AXCT_SWWIDTH			-	B3	
-	Default rotation of axis container			DWORD	NEW CONF	
CTDE						
-	16	0, 0, 0, 0, 0, 0, 0, 0...	-32	32	7/7	U

Description: The number of entries (slots) by which the entries in the axis container are advanced on execution of the rotation. The value is interpreted modulo of the actually existing entries. Negative values reverse the direction of rotation.

Related to the container rotation command, container axes.

This machine data is distributed via the NCU-link.

42000	THREAD_START_ANGLE			-	K1	
degrees	Starting angle for thread			DOUBLE	Immediately	
-						
-	-	0., 0., 0., 0., 0., 0., 0., 0....	0.0	1.0E+301	7/7	U

42010	THREAD_RAMP_DISP			-	V1	
mm	Acceleration behavior of axis when thread cutting			DOUBLE	Immediately	
-						
-	3	-1., -1., -1., -1., -1., -1., -1., -1., -1., -1., -1., -1., -1.,...	-1., -1., -1.	999999., 999999., 0.	7/7	U

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3.4 NC setting data

The 3rd value defines the geometric tolerance that may be used at a corner between 2 thread blocks in order to soften the transition:

< or = 0:

The corner is left with hard retraction, the axes follow the specification of the control loops.

> 0:

The transition is made as geometrically soft as possible by using this tolerance.

42100	DRY_RUN_FEED			-	V1	
mm/min	Dry run feedrate			DOUBLE	Immediately	
-						
-	-	5000., 5000., 5000., 5000., 5000., 5000., 5000., 5000....	0.0	1.0E+301	7/7	U

Description:

The feedrate for the active dry run is entered in this setting data. The setting data can be altered on the operator panel in the "Parameters" operating area.

The entered dry run feedrate is always interpreted as a linear feed (G94). If the dry run feedrate is activated via the PLC interface, the dry run feedrate is used as the path feed after a reset instead of the programmed feed. The programmed velocity is used for traversing if it is greater than the velocity stored here.

Application example(s)

Program testing

Related to

NC/PLC interface signal DB21-30 DBX0.6 (Activate dry run feedrate)

NC/PLC interface signal DB21-30 DBX24.6 (Dry run feedrate selected)

42101	DRY_RUN_FEED_MODE			-	V1	
-	Mode for dry run velocity			BYTE	Immediately	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	12	7/7	U

Description:

This SD can be used to set the method of operation of the dry run velocity set by SD42100 \$SC_DRY_RUN_FEED.

The following values are possible:

0:

The maximum of SD42100 \$SC_DRY_RUN_FEED and the programmed velocity become active. This is the standard setting and corresponds to the behavior up to SW 5.

1:

The minimum of SD42100 \$SC_DRY_RUN_FEED and the programmed velocity become active.

2:

SD42100 \$SC_DRY_RUN_FEED becomes active directly, irrespective of the programmed velocity.

The values 3...9 are reserved for extensions.

10:

As configuration 0, except for thread cutting (G33, G34, G35) and tapping (G331, G332, G63). These functions are executed as programmed.

11:

As configuration 1, except for thread cutting (G33, G34, G35) and tapping (G331, G332, G63). These functions are executed as programmed.

12:

As configuration 2, except for thread cutting (G33, G34, G35) and tapping (G331, G332, G63). These functions are executed as programmed.

42110	DEFAULT_FEED	-	V1, FBFA
mm/min	Path feed default value	DOUBLE	Immediately
-			
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	0.0 1.0E+301 7/7 U

Description: Default value for path feedrate, This setting data is evaluated when the part program starts taking into account the feedrate type active at this time (see MD20150 \$MC_GCODE_RESET_VALUES and MD20154 \$MC_EXTERN_GCODE_RESET_VALUES).

42120	APPROACH_FEED	-	-
mm/min	Path feedrate in approach blocks	DOUBLE	Immediately
-			
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	0.0 1.0E+301 7/7 U

Description: Default value for path feedrate in approach blocks (after repos., block search, SERUPRO etc).

The contents of this setting data are only used when it is non-zero.

It is evaluated like an F word programmed for G94.

42121	AX_ADJUST_FEED	-	-
mm/min	Path feed in adjustment movements	DOUBLE	Immediately
-			
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	- - 7/7 U

Description: Default value for the path feed in adjustment movements of tangential axes on activation of a tangential axis coupling during or after block search.

The content of this setting data is only used if it is not equal to zero and bit7 = 0 of MD \$MN_SEARCH_RUN_MODE is set.

It is evaluated as an F-word programmed in G94.

42122	OVR_RAPID_FACTOR	-	MD12050 \$MN_OVR_FACTOR_RAPID_TRA, \$AC_OVR
%	Add. rapid traverse override can be specified through operation	DOUBLE	Immediately
-			
-	-	100., 100., 100., 100., 100., 100., 100., 100....	0.0 1.0E+301 7/7 U

Description: Additional channel-specific rapid traverse override in %. The value is calculated as a function of the OPI variable enableOvrRapidFactor on the path and during jogging of geometry axes. The value multiplies the other overrides relevant to rapid traverse (rapid traverse override of the machine control panel, override default through synchronized actions \$AC_OVR).

42125	SERUPRO_SYNC_MASK	-	-
-	Synchronization in approach blocks	DWORD	Immediately
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	- - 7/7 U

Description: A synchronized approach can be set for the search type SERUPRO with the setting data SERUPRO_SYNC_MASK.

3.4 NC setting data

SERUPRO uses the function REPOS to move from the current machine position to the target block of the search. A synchronization of the channels can be forced between the reapproach block and the target block via SERUPRO_SYNC_MASK which would correspond to the use of WAIT markers.

Note:

The user cannot program WAIT markers between reapproach block and target block in a part program.

SERUPRO_SYNC_MASK activates this internal WAIT marker, and defines for which other channels this channel is to wait.

Example for channel 3: SD42125 \$SC_SERUPRO_SYNC_MASK= 0x55

A new block is now inserted in the Serupro approach between the reapproach block and the target block, the function of which corresponds to the following programming: WAITM(101, 1,3,5,7), i.e. a WAIT marker synchronizes the channels 1, 3, 5 and 7.

The WAIT markers used internally cannot be explicitly programmed by the user.

NOTICE:

Similarly to the part program, the user can make the error of not setting the marker in a channel, so that the other channels naturally wait for ever!

Note:

The bit mask can contain a channel that does not exist (channel gaps) without a deadlock occurring.

Example for channel 3: SD42125 \$SC_SERUPRO_SYNC_MASK= 0x55 and channel 5 do not exist, so WAITM(101, 1,3,7) is set.

Note: The block content corresponds to "WAITM(101, 1,3,5,7)", the user does not see this block content, he sees REPOSA!

Note:

SERUPRO_SYNC_MASK is evaluated as soon as the part program command REPOSA is interpreted.

SERUPRO_SYNC_MASK can still be changed if SERUPRO is in the state "search target found".

If REPOSA has already been executed, a change to SERUPRO_SYNC_MASK can only become active if a new REPOS is set. This occurs, for example, by:

- Starting a new ASUB.
- STOP-JOG-AUTO-START
- STOP - select a new REPOS mode RMI/RMN/RME/RMB - START

Note:

If one uses the prog. event for search and if the NCK is at alarm 10208 then a change of SERUPRO_SYNC_MASK is not active unless one sets a new REPOS.

SERUPRO_SYNC_MASK == 0 A block is NOT inserted.

Note:

If the bit for the current channel is not set in SD42125 \$SC_SERUPRO_SYNC_MASK then a block is NOT inserted.

Example:

If SD42125 \$SC_SERUPRO_SYNC_MASK= 0xE is programmed in channel 1, then a block is NOT inserted.

This assignment is reserved for a future function!

42140	DEFAULT_SCALE_FACTOR_P			-	FBFA	
-	Default scaling factor for address P			DWORD	Immediately	
-						
-	-	1, 1, 1, 1, 1, 1, 1...	-	-	7/7	U

Description: The value in this machine data is active if no scaling factor P has been programmed in the block.

Related to:

WEIGHTING_FACTOR_FOR_SCALE

42150	DEFAULT_ROT_FACTOR_R			-	-	
-	Default rotation factor for address R			DOUBLE	Immediately	
-						
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	-1.0E+301	1.0E+301	7/7	U

Description: The value in this machine data is active if no factor for rotation R is programmed in the block.

42160	EXTERN_FIXED_FEEDRATE_F1_F9			-	FBFA	
-	Fixed feedrates F1 - F9			DOUBLE	Immediately	
-						
-	10	0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., ...	0.0	1.0E+301	7/7	U

Description: Fixed feedrate values for programming with F1 - F9. If the machine data \$MC_FEEDRATE_F1_F9_ON = TRUE is set with the programming of F1 - F9, the feedrate values are read from SD42160 \$SC_EXTERN_FIXED_FEEDRATE_F1_F9[0] - SD42160 \$SC_EXTERN_FIXED_FEEDRATE_F1_F9[8], and activated as the machining feedrate. The rapid traverse feedrate must be entered in SD42160 \$SC_EXTERN_FIXED_FEEDRATE_F1_F9[0].

42162	EXTERN_DOUBLE_TURRET_DIST			-	FBFA	
-	Double turret head tool distance			DOUBLE	Immediately	
-						
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	0.0	1.0E+301	7/7	U

Description: Distance between both tools of a double turret head.
The distance is activated using G68 as additive zero point offset if MD10812 \$MN_EXTERN_DOUBLE_TURRET_ON is set to TRUE.

42200	SINGLEBLOCK2_STOPRE			-	BA	
-	Activate SBL2 debug mode			BOOLEAN	Immediately	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/7	U

Description: Value = TRUE:
A preprocessing stop is made with every block if SBL2 (single block with stop after every block) is active. This suppresses the premachining of part program blocks. This variant of the SBL2 is not true-to-contour.
This means that a different contour characteristic might be generated as a result of the preprocessing stop than without single block or with SBL1.
Application: Debug mode for testing part programs.

42220	CFG_STOP_ARRAY			-	K1	
-	Name of the NC function for which there should be a stop			STRING	Reset	
-						
-	20	////////// //////////	-	-	7/7	U

Description: Together with SD42222 \$SC_CFG_STOP_MASK and SD42224 \$SC_CFG_STOP_ARRAY_MASK, this setting data defines the reasons for the configured stop.

3.4 NC setting data

For example, NC language function identifiers and subprogram names as strings are permissible entries.

Initially, the entry is restricted to M/H/T/D auxiliary functions or calls and subprogram names.

Examples: Auxiliary functions M=87, H[13]=*, T[*]=5 and subprogram name _N_CS_TOOL

42222	CFG_STOP_MASK			-	K1	
-	Stop mask for G code transitions, wait marker			DWORD	Reset	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	0xF	7/7	U

Description: This setting data states the stop mask for the G code transitions.

Configured stop for:

Bit 0 Transition G0 to G0

Bit 1 Transition G0 to not-G0

Bit 2 Transition not-G0 to G0

Bit 3 WaitM, WaitMC, WaitE

42224	CFG_STOP_ARRAY_MASK			-	K1	
-	Mask for enabling SD42220 \$SC_CFG_STOP_ARRAY			DWORD	Reset	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	-	7/7	U

Description: This setting data activates the stop handling of the functions defined by CFG_STOP_ARRAY

Bit 0 SD42220 \$SC_CFG_STOP_ARRAY[0]

Bit 1 SD42220 \$SC_CFG_STOP_ARRAY[1]

Bit n SD42220 \$SC_CFG_STOP_ARRAY[n]

42300	COUPLE_RATIO_1			-	-	
-	Speed ratio for synchronous spindle mode			DOUBLE	Immediately	
-						
-	2	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0,...	-1.0e8	1.0e8	7/7	U

Description: This setting data defines the speed ratio for the fixed coupling configuration defined with the channel-specific MD21300 \$MC_COUPLE_AXIS_1[n].

The linear correlation between the leading and following spindles is determined by the speed ratio. The speed ratio is defined by the specification of the numerator and the denominator.

Speed ratio = numerator / denominator = SD42300 \$SC_COUPLE_RATIO[0] / SD42300 \$SC_COUPLE_RATIO[1]

The speed ratio parameters can be altered in the NC part program with the language instruction COUPDEF provided that this is not locked by the channel-specific MD21340 \$MC_COUPLE_IS_WRITE_PROT_1.

However, the parameterized values of SD42300 \$SC_COUPLE_RATIO_1 are not changed.

The calculation of the speed ratio is initiated with Power On.

42400	PUNCH_DWELLTIME			-	N4	
s	Dwell time for punching and nibbling			DOUBLE	Immediately	
-						
-	-	1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0E+301	7/7	U

Description: This data sets the dwell time between reaching the position and triggering the stroke. The set value is rounded to an integer multiple of the interpolation cycle. (This means that the value set here can only differ slightly from that which is actually executed.)

Note:

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB can be set so that the value written by the part program is transferred into the active file system on reset (i.e. the value is retained even after the reset).

42402	NIBPUNCH_PRE_START_TIME			-	N4	
s	Delay time (punch/nibble) with G603			DOUBLE	Immediately	
-						
-	-	.02, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0E+301	7/7	U

Description: This setting data has exactly the same effect as MD26018 \$MC_NIBBLE_PRE_START_TIME. Its primary purpose is to allow the pre-start time to be altered from the NC program so that it can be adapted to different metal sheet sizes and thicknesses. However, the setting data is active only when the machine data has been set to zero.

Related to NIBBLE_PRESTART_TIME

42404	MINTIME_BETWEEN_STROKES			-	N4	
s	Minimum time between 2 strokes in seconds			DOUBLE	Immediately	
-						
-	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0...	0.0	1.0E+301	7/7	U

Description: Minimum time between 2 strokes in seconds

42440	FRAME_OFFSET_INCR_PROG			-	K1, K2	
-	Work offsets in frames			BOOLEAN	Immediately	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: 0: When incremental programming is used on an axis, only the programmed position delta is traversed after a frame change. Work offsets in FRAMES are only traversed when an absolute position is specified.

1: When incremental programming is used on an axis, changes to work offsets are traversed after a frame change (standard response up to software version 3).

Related to

SD42442 \$SC_TOOL_OFFSET_INCR_PROG

42442	TOOL_OFFSET_INCR_PROG			-	W1, K1	
-	Tool length compensations			BOOLEAN	Immediately	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: 0: When incremental programming is used on an axis, only the programmed position delta is traversed after a frame change. Tool length offsets in FRAMES are only traversed when an absolute position is specified.

1: When incremental programming is used on an axis, changes to tool length offsets are traversed after a tool change (standard response up to SW version 3).

Related to

3.4 NC setting data

SD42440 \$SC_FRAME_OFFSET_INCR_PROG

42444	TARGET_BLOCK_INCR_PROG			-	BA	
-	Set down mode after search run with calculation			BOOLEAN	Immediately	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: If the first programming of an axis after "Search run with calculation to end of block" is incremental, the incremental value is added as a function of SD42444 \$SC_TARGET_BLOCK_INCR_PROG to the value accumulated up to the search target :
SD = TRUE: Incremental value is added to accumulated position
SD = FALSE: Incremental value is added to current actual value
The setting data is evaluated on NC start for output of the action blocks.

42450	CONTPREC			-	B1, K6	
mm	Contour accuracy			DOUBLE	Immediately	
-						
-	6	0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1,...	0.000001	999999.	7/7	U

Description: Contour accuracy of the technology groups. This setting data can be used to define the accuracy to be maintained for the path of the geometry axes on curved contours. The lower the value and the lower the servogain factor of the geometry axes, the greater the reduction of path feed on curved contours.
Related to
MD20470 \$MC_CPREC_WITH_FFW
SD42460 \$SC_MINFEED

42451	CONTPREC_G00_ABS			-	B1, K6	
mm	Contour accuracy in rapid traverse mode			DOUBLE	Immediately	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	999999.	7/7	U

Description: Contour accuracy in rapid traverse mode. The setting data can be used to specify the accuracy to be maintained for the path of the geometry axes on curved contours in rapid traverse (in corners and smoothing blocks). The smaller the value and the smaller the servo gain factor of the geometry axes, the more the path velocity on curved contours is reduced. If the setting data contains the value 0, the contour accuracy in \$SC_CONTPREC[DYNORM] is valid for rapid traverse, compatible to previous versions.
Corresponding to
SD42450 \$MC_CONTPREC
MD20470 \$MC_CPREC_WITH_FFW
SD42460 \$SC_MINFEED

42460	MINFEED			-	B1, K6	
mm/min	Minimum path feedrate for CPRECON			DOUBLE	Immediately	
-						
-	-	1., 1., 1., 1., 1., 1., 1., 1....	1.e-6	1.e9	7/7	U

Description: Minimum path feedrate with the "Contour accuracy" function active. The feedrate is not limited to below this value unless a lower F value has been programmed or the axis dynamics do not permit it.

Related to

MD20470 \$MC_CPREC_WITH_FFW

SD42450 \$SC_CONTPREC

42465	SMOOTH_CONTUR_TOL	-	B1
mm	Maximum contour tolerance on smoothing	DOUBLE	Immediately
-			
-	-	0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05...	0.000001 999999. 7/7 U

Description: This setting data defines the maximum tolerance for smoothing the contour.

Related to:

MD20480 \$MC_SMOOTHING_MODE,

SD42466 \$SC_SMOOTH_ORI_TOL

42466	SMOOTH_ORI_TOL	-	B1
degrees	Maximum deviation of tool orientation during smoothing.	DOUBLE	Immediately
-			
-	-	0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05...	0.000001 90. 7/7 U

Description: This setting data defines the maximum tool orientation tolerance during smoothing.

The data determines the maximum permissible

angular displacement of the tool orientation.

This data only applies if an orientation transformation is active.

Related to:

MD20480 \$MC_SMOOTHING_MODE,

SD42465 \$SC_SMOOTH_CONTUR_TOL

42470	CRIT_SPLINE_ANGLE	-	W1, PGA
degrees	Corner limit angle for compressor	DOUBLE	Immediately
-			
-	-	36.0, 36.0, 36.0, 36.0, 36.0, 36.0, 36.0, 36.0...	0.0 89.0 7/7 U

Description: The setting data defines the limit angle from which the compressor COMPCAD interprets a block transition as a corner. Practical values lie between 10 and 40 degrees. Values from 0 to 89 degrees inclusive are permitted.

The angle only serves as an approximate measure for corner detection. The compressor can also classify flatter block transitions as corners and eliminate larger angles as outliers on account of plausibility considerations.

42471	MIN_CURV_RADIUS	EXP, C09	-
mm	Minimum radius of curvature	DOUBLE	Immediately
-			
-	-	3.0, 3.0, 3.0, 3.0, 3.0, 3.0, 3.0, 3.0...	0.0 1.0E+301 7/7 U

Description: The setting data defines a typical tool radius. It is only evaluated in compressor COMPCAD. The lower the value, the greater the precision, but the slower the program execution.

3.4 NC setting data

42472	MIN_SURF_RADIUS	EXP, C09	-
mm	Minimum curvature radius for COMPSURF [0] Minimum curvature radius for geometry axes [1] Minimum curvature radius for the orientation axes [2] Minimum curvature radius for other axes	DOUBLE	Immediately
-			
-	3	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0,...	0.0 1.0E+301 7/7 U

Description: The setting data specifies a typical tool radius. It is evaluated for the COMPSURF compressor only. A smaller value results in greater precision but also slower program execution.

42473	ACTNUM_SURF_GROUPS	EXP, C09	-
-	Currently desired COMPSURF function dimensioning in respect of axis groups.	DWORD	Immediately
-			
-	-	1, 1, 1, 1, 1, 1, 1, 1...	1 3 7/7 U

Description: The setting data dimensions the COMPSURF function in respect of axis groups for following machining. Values greater than \$MC_MM_MAXNUM_SURF_GROUPS are limited without an alarm.

Related to:

MD28072 \$MC_MM_MAXNUM_SURF_GROUPS

42475	COMPRESS_CONTUR_TOL	-	F2, PGA
mm	Maximum contour deviation with compressor	DOUBLE	Immediately
-			
-	-	0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05...	0.000001 999999. 7/7 U

Description: This setting data defines the maximum contour tolerance in the compressor.

42476	COMPRESS_ORI_TOL	-	F2, PGA
degrees	Maximum deviation of tool orientation with compressor	DOUBLE	Immediately
-			
-	-	0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05...	0.000001 90. 7/7 U

Description: This setting data defines the maximum tool orientation tolerance in the compressor. This data defines the maximum permissible angular displacement of the tool orientation.

This data is active only if an orientation transformation is active.

42477	COMPRESS_ORI_ROT_TOL	-	F2, PGA
degrees	Maximum deviation of tool rotation with compressor	DOUBLE	Immediately
-			
-	-	0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05...	0.000001 90. 7/7 U

Description: This setting data defines the maximum tolerance in the compressor for turning the tool orientation. This data defines the maximum permissible angular displacement of the tool rotation.

This data is only active if an orientation transformation is active.

Turning the tool orientation is only possible with 6-axis machines.

42478	SURF_PERF_ADJUST			EXP, C09	-	
mm	Adaptation of the CPU time utilization with COMPSURF.			DOUBLE	Immediately	
-						
-	-	0.005, 0.005, 0.005, 0.005, 0.005, 0.005, 0.005, 0.005...	0.0001	0.1	1/1	M

Description: Represents a compromise between computational utilization and accuracy. The higher the value, the lower the computational utilization, the lower the value the higher the accuracy.

A sharper surface can be achieved, especially by COMPSURF with "Smoothing off" (MIN_SURF_RADIUS = 0).

42480	STOP_CUTCOM_STOPRE			-	W1	
-	Alarm response with tool radius compensation and preproc. stop			BOOLEAN	Immediately	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: If this setting data is TRUE, block execution is stopped by preprocessing stop and active tool radius compensation, and does not resume until after a user acknowledgment (START).

If it is FALSE, machining is not interrupted at such a program point.

42490	CUTCOM_G40_STOPRE			-	W1	
-	Retraction behavior of tool radius compensation with prep. stop			BOOLEAN	Immediately	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/7	U

Description: FALSE:

If there is a preprocessing stop (either programmed or generated internally by the control) before the deselection block (G40) when tool radius compensation is active, then firstly the starting point of the deselection block is approached from the last end point before the preprocessing stop. The deselection block itself is then executed, i.e. the deselection block is usually replaced by two traversing blocks. Tool radius compensation is no longer active in these blocks. The behavior is thus identical with that before the introduction of this setting data.

TRUE:

If there is a preprocessing stop (either programmed or generated internally by the control) before the deselection block (G40) when tool radius compensation is active, the end point of the deselection point is traversed in a straight line from the last end point before the preprocessing stop.

42494	CUTCOM_ACT_DEACT_CTRL			-	W1	
-	Approach & retraction behavior with 2-1/2D tool radius compens.			DWORD	Immediately	
-						
-	-	2222, 2222, 2222, 2222, 2222, 2222, 2222, 2222...	-	-	7/7	U

Description: This setting data controls the approach and retraction behavior with tool radius compensation if the activation or deactivation block does not contain any traversing information. It is only evaluated with 2-1/2D TRC (CUT2D or CUT2DF).

3.4 NC setting data

The decimal coding is as follows:

N N N N

				_____	Approach behavior for tools with tool point direction
					(turning tools)
				_____	Approach behavior for tools without tool point direction
					(milling tools)
				_____	Retract behavior for tools with tool point direction
					(turning tools)
				_____	Retract behavior for tools without tool point direction
					(milling tools)

If the position in question contains a 1, approach or retraction is always performed, even if G41/G42 or G40 stands alone in a block.

For example:

```
N100 x10 y0
N110 G41
N120 x20
```

If a tool radius of 10mm is assumed in the above example, position x10y10 is approached in block N110.

If the position in question contains the value 2, the approach or retraction movement is only performed if at least one geometry axis is programmed in the activation/deactivation block. To obtain the same results as the above example with this setting, the program must be altered as follows:

```
N100 x10 y0
N110 G41 x10
N120 x20
```

If axis information x10 is missing in block N110, activation of TRC is delayed by one block, i.e. the activation block would now be N120.

If the position in question contains a 3, retraction is not performed in a deactivation block (G40) if only the geometry axis perpendicular to the compensation plane is programmed. In this case, the motion perpendicular to the compensation plane is performed first. This is followed by the retraction motion in the compensation plane. In this case, the block after G40 must contain motion information in the compensation plane. The approach motions for values 2 and 3 are identical.

If the position in question contains a value other than 1, 2 or 3, i.e. in particular the value 0, an approach or retraction movement is not performed in a block that does not contain any traversing information.

About the term "Tools with tool point direction":

These are tools with tool numbers between 400 and 599 (turning and grinding tools), whose tool point direction has a value between 1 and 8. Turning and grinding tools with tool point direction 0 or 9 or other undefined values are treated like milling tools.

Note:

If the value of this setting data is changed within a program, we recommend programming a preprocessing stop (stopre) before the description to avoid the new value being used in program sections before that point. The opposite case is not serious, i.e. if the setting data is written, subsequent NC blocks will definitely access the new value.

42496	CUTCOM_CLSD_CONT			-	-	
-	Tool radius compensation behavior with closed contour			BOOLEAN	Immediately	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description:

FALSE:

CASE A: If two intersections arise on correction of the inner side with an (almost) closed contour consisting of two successive circle blocks or an (almost) closed full circle, by default the intersection is chosen that is located on the first partial contour nearer to the beginning of the block.

Contours can be omitted with this procedure.

A contour is considered (almost) closed if the distance between the starting point of the first block and the end point of the second block or the starting and end points of the almost closed full circle is less than 10% of the active compensation radius, but not greater than 1000 path increments (corresponds to 1 mm with 3 decimal places).

CASE B: If on correction of the inner side and a block transition between a straight line and a circle with an angle of aperture of more than approx. 315 degrees, the offset curve of the straight line intersects the offset curve of the circle at two points, by default the point of intersection is chosen that is located on the first partial contour nearer to the beginning of the block.

In this situation, the two curves involved are almost completely excluded.

TRUE:

In the same situations as described above, the intersection on the first partial contour that lies nearer to the end of the block is selected. Thus more of the two partial contours is retained. This is the better procedure for achieving the programmed original contour.

With (almost) closed contours, it is generally always better to divide contours into partial contours (e.g. instead of a full circle, program two half circles) so that the tool radius compensation can find the unambiguous intersection.

CASE A: With two successive curves (as described above), whose offset curves intersect twice, the intersection is chosen that lies nearer to the end of the first curve.

A slight contour violation at the beginning of the block of the first curve and at the end of the block of the second curve is accepted in order to be able to completely machine both curves. But only if the contour is (almost) closed (see above definition).

CASE B: In the same situation as described above, the intersection which lies nearer to the end of the first curve is selected.

But only if the absolute value of the contour violation caused by this is less than the permanently assigned tolerance of 0.002 mm.

42500	SD_MAX_PATH_ACCEL			-	B2	
m/s ²	Maximum path acceleration			DOUBLE	Immediately	
-						
-	-	10000., 10000., 10000., 10000., 10000., 10000., 10000., 10000....	1.0e-6	1.0E+301	7/7	U

Description: Setting data for additional limitation of (tangential) path acceleration

Related to ...

MD32300 \$MA_MAX_AX_ACCEL

SD42502 \$SC_IS_SD_MAX_PATH_ACCEL

42502	IS_SD_MAX_PATH_ACCEL			-	B2	
-	Evaluate SD42500 \$SC_SD_MAX_PATH_ACCEL			BOOLEAN	Immediately	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/7	U

3.4 NC setting data

Description: SD42500 \$SC_SD_MAX_PATH_ACCEL is included in the limit calculations if SD42502
 \$SC_IS_SD_MAX_PATH_ACCEL=TRUE
 Related to ...
 SD42500 \$SC_SD_MAX_PATH_ACCEL

42510	SD_MAX_PATH_JERK			-	B2	
m/s³	Maximum path-related jerk as setting data			DOUBLE	Immediately	
-						
-	-	100000., 100000., 100000., 100000., 100000., 100000., 100000., 1...	1.e-9	1.0E+301	7/7	U

Description: As well as MD20600 \$MC_MAX_PATH_JERK, the maximum path-related jerk can also limit the jerk.
 Related to ...
 MD20600 \$MC_MAX_PATH_JERK
 SD42512 \$SC_IS_SD_MAX_PATH_JERK

42512	IS_SD_MAX_PATH_JERK			-	B2	
-	Evaluate SD42510 \$SC_SD_MAX_PATH_JERK			BOOLEAN	Immediately	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/7	U

Description: SD42510 \$SC_SD_MAX_PATH_JERK is included in the limit calculations if SD42512
 \$SC_IS_SD_MAX_PATH_JERK=TRUE
 Related to ...
 SD42510 \$SC_SD_MAX_PATH_JERK (SD for additional limitation of (tangential) path jerk)

42520	CORNER_SLOWDOWN_START			-	-	
mm	Start of feed reduction at G62.			DOUBLE	Immediately	
-						
-	-	0., 0., 0., 0., 0., 0., 0., 0....	0.0	1.0E+301	7/7	U

Description: Traverse path distance from which the feed is reduced before the corner with G62.

42522	CORNER_SLOWDOWN_END			-	-	
mm	End of feed reduction at G62.			DOUBLE	Immediately	
-						
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	0.0	1.0E+301	7/7	U

Description: Traverse path distance up to which the feed remains reduced after a corner with G62.

42524	CORNER_SLOWDOWN_OVR			-	-	
%	Feed override reduction at G62			DOUBLE	Immediately	
-						
-	-	0., 0., 0., 0., 0., 0., 0., 0....	0.0	1.0E+301	7/7	U

Description: Override used to multiply the feed at the corner with G62.

42526	CORNER_SLOWDOWN_CRIT	-	-
degrees	Corner detection at G62	DOUBLE	Immediately
-			
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	0.0 1.0E+301 7/7 U

Description: Angle from which a corner is taken into account when reducing the feed with G62.
For example SD42526 \$SC_CORNER_SLOWDOWN_CRIT = 90 means that all corners of 90 degrees or a more acute angle are traversed slower with G62.

42528	CUTCOM_DECEL_LIMIT	-	-
-	Feed lowering on circles with tool radius compensation	DOUBLE	Immediately
-			
-	-	0., 0., 0., 0., 0., 0., 0., 0., 0....	0. 1. 7/7 U

Description: The setting data limits feed lowering of the tool center point on concave circle segments with tool radius compensation active and CFC or CFIN selected.
With CFC, the feed is defined at the contour. On concave circular arcs, feed lowering of the tool center point is created by the ratio of the contour curvature to the tool center point path curvature. The setting data is limiting this effect, reducing backing off and overheating of the tool.
For contours with varying curvatures, a mid-range curvature is used.
0: Provides the previous behavior: If the ratio between contour radius and tool center point path radius is less than or equal to 0.01 the feed is applied to the tool center point path. Less pronounced feed reductions are executed.
>0: Feed lowering is limited to the programmed factor. At 0.01, this means that the feed of the tool center point path is possibly only 1 percent of the programmed feed value.
1: On concave contours, the tool center point feed equals the programmed feed (the behavior then corresponds to CFTCP).

42600	JOG_FEED_PER_REV_SOURCE	-	V1
-	Control revolutional feedrate in JOG	DWORD	Immediately
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0, 0...	-3 31 7/7 U

Description: The revolutional feedrate in JOG mode for geometry axes on which a frame with rotation acts.
0= No revolutional feedrate is active.
>0= Machine axis index of the rotary axis/spindle from which the revolutional feedrate is derived.
-1= The revolutional feedrate is derived from the master spindle of the channel in which the axis/spindle is active.
-2= The revolutional feedrate is derived from the axis with machine axis index == 0.
-3= The revolutional feedrate is derived from the master spindle of the channel in which the axis/spindle is active. No revolutional feedrate is active if the master spindle is at a standstill.
Related to
SD43300: \$SA_ASSIGN_FEED_PER_REV_SOURCE (revolutional feedrate for position axes/spindles)

3.4 NC setting data

42650	CART_JOG_MODE			-	H1	
-	Coordinate system for Cartesian jog traverse			DWORD	Immediately	
-						
-	-	0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0...	0	0x0404	7/7	U

Description:

This SD can be used to set the reference coordinate system for Cartesian manual travel, with bits 0 to 7 provided for selecting the coordinate system for translation, bits 8 to 15 for selecting the reference system for orientation.

Cartesian manual travel will not be enabled if no bit is set or if just one bit is set for translation or for orientation. This means that one bit must always be set for translation and one for orientation. Cartesian manual travel will also not be enabled if more than one bit is set for translation or orientation.

The meaning of the individual bits is defined as follows :

- Bit 0 : Translation in Basic Coordinate System
- Bit 1 : Translation in Workpiece Coordinate System
- Bit 2 : Translation in Tool Coordinate System
- Bit 3 : reserved
- Bit 4 : reserved
- Bit 5 : reserved
- Bit 6 : reserved
- Bit 7 : reserved
- Bit 8 : Orientation in Basic Coordinate System
- Bit 9 : Orientation in Workpiece Coordinate System
- Bit 10 : Orientation in Tool Coordinate System
- Bit 11 : reserved
- Bit 12 : reserved
- Bit 13 : reserved
- Bit 14 : reserved
- Bit 15 : reserved

42660	ORI_JOG_MODE			-	-	
-	Definition of virtual kinematics for JOG			DWORD	Immediately	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	5	7/7	U

Description:

This SD can be used to define virtual kinematics, which become active for the manual travel of orientations.

This setting data is evaluated only by the generic 5/6-axis transformation. This data has no meaning for OEM transformations.

The following setting options are available:

- 0: The virtual kinematics are defined by the transformation.
- 1: Euler angles are traversed during jog, that is the 1st axis turns round the Z direction, the 2nd axis turns around the X direction and, if present, the 3rd axis turns around the new Z direction.
- 2: RPY angles are traversed during jog with the turning sequence XYZ, that is the 1st axis turns around the x direction, the 2nd axis turns around the Y direction and, if present, the 3rd axis turns around the new Z direction.
- 3: RPY angles are traversed during jog with the turning sequence ZYX, that is the 1st axis turns around the Z direction, the 2nd axis turns around the Y direction and, if present, the 3rd axis turns around the new X direction.
- 4: The turning sequence of the rotary axes is set by means of MD21120 \$MC_ORIAX_TURN_TAB_1.

5: The turning sequence of the rotary axes is set by means of MD21130
\$MC_ORIAX_TURN_TAB_2.

42664	OFF_ORI_LIMIT	-	-
degrees	Maximum angles for the override of the orientation [0] Maximum angles for the orientation vector [1] Maximum angles for the rotation vector with 6-axis kinematics	DOUBLE	Immediately
-			
-	2	90.0, 90.0, 90.0, 90.0, 90.0, 90.0, 90.0, 90.0, 90.0, 90.0, 90.0...	0.0
		1.0E+301	7/7
			U

Description: The maximum angles for the maximum possible override of the current tool orientation can be specified with the system variables \$AC_OFF_O, \$AC_OFF_R, \$AC_OFF_LEAD, \$AC_OFF_TILT and \$AC_OFF_THETA.
\$AC_OFF_ORI_LIMIT[0]: Maximum angle for the vector of the tool orientation
\$AC_OFF_ORI_LIMIT[1]: Maximum angle for the rotation vector (only with 6-axis kinematics)
If an override of the tool orientation is specified that is larger than the maximum angles, this is shown in the system variable \$AC_OFF_ORI_LIMIT.

42670	ORIPATH_SMOOTH_DIST	-	-
mm, degrees	Path for smoothing the orientation	DOUBLE	Immediately
-			
-	-	0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05...	0.0
		1.0E+301	7/7
			U

Description: Displacement by which a jump in the tool orientation is smoothed with ORIPATH path-relative orientation interpolation. There is a deviation within this displacement from the relation of the orientation to the path tangent and the surface normal vector programmed with LEAD/TILT.
If zero is entered for this path length (SD42670 \$SC_ORIPATH_SMOOTH_DIST = 0.0), an intermediate block is inserted for smoothing the orientation. This means that the path motion remains at a stop in a corner and the orientation is then turned separately.

42672	ORIPATH_SMOOTH_TOL	-	-
degrees	Tolerance for smoothing the orientation	DOUBLE	Immediately
-			
-	-	0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05...	0.000001
		1.0E+301	7/7
			U

Description: Maximum angle (in degrees) for the deviation of the tool orientation with ORIPATH path-relative orientation interpolation. This angular tolerance is used for smoothing a "kink" in the orientation path.

42674	ORI_SMOOTH_DIST	-	-
mm, degrees	Path for orientation smoothing during smoothing	DOUBLE	Immediately
-			
-	-	0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05...	0.000001
		1.0E+301	7/7
			U

Description: Path through which a tool orientation bend is smoothed on a block transition with G code OSD.

3.4 NC setting data

42676	ORI_SMOOTH_TOL			-	-	
degrees	Tolerance for orientation smoothing during smoothing			DOUBLE	Immediately	
-						
-	-	0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05...	0.000001	1.0E+301	7/7	U

Description: Maximum angle (in degree) for the tool orientation deviation during orientation smoothing with G code OST with a bend in the orientation curve on block transitions.

42678	ORISON_TOL			-	-	
degrees	Tolerance for smoothing the orientation			DOUBLE	Immediately	
-						
-	-	10.00, 10.00, 10.00, 10.00, 10.00, 10.00, 10.00, 10.00...	0.0	1.0E+301	7/7	U

Description: Maximum angle (in degree) for the tool orientation deviation during orientation smoothing with the G code ORISON over several blocks.

The tolerance specification with the SD42678 \$SC_ORISON_TOL is valid only if no programmed orientation tolerance (OTOL) is active.

This behavior is the default setting. With MD20478 \$MC_ORISON_MODE, however, this can be changed.

42690	JOG_CIRCLE_CENTRE			-	-	
mm	Center of the circle			DOUBLE	Immediately	
-						
-	3	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0...	-1.0E+301	1.0E+301	7/7	U

Description: This setting data is used to define the circle center point in the workpiece coordinate system during JOG of circles.

Only the relevant center point coordinates of the geometry axes in the active plane are evaluated, not the coordinate of the geometry axis vertical to the plane. This setting data is written via the user interface.

By default the coordinate of an axis with diameter programming is in the diameter. This can be changed with MD20360 \$MC_TOOL_PARAMETER_DEF_MASK Bit 13 = 1 by indicating a radius.

42691	JOG_CIRCLE_RADIUS			-	-	
mm	Circle radius			DOUBLE	Immediately	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-1.0E+301	1.0E+301	7/7	U

Description: With this setting data, the circle radius in the machine, the maximum circle during inner machining or the minimum circle during outer machining are defined when jogging circles. This setting data is written via the user interface.

42692	JOG_CIRCLE_MODE			-	-	
-	JOG of circles mode			DWORD	Immediately	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0	0xf	7/7	U

Description: This setting data sets the following during JOG of circles:

Bit 0 = 0 :

Travel to + creates traversing on a circular path in counterclockwise direction;
travel to - creates traversing in clockwise direction.

Bit 0 = 1 :

Travel to + creates traversing on a circular path in clockwise direction; travel to - creates traversing in counterclockwise direction.

Bit 1 = 0 :

The tool radius is not taken into account in checking the limitation produced by the specified circle or by the circle segment limited by the start and end angles.

Bit 1 = 1 :

The tool radius is taken into account in checking the limitation produced by the specified circle or by the circle segment limited by the start and end angles.

Bit 2 = 0 :

Internal machining is performed. The circle radius in SD42691 \$SC_JOG_CIRCLE_RADIUS is the maximum possible radius.

Bit 2 = 1 :

External machining is performed. The circle radius in SD42691 \$SC_JOG_CIRCLE_RADIUS is the minimum possible radius.

Bit 3 = 0 :

Given a full circle, the radius is enlarged starting from the circle center point in the direction of the ordinate (2nd geometry axis) of the plane.

Bit 3 = 1 :

Given a full circle, the radius is enlarged starting from the circle center point in the direction of the abscissa (1st geometry axis) of the plane.

This setting data should be written via the user interface.

42693	JOG_CIRCLE_START_ANGLE	-	-
degrees	Circle start angle	DOUBLE	Immediately
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 360 7/7 U

Description: This setting data defines the start angle during JOG of circles.
The start angle refers to the abscissa of the current plane. Traversing is only possible within the range
between the start and the end angle. SD42692 \$SC_JOG_CIRCLE_MODE bit 0 defines the direction from the start to the end angle. If start and end angle equal zero, no limitation is active.
This setting data is written via the user interface.

42694	JOG_CIRCLE_END_ANGLE	-	-
degrees	Circle end angle	DOUBLE	Immediately
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0 360 7/7 U

Description: This setting data defines the end angle during JOG of circles.
The end angle refers to the abscissa of the current plane. Traversing is only possible within the range
between the start and the end angle. SD42692 \$SC_JOG_CIRCLE_MODE bit 0 defines the direction from the start to the end angle. If start and end angle equal zero, no limitation is active.
This setting data is written via the user interface.

42700	EXT_PROG_PATH	-	K1
-	Program path for external subroutine call EXTCALL	STRING	Immediately
-			
-	-	-	- 7/7 U

3.4 NC setting data

Description: The total path results from the string chaining of SD42700 \$SC_EXT_PROG_PATH + the programmed subprogram identifier.

42750	ABSBLOCK_ENABLE			-	K1	
-	Enable base block display			BOOLEAN	Immediately	
-						
-	-	TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE, TRUE...	0	-	7/7	U

Description: Value 0: Disable basic blocks with absolute values (basic block display)
Value 1: Enable basic blocks with absolute values (basic block display)

42800	SPIND_ASSIGN_TAB			-	S1	
-	Spindle number converter.			BYTE	Immediately	
-						
-	21	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17,, 0...	0	20	7/7	U

Description: The spindle converter converts the programmed (= logical) spindle number to the physical (= internal, configured) spindle number.
The index of the setting data (SD) corresponds to the programmed spindle number or the programmed address extension.
The SD contains the physical spindle which actually exists.
Special cases, errors, ...

Notes:

- The zero index (SPIND_ASSIGN_TAB[0]) is only used to display the master spindle (= logical spindle number) selected in the channel, and it must not be overwritten.
- Changes to the spindle converter take effect immediately. Therefore it is not advisable to change the spindle converter for spindles used in a part program from the HMI or PLC while a part program is running.
- After "delete SRAM", the numbers of the logical and physical spindles are identical.

42900	MIRROR_TOOL_LENGTH			-	W1	
-	Sign change of tool length with mirror image machining			BOOLEAN	Immediately	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/7	U

Description: TRUE:
If a frame with mirror image machining is active, the tool components (\$TC_DP3[... , ...] to \$TC_DP5[... , ...]) and the components of the base dimensions (\$TC_DP21[... , ...] to \$TC_DP23[... , ...]) whose associated axes are mirrored, are also mirrored, i.e. their sign is inverted. The wear values are not mirrored. If the wear values are to be mirrored too, SD42910 \$SC_MIRROR_TOOL_WEAR must be set.

FALSE:
The sign for tool length components is unaffected by whether a frame with mirror image machining is active.

42910	MIRROR_TOOL_WEAR	-	W1
-	Sign change of tool wear with mirror image machining	BOOLEAN	Immediately
-			
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0 - 7/7 U

Description:

TRUE:

If a frame with mirror image machining is activated, the signs of the wear values of the components in question are inverted. The wear values of the components that are not assigned to mirrored axes remain unchanged.

FALSE:

The signs for wear values are unaffected by whether a frame with mirror image machining is active.

42920	WEAR_SIGN_CUTPOS	-	W1
-	Sign of tool wear depending on tool point direction	BOOLEAN	Immediately
-			
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0 - 7/7 U

Description:

TRUE:

In the case of tools with a relevant tool point direction (turning and grinding tools), the sign for wear of the tool length components depends on the tool point direction.

The sign is inverted in the following cases (marked with an X):

Tool point direction	Length 1	Length 2
1		
2	X	
3	X	X
4		X
5		
6		
7	X	
8		X
9		

The sign for wear value of length 3 is not influenced by this setting data.

The SD42930 \$SC_WEAR_SIGN acts in addition to this setting data.

FALSE:

The sign for wear of the tool length components is unaffected by the tool point direction.

42930	WEAR_SIGN	-	W1
-	Sign of wear	BOOLEAN	Immediately
-			
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0 - 7/7 U

Description:

TRUE:

The sign for wear of the tool length components and the tool radius are inverted, i.e. if a positive value is entered, the total dimension is decreased.

FALSE:

3.4 NC setting data

The sign for wear of the tool length components and the tool radius is not inverted.

42935	WEAR_TRANSFORM	-	W1, W4
-	Transformations for tool components	UDWORD	Immediately
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0x0 0x03 7/7 U

Description:

This setting data is bit-coded.

It determines which of the three wear components wear

(\$TC_DP12 - \$TC_DP14),

additive offsets fine (\$TC_SCPx3 - \$TC_SCPx5),

and additive offsets coarse (\$TC_ECPx3 - \$TC_ECPx5)

are subject to adapter transformation and transformation by an orientable tool holder, if one of the two G codes TOWMCS or TOWWCS from G code group 56 is active. If initial-setting G code TOWSTD is active, this setting data will not become active.

Then, the following assignment is valid:

Bit 0 = TRUE: Do not apply transformations to \$TC_DP12 - \$TC_DP14.

Bit 1 = TRUE: Do not apply transformations to \$TC_SCPx3 - \$TC_SCPx5.

Bit 2 = TRUE: Do not apply transformations to \$TC_ECPx3 - \$TC_ECPx5.

The bits not mentioned here are (currently) not assigned.

42940	TOOL_LENGTH_CONST	-	W1
-	Change of tool length components with change of active plane	DWORD	Immediately
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	- - 7/7 U

Description:

If this setting data is not equal to 0, the assignment of tool length components (length, wear, base dimensions) to geometry axes is not changed when the machining plane (G17 - G19) is changed.

The assignment of tool length components to geometry axes can be derived from the value of the setting data according to the following tables.

The assignment of the tool orientation components is not affected by this setting data. Setting data SD42945 \$SC_TOOL_ORI_CONST_M and SD42947 \$SC_TOOL_ORI_CONST_T may have to be set accordingly.

A distinction is made between turning and grinding tools (tool types 400 to 599) and other tools (typically milling tools) in the assignment.

Representation of this information in tables assumes that geometry axes 1 to 3 are called X, Y and Z. For assignment of an offset to an axis, not the axis identifier but the axis sequence is relevant.

Assignment for turning tools and grinding tools (tool types 400 to 599):

Content	Length 1	Length 2	Length 3
17	Y		X Z
18*	X		Z Y
19	Z		Y X
-17	X		Y Z
-18	Z		X Y
-19	Y		Z X

* Any value which is not 0 and is not one of the six values listed, is treated as value 18.

For values that are the same but with a different sign, assignment of length 3 is always the same, lengths 1 and 2 are reversed. Assignment for all tools which are neither turning nor grinding tools (tool types < 400 or > 599):

Content	Length 1	Length 2	Length 3

17*	Z	Y	X
18	Y	X	Z
19	X	Z	Y
-17	Z	X	Y
-18	Y	Z	X
-19	X	Y	Z

* Any value which is not 0 and is not one of the six values listed, is treated as value 17.

For values that are the same but with a different sign, assignment of length 1 is always the same, lengths 2 and 3 are reversed.

If the 100s digit of the settings data is 1, the sign of the second length component is inverted.

If the setting data SD42950 \$SC_TOOL_LENGTH_TYPE has the value 3, this setting data is only active with milling tools. Together with setting data SD42942 \$SC_TOOL_LENGTH_CONST_T, the length assignments can then be set separately for turning and milling tools.

42942	TOOL_LENGTH_CONST_T			-	W1	
-	Change tool length components for turning tools with change of active plane			DWORD	Immediately	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description:

This setting data is only evaluated if SD42950 \$SC_TOOL_LENGTH_TYPE has the value 3. Under this condition, it has the following meaning:

If this setting data is not equal to zero, the assignment of the tool length components (length, wear and base dimensions) of turning and grinding tools (tool types 400 to 599) to geometry axes is not changed when the machining plane (G17 - G19) is changed.

The assignment of tool orientation components is not affected by this setting data. Setting data SD42957 \$SC_TOOL_ORI_CONST_T may have to be set correspondingly.

The assignment of tool orientation components to the geometry results from the value of the setting data according to the following table.

The representation of this information in tables assumes that geometry axes 1 to 3 are called X, Y and Z. For assignment of an offset to an axis, not the axis identifier but the axis sequence is relevant.

Content Length 1 Length 2 Length 3

17	Y	X	Z
18*	X	Z	Y
19	Z	Y	X
-17	X	Y	Z
-18	Z	X	Y
-19	Y	Z	X

* Any value which is not 0 and is not one of the six values listed, is evaluated as value 18.

For values that are the same but with a different sign, assignment of length 3 is always the same, lengths 1 and 2 are reversed.

If the 100s digit of the settings data is 1, the sign of the second length component is inverted.

42950	TOOL_LENGTH_TYPE			-	W1	
-	Assignment of tool length compensation independent of tool type			DWORD	Immediately	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

3.4 NC setting data

Description:

This setting data defines the assignment of the tool length components to the geometry axes irrespective of the tool type. It can assume any value between 0 and 3. Any other value is interpreted as 0.

Value

0: Standard assignment. A distinction is made between turning and grinding tools (tool types 400 to 599) and other tools (milling tools).

1: The tool length components are assigned irrespective of the actual tool type, always as for milling tools.

2: The tool length components are assigned irrespective of the actual tool type, always as for turning and grinding tools.

3: The tool length components are assigned separately, on the one hand for turning and grinding tools (tool types 400 to 599) and, on the other hand, for all other tools (milling tools).

The assignment of tool components is specified as follows:

Milling tools:

The assignment of tool length components is specified by SD42940 \$SC_TOOL_LENGTH_CONST.

Turning and grinding tools:

The assignment of tool length components is specified by SD42942 \$SC_TOOL_LENGTH_CONST_T.

The setting data also affects the wear values assigned to the length components.

If SD42940 \$SC_TOOL_LENGTH_CONST is set, the tables defined there access the table for milling and turning tools defined by SD42950 \$SC_TOOL_LENGTH_TYPE irrespective of the actual tool type if the value of the latter is 1 or 2.

42954	TOOL_ORI_CONST_M			-	W1	
-	Change of the tool orientation component for milling tools on plane change			DWORD	Immediately	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description:

If this setting data is not equal to zero, a clockwise, orthogonal tool coordinate system is defined for milling tools (all tool types except 400 to 599), which remains unchanged when the machining plane is changed (G17 - G19. It has no relevance for turning and grinding tools.

The orientation coordinate system is determined by the orientation vector and a normal orientation vector extending perpendicularly to it. It is completed by a third vector, the binormal vector, which derives from the cross product of the normal orientation vector and the orientation vector.

The basic orientation is determined by the units and tens digits of the setting data. Apart from the value 0, only the values 17, 18 and 19 are permissible. All other values are treated as if their value were 17.

	Orientation vector	Normal orient- ation vector	Binormal vector
Content			
17*	(0, 0, 1)	(0, 1, 0)	(1, 0, 0)
18	(0, 1, 0)	(1, 0, 0)	(0, 0, 1)
19	(1, 0, 0)	(0, 0, 1)	(0, 1, 0)

* Each value not equal to 0 that is not one of the listed values is evaluated as if it were the value 17.

If n is the content of the 100s digit of the setting data, the coordinate system is rotated around the orientation vector by the angle $n * 90$ degrees. n may have the values 0 to 3. Larger values are evaluated as if they were 0.

If the sign of the setting data is negative, the coordinate system is rotated around the axis by 180 degrees, which is defined by the original position of the normal orientation vector (that is, before any rotation due to n being unequal to 0).

Example:

If the content of the setting data is -18, then:

Orientation vector (0, -1, 0)

Normal orientation vector (1, 0, 0)

Binormal vector (0, 0, -1)

Handling of tools with an explicitly programmed tool orientation by means of cutting edge data (\$TC_DPV..):

This setting data is normally ignored for tools for which the orientation is defined in this way. This means that the programmed orientation vectors are assigned to the geometry axes in response to the active machining plane (G17 - G19).

If the setting data is also active for such tools, the 1000s digit must be equal to 1. However, the 100s digit and the sign are not evaluated. This means that the setting data only defines how the orientation components are assigned to the geometry axis directions. No additional rotations are performed.

42956	TOOL_ORI_CONST_T			-	W1	
-	Change in the tool orientation component for turning tools on plane change			DWORD	Immediately	
-						
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-	-	7/7	U

Description:

If this setting data is not equal to zero, the assignment of the tool orientation components of turning and grinding tools (tool types 400 to 599) to the geometry axes is not changed if the machining plane changes (G17 - G19). It has no relevance for tools other than turning and grinding tools.

The orientation coordinate system is determined by the orientation vector and a normal orientation vector lying at right-angles to it. It is completed by a third vector, the binormal vector, which is given by the cross product of the normal orientation vector and the orientation vector.

The basic orientation is determined by the units and tens digits of the setting data. Apart from the value 0, only the values 17, 18 and 19 are permissible. All other values are treated as if their value were 18.

	Orientation vector	Normal orient- ation vector	Binormal vector
Content			
17	(0, 0, 1)	(0, 1, 0)	(1, 0, 0)
18*	(0, 1, 0)	(1, 0, 0)	(0, 0, 1)
19	(1, 0, 0)	(0, 0, 1)	(0, 1, 0)

* Each value not equal to 0, which is not one of the listed values is evaluated as if it were the value 18.

If n is the content of the 100s digit of the setting data, the coordinate system is rotated around the orientation vector by the angle $n * 90$ degrees. n may have the values 0 to 3. Larger values are evaluated as if they were 0.

If the sign of the setting data is negative, the coordinate system is rotated around the axis by 180 degrees, which is defined by the original position of the normal orientation vector (that is before any rotation on account of n being unequal to 0).

Example:

If the content of the setting data is -18, then:

Orientation vector (0, -1, 0)

Normal orientation vector (1, 0, 0)

Binormal vector (0, 0, -1)

Handling of tools with an explicitly programmed tool orientation by using cutting edge data (\$TC_DPV..):

This setting data is normally ignored for tools for which the orientation is defined in this way. This means that the programmed orientation vectors are assigned to the geometry axes according to the active machining plane (G17 - G19).

42960	TOOL_TEMP_COMP			-	W1	
-	Temperature compensation for tool			DOUBLE	Immediately	
-						
-	3	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0,...	-1.0E+301	1.0E+301	7/7	U

42970	TOFF_LIMIT			-	F2	
mm	Upper limit of correction value via \$AA_TOFF			DOUBLE	Immediately	
-						
-	3	10.0, 10.0, 10.0, 10.0, 10.0, 10.0, 10.0, 10.0, 10.0, 10.0, 10.0...	0.0	1.0E+301	7/7	U

42972	TOFF_LIMIT_MINUS			-	F2	
mm	Lower limit of the offset value \$AA_TOFF			DOUBLE	Immediately	
-						
-	3	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0,...	-1.0E+301	0.0	7/7	U

42974	TOCARR_FINE_CORRECTION			C08	-	
-	Fine offset TCARR ON / OFF			BOOLEAN	Immediately	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/7	U

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FALSE:

On activating an orientable tool holder, the fine offset are not considered.

42977	SLOT_FORM_RECOGN			-	-	
-	Slot recognition on/off			BOOLEAN	Immediately	
-						
-	-	FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE, FALSE...	0	-	7/7	U

Description:

TRUE:

With active tool radius compensation, narrow slots are detected and traversed.

FALSE:

With active tool radius compensation, narrow slots are ignored

42980	TOFRAME_MODE			-	K2	
-	Frame definition at TOFRAME, TOROT and PAROT			DWORD	Immediately	
-						
-	-	1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000...	-	-	7/7	U

Description:

This setting data defines the direction of the geometry axes on the machining plane (XY in the case of G17) in the case of the frame definition by means of (TOROTY, TOROTX) or for PAROT.

When a frame is calculated, the tool direction (Z in the case of G17) is uniquely defined so that the tool direction and vertical axis (Z in the case of G17) of the frame are parallel and lie perpendicular on the machining plane.

Rotation around the tool axis is free at first. This free rotation can be defined using this setting data so that the newly defined frame deviates as little as possible from a previously active frame.

In all cases in which the setting data is not zero, an active frame remains unchanged if the tool direction (Z in the case of G17) of the old and the new frame are the same.

SD42980 \$SC_TOFRAME_MODE >= 2000:

In the case of TOROT (or TOROTY and TOROTX), the rotations and translations of the frame chain are used to calculate a frame in the tool reference system frame (\$P_TOOLFRAME) berechnet.

Machine data 21110 \$MC_X_AXIS_IN_OLD_X_Z_PLANE is not evaluated.

The explanatory notes below refer to the G17 plane with the XY axes in the machining plane and the tool axis being Z.

SD42980 \$SC_TOFRAME_MODE = 2000:

Rotation around the Z axis is selected so that the angle between the new X axis and the old X-Z plane has the same absolute value as the angle between the new Y axis and the old Y-Z plane. This setting corresponds to the mean value of both settings which would result for values 2001 and 2002 of this setting data.

It is also applied if the value of the units digit is greater than 2.

SD42980 \$SC_TOFRAME_MODE = 2001:

The new X direction is selected so that it lies in the X-Z plane of the old coordinate system. The angular difference between the old and new Y axes is minimal with this setting.

SD42980 \$SC_TOFRAME_MODE = 2002:

The new Y direction is selected so that it lies in the Y-Z plane of the old coordinate system. The angular difference between the old and new X axes is minimal with this setting.

None of the other settings of SD42980 \$SC_TOFRAME_MODE (0,1,2,...1000,1001...) should be used for recommissioning.

3.4 NC setting data

For compatibility reasons, the following settings remain valid:

0: The orientation of the coordinate system is determined by the value of machine data 21110 \$MC_X_AXIS_IN_OLD_X_Z_PLANE.

1: The new X direction is selected so that it lies in the X-Z plane of the old coordinate system. The angular difference between the old and new Y axes is minimal with this setting.

2: The new Y direction is selected so that it lies in the Y-Z plane of the old coordinate system. The angular difference between the old and new X axes is minimal with this setting.

3: The average of the two settings resulting from 1 and 2 is selected.

Addition of 100: In the case of a plane change from G17 to G18 or G19, a tool matrix is generated, in which the new axis directions are parallel to the old directions. The axes are swapped cyclically accordingly (standard transformation on plane changes). If the hundreds digit equals zero, a matrix is supplied in the cases of G18 and G19 which is derived from the unit matrix by simply rotating through 90 degrees around the X axis (G18) or through 90 degrees around the Y axis (G19). Thus in each case one axis is antiparallel to an initial axis. This setting is required to remain compatible with old software versions.

Addition of 1000: The tool-frame is linked to any active basic frames and settable frames. The response is thus compatible with earlier software versions (before 5.3). If the thousands digit is not set, the tool frame is calculated so that any active basic frames and settable frames are taken into account.

42984	CUTDIRMOD	C08	-
-	Modification of \$P_AD[2] or \$P_AD[11]	STRING	Immediately
-			
-	-	-	-
			7/7 U

Description:

States whether the tool point direction and cutting direction are to be modified on reading the corresponding system variables \$P_AD[2] and \$P_AD[11].

Modification is made by rotating the vector of the tool point direction or cutting direction by a specific angle in the active machining plane (G17-G19). The resulting output value is always the tool point direction or cutting direction created by the rotation or to which the rotated value is closest. the angle of rotation can be defined by one of the following six options:

1: The string is empty. The stated data are output unchanged.

2: The contents of the string is "P_TOTFRAME". The resulting rotation is determined from the total frame.

3: The contents of the string is a valid frame name (e.g. \$P_NCBFRAME[3]). The resulting rotation is then calculated from this frame.

4: The contents of the string has the form "Frame1 : Frame2". The resulting rotation is determined from the part frame chain that is created by chaining all frames from Frame1 to Frame2 (in each case inclusive). Frame1 and Frame2 are valid frame names such as \$P_PFRAME or \$P_CHBFRAME[5]"

5: The contents of the frame is the valid name of a rotary axis (machine axis). The resulting rotation is determined from the programmed end position of this rotary axis. Additionally, an offset can be stated (in degrees, e.g. "A+90").

6: The rotation is programmed explicitly (in degrees).

Optionally, the first character of the string can be written as sign (+ or -). A plus sign will not have any effect on the angle calculation, but a minus sign will invert the sign of the calculated angle.

42990	MAX_BLOCKS_IN_IPOBUFFER	-	K1
-	Maximum number of blocks in IPO buffer	DWORD	Immediately
-			
-	-	-1, -1, -1, -1, -1, -1, -1, -1...	-
-	-	-	-
-	-	-	7/7
-	-	-	U

Description: This setting data can be used to limit the maximum number of blocks in the interpolation buffer to the maximum number specified in MD28060 \$MC_MM_IPO_BUFFER_SIZE.
A negative value means that no limitation of the number of blocks is active in the interpolation buffer, and the number of blocks is determined solely by MD28060 \$MC_MM_IPO_BUFFER_SIZE (default setting).

42995	CONE_ANGLE	-	-
-	Taper angle	DOUBLE	Immediately
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	-90
-	-	90	7/7
-	-	90	U

Description: This setting data writes the taper angle for taper turning. This setting data is written via the operator interface.

42996	JOG_GEOAX_MODE_MASK	-	-
-	JOG of geometry axis mode	DWORD	Immediately
-			
-	-	0, 0, 0, 0, 0, 0, 0, 0...	0
-	-	0x7	7/7
-	-	0x7	U

Description: This setting data sets the following during JOG of geometry axes:
Bit 0 = 1 :
A traversing request for the 1st geometry axis is inverted, i.e. a traversing request to + triggers a traversing motion to - .
Bit 1 = 1 :
A traversing request for the 2nd geometry axis is inverted, i.e. a traversing request to + triggers a traversing motion to - .
Bit 2 = 1 :
A traversing request for the 3rd geometry axis is inverted, i.e. a traversing request to + triggers a traversing motion to - .

42998	CUTMOD_PLANE_TOL	-	-
degrees	Deviation tool tip/machining plane	DOUBLE	Immediately
-			
-	-	5.0, 5.0, 5.0, 5.0, 5.0, 5.0, 5.0, 5.0...	0.0
-	-	89.0	7/3
-	-	89.0	U

Description: This setting data specifies by how many degrees the tip of a tool can be rotated as a maximum from the machining plane when calling the CUTMOD or CUTMODK function, i.e. the maximum deviation of the angle gamma from one of the two standard positions 0 or 180 degrees.
If the value of this setting data is 0, the absolute value of the specified angle is a maximum of 89 degrees.

42999	ORISOLH_INCLINE_TOL	-	-
degrees	Deviation, tool tip/machining plane for ORISOLH	DOUBLE	Immediately
-			
-	-	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0...	0.001
-	-	89.0	7/3
-	-	89.0	U

3.4 NC setting data

Description: This setting data specifies the maximum permissible inclination of the tool tip with respect to the machining plane (in the standard case G18) when calling the ORISOLH function for "Directly swivel tool".

43100	LEAD_TYPE			-	M3	
-	Defines what is used as master value			DWORD	Immediately	
CTEQ						
-	-	1	0	2	7/7	U

Description: Defines which value is to be used as master value:

0: Actual value

1: Setpoint

2: Simulated master value

43102	LEAD_OFFSET_IN_POS			-	M3	
-	Offset of master value if coupled to this axis			DOUBLE	Immediately	
-						
-	-	0.0	-1e15	1e15	7/7	U

Description: Offset of the master value before use on the coupling.

If this axis is a master value coupled following axis with CTABP as the curve table and X as the master value, then its position setpoint is calculated from
 $LEAD\_OFFSET\_OUT\_POS + LEAD\_SCALE\_OUT\_POS * CTABP(LEAD\_OFFSET\_IN\_POS + LEAD\_SCALE\_IN\_POS * X)$

Related to

SD43104 \$SA_LEAD_SCALE_IN_POS

SD43106 \$SA_LEAD_OFFSET_OUT_POS

SD43108 \$SA_LEAD_SCALE_OUT_POS

43104	LEAD_SCALE_IN_POS			-	M3	
-	Scaling of master value if coupled to this axis			DOUBLE	Immediately	
-						
-	-	1.0	-1e15	1e15	7/7	U

Description: Scaling of the master value before use on the coupling.

If this axis is a master value coupled following axis with CTABP as the curve table and X as the master value, then its position setpoint is calculated from
 $LEAD\_OFFSET\_OUT\_POS + LEAD\_SCALE\_OUT\_POS * CTABP(LEAD\_OFFSET\_IN\_POS + LEAD\_SCALE\_IN\_POS * X)$

Related to

SD43102 \$SA_LEAD_OFFSET_IN_POS

SD43106 \$SA_LEAD_OFFSET_OUT_POS

SD43108 \$SA_LEAD_SCALE_OUT_POS

43106	LEAD_OFFSET_OUT_POS			-	M3	
mm, degrees	Offset of the functional value of the curve table			DOUBLE	Immediately	
-						
-	-	0.0	-1e15	1e15	7/7	U

Description: Offset of the master value before use on the coupling.

If this axis is a master value coupled following axis with CTABP as the curve table and X as the master value, then its position setpoint is calculated from
 $LEAD\_OFFSET\_OUT\_POS + LEAD\_SCALE\_OUT\_POS * CTABP(LEAD\_OFFSET\_IN\_POS + LEAD\_SCALE\_IN\_POS * X)$

Related to

SD43102 \$SA_LEAD_OFFSET_IN_POS

SD43104 \$SA_LEAD_SCALE_IN_POS

SD43108 \$SA_LEAD_SCALE_OUT_POS

43108	LEAD_SCALE_OUT_POS	-	M3
-	Scaling of functional value of the curve table	DOUBLE	Immediately
-			
-	-	1.0	-1e15 1e15 7/7 U

Description: Scaling of the function value before use of the curve table.

If this axis is a master value coupled following axis with CTABP as the curve table and X as the master value, then its position setpoint is calculated from

$$\text{LEAD\_OFFSET\_OUT\_POS} + \text{LEAD\_SCALE\_OUT\_POS} * \text{CTABP}(\text{LEAD\_OFFSET\_IN\_POS} + \text{LEAD\_SCALE\_IN\_POS} * X)$$

Related to

SD43102 \$SA_LEAD_OFFSET_IN_POS

SD43104 \$SA_LEAD_SCALE_IN_POS

SD43106 \$SA_LEAD_OFFSET_OUT_POS

43120	DEFAULT_SCALE_FACTOR_AXIS	-	FBFA
-	Axial default scaling factor with G51 active	DWORD	Immediately
-			
-	-	1	- - 7/7 U

Description: If no axial scaling factor I, J, or K is programmed in the G51 block, SD43120 \$SA_DEFAULT_SCALE_FACTOR_AXIS is active. The scaling factor is only active if MD22914 \$MC_AXES_SCALE_ENABLE is set.

Related to:

MD22914 \$MC_AXES_SCALE_ENABLE,

MD22910 \$MC_WEIGHTING_FACTOR_FOR_SCALE

43200	SPIND_S	-	S1
rev/min	Speed for spindle start by VDI	DOUBLE	Immediately
-			
-	-	0.0	0.0 1.0E+301 7/7 U

Description: Spindle speed at spindle start by NC/PLC interface signals DB31, ... DBX30.1 (Spindle start clockwise rotation) and DB31, ... DBX30.2 (Spindle start counterclockwise rotation).

Example: SD43200 \$SA_SPIND_S[S1] = 600

Spindle 1 is started at a speed of 600 rpm upon detection of the positive edge of one of the above-mentioned VDI starting signals.

Speed programming values are entered in the SD by setting bit 4=1 in MD35035 \$MA_SPIND_FUNCTION_MASK.

The SD becomes active in JOG mode as a default speed by setting bit 5=1 in MD35035 \$MA_SPIND_FUNCTION_MASK (exception: the value is zero).

Related to:

MD35035 \$MA_SPIND_FUNCTION_MASK

MD10709 \$MN_PROG_SD_POWERON_INIT_TAB

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

3.4 NC setting data

43202	SPIND_CONSTCUT_S	-	S1
m/min	Const cut speed for spindle start by VDI	DOUBLE	Immediately
-			
-	-	0.0	0.0
		1.0E+301	7/7
			U

Description:

Definition of the constant cutting speed for the master spindle.

The setting data is evaluated at spindle start by the NC/PLC interface signals DB31, ... DBX30.1 (Spindle start clockwise rotation) and DB31, ... DBX30.2 (Spindle start counterclockwise rotation)

Cutting speed programming values are entered in the SD by setting bit 8=1 in MD35035 \$MA_SPIND_FUNCTION_MASK.

Related to:

MD35035 \$MA_SPIND_FUNCTION_MASK

MD10709 \$MN_PROG_SD_POWERON_INIT_TAB

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

43206	SPIND_SPEED_TYPE	A06	-
-	Spindle speed type for spindle start through VDI	DWORD	Immediately
-			
-	-	94	93
		973	7/7
			U

Description:

Definition of the spindle speed type for the master spindle.

The range of values and the functionality correspond to the 15th G group "feed type".

Permissible values are the G values: 93, 94, 95, 96, 961, 97, 971 and 973.

The stated values make a functional distinction between the following variants:

==> 93, 94, 95, 97 and 971: The spindle is started at the speed in SD 43200 \$SA_SPIND_S.

==> 96 and 961: The speed of the spindle is derived from the cutting speed of SD 43202 \$SA_SPIND_CONSTCUT_S and the radius of the transverse axis.

==> 973: G973 behaves like G97, but the spindle speed limitation is not active

The default value is 94 (corresponds to G94)

The default value becomes active if the SD is written with impermissible values.

43210	SPIND_MIN_VELO_G25	-	S1
rev/min	Programmed spindle speed limitation G25	DOUBLE	Immediately
-			
-	-	0.0	0.0
		1.0E+301	7/7
			U

Description:

A minimum spindle speed limit below which the spindle must not fall is entered in SPIND_MIN_VELO_G25. The NCK limits the set spindle speed to this value if it is too low.

The spindle speed may only fall below the minimum as a result of:

- Spindle offset 0%
- M5
- S0
- NC/PLC interface signal DB31, ... DBX4.3 (Spindle stop)
- NC/PLC interface signal DB31, ... DBX2.1 (Servo enable)
- NC/PLC interface signal DB21-30 DBX35.7 (Channel status: Reset)
- NC/PLC interface signal DB31, ... DBX2.2 (Delete distance-to-go/Spindle reset)
- NC/PLC interface signal DB31, ... DBX18.5 (Oscillation speed)
- Cancel S value

SD irrelevant to

other spindle modes used in open-loop control mode (SPOS, M19, SPOSA)

Related to:

MD10709 \$MN_PROG_SD_POWERON_INIT_TAB

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

43220	SPIND_MAX_VELO_G26			-	S1	
rev/min	Programmable upper spindle speed limitation G26			DOUBLE	Immediately	
-						
-	-	1000.0	0.0	1.0E+301	7/7	U

Description: A maximum spindle speed is entered in SD43220 \$SA_SPIND_MAX_VELO_G26, which the spindle must not exceed. The NCK limits an excessive spindle speed setpoint to this value.

SD irrelevant for

all spindle modes except open-loop control mode.

Special cases, errors, ...

The value in SD43210 \$SA_SPIND_MIN_VELO_G26 can be altered by means of:

- G26 S.... in the part program
- Operator commands via HMI

The value in SD43210 \$SA_SPIND_MIN_VELO_G26 is retained after a reset or Power Off.

Related to

SD43210 \$SA_SPIND_MIN_VELO_G25 (programmed spindle speed limit G25)

SD43230 \$SA_SPIND_MAX_VELO_LIMS (programmed spindle speed limit G96/961)

MD10709 \$MN_PROG_SD_POWERON_INIT_TAB

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

43230	SPIND_MAX_VELO_LIMS			-	S1, Z1	
rev/min	Spindle speed limitation with G96			DOUBLE	Immediately	
-						
-	-	100.0	0.0	1.0E+301	7/7	U

Description: Limits the spindle speed with G96, G961, G97 to the stated maximum value. This setting data can be written from the block with LIMS.

Note:

MD 10710 \$MN_PROG_SD_RESET_SAVE_TAB can be set so that the value written by the part program is transferred into the active file system on reset (that is the value is retained after reset).

Related to

SD43210 \$SA_SPIND_MIN_VELO_G25 (programmed spindle speed limit G25)

SD43230 \$SA_SPIND_MAX_VELO_LIMS (programmed spindle speed limit with G96/961)

MD10709 \$MN_PROG_SD_POWERON_INIT_TAB

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

43235	SPIND_USER_VELO_LIMIT			A06	S1, Z1	
rev/min	Maximum spindle speed			DOUBLE	Immediately	
-						
-	-	1.0e+8	0.0	1.0E+301	7/7	U

Description: The user can enter a maximum spindle speed.

The NCK limits an excessive spindle setpoint speed to this value. The SD is effective immediately.

Corresponds with:

MD35100 \$MA_SPIND_VELO_LIMIT (maximum spindle speed)

MD35110 \$MA_GEAR_STEP_MAX_VELO (maximum speed for gear stage change)

3.4 NC setting data

43240	M19_SPOS			, A12	S1	
degrees	Spindle position for spindle positioning with M19.			DOUBLE	Immediately	
-						
-	-	0.0	-10000000.0	10000000.0	7/7	U

Description: Spindle position in [DEGREES] for spindle positioning with M19.
The position approach mode is defined in SD43250 \$SA_M19_SPOSMODE.
Default positions must lie in the range $0 \leq \text{pos} < \text{MD30330 } \$\text{MA\_MODULO\_RANGE}$.
Path defaults (SD43250 \$SA_M19_SPOSMODE = 2) can be positive or negative and are only limited by the input format.

43250	M19_SPOSMODE			, A12	S1	
-	Spindle position approach mode for spindle positioning with M19.			DWORD	Immediately	
-						
-	-	0	0	5	7/7	U

Description: Spindle position approach mode for spindle positioning with M19.
In which signify:
0: DC (default) approach position on the shortest path.
1: AC approach position normally.
2: IC approach incrementally (as path), sign gives the traversing direction
3: DC approach position on the shortest path.
4: ACP approach position from the positive direction.
5: ACN approach position from the negative direction.

43300	ASSIGN_FEED_PER_REV_SOURCE			-	V1, P2, S1	
-	Revolutional feedrate for positioning axes/spindles			DWORD	Immediately	
CTEQ						
-	-	0	-3	31	7/7	U

Description: 0= No revolutional feedrate is active.
>0= Machine axis index of the rotary axis/spindle, from which the revolutional feedrate is derived.
-1= The revolutional feedrate is derived from the master spindle of the channel in which the axis/spindle is active
-2= The revolutional feedrate is derived from the axis with machine axis index == 0 or the axis with an index in MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB == 0.
-3= The revolutional feedrate is derived from the master spindle of the channel in which the axis/spindle is active. No revolutional feedrate is active if the master spindle is at a standstill.
Related to
SD42600 \$SC_JOG_FEED_PER_REV_SOURCE (revolutional feedrate for geometry axes on which a frame with rotation acts in JOG mode.)
MD10709 \$MN_PROG_SD_POWERON_INIT_TAB
MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

43320	JOG_POSITION			-	-	
mm, degrees	JOG position			DOUBLE	Immediately	
-						
-	-	0.0	-1.0E+301	1.0E+301	7/7	U

Description: Position to be approached in JOG. Depending on MD10735 \$MN_JOG_MODE_MASK bit 4 axial frames and, with an axis configured as geometry axis, the tool length offset are considered.

43340	EXTERN_REF_POSITION_G30_1			, A12	FBFA	
-	Reference point position for G30.1			DOUBLE	Immediately	
-						
-	-	0.0	-1.0E+301	1.0E+301	7/7	U

Description: Reference point position for G30.1.
This setting data will be evaluated in CYCLE328.

43350	AA_OFF_LIMIT			-	S5, FBSY	
mm, degrees	Upper limit of offset value \$AA_OFF with clearance control			DOUBLE	PowerOn	
CTEQ						
-	-	100000000.0	0.0	1e15	7/7	U

Description: The upper limit of the offset value, which can be defined by means of synchronized actions via the variable \$AA_OFF.
This limit value acts on the absolutely effective amount of offset by means of \$AA_OFF.
It is used for clearance control in laser machining:
The offset value is limited so that the laser head cannot get caught in the plate recesses.
Whether the offset value lies within the limit range can be queried via system variable \$AA_OFF_LIMIT.

43400	WORKAREA_PLUS_ENABLE			-	A3	
-	Working area limitation active in positive direction			BOOLEAN	Immediately	
CTEQ						
-	-	FALSE	0	-	7/7	U

Description: 1: The working area limitation of the axis concerned is active in the positive direction.
0: The working area limitation of the axis concerned is switched off in the positive direction.
The setting data is parameterized via the operator panel in the operating area "Parameters" by activating/deactivating the working area limitation.
SD irrelevant for
G code: WALIMOF

43410	WORKAREA_MINUS_ENABLE			-	A3	
-	Working area limitation active in the negative direction			BOOLEAN	Immediately	
CTEQ						
-	-	FALSE	0	-	7/7	U

Description: 1: The working area limitation of the axis concerned is active in the negative direction.
0: The working area limitation of the axis concerned is switched off in the negative direction.
The setting data is parameterized via the operator panel in the operating area "Parameters" by activating/deactivating the working area limitation.
SD irrelevant for
G code: WALIMOF

43420	WORKAREA_LIMIT_PLUS				-	A3	
mm, degrees	Working area limitation plus				DOUBLE	Immediately	
-							
-	-	1.0e+8	-1.0E+301	1.0E+301	7/7	U	

3.4 NC setting data

Description: The working area defined in the basic coordinate system in the positive direction of the axis concerned can be limited with axial working area limitation.
The setting data can be changed on the operator panel in the operating area "Parameters".
The positive working area limitation can be changed in the program with G26.
SD irrelevant for
G code: WALIMOF
Related to
SD43400 \$SA_WORKAREA_PLUS_ENABLE
MD10709 \$MN_PROG_SD_POWERON_INIT_TAB
MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

43430	WORKAREA_LIMIT_MINUS			-	A3	
mm, degrees	Working area limitation minus			DOUBLE	Immediately	
-						
-	-	-1.0e+8	-1.0E+301	1.0E+301	7/7	U

Description: The working area defined in the basic coordinate system in the negative direction of the axis concerned can be limited with axial working area limitation.
The setting data can be changed on the operator panel in the operating area "Parameters".
The negative working area limitation can be changed in the program with G25.
SD irrelevant for
G code: WALIMOF
Related to
SD43410 \$SA_WORKAREA_MINUS_ENABLE
MD10709 \$MN_PROG_SD_POWERON_INIT_TAB
MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

43500	FIXED_STOP_SWITCH			-	F1	
-	Selection of travel to fixed stop			BYTE	Immediately	
-						
-	-	0	0	1	7/7	U

Description: The "Travel to fixed stop" function can be selected and deselected with this setting data.
SD=0 Deselect "Travel to fixed stop"
SD=1 Select "Travel to fixed stop"
The setting data can only be overwritten by the part program with the command FXS[x]=1/0 when software version 2.x is installed.
The status of the setting data is indicated on the operator panel in the "Parameters" area.

43510	FIXED_STOP_TORQUE			-	F1	
%	Fixed stop clamping torque			DOUBLE	Immediately	
-						
-	-	5.0	0.0	800.0	7/7	U

Description: The clamping torque is entered in this setting data as a % of the maximum motor torque (corresponds to % of max. current value with FDD).
The setting data is active only if the fixed stop has been reached.
The fixed stop is considered reached when,

- with MD37060 \$MA_FIXED_STOP_ACKN_MASK, bit 1 = 0 (no acknowledgment required), the interface signal DB31, ... DBX62.5 (Fixed stop reached) is set by the NC
- with MD37060 \$MA_FIXED_STOP_ACKN_MASK, bit 1 = 1 (acknowledgment required), the interface signal DB31, ... DBX62.5 (Fixed stop reached) is set by the NC and acknowledged by interface signal DB31, ... DBX1.1 (Acknowledge fixed stop reached)

The status of the setting data is indicated on the operator panel in the "Parameters" area.

The FXST[x] command effects a block-synchronous change to this setting data. It can also be changed by the user or via the PLC. Otherwise the value is transferred from MD37010 \$MA_FIXED_STOP_TORQUE_DEF to the setting data when "Travel to fixed stop" is active.

Related to

MD37010 \$MA_FIXED_STOP_TORQUE_DEF (default setting for clamping torque)

43520	FIXED_STOP_WINDOW	-	F1
mm, degrees	Fixed stop monitoring window	DOUBLE	Immediately
-			
-	-	1.0	0.0
		1.0E+301	7/7
			U

Description:

The fixed stop monitoring window is entered in this setting data.

The setting data is active only if the fixed stop has been reached.

The fixed stop is considered reached when,

- with MD37060 \$MA_FIXED_STOP_ACKN_MASK, bit 1 = 0 (no acknowledgment required) interface signal DB31, ... DBX62.5 (Fixed stop reached) is set by the NC
- with MD37060 \$MA_FIXED_STOP_ACKN_MASK, bit 1 = 1 (acknowledgment required) interface signal DB31, ... DBX62.5 (Fixed stop reached) is set by the NC and acknowledged by interface signal DB31, ... DBX1.1 (Acknowledge fixed stop reached)

If the position at which the fixed stop was detected leaves the tolerance band by more than the amount specified in SD43520 \$SA_FIXED_STOP_WINDOW, then alarm 20093 "Fixed stop monitoring has responded" is output and the "FXS" function is deselected.

The status of the setting data is indicated on the operator panel in the "Parameters" area.

The FXSW[x] command effects a block-synchronous change to this setting data. It can also be changed by the user or via the PLC.

The value is otherwise transferred from MD37020 \$MA_FIXED_STOP_WINDOW_DEF to the setting data when "Travel to fixed stop" is active.

Related to

MD37020 \$MA_FIXED_STOP_WINDOW_DEF (default setting for fixed stop monitoring window)

43600	IPOBRAKE_BLOCK_EXCHANGE	A06, A10	K1
%	Block change criterion 'braking ramp'	DOUBLE	Immediately
-			
-	-	0.0	0
		100.0	7/7
			U

Description:

Specifies the application time at single axis interpolation for the block change criterion braking ramp: At 100%, the block change criterion is fulfilled at the time of application of the braking ramp. At 0%, the block change criterion is identical with IPOENDA.

Note:

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB can be set so that the value written by the part program is transferred into the active file system on reset (i.e. the value is retained even after reset).

3.4 NC setting data

43610	ADISPOSA_VALUE	A06, A10	P2
mm, degrees	Tolerance window 'braking ramp'	DOUBLE	Immediately
-			
-	-	0.0	0.0
		1.0E+301	7/7
			U

Description: In case of single-axis interpolation, this value defines the size of the tolerance window which the axis must have reached in order to enable a block change in case of the block-change criterion 'braking ramp with tolerance window valid' and when reaching the corresponding % value of the braking ramp (SD43600 \$SA_IPOBRAKE_BLOCK_EXCHANGE).

Note:

By means of the MD 10710 \$MN_PROG_SD_RESET_SAVE_TAB, the user can specify that the value written by the part program is transferred into the active file system in case of a reset (i.e. the value is retained even after the reset).

43700	OSCILL_REVERSE_POS1	-	P5
mm, degrees	Oscillation reversal point 1	DOUBLE	Immediately
-			
-	-	0.0	-1.0E+301
		1.0E+301	7/7
			U

Description: Position of the oscillating axis at reversal point 1.

Note:

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB can be set so that the value written by the part program is transferred to the active file system on reset (that is the value is retained after RESET.)

Application example(s)

NC language: OSP1[Axis]=Position

Related to

SD43710 \$SA_OSCILL_REVERSE_POS2

MD10709 \$MN_PROG_SD_POWERON_INIT_TAB

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

43710	OSCILL_REVERSE_POS2	-	P5
mm, degrees	Oscillation reversal point 2	DOUBLE	Immediately
-			
-	-	0.0	-1.0E+301
		1.0E+301	7/7
			U

Description: Position of the oscillating axis at reversal point 2.

Note:

MD 10710 \$MN_PROG_SD_RESET_SAVE_TAB can be set so that the value written by the part program is transferred to the active file system on reset (that is the value is retained after reset.)

Application example(s)

NC language: OSP2[Axis]=Position

Related to

SD43700 \$SA_OSCILL_REVERSE_POS1

MD10709 \$MN_PROG_SD_POWERON_INIT_TAB

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

43720	OSCILL_DWELL_TIME1	-	P5
s	Hold time at oscillation reversal point 1	DOUBLE	Immediately
-			
-	-	0.0	-1.0E+301
		1.0E+301	7/7
			U

Description: Hold time of the oscillating axis at reversal point 1.

Note:

MD 10710 \$MN_PROG_SD_RESET_SAVE_TAB can be set so that the value written by the part program is transferred to the active file system on reset (that is the value is retained after reset.)

Application example(s)

NC language: OST1[Axis]=Position

Related to

SD43730 \$SA_OSCILL_DWELL_TIME2

MD10709 \$MN_PROG_SD_POWERON_INIT_TAB

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

43730	OSCILL_DWELL_TIME2			-	P5	
s	Hold time at oscillation reversal point 2			DOUBLE	Immediately	
-						
-	-	0.0	-1.0E+301	1.0E+301	7/7	U

Description: Hold time of the oscillating axis at reversal point 2.

Note:

MD 10710 \$MN_PROG_SD_RESET_SAVE_TAB can be set so that the value written by the part program is transferred to the active file system on reset (that is the value is retained after reset.)

Application example(s)

NC language: OST2[Axis]=Position

Related to

SD43720 \$SA_OSCILL_DWELL_TIME1

MD10709 \$MN_PROG_SD_POWERON_INIT_TAB

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

43740	OSCILL_VELO			-	P5	
mm/min, rev/min	Feedrate of reciprocating axis			DOUBLE	Immediately	
-						
-	-	0.0	0.0	1.0E+301	7/7	U

Description: Feed rate of the oscillating axis

Note:

MD 10710 \$MN_PROG_SD_RESET_SAVE_TAB can be set so that the value written by the part program is transferred to the active file system on reset (that is the value is retained after reset.)

Application example(s)

NC language: FA[Axis]=F value

Related to

MD10709 \$MN_PROG_SD_POWERON_INIT_TAB

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

43750	OSCILL_NUM_SPARK_CYCLES			-	P5	
-	Number of spark-out strokes			DWORD	Immediately	
-						
-	-	0	0	-	7/7	U

Description: Number of sparking-out strokes performed after ending the oscillating movement

Application example(s)

NC language: OSNSC[Axis]=Stroke number

3.4 NC setting data

Note:

MD 10710 \$MN_PROG_SD_RESET_SAVE_TAB can be set so that the value written by the part program is transferred to the active file system on reset (that is the value is retained after reset.)

Related to

MD10709 \$MN_PROG_SD_POWERON_INIT_TAB

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

43760	OSCILL_END_POS			-	P5	
mm, degrees	End position of the reciprocating axis			DOUBLE	Immediately	
-						
-	-	0.0	-1.0E+301	1.0E+301	7/7	U

Description: Position the oscillating axis travels to after ending the sparking-out strokes.

Note:

MD 10710 \$MN_PROG_SD_RESET_SAVE_TAB can be set so that the value written by the part program is transferred to the active file system on reset (that is the value is retained after reset.)

Application example(s)

NC language: OSE[Axis]=Position

Related to

MD10709 \$MN_PROG_SD_POWERON_INIT_TAB

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

43770	OSCILL_CTRL_MASK			-	P5	
-	Oscillation sequence control mask			UDWORD	Immediately	
-						
-	-	0	0	0x7FFFFFFF	7/7	U

Description: Bit mask:

Bit no. | Meaning in OSCILL_CTRL_MASK

0 (LSB)-1 | 0: Stop at the next reversal point if the
 | oscillating movement is switched off
 |
 | 1: Stop at reversal point 1 if the
 | oscillating movement is switched off
 | 2: Stop at reversal point 2 if the
 | oscillating movement is switched off
 | 3: Do not approach a reversal point when the oscillating movement is
switched off
 | if no sparking-out strokes are programmed

2 | 1: Approach end position after sparking out

3 | 1: If the oscillating movement is canceled by delete distance-to-go,
 | then the sparking-out strokes are to be executed afterwards
 | and the end position approached if necessary

4 | 1: If the oscillating movement is canceled by delete distance-to-go,
 | then the corresponding reversal point
 | is approached on switch off


```

-----
5          | 1: Changed feedrate does not become active until the next reversal point
-----
6          | 1: Path override is active if the feed rate is 0,
          | otherwise speed override is active
-----
7          | 1: In the case of rotary axes DC (shortest path)
-----
8          | 1: Execute sparking-out stroke as single stroke not as double stroke
-----
9          | 1: On starting, first approach the starting position, see
          | SD43790 $SA_OSCILL_START_POS
-----

Application example(s)
NC language:      OSCTRL[Axis]=(setting options, reset options)
Related to ....
    MD10709 $MN_PROG_SD_POWERON_INIT_TAB
    MD10710 $MN_PROG_SD_RESET_SAVE_TAB

```

43780	OSCILL_IS_ACTIVE			-	P5	
-	Activate oscillation movement			BOOLEAN	Immediately	
-						
-	-	FALSE	0	-	7/7	U

Description: Switching the oscillating movement on and off

Note:

MD 10710 \$MN_PROG_SD_RESET_SAVE_TAB can be set so that the value written by the part program is transferred to the active file system on reset (that is the value is retained after reset.)

Application example(s)

NC language: OS[Axis]=1, OS[Axis]=0

Related to

MD10709 \$MN_PROG_SD_POWERON_INIT_TAB

MD10710 \$MN_PROG_SD_RESET_SAVE_TAB

43790	OSCILL_START_POS			-	-	
mm, degrees	Start position of reciprocating axis			DOUBLE	Immediately	
-						
-	-	0.0	-1.0E+301	1.0E+301	7/7	U

Description: Position approached by the oscillating axis at the start of oscillation if this is set in SD43770 \$SA_OSCILL_CTRL_MASK.

Note:

MD 10710 \$MN_PROG_SD_RESET_SAVE_TAB can be set so that the value written by the part program is transferred to the active file system on reset (that is the value is retained after reset.)

43900	TEMP_COMP_ABS_VALUE			-	K3	
-	Position-independent temperature compensation value			DOUBLE	Immediately	
-						
-	-	0.0	-1.0E+301	1.0E+301	7/7	U

3.4 NC setting data

Description: The position-independent temperature compensation value is defined by SD43900 \$SA_TEMP_COMP_ABS_VALUE.

-

The machine axis traverses this additional compensation value as soon as the position-independent temperature compensation has been activated (MD32750 \$MA_TEMP_COMP_TYPE = 1 oder 3).

SD irrelevant for

MD32750 \$MA_TEMP_COMP_TYPE = 0 or 2

Related to

MD32750 \$MA_TEMP_COMP_TYPE Temperature compensation type

MD32760 \$MA_COMP_ADD_VELO_FACTOR Velocity overshoot caused by compensation

43910	TEMP_COMP_SLOPE			-	K3	
-	Lead angle for position-dependent temperature compensation			DOUBLE	Immediately	
-						
-	-	0.0	-1.0E+301	1.0E+301	7/7	U

Description: In the case of position-dependent temperature compensation, the error curve characteristic of the temperature-dependent actual-value deviation can often be approximated by a straight line. This straight line is defined by a reference point P_0 and a slope $\tan\beta$.

SD43910 \$SA_TEMP_COMP_SLOPE defines the slope $\tan\beta$. This slope can be changed by the PLC user program as a function of the current temperature.

The axis traverses additionally the compensation value calculated for the relevant actual position as soon as the position-dependent temperature compensation becomes active (MD32750 \$MA_TEMP_COMP_TYPE = 2 or 3).

MD32760 \$MA_COMP_ADD_VELO_FACTOR limits the maximum angle of slope $\tan\beta_{\max}$ of the error curve. This maximum angle of slope cannot be exceeded.

SD irrelevant for

MD32750 \$MA_TEMP_COMP_TYPE = 0 or 1

Special cases, errors, ...

When SD43910 \$SA_TEMP_COMP_SLOPE is greater than $\tan\beta_{\max}$, the slope $\tan\beta_{\max}$ is used to calculate the position-dependent temperature compensation value internally. No alarm is output.

Related to

MD32750 \$MA_TEMP_COMP_TYPE Temperature compensation type

SD43920 \$SA_TEMP_COMP_REF_POSITION Reference position for position-dependent temperature compensation

MD32760 \$MA_COMP_ADD_VELO_FACTOR Velocity overshoot caused by compensation

43920	TEMP_COMP_REF_POSITION			-	K3	
-	Ref. position of position-dependent temperature compensation			DOUBLE	Immediately	
-						
-	-	0.0	-1.0E+301	1.0E+301	7/7	U

Description: In the case of position-dependent temperature compensation, the error curve characteristic of the temperature-dependent actual-value deviation can often be approximated by a straight line. This straight line is defined by a reference point P_0 and a slope $\tan\beta$.

SD43920 \$SA_TEMP_COMP_REF_POSITION defines the position of the reference point P_0. This reference position can be changed by the PLC user program as a function of the current temperature.

The axis traverses additionally the compensation value calculated for the relevant actual position as soon as the position-dependent temperature compensation becomes active (MD32750 \$MA_TEMP_COMP_TYPE = 2 or 3).

SD irrelevant for

MD32750 \$MA_TEMP_COMP_TYPE = 0 or 1

Related to

MD32750 \$MA_TEMP_COMP_TYPE Temperature compensation type

SD43910 \$SA_TEMP_COMP_SLOPE Angle of slope for position-dependent temperature compensation

3.5 Machine and setting data cycles

51000	DISP_RES_MM	-	-
-	Display resolution in mm	BYTE	PowerOn
-			
-	-	3	0
		6	7/3
			M

Description: Display resolution in mm

51001	DISP_RES_MM_FEED_PER_REV	-	-
-	Display resolution in mm feedrate/rev	BYTE	PowerOn
-			
-	-	3	0
		6	7/3
			M

Description: Display resolution in mm feedrate/rev

51002	DISP_RES_MM_FEED_PER_TIME	-	-
-	Display resolution in mm feedrate/min	BYTE	PowerOn
-			
-	-	3	0
		6	7/3
			M

Description: Display resolution in mm feedrate/min

51003	DISP_RES_MM_FEED_PER_TOOTH	-	-
-	Display resolution in mm feedrate/tooth	BYTE	PowerOn
-			
-	-	3	0
		6	7/3
			M

Description: Display resolution in mm feedrate/tooth

51004	DISP_RES_MM_CONST_CUT_RATE	-	-
-	Display resolution constant cutting speed m/min	BYTE	PowerOn
-			
-	-	3	0
		6	7/3
			M

Description: Display resolution constant cutting speed m/min

51010	DISP_RES_INCH	-	-
-	Display resolution in inch	BYTE	PowerOn
-			
-	-	4	0
		6	7/3
			M

Description: Display resolution in inch

3.5 Machine and setting data cycles

51011	DISP_RES_INCH_FEED_P_REV	-	-
-	Display resolution in inch feedrate/rev	BYTE	PowerOn
-			
-	-	4	0
-	-	6	7/3
-	-	M	

Description: Display resolution in inch feedrate/rev

51012	DISP_RES_INCH_FEED_P_TIME	-	-
-	Display resolution in inch feedrate/min	BYTE	PowerOn
-			
-	-	4	0
-	-	6	7/3
-	-	M	

Description: Display resolution in inch feedrate/min

51013	DISP_RES_INCH_FEED_P_TOOTH	-	-
-	Display resolution in inch feedrate/tooth	BYTE	PowerOn
-			
-	-	4	0
-	-	6	7/3
-	-	M	

Description: Display resolution in inch feedrate/tooth

51014	DISP_RES_INCH_CUT_RATE	-	-
-	Display resolution constant cutting speed ft/min	BYTE	PowerOn
-			
-	-	4	0
-	-	6	7/3
-	-	M	

Description: Display resolution constant cutting speed ft/min

51018	DISP_RES_SCALE	-	-
-	Display resolution scaling	BYTE	PowerOn
-			
-	-	3	0
-	-	6	7/3
-	-	M	

Description: Display resolution scaling

51019	DISP_RES_ROT_WO	-	-
-	Display resolution of rotation in work offsets	BYTE	PowerOn
-			
-	-	0	0
-	-	6	7/3
-	-	M	

Description: Display resolution of rotation in work offsets
If the value of the data is 0, MD51020 \$MNS_DISP_RES_ANGLE is used.

51020	DISP_RES_ANGLE	-	-
-	Display resolution of angle	BYTE	PowerOn
-			
-	-	3	0
-	-	6	7/3
-	-	M	

Description: Display resolution of angle

51021	DISP_RES_SPINDLE	-	-
-	Display resolution of spindles	BYTE	PowerOn
-			
-	-	0	0
-	-	6	7/3
-	-	M	

Description: Decimal places in speed entry field

51022	DISP_RES_ROT_AX_FEED	-	-
-	Display resolution of rotary axis feedrate	BYTE	PowerOn
-			
-	-	0	0
-	-	6	7/3
-	-		M

Description: Display resolution of rotary axis feedrate

51023	ACT_VALUE_SPIND_MODE	-	-
-	Only display spindles in actual values window when in axis mode	BYTE	PowerOn
-			
-	-	1	0
-	-	1	3/4
-	-		M

Description: This affects the display of the spindles in the axis actual values window. If the value is set to 1, only those spindles in axis mode are displayed, those in spindle mode are shown as gaps. If the value is set to 0, all spindles are displayed.

51024	BLOCK_SEARCH_MODE_MASK_JS	-	-
-	Bit mask for available search modes (ShopMill, ShopTurn single-channel)	BYTE	PowerOn
-			
-	-	1	-
-	-	-	4/3
-	-		M

Description: Bit mask for available search modes (ShopMill, ShopTurn single-channel)

Bit 0: Block search with calculation without approach
 Bit 1: Block search with calculation with approach
 Bit 2: reserved
 Bit 3: Skip EXTCALL programs
 Bit 4: reserved
 Bit 5: Block search with test run without approach
 Bit 6: Block search with test run with approach

51025	FRAMES_ACT_IMMEDIATELY	-	-
-	Activate active offset immediately	BYTE	PowerOn
-			
-	-	1	0
-	-	1	4/3
-	-		M

Description: Active data (frames) are activated immediately after change

51026	AXES_SHOW_GEO_FIRST	-	-
-	Actual value display with leading geometry axes	BYTE	PowerOn
-			
-	-	1	0
-	-	1	4/3
-	-		M

Description: When the machine data value is 1, the geometry axes of the channel are displayed first.

51027	ONLY_MKS_DIST_TO_GO	-	-
-	Distance-to-go display in the Work window	BYTE	PowerOn
-			
-	-	0	0
-	-	1	4/3
-	-		M

Description: Distance-to-go display in the Work window

3.5 Machine and setting data cycles

51028	BLOCK_SEARCH_MODE_MASK	-	-
-	Bit mask for available block search modes	BYTE	PowerOn
-			
-	-	31	-
-	-	-	4/3
-	-	-	M

Description: Bit mask for available search modes

Bit 0: Block search with calculation without approach

Bit 1: Block search with calculation with approach

Bit 3: Skip EXTCALL programs

Bit 4: Block search without calculation

Bit 5: Block search with test run without approach

Bit 6: Block search with test run with approach

51029	MAX_SKP_LEVEL	-	-
-	Maximum number of skip levels in the NC program	BYTE	PowerOn
-			
-	-	1	1
-	-	10	4/3
-	-	-	M

Description: The machine data defines how many skip levels are made available for operation.

51030	SPIND_MAX_POWER	-	-
%	Maximum value of spindle power rating display	DWORD	PowerOn
-			
-	-	100	0
-	-	255	4/3
-	-	-	M

Description: Maximum value of the permissible spindle power as a percentage; the display bar in the machine image "spindle diagnosis" is shown green in the range between 0 and the value set in SPIND_MAX_POWER.

In the case of a SINAMICS drive, the drive parameter r0033 "Torque utilization smoothed" is shown in the load bar.

51031	SPIND_POWER_RANGE	-	-
%	Display range of spindle power rating display	DWORD	PowerOn
-			
-	-	100	0
-	-	255	4/3
-	-	-	M

Description: Scale end value for spindle power rating in percent; value must be equal to or greater than SPIND_MAX_POWER.

The display bar in the machine image is shown in red in the range between the values of SPIND_MAX_POWER and SPIND_POWER_RANGE.

51034	TEACH_MODE	-	-
-	Teach mode to be activated	DWORD	PowerOn
-			
-	-	1	-
-	-	-	4/3
-	-	-	M

Description: Teach mode to be activated

Bit 0: default teach-in

Taught-in block is transferred to the program using the Accept softkey.

Bit 1: transfer of teach block can be blocked by the PLC.

SINUMERIK 840D sl:

DB19.DBX13.0 = 0 block is transferred.

DB19.DBX13.0 = 1 block is not transferred.

SINUMERIK 828D:

DB1700.DBX1000.0 = 0 block is transferred.

DB1700.DBX1000.0 = 1 block is not transferred.

Bit 2: block selection only explicitly

Bits 16-31 are reserved for the OEM.

51035	WRITE_FRAMES_FINE_LIMIT	-	-
-	Input limit for all WO fine	DOUBLE	PowerOn
-			
-	-	0.999	-
-	-	-	4/3
-	-	-	M

Description: Input limit for all work offsets fine

51036	ENABLE_COORDINATE_REL	-	-
-	Enable REL coordinate system	BYTE	PowerOn
-			
-	-	0	0
-	-	1	7/3
-	-	-	M

Description: Display REL coordinate system
 0 = No relative coordinate system selectable
 1 = REL coordinate system can be selected as an alternative to the Work (WCS)/SZS coordinate system

51037	ENABLE_COORDINATE_ACS	-	-
-	Enable settable coordinate system	BYTE	PowerOn
-			
-	-	0	0
-	-	1	7/3
-	-	-	M

Description: Activate settable coordinate system
 0 = WCS coordinate system is displayed
 1 = SZS coordinate system is displayed
 (SZS is WCS reduced by the offset components defined in MD24030)

51038	SET_ACT_VALUE	-	-
-	Set actual value selection	BYTE	PowerOn
-			
-	-	1	0
-	-	1	7/3
-	-	-	M

Description: Set actual value selection
 0 = Set actual value is not offered.
 1 = if a user frame (settable work offset e.g. G54) is active, it will be used. In G500 Set actual values is not offered (system frame is no longer used).

51039	PROGRAM_CONTROL_MODE_MASK	-	-
-	Options for machine - program influence	DWORD	PowerOn
-			
-	-	1	-
-	-	-	7/3
-	-	-	M

Description: Options for machine - program influence:
 Bit 0: program test function available

51040	SWITCH_TO_MACHINE_MASK	-	-
-	Automatic operating area switchover to machine	BYTE	PowerOn
-			
-	-	0	-
-	-	-	7/3
-	-	-	M

3.5 Machine and setting data cycles

Description: Automatic area switchover dependent upon machine

Bit 0: No automatic switch to Machine operating area when the program is selected in the Program Manager.

Bit 1: No automatic switch to Machine operating area when the operating mode is changed over via the machine control panel (MCP).

Bit 2: No automatic switch to Machine operating area when the program is selected in the Programs operating area.

Bit 3: No automatic start of block search when the program is selected / executed in the Programs operating area.

(The automatic start of block search is only available with ShopMill and ShopTurn (single-channel).)

51041	ENABLE_PROGLIST_USER	-	-
-	Activation of PLC program list, USER area	BYTE	Immediately
-			
-	-	0	0
-	-	1	7/3
-	-	M	

Description: Activates the PLC program list of the USER area. The programs entered there can be selected by the PLC for processing.

51042	ENABLE_PROGLIST_INDIVIDUAL	-	-
-	Activation of PLC program list, INDIVIDUAL area	BYTE	Immediately
-			
-	-	0	0
-	-	1	7/3
-	-	M	

Description: Activates the PLC program list of the INDIVIDUAL area. The programs entered here can be selected by the PLC for processing.

51043	ENABLE_PROGLIST_MANUFACT	-	-
-	Activation of PLC program list, MANUFACTURER area	BYTE	Immediately
-			
-	-	0	0
-	-	1	7/3
-	-	M	

Description: Activates the PLC program list of the MANUFACTURER area. The programs entered here can be selected by the PLC for processing.

51044	ACCESS_SHOW_SBL2	-	-
-	Display protection level SBL2	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	M	

Description: Display protection level SBL2

51045	ACCESS_TEACH_IN	-	-
-	Protection level TEACH IN	BYTE	PowerOn
-			
-	-	4	0
-	-	7	4/3
-	-	M	

Description: Protection level TEACH IN

51046	ACCESS_CLEAR_RPA	-	-
-	Protection level delete R variables	BYTE	PowerOn
-			
-	-	4	0
-	-	7	4/3
-	-	M	

Description: Protection level delete R variables

51047	ACCESS_READ_GUD_LUD	-	-
-	Read user variable protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	-	M

Description: Read user variable protection level

51048	ACCESS_WRITE_GUD_LUD	-	-
-	Write protection level of user variables	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	-	M

Description: Write protection level of user variables

51049	ACCESS_WRITE_PRG_COND	-	-
-	Write program control protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	-	M

Description: Write program control protection level

51050	ACCESS_WRITE_PROGRAM	-	-
-	Write part program protection level	BYTE	PowerOn
-			
-	-	4	0
-	-	7	4/3
-	-	-	M

Description: Write part program protection level

51051	ACCESS_WRITE_RPA	-	-
-	Protection level write R variables	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	-	M

Description: Protection level write R variables

51052	ACCESS_WRITE_SEA	-	-
-	Protection level write setting data	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	-	M

Description: Protection level write setting data

51053	ACCESS_WRITE_BASEFRAME	-	-
-	Write basic work offset protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	-	M

Description: Write basic work offset (basic frame) protection level

51054	ACCESS_WRITE_CYCFRAME	-	-
-	Write cycle frame protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	-	M

Description: Write cycle frame protection level

3.5 Machine and setting data cycles

51055	ACCESS_WRITE_EXTFRAME	-	-
-	Write external WO protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	M	

Description: Write external work offset protection level

51056	ACCESS_WRITE_PARTFRAME	-	-
-	Write table reference protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	M	

Description: Write table reference protection level

51057	ACCESS_WRITE_SETFRAME	-	-
-	Write basic reference protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	M	

Description: Write basic reference protection level

51058	ACCESS_WRITE_TOOLFRAME	-	-
-	Write basic tool reference protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	M	

Description: Write basic tool reference protection level

51059	ACCESS_WRITE_TRAFRAME	-	-
-	Write transformation frame protec. level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	M	

Description: Write transformation frame protec. level

51060	ACCESS_WRITE_USERFRAME	-	-
-	Write settable work offset protection level	BYTE	PowerOn
-			
-	-	4	0
-	-	7	4/3
-	-	M	

Description: Write settable work offset (G54 ... G599) protection level

51061	ACCESS_WRITE_WPFRAME	-	-
-	Write workpiece reference protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	M	

Description: Write workpiece reference protection level

51062	ACCESS_WRITE_FINE	-	-
-	Write protection level for fine offset of all work offsets	BYTE	PowerOn
-			
-	-	6	0
-	-	7	4/3
-	-	M	

Description: Write protection level for fine offset of all work offsets

51063	ACCESS_SET_ACT_VALUE	-	-
-	Set actual value protection level	BYTE	PowerOn
-			
-	-	4	0
-	-	7	4/3
-	-	M	

Description: Set actual value protection level

51064	ACCESS_WRITE_PROGLIST	-	-
-	Write protection level of program list in USER area	BYTE	Immediately
-			
-	-	4	0
-	-	7	4/3
-	-	M	

Description: Minimum protection level required to change the program list in the USER area (program manager)

51065	NUM_DISPLAYED_CHANNELS	-	-
-	Number of channels displayed simultaneously	BYTE	PowerOn
-			
-	-	1	1
-	-	4	4/3
-	-	M	

Description: Setting of the number of channels to be displayed simultaneously in the machine operating area and in the multi-channel editor.

51066	ORDER_DISPLAYED_CHANNELS	-	-
-	Channel numbers of the channels displayed	STRING	PowerOn
-			
-	-	1;	-
-	-	4/3	M

Description: Contains the numbers of the channels to be displayed under machine in the multi-channel view, in the desired order and separated by commas, semicolons or spaces.

51067	ENABLE_HANDWHEEL_WINDOW	-	-
-	Show handwheel window	BYTE	PowerOn
-			
-	-	1	0
-	-	1	4/2
-	-	M	

Description: If the machine data is set to 0, the window for handwheel assignment is hidden

51068	SPIND_DRIVELOAD_FROM_PLC1	-	-
-	Machine axis index of spindle 1 utilization display from PLC	BYTE	PowerOn
-			
-	-	0	0
-	-	31	4/2
-	-	M	

Description: Machine axis index of a spindle (analog), which obtains the data for the utilization display in the T,F,S window from the PLC.

SINUMERIK 840D sl: DB19.DBB6

SINUMERIK 828D : DB1900.DBB5006

51069	SPIND_DRIVELOAD_FROM_PLC2	-	-
-	Machine axis index of spindle 2 utilization display from PLC	BYTE	PowerOn
-			
-	-	0	0
-	-	31	4/2
-	-	M	

Description: Machine axis index of a spindle (analog), which refers to the data for the utilization display in the T,F,S window from the PLC (DB19.DBB7).

3.5 Machine and setting data cycles

51070	ACCESS_CAL_TOOL_PROBE	-	-
-	Protection level for calibration of the tool probe (ShopTurn)	BYTE	PowerOn
-			
-	-	4	0
-	-	7	4/3
-	-	M	

Description: Protection level for calibration of the tool probe (ShopTurn)

51071	ACCESS_ACTIVATE_CTRL_E	-	-
-	Protection level of Ctrl-Energy	BYTE	PowerOn
-			
-	-	1	0
-	-	7	4/3
-	-	M	

Description: Protection level for activating, disabling and enabling energy-saving profiles.

51072	ACCESS_EDIT_CTRL_E	-	-
-	Protection level of Ctrl-Energy for changing profiles	BYTE	PowerOn
-			
-	-	2	0
-	-	7	4/3
-	-	M	

Description: Protection level of Ctrl-Energy: Definition of energy-saving profiles

51073	ACCESS_SET_SOFTKEY_ACCESS	-	-
-	Protection level of "Adapt softkeys"	BYTE	PowerOn
-			
-	-	3	0
-	-	7	4/3
-	-	M	

Description: Protection level for the softkey "Adapt softkeys", which is used to change the access levels of other softkeys.

51074	ACCESS_WRITE_WPC_COUNTER	-	-
-	Write protection level of workpiece counter	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	M	

Description: Write protection level of workpiece counter in the Times/Counters mask in the machine area

51075	ACCESS_WRITE_MDI	-	-
-	Write protection level MDI program	BYTE	PowerOn
-			
-	-	7	0
-	-	7	4/3
-	-	M	

Description: Write protection level MDI program

51160	ACCESS_WRITE_CA_MACH_JOG	-	-
-	Write protection level collision monitoring machine jog	BYTE	PowerOn
-			
-	-	6	0
-	-	7	7/1
-	-	M	

Description: This machine data defines the protection level from which the machine/machine collision monitoring can be activated or deactivated under jog.

51161	ACCESS_WRITE_CA_MACH_AUTO			-	-	
-	Write protection level, collision monitoring machine automatic			BYTE	PowerOn	
-						
-	-	3	0	7	7/1	M

Description: This machine data defines the protection level from which the machine/machine collision monitoring can be activated or deactivated under automatic.

51162	ACCESS_WRITE_CA_TOOL			-	-	
-	Write protection level collision monitoring tool			BYTE	PowerOn	
-						
-	-	1	0	7	7/4	M

Description: This machine data defines the protection level from which the collision monitoring for tools can be activated or deactivated.

51198	ACCESS_READ_TM_ALL_PARAM			-	-	
-	Protection level tool management details - read all parameters			BYTE	PowerOn	
-						
-	-	1	0	7	7/4	M

Description: Protection level tool management details - read all parameters

51199	ACCESS_WRITE_TM_GRIND			-	-	
-	Protection level of tool management for writing grinding data			BYTE	PowerOn	
-						
-	-	4	0	7	7/4	M

Description: Protection level of tool management for writing grinding data

51200	ACCESS_WRITE_TM_GEO			-	-	
-	Write tool offset geometry data protection level			BYTE	PowerOn	
-						
-	-	5	0	7	7/4	M

Description: Write tool offset geometry data protection level

51201	ACCESS_WRITE_TM_WEAR			-	-	
-	Write tool offset wear data protection level			BYTE	PowerOn	
-						
-	-	6	0	7	7/4	M

Description: Write tool offset wear data protection level

51202	ACCESS_WRITE_TM_WEAR_DELTA			-	-	
-	Protection level for tool offset restricted writing of wear data			BYTE	PowerOn	
-						
-	-	7	0	7	7/4	M

Description: Protection level for restricted writing of tool wear values
S. MD51213: TM_WRITE_WEAR_DELTA_LIMIT

3.5 Machine and setting data cycles

51203	ACCESS_WRITE_TM_SC	-	-
-	Write tool offset sum offset protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	7/4
-	-	-	M

Description: Write tool offset sum offset protection level

51204	ACCESS_WRITE_TM_EC	-	-
-	Write tool offset use offsets protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	7/4
-	-	-	M

Description: Write tool offset use offsets protection level

51205	ACCESS_WRITE_TM_SUPVIS	-	-
-	Write tool offset monitoring data protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	7/4
-	-	-	M

Description: Write tool offset monitoring data protection level

One authorization applies to all limit values: quantity, service life, wear and the monitoring type.

51206	ACCESS_WRITE_TM_ASSDNO	-	-
-	Write tool offset unique D number protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	7/4
-	-	-	M

Description: Write tool offset unique D number protection level

51207	ACCESS_WRITE_TM_WGROUP	-	-
-	Write tool offset wear groups protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	7/4
-	-	-	M

Description: Write tool offset wear groups (magazine location / magazine) protection level

51208	ACCESS_WRITE_TM_ADAPT	-	-
-	Write tool offset adapter data protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	7/4
-	-	-	M

Description: Write tool offset tool adapter geometry data protection level

51209	ACCESS_WRITE_TM_NAME	-	-
-	Write tool offset tool name protection level	BYTE	PowerOn
-			
-	-	4	0
-	-	7	7/4
-	-	-	M

Description: Write tool offset tool name and duplo data protection level

51210	ACCESS_WRITE_TM_TYPE	-	-
-	Write tool offset tool type protection level	BYTE	PowerOn
-			
-	-	4	0
-	-	7	7/4
-	-	-	M

Description: Write tool offset tool type protection level

51211	ACCESS_READ_TM	-	-
-	Read tool offset data protection level	BYTE	PowerOn
-			
-	-	7	0
-	-	7	7/4
-	-	M	

Description: Read tool offset data protection level

51212	TM_WRITE_WEAR_ABS_LIMIT	-	-
mm	Maximum tool wear value	DOUBLE	PowerOn
-			
-	-	0.999	0
-	-	10	7/4
-	-	M	

Description: Using TM_WRITE_WEAR_ABS_LIMIT, the max. possible value of a tool wear is limited absolutely, independently of the current protection level (keyswitch position), i.e. also independently of ACCESS_WRITE_TM_WEAR. Absolute and incremental wear limitation can be combined, i.e. the wear can be changed incrementally up to the absolute limit. See MD51213.

The value 0 disables the limitation of the wear input.

51213	TM_WRITE_WEAR_DELTA_LIMIT	-	-
mm	Maximum difference value restricted tool wear input	DOUBLE	PowerOn
-			
-	-	0	0
-	-	10	7/4
-	-	M	

Description: When entering tool offsets, the value of the change from the previous value to the new value cannot exceed the value set here.

With TM_WRITE_WEAR_DELTA_LIMIT, the change to a tool wear can be limited incrementally, if the current protection level is the same as or higher than the one set in ACCESS_WRITE_TM_WEAR_DELTA. With the current protection level being the same or higher than ACCESS_WRITE_TM_WEAR, an incremental limitation is no longer performed. Absolute and

incremental wear limitation can be combined, i.e. the wear can be changed up to the absolute limit. See MD51212

The value 0 disables limitation of the wear input.

51214	TM_WRITE_LIMIT_MASK	-	-
-	Validity of the restricted tool wear input	BYTE	PowerOn
-			
-	-	7	0
-	-	7	7/4
-	-	M	

Description: Validity of the restricted tool wear input

Bit 0: use for cutting edge data, wear

Bit 1: use for SC data, sum offsets

Bit 2: use for EC data, use offsets

Bit 0+1+2: use for all data, wear, SC, EC

51215	ACCESS_WRITE_TM_ALL_PARAM	-	-
-	Protection level TM details - write all parameters	BYTE	PowerOn
-			
-	-	1	0
-	-	7	7/4
-	-	M	

Description: Protection level TM details - write all parameters

3.5 Machine and setting data cycles

51216	ACCESS_TM_TOOL_CREATE	-	-
-	Protection level TM create tool	BYTE	PowerOn
-			
-	-	4	0
-	-	7	7/4
-	-	M	

Description: Protection level TM create tool

51217	ACCESS_TM_TOOL_DELETE	-	-
-	Protection level TM delete tool	BYTE	PowerOn
-			
-	-	4	0
-	-	7	7/4
-	-	M	

Description: Protection level TM delete tool

51218	ACCESS_TM_TOOL_LOAD	-	-
-	Protection level TM load tool	BYTE	PowerOn
-			
-	-	4	0
-	-	7	7/4
-	-	M	

Description: Protection level TM load tool

51219	ACCESS_TM_TOOL_UNLOAD	-	-
-	Protection level TM unload tool	BYTE	PowerOn
-			
-	-	4	0
-	-	7	7/4
-	-	M	

Description: Protection level TM unload tool

51220	ACCESS_TM_TOOL_MOVE	-	-
-	Protection level TM relocate tool	BYTE	PowerOn
-			
-	-	4	0
-	-	7	7/4
-	-	M	

Description: Protection level TM relocate tool

51221	ACCESS_TM_TOOL_REACTIVATE	-	-
-	Protection level TM reactivate tool	BYTE	PowerOn
-			
-	-	4	0
-	-	7	7/4
-	-	M	

Description: Protection level TM reactivate tool

51222	ACCESS_TM_TOOL_MEASURE	-	-
-	Protection level TM measure tool	BYTE	PowerOn
-			
-	-	4	0
-	-	7	7/4
-	-	M	

Description: Protection level TM measure tool
Direct jump from tool list to measuring screen

51223	ACCESS_TM_TOOLEGE_CREATE	-	-
-	Protection level TM create tool cutting edge	BYTE	PowerOn
-			
-	-	4	0
-	-	7	7/4
-	-	M	

Description: Protection level TM create tool cutting edge

51224	ACCESS_TM_TOOLEEDGE_DELETE	-	-
-	Protection level TM delete tool cutting edge	BYTE	PowerOn
-			
-	-	4	0
-	-	7	7/4
-	-	M	

Description: Protection level TM delete tool cutting edge

51225	ACCESS_TM_MAGAZINE_POS	-	-
-	Protection level TM position magazine	BYTE	PowerOn
-			
-	-	4	0
-	-	7	7/4
-	-	M	

Description: Protection level TM position magazine

51226	FUNCTION_MASK_SIM	-	-
-	Function mask for simulation	DWORD	PowerOn
-			
-	-	0	-
-	-	-	7/3
-	-	M	

Description: Function mask for simulation

- Bit 0: No automatic start when simulation is selected
- Bit 1: Deactivate simulation
- Bit 4: Ignore frame components in X and Y (compatibility)
- Bit 5: Turning tool can be rotated in the tool spindle
- Bit 6: Enable handwheel as simulation override (values from DB19.DBW400)
- Bit 7: Interpret handwheel values from DB19.DBW400 as absolute values
- Bit 10: Hide zero point symbol
- Bit 22: Machine model for simulation from kinematic chain (also without collision avoidance)

51228	FUNCTION_MASK_TECH	-	-
-	Function mask Cross-technology	DWORD	PowerOn
-			
-	-	0	-
-	-	-	7/3
-	-	M	

Description: Function mask for all technologies

- Bit 0: G code programming without multi-channel data
- If bit 0 = 1, no multi-channel data will be offered for job lists which only contain G code programs.
- Bit 1: Enable print function of Editor
- Bit 2: With external program selection (e.g. via PLC), set start disable (program check).

51230	ENABLE_LADDER_DB_ADDRESSES	-	-
-	DB address activation in the PLC ladder viewer	BOOLEAN	Immediately
-			
-	-	1	0
-	-	1	7/2
-	-	M	

Description: DB address activation in the PLC ladder viewer

3.5 Machine and setting data cycles

51231	ENABLE_LADDER_EDITOR	-	-
-	Activation of PLC ladder add-on tool for INT100/101	BOOLEAN	Immediately
-			
-	-	1	0
-	-	1	7/2
-	-	1	M

Description: Activation of PLC ladder add-on tool for INT100/101

51232	ENABLE_LADDER_EDITOR_ADV	-	-
-	Activation of PLC ladder editor for the complete PLC project	BOOLEAN	Immediately
-			
-	-	1	0
-	-	1	7/1
-	-	1	M

Description: Activation of PLC ladder editor for the complete PLC project

51233	ENABLE_GSM_MODEM	-	-
-	GSM modem activation for Easy Message	BOOLEAN	PowerOn
-			
-	-	0	0
-	-	1	7/2
-	-	1	I

Description: GSM modem activation for Easy Message

51235	ACCESS_RESET_SERV_PLANNER	-	-
-	Protection level for acknowledgment of maintenance tasks	BYTE	Immediately
-			
-	-	3	0
-	-	7	4/2
-	-	7	M

Description: Protection level for acknowledgment of maintenance tasks

51240	MACHINE_REGISTRATION	-	-
-	Machine registration	DWORD	Immediately
-			
-	-	1	-
-	-	-	7/2
-	-	-	M

Description: Machine registration
 Bit 0: Enable machine registration via QR code
 Bit 1: Machine has been registered

51300	MAXNUM_WAITM_USER	-	-
-	Number of wait marks available to the end user	BYTE	PowerOn
-			
-	-	100	0
-	-	100	7/4
-	-	100	M

Description: Number of wait marks available to the end user

51600	MEA_CAL_WP_NUM	-	-
-	Number of calibration data fields for workpiece probes	BYTE	Immediately
-			
-	-	40	0
-	-	40	7/2
-	-	40	I

Description: The workpiece probe calibration data refer to the workpiece coordinate system (Work)!
 In the data fields, the workpiece probe calibration data of the technologies Milling and Turning are stored!

51601	MEA_CAL_EDGE_NUM	-	-
-	Number of geometry data fields of gauging block, workpiece probe	BYTE	Immediately
-			
-	-	3	0

Description: The gauging block is exclusively used to calibrate the workpiece probe of the Turning technology!

51602	MEA_CAL_TP_NUM	-	-
-	Number of calibration data fields for tool probes	BYTE	Immediately
-			
-	-	6	0

Description: The value of this parameter corresponds to the number of tool probe calibration data records
set up for the machine coordinate system (Machine).

51603	MEA_CAL_TPW_NUM	-	-
-	Number of calibration data fields for tool probes	BYTE	Immediately
-			
-	-	6	0

Description: The value of this parameter corresponds to the number of tool probe calibration data records
set up for the workpiece coordinate system (Work).

51618	MEA_CM_ROT_AX_POS_TOL	-	-
degrees	Tolerance of rotary axis positions - measuring with orientable toolholder	DOUBLE	Immediately
-			
-	-	0.5	-1

Description: Parameter for measuring with orientable tool carrier
Entries in parameter \$MN_MEA_CM_ROT_AX_POS_TOL are effective only if \$MNS_MEA_FUNCTION_MASK bit2 or bit16 is set by MD51740.
The real angle position of the rotary axes can deviate from the programmed one (exact stop fine window).
This deviation depends on the position control features of the axis. The maximum deviation expected on the concrete axis
must be entered in this parameter. When the tolerance is exceeded, alarm 61442 "Toolholder not in parallel with the geometry axes" is displayed.

51740	MEA_FUNCTION_MASK	-	-
-	Function mask for measuring cycles, workpiece and tool measuring	DWORD	Immediately
-			
-	-	67	-

Description: Function mask for measuring cycles
Bit 0: Workpiece measurement, calibration status monitoring
0: Calibration monitoring not active
1: Calibration monitoring active
Between calibration and measurement, the following states are monitored:
- Working plane (G17, 18, 19)
- Probe type (3D probe, type 710, mono probe, type 712, L probe, type 713, star probe, type 714)

3.5 Machine and setting data cycles

- Length reference of the probe (center of the probe ball, probe ball circumference)

- The following alarms 61341, 61419, 61420 can be output.

Note: - These monitoring functions are always active when "measuring in JOG".

- See also SD54740 \$SNS_MEA_FUNCTION_MASK, bit 4.

Bit 1: Workpiece measurement, milling technology, length reference of the workpiece probe

0: Tool length in the infeed axis, relative to the center of the probe ball (TCP)

1: Tool length in the infeed axis, relative to the circumference of the probe ball

Bit 2: Workpiece measurement, taking into account the orientation of tool carriers for the tool offset

0: The tool components are corrected according to the orientation of the tool carrier

when measuring. This is valid for the orientations 0°, 90°, 180°, and 270°.

1: The tool components are corrected according to the orientation of the tool carrier

in the initial setting.

Bit 4: Workpiece measurement, milling technology, probe is permanently mounted on the machine

0: When measuring, the workpiece probe is located in a tool spindle.

1: The workpiece probe is permanently mounted on the machine.

Not all measurement variants are available. If an inadmissible measurement variant is selected, alarm 61373 is output.

Bit 5: Workpiece measurement, correction in WO coarse if no fine offset is set up

0: Only the measurement difference is entered in the coarse offset of the WO (compatibility).

1: The absolute offset, corrected by the measurement difference, is entered in the coarse offset of the WO.

Bit 6: Effect of the feedrate override in measuring blocks of measuring cycles

0: Measuring blocks are traversed in the measuring cycles with the current feedrate override (compatibility).

1: Measuring blocks are traversed in the measuring cycles with 100% feedrate override if the feedrate override is set >0.

Bit 7: Workpiece measurement, accept active WO in inactive WO, only JOG mode, set edge

0: In JOG mode, "Set edge" function with correction of measurement result in an

inactive work offset (target frame), only the measuring axis with the result

is written by the geometry axes in the target frame.

For the non-measured geometry axes, no values are accepted from the active work offset (source frame). (Compatibility)

Of all non-geometry axes (rotary and auxiliary axes), mirrorings, rotations

and translations are accepted from the active work offset (source frame) into the selected

inactive work offset (target frame). (Compatibility)

This description applies to automatic measurement using an electronic probe

and equally to the "Scratching" function with a machining tool.

1: In JOG mode, "Set edge" function with correction of the measurement result in an inactive work offset (target frame), the measuring axis in the target frame is written with the measurement result.

For all other axes (geometry, rotary and auxiliary axes) mirrorings, rotations and translations are accepted from the active work offset (source frame) into the selected inactive work offset (target frame).

This description applies to automatic measurement using an electronic probe and equally to the "Scratching" function with a machining tool.

Bit 14: Workpiece, simultaneous measurement function active

0: The simultaneous measurement function is inactive (default).

1: The simultaneous measurement function is active. This setting is intended for machines with two spindles that operate simultaneously.

Bit 15: Workpiece measurement, traverse measuring block with path behavior G60, exact stop at the end of the block

0: The measuring block is traversed in continuous-path mode G64.

1: The measuring block is traversed with path behavior G60, exact stop at the end of the block.

Bit 16: Tool measurement, turning technology, taking into account the orientation of the tool carrier

0: The tool component is corrected according to the orientation of the tool carrier when measuring.

1: The tool component is corrected according to the orientation of the tool carrier in the initial setting.

51742	MEA_ACCESS_EXEC			-	-	
-	Meas. cycles: Limitation of protection levels when writing system variables			DWORD	Immediately	
-						
-	10	1, 1, 1, 1, 1, 1, 1...	1	7	7/1	M

Description: Limitation of the protection levels when writing system variables during the execution of measuring cycles.

MD51742 limits one range of the current protection level between the setting of the protection level in MD11160 \$NM_ACCESS_EXEC_CST and the setting in MD51742 when executing the measuring cycles.

The field elements [0] to [9] are used as follows:

[0] Measure all kinematics

[1] to [9] reserved

For the meaning of the numerical values (protection level) see MD11160

51750	J_MEAS_M_DIST			-	-	
mm	Measuring path for measuring with ShopMill, in automatic mode			DOUBLE	Immediately	
-						
-	-	5	-10000	10000	7/5	I

3.5 Machine and setting data cycles

Description: This parameter defines the measuring path in front of and behind the measuring setpoint.
It is only used by old ShopMill measuring cycles (powerline).

51751	J_MEA_M_DIST_MANUELL	-	-
mm	Measuring path, for "Measure in JOG"	DOUBLE	Immediately
-			
-	-	10	-10000
		10000	7/5
			I

Description: This parameter defines the measuring path in front of and behind the measuring setpoint.

51752	J_MEA_M_DIST_TOOL_LENGTH	-	-
mm	Measuring path for tool length measuring, for "Measure in JOG"	DOUBLE	Immediately
-			
-	-	2	-10000
		10000	7/5
			I

Description: This parameter defines the measuring path in front of and behind the measuring setpoint.

51753	J_MEA_M_DIST_TOOL_RADIUS	-	-
mm	Measuring path for tool radius measuring, for "Measure in JOG"	DOUBLE	Immediately
-			
-	-	1	-10000
		10000	7/5
			I

Description: This parameter defines the measuring path in front of and behind the measuring setpoint.

51757	J_MEA_COLL_MONIT_FEED	-	-
mm/min	Feedrate in the plane w. active collision detection, for "Measure in JOG"	DOUBLE	Immediately
-			
-	-	1000	0
		100000	7/5
			I

Description: Feedrate in the working plane w. active collision detection

51758	J_MEA_COLL_MONIT_POS_FEED	-	-
mm/min	Infeed rate with active collision detection, for "Measure in JOG"	DOUBLE	Immediately
-			
-	-	1000	0
		100000	7/5
			I

Description: Feedrate of the infeed axis with active collision detection, for "Measure in JOG".

51770	J_MEA_CAL_RING_DIAM	-	-
mm	Calibration ring diameter, for "Measure in JOG"	DOUBLE	Immediately
-			
-	40	-1, -1, -1, -1, -1, -1, -1, -1	-1
		10000	7/5
			I

Description: Calibration ring diameter, for probe sphere calibration in the plane, for "Measure in JOG"

51772	J_MEAL_CAL_HEIGHT_FEEDAX	-	-
mm	Calibration height in the infeed axis, for probe length calibration	DOUBLE	Immediately
-			
-	40	-99999, -99999, -99999, -99999, -99999, -99999, -99999, -99999...	-100000 100000 7/5 I

Description: Calibration height in the infeed axis for probe length calibration, for "Measure in JOG"
The calibration height must be entered with reference to the the workpiece coordinate system (Work)!

51780	J_MEAL_T_PROBE_DIAM_RAD	-	-
mm	Diameter of the tool probe for radius measurement	DOUBLE	Immediately
-			
-	6	0, 0, 0, 0, 0, 0	0 10000 7/5 I

Description: Effective grinding wheel diameter of the tool probe for radius measurement on milling tools

51781	MEAL_T_PROBE_THICKNESS	-	-
mm	Tool probe thickness	DOUBLE	Immediately
-			
-	6	0, 0, 0, 0, 0, 0	0 10000 7/5 I

Description: Tool probe thickness for automatic approach of turning tools to the probes at milling/turning machines

51784	J_MEAL_T_PROBE_APPR_AX_DIR	-	-
-	Approach direction in the plane on the tool probe, for "Measure in JOG"	DWORD	Immediately
-			
-	6	-1, -1, -1, -1, -1, -1	-2 2 7/5 I

Description: Approach direction in the plane on the tool probe, for "Measure in JOG"
= -2 negative direction 2nd measuring axis
= -1 negative direction 1st measuring axis
= 0 or 1 positive direction 1st measuring axis
= 2 positive direction 2nd measuring axis

51786	J_MEAL_T_PROBE_MEASURE_DIST	-	-
mm	Measur. path for tool measurem. w. stationary spindle, for "Measure in JOG"	DOUBLE	Immediately
-			
-	-	10	-10000 10000 7/5 I

Description: Measuring path for tool probe calibration and tool measuring with stationary spindle, in front of and behind the expected switching position.

51840	GRIND_FUNCTION_MASK	-	-
-	Function mask for grinding cycles	DWORD	Immediately
-			
-	-	0	- - 7/3 M

Description: Function mask for grinding cycles

3.5 Machine and setting data cycles

Bit 0: Reference point for recording dresser/grinding wheel is a work offset
 0: Deselect work offset as reference point
 1: Select work offset as reference point
 Bit 1: Reserved

51900	CAS_ACCES_LEVEL	-	-
-	Collision Avoidance System access level for UI functionality	DWORD	Immediately
-			
-	32	0, 0, 0, 0, 0, 0, 0, 0...	0 7 7/3 M

Description: Collision Avoidance System access levels
 Each field represents an access level of a CAS UI functionality

51901	CAS_CONFIG_MASK	-	-
-	Collision Avoidance System function mask	DWORD	Immediately
-			
-	-	0	- - 7/3 M

Description: Collision Avoidance System function mask
 Bit 0: reserved
 Bit 1: reserved

51902	CAS_CONFIG_MASK_EXT	-	-
-	Collision Avoidance System extended function mask	DWORD	Immediately
-			
-	-	0	- - 7/3 M

Description: Collision Avoidance System extended function mask
 Bit 0: reserved
 Bit 1: reserved

51903	CAS_CONFIG_INT	-	-
-	Collision Avoidance System configuration - integers	DWORD	Immediately
-			
-	32	0, 0, 0, 0, 0, 0, 0, 0...	- - 7/3 M

Description: Collision Avoidance System configuration - integers
 Each field represents a CAS setting value.
 Only integers are allowed.

52000	DISP_COORDINATE_SYSTEM	-	-
-	Coordinate system position	BYTE	PowerOn
-			
-	-	0	0 47 7/3 M

Description: With this MD, you adapt the operator panel's coordinate system to the machine's coordinate system. Depending on the selected position, all help screens, the sequence graphic, the simulation, and the input fields with the circular direction specified will change automatically in the user interface.
 The machine data is evaluated in the cycles.
 Also note MD52210 \$MCS_FUNCTION_MASK_DISP, bit 1.

52001	DISP_COORDINATE_SYSTEM_2	-	-
-	Coordinate system for turning on milling machines	BYTE	PowerOn
-			
-	-	0	0
		47	7/3
			M

Description: With this MD you specify the coordinate system for turning operations on milling machines.
See also MD52000 \$MCS_DISP_COORDINATE_SYSTEM.

52004	PROG_COORDINATE_SYS_CHAN	-	-
-	Coordinate system during programming as described in the specified channel	BYTE	PowerOn
-			
-	-	0	0
		10	7/3
			M

Description: You can set this MD so that the coordinate system is displayed during programming as it is described in the specified channel.
0: Display as described in own channel
n: Display as described in channel n

52005	DISP_PLANE_MILL	-	-
-	Plane selection Milling	BYTE	Immediately
-			
-	-	0	0
		19	7/3
			M

Description: Plane selection Milling
0: plane selection on the operator panel
17: always G17
18: always G18
19: always G19

52006	DISP_PLANE_TURN	-	-
-	Plane selection Turning	BYTE	Immediately
-			
-	-	18	0
		19	ReadOnly
			M

Description: Plane selection Turning
0: plane selection on the operator panel
17: always G17
18: always G18
19: always G19

52010	DISP_NUM_AXIS_BIG_FONT	-	-
-	Number of actual values with large font	BYTE	PowerOn
-			
-	-	3	0
		31	7/3
			M

Description: Number of actual values with large font

52011	ADJUST_NUM_AXIS_BIG_FONT	-	-
-	Adapt number of act val w large font dynamically to no. of geometry axes	BYTE	PowerOn
-			
-	-	0	0
		2	7/3
			M

3.5 Machine and setting data cycles

Description: Adapt the number of actual values with large font if the number of geometry axes changes, e.g. due to transformations like TRANSMIT or TRACYL.

0 = Only MD52010 "DISP_NUM_AXIS_BIG_FONT" is valid. The number is assigned as a fixed value.

1 = Only the geometry axes are displayed in large font. MD 52010 "DISP_NUM_AXIS_BIG_FONT" is ignored.

2 = The number of geometry axes plus the content of MD 52010 "DISP_NUM_AXIS_BIG_FONT" are displayed in large font.

52020	ORIAxes_Euler_Angle_Name					-	-
-	Axis identifiers of the orientation axes: Euler angle or geometry axis name					BYTE	PowerOn
-							
-	-	0	0	1	4/3	M	

Description: This MD specifies whether the axis identifiers of the orientation axes are Euler angle names or channel geometry axis names.

Possible values are:

- = 0 Orientation axis name from the channel block geometry axis name with the index 3 to 5
- = 1 Orientation axis name is the name of the Euler angle from the general machine data

52032	STAT_DISPLAY_BASE					-	-
-	Number basis for display of articulated joint STAT					BYTE	PowerOn
-							
-	-	0	0	16	4/3	M	

Description: Numerical basis for displaying the articulated joint STAT

If the value of the data is greater than 0, MD51032 \$MNS_STAT_DISPLAY_BASE is ignored for this channel.

00: MD51032 is active

02: Representation as binary value

10: Representation as decimal value

16: Representation as hexadecimal value

The machine data activates not only the STAT display channel-specifically on the main screen, but also the display during "TEACH IN".

52033	TU_DISPLAY_BASE					-	-
-	Number basis for display of rotary axis position TU					BYTE	PowerOn
-							
-	-	0	0	16	4/3	M	

Description: Numerical basis for displaying the rotary axis position TU

If the value of the data is greater than 0, MD51033 \$MNS_TU_DISPLAY_BASE is ignored for this channel.

00: MD51033 is active

02: Representation as binary value

10: Representation as decimal value

16: Representation as hexadecimal value

The machine data activates not only the TU display channel-specifically on the main screen, but also the display during "TEACH IN".

Description: Technology
0: no specific configuration
1: turning
2: milling
3: cylindrical grinding
4: surface grinding
Also note MD52201 \$MCS_TECHNOLOGY_EXTENSION

Description: Advanced technology
0: no specific configuration
1: turning
2: milling
Also note MD52200 \$MCS_TECHNOLOGY.
Example:
Turning machine with milling technology
MD 52200 \$MCS_TECHNOLOGY = 1
MD 52201 \$MCS_TECHNOLOGY_EXTENSION = 2

Description:	Meaning of the axes in the channel
	0 = no special meaning)
	1 = tool spindle (rotating tool)
	2 = auxiliary spindle (rotating tool)
	3 = main spindle (turning)
	4 = separate C axis of the main spindle (turning)
	5 = counterspindle (turning)
	6 = separate C axis of the counterspindle (turning)
	7 = linear axis of the counterspindle (turning)
	8 = tailstock (turning)
	9 = steady rest (turning)
	10 = B axis in the head (turning and cylindrical grinding)
	11 = reserved
	12 = B axis in the counterspindle (turning)
	13 = transverse travel X of the counterspindle (turning)

Description:

Axis attributes

Bit 0: rotates around 1st geometry axis (for rotary axes)

Bit 1: rotates around 2nd geometry axis (for rotary axes)

Bit 2: rotates around 3rd geometry axis (for rotary axes)

Bit 3: Positive direction of rotation is counter-clockwise (for rotary axes)

The rotary axes are always viewed in the negative geometry axis direction.

For turning machines, a spindle is always viewed from the interior.

Bit 4: Displayed direction of rotation for M3 is counter-clockwise (for spindles)

The viewing direction can be selected. Either viewed outward from the inside or from the outside toward the spindle.

However, the same selection must be made for all spindles.

Bit 5: Direction of rotation M3 corresponds to minus rotary axis (for spindles)

This bit must be set in the same way as a PLC bit.

For 840Dsl: PLC bit DBnn.DBX17.6, nn = 31 + machine axis index

For 828D : PLC bit DB38xx.DBX2001.6, xx is machine axis index

Bit 6: Display rotary axis as offset target for measuring

Bit 7: Offer rotary axis in position pattern

The orientation of the axis is defined using bits 0 - 2.

If one of the bits 10 - 12 is set, these bits specify the orientation of the axis for position patterns.

Bit 8: Offer rotary axis for blank clamp (on milling machines)

The orientation of the axis is defined using bits 0 - 2.

Bit 9: Spindle is not SPOS capable

Bit 10: Rotary axis rotates around 1st geometry axis (only for position pattern)

Bit 11: Rotary axis rotates around 2nd geometry axis (only for position pattern)

Bit 12: Rotary axis rotates around 3rd geometry axis (only for position pattern)

Bit 13: Position of the axis for blank selection from active WO (for rotary axes)

This enables a rotary axis set up with simulation/simultaneous recording to be automatically shown in the correct position.

Bit 14: Enable spindle in axis mode for teach-in.

Note:

For bits 0 - 2 and 10 - 12, only the 1st set bit is active in each case.

Note on position pattern with rotary axes:

If one of the bits 10 - 12 is set, these bits take precedence over bits 0 - 2.

Description:	Function mask for display
	Bit 0: Dimension system for programs always in the basic system
	Bit 1: Face view when turning in the school coordinate system
	Bit 2: Hide softkey "T,S,M" in the jog area
	Bit 3: Generate automatic end-of-program in MDI (using the "Delete blocks" softkey)

Bit 4: Display follow-on tool in the T,F,S window
 Bit 5: Hide "Act. values Machine" softkey
 Bit 6: Hide tool radius/diameter in the T,F,S window
 Bit 7: Hide tool lengths in the T,F,S window
 Bit 8: Hide tool icon in the T,F,S window
 Bit 9: Display "Simple input" selection
 Bit 10: Do not offer channel in the job lists
 Bit 11: For Work activate the display of the logical spindles
 Bit 12: Hide mold making view for G code
 Bit 13: Hide channel axes which are currently located in another channel
 0: Display channel axes which are currently located in another channel in grey
 1: Hide channel axes which are currently located in another channel
 Bit 14: Display overlay of the DRF under the machine
 Bit 15: Display overlay of the tool (\$AA_TOFF) under the machine
 Bit 16: Select JOG axis via HMI
 Bit 17: Select increment via HMI
 Bit 18: Offer select "With set stop override to 0%" with configured stop (only with Powerride)

52211	FUNCTION_MASK_DISP_ZOA	-	-
-	Function mask for displaying overview of work offsets	DWORD	PowerOn
-			
-	-	2097141	-

Description: Function mask for displaying overview of work offsets

Bit 0: Show Machine position
 Bit 1: Reserved
 Bit 2: Display DRF offset
 Bit 3: Display \$AA_OFF position offset
 Bit 4: Display \$P_PARTFRAME
 Bit 5: Display \$P_SETFRAME
 Bit 6: Display \$P_EXTSFRAME
 Bit 7: Display \$P_ISO1FRAME
 Bit 8: Display \$P_ISO2FRAME
 Bit 9: Display \$P_ISO3FRAME
 Bit 10: Display \$P_ACTBFRAME
 Bit 11: Display \$P_IFRAME
 Bit 12: Display \$P_TOOLFRAME
 Bit 13: Display \$P_WPFRAME
 Bit 14: Display \$P_TRAFRAME
 Bit 15: Display \$P_PFRAME
 Bit 16: Display \$P_ISO4FRAME
 Bit 17: Display \$P_CYCFRAME
 Bit 18: Display sum of work offsets
 Bit 19: Display offset of active tool
 Bit 20: Display Work position
 Bit 21: Display BCS position
 Bit 22: Display \$P_GFRAME
 Bit 23: Display TOFF
 Bit 24: Display overlay \$AA_TOFF

3.5 Machine and setting data cycles

52212	FUNCTION_MASK_TECH	-	-
-	Function mask Cross-technology	DWORD	Immediately
-			
-	-	0	-
-	-	-	-
-	-	7/3	M

Description:

Function mask for all technologies

Bit 0: Enable swivel plane/align tool with tool carrier

0: Swivel plane/align tool with tool carrier not enabled

1: Swivel plane/align tool with tool carrier enabled

Bit 1: No optimized travel along software limit switches (ShopMill/ShopTurn)

0: Optimized travel along software limit switches

1: No optimized travel along software limit switches

With optimized travel along the software limit switches, in the swiveled state (with table kinematics) any traversing motions which would go

beyond the software limit switches are truncated. This avoids the alarm 10720 "Axis software limit switches".

Bit 2: Special approach logic for step drill (ShopTurn)

0: Special approach logic for step drill disabled

1: Special approach logic for step drill active

When navigating around the retraction planes, the longest cutting edge (with the same cutting edge position as the active cutting edge) in the same machining direction is always taken into account.

Bit 3: Call block search cycle for ShopMill/ShopTurn

0: In the block search cycle PROG_EVENT.SPF, the cycles E_S_ASUP and F_S_ASUP are not called

1: In the block search cycle PROG_EVENT.SPF, the cycles E_S_ASUP (milling technology) and F_S_ASUP (turning technology) are called. After the block search,

the cycles E_S_ASUP and F_S_ASUP ensure the output of tool and machine commands.

The corresponding cycle is also called with a block search of a G code program.

The bit must be set when ShopMill/ShopTurn is used!

Bit 4: Approach logic via cycle (ShopTurn)

0: Approach logic via NC function

1: Approach logic via ShopTurn cycle

The approach logic via the ShopTurn cycle is only required for diagnostic purposes.

Bit 5: Call SERUPRO block search function

0: In the block search cycle PROG_EVENT.SPF, the cycle CYCLE207 is not called.

1: In the block search cycle PROG_EVENT.SPF, the cycle for SERUPRO (CYCLE207) is called (for block search with SERUPRO program test).

After the block search with program test (SERUPRO), cycle CYCLE207 ensures the output of the collected machine commands.

Bit 6: Work offset ZV cannot be entered as an absolute value (ShopTurn)

0: Parameter ZV, active work offset can be entered as an increment and as an absolute

1: Parameter ZV, active work offset can only be entered as an increment (ShopTurn)

Bit 7: Detect expiry of tool lives in the program (ShopMill/ShopTurn)

0: The tool life is only taken into account when the tool is loaded

1: The tool life is taken into account when changing the machining steps (even if there is no tool change).

Bit 8: Manual machine function active (ShopMill/ShopTurn)

0: Manual machine function is not activated

1: Manual machine function is active

Bit 9: Selection/deselection of work offset via softkey

0: The WO selection/deselection softkey is not available in the work offset table of the settable WOs.

1: The WO selection/deselection softkey is available in the work offset table of the settable WOs.

Bit 10: Enable swivel plane/align tool with kinematic transformation

0: Swivel plane/align tool with kinematic transformation not enabled

1: Swivel plane/align tool with kinematic transformation enabled

Bit 11: Disable position check for drilling and milling tools (ShopTurn)

0: Cutting edge position check is active for drilling and milling tools

1: No cutting edge position check for drilling and milling tools

The cutting edge position check can be disabled for drilling and milling tools if this is necessary on account of the machine design.

Bit 12: Reserved

Bit 13: Approach tool change point Y in the MCS (ShopTurn)

0 : The tool change point in the Work is only approached to 0 in the Y direction if MD52241 \$MCS_TOOL_CHANGE_POS_Y = 0.

1: Tool change point in the MCS is always approached in the Y direction (see MD52241 \$MCS_TOOL_CHANGE_POS_Y).

Bit 14: With approach logic only check tool position with cutting edge (ShopTurn)

0: The approach logic always checks the tool position.

1: The approach logic only checks the tool position if a cutting edge is active.

Bit 15: Do not set \$MC_TOOL_CARRIER_RESET_VALUE after block search

0: The current tool carrier is written in the machine data

\$MC_TOOL_CARRIER_RESET_VALUE in the block search cycle PROG_EVENT.SPF

1: The current tool carrier is not written in the machine data

\$MC_TOOL_CARRIER_RESET_VALUE in the block search cycle PROG_EVENT.SPF

Bit 16: Do not automatically execute swivel plane after block search

0: The section for standard cycles: swivel plane is executed in the block search cycle PROG_EVENT.SPF

1: The section for standard cycles: swivel plane is not executed in the block search cycle PROG_EVENT.SPF

Bit 17: Do not automatically execute align turning tool after block search

0: The section for align turning tool is executed in the block search cycle PROG_EVENT.SPF

1: The section for align turning tool is not executed in the block search cycle PROG_EVENT.SPF

Bit 18: Enable Determine total load: empty axis + workpiece

0: The selection Determine load separately is enabled in the cycle CYCLE782. The determined load value then corresponds to the current workpiece only.

1: The total load is determined in the cycle CYCLE782. The determined load value corresponds to the sum of: empty axis + workpiece.

52214	FUNCTION_MASK_MILL	-	-
-	Function mask for milling	DWORD	Immediately
-			
-	-	0	-

Description:

Function mask for milling

Bit 0: Enable cylinder surface transformation (ShopMill)

0: Softkey not enabled for cylinder surface transformation

1: Cylinder surface transformation enabled

Bit 1: Offer fixed table for blank clamping (on milling machines)

0: Fixed table not offered for blank clamping

3.5 Machine and setting data cycles

1: Offer fixed table for blank clamping

(This bit must only be set if a milling machine has a rotary axis and a fixed table for blank clamping.)

Bit 2: Special handling of side mill/saw for polyhedron

0: No special handling of side mill/saw for polyhedron

1: Special handling of side mill/saw for polyhedron

With this tool type, the first infeed is selected so that the upper edge of the tool exactly touches reference point Z0.

At the end of machining, it is completely drawn out laterally from the blank spigot. This can create an internal polyhedron on a shaft.

Bit 3: Enable inside/rear machining (ShopTurn)

0: Inside/rear machining not enabled

1: Enable inside/rear machining in ShopTurn screenforms (applies in ShopTurn screenforms which define the machining planes)

Bit 4: Enable spindle clamping (C axis) (ShopTurn)

0: The parameter "Clamp/release spindle" is not shown in drilling or milling screenforms. ShopTurn clamps the spindle automatically if this is advantageous for machining.

1: The parameter "Clamp/release spindle" is shown in drilling and milling screenforms. The operator decides on the machining for which the spindle is clamped.

If you have implemented the function "Clamp/release spindle" by using the machine manufacturer cycle CUST_TECHCYC.SPF, you can activate the parameter "Clamp/release spindle"

in drilling and milling screenforms with this machine data.

Bit 5: Enable spindle control of tool spindle via user interface

0: Enable spindle control via the NC/PLC interface

1: Enable spindle control via user interface

Bit 6: Enable spindle control of turning spindle via user interface

0: Enable spindle control via the NC/PLC interface

1: Enable spindle control via user interface

Bit 7: Offer fixed table for blank clamping (on drilling machines)

0: Fixed table not offered for blank clamping

1: Offer fixed table for blank clamping

(This bit must only be set if a drilling machine has a rotary axis and a fixed table for blank clamping.)

Bit 8: Enable damping braking (C axis) (ShopTurn)

0: Parameter "Damping braking on/off" is not displayed in the milling screenforms.

1: Parameter "Damping braking on/off" is displayed in the milling screenforms. The operator decides with which machining (face C/cylinder surface C) the C axis is braked.

If you have implemented the function "Damping braking" with the machine manufacturer cycle CUST_TECHCYC.SPF, you can activate the parameter "Damping braking on/off" in the milling screenforms.

52216	FUNCTION_MASK_DRILL	-	-
-	Function mask for drilling	DWORD	Immediately
-			
-	-	0	-
-	-	-	-
-	-	7/3	M

Description:

Function mask for drilling

Bit 0: CYCLE84 Show input fields, Technology

0: Hide input fields

1: Show input fields
 Bit 1: CYCLE840 Show input fields, Technology
 0: Hide input fields
 1: Show input fields
 Bit 2: Thread tapping also without encoder (ShopMill/ShopTurn)
 0: Thread tapping only possible with encoder
 1: Thread tapping also possible without encoder
 The setting depends on whether the machine has an encoder for the tool spindle.
 Bit 3: Constant cutting speed in relation to the diameter of the centering (ShopMill/ShopTurn)
 0: Constant cutting speed in relation to the diameter of the tool
 1: Constant cutting speed in relation to the diameter of the centering

52218	FUNCTION_MASK_TURN	-	-
-	Function mask Turning	DWORD	Immediately
-			
-	-	0	-

Description:

Function mask for turning
 Bit 0: Enable zoom under manual for tool measurement
 0: No zoom under manual for tool measurement
 1: Enable zoom under manual for tool measurement
 Bit 1: Enable parts gripper for cut-off
 0: No parts gripper for cut-off
 1: Enable parts gripper for cut-off
 Bit 2: Enable tailstock
 0: Tailstock not enabled
 1: The tailstock can be selected in the program.
 Bit 3: Enable spindle control of main spindle via user interface
 0: Enable spindle control via the NC/PLC interface
 1: Enable spindle control via the user interface
 Bit 4: Enable spindle control of counterspindle via user interface
 0: Enable spindle control via the NC/PLC interface
 1: Enable spindle control via the user interface
 Bit 5: Enable spindle control of tool spindle via user interface
 0: Enable spindle control via the NC/PLC interface
 1: Enable spindle control via the user interface
 Bit 6: Enable balance cutting for dual-channel stock removal
 0: No enable of the balance cutting function for dual-channel stock removal
 1: Enable of balance cutting for dual-channel stock removal
 In balance cutting, stock is removed from both sides of the workpiece simultaneously. This enables work to be performed with a higher feedrate.
 Bit 7: Retraction during stock removal along the contour with G1
 0: Retraction during stock removal along the contour with rapid traverse (G0)
 1: Retraction during stock removal along the contour with feedrate (G1)
 Bit 8: Enter spindle chuck data in the program
 0: The spindle chuck data are taken from the corresponding input screen in the parameter area.
 1: Enter spindle chuck data in the program
 Bit 9: Additional entry of tailstock data in the program

3.5 Machine and setting data cycles

0: The tailstock data are taken from the spindle chuck data in the parameter area.

1: Additional entry of tailstock data in the program

This bit is only effective if bit 8 is also set.

Bit 10: Enable convex thread

0: Convex thread not enabled with longitudinal thread cutting

1: Convex thread enabled with longitudinal thread cutting

Bit 11: Reserved

Bit 12: Deactivate thread synchronization

0: Thread synchronization is possible

1: Deactivate the thread synchronization function

The operator screenform to set the synchronization point is not displayed, and in the thread cycles

the thread first cut is not calculated with the synchronization point.

Bit 13: Stock removal along the contour with CYCLE95 (828D programGUIDE without Advanced Technology)

0: The screenform for CYCLE952 is opened with the softkey contour turning/stock removal.

1: The screenform for CYCLE95 is opened with the softkey contour turning/stock removal.

Secondary conditions:

- 828D

- programGUIDE

- Without Advanced Technology option

Bit 14: Turning on milling machines: continuous transition between pole position and beta plus

0: possibly discontinuous transition between pole position and beta plus (compatibility)

1: continuous transition between pole position and beta plus

Bit 15: Enable counterspindle TM,inc (ShopTurn)

0: TM,inc causes no shift (compatibility)

1: TM,inc causes an incremental shift

52224	FUNCTION_MASK_TECHNOLOGY_0			-	-	
-	Technology function mask 0			DWORD	PowerOn	
-						
-	-	0	-	-	7/3	M

Description:

Technology function mask 0

Bit 0: Hide display of tools/tool functions

0: Show tools/tool functions

1: Hide tools/tool functions

Bit 1: Hide display of spindles/spindle functions

0: Show spindles/spindle functions

1: Hide spindles/spindle functions

Bit 2: Hide "Synchronous actions" softkey

0: Show "Synchronous actions" softkey

1: Hide "Synchronous actions" softkey

Bit 3: Hide "Retract" softkey

0: Show "Retract" softkey

1: Hide "Retract" softkey

Bit 4: Hide "Contour" softkey

0: Show "Contour" softkey
 1: Hide "Contour" softkey
 Bit 5: Hide "Diverse" softkey
 0: Show "Diverse" softkey
 1: Hide "Diverse" softkey
 Bit 6: Hide "Simulation" softkey
 0: Show "Simulation" softkey
 1: Hide "Simulation" softkey
 Bit 7: Hide "Simultaneous recording" softkey
 0: Show "Simultaneous recording" softkey
 1: Hide "Simultaneous recording" softkey
 Bit 8: Hide "Mold making view" softkey
 0: Show "Mold making view" softkey
 1: Hide "Mold making view" softkey

52229	ENABLE_QUICK_M_CODES	-	-
-	Enable fast M functions	BYTE	Immediately
-			
-	-	0	-

Description: Enable fast M functions
 Bit 0: Coolant OFF
 Bit 1: Coolant 1 ON
 Bit 2: Coolant 2 ON
 Bit 3: Coolant 1 and 2 ON

52230	M_CODE_ALL_COOLANTS_OFF	-	-
-	M code for all coolants OFF	DWORD	Immediately
-			
-	-	9	0

Description: M code for all coolants OFF

52231	M_CODE_COOLANT_1_ON	-	-
-	M code for coolant 1 ON	DWORD	Immediately
-			
-	-	8	0

Description: M code for coolant 1 ON

52232	M_CODE_COOLANT_2_ON	-	-
-	M code for coolant 2 ON	DWORD	Immediately
-			
-	-	7	0

Description: M code for coolant 2 ON

52233	M_CODE_COOLANT_1_AND_2_ON	-	-
-	M code for both coolants ON	DWORD	Immediately
-			
-	-	-1	-1

Description: M code for coolant 1 + 2 ON

3.5 Machine and setting data cycles

52240	NAME_TOOL_CHANGE_PROG	-	-
-	Tool change program for G code steps	STRING	Immediately
-			
-	-	-	-
		7/3	M

Description: Tool change program for G code steps.

When inserting a tool using the "Select tool" softkey, the T command is transferred into the program.

If the MD contains a text, this is automatically inserted as an autonomous block after the T command.

For example, the tool change command "M6" can be entered here or a machine-manufacturer specific tool change program.

52241	TOOL_CHANGE_POS_Y	-	-
mm	Tool change position Y in the Machine (ShopTurn)	DOUBLE	Immediately
-			
-	-	0	-
		7/3	M

Description: Tool change position Y in Machine (ShopTurn)

In ShopTurn, the tool change point in X and Z can be specified in the Machine or Work.

When the tool change point is approached, the Y axis is simultaneously traversed to the value in the Machine specified in this MD.

52242	TURN_TOOL_FIXING	-	-
-	Tool adapter for turning tools	BYTE	PowerOn
-			
-	-	0	0
		2	7/3
			M

Description: Tool adapter for turning tools:

0 = turning tool in the tool spindle

1 = turning tool fixed at the tool spindle box

2 = turning tool in the tool spindle or fixed at the tool spindle box

52244	SUB_SPINDLE_PARK_POS_Y	-	-
mm	Parking position of the Y axis with counterspindle in the Machine	DOUBLE	Immediately
-			
-	-	0	-
		7/3	U

Description: Parking position of the Y axis with counterspindle in the Machine

52248	REV_2_BORDER_TOOL_LENGTH	-	-
mm	Limit value tool length X for 2nd turret	DOUBLE	Immediately
-			
-	-	0	-
		7/3	M

Description: Limit value of tool length X for the 2nd turret:

Limit value = 0: only one turret available

Tool length X < limit value: tool belongs to 1st turret/multifix

Tool length X >= limit value: tool belongs to 2nd turret/multifix

52250	M_CODE_CHUCK_OPEN	-	-
-	M code for Open chuck with non-rotating spindle	STRING	Immediately
-			
-	2	-	-
		7/3	M

Description: M code for Open chuck with non-rotating spindle.

Example: "M34" or "M1=34"

Elements:

[0]: Main spindle

[1]: Counterspindle

52251	M_CODE_CHUCK_OPEN_ROT	-	-
-	M code for Open chuck with rotating spindle	STRING	Immediately
-			
-	2	-	-

Description: M code for Open chuck with rotating spindle.

Example: "M34" or "M1=34"

Elements:

[0]: Main spindle

[1]: Counterspindle

52252	M_CODE_CHUCK_CLOSE	-	-
-	M code for Close chuck	STRING	Immediately
-			
-	2	-	-

Description: M code for Close chuck

Example: "M34" or "M1=34"

Elements:

[0]: Main spindle

[1]: Counterspindle

52253	M_CODE_TAILSTOCK_FORWARD	-	-
-	M code for quill forward	STRING	Immediately
-			
-	2	-	-

Description: M code for quill forward.

E.g.: "M55" or "M1=55"

Elements:

[0]: Quill opposite main spindle

[1]: Quill opposite counterspindle

52254	M_CODE_TAILSTOCK_BACKWARD	-	-
-	M code for quill backward	STRING	Immediately
-			
-	2	-	-

Description: M code for quill backward.

E.g.: "M54" or "M1=54"

Elements:

[0]: Quill opposite main spindle

[1]: Quill opposite counterspindle

3.5 Machine and setting data cycles

52260	MACHINE_JOG_INTERRUPT_Prio	-	-
-	Priority for start ASUB under machine JOG	BYTE	Immediately
-			
-	-	1	1
-	-	8	7/3
-	-	1	S

Description: Priority for start ASUB under machine JOG

52270	TM_FUNCTION_MASK	-	-
-	Function mask for tool management	DWORD	PowerOn
-			
-	-	0	-
-	-	-	7/3
-	-	-	M

Description: Function mask for tool management

Bit 0: Create tool on magazine location not allowed. Tools can only be created outside the magazine.

Bit 1: Load/unload disabled if machine is not in reset. Tools can only be loaded/unloaded if the appropriate channel is in reset state.

Bit 2: Load/unload disabled on emergency stop. Tools can only be loaded/unloaded if emergency stop is not active.

Bit 3: Load/unload or relocate tool to/from buffer is disabled. Tools cannot be loaded/ unloaded or relocated in the buffer (spindle/gripper).

Bit 4: Loading is executed directly into the spindle. Tools are loaded exclusively directly into the spindle.

Bit 5: Use grinding configuration file for creating the tool lists. Only grinding tools are offered.

Bit 6: Relocating a tool to/from the buffer (spindle/gripper) is permitted despite a block (see bit3).

Bit 7: Create tool using the tool number. Specify the tool's T number when creating the tool.

Bit 8: Hide Relocate tool. The function 'Relocate tool' is hidden on the user interface.

Bit 9: Hide Position magazine. The function 'Position magazine' is hidden on the user interface.

Bit 10: Reactivate tool using Position magazine. Prior to reactivation, the tool is positioned on the loading position.

Bit 11: Reactivate tool in all monitoring modes. When reactivating a tool, all monitoring modes enabled in the NC are

reactivated for this tool, even the monitoring modes, which have not been set for the relevant tool, but are available in the background only.

Bit 12: Hide Reactivate tool. The function 'Reactivate tool' is hidden on the user interface.

52271	TM_MAG_PLACE_DISTANCE	-	-
mm	Distance betw. indiv. magazine locations	DOUBLE	PowerOn
-			
-	-	70	0
-	-	10000	7/3
-	-	0	M

Description: Distance between individual magazine locations.

Is used for graphical display of magazine and tools in tool management.

52272	TM_TOOL_LOAD_DEFAULT_MAG	-	-
-	Default magazine for tool loading	BYTE	PowerOn
-			
-	-	0	0
-	-	30	7/3
-	-	0	M

Description: Default magazine for tool loading
0 = no default magazine

52273	TM_TOOL_MOVE_DEFAULT_MAG	-	-
-	Default magazine for tool relocation	BYTE	PowerOn
-			
-	-	0	0
		30	7/3
			M

Description: Default magazine for tool relocation
0 = no default magazine

52274	TM_TOOL_LOAD_STATION	-	-
-	Number of load station	BYTE	PowerOn
-			
-	-	0	0
		16	7/3
			M

Description: Number of the loading station
0 = All configured stations are taken into account

52281	TOOL_MCODE_FUNC_ON	-	-
-	M code for tool-specific function ON	DWORD	Immediately
-			
-	4	-1, -1, -1, -1	-1
		32767	7/3
			M

Description: M code for tool-specific function ON
Value -1 means that the M function is not output. If both M commands of a function equal -1, the corresponding field will not be displayed in the user interface

52282	TOOL_MCODE_FUNC_OFF	-	-
-	M code for tool-specific function OFF	DWORD	Immediately
-			
-	4	-1, -1, -1, -1	-1
		32767	7/3
			M

Description: M code for tool-specific function OFF
Value -1 means that the M function is not output. If both M commands of a function equal -1, the corresponding field will not be displayed in the user interface

52290	SIM_DISPLAY_CONFIG	-	-
-	Location of status display of the channel in the simulation (OP019 only)	BYTE	Immediately
-			
-	-	0x0F	-
		-	7/3
			M

Description: Location of status display of the channel in the simulation
Only one of the 4 corners can be selected:
Bit 0 = Top left corner
Bit 1 = Top right corner
Bit 2 = Bottom left corner
Bit 3 = Bottom right corner
This MD is active only on the OP019.

3.5 Machine and setting data cycles

52441	LIMIT_RES_PATH_SPEED	-	-
mm/min	Limiting the resulting speed of the path motion	DOUBLE	Immediately
-			
-	-	0	0
		1000000	7/1
			I

Description: With the CYCLE832 cycle, the speed of the path motion resulting from the axial limitation values can be limited or reduced in critical program sections.

The resulting path speed is limited to the entered value. However, the value 0 has no limiting effect.

The limitation of the path motion speed is deactivated by deselecting CYCLE832 or by a reset or by ending the part program.

52740	MEA_FUNCTION_MASK	-	-
-	Function mask for measuring cycles, workpiece and tool measuring	DWORD	Immediately
-			
-	-	65536	-
		-	7/3
			M

Description: Function mask for measuring cycles

Bit 0: Workpiece measurement, probe input

0: Workpiece probe connected to probe input 1

1: Workpiece probe connected to probe input 2

Bit 1: Workpiece measurement, turning technology, use of a third geometry axis (Y axis) in turning technology by the turning measurement cycles.

0: No use or support of the Y axis.

1: Default values for the turning measuring cycles refer to the Y axis.

This means that the Y axis can be used as a measuring or bypassing axis by the turning measuring cycles.

The tool length or work offset is always corrected in the components of the second geometry axis (X axis) during measurement in the Y axis.

Note: The default values for the Y axis are related to the diameter.

Bit 2: Correction angle is calculated with/without orientation transformation

0: Correction angle (_MEA_CORR_ANGLE[1]) is calculated only with an active orientation transformation (TCARR, CYCLE800 or TRAORI)

1: Correction angle (_MEA_CORR_ANGLE[1]) is calculated even without an active orientation transformation

and SD42940 \$SC_TOOL_LENGTH_CONST 1000s digit = 1 (calculation of tool orientation) is set

Bit 16: Tool measurement, probe input

0: Tool probe connected to probe input 1

1: Tool probe connected to probe input 2

Bit 17: Tool measurement turning, recoding of the cutting edge positions

0: No recoding

1: Internal recoding, cutting edge positions mirrored on the X axis

Tool turret rotated through 180°, Z axis not mirrored

52750	J_MEA_FIXPOINT	-	-
mm	Z value for measuring fixed point	DOUBLE	Immediately
-			
-	-	0	-
		-	7/3
			I

Description: Z value for measuring against fixed point

52751	J_ME_A_MAGN_GLAS_POS	-	-
mm	Zoom-in position for tool measurement	DOUBLE	Immediately
-			
-	2	0	-
-	-	-	7/3
-	-	-	M

Description: If the machine has a zoom, it can be used to determine the tool geometry.
The operator calculates the tool offset data from the known positions of the tool carrier reference point and the crosshair of the zoom.
Zoom-in position for tool measurement
[0] = Position in the 1st axis
[1] = Position in the 2nd axis

52780	J_ME_A_T_PROBE_APPR_MODE	-	-
-	Approach mode tool measurement in JOG	BYTE	Immediately
-			
-	-	0	0
-	-	2	7/3
-	-	-	M

Description: Approach mode tool measurement in JOG
=0: technology-dependent approach to the tool probe
Turning technology: manual approach
Milling technology : automatic approach
=1: technology independent approach to the tool probe
Manual approach to the tool probe
=2: technology-independent approach to the tool probe
Automatic approach to the tool probe

52800	ISO_M_ENABLE_POLAR_COORD	-	-
-	Polar coordinates	BYTE	Immediately
-			
-	-	0	0
-	-	1	7/3
-	-	-	M

Description: Polar coordinates
0: OFF
1: ON

52802	ISO_ENABLE_INTERRUPTS	-	-
-	Interrupt process	BYTE	Immediately
-			
-	-	0	0
-	-	1	7/3
-	-	-	M

Description: Interrupt process
0: OFF
1: ON

52804	ISO_ENABLE_DRYRUN	-	-
-	Machining skipped at DRYRUN	BYTE	Immediately
-			
-	-	0	0
-	-	1	7/3
-	-	-	M

Description: Machining skipped during tapping G74/G84 at DRYRUN
0: OFF
1: ON

3.5 Machine and setting data cycles

52806	ISO_SCALING_SYSTEM	-	-
-	Basic system	BYTE	Immediately
-			
-	-	0	0
		2	7/7
			M

Description: Basic system:
0: not defined
1: METRIC
2: INCH

52808	ISO_SIMULTAN_AXES_START	-	-
-	Simultaneous approach to the boring position on all programmed axes	BYTE	Immediately
-			
-	-	0	0
		1	7/3
			M

Description: Simultaneous approach to the boring position on all programmed axes
0: OFF
1: ON

52810	ISO_T_DEEPTHOLE_DRILL_MODE	-	-
-	Deep hole drilling with chipbreaking/stock removal	BYTE	Immediately
-			
-	-	0	0
		1	7/3
			M

Description: Select the type of deep hole drilling
0: deep hole drilling with chipbreaking
1: deep hole drilling with stock removal

52818	ISO_M_FUNCTION_MASK	-	-
-	Function mask for ISO milling mode	DWORD	Immediately
-			
-	-	0	-
		-	7/3
			M

Description: Function mask for ISO milling mode

52819	ISO_T_FUNCTION_MASK	-	-
-	Function mask for ISO turning mode	DWORD	Immediately
-			
-	-	0	-
		-	7/3
			M

Description: Function mask for ISO turning mode

52840	GRIND_FUNCTION_MASK	-	-
-	Function mask for grinding	DWORD	Immediately
-			
-	-	0	-
		-	7/3
			M

Description: Function mask for grinding
Bit 7: Retraction while profiling with G1
0: Retraction while profiling with rapid traverse (G0)
1: Retraction while profiling with feedrate (G1)

52842	GRIND_DIAMETER_LENGTH	-	-
-	Number of diameter length	BYTE	PowerOn
-			
-	-	1	1
-	-	2	7/3
-	-	M	

Description: Grinding technology: Number of the tool length for the grinding wheel diameter:
 1: Length 1 is grinding wheel diameter
 2: Length 2 is grinding wheel diameter

52843	GRIND_WIDTH_LENGTH	-	-
-	Number of grinding wheel width	BYTE	PowerOn
-			
-	-	2	1
-	-	2	7/3
-	-	M	

Description: Grinding technology: Number of the tool length for the grinding wheel width:
 1: Length 1 is grinding wheel width
 2: Length 2 is grinding wheel width

53030	AXIS_MAX_POWER	-	-
%	Maximum value of axis power rating display	DWORD	PowerOn
-			
-	-	100	0
-	-	255	4/3
-	-	M	

Description: Maximum value of permissible axis power rating in percent.
 The display bar is shown green in the range between 0 and the value of AXIS_MAX_POWER.

53031	AXIS_POWER_RANGE	-	-
%	Display range of axis power rating display	DWORD	PowerOn
-			
-	-	100	0
-	-	255	4/3
-	-	M	

Description: Scale end value for the axis power display as a percentage. The value must be greater than or equal to AXIS_MAX_POWER.
 The bar display is shown red in the area between the values of AXIS_MAX_POWER and AXIS_POWER_RANGE.

53035	SHOW_SPINDLE_UTIL_TIME	-	-
-	Display spindle service life	DWORD	PowerOn
-			
-	-	0	0
-	-	1	4/3
-	-	M	

Description: If the remaining spindle service life (at the same load) is less than 2 minutes, the remaining time is displayed.
 0: Do not display spindle service life
 1: Display spindle service life

53220	AXIS_MCS_POSITION	-	-
mm	Position of axis in the Machine	DOUBLE	Immediately
-			
-	3	0	-
-	-	-	7/3
-	-	M	

Description: Position of axis in the Machine:
 The 3 field elements specify the position in X, Y, Z.
 For linear axes, the value corresponds to the zero point of the axis in the Machine.

3.5 Machine and setting data cycles

For rotary axes, the position of the rotary axis is defined in the Machine.

53230	SIM_START_POSITION			-	-	
mm, degrees	Axis position at start of simulation			DOUBLE	Immediately	
-						
-	-	0	-	-	7/3	M

Description: Axis position at start of simulation
Simulation is only possible if a value not equal to 0 has been set for at least one geometry axis.

53240	SPINDLE_PARAMETER			-	-	
mm	Spindle chuck data			DOUBLE	Immediately	
-						
-	3	0	-	-	7/7	U

Description: Spindle chuck data:
[0]: Chuck dimension
[1]: Stop dimension
[2]: Jaw dimension

53241	SPINDLE_CHUCK_TYPE			-	-	
-	Spindle jaw type			BYTE	Immediately	
-						
-	-	0	-	-	7/7	U

Description: Spindle jaw type:
0 = Clamping from outside
1 = Clamping from inside

53242	TAILSTOCK_PARAMETER			-	-	
mm	Tailstock data			DOUBLE	Immediately	
-						
-	2	0	-	-	7/7	M

Description: Tailstock data:
[0]: Tailstock diameter
[1]: Tailstock length

53250	CLAMPING_TOLERANCE			-	-	
mm, degrees	Permissible tolerance when an axis jams			DOUBLE	Immediately	
-						
-	-	0.1	0	10	7/3	M

Description: Permissible tolerance when an axis jams.
When jamming, an axis can be pushed somewhat out of its position.
With this machine data you define up to which tolerance level the axis does not have to be repositioned.

53350	ILC_BASE_VALUE			-	-	
-	Basic inertia of the axis			DOUBLE	Immediately	
-						
-	-	0	-	-	7/1	M

Description: Basic inertia of the axis

The result of the determination of the load on the axis without workpiece is stored in this machine data.

This value must be determined once during the machine setup.

It is needed to support the Determine load separately function with the cycle CYCLE782.

54215	TM_FUNCTION_MASK_SET	-	-
-	Function mask for tool management	DWORD	PowerOn
-			
-	-	0	-

Description:

Function mask for tool management

Bit 0: Diameter display for rotating tools. It is not the radius value but the diameter that is displayed for rotating tools.

Bit 1: Default direction of rotation for all turning tools is M4. Direction of rotation M4 is assigned by default when turning tools are created.

Bit 2: Create tool without suggesting name.

Bit 3: Input disable for tool name and tool type in the case of loaded tools. Once tools have been loaded, the tool name and the tool type can no longer be changed.

Bit 4: Input disable for loaded tools if the channel is not in reset.

Bit 5: Accrue tool wear entries additively. Tool wear data entries are added to the existing wear value.

Bit 6: Entry of tool ID in numerical format. The tool ID may only be entered using numbers.

Bit 7: Hide tool monitoring parameters. The tool monitoring parameters are hidden on the user interface.

Bit 8: Diameter display for transverse axis geometry. The geometry value for the transverse axis is displayed as a diameter value.

Bit 9: Diameter display for transverse axis wear. The wear value for the transverse axis is displayed as a diameter value.

Bit 10: Enable loading/relocation of tool in buffer locations. The magazine number can be entered in the load dialog box. The magazine number 9998 is then used to access the buffer location.

Bit 11: Creation of new tools in gripper locations is disabled.

Bit 12: Measuring tools are not unloaded when the "Unload all" function is executed.

Bit 13: The wear value is not deleted on entry of a tool geometry value.

Bit 14: Load or relocate tool. The search for an empty location is made without assignment with the last used magazine.

0: The search for an empty location always starts with the last used magazine.

1: The search for an empty location follows the set search strategy.

54480	AST_MMC_HANDLER_NAME	-	-
-	Assignment of an HMI Operate instance for AST commands	STRING	Immediately
-			
-	-	-	-

Description:

Name of the assigned HMI Operate (master)

One Operate must be defined as the master.

54481	AST_MMC_DEFAULT_IS_PCU	-	-
-	Selection of HMI Operate internally (NCU) / externally (PCU) for AST	BOOLEAN	Immediately
-			
-	-	0	0

Description:

Selection of HMI Operate internally (NCU) / externally (PCU) for AST

3.5 Machine and setting data cycles

Selection of the Operate type

54600	MEA_WP_BALL_DIAM	-	-
mm	Effective diameter of the probe sphere for the workpiece probe	DOUBLE	Immediately
-			
-	40	0, 0, 0, 0, 0, 0, 0, 0...	0 10000 7/7 U

Description: Effective sphere diameter of the probe sphere for the workpiece probe.
The value of this parameter is created by the operation "Calibrate workpiece probe"!

54601	MEA_WP_TRIG_MINUS_DIR_AX1	-	-
mm	Trigger point of the 1st measuring axis in negative direction	DOUBLE	Immediately
-			
-	40	0, 0, 0, 0, 0, 0, 0, 0...	-100000 100000 7/7 U

Description: Trigger point of the 1st measuring axis (abscissa) in negative traversing direction (X at G17) of the workpiece probe.
The term "negative traversing direction" refers to the currently active workpiece zero point reference!
The value of this parameter is created by the operation "Calibrate workpiece probe"!

54602	MEA_WP_TRIG_PLUS_DIR_AX1	-	-
mm	Trigger point of the 1st measuring axis in positive direction	DOUBLE	Immediately
-			
-	40	0, 0, 0, 0, 0, 0, 0, 0...	-100000 100000 7/7 U

Description: Trigger point of the 1st measuring axis (abscissa) in positive traversing direction (X at G17) of the workpiece probe.
The term "positive traversing direction" refers to the currently active workpiece zero point reference!
The value of this parameter is created by the operation "Calibrate workpiece probe"!

54603	MEA_WP_TRIG_MINUS_DIR_AX2	-	-
mm	Trigger point of the 2nd measuring axis in negative direction	DOUBLE	Immediately
-			
-	40	0, 0, 0, 0, 0, 0, 0, 0...	-100000 100000 7/7 U

Description: Trigger point of the 2nd measuring axis (ordinate) in negative traversing direction (Y at G17) of the workpiece probe.
The term "negative traversing direction" refers to the currently active workpiece zero point reference!
The value of this parameter is created by the operation "Calibrate workpiece probe"!

54604	MEA_WP_TRIG_PLUS_DIR_AX2	-	-
mm	Trigger point of the 2nd measuring axis in positive direction	DOUBLE	Immediately
-			
-	40	0, 0, 0, 0, 0, 0, 0, 0...	-100000 100000 7/7 U

Description: Trigger point of the 2nd measuring axis (ordinate) in positive traversing direction (Y at G17) of the workpiece probe.
The term "positive traversing direction" refers to the currently active workpiece zero point reference!
The value of this parameter is created by the operation "Calibrate workpiece probe"!

54605	MEA_WP_TRIG_MINUS_DIR_AX3	-	-
mm	Trigger point of the 3rd measuring axis in negative direction	DOUBLE	Immediately
-			
-	40	0, 0, 0, 0, 0, 0, 0, 0...	-100000 100000 7/7 U

Description: Trigger point of the 3rd measuring axis (applicate) in negative traversing direction (Z at G17) of the workpiece probe.
The term "negative traversing direction" refers to the currently active workpiece zero point reference!
The value of this parameter is created by the operation "Calibrate workpiece probe"!

54606	MEA_WP_TRIG_PLUS_DIR_AX3	-	-
mm	Trigger point of the 3rd measuring axis in positive direction	DOUBLE	Immediately
-			
-	40	0, 0, 0, 0, 0, 0, 0, 0...	-100000 100000 7/7 U

Description: Trigger point of the 3rd measuring axis (applicate) in positive traversing direction (Z at G17) of the workpiece probe.
The term "positive traversing direction" refers to the currently active workpiece zero point reference!
The value of this parameter is created by the operation "Calibrate workpiece probe"!

54607	MEA_WP_POS_DEV_AX1	-	-
mm	Position deviation of the probe sphere in the 1st measuring axis	DOUBLE	Immediately
-			
-	40	0, 0, 0, 0, 0, 0, 0, 0...	-100000 100000 7/7 U

Description: The position deviation in the 1st measuring axis represents a geometrical offset of the center point of the probe sphere related to the electrical center point of the probe in this axis!
The value of this parameter is created by the operation "Calibrate workpiece probe"!

54608	MEA_WP_POS_DEV_AX2	-	-
mm	Position deviation of the probe sphere in the 2nd measuring axis	DOUBLE	Immediately
-			
-	40	0, 0, 0, 0, 0, 0, 0, 0...	-100000 100000 7/7 U

Description: The position deviation in the 2nd measuring axis represents a geometrical offset of the center point of the probe sphere related to the electrical center point of the probe in this axis!
The value of this parameter is created by the operation "Calibrate workpiece probe"!

54609	MEA_WP_STATUS_RT	-	-
-	Calibration status axis positions	DOUBLE	Immediately
-			
-	40	0, 0, 0, 0, 0, 0, 0, 0...	- - 7/7 U

Description: Calibration status of the axis positions reserved for internal use!
The value of this parameter is created by the operation "Calibrate workpiece probe"!

54610	MEA_WP_STATUS_GEN	-	-
-	Calibration status in general	DOUBLE	Immediately
-			
-	40	0, 0, 0, 0, 0, 0, 0, 0...	- - 7/7 U

3.5 Machine and setting data cycles

Description: Calibration status in general reserved for internal use!
The value of this parameter is created by the operation "Calibrate workpiece probe"!

54611	MEA_WP_FEED	-	-
mm/min	Measuring feed for calibration	DOUBLE	Immediately
-			
-	40	0, 0, 0, 0, 0, 0, 0, 0...	0 100000 7/7 U

Description: Measure workpiece measuring feed for calibration
This measuring feed is used for all subsequent workpiece measuring programs in conjunction with the probe field.

54615	MEA_CAL_EDGE_BASE_AX1	-	-
mm	Calibration groove base of the 1st measuring axis	DOUBLE	Immediately
-			
-	3	0, 0, 0	-100000 100000 7/7 U

Description: Calibration groove base of the 1st measuring axis (abscissa, Z at G18)
This parameter is a geometrical component of the calibration groove and must be supplied by the user!

54617	MEA_CAL_EDGE_PLUS_DIR_AX1	-	-
mm	Calibration groove edge in positive direction of the 1st measuring axis	DOUBLE	Immediately
-			
-	3	0, 0, 0	-100000 100000 7/7 U

Description: Calibration groove edge in positive direction of the 1st measuring axis (abscissa, Z at G18)
This parameter is a geometrical component of the calibration groove and must be supplied by the user!

54618	MEA_CAL_EDGE_MINUS_DIR_AX1	-	-
mm	Calibration groove edge in negative direction of the 1st measuring axis	DOUBLE	Immediately
-			
-	3	0, 0, 0	-100000 100000 7/7 U

Description: Calibration groove edge in negative direction of the 1st measuring axis (abscissa, Z at G18)
This parameter is a geometrical component of the calibration groove and must be supplied by the user!

54619	MEA_CAL_EDGE_BASE_AX2	-	-
mm	Calibration groove base of the 2nd measuring axis	DOUBLE	Immediately
-			
-	3	0, 0, 0	-100000 100000 7/7 U

Description: Calibration groove base of the 2nd measuring axis (ordinate, X at G18)
This parameter is a geometrical component of the calibration groove and must be supplied by the user!

54620	MEA_CAL_EDGE_UPPER_AX2	-	-
mm	Calibration groove upper edge of the 2nd measuring axis	DOUBLE	Immediately
-			
-	3	0, 0, 0	-100000 100000 7/7 U

Description: Calibration groove upper edge of the 2nd measuring axis (ordinate, X at G18)
This parameter is a geometrical component of the calibration groove and must be supplied by the user!

54621	MEA_CAL_EDGE_PLUS_DIR_AX2			-	-	
mm	Calibration groove edge in positive direction of the 2nd measuring axis			DOUBLE	Immediately	
-						
-	3	0, 0, 0	-100000	100000	7/7	U

Description: Calibration groove edge in positive direction of the 2nd measuring axis (ordinate, X at G18)
This parameter is a geometrical component of the calibration groove and must be supplied by the user!

54622	MEA_CAL_EDGE_MINUS_DIR_AX2			-	-	
mm	Calibration groove edge in negative direction of the 2nd measuring axis			DOUBLE	Immediately	
-						
-	3	0, 0, 0	-100000	100000	7/7	U

Description: Calibration groove edge in negative direction of the 2nd measuring axis (ordinate, X at G18)
This parameter is a geometrical component of the calibration groove and must be supplied by the user!

54625	MEA_TP_TRIG_MINUS_DIR_AX1			-	-	
mm	Trigger point of the 1st measuring axis in negative direction			DOUBLE	Immediately	
-						
-	6	0, 0, 0, 0, 0, 0	-100000	100000	7/7	U

Description: Trigger point of the 1st measuring axis in negative direction (abscissa, X at G17, Z at G18)
The trigger point refers to the machine coordinate system (Machine).
Prior to calibration the approximate trigger point must be entered in the machine coordinate system!
The exact value of this parameter is created by the operation "Calibrate workpiece probe"!

54626	MEA_TP_TRIG_PLUS_DIR_AX1			-	-	
mm	Trigger point of the 1st measuring axis in positive direction			DOUBLE	Immediately	
-						
-	6	0, 0, 0, 0, 0, 0	-100000	100000	7/7	U

Description: Trigger point of the 1st measuring axis in positive direction (abscissa, X at G17, Z at G18)
The trigger point refers to the machine coordinate system (Machine).
Prior to calibration the approximate trigger point must be entered in the machine coordinate system!
The exact value of this parameter is created by the operation "Calibrate workpiece probe"!

54627	MEA_TP_TRIG_MINUS_DIR_AX2			-	-	
mm	Trigger point of the 2nd measuring axis in negative direction			DOUBLE	Immediately	
-						
-	6	0, 0, 0, 0, 0, 0	-100000	100000	7/7	U

3.5 Machine and setting data cycles

Description: Trigger point of the 2nd measuring axis in negative direction (ordinate, Y at G17, X at G18)

The trigger point refers to the machine coordinate system (Machine).

Prior to calibration the approximate trigger point must be entered in the machine coordinate system!

The exact value of this parameter is created by the operation "Calibrate workpiece probe"!

54628	MEA_TP_TRIG_PLUS_DIR_AX2			-	-	
mm	Trigger point of the 2nd measuring axis in positive direction			DOUBLE	Immediately	
-						
-	6	0, 0, 0, 0, 0, 0	-100000	100000	7/7	U

Description: Trigger point of the 2nd measuring axis in positive direction (ordinate, Y at G17, X at G18)

The trigger point refers to the machine coordinate system (Machine).

Prior to calibration the approximate trigger point must be entered in the machine coordinate system!

The exact value of this parameter is created by the operation "Calibrate workpiece probe"!

54629	MEA_TP_TRIG_MINUS_DIR_AX3			-	-	
mm	Trigger point of the 3rd measuring axis in negative direction			DOUBLE	Immediately	
-						
-	6	0, 0, 0, 0, 0, 0	-100000	100000	7/7	U

Description: Trigger point of the 3rd measuring axis in negative direction (applicate, Z at G17, Y at G18)

The trigger point refers to the machine coordinate system (Machine).

Prior to calibration the approximate trigger point must be entered in the machine coordinate system!

The exact value of this parameter is created by the operation "Calibrate workpiece probe"!

54630	MEA_TP_TRIG_PLUS_DIR_AX3			-	-	
mm	Trigger point of the 3rd measuring axis in positive direction			DOUBLE	Immediately	
-						
-	6	0, 0, 0, 0, 0, 0	-100000	100000	7/7	U

Description: Trigger point of the 3rd measuring axis in positive direction (ordinate, Y at G17, X at G18)

The trigger point refers to the machine coordinate system (Machine).

Prior to calibration, the approximate trigger point must be entered in the machine coordinate system!

The exact value of this parameter is created by the operation "Calibrate tool probe"!

54631	MEA_TP_EDGE_DISK_SIZE			-	-	
mm	Tool probe edge length/wheel diameter			DOUBLE	Immediately	
-						
-	6	0, 0, 0, 0, 0, 0	0	1000	7/7	U

Description: Effective edge length or grinding wheel diameter of the tool probe.

This data is important for the "Milling" technology when measuring the length of milling tools.

54632	MEA_TP_AX_DIR_AUTO_CAL			-	-	
-	Automatic tool probe calibration, enable axes/directions			DWORD	Immediately	
-						
-	6	133, 133, 133, 133, 133, 133	-	-	7/7	U

Description: Enabling axes and traversing directions for the "Automatic calibration" of milling tool probes in the machine coordinate system (Machine).

The default setting refers in X and Y to the plus and minus directions respectively, in Z only to the minus direction.

The parameter is divided into six components, the functions of which are assigned to calibration data records 1 to 6.

Meaning of the parameter components

Decimal position:

Units 1st geometry axis (X)

Tens: 2nd geometry axis (Y)

Hundreds: 3rd geometry axis (Z)

Value:

=0: axis not enabled

=1: only minus direction possible

=2: only plus direction possible

=3: both directions possible

54633	MEA_TP_TYPE			-	-	
-	Tool probe type cube / wheel / probe head			DOUBLE	Immediately	
-						
-	6	0, 0, 0, 0, 0, 0	0	999	7/7	U

Description: Tool probe type

0: Compatibility (measuring cycles: cube, turning surface shows probe head, milling surface shows wheel)

101: Wheel in XY, working plane G17

201: Wheel in ZX, working plane G18

301: Wheel in YZ, working plane G19

2: Probe head

3: Cube

54634	MEA_TP_CAL_MEASURE_DEPTH			-	-	
mm	Distance between the upper tool probe edge and the lower milling tool edge			DOUBLE	Immediately	
-						
-	6	2, 2, 2, 2, 2	-1000	1000	7/7	U

Description: Distance between the upper tool probe edge and the lower milling tool edge.

For tool probe calibration this distance defines the calibration depth and for milling tool measuring the measuring depth!

This parameter does not apply to turning tool measuring!

54635	MEA_TP_STATUS_GEN			-	-	
-	Calibration status in general			DOUBLE	Immediately	
-						
-	6	0, 0, 0, 0, 0, 0	-	-	7/7	U

3.5 Machine and setting data cycles

Description: Calibration status general, reserved for internal use
The value of this parameter is assigned when the "Calibrate tool probe" procedure is executed.

54636	MEA_TP_FEED	-	-
mm/min	Measuring feed for tool probe calibration in the Machine	DOUBLE	Immediately
-			
-	6	0, 0, 0, 0, 0, 0	0
		100000	7/7
			U

Description: Measuring feed for tool probe calibration in Machine
This measuring feed is used for all subsequent tool measuring programs in conjunction with the probe field.

54640	MEA_TPW_TRIG_MINUS_DIR_AX1	-	-
mm	Trigger point of the 1st measuring axis in negative direction	DOUBLE	Immediately
-			
-	6	0, 0, 0, 0, 0, 0	-100000
		100000	7/7
			U

Description: Trigger point of the 1st measuring axis in negative direction (abscissa, X at G17, Z at G18)
The trigger point refers to the workpiece coordinate system (Work).
Prior to calibration the approximate trigger point must be entered in the workpiece coordinate system!
The exact value of this parameter is created by the operation "Calibrate tool probe"!

54641	MEA_TPW_TRIG_PLUS_DIR_AX1	-	-
mm	Trigger point of the 1st measuring axis in positive direction	DOUBLE	Immediately
-			
-	6	0, 0, 0, 0, 0, 0	-100000
		100000	7/7
			U

Description: Trigger point of the 1st measuring axis in positive direction (abscissa, X at G17, Z at G18)
The trigger point refers to the workpiece coordinate system (Work).
Prior to calibration the approximate trigger point must be entered in the workpiece coordinate system!
The exact value of this parameter is created by the operation "Calibrate tool probe"!

54642	MEA_TPW_TRIG_MINUS_DIR_AX2	-	-
mm	Trigger point of the 2nd measuring axis in negative direction	DOUBLE	Immediately
-			
-	6	0, 0, 0, 0, 0, 0	-100000
		100000	7/7
			U

Description: Trigger point of the 2nd measuring axis in negative direction (ordinate, Y at G17, X at G18)
The trigger point refers to the workpiece coordinate system (Work).
Prior to calibration the approximate trigger point must be entered in the workpiece coordinate system!
The exact value of this parameter is created by the operation "Calibrate tool probe"!

54643	MEA_TPW_TRIG_PLUS_DIR_AX2	-	-
mm	Trigger point of the 2nd measuring axis in positive direction	DOUBLE	Immediately
-			
-	6	0, 0, 0, 0, 0, 0	-100000
		100000	7/7
			U

Description: Trigger point of the 2nd measuring axis in positive direction (ordinate, Y at G17, X at G18)

The trigger point refers to the workpiece coordinate system (Work).

Prior to calibration the approximate trigger point must be entered in the workpiece coordinate system!

The exact value of this parameter is created by the operation "Calibrate tool probe"!

54644	MEA_TPW_TRIG_MINUS_DIR_AX3			-	-	
mm	Trigger point of the 3rd measuring axis in negative direction			DOUBLE	Immediately	
-						
-	6	0, 0, 0, 0, 0, 0	-100000	100000	7/7	U

Description: Trigger point of the 3rd measuring axis in negative direction (applicate, Z at G17, Y at G18)

The trigger point refers to the workpiece coordinate system (Work).

Prior to calibration the approximate trigger point must be entered in the workpiece coordinate system!

The exact value of this parameter is created by the operation "Calibrate tool probe"!

54645	MEA_TPW_TRIG_PLUS_DIR_AX3			-	-	
mm	Trigger point of the 3rd measuring axis in positive direction			DOUBLE	Immediately	
-						
-	6	0, 0, 0, 0, 0, 0	-100000	100000	7/7	U

Description: Trigger point of the 3rd measuring axis in positive direction (applicate, Z at G17, Y at G18)

The trigger point refers to the workpiece coordinate system (Work).

Prior to calibration the approximate trigger point must be entered in the workpiece coordinate system!

The exact value of this parameter is created by the operation "Calibrate tool probe"!

54646	MEA_TPW_EDGE_DISK_SIZE			-	-	
mm	Tool probe edge length/wheel diameter			DOUBLE	Immediately	
-						
-	6	0, 0, 0, 0, 0, 0	0	1000	7/7	U

Description: Effective edge length or grinding wheel diameter of the tool probe.

Milling tools are normally measured with wheel-shaped probes while turning tools are measured with square probes.

54647	MEA_TPW_AX_DIR_AUTO_CAL			-	-	
-	Automatic tool probe calibration, enable axes/directions			DWORD	Immediately	
-						
-	6	133, 133, 133, 133, 133, 133	-	-	7/7	U

Description: Enabling axes and traversing directions for "Automatic calibration" in the workpiece coordinate system (Work) of milling tool probes.

The default setting refers in X and Y to the plus and minus direction respectively, in Z only to the minus direction.

The parameter is divided into six components, the functions of which are assigned to calibration data records 1 to 6.

Meaning of the parameter components

Decimal position:

Units 1st geometry axis (X)

Tens: 2nd geometry axis (Y)

Hundreds: 3rd geometry axis (Z)

3.5 Machine and setting data cycles

Value:

=0: axis not enabled

=1: only minus direction possible

=2: only plus direction possible

=3: both directions possible

54648	MEA_TPW_TYPE	-	-
-	Tool probe type cube / wheel / probe head	DOUBLE	Immediately
-			
-	6	0, 0, 0, 0, 0, 0	-

Description: Tool probe type
 0: Compatibility (measuring cycles: cube, turning interface shows probe head, milling interface shows disc)
 101: Disk in XY, working plane G17
 201: Disk in ZX, working plane G18
 301: Disk in YZ, working plane G19
 2: Probe head
 3: Cube

54649	MEA_TPW_CAL_MEASURE_DEPTH	-	-
mm	Distance between the upper tool probe edge and the lower milling tool edge	DOUBLE	Immediately
-			
-	6	2, 2, 2, 2, 2, 2	0

Description: Distance between the upper tool probe edge and the lower milling tool edge.
 For tool probe calibration this distance defines the calibration depth and for milling tool measuring the measuring depth!
 This parameter does not apply to turning tool measuring!

54650	MEA_TPW_STATUS_GEN	-	-
-	Calibration status in general	DOUBLE	Immediately
-			
-	6	0, 0, 0, 0, 0, 0	-

Description: Calibration status general, reserved for internal use
 The value of this parameter is assigned when the "Calibrate tool probe" procedure is executed.

54651	MEA_TPW_FEED	-	-
mm/min	Measuring feed for tool probe calibration in the Work	DOUBLE	Immediately
-			
-	6	0, 0, 0, 0, 0, 0	0

Description: Measuring feed for tool probe calibration in Work
 This measuring feed is used for all subsequent tool measuring programs in conjunction with the probe field.

54652	MEA_INPUT_TOOL_PROBE_SUB	-	-
-	Tool probe available/active on the counterspindle	BYTE	Immediately
-			
-	6	0, 0, 0, 0, 0, 0	0

Description: CNC measurement input for tool probe with reference to the counterspindle

```

$SNS_MEA_INPUT_TOOL_PROBE_SUB[[n]
=0:      Toolsetter no.= n+1, with reference to the main spindle,
        CNC measurement input corresponds to the value of $MCS_MEA_FUNCTION_MASK, bit16
        (Input values 1 to 9 have the same functional effect as input 0!)
=10:     Toolsetter no.= n+1, with reference to the counterspindle,
        units digit =0 corresponds to CNC measurement input 1
=11:     Toolsetter no.= n+1, with reference to the counterspindle,
        units digit =1 corresponds to CNC measurement input 2

```

54670	MEA_CM_MAX_PERI_SPEED	-	-
m/min	Max. permissible peripheral speed of the tool to be measured	DOUBLE	Immediately
-			
-	2	100, 100	0 10000 7/7 U

Description: Max. permissible peripheral speed of the tool to be measured when the spindle rotates.
Monitoring parameter for tool measuring with rotating spindle

54671	MEA_CM_MAX_REVOLUTIONS	-	-
rev/min	Maximum tool speed for tool measuring	DOUBLE	Immediately
-			
-	2	1000, 1000	0 100000 7/7 U

Description: Max. permissible tool speed for tool measuring with rotating spindle.
The speed is automatically reduced when this value is exceeded.
Monitoring parameter for tool measuring with rotating spindle

54672	MEA_CM_MAX_FEEDRATE	-	-
mm/min	Maximum feed for contact of the tool with the probe	DOUBLE	Immediately
-			
-	2	20, 20	0 100000 7/7 U

Description: Max. permissible feed for contact of the tool to be measured with the probe when the spindle rotates.
Monitoring parameter for tool measuring with rotating spindle

54673	MEA_CM_MIN_FEEDRATE	-	-
mm/min	Minimum feed for 1st contact of the tool with the probe	DOUBLE	Immediately
-			
-	2	1, 1	0 100000 7/7 U

Description: Min. feed for first contact of the tool to be measured with the probe when the spindle rotates.
Too small feeds for large tool radii are thus avoided!
Monitoring parameter for tool measuring with rotating spindle

54674	MEA_CM_SPIND_ROT_DIR	-	-
-	Direction of spindle rotation for tool measuring	DOUBLE	Immediately
-			
-	2	4, 4	3 4 7/7 U

Description: Direction of spindle rotation for tool measuring with rotating spindle (default: 4 = M4)
Notice: if the spindle is already rotating when the measuring cycle is called, the direction of rotation is maintained
independently of \$SNS_MEA_CM_SPIND_ROT_DIR!

3.5 Machine and setting data cycles

Monitoring parameter for tool measuring with rotating spindle

54675	MEA_CM_FEEDFACTOR_1	-	-
-	Feedrate factor 1, for tool measuring	DOUBLE	Immediately
-			
-	2	10, 10	-

Description: Feedrate factor 1, for tool measuring with rotating spindle
 =0: single probing with the feedrate calculated by the cycle (but at least with the value of \$SNS_MEA_CM_MIN_FEEDRATE)
 >=1: first probing with calculated feedrate (but at least with the value of \$SNS_MEA_CM_MIN_FEEDRATE).
 Monitoring parameter for tool measuring with rotating spindle

54676	MEA_CM_FEEDFACTOR_2	-	-
-	Feedrate factor 2, for tool measuring	DOUBLE	Immediately
-			
-	2	0, 0	-

Description: Feedrate factor 2, for tool measuring with rotating spindle
 =0: second probing with the feedrate calculated by the cycle (only effective with MEA_CM_FEEDFACTOR_1 > 0)
 >=1: second probing with calculated feedrate, feedrate factor 2
 Third probing with calculated feedrate (tool speed is influenced by SD54749 \$SNS_MEA_FUNCTION_MASK_TOOL, Bit 12)
 Notice: - Feedrate factor 2 should be smaller than feedrate factor 1!
 - If the value of feedrate factor 2 is 0, a third probing will not be performed!
 Monitoring parameter for tool measuring with rotating spindle

54677	MEA_CM_MEASURING_ACCURACY	-	-
mm	Required measuring accuracy, for tool measuring	DOUBLE	Immediately
-			
-	2	0.005, 0.005	0

Description: Required measuring accuracy for tool measuring
 The value of this parameter always refers to the last contact of the tool with the probe!
 Monitoring parameter for tool measuring with rotating spindle

54689	MEA_T_PROBE_MANUFACTURER	-	-
-	Tool probe type (manufacturer)	BYTE	Immediately
-			
-	-	0	0

Description: Tool probe type (manufacturer)
 These indications are required for tool measuring with rotating spindle.
 =0: no indication
 =1: TT130 (Heidenhain)
 =2: TS27R (Renishaw)

54691	MEA_T_PROBE_OFFSET	-	-
-	Measurement result offset for tool measuring	BYTE	Immediately
-			
-	-	0	0
-	-	2	7/5
-	-	U	

Description: Measurement result offset for tool measuring with rotating spindle.
 =0: no offset
 =1: cycle-internal offset (only effective with SD54690
 \$SNS_MEA_T_PROBE_MANUFACTURER<>0)
 =2: offset through user-defined offset table

54692	MEA_T_CIRCULAR_ARC_DIST	-	-
mm	Distance between meas. pts with meas. function "Check teeth individually"	DOUBLE	Immediately
-			
-	-	0.25	0
-	-	5	7/7
-	-	U	

Description: The data value is used for measuring the tool radius with the function "Check teeth individually".
 The distance (measured at the circumference of the tool) between the points at which measurements are made to find the "highest point on the longest tooth" must be entered.
 If the data value is ZERO, then the search for the "highest point on the longest tooth" is not made with a stationary spindle,
 instead the value is measured by sampling while the spindle is rotating.

54693	MEA_T_MAX_STEPS	-	-
-	Max. number of contacts for measuring function "Check teeth individually"	BYTE	Immediately
-			
-	-	10	0
-	-	15	7/7
-	-	U	

Description: Maximum number of contacts for finding the "highest point on the longest tooth" when measuring the tool radius.
 If the data value is ZERO, then the search for the "highest point on the longest tooth" is not made with a stationary spindle,
 instead the value is measured by sampling while the spindle is rotating.

54695	MEA_RESULT_OFFSET_TAB_RAD1	-	-
mm	Offset table (measure tool radius with rotating spindle)	DOUBLE	Immediately
-			
-	5	0, 0, 0, 0, 0	-
-	-	-	7/5
-	-	U	

Description: Parameter for user-defined measurement result offset for tool measuring with rotating spindle
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD1[0] ... this element always has value ZERO
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD1[1] ... 1st tool radius
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD1[2] ... 2nd tool radius
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD1[3] ... 3rd tool radius
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD1[4] ... 4th tool radius

54696	MEA_RESULT_OFFSET_TAB_RAD2	-	-
mm	Offset table 1st peripheral speed (radius)	DOUBLE	Immediately
-			
-	5	0, 0, 0, 0, 0	-
-	-	-	7/5
-	-	U	

3.5 Machine and setting data cycles

Description: Parameter for user-defined measurement result offset for tool measuring with rotating spindle

\$SNS_MEA_RESULT_OFFSET_TAB_RAD2[0] ... 1st peripheral speed
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD2[1] ... offset value for radius regarding 1st radius and 1st peripheral speed
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD2[2] ... offset value for radius regarding 2nd radius and 1st peripheral speed
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD2[3] ... offset value for radius regarding 3rd radius and 1st peripheral speed
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD2[4] ... offset value for radius regarding 4th radius and 1st peripheral speed

54697	MEA_RESULT_OFFSET_TAB_RAD3			-	-	
mm	Offset table 2nd peripheral speed (radius)			DOUBLE	Immediately	
-						
-	5	0, 0, 0, 0, 0	-	-	7/5	U

Description: Parameter for user-defined measurement result offset for tool measuring with rotating spindle

\$SNS_MEA_RESULT_OFFSET_TAB_RAD3[0] ... 2nd peripheral speed
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD3[1] ... offset value for radius regarding 1st radius and 2nd peripheral speed
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD3[2] ... offset value for radius regarding 2nd radius and 2nd peripheral speed
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD3[3] ... offset value for radius regarding 3rd radius and 2nd peripheral speed
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD3[4] ... offset value for radius regarding 4th radius and 2nd peripheral speed

54698	MEA_RESULT_OFFSET_TAB_RAD4			-	-	
mm	Offset table 3rd peripheral speed (radius)			DOUBLE	Immediately	
-						
-	5	0, 0, 0, 0, 0	-	-	7/5	U

Description: Parameter for user-defined measurement result offset for tool measuring with rotating spindle

\$SNS_MEA_RESULT_OFFSET_TAB_RAD4[0] ... 3rd peripheral speed
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD4[1] ... offset value for radius regarding 1st radius and 3rd peripheral speed
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD4[2] ... offset value for radius regarding 2nd radius and 3rd peripheral speed
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD4[3] ... offset value for radius regarding 3rd radius and 3rd peripheral speed
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD4[4] ... offset value for radius regarding 4th radius and 3rd peripheral speed

54699	MEA_RESULT_OFFSET_TAB_RAD5			-	-	
mm	Offset table 4th peripheral speed (radius)			DOUBLE	Immediately	
-						
-	5	0, 0, 0, 0, 0	-	-	7/5	U

Description: Parameter for user-defined measurement result offset for tool measuring with rotating spindle

\$SNS_MEA_RESULT_OFFSET_TAB_RAD5[0] ... 4th peripheral speed
 \$SNS_MEA_RESULT_OFFSET_TAB_RAD5[1] ... offset value for radius regarding 1st radius and 4th peripheral speed

`$$SNS_MEA_RESULT_OFFSET_TAB_RAD5[2]` ... offset value for radius regarding 2nd radius and 4th peripheral speed
`$$SNS_MEA_RESULT_OFFSET_TAB_RAD5[3]` ... offset value for radius regarding 3rd radius and 4th peripheral speed
`$$SNS_MEA_RESULT_OFFSET_TAB_RAD5[4]` ... offset value for radius regarding 4th radius and 4th peripheral speed

54700	MEA_RESULT_OFFSET_TAB_RAD6			-	-	
mm	Offset table 5th peripheral speed (radius)			DOUBLE	Immediately	
-						
-	5	0, 0, 0, 0, 0	-	-	7/5	U

Description: Parameter for user-defined measurement result offset for tool measuring with rotating spindle

`$$SNS_MEA_RESULT_OFFSET_TAB_RAD6[0]` ... 5th peripheral speed
`$$SNS_MEA_RESULT_OFFSET_TAB_RAD6[1]` ... offset value for radius regarding 1st radius and 5th peripheral speed
`$$SNS_MEA_RESULT_OFFSET_TAB_RAD6[2]` ... offset value for radius regarding 2nd radius and 5th peripheral speed
`$$SNS_MEA_RESULT_OFFSET_TAB_RAD6[3]` ... offset value for radius regarding 3rd radius and 5th peripheral speed
`$$SNS_MEA_RESULT_OFFSET_TAB_RAD6[4]` ... offset value for radius regarding 4th radius and 5th peripheral speed

54705	MEA_RESULT_OFFSET_TAB_LEN1			-	-	
mm	Offset table (measure tool length with rotating spindle)			DOUBLE	Immediately	
-						
-	5	0, 0, 0, 0, 0	-	-	7/5	U

Description: Parameter for user-defined measurement result offset for tool measuring with rotating spindle

`$$SNS_MEA_RESULT_OFFSET_TAB_LEN1[0]` ... this element always has value ZERO
`$$SNS_MEA_RESULT_OFFSET_TAB_LEN1[1]` ... 1st tool radius
`$$SNS_MEA_RESULT_OFFSET_TAB_LEN1[2]` ... 2nd tool radius
`$$SNS_MEA_RESULT_OFFSET_TAB_LEN1[3]` ... 3rd tool radius
`$$SNS_MEA_RESULT_OFFSET_TAB_LEN1[4]` ... 4th tool radius

54706	MEA_RESULT_OFFSET_TAB_LEN2				-	-	
mm	Offset table 1st peripheral speed (length)				DOUBLE	Immediately	
-							
-	5	0, 0, 0, 0, 0	-	-	7/5	U	

Description: Parameter for user-defined measurement result offset for tool measuring with rotating spindle

`$$SNS_MEA_RESULT_OFFSET_TAB_LEN2[0]` ... 1st peripheral speed
`$$SNS_MEA_RESULT_OFFSET_TAB_LEN2[1]` ... offset value for radius regarding 1st radius and 1st peripheral speed
`$$SNS_MEA_RESULT_OFFSET_TAB_LEN2[2]` ... offset value for radius regarding 2nd radius and 1st peripheral speed
`$$SNS_MEA_RESULT_OFFSET_TAB_LEN2[3]` ... offset value for radius regarding 3rd radius and 1st peripheral speed
`$$SNS_MEA_RESULT_OFFSET_TAB_LEN2[4]` ... offset value for radius regarding 4th radius and 1st peripheral speed

3.5 Machine and setting data cycles

54707	MEA_RESULT_OFFSET_TAB_LEN3			-	-	
mm	Offset table 2nd peripheral speed (length)			DOUBLE	Immediately	
-						
-	5	0, 0, 0, 0, 0	-	-	7/5	U

Description: Parameter for user-defined measurement result offset for tool measuring with rotating spindle

\$SNS_MEA_RESULT_OFFSET_TAB_LEN3[0]	... 2nd peripheral speed
\$SNS_MEA_RESULT_OFFSET_TAB_LEN3[1]	... offset value for radius regarding 1st radius and 2nd peripheral speed
\$SNS_MEA_RESULT_OFFSET_TAB_LEN3[2]	... offset value for radius regarding 2nd radius and 2nd peripheral speed
\$SNS_MEA_RESULT_OFFSET_TAB_LEN3[3]	... offset value for radius regarding 3rd radius and 2nd peripheral speed
\$SNS_MEA_RESULT_OFFSET_TAB_LEN3[4]	... offset value for radius regarding 4th radius and 2nd peripheral speed

54708	MEA_RESULT_OFFSET_TAB_LEN4			-	-	
mm	Offset table 3rd peripheral speed (length)			DOUBLE	Immediately	
-						
-	5	0, 0, 0, 0, 0	-	-	7/5	U

Description: Parameter for user-defined measurement result offset for tool measuring with rotating spindle

\$SNS_MEA_RESULT_OFFSET_TAB_LEN4[0]	... 3rd peripheral speed
\$SNS_MEA_RESULT_OFFSET_TAB_LEN4[1]	... offset value for radius regarding 1st radius and 3rd peripheral speed
\$SNS_MEA_RESULT_OFFSET_TAB_LEN4[2]	... offset value for radius regarding 2nd radius and 3rd peripheral speed
\$SNS_MEA_RESULT_OFFSET_TAB_LEN4[3]	... offset value for radius regarding 3rd radius and 3rd peripheral speed
\$SNS_MEA_RESULT_OFFSET_TAB_LEN4[4]	... offset value for radius regarding 4th radius and 3rd peripheral speed

54709	MEA_RESULT_OFFSET_TAB_LEN5			-	-	
mm	Offset table 4th peripheral speed (length)			DOUBLE	Immediately	
-						
-	5	0, 0, 0, 0, 0	-	-	7/5	U

Description: Parameter for user-defined measurement result offset for tool measuring with rotating spindle

\$SNS_MEA_RESULT_OFFSET_TAB_LEN5[0]	... 4th peripheral speed
\$SNS_MEA_RESULT_OFFSET_TAB_LEN5[1]	... offset value for radius regarding 1st radius and 4th peripheral speed
\$SNS_MEA_RESULT_OFFSET_TAB_LEN5[2]	... offset value for radius regarding 2nd radius and 4th peripheral speed
\$SNS_MEA_RESULT_OFFSET_TAB_LEN5[3]	... offset value for radius regarding 3rd radius and 4th peripheral speed
\$SNS_MEA_RESULT_OFFSET_TAB_LEN5[4]	... offset value for radius regarding 4th radius and 4th peripheral speed

54710	MEA_RESULT_OFFSET_TAB_LEN6	-	-
mm	Offset table 5th peripheral speed (length)	DOUBLE	Immediately
-			
-	5	0, 0, 0, 0, 0	- - 7/5 U

Description: Parameter for user-defined measurement result offset for tool measuring with rotating spindle

\$SNS_MEA_RESULT_OFFSET_TAB_LEN6[0] ... 5th peripheral speed

\$SNS_MEA_RESULT_OFFSET_TAB_LEN6[1] ... offset value for radius regarding 1st radius and 5th peripheral speed

\$SNS_MEA_RESULT_OFFSET_TAB_LEN6[2] ... offset value for radius regarding 2nd radius and 5th peripheral speed

\$SNS_MEA_RESULT_OFFSET_TAB_LEN6[3] ... offset value for radius regarding 3rd radius and 5th peripheral speed

\$SNS_MEA_RESULT_OFFSET_TAB_LEN6[4] ... offset value for radius regarding 4th radius and 5th peripheral speed

54740	MEA_FUNCTION_MASK	-	-
-	Function mask for measuring cycles, workpiece and tool measuring	DWORD	Immediately
-			
-	-	8	- - 7/5 U

Description: Function mask for measuring cycles

Bit 0: Repeat measurement, workpiece measurement with offset in a tool, after tolerance exceeded for dimension difference (TDIF) or confidence range (TSA)

0: When one of the tolerances is exceeded, the measurement is not repeated and an appropriate alarm is displayed (alarm 61303 or 61306).

1: When one of the tolerances is exceeded, a measurement is repeated up to four times.

When, for all repeat measurements, one of the tolerances is exceeded, then an appropriate alarm is displayed (alarm 61303 or 61306).

Bit 1: Repeat measurement, workpiece measurement with offset in a tool, program stop at M0,

After every repeat measurement with tolerance of dimension difference (TDIF) or confidence range (TSA) exceeded and alarm output

Bit 1 only effective in conjunction with bit 0 = 1.

0: If one of the tolerances is exceeded, the measurement is not repeated and an appropriate alarm is displayed (alarm 61303 or 61306).

1: If one of the tolerances is exceeded, the measurement is repeated up to four times.

In the case of a tolerance being repeatedly exceeded, using an appropriate alarm output and M0, the measurement is interrupted (alarm 62303 or 62306).

With "NC-START", the alarm can be acknowledged, and the next repeat measurement started.

Bit 2: Workpiece measurement with offset in a tool, programmed stop at M0 after tolerance exceeded

from lower limit workpiece (TLL) or upper limit workpiece (TUL) and alarm output

0: If one of the tolerances is exceeded, an appropriate reset alarm is displayed (alarm 61304 or 61305). A tool correction (offset) is not executed.

3.5 Machine and setting data cycles

1: If one of the tolerances is exceeded, then using an appropriate alarm output and M0, the sequence is canceled (alarm 62304 or 62305).

Using "NC-START" these alarms can be acknowledged, and the sequence restarted. The correction (offset) in the tool is executed.

Bit 3: Accept the calibrated radius of the workpiece probe in the tool data

0: Do not accept the calibrated radius of the workpiece probe in the tool data.

1: Accept the calibrated radius of the workpiece probe in the tool data.

Bit 4: For mixed technologies, turning-milling or milling-turning, the plane between calibrating and

measuring can be different.

0: When measuring workpieces, it is not permissible to have different planes for calibration and measurement.

If the planes differ, alarm 61341 is output during the cycle runtime.

1: When measuring workpieces, different planes for calibration and measurement are permissible.

For example: Calibration in G17 and measurement under turning in G18.

Bit 16: Repeat measurement, tool measurement, after tolerances of the dimension difference are exceeded (TDIF)

or confidence range (TSA) exceeded

0: If one of the tolerances is exceeded, the measurement is not repeated, and an appropriate alarm is displayed (alarm 61303 or 61306).

1: When one of the tolerances is exceeded, the measurement is repeated up to four times.

If, for all repeat measurements, one of the tolerances is exceeded, then an appropriate alarm is displayed (alarm 61303 or 61306).

Bit 17: Repeat measurement, tool measurement, programmed stop at M0 after tolerance exceeded, dimension difference (TDIF) or confidence range (TSA) and alarm output

0: If one of the tolerances is exceeded, the measurement is not repeated, and an appropriate alarm is displayed (alarm 61303 or 61306).

1: If one of the tolerances is exceeded, the measurement is repeated up to four times.

In the case that the tolerance is exceeded again, using an appropriate alarm output and M0 measurement is canceled (alarm 62303 or 62306).

Using "NC-START", the alarm can be acknowledged, and the next repeat measurement started.

Bit 19: Tool measurement, milling technology, reducing the spindle speed at the last probing

0: The last probing is realized without reducing the spindle speed.

1: At the last probing, the spindle speed is automatically reduced.

54750	MEA_ALARM_MASK	-	-
-	Expert mode for cycle alarms	DWORD	Immediately
-			
-	-	0	-

Description:

Bit 2: With special transformations (e.g. robot transformations) it may be useful to deactivate the traversing distance reduction of the measurement block related to the software limit positions, and the corresponding alarms.

Bit 3 - 15 Reserved for workpiece measurement

Bit 16: Tool, extended error reaction

=0: No extended error reaction

=1: CUST_MEACYC is called at the end of the measuring cycle before the alarm output

Bit 17: Tool, extended error reaction with the action alarm output
 =0: Alarm output
 =1: Alarm is not output
 Bit 17 is effective only in conjunction with bit 16.
 Bits 18-31 Reserved for tool measurement

54760	MEA_FUNCTION_MASK_PIECE	-	-
-	Setting f. input screen, measuring cycles in Automatic, workpiece measuring	DWORD	Immediately
-			
-	-	131586	-
-	-	-	-
-	-	7/5	U

Description: Setting for the input screen, measuring cycles in automatic, workpiece measurement

Bit1 Display Selection of softkey 3D measurement
 Bit3 Enable Selection of probe calibration data field
 Bit4 Select Calibrate input measuring feed 1)
 Bit6 Enable Selection of WO compensation in basic frame (SETFRAME)
 Bit7 Enable Selection of WO compensation in channel-specific basic frame
 Bit8 Enable Selection of WO compensation in global basic frame
 Bit9 Enable Selection of WO compensation in settable frame
 Bit10 Enable Selection of WO compensation, coarse and fine
 Bit11 Select Tool offset geometry and wear
 Bit12 Select Tool offset, not inverted and inverted
 Bit13 Select Tool offset L1, R or L1, L2, L3 R
 Bit14 Select Tool offset work offset (_TZL)
 Bit15 Select Tool offset dimensional difference check (_TDIF)
 Bit16 Select Workpiece measurement with spindle reversal
 Bit17 Select Align workpiece probe in switching direction
 Bit18 Select Number of measurements (_NMSP)
 Bit19 Select Offset with averaging (_TMV) 1)
 Bit20 Select Empirical values (_EVNUM)
 Bit21 Select Additive setup offset
 Bit22 Select Calibrate to unknown or known center point
 Bit24 Select Calibrate with/without positional deviation
 Bit25 Enable Select Work offset when measuring the angularity of the spindle
 Bit26 Select Do not enable tool offset
 Bit27 Do not enable: Select tolerance of linear vectors with measurement of complete kinematics
 Bit28 Enable Select adapt tool length
 If WO compensation bit 6..10 is not selected, then list "Measure only"..
 If WO compensation bit 6..10 is selected, then always also list compensation in active WO in the input screen
 For averaging, display the following parameters: _K _TMV, _EVNUM
 1) Input measuring feed applies to automatic and JOG

54762	MEA_FUNCTION_MASK_TOOL	-	-
-	Setting for input screen, measuring cycles in Automatic, tool measuring	DWORD	Immediately
-			
-	-	0	-
-	-	-	-
-	-	7/5	U

Description: Setting for input screen, Measuring cycles in Automatic, Tool measurement

3.5 Machine and setting data cycles

54762 MEA_FUNCTION_MASK_TOOL

- Bit3 Enable selection of tool probe calibration data field
 Bit4 Select Calibrate input measuring feed (VMS) 1)
 Bit5 Select Input feed and spindle speeds for contacting
 Bit7 Select Measure in Machine and Work
 Bit8 Select Measure absolute and incremental
 Bit9 Select Tool offset geometry and wear
 Bit10 Select measuring function "Check teeth individually"
 Bit11 Select Spindle reversal when calibrating on the plane
 Bit12 Select Number of measurements (_NMSP)
 Bit13 Select Empirical values (_EVNUM)
 Bit14 Select offset correction with selection of direction
 1) Measuring feed input applies to Automatic and JOG

54764	MEA_FUNCTION_MASK_TURN	-	-
-	Setting for input screen, Measuring cycles in Automatic, Workpiece turning	DWORD	Immediately
-			
-	-	0	-

Description: 54764 MEA_FUNCTION_MASK_TURN
 Setting for input screen, Measuring cycles Turning in Automatic
 Bit0 Measure inside/outside diameter with reversal
 Bit1 Measure inside/outside diameter "travel under turning center"?

54780	J_MEA_FUNCTION_MASK_PIECE	-	-
-	Settings for input screen Workpiece measurement in JOG	DWORD	Immediately
-			
-	-	131584	-

Description: Settings for input screen Workpiece measuring in JOG
 Bit2 Activate compensation for electronic workpiece probe
 Bit3 Select probe calibration data field, enable
 Bit5 Select W0 as basis for measuring
 Bit6 Select W0 compensation in basic frame, enable
 Bit7 Select W0 compensation in channel basic frame, enable
 Bit8 Select W0 compensation in global basic frame, enable
 Bit9 Select W0 compensation in settable frame, enable
 Bit16 Select Workpiece measurement with spindle reversal
 Bit17 Select Align workpiece probe in switching direction
 Bit28 Select adapt tool length, enable

54782	J_MEA_FUNCTION_MASK_TOOL	-	-
-	Settings for input screen Tool measuring in JOG	DWORD	Immediately
-			
-	-	0	-

Description: Settings for input screen Tool measuring in JOG
 Bit2 Enable automatic tool measurement
 Bit3 Enable selection of tool probe calibration data field
 Bit10 Select measuring function "Check teeth individually"
 Bit 11 Select spindle reversal when calibrating on the plane

55200	MAX_INP_FEED_PER_REV	-	-
mm/rev	Upper limit feedrate/rev	DOUBLE	Immediately
-	-	-	-
-	-	1	0
-	-	15	7/4
-	-	-	M

Description: Feedrate input upper limit for mm/rev

55201	MAX_INP_FEED_PER_TIME	-	-
mm/min	Upper limit feedrate/min	DOUBLE	Immediately
-	-	-	-
-	-	10000	-
-	-	-	7/4
-	-	-	M

Description: Feedrate input upper limit for mm/min

55202	MAX_INP_FEED_PER_TOOTH	-	-
mm	Upper limit feedrate/tooth	DOUBLE	Immediately
-	-	-	-
-	-	1	0
-	-	5	7/4
-	-	-	M

Description: Feedrate input upper limit for mm/tooth

55212	FUNCTION_MASK_TECH_SET	-	-
-	Function mask Cross-technology	BYTE	Immediately
-	-	-	-
-	-	6	-
-	-	-	7/4
-	-	-	M

Description: Function mask for all technologies
 Bit 0: Tool preselection active
 Bit 1: Calculate thread depth from thread pitch
 Bit 2: Refer to Table for thread diameter and depth
 Bit 3: Delete programs generated from contour cycles (CYCLE63, CYCLE64, CYCLE952)
 0: Generated programs are not deleted (compatibility as before)
 1: Generated programs are deleted immediately after execution from the calling cycle

55214	FUNCTION_MASK_MILL_SET	-	-
-	Function mask for milling	DWORD	Immediately
-	-	-	-
-	-	5	-
-	-	-	7/4
-	-	-	M

Description: Function mask for milling
 Bit 0: Default setting - milling cycles with synchronous operation
 Bit 2: Depth calculation in milling cycles without parameter SC
 Bit 3: Deactivation of alarm 61012 Different scaling in the level for cycles Pocket 3 and 4, Slot1 and Longhole

55216	FUNCTION_MASK_DRILL_SET	-	-
-	Function mask for drilling	DWORD	Immediately
-	-	-	-
-	-	24	-
-	-	-	7/4
-	-	-	M

Description: Function mask for drilling
 Bit 0: Tapping CYCLE84: Reverse direction of spindle rotation during cycle

3.5 Machine and setting data cycles

Bit 1: Boring CYCLE86: Take into consideration rotation of the tool plane when positioning the spindle

Bit 2: Boring CYCLE86: When positioning the spindle, take into account swiveled table kinematics (toolholder)

Bit 3: Tapping CYCLE84: Monitoring machine data 31050 and 31060 of the spindle

Bit 4: Tapping CYCLE840: Monitoring machine data 31050 and 31060 of the spindle

Bit 6: Boring CYCLE86: Adapt spindle position to the orientation of the tool

Tool orientation can be realized using TOOLCARR or TRAORI before the cycle is called.

If bit6=1, bits 1 and 2 are no longer effective.

Bit 7: Boring CYCLE86: Adapt the direction of the retraction path in the plane to active mirroring

0: Retraction in the plane is realized as programmed

1: When mirroring is active, when retracting in the plane, the direction is adapted in the cycle to the active mirroring.

55218	FUNCTION_MASK_TURN_SET	-	-
-	Function mask Turning	DWORD	Immediately
-			
-	-	1	-

Description:

Function mask for turning

Bit 0: New thread table for thread cutting

Bit 1: Reserved (CYCLE93)

Bit 2: Reserved (CYCLE93)

Bit 3: Chamfer in CYCLE930 as chamfer length (CHF)

Bit 4: Retraction from inside machining (CYCLE951)

0: Compatibility as before

If the necessity for rounding the corner is detected in the cycle, the tool is retracted from the inside machining, otherwise it is not.

1: It is generally retracted from the inside machining in the cutting axis.

Bit 5: Disable new smoothing behavior in thread cutting cycles

0: The new smoothing behavior is active in the threading cycles between thread blocks (G33, G34, G35 ...).

This improves the dynamic response adaptation in thread blocks that serve for run-in, run-out or as a transition element of the thread

by using a larger proportion of the block length for the dynamic response adaptation.

The prerequisite for this function is the setting data setting SD 42010 \$SSC_THREAD_RAMP_DISP[2]=-1.

1: The new smoothing behavior is not active between thread blocks (compatibility).

55220	FUNCTION_MASK_MILL_TOL_SET	-	-
-	Function mask for high-speed settings CYCLE832	DWORD	Immediately
-			
-	-	0	-

Description:

Function mask for high-speed settings CYCLE832

Bit 0: Display input fields technology

=0: Hide input fields technology

=1: Display input fields technology

Bit 1: Enter orientation tolerance (OTOL) as factor of tolerance (CTOL) or enter directly

Bit 1 is only relevant for machines in which orientation transformation has been setup

=0: Orientation tolerance (OTOL) is calculated as factor of the entered tolerance

=1: Enter orientation tolerance (OTOL) directly into the input screen

The factor to calculate the orientation tolerance is saved in the following setting data

\$SCS_MILL_TOL_FACTOR_ROUGH for the machining type, roughing G group 59 DYNROUGH

\$SCS_MILL_TOL_FACTOR_SEMIFIN for the machining type, semi-finishing G group 59 DYNSEMIFIN

\$SCS_MILL_TOL_FACTOR_FINISH for the machining type, finishing G group 59 DYNFINISH

\$SCS_MILL_TOL_FACTOR_FINEFIN for the machining type, finishing G group 59 DYNPREC

Bit 2: A mold-making function can be selected in the High Speed Settings mask

=0: The best available mold-making function is used automatically

- Top Surface option not active -> Advanced Surface
- Top Surface option active -> Top Surface

=1: The mold-making function (Advanced Surface or Top Surface) can be selected in the mask (only if the Top Surface option is active)

Bit 3: High Speed Settings mask without Advanced Surface option

=0: The High Speed Settings mask is only offered with the Advanced Surface option

=1: The High Speed Settings mask is also offered without the Advanced Surface option

Bit 4: Display smoothing selection

=0: Do not display smoothing selection (corresponds to smoothing = yes)

=1: Display smoothing selection

55221	FUNCTION_MASK_SWIVEL_SET			-	-	
-	Function mask for swivel CYCLE800			DWORD	Immediately	
-						
-	-	256	-	-	7/3	M

Description:

Function mask for swivel CYCLE800

The settings of the function mask (bits 0 to 4) for swivel act on all swivel data records

Bit 0: Show "No swivel" input field

=0: Hide "No swivel" input field

=1: Show "No swivel" input field

Bit 1: Retract "fixed point 1/2" instead of "Z", "Z XY"

=0: Selection text retract "Z" or retract "Z XY"

=1: Selection text retract "fixed point 1" or retract "fixed point 2"

Bit 2: Permit selection of "deselection" of the swivel data record

=0: Do not permit selection of "deselection" of the swivel data record (hide)

=1: Permit selection of "deselection" of the swivel data record

Bit 3: Show active swivel plane under swivel in JOG

=0: Hide active swivel plane under swivel in JOG

=1: Show active swivel plane under swivel in JOG

Bit 4: Evaluate input values for swiveling in the pole position of the machine kinematics

=0: Evaluation of the input values with swiveling in pole position

=1: No evaluation of the input values with swiveling in pole position (compatibility)

Starting from the initial position of the machine kinematics, the input values when swiveling are evaluated so that continuous swiveling around the pole axis is possible

3.5 Machine and setting data cycles

Pole axis is the rotary axis of the swivel data record that rotates around the tool axis

Example: rotary axis C rotates around Z for G17./

Additional settings of the pole axis:

Angular range (traversing range) of >360 degrees in the swivel data record

Bit 5 Align tool (turning technology) using frame calculation (TCOFRY) or absolute (TCOABS)

The tool orientation of the orientable tool carrier is calculated

either using a frame calculation (TCOFRY for G18) or in absolute terms with TCOABS

For B axis kinematics of a turning machine, the tool spindle in the initial setting of the kinematics

can be set up parallel to either Z or to X. See also "Swivel data" under Commissioning.

For new systems being commissioned, it is recommended you set bit 5=1:

=0: Align tool using frame calculation (TCOFRY for G18, compatibility)

=1: Align tool absolutely (TCOABS)

Bit 6: Do not offer "direct" swivel mode under swivel in JOG

=0: "Direct" swivel mode is offered under swivel in JOG

=1: "Direct" swivel mode is not offered under swivel in JOG

Bit 7: Swivel plane: Direction selection in initial setting of the kinematics

Behavior with swivel plane in initial setting of the kinematics if the NCK calculates two solutions:

=0 With selected direction + or -, both calculated solutions of the rotary axes are approached. (Compatibility)

=1 With selected direction + or -, only one of the calculated solutions of the rotary axes is approached.

Compatibility for PowerLine up to SW 7.x and for SolutionLine up to SW 1.x

Bit 8: Work offset of the rotary axes of the swivel data record traversed as an offset

=0 Work offset of the rotary axes of the swivel data record is only taken into account in the WCS (compatibility)

=1 Work offset of the rotary axes of the swivel data record traversed as an offset

Setting is in conjunction with MD21186 \$MC_TOCARR_ROT_OFFSET_FROM_FR

Bit 9: Swivel data set TC permanently assigned to the tool

=0 Display number of the swivel data record TC

=1 Do not display number of the swivel data record TC

Assignment of the swivel data record to the tool is performed in SGUD_TC_GNO

if technology cylindrical grinding is set in MD52200 \$MCS_TECHNOLOGY =3

Example:

_TC_GNO can be written by the machine manufacturer in the tool change program L6

Bit 10: Swivel plane: Show input field "positioning direction"

=0: The input field "positioning direction" is hidden.

=1: The input field "positioning direction" is displayed with swivel tables and swivel head / table combinations.

Bit 11: Positioning of both solutions of an AB kinematics

=0 Compatibility. Positioning of only one solution with specific swivel angles

=1 Positioning of both solutions calculated by the NCK

Bit11 should be set =1 with kinematics, on which - in the basic position - none of the two rotary axes rotates around

the tool axes (AB kinematics with tool axes in Z direction)

Bit 12: Swivel plane, tool alignment: reset behavior taking the rotary axis positions into account

=0 Compatibility. Reset state refers to the end positions of the rotary axes in the swivel data record

=1 Reset state refers to the current positions of the rotary axes in the swivel data record

If bit12=0, a linear axis identifier is written in the parameters \$TC_CARR21/22. The tool carrier is thus initialized with the end positions of the rotary axes (\$TC_CARR13/14) on reset (TCOABS).

If Bit12=1, the names of the rotary axes of the swivel data record are written in the parameters \$TC_CARR21/22.

The tool carrier is thus initialized with the actual values of the rotary axes on reset (TCOABS).

Bit 13: Activation of the extended evaluation of the rotations with axis-by-axis swiveling in the pole position.

=0 No evaluation of the rotations with swiveling in the pole position (compatibility)
The settings of bits 4, 7 and 11 apply

=1 Extended evaluation of the rotations with swiveling in the pole position

With kinematics with 2 rotary axes, one of the rotary axes can be the pole axis. A rotary axis is then in the pole position, if it rotates around the tool axis. In contrast to bit4, the input values are still evaluated if bit13 is set if the 1st rotary axis is not in the initial position.

Example: Table kinematics with 1st rotary axis A (rotates around X) and 2nd rotary axis B (rotates around Y) G17

After axis-by-axis swiveling around Y and then around X=90°, the 2nd rotary axis is in pole position.

Setting for swivel data record: Rotary axis reference must be set to the rotary axis that is not the pole axis (in the example: rotary axis 1).

When the bit is set, the input rotations are evaluated so that continuous swiveling around the pole axis/tool axis is possible. The following applies: the "+" solution of CYCLE800 has no additional rotation, whereas the "-" solution has an additional 180° rotation in the Actframe in the tool axis.

If bit13 is set, the settings of bits 4, 7 and 11 have no effect.

55230	CIRCLE_RAPID_FEED			-	-	
mm/min	Positional feed on circular paths			DOUBLE	Immediately	
-						
-	-	10000	100	100000	7/4	M

Description: Rapid traverse feedrate in mm/min for positioning on circle path

55232	SUB_SPINDLE_REL_POS			-	-	
mm	Retract position Z for counterspindle			DOUBLE	Immediately	
-						
-	-	0	-	-	7/4	M

Description: Z retraction position for the counterspindle

55260	MAJOG_SAFETY_CLEARANCE			-	-	
mm	Safety clearance for machine JOG			DOUBLE	Immediately	
-						
-	-	1	0.1	100	7/4	M

Description: Safety clearance for machine JOG

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55261	MAJOG_RELEASE_PLANE			-	-	
mm	Retraction plane for machine JOG			DOUBLE	Immediately	
-						
-	-	100	-	-	7/4	M

Description: Retraction plane for machine JOG

55300	EASY_SAFETY_CLEARANCE			-	-	
mm	Simple input: Safety clearance			DOUBLE	Immediately	
-						
-	-	1	-	-	7/4	M

Description: Simple input: safety clearance
The input field for the safety clearance is not available in the simple input screens.
Instead, the value of this setting date is always used.

55301	EASY_DWELL_TIME			-	-	
s	Simple input: dwell time			DOUBLE	Immediately	
-						
-	-	0.6	-100	100	7/4	M

Description: Simple input: dwell time in seconds
The input fields for dwell times are not available in the simple input screens.
Instead, the value of this setting data is always used.

55305	EASY_DRILL_DEEP_FD1			-	-	
%	Simple input: percentage 1st feedrate deep-hole drilling			DOUBLE	Immediately	
-						
-	-	90	0	100	7/7	U

Description: Simple input: percentage 1st feedrate deep-hole drilling
The input field for this percentage is not available in the simple input screens.
Instead, the value of this setting data is always used.

55306	EASY_DRILL_DEEP_DF			-	-	
%	Simple input: percentage infeed deep-hole drilling			DOUBLE	Immediately	
-						
-	-	90	0	100	7/7	U

Description: Simple input: percentage infeed deep-hole drilling
The input field for this percentage is not available in the simple input screens.
Instead, the value of this setting data is always used.

55307	EASY_DRILL_DEEP_V1			-	-	
mm	Simple input: min. depth infeed deep-hole drilling			DOUBLE	Immediately	
-						
-	-	1.2	-	-	7/4	M

Description: Simple input: min. depth infeed deep-hole drilling
The input field for the minimum depth infeed is not available in the simple input screens.
Instead, the value of this setting data is always used.

55308	EASY_DRILL_DEEP_V2	-	-
mm	Simple input: absolute retraction value deep-hole drilling	DOUBLE	Immediately
-			
-	-	1.4	-

Description: Simple input: absolute retraction value deep-hole drilling
The input field for the absolute retraction value is not available in the simple input screens.
Instead, the value of this setting data is always used

55309	EASY_THREAD_RETURN_DIST	-	-
mm	Simple input: return distance thread tapping	DOUBLE	Immediately
-			
-	-	2	-

Description: Simple input: return distance thread tapping
The input field for the return distance is not available in the simple input screens.
Instead, the value of this setting data is always used.

55400	MILL_ENGRAVE_POINT_RAD	-	-
mm	Engraving cycle CYCLE60: Circ. path radius for generating the char. "point"	DOUBLE	Immediately
-			
-	-	0	0

Description: Input value equals zero: The character "point" is realised by a simple linear insertion movement of the tool
(Default setting for conventional engraving tools, compatibility).
Input value greater than zero: The character "point" is executed as a circle with the radius value from this setting data
(Setting for certain special tools).

55410	MILL_SWIVEL_ALARM_MASK	-	-
-	Hide and unhide cycle alarms	DWORD	Immediately
-			
-	-	0	-

Description: Display of cycle alarms CYCLE800, CYCLE996, CYCLE9960
Bit 0: Display alarm 62186: Active work offset G54 ff. and base (basic reference) contain rotations
Bit 1: Display alarm 62187: Active base and basic reference (G500) contain rotations
Bit 2: Display alarm 61148: Swivel plane not possible with active turning tool
Bit 3: Display alarm 61426: Kinematics measurement with CYCLE9960/996. Hide 1 = Alarm 61426

55420	MILL_SWIVEL_RESET_RETRACT	-	-
-	Initial setting swivel: retract	BYTE	Immediately
-			
-	-	0	0

Description: Initial setting swivel: retract
With this setting data, the status adopted by the toggler "Retract" in the mask "Swivel plane" when activating the "Initial setting" softkey can be set:
0 = no change

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- 1 = no
- 2 = Z
- 3 = Z XY
- 4 = Tool direction max.
- 5 = Tool direction inc.

55421	MILL_SWIVEL_RESET_TRACK	-	-
-	Initial setting swivel: tool correction	BYTE	Immediately
-			
-	-	0	0
		2	7/5
			M

Description: Initial setting swivel: Tool correction

With this setting data, the status adopted by the toggler "Tool correction" in the mask "Swivel plane" after activating the softkey "Initial setting" can be set:

- 0 = no change
- 1 = do not correct
- 2 = correct

55422	MILL_SWIVEL_RESET_MODE	-	-
-	Initial setting swivel: swivel mode	BYTE	Immediately
-			
-	-	0	0
		1	7/5
			M

Description: Initial setting for swivel: Swivel mode

With this setting data, the state of the "Swivel mode" toggler in the "Swivel plane" mask can be set with the "Initial setting" softkey:

- 0 = axis by axis
- 1 = direct

55423	MILL_SWIVEL_RESET_SEQ_AXIS	-	-
-	Initial setting swiveling: axis sequence	BYTE	Immediately
-			
-	-	0	0
		5	7/5
			M

Description: Initial setting swiveling: Axis sequence

The status adopted by the "Axis sequence" toggler in the "Swivel plane" mask after activating the "Initial setting" softkey can be set with this setting data:

- 0 = X Y Z
- 1 = X Z Y
- 2 = Y X Z
- 3 = Y Z X
- 4 = Z X Y
- 5 = Z Y X

55441	MILL_TOL_FACTOR_ROUGH	-	-
-	Rotary axes tolerance factor for roughing CYCLE832 of G group 59	DOUBLE	Immediately
-			
-	-	10	0
		1000	7/5
			U

Description: Rotary axes tolerance factor for roughing CYCLE832 of G group 59

55442	MILL_TOL_FACTOR_SEMIFIN	-	-
-	Rotary axes tolerance factor for prefinishing CYCLE832 of G group 59	DOUBLE	Immediately
-			
-	-	10	0
		1000	7/5
			U

Description: Rotary axes tolerance factor for prefinishing CYCLE832 of G group 59

55443	MILL_TOL_FACTOR_FINISH	-	-
-	Rotary axes tolerance factor for finishing CYCLE832 of G group 59	DOUBLE	Immediately
-			
-	-	10	0
		1000	7/5
			U

Description: Rotary axes tolerance factor for finishing CYCLE832 of G group 59

55444	MILL_TOL_FACTOR_PRECISION	-	-
-	Rotary axes tolerance factor for smooth-finishing CYCLE832 of G group 59	DOUBLE	Immediately
-			
-	-	10	0
		1000	7/5
			U

Description: Rotary axes tolerance factor for smooth-finishing CYCLE832 of G group 59

55446	MILL_TOL_VALUE_ROUGH	-	-
mm	Tolerance value for roughing CYCLE832 (High Speed Settings)	DOUBLE	Immediately
-			
-	-	0.1	0
		10	7/5
			U

Description: Tolerance value for roughing CYCLE832

55447	MILL_TOL_VALUE_SEMIFIN	-	-
mm	Tolerance value for roughing CYCLE832 (High Speed Settings)	DOUBLE	Immediately
-			
-	-	0.05	0
		10	7/5
			U

Description: Tolerance value for prefinishing CYCLE832

55448	MILL_TOL_VALUE_FINISH	-	-
mm	Tolerance value for finishing CYCLE832 (High Speed Settings)	DOUBLE	Immediately
-			
-	-	0.01	0
		10	7/5
			U

Description: Tolerance value for finishing CYCLE832

55449	MILL_TOL_VALUE_PRECISION	-	-
mm	Tolerance value for smooth-finishing CYCLE832 (High Speed Settings)	DOUBLE	Immediately
-			
-	-	0.005	0
		10	7/5
			U

Description: Tolerance value for smooth-finishing CYCLE832

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55451	MILL_ORI_TOL_ROUGH	-	-
degrees	Orientation tolerance for roughing CYCLE832 (High Speed Settings)	DOUBLE	Immediately
-			
-	-	1	0
		10	7/5
			U

Description: Tolerance value of tool orientation for roughing CYCLE832

55452	MILL_ORI_TOL_SEMIFIN	-	-
degrees	Orientation tolerance for semi-finishing CYCLE832 (High Speed Settings)	DOUBLE	Immediately
-			
-	-	0.5	0
		10	7/5
			U

Description: Tolerance value of tool orientation for semi-finishing CYCLE832

55453	MILL_ORI_TOL_FINISH	-	-
degrees	Orientation tolerance for finishing CYCLE832 (High Speed Settings)	DOUBLE	Immediately
-			
-	-	0.3	0
		10	7/5
			U

Description: Tolerance value of tool orientation for finishing CYCLE832

55454	MILL_ORI_TOL_PRECISION	-	-
degrees	Orientation tolerance for smooth-finishing CYCLE832 (High Speed Settings)	DOUBLE	Immediately
-			
-	-	0.1	0
		10	7/5
			U

Description: Tolerance value of tool orientation for smooth-finishing CYCLE832

55460	MILL_CONT_INITIAL_RAD_FIN	-	-
mm	Contour pocket milling: approach circle radius finishing	DOUBLE	Immediately
-			
-	-	0	0
		100	7/4
			M

Description: This data affects the radius of the approach circle during contour pocket finishing.
 0: the radius is selected to maintain a safety clearance to the finishing allowance in the starting point.
 >0: the radius is selected to maintain the value of this setting data to the finishing allowance in the starting point.

55481	DRILL_TAPPING_SET_GG12	-	-
-	Setting tapping G group 12: block change behavior at exact stop	DOUBLE	Immediately
-			
-	2	0	0
		3	7/4
			M

Description: Settings for tapping G group 12 cycle CYCLE84 and CYCLE840:
 G group 12: block change behavior at exact stop (G60)

55482	DRILL_TAPPING_SET_GG21	-	-
-	Setting tapping G group 21: acceleration profile	DOUBLE	Immediately
-			
-	2	0	0
		3	7/4
			M

Description: Settings for tapping G group 21 cycle CYCLE84

G group 21: acceleration profile (SOFT, BRISK, ...)

55483	DRILL_TAPPING_SET_GG24	-	-
-	Setting tapping G group 24: precontrol	DOUBLE	Immediately
-			
-	2	0	0
		2	7/4
			M

Description: Settings for tapping G group 24 cycle CYCLE84 and CYCLE840:
G group 24: precontrol (FFWON, FFWOF)

55484	DRILL_TAPPING_SET_MC	-	-
-	Setting tapping: spindle operation at MCALL	DOUBLE	Immediately
-			
-	2	0	0
		1	7/4
			M

Description: Setting for tapping cycle CYCLE84 spindle operation at MCALL
0= reactivate spindle operation at MCALL
1= maintain position-controlled spindle operation at MCALL

55489	DRILL_MID_MAX_ECCENT	-	-
mm	Max. center offset f. center boring	DOUBLE	Immediately
-			
-	-	0.5	0
		10	7/4
			M

Description: Maximum center offset for center boring

55490	DRILL_SPOT_DIST	-	-
mm	Preboring depth drill and thread milling	DOUBLE	Immediately
-			
-	-	1	0
		100	7/4
			M

Description: Preboring depth for drill and thread milling

55500	TURN_FIN_FEED_PERCENT	-	-
%	Roughing feedrate for complete machining in %	BYTE	Immediately
-			
-	-	100	1
		100	7/4
			M

Description: When selecting Complete machining (roughing and finishing), the percentage of the entered feedrate F as specified in this setting data is used for finishing.

55505	TURN_ROUGH_O_RELEASE_DIST	-	-
mm	Return distance stock removal for external machining	DOUBLE	Immediately
-			
-	-	1	-1
		100	7/4
			M

Description: Using this setting data, you enter the clearance, by which the tool is retracted from the contour when removing stock from an outer corner. This is not applicable for removing stock from a contour
1: The safety clearance is used as clearance.

55506	TURN_ROUGH_I_RELEASE_DIST	-	-
mm	Return distance stock removal for internal machining	DOUBLE	Immediately
-			
-	-	0.5	-1
		100	7/4
			M

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Description: Using this setting data, you enter the clearance, by which the tool is retracted from the contour when removing stock from an inner corner. This is not applicable for removing stock from a contour.

-1: The safety clearance is used as clearance.

55510	TURN_GROOVE_DWELL_TIME	-	-
s	Tool clearance time for grooving at the base (neg. value=rotations)	DOUBLE	Immediately
-			
-	-	-1	-100
		100	7/4
			M

Description: If a tool clearance time occurs in a cycle, e.g. deep hole drilling, grooving, the value of this setting data is used

- negative value in spindle revolutions
- positive value in seconds

55540	TURN_PART_OFF_CTRL_DIST	-	-
mm	Path for cut-off check	DOUBLE	Immediately
-			
-	-	0.1	0
		10	7/4
			M

Description: Path for cut-off check

55541	TURN_PART_OFF_CTRL_FEED	-	-
mm/min	Feedrate for cut-off check	DOUBLE	Immediately
-			
-	-	0	-
		-	7/4
			M

Description: Feedrate for cut-off check

55542	TURN_PART_OFF_CTRL_FORCE	-	-
%	Force for cut-off check in %	DOUBLE	Immediately
-			
-	-	10	1
		100	7/4
			M

Description: Force in percent for cut-off check

55543	TURN_PART_OFF_RETRACTION	-	-
mm	Retraction path prior to cut-off with counterspindle	DOUBLE	Immediately
-			
-	-	0	0
		1	7/4
			M

Description: Retraction path prior to cut-off with counterspindle

55550	TURN_FIXED_STOP_DIST	-	-
mm	Counterspindle: path for travel to fixed stop	DOUBLE	Immediately
-			
-	-	10	0.001
		1000	7/4
			M

Description: In this setting data you specify the distance to the programmed target position, after which the counterspindle travels with a special feedrate during travel to fixed stop (see 55551 \$SCS_TURN_FIXED_STOP_FEED).

55551	TURN_FIXED_STOP_FEED	-	-
mm/min	Counterspindle: feedrate for travel to fixed stop	DOUBLE	Immediately
-			
-	-	0	-
		-	7/4
			M

Description: In this setting data you specify the feedrate with which the counterspindle travels to a fixed stop. In setting data 55550 \$SCS_TURN_FIXED_STOP_DIST you specify the distance after which the tool travels in this feedrate.

55552	TURN_FIXED_STOP_FORCE	-	-
%	Counterspindle: force for travel to fixed stop in %	DOUBLE	Immediately
-			
-	-	10	1
		100	7/4
			M

Description: In this setting data you specify at which percentage of the driving force the counterspindle is to stop during travel to fixed stop.

55553	TURN_FIXED_STOP_RETRACTION	-	-
mm	Counterspindle: retraction path prior to chucking after fixed stop	DOUBLE	Immediately
-			
-	-	0	0
		1	7/4
			M

Description: Retraction path prior to chucking after travel to fixed stop

55580	TURN_CONT_RELEASE_ANGLE	-	-
degrees	Contour turning: retraction angle	DOUBLE	Immediately
-			
-	-	45	0
		90	7/4
			M

Description: This setting data defines the angle by which the tool is retracted from the contour during contour turning roughing.

55581	TURN_CONT_RELEASE_DIST	-	-
mm	Contour turning: retraction value	DOUBLE	Immediately
-			
-	-	1	0.01
		10	7/4
			M

Description: This setting data defines the value by which the tool is retracted in both axes during contour turning roughing.

55582	TURN_CONT_TRACE_ANGLE	-	-
degrees	Contour turning: minimum angle for rounding along contour	DOUBLE	Immediately
-			
-	-	5	0
		90	7/4
			M

Description: This setting data specifies the angle between the cutting edge and the contour, at which the contour is rounded in order to remove residual material.

55583	TURN_CONT_VARIABLE_DEPTH	-	-
%	Contour turning: percentage for variable cutting depth	BYTE	Immediately
-			
-	-	20	0
		50	7/4
			M

Description: Percentage for variable cutting depth during contour turning

55584	TURN_CONT_BLANK_OFFSET	-	-
mm	Contour turning: blank allowance	DOUBLE	Immediately
-			
-	-	1	0
		100	7/4
			M

Description: This setting data specifies the distance to the blank, after which contour turning is switched from G0 to G1 in order to adjust any possible blank allowances.

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55585	TURN_CONT_INTERRUPT_TIME	-	-
s	Contour turning: feed interrupt time (neg. values = revolutions)	DOUBLE	Immediately
-			
-	-	-1	-

Description: Feed interrupt time during contour turning, contour grooving and plunge turning

- negative value in spindle revolutions
- positive value in seconds

This setting data is effective only if setting data 55586 is
\$SCS_TURN_CONT_INTER_RETRACTION = 0.

55586	TURN_CONT_INTER_RETRACTION	-	-
mm	Contour turning: retraction path after feed interrupt	DOUBLE	Immediately
-			
-	-	1	0

Description: Retraction path feed interrupt during contour turning, contour grooving and plunge turning:

>0: retraction path after feed interrupt (setting data 55585
\$SCS_TURN_CONT_INTERRUPT_TIME is ineffective!)
=0: no retraction path

55587	TURN_CONT_MIN_REST_MAT_AX1	-	-
%	Contour turning: minimum difference dimension residual machining axis 1	DOUBLE	Immediately
-			
-	-	50	0

Description: This MD defines the limit value for stock removal of residual material in the direction of the 1st axis.

Example:

If this MD is set to 50% and if the finishing allowance is 0.5mm, the residual material which is thinner than 0.25mm is not removed in a separate machining step, but during finishing.

55588	TURN_CONT_MIN_REST_MAT_AX2	-	-
%	Contour turning: minimum difference dimension residual machining axis 2	DOUBLE	Immediately
-			
-	-	50	0

Description: This MD defines the limit value for stock removal of residual material in the direction of the 2nd axis.

Example:

If this MD is set to 50% and if the finishing allowance is 0.5mm, the residual material which is thinner than 0.25mm is not removed in a separate machining step, but during finishing.

55595	TURN_CONT_TOOL_BEND_RETR	-	-
mm	Contour plunge turning: retraction path due to tool bending	DOUBLE	Immediately
-			
-	-	0.1	0

Description: Retraction due to tool bending during plunge turning

55596	TURN_CONT_TURN_RETRACTION	-	-
mm	Contour plunge turning: retraction depth prior to turning	DOUBLE	Immediately
-			
-	-	0.1	0
-	-	1	7/4
-	-	M	

Description: Retraction depth prior to plunge turning

55613	MEA_RESULT_DISPLAY	-	-
-	Selection of measurement result display	BYTE	Immediately
-			
-	-	0	0
-	-	10	7/7
-	-	U	

Description: Measurement results screen display
 =0: No measurement results screen
 =1: The measurement results screen is visible for a fixed time of 8 seconds
 =3: When the measurement results screen is visible, the cycle is stopped by an internal M0;
 on NC start the measuring cycle is resumed and the measurement results screen is deselected.
 =4: The measurement results screen only appears in the case of cycle alarms 61303, 61304, 61305, 61306.

55614	MEA_RESULT_MRD	-	-
-	Program control of the display of the measurement result image MRD	BYTE	Immediately
-			
-	-	1	0
-	-	1	7/7
-	-	U	

Description: Setting of the program control of the display of the measurement result image MRD
 0= Hide measurement result image
 1= Show measurement result image

55618	MEA_SIM_ENABLE	-	-
-	Setting measuring cycles under a simulated environment	BYTE	Immediately
-			
-	-	1	0
-	-	9	7/5
-	-	U	

Description: Setting measuring cycles under a simulated environment
 =0: The measuring cycles are terminated without function.
 =1: The measuring cycles are executed.
 - Simulation in HMI Operate:
 The traversing motion is visualized.
 No measurement results and measurement result display are available.
 - SinuTrain:
 Measurement results and measurement result display are available.
 The traversing motion is visualized using simultaneous recording.
 -For systems, that only operate with simulated axes
 (e.g. virtual machine, test rack):
 Measurement results and measurement results display are available.
 The traversing motion is visualized with simultaneous recording.
 In this case, the following settings must be observed:
 MD10360 \$MN_FASTIO_DIG_NUM_OUTPUTS >=1
 MD13230 \$MN_MEAS_PROBE_SOURCE = 1 to 4

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= 2 to 8: reserved

= 9 internal

55619	MEA_SIM_MEASURE_DIFF			-	-	
mm	Value for simulated error of measurement			DOUBLE	Immediately	
-						
-	-	0	-100	100	7/5	U

Description: With this parameter simulated measurement errors can be specified on the measuring points.
 Provided that SD55618 \$SCS_MEA_SIM_ENABLE=1 is used and that the measuring cycles are executed in a simulated environment of HMI, a measurement difference can be entered in this parameter. The value of the measurement difference must be smaller than the measuring path in parameter _FA!
 Otherwise cycle alarm 61301 "Probe does not switch" is output during active simulation.

55622	MEA_EMPIRIC_VALUE_NUM			-	-	
-	Number of empirical values			DWORD	Immediately	
-						
-	-	20	0	20	7/5	U

Description: Number of empirical values

55623	MEA_EMPIRIC_VALUE			-	-	
mm	Empirical value memory			DOUBLE	Immediately	
-						
-	20	0	-100000	100000	7/7	U

Description: In its default setting the empirical value memory consists of 20 memory elements.
 Using parameter \$SCS_MEA_EMPIRIC_VALUE_NUM the number of memory elements can be defined! Currently, however, these 20 memory elements cannot be changed!
 In the empirical value memory, empirical values can be stored which are cleared with the currently calculated difference between the setpoint and the actual value.
 Using parameter _EVNUM the empirical value element to be cleared is addressed!

55624	MEA_AVERAGE_VALUE_NUM			-	-	
-	Number of mean values			DWORD	Immediately	
-						
-	-	20	0	20	7/5	U

Description: Number of mean values

55625	MEA_AVERAGE_VALUE			-	-	
-	Mean value memory			DOUBLE	Immediately	
-						
-	20	0	-100000	100000	7/7	U

Description: In its default setting the mean value memory consists of 20 memory elements.
 Using parameter \$SCS_MEA_AVERAGE_VALUE_NUM the number of memory elements can be defined! Currently, however, these 20 memory elements cannot be changed!
 In the mean value memory, the mean values calculated in connection with functionality "Automatic tool offset with mean value creation" are stored.

Using parameter `_EVNUM` the mean value element to be used is addressed!

55628	MEA_TP_FEED_MEASURE	-	-
mm/min	Feed for calibrating a tool probe	DOUBLE	Immediately
-	-	-	-
-	-	300	0
-	-	100000	7/7
-	-	-	U

Description: MEA_TP_FEED_MEASURE
Feed for calibrating a tool probe with stationary spindle in AUTO and JOG

55630	MEA_FEED_MEASURE	-	-
mm/min	Feed for calibrating a workpiece probe	DOUBLE	Immediately
-	-	-	-
-	-	300	0
-	-	100000	7/7
-	-	-	U

Description: MEA_FEED_MEASURE
Feed for calibrating a workpiece probe in Automatic and JOG

55631	MEA_FEED_MEASURE_DEG	-	-
rev/min	Measurement feedrate of workpiece probe during positioning of a rotary axis	DOUBLE	Immediately
-	-	-	-
-	-	1	0
-	-	100000	7/7
-	-	-	U

Description: Measurement feedrate of workpiece probe during positioning of a rotary axis

55632	MEA_FEED_RAPID_IN_PERCENT	-	-
%	Rapid traverse velocity in per cent, for intermediate positioning	DOUBLE	Immediately
-	-	-	-
-	-	50	0
-	-	100	7/7
-	-	-	U

Description: Traverse velocities for positioning in the measuring cycle between the measuring positions,
with rapid traverse velocity in per cent, with collision detection not active
Note:
If necessary, adapt the value of the rapid traverse velocity in per cent to the probe type used and to the machine characteristics! This means that the maximum deflection of the actual probe type must be considered!!
Explanations:
In the measuring cycles any intermediate positions are calculated prior to the actual set of measurements. These positions can be approached

- with collision detection (SD55740 \$SCS_MEA_FUNCTION_MASK Bit0/Bit16=1 or
- without collision detection (SD55740 \$SCS_MEA_FUNCTION_MASK Bit0/Bit16=0).

Depending on this setting different velocities are used for the approach:

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- with collision detection (SD55740 \$SCS_MEA_FUNCTION_MASK Bit0/Bit16=1):
With SD55634 \$SCS_MEA_FEED_PLAN_VALUE the traversing feed is performed in the plane and
with SD55636 \$SCS_MEA_FEED_FEEDAX_VALUE during traversing in the feed axis (applicate).
If the probe switches when these intermediate positions are approached, the movement is stopped and the alarm "Probe collision" is output.
- without collision detection (SD55740 \$SCS_MEA_FUNCTION_MASK Bit0/Bit16=0):
The intermediate positions are approached with the maximum axis velocity (rapid traverse) in per cent as specified in SD55632 \$SCS_MEA_FEED_RAPID_IN_PERCENT.
With SD55632 \$SCS_MEA_FEED_RAPID_IN_PERCENT=0 and SD55632 \$SCS_MEA_FEED_RAPID_IN_PERCENT=100 the maximum axis velocity is effective.

55634	MEA_FEED_PLANE_VALUE			-	-	
mm/min	Traverse velocity for intermediate positioning in the plane			DOUBLE	Immediately	
-						
-	-	1000	0	100000	7/7	U

Description: MEA_FEED_MEASURE
Traversing velocity for the intermediate positioning in the plane in Automatic and JOG

55636	MEA_FEED_FEEDAX_VALUE			-	-	
mm/min	Positioning velocity in the infeed axis			DOUBLE	Immediately	
-						
-	-	1000	0	100000	7/7	U

Description: Traversing speed for intermediate positioning in the measuring cycle in the infeed axis, with or without collision detection

Note:

If necessary, adapt the value of the speed in the infeed axis to the probe type used and to the

machine characteristics! This means that the maximum deflection of the actual probe type must be considered!!

Explanations:

In the measuring cycles any intermediate positions are calculated prior to the actual set of measurements. These positions can be approached

- with collision detection (SD55740 \$SCS_MEA_FUNCTION_MASK Bit0/Bit16=1) or
- without collision detection (SD55740 \$SCS_MEA_FUNCTION_MASK Bit0/Bit16=0).

Depending on this setting different speeds are used for the approach:

- with collision detection (SD55740 \$SCS_MEA_FUNCTION_MASK Bit0/Bit16=1):
With SSD55636 \$SCS_MEA_FEED_FEEDAX_VALUE the traversing feed is performed in the infeed axis (applicate).
If the probe switches when these intermediate positions are approached, the movement is stopped and the alarm "Probe collision" is output.
- without collision detection (SD55740 \$SCS_MEA_FUNCTION_MASK Bit0/Bit16=0):
The intermediate positions are approached with the maximum axis velocity (rapid traverse) in per cent as specified in SD55632 \$SCS_MEA_FEED_RAPID_IN_PERCENT.
With SD55632 \$SCS_MEA_FEED_RAPID_IN_PERCENT=0 and SD55632 \$SCS_MEA_FEED_RAPID_IN_PERCENT=100 the maximum axis velocity is effective.

55637	MEA_FEED_POS_DEG			-	-	
-	Feedrate when positioning the rotary axes between the measurements			DOUBLE	Immediately	
-						
-	-	360	0	100000	7/7	U

Description: Feedrate when positioning a rotary axis between the individual measurements with kinematic measuring (CYCLE9960). The value is always interpreted in degrees/min.

55638	MEA_FEED_FAST_MEASURE	-	-
mm/min	Rapid measuring feed	DOUBLE	Immediately
-			
-	-	900	0
		100000	7/7
			U

Description: Rapid measuring feed
 Note:
 If necessary, adjust the value of the velocity to the probe type used and to the machine characteristics!
 This means that the maximum deflection of the actual probe type must be considered!!
 The use of "Rapid measuring feed" depends of SD55740 \$SCS_MEA_FUNCTION_MASK Bit4!

55640	MEA_FEED_CIRCLE	-	-
mm/min	Circular feed for measuring circle segment and measuring ball / 3 balls	DOUBLE	Immediately
-			
-	-	1000	0
		100000	7/7
			U

Description: MEA_FEED_CIRCLE
 Circular feed for measuring circle segment and measuring ball / 3 balls

55642	MEA_EDGE_SAVE_ANG	-	-
degrees	Additional safe angle for measuring corner	DOUBLE	Immediately
-			
-	-	0	0
		10	7/7
			U

Description: Set \$SCS_MEA_EDGE_SAVE_ANG=10 for compatibility programs.
 The set angle is added to the measured angle as a safety angle.

55644	MEA_KIN_DM_TOL	-	-
mm	Measure kinematics: Tolerance of diameter of calibration ball	DOUBLE	Immediately
-			
-	-	0	0
		1	7/4
			U

Description: Measure kinematics: Tolerance of diameter of calibration ball
 If \$SCS_MEA_KIN_DM_TOL > 0, the measurement of the kinematics (CYCLE996) also checks whether the measured diameter
 of the calibration ball lies within the tolerance value in \$SCS_MEA_KIN_DM_TOL.

55645	MEA_KIN_MODE	-	-
-	Free component of the linear vector	BYTE	Immediately
-			
-	2	0	0
		20	7/4
			M

Description: Free component of the linear vector
 Units digit
 0 = calculate all components of the linear vector
 1 = take over free component for X from \$SCS_MEA_KIN_VALUE
 2 = take over free component for Y from \$SCS_MEA_KIN_VALUE
 3 = take over free component for Z from \$SCS_MEA_KIN_VALUE
 4 = retain free component for X from active transformation
 5 = retain free component for Y from active transformation

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6 = retain free component for Z from active transformation

Data based on kinematic chain:

55645[0] Rotary axis which is closest to the workpiece.

55645[1] Rotary axis which is closest to the tool.

Classic TOOLCARRIER:

Head kinematics

55645[0] Rotary axis one which is closest to the workpiece.

55645[1] Rotary axis two which is closest to the tool.

Mixed or table kinematics

55645[0] Rotary axis one which is closest to the tool.

55645[1] Rotary axis two which is closest to the workpiece.

Tens digit

0x = vector chain closed, only with classic tool carrier (55645[0] for the head chain, 55645[1] for the table chain)

1x = vector chain open, only with classic tool carrier (55645[0] for the head chain, 55645[1] for the table chain)

55646	MEA_KIN_VALUE	-	-
mm	Measure kinematics completely: value of the linear vector	DOUBLE	Immediately
-			
-	2	0	-

Description: Perform complete kinematics measurement: Value of the linear vector

SD55646[0] Value for rotary axis 1

SD55646[1] Value for rotary axis 2

See SD55645

55647	MEA_KIN_MIN_ANG_TRIANGLE	-	-
degrees	Minimum interior angle of the measurement triangle	DOUBLE	Immediately
-			
-	-	10	2

Description: Perform complete kinematics measurement

Valid for 3 measuring points only. Minimum interior angle of the measuring triangle.

Value range 2 to 60 degrees

55648	MEA_KIN_MIN_ANG_POS	-	-
degrees	Minimum angle range when positioning a rotary axis	DOUBLE	Immediately
-			
-	-	10	10

Description: Perform complete kinematics measurement

Minimum measuring range of a rotary axis. If the measuring range of a rotary axis is less than 90°, then inaccuracies caused by measuring inaccuracies in the micrometer range of the probe can be expected.

Value range 10 to 180 degrees

55649	MEA_KIN_BALL_VEC	-	-
-	Perform complete kinematics measurement: Vector of the ball mounting	DOUBLE	Immediately
-			
-	3	0	-

Description: Perform complete kinematics measurement: Vector of the ball mounting. The vector is determined by the ball in the shaft. If this vector is defined, the starting angle of the ball measurement is automatically calculated in CYCLE9960.

55700	MEA_SIMULTAN_LIMIT	-	-
mm	Simultaneous measuring, overrun travel	DOUBLE	Immediately
-			
-	-	1	0.5
-	-	5	7/5
-	-	U	

Description: Maximum permissible difference between switching point of 1st and 2nd probes with simultaneous measuring (MD51740 bit14)

55701	MEA_SIMULTAN_POS_DEV_MAX	-	-
mm	Simultaneous measurement, maximum position deviation between the probes	DOUBLE	Immediately
-			
-	-	0.02	0
-	-	1	7/5
-	-	U	

Description: Maximum permissible difference in position deviation between the 1st and 2nd probes with simultaneous measurement (MD51740 bit14)

55730	MEA_PROTOCOL_USER_EXT	-	-
-	File extension for application protocol	STRING	Immediately
-			
-	-	TXT	-
-	-	-	7/4
-	-	U	

Description: File extension for application protocol

55740	MEA_FUNCTION_MASK	-	-
-	Function mask for measuring cycles, workpiece and tool measuring	DWORD	Immediately
-			
-	-	65537	-
-	-	-	7/4
-	-	M	

Description: Function mask for measuring cycles
 Bit 0: Collision monitoring using workpiece probe for intermediate positioning
 In JOG mode, collision monitoring is always activated.
 0: No collision monitoring
 1: For positioning operations executed by the measuring cycles between the measurement points,
 motion is interrupted, as soon as the probe supplies a switching signal.
 An alarm message is output (Alarm 61302).
 Bit 1: Workpiece measurement with 3D-probe, coupling of the spindle alignment with the coordinate rotation around the
 infeed axis of the active plane (Z axis for G17)
 In JOG mode, the coupling is always activated.
 0: no coupling between the spindle alignment and coordinate rotation
 The trigger data are automatically corrected.
 1: For 3D and star probes (tool type 710, 714) the spindle is aligned depending
 on the coordinate rotation around the infeed axis of the active plane.
 The positioning direction of the spindle is defined by SD55740
 \$SCS_MEA_FUNCTION_MASK bit2.
 Caution
 The coupling or the correction calculation is cancelled via the measuring cycle without issuing an alarm message if one of the following conditions applies:

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- No TRAORI orientation transformation and no tool holder that can be oriented, TCARR (CYCLE800) is active and, in addition to the rotation around Z, additional rotations are active that are not

identical between measurement and calibration.

- The working spindle is not position-controlled (SPOS not possible).

- The spindle position between calibration and measurement is not identical.

Bit 2: Workpiece measurement, for coupling of the spindle position, reverse the positioning direction,

Function refers to SD55740 \$SCS_MEA_FUNCTION_MASK, bit1 = 1

0: Spindle positioning is based on the standard.

1: Spindle positioning is realized in the opposite direction (adapted angular values).

Example:

Angle of the coordinate rotation in the plane 90°

if bit2 = 0, spindle is positioned to 270°

if bit2 = 1, spindle is positioned to 90°

Bit 3: Workpiece measurement, number of repeated measurements if the probe does not switch

In the JOG mode, the measurement is not repeated.

0: Measurements are repeated up to 4 times, then a measuring cycle alarm (alarm 61301) is output.

1: Measurement is not repeated if the probe does not switch, a measuring cycle alarm

is output (alarm 61301).

Bit 4: Workpiece measurement, 1st probing for each measurement with fast measuring feedrate

0: When measuring, the measurement velocity saved in the calibration data is effective.

1: "Fast measuring feed rate (SD 55638 \$SCS_MEA_FEED_FAST_MEASURE)

is used. After the first probing, the probe retracts through 2 mm.

After this, the measurement is realized with the measurement velocity saved in the calibration data.

The "Fast measurement feedrate" function is not executed if the measurement distance is less than 1 mm!

Bit 5: Workpiece measurement, fast retraction after measuring

0: The retraction after measurement is realized with the same velocity as for

intermediate positioning (SD 55634 \$SCS_MEA_FEED_PLANE_VALUE).

Is only active when collision monitoring is active (SD55740 \$SCS_MEA_FUNCTION_MASK, bit0 = 1).

1: The retraction after measurement is realized with the percentage rapid traverse velocity defined in SD 55632 \$SCS_MEA_FEED_RAPID_IN_PERCENT

.

Is only active when collision monitoring is active (SD 55740 \$SCS_MEA_FUNCTION_MASK, bit0 = 1).

Bit 6: Workpiece measurement, probe activation-deactivation while the spindle is being positioned

0: Workpiece probe is not deactivated before positioning the spindle.

1: Spindle positioning is realized centrally in the manufacturer's cycle CUST_MEACYC.

The machine manufacturer has the option of activating and reactivating the probe before and after spindle positioning.

Bit 7: Kinematic measurement, scaling based on the input values of the rotary axis vectors

0: Scaling based on the calculated rotary axis vectors (V1xyz, V2xyz)

1: Scaling based on the rotary axis vectors saved in the swivel data set (V1xyz, V2xyz)

The swivel data set is displayed under start-up, "Swivel cycle data".

Bit 8: Kinematic measurement: measuring with active swivel (TCARR) or active TRAORI

0: Measurement without active swivel (TCARR) or without active TRAORI

In the cycle, when measuring, the corresponding orientation transformation is deactivated, and reactivated after the measurement has been made.

1: Measurement with active swivel (TCARR) or with active TRAORI

For measurement, the corresponding orientation transformation remains active.

If no orientation transformation is active, then alarm 61167 is output.

Bit 9: Measure kinematics, user-specific scaling of rotary axis vectors V1xyz and V2xyz

0: Scaling of rotary axis vectors V1xyz und V2xyz as unit vector

1: User-specific scaling of rotary axis vectors V1xyz and V2xyz

With user-specific scaling, one vector component is always 1 or -1.

The other two vector components are correspondingly converted by a factor.

Bit 10: Complete kinematic measurement with reference

0: Measuring without reference (compatibility)

1: Measuring with reference with swivel heads

The reference comprises the "Measure reference head" functions and "Adjust head to reference head". See CYCLE9960

Bit 11: Measure kinematics, number of measuring points for measuring the calibration ball

0: 10 Measuring points for measuring on circular path (compatibility)

1: 8 Measuring points for measuring on circular path

10 measuring points are always approached for paraxial measurement

Bit 12: Kinematics, change cancel alarms for tolerance monitoring to reset alarms

0: If the tolerance of the linear or rotary axis vector is exceeded, cancel alarm 62317 or. 62318 is output.

1: Instead of the cancel alarms, the reset alarms 61362 and 61363 are output for tolerance monitoring of linear and rotary axis vectors

Bit 13: Kinematics, scaling/fixed value setting of closing vector

0: With the scaling/fixed value setting, the value is set in the vectors written in the kinematics (I2/I3).

1: With the scaling/fixed value setting, the value is set in the closing vector.

Example: Table kinematics, the value for rotary axis 2 is used in I4.

Bit 15: Workpiece measurement, calibration radius with starting point at the center of the ring, JOG mode

0: The starting point for calibration, radius need not be precisely located at the center of the calibration ring.

1: The starting point for calibration, radius must be precisely located at the center of the calibration ring.

Bit 16: Collision monitoring using tool probe for intermediate positioning.

In JOG mode, collision monitoring is always activated.

0: No collision monitoring

1: For positioning operations which are executed by measuring cycles between the measurement

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points, motion is interrupted as soon as the probe supplies a switching signal.

An alarm message is output (alarm 61302).

Bit 17: Workpiece measurement, number of repeated measurements if the probe does not switch.

In JOG mode, a measurement is not repeated.

0: Measurements are repeated a maximum of 4 times, then a measuring cycle alarm (alarm 61301) is output.

1: The measurement is not repeated if the probe does not switch, a measuring cycle alarm

is output (alarm 61301).

Bit 19: Tool measurement: retraction velocity from the measuring point

0: The retraction from the measuring point is realized with the same velocity as for

intermediate positioning (SD55634 \$SCS_MEA_FEED_PLANE_VALUE).

1: The retraction velocity is realized with the percentage rapid traverse velocity specified in SD55632 \$SCS_MEA_FEED_RAPID_IN_PERCENT

and is only effective when collision monitoring is active

(SD55740 \$SCS_MEA_FUNCTION_MASK, bit16 = 1).

Bit 28: Selection of new or continuous protocol for standard protocol measurement in JOG

0: New protocol (default)

1: Continuous, in other words, it is always appended to an existing protocol

Bit 29: File format selection for standard protocol measurement in JOG

0: Text format (default)

1: Table format

55774	J_MEA_PROTOCOL_FILE			-	-	
-	Name and path of protocol file for measurement in JOG			STRING	Immediately	
-						
-	-	//NC:/WKS.DIR/ TEMP.WPD/ J_MEAPROT.TXT	-	-	7/4	U

Description: Name and path of protocol file for measurement in JOG

55800	ISO_M_DRILLING_AXIS_IS_Z			-	-	
-	Drilling axis depends on the plane / always Z			BYTE	Immediately	
-						
-	-	0	0	1	7/6	U

Description: Selection of the drilling axis
 0: drilling axis is vertical to the active plane
 1: drilling axis is always "Z", independently of the active plane

55802	ISO_M_DRILLING_TYPE			-	-	
-	Tapping type			BYTE	Immediately	
-						
-	-	0	0	3	7/6	U

Description: Tapping type
 0: tapping without compensating chuck
 1: tapping with compensating chuck

2: deep hole tapping with chip breakage

3: deep hole tapping with stock removal

55804	ISO_M_RETRACTION_FACTOR	-	-
%	Factor for retraction speed (0...200%)	DWORD	Immediately
-			
-	-	100	0
-	-	200	7/6
-	-	U	

Description: Factor for retraction speed (0...200%)

55806	ISO_M_RETRACTION_DIR	-	-
-	Retraction direction at G76/G87	BYTE	Immediately
-			
-	-	0	0
-	-	4	7/6
-	-	U	

Description: Retraction direction for precision drilling and reverse countersinking G76/G87

0: G17(-X) G18(-Z) G19(-Y)

1: G17(+X) G18(+Z) G19(+Y)

2: G17(-X) G18(-Z) G19(-Y)

3: G17(+Y) G18(+X) G19(+Z)

4: G17(-Y) G18(-X) G19(-Z)

55807	ISO_M_TAPPING_SET_MC	-	-
-	Setting tapping G84: Spindle mode/position control	DOUBLE	Immediately
-			
-	-	0	0
-	-	1	7/4
-	-	M	

Description: Setting when rigid tapping (G84)

0= with G84, reactivate spindle mode

1= with G84, remain in position-controlled spindle mode

55808	ISO_T_RETRACTION_FACTOR	-	-
%	Factor for retraction speed	DWORD	Immediately
-			
-	-	100	0
-	-	200	7/6
-	-	U	

Description: Factor (1-200%) for retraction speed at tapping G84/G88

55810	ISO_T_DWELL_TIME_UNIT	-	-
-	Dwell time evaluation	BYTE	Immediately
-			
-	-	0	0
-	-	1	7/6
-	-	U	

Description: Dwell time evaluation for deep hole drilling G83/G87

0: seconds

1: revolutions

55818	ISO_M_FUNCTION_MASK	-	-
-	Function mask for ISO milling mode	DWORD	Immediately
-			
-	-	0	-
-	-	7/4	M

Description: Function mask for ISO milling mode

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55819	ISO_T_FUNCTION_MASK			-	-	
-	Function mask for ISO turning mode			DWORD	Immediately	
-						
-	-	0	-	-	7/4	M

Description: Function mask for ISO turning mode

Bit 0: Execution of residual corner cut

0: Complete residual corner cut is executed (compatibility)

1: Without complete residual corner cut

Bit 1: Stock removal roughing (G71/G72) without tool nose radius compensation

0: Roughing with active tool nose radius compensation (with G41/G42, compatibility)

1: Roughing without tool nose radius compensation (with G40)

55820	FRICT_OPT_RADIUS			-	-	
mm	Circle radius for optimizing friction compensation			DOUBLE	Immediately	
-						
-	-	5	0	5000	7/4	M

Description: MEA_FEED_CIRCLE

Circle radius for optimizing friction compensation

55821	FRICT_OPT_RADIUS_ROT			-	-	
degrees	Circle radius for optimizing friction compensation			DOUBLE	Immediately	
-						
-	-	5	0	5000	7/4	M

Description: MEA_FEED_CIRCLE

Circle radius for optimizing friction compensation

55822	FRICT_OPT_FEED			-	-	
mm/min	Feedrates for optimizing friction compensation			DOUBLE	Immediately	
-						
-	9	70,140,350,560,700,1060,1410,1770,2120	0	100000	7/4	M

Description: Setting data contains feedrate values for optimizing friction compensation.

55823	FRICT_OPT_FEED_ROT			-	-	
rev/min	Feedrates for optimizing friction compensation for rotary axes			DOUBLE	Immediately	
-						
-	9	0.2,0.4,1.0,1.5,2.0,3.0,3.9,5.0,5.9	0	100	7/4	M

Description: Setting data contains the feedrate values for optimizing friction compensation for rotary axes.

55824	FRICT_OPT_STEP			-	-	
-	Step number for optimizing friction compensation			DWORD	Immediately	
-						
-	-	0	0	1000	7/4	M

Description: Step number for optimizing friction compensation

55826	FRICT_OPT_ACT_STEP	-	-
-	Current step number for optimizing friction compensation	DWORD	Immediately
-			
-	-	0	0
		1000	7/4
			M

Description: Displays current step number for optimizing friction compensation

55828	FRICT_OPT_DIR_MINUS	-	-
-	Direction of rotation for optimizing friction compensation	DWORD	Immediately
-			
-	-	0	0
		1	7/4
			M

Description: Direction of rotation for optimizing friction compensation
0= Travel in positive direction (G03)
1= Travel in negative direction (G02)

55844	GRIND_MEA_KIN_TOL	-	-
mm	Kinematik measurement: Tolerance of kinematic vectors	DOUBLE	Immediately
-			
-	-	5	0
		10	7/4
			U

Description: Measure kinematics: Tolerance of kinematic vectors
When the kinematics are measured (CYCLE496), it is checked whether the measured vectors
lie within the tolerance value of setting data \$SCS_GRIND_MEA_KIN_TOL.

55880	GRIND_CONT_RELEASE_ANGLE	-	-
degrees	Grinding - profiling: retraction angle	DOUBLE	Immediately
-			
-	-	45	0
		90	7/4
			M

Description: This setting data specifies the angle of retraction from the contour during profiling.

55881	GRIND_CONT_RELEASE_DIST	-	-
mm	Grinding - profiling: retraction value	DOUBLE	Immediately
-			
-	-	1	0
		10	7/4
			M

Description: This setting data defines the value by which the tool is retracted in both axes during profiling.

55884	GRIND_CONT_BLANK_OFFSET	-	-
mm	Grinding - profiling: blank allowance	DOUBLE	Immediately
-			
-	-	1	0
		100	7/4
			M

Description: This setting data specifies the distance from the grinding wheel at which there is a switch from G0 to G1 during profiling.

3.6 Compile cycles

61516	CC_PROTECT_PAIRS			-	-	
-	Axis collision protection configuration			DWORD	Reset	
-						
-	20	0	-	-	7/2	M

Description: This MD defines the axis pairs that must be protected against mutual collision. The machine axis number of the first axis is entered in the decades of 1s and 10s. The number of the second machine axis must be entered in the decades of 100s and 1000s.

Example:

```
$MN_CC_PROTECT_PAIRS[0] = 1201 ; axis_1 = 1   axis_2 = 12
```

When zero is entered, collision protection is deactivated.

61517	CC_PROTECT_SAFE_DIR			-	-	
-	Axis collision protection. Definition of the retraction direction.			DWORD	Reset	
-						
-	20	0	-	-	7/2	M

Description: In this MD the direction of retraction for both axes of a collision-protected axis pair is entered. Entry in the decade of 1s and 10s defines the direction of retraction of the first axis. Entry in the decade of 100s and 1000s defines that of the second axis. A value > 0 means retraction in the plus direction. 0 means retraction in the minus direction.

The value can only be changed only if collision protection for the axis pair is inactive!

61518	CC_PROTECT_OFFSET			-	-	
mm, degrees	Axis collision protection. Position offset			DOUBLE	Reset	
-						
-	20	0.0	-	-	7/2	M

Description: Position offset for the collision detection of the two axes defined in MD_60972.

The following applies to calculation of distance d between axes AX1 and AX2:

$$d = \text{abs}(\text{POS}[\text{AX1}] + \$MN\_CC\_PROTECT\_OFFSET[n] - \text{POS}[\text{AX2}])$$

The axis collision protection function guarantees that the following condition is always fulfilled:

$$d > \$MN\_CC\_PROTECT\_WINDOW + \$MN\_CC\_PROTECT\_WINDOW\_EXTENSION[n]$$

This considers the current axis velocities and the acceleration/braking capacities of the axes in order to be able to brake the axes in time if required.

The value can be changed only if collision protection for the axis pair is inactive!

61519	CC_PROTECT_WINDOW			-	-	
mm, degrees	Axis collision protection. Minimum distance			DOUBLE	Reset	
-						
-	20	10.0	0.0	10000.0	7/2	M

Description: Minimum distance that must be kept by the axes.

The value can be changed even if the protection is active. In this case, however, the axes must have a safe distance between them.

61532	CC_PROTECT_DIR_IS_REVERSE			-	-	
-	Axis collision protection. Detection of the reversed direction.			DWORD	Reset	
-						
-	20	0	-	-	7/2	M

Description: This machine data is used to detect the reversed direction of the axes of a collision-protected pair of axes.

61533	CC_PROTECT_WINDOW_EXTENSION			-	-	
mm, degrees	Axis collision protection. Increase in the minimum distance			DOUBLE	NEW CONF	
-						
-	20	0.0	0.0	10000.0	7/2	M

Description: Increasing the distance that must be kept from the axes.
The value can be changed even if the protection is active in the part program.

61534	CC_PROTECT_A_DBD_INDEX			-	-	
-	Axis collision protection. Defining the \$A_DBD index			DWORD	Reset	
-						
-	-	-1	-	-	7/2	M

Description: The global axis screenform of axes, where braking operations are initiated due to the violation of the protection window, is mapped to variable \$A_DBD. The index is defined using this machine data. For index -1, an axis screenform is not output.

61535	CC_PROTECT_OPTIONS			-	-	
-	Axis collision protection options			DWORD	Reset	
-						
-	20	0	0	3	7/2	M

Description: This MD specifies the additional options. The following options can be activated:
Bit 0: Activation of the protection pair by DB3#.DBB24.3 of an axis of the protection pair
Bit 1: If it is set in addition to bit 0, then only the VDI bit of the first axis of the axis pair is taken into account.

62500	CLC_AXNO			-	-	
-	Axis assignment for clearance control			DWORD	PowerOn	
-						
-	-	0	-2	CC_MAXNUM_AXES_PER_CHAN	7/2	M

Description: n=0: Deactivates the clearance control
n > 0:
Activates the 1D clearance control for the channel axis with the axis number indicated under n. This axis must not be a modulo rotary axis.
n < 0: Activates the 3D clearance control.
Activation of the 3D clearance control requires configuration of at least one of the two possible 5-axis transformations in the channel.
-1: with n = -1 the first 5-axis transformation (16 ≤ transformer type ≤ 149) configured with \$MC_TRAFO_TYPE_n in the 1st channel is selected for clearance control.
-2: with n = -2 the second 5-axis transformation configured in the 1st channel is selected.
The overlaid motion acts on the axes configured as linear axes in the first three elements of \$MC_TRAFO_AXES_IN_n of the selected transformation.

3.6 Compile cycles

Configuration of 3- and 4-axis transformations is permissible (2D clearance control).

Restriction:

- Only one of the linear axes involved in clearance control must be configured as master axis of a gantry grouping.
- No axis of the clearance control must be configured as slave axis of a gantry grouping.
- Erroneous configurations are rejected after power ON with CLC alarm 75000.

62502	CLC_ANALOG_INPUT	-	-
-	Analog input for clearance control	DWORD	-
-			
-	-	1	1
-	-	8	7/2
-	-	M	

Description: The machine data defines the number of the analog input that is used for the clearance sensor.

Differing from the functions realized in the interpolator (synchronized actions) the input of the clearance control cannot be influenced via PLC interface DB10 DBW148ff.

62504	CLC_SENSOR_TOUCHED_INPUT	-	-
-	Input bit assignment for "Sensor collision" signal	DWORD	PowerOn
-			
-	-	0	-40
-	-	40	7/2
-	-	M	

Description: This machine data defines the digital input that is used for collision detection.

Requirements:

- The clearance sensor has a "sensor collision" signal.
- The numbering of the digital inputs corresponds to the numbering of the corresponding system variables: \$A_IN[n], with n = number of the digital input.
- Example: 3rd input on the 2nd input byte: \$MC_CLC_SENSOR_TOUCHED_INPUT = 11 ; 3 + 1 * 8

Negative values result in the corresponding input signal being used internally inverted (fail-safe).

See section 2.4, /TE1/ for sensor collision detection.

62505	CLC_SENSOR_LOWER_LIMIT	-	-
mm, degrees	Lower motion limit of the clearance control	DOUBLE	Reset
-			
-	2	-5.0, -10.0	-1.0e40
-	-	0.0	7/2
-	-	M	

Description: This machine data consists of 2 field elements:

- CLC_SENSOR_LOWER_LIMIT[0]

With the first field element the lower limit for the deviation from the sensor-controlled machine position from the programmed position is entered.

As soon as the limit is reached, PLC signal DB21.DBX37.4 is set and CLC alarm 75020 is displayed:

- CLC_SENSOR_LOWER_LIMIT[1]

The second field element limits the value of the maximum lower motion limit that can be programmed.

62506	CLC_SENSOR_UPPER_LIMIT	-	-
mm, degrees	Upper motion limit of the clearance control	DOUBLE	Reset
-			
-	2	+10.0, +40.0	0.0
-	-	+1.0e40	7/2
-	-	M	

Description: This machine data consists of 2 field elements:

- CLC_SENSOR_UPPER_LIMIT[0]

With the first field element the upper limit for the deviation from the sensor-controlled machine position from the programmed position is set.

As soon as the limit is reached, PLC signal DB21.DBB37.5 is set and CLC alarm 75021 is displayed.

- CLC_SENSOR_UPPER_LIMIT[1]

The second field element limits the value of the maximum upper motion limit that can be programmed.

62508	CLC_SPECIAL_FEATURE_MASK	-	-
-	Special functions and CLC modes	DWORD	PowerOn
-			
-	-	0x3	-
			7/2
			M

Description:

Bit 0 and bit 1:

Alarm reaction on reaching the CLC motion limits: This machine data configures the alarm reaction on reaching the motion limits set with MD 62505 and MD 62506 or programmed with CLC_LIM .

Bit 0 = 0: Alarm 75020 does not stop program execution. The alarm can be acknowledged by pressing the Cancel key.

Bit 0 = 1: Alarm 75020 stops program execution at the lower limit. The alarm can only be acknowledged with reset.

Bit 1 = 0: Alarm 75021 does not stop program execution. The alarm can be acknowledged by pressing the Cancel key.

Bit 1 = 1: Alarm 75021 stops program execution at the upper limit. The alarm can only be acknowledged with reset.

Bit 4:

Operation as online tool length compensation in orientation direction

Bit 4 = 0: Clearance control works as usual.

Bit 4 = 1: Unlike the clearance control mode the analog input does not specify a velocity, but directly an offset position instead. In this case, the ordinate of the selected sensor characteristic \$MC_CLC_SENSOR_VELO_TABLE_x is interpreted in mm or inch instead of in mm/min (inch/min).

This operating mode can be used for testing purposes and for implementing a 3D tool length compensation. The analog value is thereby not read in in position controller cycle, but in IPO cycle. In this operating mode, a normal influence or definition of the analog values by the PLC is possible via DB10 DBW148ff. The input used must have been activated through the following machine data: MD 10300 \$MN_FASTIO_ANA_NUM_INPUTS

Bit 5:

Mode for rapid retraction in position controller cycle

Bit 5 = 0: Clearance control works as usual.

Bit 5 = 1: The analog input is inactive. If the digital input configured with MD 62504 is activated (inverted, if required), a retraction motion will start in the same position controller cycle that corresponds to an analog signal specification of +10V during operation as "Online tool length compensation" (see bit 4).

The digital input signal that starts the retraction movement cannot be influenced by the PLC. In addition to the reaction in the position controller, the input "sensor collision" and the subsequent stop of the path motion is handled in the interpolator. This signal branch can be influenced by the PLC through default signals DB10 DBB0ff.

Bit 8:

Mode for alarm output when the lower motion limit is reached.

Bit 8 = 0: Alarm 75020 is displayed.

Bit 8 = 1: Alarm 75020 will not be displayed, if the alarm reaction after reaching of the CLC movement limits (bit 0) was configured without program execution stop: bit 0 = 0

3.6 Compile cycles

Bit 9:

Mode for alarm display when the upper motion limit is reached.

Bit 9 = 0: Alarm 75021 is displayed.

Bit 9 = 1: Alarm 75021 will not be displayed, if the alarm reaction on reaching the CLC motion limits (bit 0) was configured without program execution stop: bit 1 = 0

Bit 14:

Synchronization of the start position with single-axis clearance control.

Bit 14 = 0: If the clearance control has been configured for one axis only (MD62500), the current actual position of the next part program block on clearance control power OFF with CLC(0) is synchronized for this axis only.

Bit 14 = 1: If the clearance control has been configured for one axis only (MD62500), the actual current positions of the next part program block on clearance control power OFF with CLC(0) are synchronized for all axes.

This setting is required only for those applications for which a single-axis clearance control is used together with a 3/4/5-axis transformation (e.g. pipe cutting with rotating workpiece) and when an axis jump in the CLC axis or alarm: "Channel %1 Axis %2 System error 550010" occur at the first traversing block after CLC (0).

62510	CLC_SENSOR_VOLTAGE_TABLE_1			-	-	
V	Coordinate voltage sensor characteristic 1			DOUBLE	Reset	
-						
-	2	-10.0, 10.0, 0.0, 0.0, 0.0	-10.0	10.0	7/2	M

Description:

This machine data defines the voltage values of sensor characteristic 1. The corresponding velocity value must be entered under the same index i of this machine data:

MD62511 \$MC_CLC_SENSOR_VELO_TABLE_1[i]

For the simplest case it will suffice to define the characteristic via two interpolation points as a symmetrical straight through the zero point:

Example:

- \$MC_CLC_SENSOR_VOLTAGE_TABLE_1[0] = -10.0 ; Volt
- \$MC_CLC_SENSOR_VOLTAGE_TABLE_1[1] = 10.0 ; Volt
- \$MC_CLC_SENSOR_VELO_TABLE_1[0] = 500.0 ; mm/min
- \$MC_CLC_SENSOR_VELO_TABLE_1[1] = -500.0 ; mm/min

For all field elements of the machine data not used in the example value 0.0 must be set.

If the defined sensor characteristic creates an incorrect control direction, i.e. after power ON of the clearance control the sensor "flees" from the workpiece, the control direction can be corrected either by reversing the polarity of the sensor signal at the I/O module, or by changing the sign in front of the voltage values in the machine data.

Notes on how to define the sensor characteristic:

- A point with velocity value 0 must not stand at the end of the table.
- The characteristic must be monotonic, i.e. the velocity values above the voltage must either only rise or only fall.
- The characteristic must not have any jumps in the velocity sequence, i.e. it is not permissible to define different velocities for the same voltage value.
- The characteristic must have at least two interpolation points.
- Do not enter more than 5 interpolation points (3 for 840D prior to SW 5.3) with positive or with negative velocity.
- Characteristics that do not go directly through the zero point may influence the clearance normalization set on the clearance sensor.

62511	CLC_SENSOR_VELO_TABLE_1			-	-	
mm/min	Coordinate velocity sensor characteristic 1			DOUBLE	Reset	
-						
-	2	2000.0/60.0, -2000.0/60.0, 0.0, 0.0, 0.0	-	-	7/2	M

Description: This machine data defines the velocity values of sensor characteristic 1. The corresponding voltage value must be entered under the same index i of the machine data:
`MD62510 $MC_CLC_SENSOR_VOLTAGE_TABLE_1[i]`
Additional information on how to define the characteristic is available in the description of machine data MD62510.

62512	CLC_SENSOR_VOLTAGE_TABLE_2			-	-	
V	Coordinate voltage sensor characteristic 2			DOUBLE	Reset	
-						
-	2	-10.0, 10.0, 0.0, 0.0, 0.0	-10.0	10.0	7/2	M

Description: This machine data defines the voltage values of sensor characteristic 2.
Additional information on how to define the characteristic is available in the description of machine data MD62510.

62513	CLC_SENSOR_VELO_TABLE_2			-	-	
mm/min	Coordinate velocity sensor characteristic 2			DOUBLE	Reset	
-						
-	2	2000.0/60.0, -2000.0/60.0, 0.0, 0.0, 0.0	-	-	7/2	M

Description: This machine data defines the voltage values of sensor characteristic 2.
Additional information on how to define the characteristic is available in the description of machine data MD62510.

62516	CLC_SENSOR_VELO_LIMIT			-	-	
%	Velocity of the clearance control motion			DOUBLE	Reset	
-						
-	-	100.0	-200.0	200.0	7/2	M

Description: 1D clearance control:
This machine data defines the maximum traversing velocity of the overlaid control motion as a percentage value of the max. residual axis velocity from the maximum value (`MD32000 $MA_MAX_AX_VELO[ AX# ]`) of the next clearance-controlled axis.
2D/3D clearance control
With 2D or 3D clearance control the maximum velocity of the slowest clearance-controlled axis multiplied with the root of 2 or with the root of 3 is used as reference value.

62517	CLC_SENSOR_ACCEL_LIMIT			-	-	
%	Acceleration of the clearance control movement			DOUBLE	Reset	
-						
-	-	100.0	0.0	200.0	7/2	M

Description: 1D clearance control:

3.6 Compile cycles

This machine data defines the maximum acceleration of the overlaid control motion as a percentage value of the max. residual axis velocity from the maximum value (MD32300 \$MA_MAX_AX_ACCEL[AX#]) of the next clearance-controlled axis.

2D/3D clearance control:

With 2D or 3D clearance control the maximum velocity of the slowest clearance-controlled axis multiplied with the root of 2 or with the root of 3 is used as reference value.

62520	CLC_SENSOR_STOP_POS_TOL			-	-	
mm, degrees	Pos. tolerance for status report "CLC standstill"			DOUBLE	Reset	
-						
-	-	0.05	0.0	1.0e40	7/2	M

Description:

With the clearance control active and in order to achieve the exact stop condition (G601/G602), not only the axis involved in the programmed traversing motion, but also the clearance-controlled axes must have reached their exact stop conditions.

The exact stop condition of the clearance control is defined via a position window and a dwell time:

- MD62520 \$MC_CLC_SENSOR_STOP_POS_TOL
- MD62521 \$MC_CLC_SENSOR_STOP_DWELL_TIME

If the clearance control or the clearance-controlled axes are within the position tolerance during the parameterized dwell time, the exact stop condition of the clearance control is fulfilled.

Setting notes:

If the clearance control should not be able to keep the parameterized position window for the corresponding dwell time, the following alarm will be displayed in certain situations:

- Alarm "1011 Channel Channel number System error 140002"

In order to avoid the alarm or in case the alarm occurred, the following measures must be taken:

1. Switch on the clearance control with the typical machining clearance between the clearance sensor and a small metal sheet.
2. Tap on the metal sheet so that the laser head performs visible adjustment motions. After these adjustment movements are completed, do not touch the metal sheet again.
3. If the interface signal DB3x.DBX60.7 (position reached with fine exact stop) "flickers" after the tapping or after release of the process gas, the following machine data will have to be adjusted:

- MD36010 \$MA_STOP_LIMIT_FINE (increase)
- MD62520 \$MC_CLC_SENSOR_STOP_POS_TOL (increase)
- MD62521 \$MC_CLC_SENSOR_STOP_DWELL_TIME (shorten)

The changes to the machine data will become active only after NCK RESET. The clearance control therefore may have to be switched on again after NC start.

62521	CLC_SENSOR_STOP_DWELL_TIME			-	-	
s	Wait time for "CLC standstill"			DOUBLE	Reset	
-						
-	-	0.1	0.0	1.0e40	7/2	M

Description:

This machine data defines the dwell time for reaching the exact stop conditions of the clearance control.

The corresponding position tolerance must be entered in machine data:

- MD62520 \$MC_CLC_SENSOR_STOP_POS_TOL

Additional information on the exact stop condition of the clearance control is available in the description of machine data MD62520.

Related to:

The set dwell time must not be longer than the maximum delay for reaching the exact stop condition parameterized in the following machine data:

- MD36020 \$MA_POSITIONING_TIME

62522	CLC_OFFSET_ASSIGN_ANAOUT	-	-
-	Assignment of internal additional analog value to sensor signal	DWORD	PowerOn
-			
-	-	0	-1020008, -8 1020008, 8 7/2 M

Description: This machine data defines the analog output, the output value of which is subtracted from the input voltage of the clearance sensor.

The numbering of the analog output corresponds to the numbering of the relevant system variables: \$A_OUTA[n], with n = number of the analog output.

The analog output can be used through variable \$A_OUTA[n] both block-synchronous from a part program or asynchronous via a synchronized action.

62523	CLC_LOCK_DIR_ASSIGN_DIGOUT	-	-
-	Assignment digital output interlocking CLC	DWORD	PowerOn
-			
-	2	0, 0	-40 40 7/2 M

Description: This machine data consists of 2 field elements:

- CLC_LOCK_DIR_ASSIGN_DIGOUT[0]

The first field element defines the digital output through which the negative motion direction of the clearance control can be locked.

- CLC_LOCK_DIR_ASSIGN_DIGOUT[1]

The second field element defines the digital output through which the positive motion direction of the clearance control can be locked.

Entering the negative output number will invert the evaluation of the switching signal.

Example:

Digital output 1 (\$A_OUT[1]) shall lock the negative motion direction; digital output 2 (\$A_OUT[2]) shall lock the positive motion direction:

- MD 62523 \$MC_CLC_LOCK_DIR_ASSIGN_DIGOUT[0] = 1
- MD 62523 \$MC_CLC_LOCK_DIR_ASSIGN_DIGOUT[1] = 2

With the corresponding system variables interlocking of the relevant motion direction can be switched on or off either block-synchronous in the part program or asynchronous via synchronized actions.

- Interlock of the negative motion direction ON/OFF: \$A_OUT[1] = 1 / 0
- Interlock of the positive motion direction ON/OFF: \$A_OUT[2] = 1 / 0

With switching signal inversion (MD 62523 \$MA_CLC_LOCK_DIR_ASSIGN_DIGOUT[0] = -1):

Interlock of the negative motion direction ON/OFF: \$A_OUT[1] = 0 / 1

62524	CLC_ACTIVE_AFTER_RESET	-	-
-	Clearance control active after RESET	BOOLEAN	PowerOn
-			
-	-	FALSE	- 7/2 M

Description: 1D clearance control:

This machine data parameterizes the RESET behavior (program end RESET or NC RESET) of the 1D clearance control.

3.6 Compile cycles

- CLC_ACTIVE_AFTER_RESET = 0: after RESET the clearance control is switched off analog to the part program command CLC(0).
- CLC_ACTIVE_AFTER_RESET = 1: after RESET the clearance control maintains its current activation status.

3D clearance control:

This machine data does not effective with a 3D clearance control. The clearance control will in this case always be switched off after RESET.

62525	CLC_SENSOR_FILTER_TIME	-	-
s	Time constant of PT1 sensor filtering	DOUBLE	Immediately
-			
-	-	0.0	0.0
		10.0	7/2
			M

Description: This machine data parameterizes the time constant for the PT1 filter of the clearance control (corresponds to an RC element).

With the PT1 filter, the higher-frequency noise components in the input signal of the clearance control can be diminished.

The filter's effect can be observed through the function-specific display data (see section 2.7, /TE1/).

A value of zero switches the filter off completely.

Note:

Any additional time constant in the control loop reduces the max. achievable control loop dynamics.

62528	CLC_PROG_ORI_AX_MASK	-	-
-	Axis screen for CLC with free direction specification	DWORD	PowerOn
-			
-	-	0x0	-
		-	7/2
			M

Description: Each bit of the axis screen refers to the channel axis[n+1] depending on its bit index n. Only exactly 3 bits may be set according to the three direction axes of the compensation vector. The bits are evaluated in ascending order.

The first channel axis parameterized like that corresponds to the X coordinate of the compensation vector. The second channel axis to the Y coordinate, and so on.

62529	CLC_PROG_ORI_MAX_ANGLE	-	-
degrees	Limit angle for CLC with free direction specification	DOUBLE	Reset
-			
-	-	45.0	0.0
		180.0	7/2
			M

Description: Permissible limit angle between tool orientation and CLC direction defined freely through additional axes.

62530	CLC_PROG_ORI_ANGLE_AC_PARAM	-	-
-	Index of the display variables f. the current differential angle	DWORD	Reset
-			
-	-	-1	-1
		20000	7/2
			M

Description: Index n of system variable \$AC_PARAM[n] in which the current differential angle between tool orientation and CLC direction is output.

62560	FASTON_NUM_DIG_OUTPUT	-	-
-	Configuration of the switching output	BYTE	PowerOn
-			
-	-	0	0
		4	7/2
			M

Description: This machine data assigns the number of the digital onboard output (1...4) to the NCU, on which the fast switching signal is output.
Output of the switching signal is deactivated with 0.

62561	FASTON_OUT_DELAY_MICRO_SEC			-	-	
-	Time correction of the switching edge			DWORD	NEW CONF	
-						
-	2	0, 0	-5000	5000	7/2	M

Description: This MD enables separate specification of time delay values for the switch-on and switch-off edge of the fast switching signal.
\$MC_FASTON_OUT_DELAY_MICRO_SEC[0] Time delay of the switch-on edge
\$MC_FASTON_OUT_DELAY_MICRO_SEC[1] Time delay of the switch-off edge
Negative values create a derivative action time for signal output. Positive values cause the output to be delayed. Derivative action time or delay are used to compensate external switching delays. The values must be determined empirically and should not exceed a few 100 microseconds. Values that are larger than approx. a half position control cycle clock will possibly not have a correct effect.

62571	RESU_RING_BUFFER_SIZE			-	-	
-	RESU ring buffer size (block buffer)			DWORD	PowerOn	
-						
-	-	1000	10	1000000	7/2	M

Description: The block buffer includes the geometrical information for the part program. The value entered in the machine data corresponds to the number of loggable part program blocks (with 32 byte / part program block). The block buffer size corresponds to the number of retrace-capable blocks.

62572	RESU_SHARE_OF_CC_HEAP_MEM			-	-	
%	RESU share of the parameterized heap memory			DOUBLE	PowerOn	
-						
-	-	100.0	1.0	100.0	7/2	M

Description: The total heap memory size available for all compile cycles is parameterized by channel-specific machine data MD 28105 \$MC_MM_NUM_CC_HEAP_MEM
The RESU machine data can limit the maximum heap memory share that RESU is to use.

62573	RESU_INFO_SA_VAR_INDEX			-	-	
-	RESU indices of the synchronized action variables used			DWORD	PowerOn	
-						
-	2	-1	-1	10000	7/2	M

Description: Reserved. This machine data must not be used.

62574	RESU_SPECIAL_FEATURE_MASK			-	-	
-	RESU parameterizable behavior			DWORD	PowerOn	
-						
-	-	0x0	0x0	0x0f	7/2	M

Description: With bit settings parameterizable behavior of the RESU function:
Bit 0: reserved. Do not use!
Bit 1:
Bit 1 = 0: (default) RESU main program CC_RESU.MPF is created in the dynamic memory area
of the NC (DRAM) (recommended setting)

3.6 Compile cycles

Bit 1 = 1: RESU main program CC_RESU.MPF is created in the buffered part program memory of the NC (SRAM).

Bit 2:

Bit 2 = 0: (default)

The following RESU-specific subroutines are created as user cycles:

- CC_RESU_INI.SPF
- CC_RESU_END.SPF
- CC_RESU_BS_ASUP.SPF
- CC_RESU_ASUP.SPF

Bit 2 = 1: (recommended setting)

The RESU-specific subroutines (see above) are created as OEM cycles.

Bit 3:

Bit 3 = 0: (default)

No effect (see under bit 3 = 1).

Bit 3 = 1: (recommended setting, if bit 2 = 1)

If the RESU-specific subroutines (see above) are created as OEM cycles and if during NC start RESU-specific subroutines are nevertheless available as user cycles, these will be canceled without prior checkback.

62575	RESU_SPECIAL_FEATURE_MASK_2	-	-
-	RESU additional parameterizable behavior	DWORD	Reset
-			
-	-	0x0	0x0

Description:

With bit settings parameterizable behavior of the RESU function:

Bit 0:

Bit 0 = 0: (default)

For continued machining at the contour, a block search with contour calculation beginning at

the part program start is used (recommended setting).

Bit 0 = 1: In order to accelerate that machining is continued, 2 different block search types are used:

- From part program start to the last main block: block search without calculation
- From the last main block to the current part program block: block search with contour calculation

62580	RESU_WORKING_PLANE	-	-
-	RESU determination of the working plane	DWORD	NEW CONF
-			
-	-	1	1

Description:

These machine data determine the working plane for the 2-dim. function RESU. The following settings are possible:

- 1 : for working plane G17 (first and second geometry axis)
- 2 : for working plane G18 (first and third geometry axis)
- 3 : for working plane G19 (second and third geometry axis)

62600	TRAFO6_KINCLASS	-	-
-	Kinematics class	DWORD	NEW CONF
-			
-	-	1	1

Description: The following kinematics classes can be indicated:

- Standard transformation: 1
- Special transformation: 2

62601	TRAFO6_AXES_TYPE			-	-	
-	Axis type for transformation [axis no.]: 0...5			DWORD	NEW CONF	
-						
-	6	1, 1, 1, 3, 3, 3	1	4	7/2	M

Description: This machine data identifies the axis type used in the transformation.

The following axis types can be indicated:

- Linear axis: 1
- Delta/acme spindle drive: 2
- Rotary axis: 3 (4)

62602	TRAFO6_SPECIAL_KIN			-	-	
-	Special kinematics type			DWORD	NEW CONF	
-						
-	-	1	-	-	7/2	M

Description: This machine data identifies the type of special kinematics.

The following special kinematics are available:

- No special kinematics: 1
- 5-axis articulated arm with coupling of axis 2 to axis 3: 2
- 2-axis SCARA with forced coupling to tool: 3
- 3-axis SCARA with degrees of freedom X, Y, A: 4
- 2-articulated arm with coupling of axis 1 to axis 2: 5
- 2-axis articulated arm without coupling of axis 1 to axis 2: 8
- 4-axis SCARA with coupling of axis 1 to axis 2: 7

62603	TRAFO6_MAIN_AXES			-	-	
-	Basic axis identification			DWORD	NEW CONF	
-						
-	-	1	1	7	7/2	M

Description: This machine data identifies the type of basic axis assignment. Normally, the first 3 axes are the basic axes.

The following basic axis assignments are included:

- SS (gantry): 1
- CC (SCARA): 2
- NR (articulated arm): 3
- SC (SCARA): 4
- RR (articulated arm): 5
- CS (SCARA): 6
- NN (articulated arm): 7

62604	TRAFO6_WRIST_AXES				-	-	
-	Identification of the hand axes				DWORD	NEW CONF	
-							
-	-	1	1	6	7/2	M	

Description: This machine data identifies the robot hand type. Normally, axes 4 to 6 are the robot hand.

The following hand types are included:

3.6 Compile cycles

- No hand: 1
- Central hand: 2
- Beveled hand: 3
- Hand with elbow: 5
- Beveled hand with elbow: 6

62605	TRAFO6_NUM_AXES			-	-	
-	Number of transformed axes			DWORD	NEW CONF	
-						
-	-	3	2	6	7/2	M

Description: This machine data identifies the number of axes involved in the transformation.
Package 2.3 (810D) or 4.3 (840D) support kinematics with a max. of 5 axes.

62606	TRAFO6_A4PAR			-	-	
-	Axis 4 parallel / antiparallel to the last basic axis			DWORD	NEW CONF	
-						
-	-	0	0	1	7/2	M

Description: This machine data identifies whether the 4th axis is parallel / antiparallel to the last rotary basic axis.
This machine data only applies for kinematics with more than 3 axes.

- Axis 4 is parallel / antiparallel: 1
- Axis 4 is not parallel: 0

62607	TRAFO6_MAIN_LENGTH_AB			-	-	
mm	Basic axis length A and B, n = 0...1			DOUBLE	NEW CONF	
-						
-	2	0.0, 500.0	-	-	7/2	M

Description: This machine data identifies the basic axis lengths A and B. These lengths are particularly defined for each basic axis type.

- n = 0: basic axis length A
- n = 1: basic axis length B

62608	TRAFO6_TX3P3_POS			-	-	
mm	Attachment of the hand (position share), n = 0...2			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0	-	-	7/2	M

Description: This machine data identifies the position share of frame TX3P3 connecting the basic axes with the hand.

- Index 0: X component
- Index 1: Y component
- Index 2: Z component

62609	TRAFO6_TX3P3_RPY			-	-	
degrees	Attachment of the hand (rotation share), n = 0...2			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0	-	-	7/2	M

Description: This machine data identifies the orientation share of frame TX3P3 connecting the basic axes with the hand.

- Index 0: rotation with RPY angle A
- Index 1: rotation with RPY angle B
- Index 2: rotation with RPY angle C

62610	TRAFO6_TFLWP_POS	-	-
mm	Frame between hand pt. and flange coordinate system, n = 0...2	DOUBLE	NEW CONF
-			
-	3	0.0, 0.0, 0.0	-

Description: This machine data identifies the position share of frame TFLWP that connects the hand point with the flange.

- Index 0: X component
- Index 1: Y component
- Index 2: Z component

62611	TRAFO6_TFLWP_RPY	-	-
degrees	Frame between hand point and flange coordinate system, n = 0...2	DOUBLE	NEW CONF
-			
-	3	0.0, 0.0, 0.0	-

Description: This machine data identifies the orientation share of frame TFLWP that connects the hand point with the flange.

- Index 0: rotation with RPY angle A
- Index 1: rotation with RPY angle B
- Index 2: rotation with RPY angle C

62612	TRAFO6_TIRORO_POS	-	-
mm	Frame between foot pt. and int. coordinate system, n = 0...2	DOUBLE	NEW CONF
-			
-	3	0.0, 0.0, 0.0	-

Description: This machine data identifies the position share of frame TIRORO that connects the basic coordinate system with the internal transformation coordinate system.

- Index 0: X component
- Index 1: Y component
- Index 2: Z component

62613	TRAFO6_TIRORO_RPY	-	-
degrees	Frame between foot pt. and int. coordinate system, n = 0...2	DOUBLE	NEW CONF
-			
-	3	0.0, 0.0, 0.0	-

Description: This machine data identifies the orientation share of frame TIRORO that connects the basic coordinate system with the internal transformation coordinate system.

- Index 0: rotation with RPY angle A
- Index 1: rotation with RPY angle B
- Index 2: rotation with RPY angle C

62614	TRAFO6_DHPAR4_5A	-	-
mm	Parameter A for configuration of the hand, n = 0...1	DOUBLE	NEW CONF
-			
-	2	0.0, 0.0	-

Description: This machine data identifies length a.

3.6 Compile cycles

- n = 0: transition axis 4 to 5
- n = 1: transition axis 5 to 6

62615	TRAFO6_DHPAR4_5D			-	-	
mm	Parameter D for configuration of the hand, n = 0...1			DOUBLE	NEW CONF	
-						
-	2	0.0, 0.0	-	-	7/2	M

Description: This machine data identifies length d.

- n = 0: transition axis 4 to 5
- n = 1: transition axis 5 to 6

62616	TRAFO6_DHPAR4_5ALPHA			-	-	
degrees	Parameter ALPHA for configuration of the hand, n = 0...1			DOUBLE	NEW CONF	
-						
-	2	-90.0, 90.0	-	-	7/2	M

Description: This machine data identifies angle alpha

- n = 0: transition axis 4 to 5
- n = 1: transition axis 5 to 6

62617	TRAFO6_MAMES			-	-	
-	Offset of math. to mech. zero point [axis no.]: 0...5			DOUBLE	NEW CONF	
-						
-	6	0.0, 0.0, 0.0, 0.0, 0.0, 0.0	-	-	7/2	M

Description: This machine data can specify an adjustment of the zero point for a rotary axis to the mathematical zero point specified by the transformation.

Based on the mechanical zero point the offset is hereby related to the mathematically positive direction of axis rotation.

62618	TRAFO6_AXES_DIR			-	-	
-	Adjustm. of the phys. and math. dir. of rot. [axis no.]: 0...5			DWORD	NEW CONF	
-						
-	6	1, 1, 1, 1, 1, 1	-1	1	7/2	M

Description: This machine data can adjust the mathematical and physical direction of rotation of the axes.

- +1: same direction of rotation
- -1: different direction of rotation

62619	TRAFO6_DIS_WRP			-	-	
mm	Medium distance between hand point and singularity			DOUBLE	NEW CONF	
-						
-	-	10.0	0.00001	999999.9999	7/2	M

Description: Through this machine data a limit value for the distance between the hand point and the singularity can be entered.

Inactive!

62620	TRAFO6_AXIS_SEQ			-	-	
-	Axis reorganization			DWORD	NEW CONF	
-						
-	6	1, 2, 3, 4, 5, 6	1	6	7/2	M

Description: This machine data can reverse the order of the axes in order to internally transfer a kinematic system into a standard kinematic system.

62621	TRAFO6_SPIN_ON	-	-
-	Triangular or acme-screw spindles available	DWORD	NEW CONF
-			
-	-	0	0
-	1	7/2	M

Description: This machine data identifies whether triangular spindles or acme connections are available.

- 0: not available
- 1: available

This function is currently not supported.

MD62621 must be set to 0. Machine data MD62622 through MD62628 are thus inactive!

62622	TRAFO6_SPIND_AXIS	-	-
-	Axis on which the triangular spindle has an effect, n = 0...2	DWORD	NEW CONF
-			
-	3	0, 0, 0	-
-	-	-	7/2
-	-	-	M

Description: This machine data identifies for which axis a triangular spindle is active. A maximum of 3 triangular spindles may be available.

- n = 0: 1st triangular axis
- n = 1: 2nd triangular axis
- n = 2: 3rd triangular axis

62623	TRAFO6_SPINDLE_RAD_G	-	-
mm	Length G for triangular spindle, n = 0...2	DOUBLE	NEW CONF
-			
-	3	0.0, 0.0, 0.0	-
-	-	-	7/2
-	-	-	M

Description: This machine data identifies length G for the n-th triangular spindle.

62624	TRAFO6_SPINDLE_RAD_H	-	-
mm	Length H for triangular spindle, n = 0...2	DOUBLE	NEW CONF
-			
-	3	0.0, 0.0, 0.0	-
-	-	-	7/2
-	-	-	M

Description: This machine data identifies length H for the n-th triangular spindle.

62625	TRAFO6_SPINDLE_SIGN	-	-
-	Sign for triangular spindle, n = 0...2	DWORD	NEW CONF
-			
-	3	1, 1, 1	-1
-	1	7/2	M

Description: This machine data identifies the sign for the adjustment of the direction of rotation for the n-th triangular spindle.

62626	TRAFO6_SPINDLE_BETA	-	-
degrees	Angular offset for triangular spindles, n = 0...2	DOUBLE	NEW CONF
-			
-	3	0.0, 0.0, 0.0	-
-	-	-	7/2
-	-	-	M

Description: This machine data identifies offset angle b for adjustment of the zero point for the n-th triangular spindle.

3.6 Compile cycles

62627	TRAFO6_TRP_SPIND_AXIS			-	-	
-	Axes driven by acme spindle, n = 0...1			DWORD	NEW CONF	
-						
-	2	0, 0	-	-	7/2	M

Description: This machine data identifies which axes are driven by an acme connection.

- n = 0: axis driven by an acme
- n = 1: coupling axis

62628	TRAFO6_TRP_SPIND_LEN			-	-	
mm	Acme length, n = 0...3			DOUBLE	NEW CONF	
-						
-	4	0.0, 0.0, 0.0, 0.0	-	-	7/2	M

Description: This machine data specifies the lengths of the acme connection.

62629	TRAFO6_VELCP			-	-	
mm/min	Cartesian velocity [no.]: 0...2			DOUBLE	Immediately	
-						
-	3	600000.0, 600000.0, 600000.0	-	-	7/2	M

Description: This machine data can specify a velocity for the Cartesian directions of traversing blocks with G0.

- n = 0: velocity in X direction
- n = 1: velocity in Y direction
- n = 2: velocity in Z direction

62630	TRAFO6_ACCCP			-	-	
m/s²	Cartesian accelerations [no.]: 0...2			DOUBLE	Immediately	
-						
-	3	0.5, 0.5, 0.5	0.001	100000	7/2	M

Description: This machine data can specify an acceleration for the Cartesian directions of traversing blocks with G0.

- n = 0: velocity in X direction
- n = 1: velocity in Y direction
- n = 2: velocity in Z direction

62631	TRAFO6_VELORI			-	-	
rev/min	Orientation angle velocities [no.]: 0...2			DOUBLE	Immediately	
-						
-	3	1.6666, 1.6666, 1.6666	-	-	7/2	M

Description: This machine data can specify a velocity for the orientation angles of traversing blocks with G0.

- n = 0: velocity angle A
- n = 1: velocity angle B
- n = 2: velocity angle C

62632	TRAFO6_ACCORI			-	-	
rev/s²	Orientation angle accelerations [no.]: 0...2			DOUBLE	Immediately	
-						
-	3	0.00277, 0.00277, 0.00277	0.001	100000	7/2	M

Description: This machine data can specify an acceleration for the orientation angles of traversing blocks with G0.

- n = 0: velocity angle A
- n = 1: velocity angle B
- n = 2: velocity angle C

62634	TRAFO6_DYN_LIM_REDUCE			-	-	
-	Reduction factor for velocity controller			DOUBLE	NEW CONF	
-						
-	-	1.0	0.001	1.0	7/2	M

Description: This MD can be used to specify a reserve for the maximum velocity, so that an excessive increase in the velocity by the velocity controller will not cause the maximum velocity to be exceeded.

The value must be regarded as a factor that has an effect on the maximum velocity.

62635	TRAFO6_VEL_FILTER_TIME			-	-	
s	Time constant for velocity controller			DOUBLE	NEW CONF	
-						
-	-	0.024	0.0	100.0	7/2	M

Description: This MD can be used to set the time constant for the velocity controller in the interpolator. This can avoid controller vibration.

62636	TRAFO6_TFL_EXT_RPY			-	-	
degrees	Frame for rotating the flange coordinate system, n = 0...2			DOUBLE	NEW CONF	
-						
-	3	0.0, 0.0, 0.0	-	-	7/2	M

Description: For machines with 5 axes it was specified that the flange coordinate system must be aligned such that the tool is oriented in the X direction (robotics convention).

With the machine data TRAFO6_TFL_EXT_RPY, the flange coordinate system can be aligned such that for a machine with 5 axes a tool direction in accordance with the NC convention is achieved (tool orientation in the Z direction).

- Index 0: Rotation by the RPY angle A
- Index 1: Rotation by the RPY angle B
- Index 2: Rotation by the RPY angle C

62637	TRAFO6_TOOL_DIR			-	-	
-	Definition of tool direction			DWORD	NEW CONF	
-						
-	-	0	0	1	7/2	M

Description: This machine data identifies the tool direction for a machine with 5/6 axes

- 0: Tool orientation in the X direction (robotics convention)
- 1: Tool orientation in the Z direction (NC convention)

This machine data also affects how the rotation sequence of the virtual orientation axes is interpreted and calculated in the Handling Transformation.

3.6 Compile cycles

- 0: Rotation sequence: 1st rotation around Z, 2nd rotation around Y', 3rd rotation around X" (does not apply for 5-axis machines)
- 1: Rotation sequence: 1st rotation around X, 2nd rotation around Y', 3rd rotation around Z" (does not apply for 5-axis machines)

62642	TRAFO6_C_ANGLE_AOFFSET			-	-	
degrees	Offset angle for C-angle calculation in the BCS			DOUBLE	NEW CONF	
-						
-	-	0.0	-	-	7/2	M

Description: This machine data can be used to specify an offset angle for calculating the C-angle in the BCS for 4-axis SCARA kinematics.

62643	TRAFO6_SPECIAL_FEATURE_MASK			-	-	
-	Activating special features			DWORD	Reset	
-						
-	-	0	-	-	7/2	M

Description: This machine data enables special features to be activated.
 Bit 0 = 0: For 4-axis SCRA kinematics, the C-angle is controlled in the BCS in the range between -180 degrees and +180 degrees.
 Bit 0 = 1: For 4-axis SCRA kinematics, the C-angle is controlled absolutely in the BCS.

63514	CC_PROTECT_ACCEL			-	-	
m/s ² , rev/s ²	PROT braking acceleration in the case of collision			DOUBLE	Reset	
-						
-	-	1000.0	1.0	10000.0	7/2	M

Description: If the axis collision protection function PROT has detected a collision, the involved axes are braked using the acceleration set in this machine data.
 Recommended setting: a few per cent higher than 32300__\$MA_MAX_AX_ACCEL, provided that the dimensioning of the drive and the mechanical system allow it.
 Notice: the braking acceleration set here always has a BRISK effect independently of other parameterizations (e.g. parameter set, active dyn. G code)

63540	CC_MASTER_AXIS			-	-	
-	Indicates the corresponding CC_Master axis for a CC_Slave axis			DWORD	Reset	
-						
-	-	0	0	CC_MAXNUM_AXES_IN_SYSTEM	7/2	M

Description: By assigning a valid CC_Master axis in this machine data, the relevant axis is defined as the CC-Slave axis of an MCS coupling. The assignment is made by entering the machine axis number of the CC_Master axis.
 The machine axis number and the axis name must be taken from the channel-specific machine data:

- 20070 \$MC_AXCONF_MACHAX_USED
- 20080 \$MC_AXCONF_CHANAX_NAME_TAB

Notice:
 CC_Master and CC_Slave must have the same axis type (linear or rotary axis).
 CC_Master and CC_Slave must not be a spindle.
 CC_Master and CC_Slave must not be replacement axes.
 If the axes show different dynamic response, it is recommended you make the axis with the lower dynamics the CC_Master axis.
 The machine data may be changed only when the coupling has been switched off.

63541	CC_POSITION_TOL	-	-
mm, degrees	Monitoring window (only relevant to a CC_Slave axis)	DOUBLE	Reset
-			
-	-	0.0	-
-	-	-	7/2
-	-	-	M

Description: Monitoring window of the MCS coupling. Only the entry in the machine data of the CC_Slave axis is evaluated. The difference of the actual values between the CC_Master and CC_Slave must always range within this window. Otherwise an alarm will be output. The following condition is monitored:

$$\text{abs}(\text{ActualPos}[\text{CC\_Master}] - (\text{ActualPos}[\text{CC\_Slave}] + \text{CC\_Offset})) \leq \text{MD63541}$$

with:

CC_Offset = position difference between CC_Master and CC_Slave when switching on the coupling.

Monitoring is switched off by entering value 0.0

63542	CC_PROTECT_MASTER	-	-
-	Indicates the corresponding PMaster axis for a PSlave axis	DWORD	Reset
-			
-	-	0	0
-	-	CC_MAXNUM_AXES_IN_SYSTEM	7/2
-	-	-	M

Description: By assigning a valid Protect-Master axis in this machine data the relevant axis is defined as the Protect-Slave axis. Assignment is made by entering the machine axis number of the Protect-Master axis.

The machine axis and the axis name must be taken from the channel-specific machine data:

- MD20070 \$MC_AXCONF_MACHAX_USED[n-1]
- MD20080 \$MC_AXCONF_CHANAX_NAME_TAB

Notice:

Protect-Master and Protect-Slave axis must have the same axis type (linear or rotary axis).

63543	CC_PROTECT_OPTIONS	-	-
-	Configuration of the collision protection function	DWORD	Reset
-			
-	-	0	0
-	-	0xFF	7/2
-	-	-	M

Description: The collision protection function can be adapted to the special situation by setting the following:

Bit 0 - bit 3 for Protect-Master and Protect-Slave

Bit 0 = 1:

Retraction in PLUS

Bit 1 = 1:

Braking to avoid collision is made by increasing the max. braking acceleration by factor 1.2

Bit 2 = 1:

Monitoring can be activated even without a referenced axis

Bit 3 = 1

Reverse the direction of retraction, if the axis is the master axis

Bit 4 - bit 7 only relevant to Protect-Slave

Bit 4 = 1:

Monitoring always active (otherwise ON/OFF via PLC)

Bit 5

3.6 Compile cycles

Reserve
 Bit6
 Reserve
 Bit 7=1:
 Display active protection in DB3x, DBX66.0

63544	CC_COLLISION_WIN	-	-
mm, degrees	Collision protection window	DOUBLE	Reset
-			
-	-	-1.0	-

Description: Minimum distance between the Protect-Slave axis and the Protect-Master axis. Only the value entered in the Slave axis is used. With a value smaller than 0, the monitoring function cannot be activated.

63545	CC_OFFSET_MASTER	-	-
mm, degrees	Work offset for collision protection	DOUBLE	PowerOn
-			
-	-	0.0	-

Description: Work offset for collision detection between Protect-Slave and Protect-Master axis. The value entered for the Protect-Slave axis is used only.

SINAMICS parameters

4.1 Explanation of the parameters

4.1.1 Structure of the data tables

Basic structure of the parameter description

The tables of SINAMICS parameters all have the following standard structure:

Parameter number	BICO: Full parameter name / short parameter name		
Drive object (function module)	Can be changed:	Calculated:	Access level:
	Data type:	Dynamic index:	Function diagram:
	P group:	Unit group:	Unit selection:
	Not for motor type:	Normalizing	Expert list:
	Min.	Max.	Factory setting

Example

r0025[0...3]	CO: Input voltage, smoothed		
A_INF, S_INF	Can be changed: -	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index:	Function diagram: 8850, 8950
	P group: Display, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Normalization p2001	Expert list: 1
	Min - [Vrms]	Max - [Vrms]	Factory setting - [Vrms]

References

You can find a detailed description of SINAMICS parameters in the following document:
SINAMICS S120/S150 List Manual

4.1.2 Meaning of table fields

Parameter number pxxxx[0...n]

The "parameter number" field contains the number of the parameter.

4.1 Explanation of the parameters

The number is made up of a "p" or "r", followed by the parameter number and optionally the index or bit array.

Below are some examples of how the number is represented in the parameter list:

p...	Adjustable parameter (read and write parameter)
r...	Display parameter (read-only)
p0918	Adjustable parameter 918
p0608[0...3]	Adjustable parameter 608, indices 0 to 3
p0610[0...n]	Adjustable parameter 6010, indices 0 to n (n = configurable)
r0944	Display parameter 944
r2129.0...15	Display parameter 2129 with bit array from bit 0 (lowest bit) to bit 15 (highest bit)

BICO: Full parameter name / short parameter name

The following abbreviations can appear in front of the parameter name:

BI:	Binector Input This parameter selects the source of a digital signal.
BO:	Binector Output This parameter is available as an digital signal for interconnection with other parameters.
CI:	Connector Input This parameter selects the source of an "analog" signal.
CO:	Connector Output This parameter is available as an "analog" signal for interconnection with other parameters.
CO/BO:	Connector/Binector Output Connector/Binector Output This parameter is available as both an "analog" and also as digital signals for interconnection with other parameters.

Drive object (function module)

A drive object (DO) is an independent, "self-contained" functional unit with its own parameters, faults messages, and alarms.

The parameter list specifies the associated drive object and function module for each individual parameter.

Additional information is available in the following documentation: /FM1/ Function Manual
SINAMICS S120 Drive Functions

Can be changed

The "-" sign indicates that the parameter can be changed in any object state and that the change will be activated immediately.

The information C1(x), C2(x), T, U ((x): optional) means that the parameter can be changed only in the specified drive object state and that the change will not be activated until the object switches to another state. This can be one or more states.

The following states are available:

C1(x)	Device commissioning Device is in the process of being commissioned (p0009 > 0). The pulses cannot be enabled. The parameter can only be changed when the device commissioning settings (p0009 > 0) are as follows: • C1: can be changed for all settings p0009 > 0. • C1(x): can only be changed for the settings p0009 = x. A modified parameter value will not be activated until the device commissioning mode is exited with p0009 = 0.	C1: Commissioning 1
C2(x)	Drive object commissioning The drive is in the process of being commissioned (p0009 = 0 and p0010 > 0). The pulses cannot be enabled. The parameter can only be changed in the following device commissioning settings (p0010 > 0): • C2: can be changed for all settings p0010 > 0. • C2(x): can be changed for the settings p0010 = x. A modified parameter value will not be activated until drive commissioning mode is exited with p0010 = 0	C2: Commissioning 2
U	Operation The pulses are enabled	U: Run
T	Ready The pulses are not enabled Status "C1(x)" or "C2(x)" is not active.	T: Ready to run

Calculated

Specifies whether the parameter is influenced by automatic calculations.

The calculation attribute defines which activities influence the parameter.

Access level

Specifies the access level required to be able to display and change this parameter. The required access level can be set using p0003.

The system uses the following access levels:

1. Standard
2. Extended
3. Expert
4. Service

Data type

The information on the data type can consist of the following two items (separated by a slash).

- First information
Data type of the parameter.
- Second information (for binector or connector input only)
Data type of the signal source to be interconnected (binector/connector output).

Parameters can have the following data types:

I8	Integer8	8-bit integer number
I16	Integer16	16-bit integer number
I32	Integer32	32-bit integer number
U8	Unsigned8	8 bits without sign
U16	Unsigned16	16 bits without sign
U32	Unsigned32	32 bits without sign
Float	FloatingPoint32	32-bit floating point number

Dynamic index

For parameters with a dynamic index [0 to n], the following information is specified:

- Data set (if available).
- Parameter for the number of indices ($n = \text{number} - 1$).

Function diagram

The parameter is included in this function diagram. The structure of the parameter function and its relationship with other parameters are shown in the function diagram.

The function diagrams are available in the following documentation:

/LH1/ SINAMICS S120/S150 List Manual

P group

Specifies the functional group to which this parameter belongs. The required parameter group can be set via p0004.

Unit, unit group, unit selection

The standard unit of a parameter is specified in square brackets after the values for "Min", "Max", and "Factory setting".

For parameters where the unit can be changed, "Unit Group" and "Unit Selection" specify which group this parameter belongs and which parameter can be used to change the unit.

Not for motor type

Specifies for which motor type this parameter has no significance

ASM	Induction motor
PMSM	Permanent-magnet synchronous motor
REL	Reluctance motor/SIEMOSYN motor
RESM	Synchronous reluctance motor
SESM	Separately excited synchronous motor

Normalizing

Specification of the reference variable with which a signal value is automatically converted for a BICO interconnection.

The following reference variables are possible:

p2000 ... p2007: Reference speed, reference voltage, etc.

TEMP: 100°C = 100%

PERCENT: 1.0 = 100%

4000H: 4000 hex = 100 %

p0514: Specific normalization

See description for p0514[0...9] to p0524[0...19]

Expert list

Specifies whether this parameter is available in the expert list of the specified drive objects in the commissioning software.

1: Parameter does exist in the expert list.

0: Parameter does not exist in the expert list

4.1.3 Number ranges of the parameters**Number ranges**

Parameters are grouped into the following number ranges:

Range		Description
From	to	
0000	0099	Display and operation
0100	0199	Commissioning
0200	0299	Power unit
0300	0399	Motor
0400	0499	Encoder

4.1 Explanation of the parameters

Range		Description
From	to	
0500	0599	Technology and units, motor-specific data, probes
0600	0699	Thermal monitoring, maximum current, operating hours, motor data, central probe
0700	0799	Control Unit terminals, measuring sockets
0800	0839	CDS, DDS data sets, motor changeover
0840	0879	Sequence control (e.g. signal source for ON/OFF1)
0880	0899	ESR, parking, control and status words
0900	0999	PROFIBUS/PROFIdrive
1000	1199	Setpoint channel (e.g. ramp-function generator)
1200	1299	Functions (e.g. motor holding brake)
1300	1399	U/f control
1400	1799	Closed-loop control
1800	1899	Gating unit
1900	1999	Power unit and motor identification
2000	2009	Reference values
2010	2099	Communication (fieldbus)
2100	2139	Faults and alarms
2140	2199	Signals and monitoring
2200	2359	Technology controller
2360	2399	Staging, hibernation
2500	2699	Position control (LR) and basic positioning (EPOS)
2700	2719	Reference values, display
2720	2729	Load gearbox
2800	2819	Logic operations
2900	2930	Fixed values (e.g. percent, torque)
3000	3099	Motor identification results
3100	3109	Real-time clock (RTC)
3110	3199	Faults and alarms
3200	3299	Signals and monitoring
3400	3659	Infeed closed-loop control
3660	3699	Voltage Sensing Module (VSM), Braking Module internal
3700	3779	Advanced Positioning Control (APC)
3780	3819	Synchronization
3820	3849	Friction characteristic
3850	3899	Functions (e.g. long stator)
3900	3999	Management
4000	4599	Terminal Board, Terminal Module (e.g. TB30, TM31)
4600	4699	Sensor Module
4700	4799	Trace
4800	4849	Function Generator
4950	4999	Technology Extension
5000	5169	Spindle diagnostics

Range		Description
From	to	
5200	5230	Current setpoint filter 5 ... 10 (r0108.21)
5400	5499	Line droop control (e.g. shaft generator)
5500	5599	Dynamic grid support (solar)
5600	5913	PROFenergy
5900	6999	SINAMICS GM/SM/GL/SL
7000	7499	Parallel connection of power units
7500	7599	SINAMICS SM120
7700	7729	External messages
7770	7789	NVRAM, system parameters
7800	7839	EEPROM read/write parameters
7840	8399	Internal system parameters
8400	8449	Real-time clock (RTC)
8500	8599	Data and macro management
8600	8799	CAN bus
8800	8899	Communication Board Ethernet (CBE), PROFIdrive
8900	8999	Industrial Ethernet, PROFINET, CBE20
9000	9299	Topology
9300	9399	Safety Integrated
9400	9499	Parameter consistency and storage
9500	9899	Safety Integrated
9900	9949	Topology
9950	9999	Diagnostics, internal
10000	10199	Safety Integrated
11000	11299	Free technology controller 0, 1, 2
20000	20999	Free function blocks (FBLOCKS)
21000	25999	Drive Control Chart (DCC)
50000	53999	SINAMICS DC MASTER (DC closed-loop control)
61000	61001	PROFINET

4.2 SINAMICS parameters

Version: 5206900

4.2 SINAMICS parameters

All objects: A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

r0002	Control Unit operating display / CU op_display		
CU_I_840, CU_NX_840	Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 117	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0002	Drive operating display / Drv op_display		
HLA_840, HLA_DBSI	Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 250	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0002	Drive operating display / Drv op_display		
SERVO_840, SERVO_DBSI	Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 250	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0002	Infeed operating display / INF op_display		
A_INF_840, S_INF_840	Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 250	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0002	Infeed operating display / INF op_display		
B_INF_840	Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 250	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r0002 TM120	TM120 operating display / TM120 op_display Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 250	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0002 TM150	TM150 operating display / TM150 op_display Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 250	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0002 TM15DI_DO	TM15DI/DO operating display / TM15D op_display Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 250	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0002 TM17	TM17 operating display / TM17 op_display Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 250	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0002 TM31	TM31 operating display / TM31 op_display Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 250	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0002 TM41	TM41 operating display / TM41 op_display Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 250	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r0002 TB30	TB30 operating display / TB30 op_display Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 250	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0002 ENC_840	Encoder DO operating display / Enc DO op_disp Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 250	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0002 HUB	DRIVE-CLiQ Hub Module operating display / Hub op_display Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 250	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0003 CU_I_840, CU_NX_840	BOP access level / BOP acc_level Can be changed: C1, T, U Data type: Integer16 P-Group: All groups Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4	Access level: 1 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 1
p0005[0...1] HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	BOP operating display selection / BOP op_disp sel Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 2 [1] 0
p0006 HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	BOP operating display mode / BOP op_disp mode Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: 4	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 4

p0009 CU_I_840, CU_NX_840	Device commissioning parameter filter / Dev com par_filt Can be changed: C1, T Data type: Integer16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p0010 HLA_840, HLA_DBSI	Drive commissioning parameter filter / Drv com par_filt Can be changed: C2(1), T Data type: Integer16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p0010 SERVO_840, SERVO_DBSI	Drive commissioning parameter filter / Drv com par_filt Can be changed: C2(1), T Data type: Integer16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000	Access level: 1 Function diagram: 2800, 2818 Unit selection: - Expert list: 1 Factory setting: 1
p0010 A_INF_840, B_INF_840, S_INF_840	Infeed commissioning parameter filter / INF com par_filt Can be changed: C2(1), T Data type: Integer16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p0010 TM120	TM120 commissioning parameter filter / TM120 com par_filt Can be changed: C2(1), T Data type: Integer16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0010 TM150	TM150 commissioning parameter filter / TM150 com par_filt Can be changed: C2(1), T Data type: Integer16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0010 TM15DI_DO	TM15DI/DO commissioning the parameterizing filter / TM15D com par_filt Can be changed: C2(1), T Data type: Integer16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0010 TM17	TM17 commissioning parameter filter / TM17 com par_filt Can be changed: C2(1), T Data type: Integer16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0010 TM31	TM31 commissioning parameter filter / TM31 com par_filt Can be changed: C2(1), T Data type: Integer16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0010 TM41	TM41 commissioning parameter filter / TM41 com par_filt Can be changed: C2(1), T Data type: Integer16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0010 TB30	TB30 commissioning parameter filter / TB30 com par_filt Can be changed: C2(1), T Data type: Integer16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0010 ENC_840	Encoder DO commissioning parameter filter / EncDO com par_filt Can be changed: C2(1), T, U Data type: Integer16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0013[0...49] HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	BOP user-defined list / BOP list Can be changed: T, U Data type: Unsigned16 P-Group: Functions Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0015 CU_I_840, CU_NX_840	Macro drive unit / Macro drv unit Can be changed: C1 Data type: Unsigned32 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999999	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0015 A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM31	Macro drive object / Macro DO Can be changed: C2(1) Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999999	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r0018 CU_I_840, CU_NX_840	Control Unit firmware version / CU FW version Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0020 HLA_840, HLA_DBSI	Velocity setpoint smoothed / v_set smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 2 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r0020 SERVO_840, SERVO_DBSI	Speed setpoint smoothed / n_set smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 2 Function diagram: 5020, 6799 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]

r0020 SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity setpoint smoothed / v_set smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 2 Function diagram: 5020, 6799 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r0021 HLA_840, HLA_DBSI	CO: Actual velocity smoothed / v_act smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 2 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r0021 SERVO_840, SERVO_DBSI	CO: Actual speed smoothed / n_act smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 2 Function diagram: 4700, 4710 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r0021 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Actual velocity smoothed / v_act smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 2 Function diagram: 4700, 4710 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r0022 HLA_840, HLA_DBSI	Actual velocity smoothed / v_act smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: - Scaling: p2000 Max: - [m/min]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [m/min]
r0022 SERVO_840, SERVO_DBSI	Speed actual value rpm smoothed / n_ActV rpm smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: - Scaling: p2000 Max: - [rpm]	Access level: 2 Function diagram: 4700, 4710 Unit selection: - Expert list: 1 Factory setting: - [rpm]

r0022 SERVO_840 (Lin), SERVO_DBSI (Lin)	Actual velocity smoothed / v_act smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: - Scaling: p2000 Max: - [m/min]	Access level: 2 Function diagram: 4700, 4710 Unit selection: - Expert list: 1 Factory setting: - [m/min]
r0024 SERVO_840, SERVO_DBSI	Output frequency smoothed / f_outp smooth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Hz]	Calculated: - Dynamic index: - Unit group: - Scaling: p2000 Max: - [Hz]	Access level: 3 Function diagram: 5300, 5730 Unit selection: - Expert list: 1 Factory setting: - [Hz]
r0024 A_INF_840, S_INF_840	CO: Line supply frequency smoothed / f_line smooth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Hz]	Calculated: - Dynamic index: - Unit group: - Scaling: p2000 Max: - [Hz]	Access level: 3 Function diagram: 8850, 8950 Unit selection: - Expert list: 1 Factory setting: - [Hz]
r0025 SERVO_840, SERVO_DBSI	CO: Output voltage smoothed / U_outp smooth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Vrms]	Calculated: - Dynamic index: - Unit group: - Scaling: p2001 Max: - [Vrms]	Access level: 2 Function diagram: 5730, 6300, 6799 Unit selection: - Expert list: 1 Factory setting: - [Vrms]
r0025[0...4] A_INF_840, S_INF_840	CO: Input voltage smoothed / U_inp smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Vrms]	Calculated: - Dynamic index: - Unit group: - Scaling: p2001 Max: - [Vrms]	Access level: 2 Function diagram: 8850, 8950 Unit selection: - Expert list: 1 Factory setting: - [Vrms]
r0026 SERVO_840, SERVO_DBSI	CO: DC link voltage smoothed / Vdc smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: p2001 Max: - [V]	Access level: 2 Function diagram: 5730, 8750, 8850, 8950 Unit selection: - Expert list: 1 Factory setting: - [V]

r0026 A_INF_840, B_INF_840, S_INF_840	CO: DC link voltage smoothed / Vdc smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: p2001 Max: - [V]	Access level: 2 Function diagram: 5730, 6799, 8750, 8850, 8950 Unit selection: - Expert list: 1 Factory setting: - [V]
r0027 A_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	CO: Absolute actual current smoothed / I_act AbsV smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: - [Arms]	Access level: 2 Function diagram: 5730, 6799, 8850, 8950 Unit selection: - Expert list: 1 Factory setting: - [Arms]
r0027 B_INF_840	CO: Absolute actual current smoothed / I_act AbsV smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: - Unit group: 6_4 Scaling: p2002 Max: - [A]	Access level: 2 Function diagram: 8750 Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r0028 A_INF_840, SERVO_840, SERVO_DBSI	Modulation depth smoothed / mod_depth smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: - [%]	Access level: 3 Function diagram: 5730, 6799, 8950 Unit selection: - Expert list: 1 Factory setting: - [%]
r0029 SERVO_840, SERVO_DBSI	Current actual value field-generating smoothed / Id_act smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 5730, 6799 Unit selection: - Expert list: 1 Factory setting: - [Arms]

r0029	Reactive current actual value smoothed / I_{react} smoth		
A_INF_840, S_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 8850, 8950 Unit selection: - Expert list: 1 Factory setting: - [Arms]
r0030	Current actual value torque-generating smoothed / I_q_act smth		
SERVO_840, SERVO_DBSI	Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 5730, 6799 Unit selection: - Expert list: 1 Factory setting: - [Arms]
r0030	Current actual value force generating smoothed / I_q_act smth		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 5730, 6799 Unit selection: - Expert list: 1 Factory setting: - [Arms]
r0030	Active current actual value smoothed / I_{act} smth		
A_INF_840, S_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 8850, 8950 Unit selection: - Expert list: 1 Factory setting: - [Arms]
r0031	Force actual value smoothed / F_{ActV} smth		
HLA_840, HLA_DBSI	Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 2 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r0031	Actual torque smoothed / M_{act} smth		
SERVO_840, SERVO_DBSI	Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 2 Function diagram: 5730, 6799 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]

r0031 SERVO_840 (Lin), SERVO_DBSI (Lin)	Force actual value smoothed / F_ActV smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 2 Function diagram: 5730, 6799 Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r0032 A_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	CO: Active power actual value smoothed / P_ActV_act smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [kW]	Calculated: - Dynamic index: - Unit group: 14_10 Scaling: r2004 Max: - [kW]	Access level: 2 Function diagram: 5730, 6799, 8750, 8850, 8950 Unit selection: p0505 Expert list: 1 Factory setting: - [kW]
r0032 B_INF_840	CO: Active power actual value smoothed / P_ActV_act smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [kW]	Calculated: - Dynamic index: - Unit group: 14_10 Scaling: r2004 Max: - [kW]	Access level: 2 Function diagram: 5730, 6799, 8750, 8850, 8950 Unit selection: p0505 Expert list: 1 Factory setting: - [kW]
r0033 SERVO_840, SERVO_DBSI	Torque utilization smoothed / M_util smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 3 Function diagram: 8012 Unit selection: - Expert list: 1 Factory setting: - [%]
r0033 SERVO_840 (Lin), SERVO_DBSI (Lin)	Force utilization smoothed / F_util smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 3 Function diagram: 8012 Unit selection: - Expert list: 1 Factory setting: - [%]
r0034 SERVO_840, SERVO_DBSI	CO: Motor utilization thermal / Mot_util therm Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: ASM, SESM, REL Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 2 Function diagram: 8017, 8019 Unit selection: - Expert list: 1 Factory setting: - [%]

r0035 SERVO_840, SERVO_DBSI	CO: Motor temperature / Mot temp Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 2 Function diagram: 8016, 8017 Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r0035 A_INF_840, S_INF_840	CO: Temperature input / Temp_input Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 2 Function diagram: 8850, 8950 Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r0035 B_INF_840	CO: Temperature input / Temp_input Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 2 Function diagram: 8750 Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r0036 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	CO: Power unit overload I2t / PU overload I2t Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 3 Function diagram: 8021 Unit selection: - Expert list: 1 Factory setting: - [%]
r0037[0...1] CU_I_840, CU_NX_840	Control Unit temperature / CU temp Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: - Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [°C]
r0037[0...1] HLA_840, HLA_DBSI	CO: HLA temperature / HLA temp Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: - Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [°C]

r0037[0...20] A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	CO: Power unit temperatures / PU temperatures Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: 8021 Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r0038 A_INF_840, S_INF_840	Power factor smoothed / Cos phi smooth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 6799, 8850, 8950 Unit selection: - Expert list: 1 Factory setting: -
r0039[0...2] SERVO_840, SERVO_DBSI	CO: Energy display / Energy disp Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [kWh]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [kWh]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [kWh]
p0040 SERVO_840, SERVO_DBSI	Reset energy consumption display / Energy usage reset Can be changed: T, U Data type: Unsigned8 P-Group: Displays, signals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r0042[0...2] SERVO_840, SERVO_DBSI	CO: Process energy display / Proc energy disp Can be changed: - Data type: Integer32 P-Group: Displays, signals Not for motor type: - Min: - [Wh]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Wh]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Wh]
p0043 SERVO_840, SERVO_DBSI	BI: Enable energy usage display / Enab energy usage Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

r0044 SERVO_840, SERVO_DBSI	Thermal converter utilization / Conv_util therm Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [%]
p0045 HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Display values smoothing time constant / Disp_val Tc_smth Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000.00 [ms]	Access level: 2 Function diagram: 4715, 5610, 5730, 6714, 8012 Unit selection: - Expert list: 1 Factory setting: 1.00 [ms]
p0045 A_INF_840	Display values smoothing time constant / Disp_val Tc_smth Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000.00 [ms]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 150.00 [ms]
r0046.0...30 HLA_840, HLA_DBSI	CO/BO: Missing enable signal / Missing enable sig Can be changed: - Data type: Unsigned32 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2634 Unit selection: - Expert list: 1 Factory setting: -
r0046.0...31 SERVO_840, SERVO_DBSI	CO/BO: Missing enable signal / Missing enable sig Can be changed: - Data type: Unsigned32 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2634 Unit selection: - Expert list: 1 Factory setting: -
r0046.0...31 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO/BO: Missing enable signal / Missing enable sig Can be changed: - Data type: Unsigned32 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2634 Unit selection: - Expert list: 1 Factory setting: -

r0046.0...29	CO/BO: Missing enable signal / Missing enable sig		
A_INF_840, S_INF_840	Can be changed: - Data type: Unsigned32 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 8834, 8934 Unit selection: - Expert list: 1 Factory setting: -
r0046.0...29	CO/BO: Missing enable signal / Missing enable sig		
B_INF_840	Can be changed: - Data type: Unsigned32 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 8734 Unit selection: - Expert list: 1 Factory setting: -
r0047	Identification status / ID status		
HLA_840, HLA_DBSI	Can be changed: - Data type: Integer16 P-Group: Displays, signals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 200	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0047	Identification status / ID status		
SERVO_840, SERVO_DBSI	Can be changed: - Data type: Integer16 P-Group: Displays, signals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 104	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0049[0...3]	Motor data set/encoder data set effective / MDS/EDS effective		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned8 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8565 Unit selection: - Expert list: 1 Factory setting: -
r0050.0...3	CO/BO: Command Data Set CDS effective / CDS effective		
A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI, TM41	Can be changed: - Data type: Unsigned8 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8560 Unit selection: - Expert list: 1 Factory setting: -

r0051.0...4 ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	CO/BO: Drive Data Set DDS effective / DDS effective Can be changed: - Data type: Unsigned8 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8565 Unit selection: - Expert list: 1 Factory setting: -
r0056.1...15 SERVO_840, SERVO_DBSI	CO/BO: Status word, closed-loop control / ZSW cl-lp ctrl Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2526 Unit selection: - Expert list: 1 Factory setting: -
r0060 HLA_840, HLA_DBSI	CO: Velocity setpoint before the setpoint filter / v_set before filt Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 4965 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r0060 SERVO_840, SERVO_DBSI	CO: Speed setpoint before the setpoint filter / n_set before filt Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 2701, 2704, 5020, 6030, 6799 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r0060 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity setpoint before the setpoint filter / v_set before filt Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 2701, 2704, 5020, 6030, 6799 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r0061[0...1] HLA_840, HLA_DBSI	CO: Actual velocity unsmoothed / v_act unsmoothed Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 2 Function diagram: 4965 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]

r0061[0...1] SERVO_840, SERVO_DBSI	CO: Actual speed unsmoothed / n_act unsmoothed Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 2 Function diagram: 4700, 4710, 4715 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r0061[0...1] SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Actual velocity unsmoothed / v_act unsmoothed Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 2 Function diagram: 4700, 4710, 4715 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r0061 ENC_840	CO: Actual speed unsmoothed / n_act unsmoothed Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 2 Function diagram: 4700, 4710, 4715 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r0061 ENC_840 (Lin_enc)	CO: Actual velocity unsmoothed / v_act unsmoothed Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 2 Function diagram: 4700, 4710, 4715 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r0062 HLA_840, HLA_DBSI	CO: Velocity setpoint after the filter / v_set after filter Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 4965 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]

r0062 SERVO_840, SERVO_DBSI	CO: Speed setpoint after the filter / n_set after filter Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 5019, 5020, 5030, 5042, 5210 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r0062 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity setpoint after the filter / v_set after filter Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 5019, 5020, 5030, 5042, 5210 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r0063 HLA_840, HLA_DBSI	CO: Actual velocity smoothed / v_act smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 4965 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r0063 SERVO_840, SERVO_DBSI	CO: Actual speed smoothed / n_act smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 4700, 4710, 5019, 5300, 8019 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r0063 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Actual velocity smoothed / v_act smth Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 4700, 4710, 5019, 5300, 8019 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]

r0063 TM41	CO: Speed actual value / n_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r0064 HLA_840, HLA_DBSI	CO: Velocity controller system deviation / v_ctrl SysDev Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r0064 SERVO_840, SERVO_DBSI	CO: Speed controller system deviation / n_ctrl SysDev Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 5040, 6040 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r0064 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity controller system deviation / v_ctrl SysDev Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 5040, 6040 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r0065 SERVO_840, SERVO_DBSI	Slip frequency / f_slip Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Hz]	Calculated: - Dynamic index: - Unit group: 2_1 Scaling: p2000 Max: - [Hz]	Access level: 3 Function diagram: 6310, 6700, 6727, 6730, 6732 Unit selection: p0505 Expert list: 1 Factory setting: - [Hz]
r0066 SERVO_840, SERVO_DBSI	CO: Output frequency / f_outp Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Hz]	Calculated: - Dynamic index: - Unit group: 2_1 Scaling: p2000 Max: - [Hz]	Access level: 3 Function diagram: 5300, 5730, 6300, 6310, 6730, 6731, 6799 Unit selection: p0505 Expert list: 1 Factory setting: - [Hz]

r0066[0...1] A_INF_840, S_INF_840	CO: Line frequency / f_line Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Hz]	Calculated: - Dynamic index: - Unit group: 2_1 Scaling: p2000 Max: - [Hz]	Access level: 3 Function diagram: 8850, 8864, 8950, 8964 Unit selection: p0505 Expert list: 1 Factory setting: - [Hz]
r0067[0...1] HLA_840, HLA_DBSI	CO: Pressure actual value A / Press ActV A Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [bar]	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: - [bar]	Access level: 3 Function diagram: 4970 Unit selection: - Expert list: 1 Factory setting: - [bar]
r0067 SERVO_840, SERVO_DBSI	CO: Output current maximum / I_outp max Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 5722, 6300, 6301, 6640 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r0067[0...1] A_INF_840, S_INF_840	Absolute current value permissible / I_AbsV perm Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r0068[0...1] HLA_840, HLA_DBSI	CO: Pressure actual value B / Press ActV B Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [bar]	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: - [bar]	Access level: 3 Function diagram: 4970 Unit selection: - Expert list: 1 Factory setting: - [bar]

r0068 A_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	CO: Absolute current actual value / I_act AbsV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 5730, 7017, 8017, 8019, 8021, 8850, 8950 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r0068 B_INF_840	CO: DC current in the DC link / Idc DC link Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: - Unit group: 6_4 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: 8021, 8750 Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r0069 HLA_840, HLA_DBSI	CO: System pressure actual value / Sys press ActV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [bar]	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: - [bar]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [bar]
r0069[0...8] SERVO_840, SERVO_DBSI	CO: Phase current actual value / I_phase ActV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: - Unit group: 6_5 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: 5700, 5730, 7008 Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r0069[0...8] A_INF_840, S_INF_840	CO: Phase current actual value / I_phase ActV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: - Unit group: 6_5 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: 6730, 6731, 6732, 7983, 7987, 8850, 8950 Unit selection: p0505 Expert list: 1 Factory setting: - [A]

r0070[0...1] HLA_840, HLA_DBSI	CO: Valve position voltage setpoint before inversion / U_set before inv Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: 5_2 Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: 4966 Unit selection: p0505 Expert list: 1 Factory setting: - [V]
r0070 SERVO_840, SERVO_DBSI	CO: Actual DC link voltage / Vdc act val Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: 5_2 Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: 5730 Unit selection: p0505 Expert list: 1 Factory setting: - [V]
r0070 A_INF_840, B_INF_840, S_INF_840	CO: Actual DC link voltage / Vdc act val Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: 5_2 Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: 8750, 8850, 8910, 8940, 8950, 8964 Unit selection: p0505 Expert list: 1 Factory setting: - [V]
r0071[0...1] HLA_840, HLA_DBSI	CO: Valve position voltage setpoint / Valve U_set Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: 5_2 Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: 4966 Unit selection: p0505 Expert list: 1 Factory setting: - [V]
r0072[0...1] HLA_840, HLA_DBSI	CO: Valve position voltage actual value / Valve U_act Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: 5_2 Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [V]
r0072 SERVO_840, SERVO_DBSI	CO: Output voltage / U_output Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Vrms]	Calculated: - Dynamic index: - Unit group: 5_1 Scaling: p2001 Max: - [Vrms]	Access level: 3 Function diagram: 5700, 5730, 6730, 6731, 6799 Unit selection: p0505 Expert list: 1 Factory setting: - [Vrms]

r0072[0...4] CO: Input voltage / U_inp

A_INF_840, S_INF_840

Can be changed: -

Data type: FloatingPoint32

P-Group: Displays, signals

Not for motor type: -

Min:

- [Vrms]

Calculated: -

Dynamic index: -

Unit group: 5_1

Scaling: p2001

Max:

- [Vrms]

Access level: 3

Function diagram: 8850, 8950

Unit selection: p0505

Expert list: 1

Factory setting:

- [Vrms]

r0073[0...1]

HLA_840, HLA_DBSI

Controller valve position voltage setpoint / Valve U_set

Can be changed: -

Data type: FloatingPoint32

P-Group: Displays, signals

Not for motor type: -

Min:

- [V]

Calculated: -

Dynamic index: -

Unit group: 5_2

Scaling: p2001

Max:

- [V]

Access level: 3

Function diagram: 4965, 4970

Unit selection: p0505

Expert list: 1

Factory setting:

- [V]

r0074

HLA_840, HLA_DBSI

CO: Piston position with respect to the piston zero point / Piston pos zero

Can be changed: -

Data type: Integer32

P-Group: Displays, signals

Not for motor type: -

Min:

-

Calculated: -

Dynamic index: -

Unit group: -

Scaling: -

Max:

-

Access level: 3

Function diagram: -

Unit selection: -

Expert list: 1

Factory setting:

-

r0074A_INF_840,
SERVO_840,
SERVO_DBSI**CO: Modulation depth / mod_depth**

Can be changed: -

Data type: FloatingPoint32

P-Group: Displays, signals

Not for motor type: -

Min:

- [%]

Calculated: -

Dynamic index: -

Unit group: -

Scaling: PERCENT

Max:

- [%]

Access level: 3

Function diagram: 5730, 6730,
6731, 6799, 8940, 8950

Unit selection: -

Expert list: 1

Factory setting:

- [%]

r0075SERVO_840,
SERVO_DBSI**CO: Current setpoint field-generating / Id_set**

Can be changed: -

Data type: FloatingPoint32

P-Group: Displays, signals

Not for motor type: REL

Min:

- [Arms]

Calculated: -

Dynamic index: -

Unit group: 6_2

Scaling: p2002

Max:

- [Arms]

Access level: 3

Function diagram: 5700, 5714,
5722

Unit selection: p0505

Expert list: 1

Factory setting:

- [Arms]

r0075 A_INF_840	CO: Reactive current setpoint / I_{react_set} Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 7997, 8945, 8946 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r0076 SERVO_840, SERVO_DBSI	CO: Current actual value field-generating / Id_{act} Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 5700, 5714, 5730, 6700, 6714, 6799 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r0076 A_INF_840, S_INF_840	CO: Reactive current actual value / I_{reactive_ActV} Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 8810, 8850, 8910, 8946, 8950 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r0077 SERVO_840, SERVO_DBSI	CO: Current setpoint torque-generating / I_{q_set} Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: REL Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 5700, 5714, 5722 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r0077 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Current setpoint force-generating / I_{q_set} Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: REL Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 5700, 5714, 5722 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]

r0077 A_INF_840	CO: Active current setpoint / I_act_set Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 7997, 8910, 8940, 8945 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r0078[0...1] SERVO_840, SERVO_DBSI	CO: Current actual value torque-generating / Iq_act Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 5700, 5714, 5730 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r0078[0...1] SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Current actual value force-generating / Iq_act Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 5700, 5714, 5730 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r0078 A_INF_840, S_INF_840	CO: Active current actual value / I_active_act Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 8810, 8850, 8910, 8946, 8950 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r0079 HLA_840, HLA_DBSI	CO: Total force setpoint / F_set total Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: 4970 Unit selection: p0505 Expert list: 1 Factory setting: - [N]

r0079[0...1] SERVO_840, SERVO_DBSI	CO: Torque setpoint total / M_set total Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: REL Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 3 Function diagram: 5610 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r0079[0...1] SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Total force setpoint / F_set total Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: 5610 Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r0080[0...1] HLA_840, HLA_DBSI	CO: Force actual value / F_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: 4970 Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r0080 SERVO_840, SERVO_DBSI	CO: Torque actual value / M_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 3 Function diagram: 5730 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r0080 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Force actual value / F_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: 5730 Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r0081 SERVO_840, SERVO_DBSI	CO: Torque utilization / M_utilization Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 3 Function diagram: 8012 Unit selection: - Expert list: 1 Factory setting: - [%]

r0081 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Force utilization / F_utilization Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 3 Function diagram: 8012 Unit selection: - Expert list: 1 Factory setting: - [%]
r0082[0...1] HLA_840, HLA_DBSI	CO: Active power actual value / P_act Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [kW]	Calculated: - Dynamic index: - Unit group: 14_8 Scaling: r2004 Max: - [kW]	Access level: 3 Function diagram: 5730 Unit selection: p0505 Expert list: 1 Factory setting: - [kW]
r0082[0...3] SERVO_840, SERVO_DBSI	CO: Active power actual value / P_act Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [kW]	Calculated: - Dynamic index: - Unit group: 14_5 Scaling: r2004 Max: - [kW]	Access level: 3 Function diagram: 5730 Unit selection: p0505 Expert list: 1 Factory setting: - [kW]
r0082[0...3] SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Active power actual value / P_act Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [kW]	Calculated: - Dynamic index: - Unit group: 14_8 Scaling: r2004 Max: - [kW]	Access level: 3 Function diagram: 5730 Unit selection: p0505 Expert list: 1 Factory setting: - [kW]
r0082 A_INF_840, S_INF_840	CO: Active power actual value / P_act Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [kW]	Calculated: - Dynamic index: - Unit group: 14_7 Scaling: r2004 Max: - [kW]	Access level: 3 Function diagram: 8750, 8850, 8950 Unit selection: p0505 Expert list: 1 Factory setting: - [kW]
r0082 B_INF_840	CO: Active power actual value / P_act Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [kW]	Calculated: - Dynamic index: - Unit group: 14_7 Scaling: r2004 Max: - [kW]	Access level: 3 Function diagram: 8750, 8850, 8950 Unit selection: p0505 Expert list: 1 Factory setting: - [kW]

r0083 SERVO_840, SERVO_DBSI	CO: Flux setpoint / Flux set Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 3 Function diagram: 5722 Unit selection: - Expert list: 1 Factory setting: - [%]
r0084 SERVO_840, SERVO_DBSI	CO: Flux actual value / Flux ActV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 3 Function diagram: 5722 Unit selection: - Expert list: 1 Factory setting: - [%]
r0088 A_INF_840, SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: DC link voltage setpoint / Vdc setpoint Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: 5_2 Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: 8940, 8964 Unit selection: p0505 Expert list: 1 Factory setting: - [V]
r0089[0...2] A_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Actual phase voltage / U_phase U ActV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: 5_3 Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: 5730, 6730 Unit selection: p0505 Expert list: 1 Factory setting: - [V]
p0092 CU_I_840, CU_NX_840	Clock synchronous operation pre-assignment/check / Clk sync op pre-as Can be changed: C1(1) Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
r0093 SERVO_840, SERVO_DBSI	CO: Pole position angle electrically scaled / Pole pos el scale Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°]	Calculated: - Dynamic index: - Unit group: - Scaling: p2005 Max: - [°]	Access level: 3 Function diagram: 4710 Unit selection: - Expert list: 1 Factory setting: - [°]

r0094 HLA_840, HLA_DBSI	CO: Piston position actual value / Piston pos ActV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [mm]	Calculated: - Dynamic index: - Unit group: - Scaling: p2005 Max: - [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mm]
r0094 SERVO_840, SERVO_DBSI	CO: Transformation angle / Transformat_angle Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°]	Calculated: - Dynamic index: - Unit group: - Scaling: p2005 Max: - [°]	Access level: 3 Function diagram: 4700, 4702, 4710, 6300, 6714, 6730, 6731, 6732 Unit selection: - Expert list: 1 Factory setting: - [°]
r0094 A_INF_840, S_INF_840	CO: Transformation angle / Transformat_angle Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°]	Calculated: - Dynamic index: - Unit group: - Scaling: p2005 Max: - [°]	Access level: 3 Function diagram: 8850, 8950 Unit selection: - Expert list: 1 Factory setting: - [°]
p0097 CU_I_840, CU_NX_840	Select drive object type / Select DO type Can be changed: C1(1) Data type: Integer16 P-Group: Topology Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 24	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r0098[0...5] CU_I_840, CU_NX_840	Actual device topology / Device_act topo Can be changed: - Data type: Unsigned32 P-Group: Topology Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0099[0...5] CU_I_840, CU_NX_840	Device target topology / Device_target topo Can be changed: C1(1) Data type: Unsigned32 P-Group: Topology Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex

p0100 HLA_840, HLA_DBSI	IEC/NEMA Standards / IEC/NEMA Standards Can be changed: C2(1, 2) Data type: Integer16 P-Group: Converter Not for motor type: SESM Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0100 SERVO_840, SERVO_DBSI	IEC/NEMA Standards / IEC/NEMA Standards Can be changed: C2(1, 2) Data type: Integer16 P-Group: Converter Not for motor type: SESM Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0101[0...n] CU_I_840, CU_NX_840	Drive object numbers / DO numbers Can be changed: C1(1) Data type: Unsigned16 P-Group: Topology Not for motor type: - Min: 0	Calculated: - Dynamic index: r0095 Unit group: - Scaling: - Max: 62	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r0102[0...1] CU_I_840, CU_NX_840	Number of drive objects / DO count Can be changed: - Data type: Unsigned16 P-Group: Topology Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0103[0...n] CU_I_840, CU_NX_840	Application-specific view / Appl_spec view Can be changed: C1(2) Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: r0095 Unit group: - Scaling: - Max: 999	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r0103 A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Application-specific view / Appl_spec view Can be changed: - Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p0105	Activate/deactivate drive object / DO act/deact		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	1

p0105	Activate/deactivate drive object / DO act/deact		
A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17	Can be changed: T	Calculated: -	Access level: 2
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	2	1

p0105	Activate/deactivate drive object / DO act/deact		
TM31, TM41	Can be changed: T	Calculated: -	Access level: 2
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	2	1

r0106	Drive object active/inactive / DO act/inact		
All objects	Can be changed: -	Calculated: -	Access level: 2
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	-

p0107[0...n]	Drive object type / DO type		
CU_I_840	Can be changed: C1(2)	Calculated: -	Access level: 2
	Data type: Integer16	Dynamic index: r0095	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	300	0

r0107	Drive object type / DO type		
HLA_840, HLA_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	70	70	-

r0107 SERVO_840, SERVO_DBSI	Drive object type / DO type Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 11	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 11	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0107 A_INF_840	Drive object type / DO type Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 10	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0107 B_INF_840	Drive object type / DO type Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 30	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0107 S_INF_840	Drive object type / DO type Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 20	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0107 TM120	Drive object type / DO type Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 207	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 207	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0107 TM150	Drive object type / DO type Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 208	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 208	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r0107 TM15DI_DO	Drive object type / DO type Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 204	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 204	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0107 TM17	Drive object type / DO type Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 202	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 202	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0107 TM31	Drive object type / DO type Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 200	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 200	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0107 TM41	Drive object type / DO type Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 201	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 201	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0107 TB30	Drive object type / DO type Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 100	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0107 ENC_840	Drive object type / DO type Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 300	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 300	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r0107 CU_LINK	Drive object type / DO type Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 254	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 254	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0107 HUB	Drive object type / DO type Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 150	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 150	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0108[0...n] CU_I_840, CU_NX_840	Drive objects function module / DO fct_mod Can be changed: C1(2) Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: r0095 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 0000 bin
r0108 HLA_840, HLA_DBSI	Drive objects function module / DO fct_mod Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0108 SERVO_840, SERVO_DBSI	Drive objects function module / DO fct_mod Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0108 A_INF_840	Drive objects function module / DO fct_mod Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r0108 B_INF_840, S_INF_840	Drive objects function module / DO fct_mod Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0108 TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Drive objects function module / DO fct_mod Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0108 ENC_840	Drive objects function module / DO fct_mod Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0110[0...2] CU_I_840, CU_NX_840	Basic sampling times / t_basis Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [µs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [µs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [µs]
r0111 A_INF_840, B_INF_840, CU_I_840, CU_NX_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Basic sampling time selection / t_basis sel Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0112 A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Sampling times pre-setting p0115 / t_samp for p0115 Can be changed: C1(3) Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 5	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 3

p0113 SERVO_840, SERVO_DBSI	Minimum pulse frequency, selection / f_puls min sel Can be changed: C1(3) Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 2.000 [kHz]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4.000 [kHz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 4.000 [kHz]
p0113 SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	Minimum pulse frequency, selection / f_puls min sel Can be changed: C1(3) Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 4.000 [kHz]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4.000 [kHz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 4.000 [kHz]
r0114[0...9] SERVO_840, SERVO_DBSI	Minimum pulse frequency recommended / f_puls min recom Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [kHz]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [kHz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [kHz]
p0115[0] CU_I_840, CU_NX_840	Sampling time for supplementary functions / t_samp suppl_fct Can be changed: C1(3) Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [μs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16000.00 [μs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 4000.00 [μs]
p0115[0...6] HLA_840, HLA_DBSI	Sampling times for internal control loops / t_samp int ctrl Can be changed: C1(3) Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [μs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16000.00 [μs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 125.00 [μs] [1] 125.00 [μs] [2] 125.00 [μs] [3] 4000.00 [μs] [4] 1000.00 [μs] [5] 4000.00 [μs] [6] 4000.00 [μs]

p0115[0...6]	Sampling times for internal control loops / t_samp int ctrl		
A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: C1(3)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	16000.00 [μs]	[0] 125.00 [μs]
			[1] 125.00 [μs]
			[2] 125.00 [μs]
			[3] 4000.00 [μs]
			[4] 1000.00 [μs]
			[5] 4000.00 [μs]
			[6] 4000.00 [μs]

p0115[0...6]	Sampling times for internal control loops / t_samp int ctrl		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: C1(3)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	16000.00 [μs]	[0] 125.00 [μs]
			[1] 125.00 [μs]
			[2] 125.00 [μs]
			[3] 4000.00 [μs]
			[4] 1000.00 [μs]
			[5] 4000.00 [μs]
			[6] 4000.00 [μs]

p0115[0]	Sampling time for supplementary functions / t_samp suppl_fct		
TM120	Can be changed: C1(3)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	16000.00 [μs]	4000.00 [μs]

p0115[0]	Sampling time for supplementary functions / t_samp suppl_fct		
TB30, TM150, TM15DI_DO, TM31	Can be changed: C1(3)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	16000.00 [μs]	4000.00 [μs]

p0115[0] TM41	Sampling time for supplementary functions / t_samp suppl_fct Can be changed: C1(3) Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [μs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16000.00 [μs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 4000.00 [μs]
p0115[0] ENC_840	Sampling time for speed detection / t_samp n_det Can be changed: C1(3) Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 125.00 [μs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 500.00 [μs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 125.00 [μs]
r0116[0...1] A_INF_840, B_INF_840, CU_I_840, CU_NX_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM15DI_DO, TM17, TM31, TM41	Drive object clock cycle recommended / DO_clock recom Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [μs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [μs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [μs]
p0117 CU_I_840, CU_NX_840	Current controller computing dead time mode / I_ctrl t_dead mode Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 6
p0118 SERVO_840, SERVO_DBSI	Current controller computing dead time / I_ctrl t_dead Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [μs]	Calculated: CALC_MOD_CON Dynamic index: - Unit group: - Scaling: - Max: 2000.00 [μs]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [μs]
p0118 A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840	Current controller computing dead time / I_ctrl t_dead Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [μs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2000.00 [μs]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [μs]

p0120 HLA_840, HLA_DBSI	Number of valve data sets (PDS) / PDS count Can be changed: C1(3), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p0120 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI, TM41	Number of Power unit Data Sets (PDS) / PDS count Can be changed: C1(3), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 8	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p0121[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Power unit component number / PU comp_no Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 199	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0124[0...n] CU_I_840, CU_NX_840	Main component detection using LED / M_comp detect LED Can be changed: T, U Data type: Unsigned8 P-Group: Converter Not for motor type: - Min: 0	Calculated: - Dynamic index: r0095 Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0124[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Power unit detection via LED / PU detection LED Can be changed: T, U Data type: Unsigned8 P-Group: Converter Not for motor type: - Min: 0	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0125[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Activate/deactivate power unit components / PU_comp act/deact Can be changed: C1(4), T Data type: Integer16 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 2	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1

r0126[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Power unit components active/inactive / PU comp act/inact Can be changed: - Data type: Integer16 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0127[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Power unit EEPROM data version / PU EEPROM version Can be changed: - Data type: Unsigned32 P-Group: Converter Not for motor type: - Min: -	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0128[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Power unit firmware version / PU FW version Can be changed: - Data type: Unsigned32 P-Group: Converter Not for motor type: - Min: -	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0130 HLA_840, HLA_DBSI	Number of Motor Data Sets (MDS) / MDS count Can be changed: C1(3), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: 8575 Unit selection: - Expert list: 1 Factory setting: 1
p0130 SERVO_840, SERVO_DBSI	Number of Motor Data Sets (MDS) / MDS count Can be changed: C1(3), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16	Access level: 2 Function diagram: 8575 Unit selection: - Expert list: 1 Factory setting: 1
p0131[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Motor component number / Mot comp_no Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 199	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0139[0...2] SERVO_840, SERVO_DBSI	Copy Motor Data Set MDS / Copy MDS Can be changed: C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 31	Access level: 2 Function diagram: 8575 Unit selection: - Expert list: 1 Factory setting: 0
p0140 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Number of Encoder Data Sets (EDS) / EDS count Can be changed: C1(3), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16	Access level: 2 Function diagram: 8570 Unit selection: - Expert list: 1 Factory setting: 1
p0140 A_INF_840, S_INF_840	Number of VSM data sets / VSM count Can be changed: C1(3), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 8	Access level: 4 Function diagram: 8570 Unit selection: - Expert list: 1 Factory setting: 1
p0140 ENC_840	Number of Encoder Data Sets (EDS) / EDS count Can be changed: C1(3), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: 8570 Unit selection: - Expert list: 1 Factory setting: 1
p0141[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder interface (Sensor Module) component number / Enc_intf comp_no Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 199	Access level: 3 Function diagram: 4704, 8570 Unit selection: - Expert list: 1 Factory setting: 0
p0141[0...n] A_INF_840, S_INF_840	VSM component number / VSM comp_no Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: p0140 Unit group: - Scaling: - Max: 199	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0142[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder component number / Encoder comp_no Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 199	Access level: 3 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: 0
p0144[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Sensor Module detection via LED / SM detection LED Can be changed: T, U Data type: Unsigned8 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0144[0...n] A_INF_840, S_INF_840	Voltage Sensing Module detection via LED / VSM detection LED Can be changed: T, U Data type: Unsigned8 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: p0140 Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0145[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Activate/deactivate encoder interface / Enc_intf act/deact Can be changed: C1(4), T, U Data type: Integer16 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 2	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p0145[0...n] A_INF_840, S_INF_840	Voltage Sensing Module activate/deactivate / VSM act/deact Can be changed: C1(4), T Data type: Integer16 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: p0140 Unit group: - Scaling: - Max: 2	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
r0146[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder interface active/inactive / Enc_intf act/deact Can be changed: - Data type: Integer16 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r0146[0...n]	Voltage Sensing Module active/inactive / VSM act/inact		
A_INF_840, S_INF_840	Can be changed: - Data type: Integer16 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: p0140 Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0147[0...n]	Sensor Module EEPROM data version / SM EEPROM version		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0147[0...n]	Voltage Sensing Module EEPROM data version / VSM EEPROM version		
A_INF_840, S_INF_840	Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: p0140 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0148[0...n]	Sensor Module firmware version / SM FW version		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0148[0...n]	Voltage Sensing Module firmware version / VSM FW version		
A_INF_840, S_INF_840	Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: p0140 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0150	VSM2 data sets selection / VSM2 dat_sets qty		
A_INF_840, S_INF_840	Can be changed: C1(3), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1

p0151[0...n] A_INF_840, S_INF_840	Voltage Sensing Module 2 component number / VSM2 comp_no Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: p0150 Unit group: - Scaling: - Max: 199	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0151 TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Terminal Module component number / TM comp_no Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 199	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0151[0...1] HUB	DRIVE-CLiQ Hub Module component number / Hub comp_no Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 199	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0154[0...n] A_INF_840, S_INF_840	Voltage Sensing Module 2 detection via LED / VSM2 detection LED Can be changed: T, U Data type: Unsigned8 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: p0150 Unit group: - Scaling: - Max: 1	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0154 TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Terminal Module detection via LED / TM detection LED Can be changed: T, U Data type: Unsigned8 P-Group: Terminals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0154 HUB	DRIVE-CLiQ Hub Module detection via LED / Hub detection LED Can be changed: T, U Data type: Unsigned8 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0155[0...n]	Voltage Sensing Module 2 activate/deactivate / VSM2 act/deact		
A_INF_840, S_INF_840	Can be changed: C1(4), T	Calculated: -	Access level: 4
	Data type: Integer16	Dynamic index: p0150	Function diagram: -
	P-Group: Data sets	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	2	1
r0156[0...n]	Voltage Sensing Module 2 active/inactive / VSM2 act/inact		
A_INF_840, S_INF_840	Can be changed: -	Calculated: -	Access level: 4
	Data type: Integer16	Dynamic index: p0150	Function diagram: -
	P-Group: Data sets	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	-
r0157[0...n]	Voltage Sensing Module 2 EEPROM data version / VSM2 EEPROM vers		
A_INF_840, S_INF_840	Can be changed: -	Calculated: -	Access level: 4
	Data type: Unsigned32	Dynamic index: p0150	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-
r0157	Terminal Module EEPROM data version / TM EEPROM version		
TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-
r0157	DRIVE-CLiQ Hub Module EEPROM data version / Hub EEPROM version		
HUB	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-
r0158[0...n]	Voltage Sensing Module 2 firmware version / VSM2 FW version		
A_INF_840, S_INF_840	Can be changed: -	Calculated: -	Access level: 4
	Data type: Unsigned32	Dynamic index: p0150	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0158 TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Terminal Module firmware version / TM FW version Can be changed: - Data type: Unsigned32 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0158 HUB	DRIVE-CLiQ Hub Module firmware version / Hub FW version Can be changed: - Data type: Unsigned32 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0161 HLA_840, HLA_DBSI	Valve component number / Valve comp_no Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 199	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0161 SERVO_840, SERVO_DBSI	HF Damping Module component number / HF Damp comp_no Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 199	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0161 TB30	Option board component number / Opt board comp_no Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 199	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0162 SERVO_840, SERVO_DBSI	HF Choke Module component number / HF Choke comp_no Can be changed: C1(4) Data type: Unsigned8 P-Group: Terminals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 199	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0162 CU_LINK	CU-LINK slave component number / CU-LINK comp_no Can be changed: C1(4) Data type: Unsigned8 P-Group: Terminals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 199	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0165 SERVO_840, SERVO_DBSI	Activate/deactivate filter module / FM act/deact Can be changed: C1(4), T Data type: Integer16 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
r0166 SERVO_840, SERVO_DBSI	Filter module active/inactive / FM act/inact Can be changed: - Data type: Integer16 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0170 HLA_840, HLA_DBSI, TM41	Number of Command Data Sets (CDS) / CDS count Can be changed: C1(3) Data type: Unsigned8 P-Group: Commands Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p0170 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Number of Command Data Sets (CDS) / CDS count Can be changed: C1(3) Data type: Unsigned8 P-Group: Commands Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p0171[0...n] CU_I_840, CU_NX_840	Drive objects function module 1 / DO fct_mod 1 Can be changed: C1(2) Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: r0095 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 0000 bin

r0171 SERVO_840, SERVO_DBSI	Drive objects function module 1 / DO fct_mod 1 Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0171 A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Drive objects function module 1 / DO fct_mod 1 Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0172[0...n] CU_I_840, CU_NX_840	Drive objects function module 2 / DO fct_mod 2 Can be changed: C1(2) Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: r0095 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 0000 bin
r0172 A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Drive objects function module 2 / DO fct_mod 2 Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0173[0...n] CU_I_840, CU_NX_840	Drive objects function module 3 / DO fct_mod 3 Can be changed: C1(2) Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: r0095 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 0000 bin

r0173 A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Drive objects function module 3 / DO fct_mod 3 Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0180 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	Number of Drive Data Sets (DDS) / DDS count Can be changed: C1(3), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 32	Access level: 2 Function diagram: 8565 Unit selection: - Expert list: 1 Factory setting: 1
p0186[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Motor Data Sets (MDS) number / MDS number Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 15	Access level: 3 Function diagram: 8575 Unit selection: - Expert list: 1 Factory setting: 0
p0187[0...n] SERVO_840, SERVO_DBSI	Encoder 1 encoder data set number / Enc 1 EDS number Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 99	Access level: 3 Function diagram: 4700, 8570 Unit selection: - Expert list: 1 Factory setting: 99
p0187[0...n] HLA_840, HLA_DBSI	Encoder 1 encoder data set number / Enc 1 EDS number Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 99	Access level: 3 Function diagram: 4700, 8570 Unit selection: - Expert list: 1 Factory setting: 99
p0188[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder 2 encoder data set number / Enc 2 EDS number Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 99	Access level: 3 Function diagram: 4700, 8570 Unit selection: - Expert list: 1 Factory setting: 99

p0189[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder 3 encoder data set number / Enc 3 EDS number Can be changed: C1(4), C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 99	Access level: 3 Function diagram: 4700, 8570 Unit selection: - Expert list: 1 Factory setting: 99
r0192 SERVO_840, SERVO_DBSI	Power unit firmware properties 1 / PU FW properties 1 Can be changed: - Data type: Unsigned32 P-Group: Converter Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0192 A_INF_840, B_INF_840, S_INF_840	Power unit firmware properties 1 / PU FW properties 1 Can be changed: - Data type: Unsigned32 P-Group: Converter Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0193 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Power unit firmware properties 2 / PU FW properties 2 Can be changed: - Data type: Unsigned32 P-Group: Converter Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0194[0...n] A_INF_840, S_INF_840	VSM properties / VSM properties Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: p0140 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0196[0...255] CU_I_840, CU_NX_840	Topology component status / Top comp stat Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r0197[0...1]	Bootloader version / Bootloader vers		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0198[0...2]	BIOS/EEPROM data version / BIOS/EEPROM vers		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0199[0...24]	Drive object name / DO name		
All objects	Can be changed: C1 Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r0200[0...n]	Power unit code number actual / PU code no act		
A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned16 P-Group: Converter Not for motor type: - Min: -	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0201[0...n]	Power unit code number / PU code no		
SERVO_840, SERVO_DBSI	Can be changed: C2(2) Data type: Unsigned16 P-Group: Converter Not for motor type: - Min: 0	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0201[0...n]	Power unit code number / PU code no		
A_INF_840, B_INF_840, S_INF_840	Can be changed: C2(2) Data type: Unsigned16 P-Group: Converter Not for motor type: - Min: 0	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

r0203[0...15]	Firmware package name / FW pkg name		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned8 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0203[0...n]	Actual power unit type / PU actual type		
A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Integer16 P-Group: Converter Not for motor type: - Min: 2	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 400	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0204[0...n]	Power unit hardware properties / PU HW properties		
SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Converter Not for motor type: - Min: -	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0204[0...n]	Power unit hardware properties / PU HW properties		
A_INF_840, B_INF_840, S_INF_840	Can be changed: - Data type: Unsigned32 P-Group: Converter Not for motor type: - Min: -	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0205[0...n]	Valve rated voltage / Valve Un		
HLA_840, HLA_DBSI	Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.500 [V]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 15.000 [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10.000 [V]
p0206[0...n]	Valve transition point flow rate / Valve trans flow		
HLA_840, HLA_DBSI	Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.2 [%]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 95.0 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10.0 [%]

r0206[0...4]	Rated power unit power / PU P_{rated}		
A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: - Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: - [kW]	Calculated: - Dynamic index: - Unit group: 14_6 Scaling: - Max: - [kW]	Access level: 2 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: - [kW]

p0207[0...n]	Valve transition point voltage / Valve trans U		
HLA_840, HLA_DBSI	Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.2 [%]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 95.0 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10.0 [%]

r0207[0...4]	Rated power unit current / PU PI_{rated}		
SERVO_840, SERVO_DBSI	Can be changed: - Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Arms]	Access level: 2 Function diagram: 8021 Unit selection: - Expert list: 1 Factory setting: - [Arms]

r0207[0...4]	Rated power unit current / PU PI_{rated}		
A_INF_840, B_INF_840, S_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Arms]	Access level: 2 Function diagram: 8021 Unit selection: - Expert list: 1 Factory setting: - [Arms]

p0208[0...n]	Valve rated flow rate / Valve Vn		
HLA_840, HLA_DBSI	Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.000 [ltr/min]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 1000.000 [ltr/min]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [ltr/min]

r0208	Rated power unit line supply voltage / PU U_{rated}		
A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: - Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: - [Vrms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Vrms]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Vrms]

p0209[0...n] HLA_840, HLA_DBSI	Valve rated pressure drop / Valve Pn Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 1.0 [bar]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 300.0 [bar]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 35.0 [bar]
r0209[0...4] A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Power unit maximum current / PU I_max Can be changed: - Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Arms]	Access level: 2 Function diagram: 8750, 8850, 8950 Unit selection: - Expert list: 1 Factory setting: - [Arms]
p0210 SERVO_840, SERVO_DBSI	Drive unit line supply voltage / U_connect Can be changed: T Data type: Unsigned16 P-Group: Converter Not for motor type: - Min: 1 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 63000 [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 600 [V]
p0210 A_INF_840, S_INF_840	Drive unit line supply voltage / U_connect Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 70 [Vrms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000 [Vrms]	Access level: 1 Function diagram: 8860, 8960 Unit selection: - Expert list: 1 Factory setting: 400 [Vrms]
p0210 B_INF_840	Drive unit line supply voltage / U_connect Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 70 [Vrms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000 [Vrms]	Access level: 1 Function diagram: 8760 Unit selection: - Expert list: 1 Factory setting: 400 [Vrms]
p0211[0...n] HLA_840, HLA_DBSI	Valve, flow rate ratio A to B side / Flowrate_ratio A/B Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.500	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 2.000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.000

p0211	Rated line frequency / Rated line freq		
A_INF_840, S_INF_840	Can be changed: T Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 10 [Hz]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100 [Hz]	Access level: 3 Function diagram: 8864, 8964 Unit selection: - Expert list: 1 Factory setting: 55 [Hz]
p0212	Power unit configuration / PU config		
SERVO_840, SERVO_DBSI	Can be changed: C2(2) Data type: Unsigned16 P-Group: Converter Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p0212	Power unit configuration / PU config		
A_INF_840, S_INF_840	Can be changed: C2(2) Data type: Unsigned16 P-Group: Converter Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 bin
p0212	Power unit configuration / PU config		
B_INF_840	Can be changed: C2(2) Data type: Unsigned16 P-Group: Converter Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 bin
p0216[0...n]	Valve natural frequency / Valve fn		
HLA_840, HLA_DBSI	Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 1.0 [Hz]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 1000.0 [Hz]	Access level: 3 Function diagram: 4966 Unit selection: - Expert list: 1 Factory setting: 150.0 [Hz]
p0217[0...n]	Valve damping / Valve D		
HLA_840, HLA_DBSI	Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.400	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 1.000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.800

p0218[0...n] HLA_840, HLA_DBSI	Cylinder safety configuration / Cyl safety config Can be changed: C2(1, 2) Data type: Unsigned16 P-Group: Converter Not for motor type: - Min: -	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0111 bin
p0220 HLA_840, HLA_DBSI	Hydraulic oil modulus of elasticity / Hydr_oil e_module Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 1000.0 [bar]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 21000.0 [bar]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 11000.0 [bar]
p0220[0...1] A_INF_840	Infeed line filter type / INF line filt type Can be changed: C2(1, 2) Data type: Integer16 P-Group: Converter Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 119	Access level: 3 Function diagram: 8950 Unit selection: - Expert list: 1 Factory setting: 0
p0221 HLA_840, HLA_DBSI	System pressure / p_system Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.0 [bar]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000.0 [bar]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [bar]
p0221[0...1] A_INF_840	Infeed filter capacitance / INF C_filter Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.00 [μF]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100000.00 [μF]	Access level: 3 Function diagram: 8950 Unit selection: - Expert list: 1 Factory setting: 0.00 [μF]
p0222[0...n] HLA_840, HLA_DBSI	Valve precontrol pressure / Valve p_prectrl Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.0 [bar]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 350.0 [bar]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [bar]

p0222[0...1]	Infeed filter resistance / INF R_filter		
A_INF_840	Can be changed: C2(1, 2)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Converter	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00000 [ohm]	100.00000 [ohm]	0.00000 [ohm]
p0223	Infeed inductance between filter and power unit / INF L filter/PU		
A_INF_840, S_INF_840	Can be changed: C2(1, 2)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8850, 8950
	P-Group: Converter	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001 [mH]	1000.000 [mH]	2.100 [mH]
p0224	Infeed resistance between filter and power unit / INF R filter/PU		
A_INF_840, S_INF_840	Can be changed: C2(1, 2)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8850, 8950
	P-Group: Converter	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00000 [ohm]	100.00000 [ohm]	0.00100 [ohm]
p0225	Infeed inductance between line supply and filter / INF L line/filter		
A_INF_840, S_INF_840	Can be changed: C2(1, 2)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8850, 8950
	P-Group: Converter	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001 [mH]	1000.000 [mH]	0.001 [mH]
p0226	Infeed resistance between line supply and filter / INF R line/filter		
A_INF_840, S_INF_840	Can be changed: C2(1, 2)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8850, 8950
	P-Group: Converter	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ohm]	100.00 [ohm]	0.00 [ohm]
p0227	Infeed DC link capacitance, power unit / INF C		
A_INF_840, S_INF_840	Can be changed: C2(1, 2)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8850, 8950
	P-Group: Converter	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.20 [mF]	1000.00 [mF]	1.00 [mF]

p0228 A_INF_840, S_INF_840	Infeed filter inductance line side / INF L_filt L side Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.000 [mH]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.000 [mH]	Access level: 3 Function diagram: 8850, 8950 Unit selection: - Expert list: 1 Factory setting: 0.000 [mH]
p0230[0...n] HLA_840, HLA_DBSI	Manipulated variable inhibit time / Manip var t_inhib Can be changed: T Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 1000 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 300 [ms]
p0231[0...n] HLA_840, HLA_DBSI	Power enable inhibit time / Pow_enab t_inhib Can be changed: T, U Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 300 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100 [ms]
p0232[0...n] HLA_840, HLA_DBSI	Valve monitoring time / Valve t_mon Can be changed: T, U Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 1 [ms]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 1000 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 50 [ms]
p0233 SERVO_840, SERVO_DBSI	Power unit motor reactor / PU mot reactor Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.000 [mH]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.000 [mH]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [mH]
p0234 SERVO_840, SERVO_DBSI	Power unit sine-wave filter capacitance / PU sine filter C Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.000 [μF]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2000.000 [μF]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [μF]

r0238 SERVO_840, SERVO_DBSI	Internal power unit resistance / PU R internal Can be changed: - Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: - [ohm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ohm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [ohm]
p0240[0...n] HLA_840, HLA_DBSI	Pressure sensor A reference value at 10 V / Sensor A ref 10V Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 50.0 [bar]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 1000.0 [bar]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 200.0 [bar]
p0241[0...n] HLA_840, HLA_DBSI	Pressure sensor A offset correction / Sensor A offset Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: -5000.000 [bar]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 5000.000 [bar]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [bar]
p0242[0...n] HLA_840, HLA_DBSI	Pressure sensor B reference value at 10 V / Sensor B ref 10V Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 50.0 [bar]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 1000.0 [bar]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 200.0 [bar]
p0243[0...n] HLA_840, HLA_DBSI	Pressure sensor B offset correction / Sensor B offset Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: -5000.000 [bar]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 5000.000 [bar]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [bar]
p0244[0...n] HLA_840, HLA_DBSI	Pressure sensor P reference value at 10 V / Sensor P ref 10V Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 50.0 [bar]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 1000.0 [bar]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 200.0 [bar]

p0245[0...n] HLA_840, HLA_DBSI	Pressure sensor P offset correction / Sensor P offs_corr Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: -5000.000 [bar]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 5000.000 [bar]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [bar]
p0246 HLA_840, HLA_DBSI	Cl: System pressure external / Sys pressure ext Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Motor Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0249 S_INF_840, SERVO_840, SERVO_DBSI	Power unit cooling type / PU cool type Can be changed: C2(1, 2) Data type: Integer16 P-Group: Converter Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0251[0...n] A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Power unit heat sink fan operating hours counter / PU fan t_op Can be changed: T Data type: Unsigned32 P-Group: Modulation Not for motor type: - Min: 0 [h]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 4294967295 [h]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [h]
p0252 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Power unit heat sink fan operating time maximum / PU fan t_op max Can be changed: T Data type: Unsigned32 P-Group: Modulation Not for motor type: - Min: 0 [h]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 500000 [h]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 40000 [h]
p0254[0...n] A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Operating hours counter power unit fan inside the converter / PU inner fan t_op Can be changed: T Data type: Unsigned32 P-Group: Modulation Not for motor type: - Min: 0 [h]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 4294967295 [h]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [h]

p0255[0...7]	Power unit contactor monitoring time / PU cont t_mon		
A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: T Data type: FloatingPoint32 P-Group: Modulation Not for motor type: - Min: -1 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 0 [ms] [1] 0 [ms] [2] -1 [ms] [3] -1 [ms] [4...7] 0 [ms]
r0256.0...31	CO/BO: Power unit contactor inputs/outputs status / PU cont IO stat		
A_INF_840, B_INF_840, S_INF_840	Can be changed: - Data type: Unsigned32 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9814 Unit selection: - Expert list: 1 Factory setting: -
p0260	Cooling unit starting time 1 / RKA start time 1		
A_INF_840 (Cool_unit), B_INF_840 (Cool_unit), S_INF_840 (Cool_unit), SERVO_840 (Cool_unit), SERVO_DBSI (Cool_unit)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.0 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 60.0 [s]	Access level: 3 Function diagram: 9794, 9795 Unit selection: - Expert list: 1 Factory setting: 5.0 [s]
p0261	Cooling unit starting time 2 / RKA start time 2		
A_INF_840 (Cool_unit), B_INF_840 (Cool_unit), S_INF_840 (Cool_unit), SERVO_840 (Cool_unit), SERVO_DBSI (Cool_unit)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.0 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1200.0 [s]	Access level: 3 Function diagram: 9794, 9795 Unit selection: - Expert list: 1 Factory setting: 180.0 [s]

p0262	Cooling unit fault conductivity delay time / RKA cond t_{del}		
A_INF_840 (Cool_unit), B_INF_840 (Cool_unit), S_INF_840 (Cool_unit), SERVO_840 (Cool_unit), SERVO_DBSI (Cool_unit)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.0 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30.0 [s]	Access level: 3 Function diagram: 9794, 9795 Unit selection: - Expert list: 1 Factory setting: 0.0 [s]
p0263	Cooling unit fault liquid flow delay time / RKA flow t_{del}		
A_INF_840 (Cool_unit), B_INF_840 (Cool_unit), S_INF_840 (Cool_unit), SERVO_840 (Cool_unit), SERVO_DBSI (Cool_unit)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.0 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20.0 [s]	Access level: 3 Function diagram: 9794, 9795 Unit selection: - Expert list: 1 Factory setting: 3.0 [s]
p0264	Cooling unit run-on time / RKA run-on time		
A_INF_840 (Cool_unit), B_INF_840 (Cool_unit), S_INF_840 (Cool_unit), SERVO_840 (Cool_unit), SERVO_DBSI (Cool_unit)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.0 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 180.0 [s]	Access level: 3 Function diagram: 9794, 9795 Unit selection: - Expert list: 1 Factory setting: 30.0 [s]
r0265.0...3	BO: Cooling unit control word / Cool_unit STW		
A_INF_840 (Cool_unit), B_INF_840 (Cool_unit), S_INF_840 (Cool_unit), SERVO_840 (Cool_unit), SERVO_DBSI (Cool_unit)	Can be changed: - Data type: Unsigned8 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p0266[0...7] A_INF_840 (Cool_unit), B_INF_840 (Cool_unit), S_INF_840 (Cool_unit), SERVO_840 (Cool_unit), SERVO_DBSI (Cool_unit)	BI: Cooling unit feedback signals signal source / Cool_unit fdbk s_s Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
r0267.0...7 A_INF_840 (Cool_unit), B_INF_840 (Cool_unit), S_INF_840 (Cool_unit), SERVO_840 (Cool_unit), SERVO_DBSI (Cool_unit)	BO: Cooling unit status word / Cool_unit ZSW Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0277[0...n] A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Power unit heat sink fan wear counter / PU fan wear_count Can be changed: - Data type: FloatingPoint32 P-Group: Modulation Not for motor type: - Min: - [%]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: - [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [%]
p0278 SERVO_840, SERVO_DBSI	DC link voltage undervoltage threshold reduction / Vdc U_under red Can be changed: T Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: -80 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 0 [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [V]
p0279 A_INF_840, B_INF_840, S_INF_840	DC link voltage offset alarm threshold / Vdc offs A thr Can be changed: T Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 500 [V]	Access level: 3 Function diagram: 8760, 8864, 8964 Unit selection: - Expert list: 1 Factory setting: 0 [V]

p0280	DC link voltage maximum steady-state / Vdc_max stat		
A_INF_840	Can be changed: C2(1), T Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 50 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1500 [V]	Access level: 3 Function diagram: 8940, 8964 Unit selection: - Expert list: 1 Factory setting: 660 [V]
p0281	Line supply overvoltage alarm threshold / U_I_over A thr		
A_INF_840, S_INF_840	Can be changed: T Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 100 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 200 [%]	Access level: 3 Function diagram: 8860, 8960 Unit selection: - Expert list: 1 Factory setting: 110 [%]
p0282	Line supply undervoltage alarm threshold / U_I_under A thr		
A_INF_840, S_INF_840	Can be changed: T Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 10 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100 [%]	Access level: 3 Function diagram: 8860, 8960 Unit selection: - Expert list: 1 Factory setting: 85 [%]
p0283	Line supply undervoltage shutdown (trip) threshold / U_I_under tr_thr		
A_INF_840, S_INF_840	Can be changed: C2(1), T Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 10 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100 [%]	Access level: 3 Function diagram: 8860, 8960 Unit selection: - Expert list: 1 Factory setting: 75 [%]
p0284	Line supply frequency exceeded alarm threshold / f_I_exc A thr		
A_INF_840, S_INF_840	Can be changed: T Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 100.0 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 300.0 [%]	Access level: 3 Function diagram: 8864, 8964 Unit selection: - Expert list: 1 Factory setting: 118.0 [%]
p0285	Line supply frequency undershot alarm threshold / f_I_under A thr		
A_INF_840, S_INF_840	Can be changed: T Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.0 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.0 [%]	Access level: 3 Function diagram: 8864, 8964 Unit selection: - Expert list: 1 Factory setting: 82.0 [%]

p0287[0...1] A_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Ground fault monitoring shutdown threshold / Gnd flt threshold Can be changed: T Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.0 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.0 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 6.0 [%] [1] 16.0 [%]
r0289 SERVO_840, SERVO_DBSI	CO: Maximum power unit output current / PU I_outp max Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Arms]
p0290 SERVO_840, SERVO_DBSI	Power unit overload response / PU overl response Can be changed: T Data type: Integer16 P-Group: Converter Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 13	Access level: 3 Function diagram: 8021 Unit selection: - Expert list: 1 Factory setting: 0
r0293 SERVO_840, SERVO_DBSI	CO: Power unit alarm threshold model temperature / PU A_thr mod_temp Can be changed: - Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: 8021 Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
p0294 A_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Power unit alarm with I2t overload / PU I2t alarm thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 10.0 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.0 [%]	Access level: 3 Function diagram: 8021 Unit selection: - Expert list: 1 Factory setting: 95.0 [%]
p0294 B_INF_840	Power unit alarm with I2t overload / PU I2t alarm thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 10.0 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.0 [%]	Access level: 3 Function diagram: 8021 Unit selection: - Expert list: 1 Factory setting: 95.0 [%]

p0295 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Fan run-on time / Fan run-on time Can be changed: T, U Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 600 [s]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [s]
r0296 SERVO_840, SERVO_DBSI	DC link voltage undervoltage threshold / Vdc U_under_thr Can be changed: - Data type: Unsigned16 P-Group: Converter Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [V]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [V]
r0296 A_INF_840, B_INF_840, S_INF_840	DC link voltage undervoltage threshold / Vdc U_under_thr Can be changed: - Data type: Unsigned16 P-Group: Converter Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [V]	Access level: 2 Function diagram: 8750, 8760, 8850, 8864, 8950, 8964 Unit selection: - Expert list: 1 Factory setting: - [V]
r0297 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	DC link voltage overvoltage threshold / Vdc U_over_thr Can be changed: - Data type: Unsigned16 P-Group: Converter Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [V]	Access level: 2 Function diagram: 8750, 8760, 8850, 8864, 8950, 8964 Unit selection: - Expert list: 1 Factory setting: - [V]
p0300[0...n] SERVO_840, SERVO_DBSI	Motor type selection / Mot type sel Can be changed: C2(1, 3) Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 10100	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0301[0...n] SERVO_840, SERVO_DBSI	Motor code number selection / Mot code no sel Can be changed: C2(1, 3) Data type: Unsigned16 P-Group: Motor Not for motor type: SESM Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 65535	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0301[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Motor code number selection / Mot code no sel Can be changed: C2(1, 3) Data type: Unsigned16 P-Group: Motor Not for motor type: SESM Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 65535	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r0302[0...n] SERVO_840, SERVO_DBSI	Motor code number of motor with DRIVE-CLiQ / Mot code mot w DQ Can be changed: - Data type: Unsigned16 P-Group: Motor Not for motor type: - Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0303[0...n] SERVO_840, SERVO_DBSI	Motor with DRIVE-CLiQ status word / Motor w DQ ZSW Can be changed: - Data type: Unsigned16 P-Group: Motor Not for motor type: - Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0304[0...n] SERVO_840, SERVO_DBSI	Rated motor voltage / Mot U_{rated} Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0 [Vrms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 20000 [Vrms]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [Vrms]
p0305[0...n] SERVO_840, SERVO_DBSI	Rated motor current / Mot I_{rated} Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.00 [Arms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 10000.00 [Arms]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [Arms]
p0306[0...n] SERVO_840, SERVO_DBSI	Number of motors connected in parallel / Mot parallel qty Can be changed: C2(1, 3) Data type: Unsigned8 P-Group: Motor Not for motor type: RESM Min: 1	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 10	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1

p0307[0...n] SERVO_840, SERVO_DBSI	Rated motor power / Mot P_{rated} Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.00 [kW]	Calculated: - Dynamic index: MDS, p0130 Unit group: 14_6 Scaling: - Max: 100000.00 [kW]	Access level: 1 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: 0.00 [kW]
p0308[0...n] SERVO_840, SERVO_DBSI	Rated motor power factor / Mot cos phi rated Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, REL Min: 0.000	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 1.000	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000
p0310[0...n] HLA_840, HLA_DBSI	Cylinder piston diameter / Cyl piston diam Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [mm]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 2500.0 [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [mm]
p0310[0...n] SERVO_840, SERVO_DBSI	Rated motor frequency / Mot f_{rated} Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.00 [Hz]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 3000.00 [Hz]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [Hz]
p0311[0...n] HLA_840, HLA_DBSI	Cylinder piston rod diameter A side / Cyl PistRodDiam A Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [mm]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 2400.0 [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [mm]
p0311[0...n] SERVO_840, SERVO_DBSI	Rated motor speed / Mot n_{rated} Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [rpm]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 210000.0 [rpm]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [rpm]

p0311[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Rated motor velocity / Mot v_{rated} Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [m/min]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 6000.0 [m/min]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [m/min]
p0312[0...n] HLA_840, HLA_DBSI	Cylinder piston rod diameter B side / Cyl rod diam B Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [mm]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 2400.0 [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [mm]
p0312[0...n] SERVO_840, SERVO_DBSI	Rated motor torque / Mot M_{rated} Can be changed: C2(3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0.00 [Nm]	Calculated: - Dynamic index: MDS, p0130 Unit group: 7_4 Scaling: - Max: 1000000.00 [Nm]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: 0.00 [Nm]
p0312[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Rated motor force / Mot F_{rated} Can be changed: C2(3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0.00 [N]	Calculated: - Dynamic index: MDS, p0130 Unit group: 8_4 Scaling: - Max: 1000000.00 [N]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: 0.00 [N]
p0313[0...n] HLA_840, HLA_DBSI	Cylinder piston stroke / Cyl pist stroke Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [mm]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 6000.0 [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [mm]
r0313[0...n] SERVO_840, SERVO_DBSI	CO: Motor pole pair number, actual (or calculated) / MotPolePair no act Can be changed: - Data type: Unsigned16 P-Group: Motor Not for motor type: - Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 5300 Unit selection: - Expert list: 1 Factory setting: -

p0314[0...n] HLA_840, HLA_DBSI	Cylinder dead volume A side / Cyl_dead vol A Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [cm³]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 200000.0 [cm³]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [cm³]
p0314[0...n] SERVO_840, SERVO_DBSI	Motor pole pair number / Mot PolePair no Can be changed: C2(1, 3) Data type: Unsigned16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 4000	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0315[0...n] HLA_840, HLA_DBSI	Cylinder dead volume B side / Cyl_dead vol B Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [cm³]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 200000.0 [cm³]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [cm³]
p0315[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Motor pole pair width / Mot PolePair width Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 1.00 [mm]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 1000.00 [mm]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 30.00 [mm]
p0316[0...n] SERVO_840, SERVO_DBSI	Motor torque constant / Mot kT Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0.000 [Nm/A]	Calculated: - Dynamic index: MDS, p0130 Unit group: 28_1 Scaling: - Max: 4000.000 [Nm/A]	Access level: 1 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: 0.000 [Nm/A]
p0316[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Motor force constant / Mot kT Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0.000 [N/Arms]	Calculated: - Dynamic index: MDS, p0130 Unit group: 29_1 Scaling: - Max: 150000.000 [N/Arms]	Access level: 1 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: 0.000 [N/Arms]

p0317[0...n] SERVO_840, SERVO_DBSI	Motor voltage constant / Mot kE Can be changed: C2(3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0.0 [Vrms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 240000.0 [Vrms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [Vrms]
p0317[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Motor voltage constant / Mot kE Can be changed: C2(3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0.0 [Vrms s/m]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 50000.0 [Vrms s/m]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [Vrms s/m]
p0318[0...n] SERVO_840, SERVO_DBSI	Motor stall current / Mot I_standstill Can be changed: C2(3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0.00 [Arms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 10000.00 [Arms]	Access level: 3 Function diagram: 8017 Unit selection: - Expert list: 1 Factory setting: 0.00 [Arms]
p0319[0...n] SERVO_840, SERVO_DBSI	Motor stall torque / Mot M_standstill Can be changed: C2(3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0.00 [Nm]	Calculated: - Dynamic index: MDS, p0130 Unit group: 7_4 Scaling: - Max: 100000.00 [Nm]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: 0.00 [Nm]
p0319[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Motor stall force / Mot F_standstill Can be changed: C2(3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0.00 [N]	Calculated: - Dynamic index: MDS, p0130 Unit group: 8_4 Scaling: - Max: 100000.00 [N]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: 0.00 [N]
p0320[0...n] SERVO_840, SERVO_DBSI	Motor rated magnetizing current/short-circuit current / Mot I_magRated Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: SESM, REL Min: 0.000 [Arms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 5000.000 [Arms]	Access level: 3 Function diagram: 5722 Unit selection: - Expert list: 1 Factory setting: 0.000 [Arms]

p0322[0...n] SERVO_840, SERVO_DBSI	Maximum motor speed / Mot n_max Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [rpm]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 210000.0 [rpm]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [rpm]
p0322[0...n] SERVO_840 (Lin, Lin, Spin_diag), SERVO_DBSI (Lin, Lin, Spin_diag)	Motor maximum velocity / Mot v_max Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [m/min]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 2000.0 [m/min]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [m/min]
p0322[0...n] SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Maximum motor speed / Mot n_max Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [rpm]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 260000.0 [rpm]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [rpm]
p0323[0...n] SERVO_840, SERVO_DBSI	Maximum motor current / Mot I_max Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, RESM Min: 0.00 [Arms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 20000.00 [Arms]	Access level: 1 Function diagram: 5722 Unit selection: - Expert list: 1 Factory setting: 0.00 [Arms]
p0324[0...n] SERVO_840, SERVO_DBSI	Winding maximum speed / Winding n_max Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [rpm]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 210000.0 [rpm]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [rpm]
p0324[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Winding maximum velocity / Winding v_max Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [m/min]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 1300.0 [m/min]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [m/min]

p0325[0...n] SERVO_840, SERVO_DBSI	Motor pole position identification current 1st phase / Mot PolID I 1st Ph Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: 0.000 [Arms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 10000.000 [Arms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [Arms]
p0326[0...n] SERVO_840, SERVO_DBSI	Motor stall torque correction factor / Mot M_stall_corr Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: SESM, REL, RESM Min: 5 [%]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 300 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 60 [%]
p0326[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Motor stall force correction factor / Mot F_stall_corr Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: SESM, REL, RESM Min: 5 [%]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 300 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 60 [%]
p0327[0...n] SERVO_840, SERVO_DBSI	Optimum motor load angle / Mot phi_load opt Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, RESM Min: 0.0 [°]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 135.0 [°]	Access level: 3 Function diagram: 5722, 6721 Unit selection: - Expert list: 1 Factory setting: 90.0 [°]
p0328[0...n] SERVO_840, SERVO_DBSI	Motor reluctance torque constant / Mot kT_reluctance Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: -1000.00 [mH]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 1000.00 [mH]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [mH]
p0328[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Motor reluctance force constant / Mot kT_reluctance Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: -1000.00 [mH]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 1000.00 [mH]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [mH]

p0329[0...n] SERVO_840, SERVO_DBSI	Motor pole position identification current / Mot PolID current Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: 0.00 [Arms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 10000.00 [Arms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [Arms]
r0330[0...n] SERVO_840, SERVO_DBSI	Rated motor slip / Mot slip Rated Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, SESM, REL, RESM Min: - [Hz]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: - [Hz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Hz]
r0331[0...n] SERVO_840, SERVO_DBSI	Actual motor magnetizing current/short-circuit current / Mot I_mag_rtd act Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: SESM, REL Min: - [Arms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: - [Arms]	Access level: 3 Function diagram: 5722, 6722, 6724 Unit selection: - Expert list: 1 Factory setting: - [Arms]
r0332[0...n] SERVO_840, SERVO_DBSI	Rated motor power factor / Mot cos phi rated Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, REL Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0333[0...n] SERVO_840, SERVO_DBSI	Rated motor torque / Mot M_rated Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: - [Nm]	Calculated: - Dynamic index: MDS, p0130 Unit group: 7_4 Scaling: - Max: - [Nm]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: - [Nm]
r0333[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Rated motor force / Mot F_rated Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: - [N]	Calculated: - Dynamic index: MDS, p0130 Unit group: 8_4 Scaling: - Max: - [N]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: - [N]

r0334[0...n]	Actual motor-torque constant / Mot kT act		
SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: -
	P-Group: Motor	Unit group: 28_1	Unit selection: p0100
	Not for motor type: ASM, SESM, REL, RESM	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [Nm/A]	- [Nm/A]	- [Nm/A]

r0334[0...n]	Actual motor force constant / Mot kT act		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: -
	P-Group: Motor	Unit group: 29_1	Unit selection: p0100
	Not for motor type: ASM, SESM, REL, RESM	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [N/Arms]	- [N/Arms]	- [N/Arms]

p0335[0...n]	Motor cooling type / Mot cool type		
SERVO_840, SERVO_DBSI	Can be changed: C2(1), T	Calculated: -	Access level: 1
	Data type: Integer16	Dynamic index: MDS, p0130	Function diagram: -
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: PMSM, SESM, REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	128	0

r0336[0...n]	Actual rated motor frequency / Mot f_{rated} act		
SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: -
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [Hz]	- [Hz]	- [Hz]

r0337[0...n]	Rated motor EMF / Mot EMF_{rated}		
SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: -
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: REL, RESM	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [Vrms]	- [Vrms]	- [Vrms]

r0337[0...n]	Rated motor EMF / Mot EMF_{rated}		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: -
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: REL, RESM	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [Vrms s/m]	- [Vrms s/m]	- [Vrms s/m]

p0338[0...n] SERVO_840, SERVO_DBSI	Motor limit current / Mot I_limit Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0.00 [Arms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 10000.00 [Arms]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [Arms]
r0339[0...n] SERVO_840, SERVO_DBSI	Rated motor voltage / Mot U Rated Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: REL Min: - [Vrms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: - [Vrms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Vrms]
p0340[0...n] HLA_840, HLA_DBSI	Automatic parameter calculation / Auto par calc Can be changed: C2(1), T Data type: Unsigned16 P-Group: Motor Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 bin
p0340[0...n] SERVO_840, SERVO_DBSI	Automatic calculation motor/control parameters / Calc auto par Can be changed: T Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0340 A_INF_840, S_INF_840	Automatic calculation control parameters / Calc auto par Can be changed: T Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0341[0...n] HLA_840, HLA_DBSI	Cylinder weight / Cyl weight Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.000000 [kg]	Calculated: - Dynamic index: MDS, p0130 Unit group: 27_1 Scaling: - Max: 100000.000000 [kg]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: 0.000000 [kg]

p0341[0...n] SERVO_840, SERVO_DBSI	Motor moment of inertia / Mot m_inert Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: REL Min: - [kgm ²]	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: 25_1 Scaling: - Max: - [kgm ²]	Access level: 3 Function diagram: 5042, 5210, 6020, 6030, 6031 Unit selection: p0100 Expert list: 1 Factory setting: - [kgm ²]
p0341[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Motor weight / Mot weight Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: REL Min: - [kg]	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: 27_1 Scaling: - Max: - [kg]	Access level: 3 Function diagram: 5042, 5210 Unit selection: p0100 Expert list: 1 Factory setting: - [kg]
p0342[0...n] SERVO_840, SERVO_DBSI	Ratio between the total and motor moment of inertia / Mot m_inert ratio Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: REL Min: 1.000	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 10000.000	Access level: 3 Function diagram: 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 1.000
p0342[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Ratio between the total and motor moment of inertia / Mot m_inert ratio Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: REL Min: 1.000	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 10000.000	Access level: 3 Function diagram: 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 1.000
p0343[0...n] HLA_840, HLA_DBSI	Valve/cylinder configuration / Valve/cyl config Can be changed: C2(1, 3) Data type: Unsigned16 P-Group: Motor Not for motor type: PMSM, SESM, REL, RESM Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p0344[0...n] HLA_840, HLA_DBSI	Cylinder mounting position A side / Cyl mount pos A Can be changed: T Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: -90.0 [°]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 90.0 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [°]

p0344[0...n] SERVO_840, SERVO_DBSI	Motor weight (for the thermal motor model) / Mot weightThermMod Can be changed: T Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [kg]	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: 27_1 Scaling: - Max: 50000.0 [kg]	Access level: 3 Function diagram: 8018 Unit selection: p0100 Expert list: 1 Factory setting: 0.0 [kg]
p0345[0...n] HLA_840, HLA_DBSI	Required damping controlled axis / Damped ctrl axis Can be changed: T Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.200	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2.000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.700
p0346[0...n] HLA_840, HLA_DBSI	Line length A side / Line length A Can be changed: T Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [mm]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 10000.0 [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [mm]
p0347[0...n] HLA_840, HLA_DBSI	Line length B side / Line length B Can be changed: T Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [mm]	Calculated: CALC_MOD_REG Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 10000.0 [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [mm]
p0347[0...n] SERVO_840, SERVO_DBSI	Motor de-excitation time / Mot t_de-excitat Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.000 [s]	Calculated: CALC_MOD_REG Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 20.000 [s]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [s]
p0348[0...n] HLA_840, HLA_DBSI	Internal line diameter / Line_inner diam Can be changed: T Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [mm]	Calculated: CALC_MOD_REG Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 100.0 [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 5.0 [mm]

p0348[0...n]	Speed at the start of field weakening Vdc = 600 V / n_strt field weak		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_REG	Access level: 3
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: 5722
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0 [rpm]	210000.0 [rpm]	0.0 [rpm]

p0348[0...n]	Velocity at the start of field weakening Vdc = 600 V / v_strt field weak		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: CALC_MOD_REG	Access level: 3
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: 5722
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0 [m/min]	1300.0 [m/min]	0.0 [m/min]

p0349	System of units motor equivalent circuit diagram data / Unit_sys mot ESB		
SERVO_840, SERVO_DBSI	Can be changed: C2(3)	Calculated: -	Access level: 1
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1	2	1

p0350[0...n]	Damping uncontrolled axis / Damp unctrl axis		
HLA_840, HLA_DBSI	Can be changed: T	Calculated: CALC_MOD_EQU	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: -
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.010	2.000	0.100

p0350[0...n]	Motor stator resistance cold / Mot R_stator cold		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_EQU	Access level: 2
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: -
	P-Group: Motor	Unit group: 16_1	Unit selection: p0349
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00000 [ohm]	2000.00000 [ohm]	0.00000 [ohm]

p0351[0...n]	Piston position natural frequency minimum / Piston pos fn min		
HLA_840, HLA_DBSI	Can be changed: T	Calculated: CALC_MOD_EQU	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: -
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0 [mm]	3000.0 [mm]	0.0 [mm]

p0352[0...n] HLA_840, HLA_DBSI	Axis natural frequency A side / Axis fn A Can be changed: T Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 1.0 [Hz]	Calculated: CALC_MOD_EQU Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2000.0 [Hz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.0 [Hz]
p0352[0...n] SERVO_840, SERVO_DBSI	Cable resistance / R_cable Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.00000 [ohm]	Calculated: - Dynamic index: MDS, p0130 Unit group: 16_1 Scaling: - Max: 120.00000 [ohm]	Access level: 3 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: 0.00000 [ohm]
p0353[0...n] HLA_840, HLA_DBSI	Axis natural frequency center / Axis fn center Can be changed: T Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 1.0 [Hz]	Calculated: CALC_MOD_EQU Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2000.0 [Hz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.0 [Hz]
p0353[0...n] SERVO_840, SERVO_DBSI	Motor series inductance / Mot L_series Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.000 [mH]	Calculated: - Dynamic index: MDS, p0130 Unit group: 15_1 Scaling: - Max: 1000000.000 [mH]	Access level: 2 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: 0.000 [mH]
p0354[0...n] HLA_840, HLA_DBSI	Axis natural frequency B side / Axis fn B Can be changed: T Data type: FloatingPoint32 P-Group: Motor Not for motor type: RESM Min: 1.0 [Hz]	Calculated: CALC_MOD_EQU Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2000.0 [Hz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.0 [Hz]
p0354[0...n] SERVO_840, SERVO_DBSI	Motor rotor resistance cold / damping resistance d axis / Mot R_r cold/R_D d Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, REL, RESM Min: 0.00000 [ohm]	Calculated: CALC_MOD_EQU Dynamic index: MDS, p0130 Unit group: 16_1 Scaling: - Max: 300.00000 [ohm]	Access level: 3 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: 0.00000 [ohm]

p0356[0...n] SERVO_840, SERVO_DBSI	Motor stator leakage inductance / Mot L_stator leak Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.00000 [mH]	Calculated: CALC_MOD_EQU Dynamic index: MDS, p0130 Unit group: 15_1 Scaling: - Max: 1000.00000 [mH]	Access level: 3 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: 0.00000 [mH]
p0358[0...n] SERVO_840, SERVO_DBSI	Motor rotor leakage inductance / damping inductance d axis / Mot L_r leak / LDd Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, REL, RESM Min: 0.00000 [mH]	Calculated: CALC_MOD_EQU Dynamic index: MDS, p0130 Unit group: 15_1 Scaling: - Max: 1000.00000 [mH]	Access level: 3 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: 0.00000 [mH]
p0360[0...n] SERVO_840, SERVO_DBSI	Motor magnetizing inductance/magn. inductance d axis saturated / Mot Lh/Lh d sat Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, REL, RESM Min: 0.00000 [mH]	Calculated: CALC_MOD_EQU Dynamic index: MDS, p0130 Unit group: 15_1 Scaling: - Max: 10000.00000 [mH]	Access level: 3 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: 0.00000 [mH]
r0370[0...n] SERVO_840, SERVO_DBSI	Motor stator resistance cold / Mot R_stator cold Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: - [ohm]	Calculated: - Dynamic index: MDS, p0130 Unit group: 16_1 Scaling: - Max: - [ohm]	Access level: 4 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: - [ohm]
r0373[0...n] SERVO_840, SERVO_DBSI	Motor rated stator resistance / Mot R_stator rated Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, SESM, REL Min: - [ohm]	Calculated: - Dynamic index: MDS, p0130 Unit group: 16_1 Scaling: - Max: - [ohm]	Access level: 4 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: - [ohm]
r0374[0...n] SERVO_840, SERVO_DBSI	Motor rotor resistance cold / damping resistance d axis / Mot R_r cold/R_D d Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, REL, RESM Min: - [ohm]	Calculated: - Dynamic index: MDS, p0130 Unit group: 16_1 Scaling: - Max: - [ohm]	Access level: 4 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: - [ohm]

r0376[0...n] SERVO_840, SERVO_DBSI	Rated motor rotor resistance / Mot rated R_rotor Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, SESM, REL, RESM Min: - [ohm]	Calculated: - Dynamic index: MDS, p0130 Unit group: 16_1 Scaling: - Max: - [ohm]	Access level: 4 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: - [ohm]
r0377[0...n] SERVO_840, SERVO_DBSI	Motor leakage inductance total / Mot L_leak total Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: - [mH]	Calculated: - Dynamic index: MDS, p0130 Unit group: 15_1 Scaling: - Max: - [mH]	Access level: 4 Function diagram: 6640 Unit selection: p0349 Expert list: 1 Factory setting: - [mH]
r0382[0...n] SERVO_840, SERVO_DBSI	Motor magnetizing inductance transformed / Lh d axis saturated / Mot L_m tr/Lhd sat Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, REL, RESM Min: - [mH]	Calculated: - Dynamic index: MDS, p0130 Unit group: 15_1 Scaling: - Max: - [mH]	Access level: 4 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: - [mH]
r0384[0...n] SERVO_840, SERVO_DBSI	Motor rotor time constant / damping time constant d axis / Mot Tc_rotor/T_Dd Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, REL, RESM Min: - [ms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: - [ms]	Access level: 4 Function diagram: 6722 Unit selection: - Expert list: 1 Factory setting: - [ms]
r0386[0...n] SERVO_840, SERVO_DBSI	Motor stator leakage time constant / Mot Tc_stator leak Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: - [ms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: - [ms]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [ms]
p0388[0...n] SERVO_840, SERVO_DBSI	Motor stall torque correction factor for p1402.6 = 1 / Mot M_stallCorrNew Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: RESM Min: 5 [%]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 300 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 140 [%]

p0391[0...n] SERVO_840, SERVO_DBSI	Current controller adaptation starting point Kp / I_adpt pt Kp Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: REL Min: 0.00 [Arms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 6000.00 [Arms]	Access level: 3 Function diagram: 5714 Unit selection: - Expert list: 1 Factory setting: 0.00 [Arms]
p0392[0...n] SERVO_840, SERVO_DBSI	Current controller adaptation starting point Kp adapted / I_adpt pt Kp adpt Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: REL Min: 0.00 [Arms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 6000.00 [Arms]	Access level: 3 Function diagram: 5714 Unit selection: - Expert list: 1 Factory setting: 0.00 [Arms]
p0393[0...n] SERVO_840, SERVO_DBSI	Current controller adaptation P gain adaptation / I_adpt Kp adpt Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: REL Min: 0.00 [%]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 1000.00 [%]	Access level: 3 Function diagram: 5714 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
r0395[0...n] SERVO_840, SERVO_DBSI	Actual stator resistance / R_stator act Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: - [ohm]	Calculated: - Dynamic index: MDS, p0130 Unit group: 16_1 Scaling: - Max: - [ohm]	Access level: 3 Function diagram: 6301, 6730, 6731, 6732 Unit selection: p0349 Expert list: 1 Factory setting: - [ohm]
r0396[0...n] SERVO_840, SERVO_DBSI	Actual rotor resistance / R_rotor act Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, SESM, REL, RESM Min: - [ohm]	Calculated: - Dynamic index: MDS, p0130 Unit group: 16_1 Scaling: - Max: - [ohm]	Access level: 3 Function diagram: 6730 Unit selection: p0349 Expert list: 1 Factory setting: - [ohm]
p0400[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder type selection / Enc_type sel Can be changed: C2(1, 4) Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 10100	Access level: 1 Function diagram: 4700, 4704 Unit selection: - Expert list: 1 Factory setting: 0

p0402[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Gearbox type selection / Gearbox type sel Can be changed: C2(1, 4) Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 1	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 10100	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 9999
p0404[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder configuration effective / Enc_config eff Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4010, 4704 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 bin
p0405[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Square-wave encoder track A/B / Sq-wave enc A/B Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: 0000 1111 bin
p0407[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Linear encoder grid division / Enc grid div Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0 [nm]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 250000000 [nm]	Access level: 3 Function diagram: 4010, 4704 Unit selection: - Expert list: 1 Factory setting: 16000 [nm]
p0408[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Rotary encoder pulse number / Rot enc pulse no Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 16777215	Access level: 3 Function diagram: 4010, 4704 Unit selection: - Expert list: 1 Factory setting: 2048
p0408 TM41	TM41 encoder emulation pulse number / Rot enc pulse no Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 32	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16384	Access level: 3 Function diagram: 9674, 9676 Unit selection: - Expert list: 1 Factory setting: 2048

p0410[0...n] HLA_840, HLA_DBSI	Encoder inversion actual value / Enc inv ActV Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0000 bin
p0410[0...n] ENC_840, SERVO_840, SERVO_DBSI	Encoder inversion actual value / Enc inv ActV Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704, 4710, 4711, 4715 Unit selection: - Expert list: 1 Factory setting: 0000 bin
p0410[0...n] ENC_840 (Lin_enc), SERVO_840 (Lin), SERVO_DBSI (Lin)	Encoder inversion actual value / Enc inv ActV Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704, 4710, 4711, 4715 Unit selection: - Expert list: 1 Factory setting: 0000 bin
p0411[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Measuring gear configuration / Meas gear config Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: 0000 bin
p0412[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Measuring gear absolute encoder rotary revolutions virtual / Abs rot rev Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 4194303	Access level: 1 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: 0
p0413[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Measuring gear position tracking tolerance window / Pos track window Can be changed: C2(4) Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: 0.00	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 4294967300.00	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00

p0414[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Redundant coarse position value relevant bits (identified) / Relevant bits Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 16	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 16
p0415[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Gx_XIST1 Coarse position safe most significant bit (identified) / Gx_XIST1 safe MSB Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 31	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 14
p0416[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Non safety-relevant meas. steps position value POS1 (detected) / nsrPos1 Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 22000
p0417[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder safety comparison algorithm (detected) / Safety comp_algo Can be changed: C2(4) Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 255	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 255
p0418[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Fine resolution Gx_XIST1 (in bits) / Enc fine Gx_XIST1 Can be changed: C2(4) Data type: Unsigned8 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 18	Access level: 3 Function diagram: 4010, 4704 Unit selection: - Expert list: 1 Factory setting: 11
p0418 TM41	TM41 encoder emulation fine resolution Gx_XIST1 (in bits) / Enc fine Gx_XIST1 Can be changed: C2(4) Data type: Unsigned8 P-Group: Encoder Not for motor type: - Min: 2	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 18	Access level: 3 Function diagram: 9674, 9676 Unit selection: - Expert list: 1 Factory setting: 11

p0419[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Fine resolution absolute value Gx_XIST2 (in bits) / Enc fine Gx_XIST2 Can be changed: C2(4) Data type: Unsigned8 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 18	Access level: 3 Function diagram: 4704, 4710 Unit selection: - Expert list: 1 Factory setting: 9
p0420[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder connection / Enc_connection Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p0421[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Absolute encoder rotary multiturn resolution / Enc abs multiturn Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: 4096
p0422[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Absolute encoder linear measuring step resolution / Enc abs meas step Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0 [nm]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 4294967295 [nm]	Access level: 3 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: 100 [nm]
p0423[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Absolute encoder rotary singleturn resolution / Enc abs singleturn Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 1073741823	Access level: 3 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: 8192
p0424[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder linear zero mark distance / Enc lin ZM_dist Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 0 [mm]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 65535 [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 20 [mm]

p0425[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder rotary zero mark distance / Enc rot dist ZM Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 16777215	Access level: 3 Function diagram: 4704, 8570 Unit selection: - Expert list: 1 Factory setting: 2048
p0426[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder zero mark differential distance / Enc ZM Dif_dist Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 1	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p0427[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder SSI baud rate / Enc SSI baud rate Can be changed: C2(4) Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: 0 [kHz]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 65535 [kHz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100 [kHz]
p0428[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder SSI monoflop time / Enc SSI t_monoflop Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 0 [µs]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 65535 [µs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 30 [µs]
p0429[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder SSI configuration / Enc SSI config Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 bin
p0430[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Sensor Module configuration / SM config Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1110 0000 0000 1000 0000 0000 0000 0000 bin

p0430[0...n] ENC_840 (Lin_enc), SERVO_840 (Lin), SERVO_DBSI (Lin)	Sensor Module configuration / SM config Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1110 0000 0000 1000 0000 0000 0000 0000 bin
p0431[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Angular commutation offset / Ang_com offset Can be changed: C2(4) Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: -180.00 [°]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 180.00 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [°]
p0432[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Gearbox factor encoder revolutions / Grbx_fact enc_rev Can be changed: C2(4) Data type: Integer32 P-Group: Encoder Not for motor type: - Min: 1	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 1048576	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p0433[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Gearbox factor motor/load revolutions / Grbx_fact mot/load Can be changed: C2(4) Data type: Integer32 P-Group: Encoder Not for motor type: - Min: 1	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 1048576	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p0434[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder SSI error bit / Enc SSI error bit Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0435[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder SSI alarm bit / Enc SSI alarm bit Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0436[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder SSI parity bit / Enc SSI parity bit Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0437[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Sensor Module configuration extended / SM config ext Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0011 0000 0000 0000 0000 1000 0000 0000 bin
p0437[0...n] ENC_840 (Lin_enc), SERVO_840 (Lin), SERVO_DBSI (Lin)	Sensor Module configuration extended / SM config ext Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0011 0000 0000 0000 0000 1000 0000 0000 bin
p0438[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Square-wave encoder filter time / Enc t_filt Can be changed: C2(4) Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: 0.00 [μs]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 100.00 [μs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.64 [μs]
p0439[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder ramp-up time / Enc ramp-up time Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 65535 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [ms]
p0440[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Copy encoder serial number / Copy enc ser_no Can be changed: C2(4) Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

4.2 SINAMICS parameters

p0441[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder commissioning serial number part 1 / Enc com ser_no 1 Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0000 hex	Calculated: CALC_MOD_ALL Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
p0442[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder commissioning serial number part 2 / Enc com ser_no 2 Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0000 hex	Calculated: CALC_MOD_ALL Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
p0443[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder commissioning serial number part 3 / Enc com ser_no 3 Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0000 hex	Calculated: CALC_MOD_ALL Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
p0444[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder commissioning serial number part 4 / Enc com ser_no 4 Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0000 hex	Calculated: CALC_MOD_ALL Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
p0445[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder commissioning serial number part 5 / Enc com ser_no 5 Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0000 hex	Calculated: CALC_MOD_ALL Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
p0446[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder SSI number of bits before the absolute value / Enc SSI bit before Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0447[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder SSI number of bits absolute value / Enc SSI bit val Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 25
p0448[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder SSI number of bits after the absolute value / Enc SSI bit after Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0449[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder SSI number of bits filler bits / Enc SSI fill bits Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
r0451[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Commutation angle factor / Enc commut_factor Can be changed: - Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4710 Unit selection: - Expert list: 1 Factory setting: -
r0452[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Square-wave encoder filter time display / Enc t_filt disp Can be changed: - Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: - [µs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [µs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [µs]
r0452 ENC_840	Square-wave encoder filter time display / Enc t_filt disp Can be changed: - Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: - [µs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [µs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [µs]

p0453[0...n]	Pulse encoder evaluation zero speed measuring time / Enc_ev n_0 t_meas		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(4)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: EDS, p0140	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.10 [ms]	10000.00 [ms]	1000.00 [ms]

p0454[0...n]	Sensor Module configuration extended Part 2 / SM config ext 2		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(4)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: EDS, p0140	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 bin

r0455[0...2]	Encoder configuration recognized / Enc_config recog		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0455	Encoder configuration recognized / Enc_config recog		
ENC_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0456[0...2]	Encoder configuration supported / Enc_config sup		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0456	Encoder configuration supported / Enc_config sup		
ENC_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0457[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Sensor Module properties extended Part 2 / SM prop ext 2 Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0457 ENC_840	Sensor Module properties extended Part 2 / SM prop ext 2 Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0458[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Sensor Module properties / SM properties Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: -
r0458[0...2] SERVO_840 (Lin), SERVO_DBSI (Lin)	Sensor Module properties / SM properties Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: -
r0458 ENC_840	Sensor Module properties / SM properties Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: -
r0458 ENC_840 (Lin_enc)	Sensor Module properties / SM properties Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: -

r0459[0...2]	Sensor Module properties extended / SM prop ext		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0459[0...2]	Sensor Module properties extended / SM prop ext		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0459	Sensor Module properties extended / SM prop ext		
ENC_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0459	Sensor Module properties extended / SM prop ext		
ENC_840 (Lin_enc)	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0460[0...2]	Encoder serial number part 1 / Enc ser_no 1		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0460	Encoder serial number part 1 / Enc ser_no 1		
ENC_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0461[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder serial number part 2 / Enc ser_no 2 Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0461 ENC_840	Encoder serial number part 2 / Enc ser_no 2 Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0462[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder serial number part 3 / Enc ser_no 3 Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0462 ENC_840	Encoder serial number part 3 / Enc ser_no 3 Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0463[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder serial number part 4 / Enc ser_no 4 Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0463 ENC_840	Encoder serial number part 4 / Enc ser_no 4 Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r0464[0...2]	Encoder serial number part 5 / Enc ser_no 5		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0464	Encoder serial number part 5 / Enc ser_no 5		
ENC_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0465[0...27]	Encoder 1 identification number/serial number / Enc1 ID_no/ser_no		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned8	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0466[0...27]	Encoder 2 identification number/serial number / Enc2 ID_no/ser_no		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned8	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0467[0...27]	Encoder 3 identification number/serial number / Enc3 ID_no/ser_no		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned8	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0469[0...2]	Absolute encoder linear measuring step / Enc lin meas step		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [nm]	- [nm]	- [nm]

r0469 ENC_840	Absolute encoder linear measuring step / Enc lin meas step Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: - [nm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [nm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [nm]
r0470[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Redundant coarse position value valid bits / Valid bits Can be changed: - Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0470 ENC_840	Redundant coarse position value valid bits / Valid bits Can be changed: - Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0471[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Redundant coarse position value fine resolution bits / Fine bit Can be changed: - Data type: Integer16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0471 ENC_840	Redundant coarse position value fine resolution bits / Fine bit Can be changed: - Data type: Integer16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0472[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Redundant coarse position value relevant bits / Relevant bits Can be changed: - Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r0472	Redundant coarse position value relevant bits / Relevant bits		
ENC_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

r0473[0...2]	Non safety-relevant measuring steps position value pos1 / nsrPos1		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

r0473	Non safety-relevant measuring steps position value pos1 / nsrPos1		
ENC_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

r0474[0...2]	Redundant coarse position value configuration / Red pos config		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

r0474	Redundant coarse position value configuration / Red pos config		
ENC_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

r0475[0...2]	Gx_XIST1 coarse position safety most significant bit / Gx_XIST1 safe MSB		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

r0475 ENC_840	Gx_XIST1 coarse position safety most significant bit / Gx_XIST1 safe MSB Can be changed: - Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0476[0...n] HLA_840, HLA_DBSI	Piston zero point calibration value / Piston 0 pt cal Can be changed: T Data type: Integer32 P-Group: Encoder Not for motor type: - Min: -2147483648	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 2147483647	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r0477[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Measuring gear position difference / Meas gear pos diff Can be changed: - Data type: Integer32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0477 ENC_840	CO: Measuring gear position difference / Meas gear pos diff Can be changed: - Data type: Integer32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0479[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Diagnostics encoder position actual value Gn_XIST1 / Diag Gn_XIST1 Can be changed: - Data type: Integer32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: -
r0479 TM41	CO: TM41 encoder emulation diagnostics Gn_XIST1 / Diag Gn_XIST1 Can be changed: - Data type: Integer32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9674, 9676 Unit selection: - Expert list: 1 Factory setting: -

r0479 ENC_840	CO: Diagnostics encoder position actual value Gn_XIST1 / Diag Gn_XIST1		
	Can be changed: -	Calculated: -	Access level: 3
	Data type: Integer32	Dynamic index: -	Function diagram: 4704
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-
p0480[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CI: Encoder control word Gn_STW signal source / Enc Gn_STW s_s		
	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / Integer16	Dynamic index: -	Function diagram: 4700, 4720, 4750
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0
p0480 ENC_840	CI: Encoder control word Gn_STW signal source / Enc Gn_STW s_s		
	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / Integer16	Dynamic index: -	Function diagram: 4700, 4720, 4750
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0
r0481[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Encoder status word Gn_ZSW / Enc Gn_ZSW		
	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: 4010, 4704, 4730, 4750
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-
r0481 TM41	CO: TM41 encoder emulation status word Gn_ZSW / Enc Gn_ZSW		
	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: 9676
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0481 ENC_840	CO: Encoder status word Gn_ZSW / Enc Gn_ZSW Can be changed: - Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704, 4730, 4750 Unit selection: - Expert list: 1 Factory setting: -
r0482[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Encoder actual position value Gn_XIST1 / Enc Gn_XIST1 Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4700, 4702, 4704, 4735, 4740, 4750 Unit selection: - Expert list: 1 Factory setting: -
r0482 TM41	CO: TM41 encoder emulation position actual value Gn_XIST1 / Enc Gn_XIST1 Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0482 ENC_840	CO: Encoder actual position value Gn_XIST1 / Enc Gn_XIST1 Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704, 4735, 4740, 4750 Unit selection: - Expert list: 1 Factory setting: -
r0483[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Encoder actual position value Gn_XIST2 / Enc Gn_XIST2 Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704, 4750 Unit selection: - Expert list: 1 Factory setting: -

r0483 TM41	CO: TM41 encoder emulation position actual value Gn_XIST2 / Enc Gn_XIST2 Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0483 ENC_840	CO: Encoder actual position value Gn_XIST2 / Enc Gn_XIST2 Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704, 4750 Unit selection: - Expert list: 1 Factory setting: -
r0484[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Redundant coarse encoder position + CRC / Enc red pos+CRC Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0484 ENC_840	CO: Redundant coarse encoder position + CRC / Enc red pos+CRC Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0485[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Measuring gear encoder raw value incremental / Enc raw val incr Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0485 ENC_840	CO: Measuring gear encoder raw value incremental / Enc raw val incr Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r0486[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Measuring gear encoder raw value absolute / Enc raw val abs Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0486 ENC_840	CO: Measuring gear encoder raw value absolute / Enc raw val abs Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0487[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Diagnostic encoder control word Gn_STW / Enc Gn_STW Can be changed: - Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4700, 4704, 4720, 4740 Unit selection: - Expert list: 1 Factory setting: -
r0487 ENC_840	Diagnostic encoder control word Gn_STW / Enc Gn_STW Can be changed: - Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4700, 4704, 4720, 4740 Unit selection: - Expert list: 1 Factory setting: -
p0488[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Measuring probe 1 input terminal / Meas probe 1 inp Can be changed: T, U Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 8	Access level: 3 Function diagram: 4740 Unit selection: - Expert list: 1 Factory setting: 0
p0488[0...2] SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	Measuring probe 1 input terminal / Meas probe 1 inp Can be changed: T, U Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 51	Access level: 3 Function diagram: 4740 Unit selection: - Expert list: 1 Factory setting: 0

p0488	Measuring probe 1 input terminal / Meas probe 1 inp		
ENC_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 4740
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	8	0

p0489[0...2]	Measuring probe 2 input terminal / Meas probe 2 inp		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 4740
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	8	0

p0489[0...2]	Measuring probe 2 input terminal / Meas probe 2 inp		
SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 4740
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	51	0

p0489	Measuring probe 2 input terminal / Meas probe 2 inp		
ENC_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 4740
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	8	0

p0490	Invert measuring probe or equivalent zero mark / Pr or ZM_equiv inv		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: 4740
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0000 0000 bin

p0491	Motor encoder fault response ENCODER / Fault resp ENCODER		
HLA_840, HLA_DBSI, TM41	Can be changed: T	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	6	0

p0491 SERVO_840, SERVO_DBSI	Motor encoder fault response ENCODER / Fault resp ENCODER Can be changed: T Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0492 HLA_840, HLA_DBSI	Square-wave encoder max. velocity difference per sampling cycle / v_dif max/samp_cyc Can be changed: T, U Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: 0.00 [m/min]	Calculated: CALC_MOD_REG Dynamic index: - Unit group: - Scaling: - Max: 210000.00 [m/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [m/min]
p0492 SERVO_840, SERVO_DBSI	Square-wave encoder maximum speed difference per sampling cycle / n_dif max/samp_cyc Can be changed: T, U Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: 0.00 [rpm]	Calculated: CALC_MOD_REG Dynamic index: - Unit group: - Scaling: - Max: 210000.00 [rpm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [rpm]
p0492 SERVO_840 (Lin), SERVO_DBSI (Lin)	Square-wave encoder max. velocity difference per sampling cycle / v_dif max/samp_cyc Can be changed: T, U Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: 0.00 [m/min]	Calculated: CALC_MOD_REG Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [m/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [m/min]
p0492 ENC_840	Square-wave encoder maximum speed difference per sampling cycle / n_dif max/samp_cyc Can be changed: T, U Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: 0.00 [rpm]	Calculated: CALC_MOD_REG Dynamic index: - Unit group: - Scaling: - Max: 210000.00 [rpm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [rpm]

p0492 ENC_840 (Lin_enc)	Square-wave encoder max. velocity difference per sampling cycle / v_dif max/samp_cyc Can be changed: T, U Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: 0.00 [m/min]	Calculated: CALC_MOD_REG Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [m/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [m/min]
p0493[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Zero mark selection input terminal / ZM_sel inp_term Can be changed: T, U Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 8	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0493[0...n] SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	Zero mark selection input terminal / ZM_sel inp_term Can be changed: T, U Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 51	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0493 ENC_840	Zero mark selection input terminal / ZM_sel inp_term Can be changed: T, U Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 211	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0494[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Equivalent zero mark input terminal / ZM_equiv inp_term Can be changed: T, U Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 8	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0494[0...n] SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	Equivalent zero mark input terminal / ZM_equiv inp_term Can be changed: T, U Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 51	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0495[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Equivalent zero mark input terminal / ZM_equiv input Can be changed: T, U Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 8	Access level: 3 Function diagram: 4735 Unit selection: - Expert list: 1 Factory setting: 0
p0495[0...2] SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	Equivalent zero mark input terminal / ZM_equiv input Can be changed: T, U Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 51	Access level: 3 Function diagram: 4735 Unit selection: - Expert list: 1 Factory setting: 0
p0495 ENC_840	Equivalent zero mark input terminal / ZM_equiv input Can be changed: T, U Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 8	Access level: 3 Function diagram: 4735 Unit selection: - Expert list: 1 Factory setting: 0
p0496[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder diagnostic signal selection / Enc diag select Can be changed: T, U Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 86	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0496 ENC_840	Encoder diagnostic signal selection / Enc diag select Can be changed: T, U Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 86	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r0497[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Encoder diagnostic signal double word / Enc diag DW Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r0497 ENC_840	Encoder diagnostic signal double word / Enc diag DW Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0498[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Encoder diagnostic signal low word / Enc diag low word Can be changed: - Data type: Integer16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0498 ENC_840	Encoder diagnostic signal low word / Enc diag low word Can be changed: - Data type: Integer16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0499[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Encoder diagnostic signal high word / Enc diag high word Can be changed: - Data type: Integer16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0499 ENC_840	Encoder diagnostic signal high word / Enc diag high word Can be changed: - Data type: Integer16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0500 SERVO_840, SERVO_DBSI	Technology application / Tec application Can be changed: C2(1), T Data type: Integer16 P-Group: Applications Not for motor type: - Min: 100	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 103	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100

p0505 ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	Selecting the system of units / Unit sys select Can be changed: C2(5) Data type: Integer16 P-Group: Applications Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p0514[0...9] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Scaling-specific reference values / Scal spec ref val Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 0.000001	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 10000000.000000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.000000
p0515[0...19] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Scaling specific parameters referred to p0514[0] / Scal spec p514[0] Can be changed: T Data type: Unsigned32 P-Group: Communications Not for motor type: - Min: 0	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0516[0...19] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Scaling specific parameters referred to p0514[1] / Scal spec p514[1] Can be changed: T Data type: Unsigned32 P-Group: Communications Not for motor type: - Min: 0	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0517[0...19] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Scaling specific parameters referred to p0514[2] / Scal spec p514[2] Can be changed: T Data type: Unsigned32 P-Group: Communications Not for motor type: - Min: 0	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0518[0...19] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Scaling specific parameters referred to p0514[3] / Scal spec p514[3] Can be changed: T Data type: Unsigned32 P-Group: Communications Not for motor type: - Min: 0	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0519[0...19]	Scaling specific parameters referred to p0514[4] / Scal spec p514[4]		
A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: CALC_MOD_ALL	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	4294967295	0
p0520[0...19]	Scaling specific parameters referred to p0514[5] / Scal spec p514[5]		
A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: CALC_MOD_ALL	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	4294967295	0
p0521[0...19]	Scaling specific parameters referred to p0514[6] / Scal spec p514[6]		
A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: CALC_MOD_ALL	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	4294967295	0
p0522[0...19]	Scaling specific parameters referred to p0514[7] / Scal spec p514[7]		
A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: CALC_MOD_ALL	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	4294967295	0
p0523[0...19]	Scaling specific parameters referred to p0514[8] / Scal spec p514[8]		
A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: CALC_MOD_ALL	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	4294967295	0
p0524[0...19]	Scaling specific parameters referred to p0514[9] / Scal spec p514[9]		
A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: CALC_MOD_ALL	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	4294967295	0

p0528 ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	Controller gain system of units / Ctrl_gain unit_sys Can be changed: C2(5) Data type: Integer16 P-Group: Applications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0530[0...n] SERVO_840, SERVO_DBSI	Bearing version selection / Bearing vers sel Can be changed: C2(1, 3) Data type: Unsigned16 P-Group: Motor Not for motor type: SESM Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 104	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0531[0...n] SERVO_840, SERVO_DBSI	Bearing code number selection / Bearing codeNo sel Can be changed: C2(3) Data type: Unsigned16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 65535	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0532[0...n] SERVO_840, SERVO_DBSI	Bearing maximum speed / Bearing n_max Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [rpm]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 210000.0 [rpm]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [rpm]
p0532[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Bearing maximum velocity / Bearing v_max Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [m/min]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 1300.0 [m/min]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [m/min]
p0541[0...n] SERVO_840, SERVO_DBSI	Load gearbox code number / Load grbx code no Can be changed: C2(1, 3) Data type: Unsigned32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 4294967295	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1

p0542[0...n] SERVO_840, SERVO_DBSI	Load gearbox maximum speed / Load grbx n_max Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0.0 [rpm]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 210000.0 [rpm]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [rpm]
p0543[0...n] SERVO_840, SERVO_DBSI	Load gearbox maximum torque / Load grbx M_max Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0.00 [Nm]	Calculated: - Dynamic index: MDS, p0130 Unit group: 7_4 Scaling: - Max: 1000000.00 [Nm]	Access level: 2 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: 0.00 [Nm]
p0544[0...n] SERVO_840, SERVO_DBSI	Load gearbox overall ratio numerator / Load grbx ratio N Can be changed: C2(1, 3) Data type: Integer32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 2147483647	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0545[0...n] SERVO_840, SERVO_DBSI	Load gearbox overall ratio denominator / Load grbx ratio D Can be changed: C2(1, 3) Data type: Integer32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 2147483647	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0546[0...n] SERVO_840, SERVO_DBSI	Load gearbox direction of rotation inversion / Load grbx dir inv Can be changed: C2(1, 3) Data type: Integer32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 2147483647	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0547[0...n] SERVO_840, SERVO_DBSI	Load gearbox moment of inertia / Load grbx m_inert Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL, RESM Min: 0.000000 [kgm ²]	Calculated: - Dynamic index: MDS, p0130 Unit group: 25_1 Scaling: - Max: 100000.000000 [kgm ²]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: 0.000000 [kgm ²]

p0550[0...n] SERVO_840, SERVO_DBSI	Brake version / Brake version Can be changed: C2(1, 3) Data type: Integer16 P-Group: Motor Not for motor type: SESM, REL, RESM Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 2	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0551[0...n] SERVO_840, SERVO_DBSI	Brake code number / Brake code no Can be changed: C2(1, 3) Data type: Unsigned32 P-Group: Motor Not for motor type: SESM, REL, RESM Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 4294967295	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p0552[0...n] SERVO_840, SERVO_DBSI	Maximum brake speed / Brake n_max Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: SESM, REL, RESM Min: 0.0 [rpm]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 210000.0 [rpm]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [rpm]
p0553[0...n] SERVO_840, SERVO_DBSI	Brake holding torque / Brake M_hold Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: SESM, REL, RESM Min: 0.00 [Nm]	Calculated: - Dynamic index: MDS, p0130 Unit group: 7_4 Scaling: - Max: 1000000.00 [Nm]	Access level: 2 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: 0.00 [Nm]
p0554[0...n] SERVO_840, SERVO_DBSI	Brake moment of inertia / Brake m_inert Can be changed: C2(1, 3) Data type: FloatingPoint32 P-Group: Motor Not for motor type: SESM, REL, RESM Min: - [kgm ²]	Calculated: - Dynamic index: MDS, p0130 Unit group: 25_1 Scaling: - Max: - [kgm ²]	Access level: 2 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: - [kgm ²]
r0565[0...15] CU_I_840, CU_NX_840	CO: Probe time stamp / Probe t_stamp Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r0566[0...3]	CO: Probe time stamp reference / Probe t_stamp name		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0567	CO: Probe diagnostics word / Probe diag_word		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0570	Inhibit list values effective number / Inhib list no		
SERVO_840, SERVO_DBSI	Can be changed: T, U Data type: Unsigned8 P-Group: Applications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 50	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0571[0...49]	Inhibit list motor/closed-loop control parameter calculation / Inhib list calc		
SERVO_840, SERVO_DBSI	Can be changed: T, U Data type: Integer16 P-Group: Applications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2142	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0572[0...n]	Activate/deactivate inhibit list / Inh_list act/deact		
SERVO_840, SERVO_DBSI	Can be changed: T, U Data type: Integer16 P-Group: Applications Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0573	Inhibit automatic reference value calculation / Inhibit calc		
A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	Can be changed: T, U Data type: Integer16 P-Group: Applications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0578[0...n] SERVO_840, SERVO_DBSI	Calculate technology-dependent parameters / Calc tec par Can be changed: T Data type: Integer16 P-Group: Applications Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0580 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Measuring probe input terminal / MT input terminal Can be changed: T, U Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 8	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0581 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Measuring probe edge / MT edge Can be changed: T, U Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0582 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Measuring probe pulses per revolution / MT pulses per rev Can be changed: T, U Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 12	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p0583 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Measuring probe maximum measuring time / MT t_meas max Can be changed: T, U Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: 0.040 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10.000 [s]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10.000 [s]
r0586 SERVO_840, SERVO_DBSI	CO: Measuring probe speed actual value / MT n_act Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]

r0586	CO: Measuring probe velocity actual value / MT v_act		
HLA_840, HLA_DBSI, SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Displays, signals	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	- [m/min]	- [m/min]	- [m/min]

r0587	CO: Measuring probe measuring time measured / MT t_meas measured		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0588	CO: Measuring probe pulse counter / MT pulse counter		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0589	Measuring probe delay time / MT t_delay		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

p0595	Technological unit selection / Tec unit sel		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: C2(5)	Calculated: -	Access level: 1
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Applications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1	32	1

p0596	Technological unit reference quantity / Tec unit ref qty		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.01	340.28235E36	1.00

p0600[0...n] SERVO_840, SERVO_DBSI	Motor temperature sensor for monitoring / Mot temp_sensor Can be changed: T, U Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 21	Access level: 2 Function diagram: 8016 Unit selection: - Expert list: 1 Factory setting: 1
p0601[0...n] SERVO_840, SERVO_DBSI	Motor temperature sensor type / Mot_temp_sens type Can be changed: T, U Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 11	Access level: 2 Function diagram: 8016 Unit selection: - Expert list: 1 Factory setting: 2
p0601 A_INF_840, B_INF_840, S_INF_840	Temperature sensor, sensor type / Temp_sens type Can be changed: T, U Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0603 SERVO_840, SERVO_DBSI	CI: Motor temperature signal source / Mot temp s_s Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Motor Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: p2006 Max: -	Access level: 2 Function diagram: 8016 Unit selection: - Expert list: 1 Factory setting: 0
p0604[0...n] SERVO_840, SERVO_DBSI	Mot_temp_mod 2: sensor alarm threshold / Mod 2: sens A_thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [°C]	Calculated: - Dynamic index: MDS, p0130 Unit group: 21_1 Scaling: - Max: 200.0 [°C]	Access level: 2 Function diagram: 8016 Unit selection: p0505 Expert list: 1 Factory setting: 120.0 [°C]
p0605[0...n] SERVO_840, SERVO_DBSI	Mot_temp_mod 1/2 sensor threshold and temperature value / Mod 1/2 sens thr_T Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [°C]	Calculated: - Dynamic index: MDS, p0130 Unit group: 21_1 Scaling: - Max: 240.0 [°C]	Access level: 2 Function diagram: 8016, 8017 Unit selection: p0505 Expert list: 1 Factory setting: 145.0 [°C]

p0606[0...n] SERVO_840, SERVO_DBSI	Mot_temp_mod 2: sensor timer / Mod 2:sens timer Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 600.000 [s]	Access level: 2 Function diagram: 8016 Unit selection: - Expert list: 1 Factory setting: 240.000 [s]
p0607[0...n] SERVO_840, SERVO_DBSI	Temperature sensor fault timer / Sensor fault time Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 600.000 [s]	Access level: 2 Function diagram: 8016 Unit selection: - Expert list: 1 Factory setting: 0.100 [s]
p0608[0...3] SERVO_840, SERVO_DBSI	CI: Motor temperature signal source 2 / Mot_temp s_s 2 Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Motor Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: p2006 Max: -	Access level: 2 Function diagram: 8016 Unit selection: - Expert list: 1 Factory setting: 0
p0609[0...3] SERVO_840, SERVO_DBSI	CI: Motor temperature signal source 3 / Mot_temp s_s 3 Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Motor Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: p2006 Max: -	Access level: 2 Function diagram: 8016 Unit selection: - Expert list: 1 Factory setting: 0
p0610[0...n] SERVO_840, SERVO_DBSI	Motor overtemperature response / Mot temp response Can be changed: T Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 12	Access level: 2 Function diagram: 8016, 8017, 8018, 8019 Unit selection: - Expert list: 1 Factory setting: 12
p0611[0...n] SERVO_840, SERVO_DBSI	I2t motor model thermal time constant / I2t MotMod Tc Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: 0 [s]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 20000 [s]	Access level: 3 Function diagram: 8017 Unit selection: - Expert list: 1 Factory setting: 0 [s]

p0612[0...n] SERVO_840, SERVO_DBSI	Mot_temp_mod activation / Mot_temp_mod act Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: SESM, REL Min: -	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8017, 8018, 8019 Unit selection: - Expert list: 1 Factory setting: 0000 0010 0000 0010 bin
p0613[0...n] SERVO_840, SERVO_DBSI	Mot_temp_mod 1/3 ambient temperature / Mod 1/3 amb_temp Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: -40 [°C]	Calculated: - Dynamic index: MDS, p0130 Unit group: 21_1 Scaling: - Max: 100 [°C]	Access level: 2 Function diagram: 8017, 8019 Unit selection: p0505 Expert list: 1 Factory setting: 40 [°C]
p0614[0...n] SERVO_840, SERVO_DBSI	Thermal resistance adaptation reduction factor / Therm R_adapt red Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0 [%]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 100 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 30 [%]
p0615[0...n] SERVO_840, SERVO_DBSI	Mot_temp_mod 1 (I2t) fault threshold / I2t F thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: 0.0 [°C]	Calculated: - Dynamic index: MDS, p0130 Unit group: 21_1 Scaling: - Max: 220.0 [°C]	Access level: 2 Function diagram: 8017 Unit selection: p0505 Expert list: 1 Factory setting: 180.0 [°C]
p0616[0...n] SERVO_840, SERVO_DBSI	Motor overtemperature alarm threshold 1 / Mot temp alarm 1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [°C]	Calculated: - Dynamic index: MDS, p0130 Unit group: 21_1 Scaling: - Max: 200.0 [°C]	Access level: 2 Function diagram: 8016 Unit selection: p0505 Expert list: 1 Factory setting: 195.0 [°C]
p0617[0...n] SERVO_840, SERVO_DBSI	Stator thermally relevant iron component / Stat therm iron Can be changed: T Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, SESM, REL, RESM Min: 0.0 [%]	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 100.0 [%]	Access level: 3 Function diagram: 8018 Unit selection: - Expert list: 1 Factory setting: 40.0 [%]

p0618[0...n] SERVO_840, SERVO_DBSI	Stator thermally relevant copper component / Stat therm copper Can be changed: T Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, SESM, REL, RESM Min: 0.0 [%]	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 100.0 [%]	Access level: 3 Function diagram: 8018 Unit selection: - Expert list: 1 Factory setting: 15.0 [%]
p0619[0...n] SERVO_840, SERVO_DBSI	Rotor thermally relevant weight / Rotor therm weight Can be changed: T Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, SESM, REL, RESM Min: 0.0 [%]	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 100.0 [%]	Access level: 3 Function diagram: 8018 Unit selection: - Expert list: 1 Factory setting: 20.0 [%]
p0620[0...n] SERVO_840, SERVO_DBSI	Thermal adaptation, stator and rotor resistance / Mot therm_adpt R Can be changed: T, U Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 2	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 2
p0624[0...n] SERVO_840, SERVO_DBSI	Motor temperature offset PT100 / Mot T_offset PT100 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: -100.0 [K]	Calculated: - Dynamic index: MDS, p0130 Unit group: 21_2 Scaling: - Max: 100.0 [K]	Access level: 3 Function diagram: 8016 Unit selection: p0505 Expert list: 1 Factory setting: 0.0 [K]
p0625[0...n] SERVO_840, SERVO_DBSI	Motor ambient temperature during commissioning / Mot amb_temp com Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: -40 [°C]	Calculated: CALC_MOD_EQU Dynamic index: MDS, p0130 Unit group: 21_1 Scaling: - Max: 80 [°C]	Access level: 3 Function diagram: 8017, 8018 Unit selection: p0505 Expert list: 1 Factory setting: 20 [°C]
p0626[0...n] SERVO_840, SERVO_DBSI	Motor overtemperature, stator core / Mot T_over core Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, SESM, REL, RESM Min: 10 [K]	Calculated: CALC_MOD_EQU Dynamic index: MDS, p0130 Unit group: 21_2 Scaling: - Max: 200 [K]	Access level: 3 Function diagram: 8018 Unit selection: p0505 Expert list: 1 Factory setting: 50 [K]

p0627[0...n] SERVO_840, SERVO_DBSI	Motor overtemperature, stator winding / Mot T_{over} stator Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: SESM, REL Min: 15 [K]	Calculated: CALC_MOD_EQU Dynamic index: MDS, p0130 Unit group: 21_2 Scaling: - Max: 200 [K]	Access level: 2 Function diagram: 8017, 8018 Unit selection: p0505 Expert list: 1 Factory setting: 80 [K]
p0628[0...n] SERVO_840, SERVO_DBSI	Motor overtemperature rotor / Mot T_{over} rotor Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, SESM, REL, RESM Min: 20 [K]	Calculated: CALC_MOD_EQU Dynamic index: MDS, p0130 Unit group: 21_2 Scaling: - Max: 200 [K]	Access level: 3 Function diagram: 8018 Unit selection: p0505 Expert list: 1 Factory setting: 100 [K]
r0630[0...n] SERVO_840, SERVO_DBSI	Mot_temp_mod ambient temperature / Mod T_{ambient} Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: SESM, REL Min: - [°C]	Calculated: - Dynamic index: MDS, p0130 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 4 Function diagram: 8018 Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r0631[0...n] SERVO_840, SERVO_DBSI	Mot_temp_mod stator iron temperature / Mod T_{stator} Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: SESM, REL Min: - [°C]	Calculated: - Dynamic index: MDS, p0130 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 4 Function diagram: 8018, 8019 Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r0632[0...n] SERVO_840, SERVO_DBSI	Mot_temp_mod stator winding temperature / Mod T_{winding} Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: SESM, REL Min: - [°C]	Calculated: - Dynamic index: MDS, p0130 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 2 Function diagram: 8017, 8018, 8019 Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r0633[0...n] SERVO_840, SERVO_DBSI	Mot_temp_mod rotor temperature / Mod rotor temp Can be changed: - Data type: FloatingPoint32 P-Group: Motor Not for motor type: SESM, REL Min: - [°C]	Calculated: - Dynamic index: MDS, p0130 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 4 Function diagram: 8018, 8019 Unit selection: p0505 Expert list: 1 Factory setting: - [°C]

p0640[0...n] SERVO_840, SERVO_DBSI	Current limit / Current limit Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.00 [Arms]	Calculated: CALC_MOD_ALL Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000.00 [Arms]	Access level: 2 Function diagram: 5722, 6640 Unit selection: - Expert list: 1 Factory setting: 0.00 [Arms]
p0642[0...n] SERVO_840, SERVO_DBSI	Encoderless operation current reduction / Encoderl op I_red Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.00 [%]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p0643[0...n] SERVO_840, SERVO_DBSI	Overvoltage protection for synchronous motors / U_over_protect Can be changed: T Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0645[0...n] SERVO_840 (Ext M_ctrl, Lin), SERVO_DBSI (Ext M_ctrl, Lin)	Motor kT characteristic kT1 / Mot kT char kT1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: 0.000 [N/Arms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 200.000 [N/Arms]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [N/Arms]
p0645[0...n] SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	Motor kT characteristic kT1 / Mot kT char kT1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: 0.000 [Nm/A]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 200.000 [Nm/A]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [Nm/A]
p0646[0...n] SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	Motor kT characteristic kT3 / Mot kT char kT3 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p0647[0...n] SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	Motor kT characteristic kT5 / Mot kT char kT5 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0648[0...n] SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	Motor kT characteristic kT7 / Mot kT char kT7 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0650[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Actual motor operating hours / Mot t_op act Can be changed: T Data type: Unsigned32 P-Group: Motor Not for motor type: - Min: 0 [h]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 4294967295 [h]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [h]
p0651[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Motor operating hours maintenance interval / Mot t_op maint Can be changed: T Data type: Unsigned32 P-Group: Motor Not for motor type: - Min: 0 [h]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 150000 [h]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [h]
p0680[0...7] CU_I_840, CU_NX_840	Central measuring probe input terminal / Cen meas inp Can be changed: T, U Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 8	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0681 CU_I_840, CU_NX_840	BI: Central measuring probe synchronizing signal signal source / Cen meas sync_sig Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0682	CI: Central measuring probe control word signal source / Cen meas STW s_s		
CU_I_840, CU_NX_840	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / Integer16	Dynamic index: -	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0
p0684	Central measuring probe evaluation technique / Cen meas eval_tech		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	16	0
r0685	Central measuring probe control word display / Cen meas STW disp		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-
r0686[0...7]	CO: Central measuring probe measuring time rising edge / CenMeas t_meas 0/1		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-
r0687[0...7]	CO: Central measuring probe measuring time falling edge / CenMeas t_meas 1/0		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-
r0688	CO: Central measuring probe status word display / Cen meas ZSW disp		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

p0700 CU_I_840, CU_NX_840, TB30, TM15DI_DO, TM31	Macro Binector Input (BI) / Macro BI Can be changed: C2(1), T Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999999	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0700[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Macro Binector Input (BI) / Macro BI Can be changed: C2(1), T Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: 0	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: 999999	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r0721 CU_NX_840	CX digital inputs terminal actual value / CX DI actual value Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2179, 2180, 2190, 2191 Unit selection: - Expert list: 1 Factory setting: -
r0721 CU_I_840	CU digital inputs terminal actual value / CU DI term ActV Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2119, 2120, 2121, 2130, 2131, 2132, 2133 Unit selection: - Expert list: 1 Factory setting: -
r0722.0...17 CU_NX_840	CO/BO: CX digital inputs status / CX DI status Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2179, 2180, 2190, 2191 Unit selection: - Expert list: 1 Factory setting: -

r0722.0...21 CU_I_840	CO/BO: CU digital inputs status / CU DI status Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2119, 2120, 2121, 2130, 2131, 2132, 2133 Unit selection: - Expert list: 1 Factory setting: -
r0723.0...17 CU_NX_840	CO/BO: CX digital inputs status inverted / CX DI status inv Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2179, 2180, 2190, 2191 Unit selection: - Expert list: 1 Factory setting: -
r0723.0...21 CU_I_840	CO/BO: CU digital inputs status inverted / CU DI status inv Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2119, 2120, 2121, 2130, 2131, 2132, 2133 Unit selection: - Expert list: 1 Factory setting: -
p0728 CU_NX_840	CX set input or output / CX DI or DO Can be changed: T Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2179, 2190, 2191 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p0728 CU_I_840	CU set input or output / CU DI or DO Can be changed: T Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2119, 2030, 2031, 2130, 2131, 2132, 2133 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin

r0729 CU_NX_840	CX digital outputs access authority / CX DO acc_auth Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2030, 2031, 2130, 2131, 2132, 2133 Unit selection: - Expert list: 1 Factory setting: -
r0729 CU_I_840	CU digital outputs access authority / CU DO acc_auth Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2030, 2031, 2130, 2131, 2132, 2133 Unit selection: - Expert list: 1 Factory setting: -
p0738 CU_NX_840	Bl: CX signal source for terminal DI/DO 8 / CX s_s DI/DO 8 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2179, 2190 Unit selection: - Expert list: 1 Factory setting: 0
p0738 CU_I_840	Bl: CU signal source for terminal DI/DO 8 / CU s_s DI/DO 8 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2119, 2130 Unit selection: - Expert list: 1 Factory setting: 0
p0739 CU_NX_840	Bl: CX signal source for terminal DI/DO 9 / CX s_s DI/DO 9 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2190 Unit selection: - Expert list: 1 Factory setting: 0
p0739 CU_I_840	Bl: CU signal source for terminal DI/DO 9 / CU s_s DI/DO 9 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2130 Unit selection: - Expert list: 1 Factory setting: 0

p0740 CU_NX_840	BI: CX signal source for terminal DI/DO 10 / CX s_s DI/DO 10 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2191 Unit selection: - Expert list: 1 Factory setting: 0
p0740 CU_I_840	BI: CU signal source for terminal DI/DO 10 / CU s_s DI/DO 10 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2131 Unit selection: - Expert list: 1 Factory setting: 0
p0741 CU_NX_840	BI: CX signal source for terminal DI/DO 11 / CX s_s DI/DO 11 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2179, 2191 Unit selection: - Expert list: 1 Factory setting: 0
p0741 CU_I_840	BI: CU signal source for terminal DI/DO 11 / CU s_s DI/DO 11 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2119, 2131 Unit selection: - Expert list: 1 Factory setting: 0
p0742 CU_I_840	BI: CU signal source for terminal DI/DO 12 / CU s_s DI/DO 12 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2119, 2132 Unit selection: - Expert list: 1 Factory setting: 0
p0743 CU_I_840	BI: CU signal source for terminal DI/DO 13 / CU s_s DI/DO 13 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2132 Unit selection: - Expert list: 1 Factory setting: 0

p0744 CU_I_840	BI: CU signal source for terminal DI/DO 14 / CU s_s DI/DO 14 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2133 Unit selection: - Expert list: 1 Factory setting: 0
p0745 CU_I_840	BI: CU signal source for terminal DI/DO 15 / CU s_s DI/DO 15 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2119, 2133 Unit selection: - Expert list: 1 Factory setting: 0
r0747 CU_NX_840	CX digital outputs status / CX DO status Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2190, 2191 Unit selection: - Expert list: 1 Factory setting: -
r0747 CU_I_840	CU digital outputs status / CU DO status Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2130, 2131, 2132, 2133 Unit selection: - Expert list: 1 Factory setting: -
p0748 CU_NX_840	CX invert digital outputs / CX DO inv Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2190, 2191 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p0748 CU_I_840	CU invert digital outputs / CU DO inv Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2030, 2031, 2130, 2131, 2132, 2133 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin

p0771[0...2]	CI: Test sockets signal source / Test skt s_s		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: Unsigned32 / Integer16	Dynamic index: -	Function diagram: 8134
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

r0772[0...2]	Test sockets output signal / TestSktSignalVal		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8134
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [%]	- [%]	- [%]

r0774[0...2]	Test sockets output voltage / TestSkt U_output		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [V]	- [V]	- [V]

p0776[0...2]	Test socket mode / Test skt mode		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: Integer16	Dynamic index: -	Function diagram: 8134
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	96	99	99

p0777[0...2]	Test socket characteristic value x1 / Test skt char x1		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8134
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-100000.00 [%]	100000.00 [%]	0.00 [%]

p0778[0...2]	Test socket characteristic value y1 / Test skt char y1		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8134
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [V]	4.98 [V]	2.49 [V]

p0779[0...2]	Test socket characteristic value x2 / Test skt char x2		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -100000.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 427.9E9 [%]	Access level: 2 Function diagram: 8134 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p0780[0...2]	Test socket characteristic value y2 / Test skt char y2		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: 0.00 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4.98 [V]	Access level: 2 Function diagram: 8134 Unit selection: - Expert list: 1 Factory setting: 4.98 [V]
p0783[0...2]	Test sockets offset / Test skt offset		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -4.98 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4.98 [V]	Access level: 2 Function diagram: 8134 Unit selection: - Expert list: 1 Factory setting: 0.00 [V]
p0784[0...2]	Test socket limit on/off / TestSktLim on/off		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Integer16 P-Group: Terminals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: 8134 Unit selection: - Expert list: 1 Factory setting: 0
r0786[0...2]	Test socket scaling per volt / TestSktScal/Volt		
CU_I_840, CU_NX_840	Can be changed: - Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8134 Unit selection: - Expert list: 1 Factory setting: -
p0788[0...2]	Test sockets physical address / Test skt PhyAddr		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned32 P-Group: Terminals Not for motor type: - Min: 0000 bin	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1111 1111 1111 1111 1111 1111 1111 1111 bin	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin

p0789[0...2]	Test sockets physical address gain / TestSktPhyAddrGain		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -340.28235E36	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 340.28235E36	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.00000
r0790[0...2]	Test sockets physical address signal value / TestSktPhyAddrVal		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0795	CX digital inputs simulation mode / CX DI simulation		
CU_NX_840	Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2180, 2190, 2191 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 bin
p0795	CU digital inputs simulation mode / CU DI simulation		
CU_I_840	Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2020, 2030, 2031, 2100, 2119, 2120, 2130, 2131, 2132, 2133 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 bin
p0796	CX digital inputs simulation mode, setpoint / CX DI sim set		
CU_NX_840	Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2020, 2030, 2031 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 bin

p0796 CU_I_840	CU digital inputs simulation mode setpoint / CU DI sim set Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2020, 2030, 2031, 2100, 2119, 2120, 2130, 2131, 2132, 2133 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 0000 bin
p0799[0...2] CU_I_840	CU inputs/outputs sampling time / CU I/O t_samp Can be changed: C1(3) Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 0.00 [μs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 5000.00 [μs]	Access level: 3 Function diagram: 2020, 2030, 2031 Unit selection: - Expert list: 1 Factory setting: 4000.00 [μs]
p0799[0...2] CU_NX_840	CX inputs/outputs sampling time / CX I/O t_samp Can be changed: C1(3) Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 0.00 [μs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 5000.00 [μs]	Access level: 3 Function diagram: 2020, 2030, 2031 Unit selection: - Expert list: 1 Factory setting: 4000.00 [μs]
p0806 A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	BI: Inhibit master control / PcCtrl inhibit Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r0807.0 A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	BO: Master control active / PcCtrl active Can be changed: - Data type: Unsigned8 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p0809[0...2] SERVO_840, SERVO_DBSI	Copy Command Data Set CDS / Copy CDS Can be changed: T Data type: Unsigned8 P-Group: Commands Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 15	Access level: 2 Function diagram: 8560 Unit selection: - Expert list: 1 Factory setting: 0
p0810 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	BI: Command data set selection CDS bit 0 / CDS sel, bit 0 Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8560 Unit selection: - Expert list: 1 Factory setting: 0
p0819[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	Copy Drive Data Set DDS / Copy DDS Can be changed: C2(15) Data type: Unsigned8 P-Group: Data sets Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 31	Access level: 2 Function diagram: 8565 Unit selection: - Expert list: 1 Factory setting: 0
p0820[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	BI: Drive Data Set selection DDS bit 0 / DDS sel, bit 0 Can be changed: T Data type: Unsigned32 / Binary P-Group: Data sets Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8565, 8575 Unit selection: - Expert list: 1 Factory setting: 0
p0821[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	BI: Drive Data Set selection DDS bit 1 / DDS sel, bit 1 Can be changed: T Data type: Unsigned32 / Binary P-Group: Data sets Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8565, 8570 Unit selection: - Expert list: 1 Factory setting: 0
p0822[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	BI: Drive Data Set selection DDS bit 2 / DDS sel, bit 2 Can be changed: T Data type: Unsigned32 / Binary P-Group: Data sets Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8565 Unit selection: - Expert list: 1 Factory setting: 0

p0823[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	Bl: Drive Data Set selection DDS bit 3 / DDS sel, bit 3 Can be changed: T Data type: Unsigned32 / Binary P-Group: Data sets Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8565 Unit selection: - Expert list: 1 Factory setting: 0
p0824[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	Bl: Drive Data Set selection DDS bit 4 / DDS sel, bit 4 Can be changed: T Data type: Unsigned32 / Binary P-Group: Data sets Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8565, 8575 Unit selection: - Expert list: 1 Factory setting: 0
p0826[0...n] SERVO_840, SERVO_DBSI	Motor changeover motor number / Mot_chgov mot no Can be changed: C2(3) Data type: Unsigned16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 15	Access level: 2 Function diagram: 8575 Unit selection: - Expert list: 1 Factory setting: 0
p0827[0...n] SERVO_840, SERVO_DBSI	Motor changeover status word bit number / Mot_chg ZSW bit no Can be changed: C2(3) Data type: Unsigned16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 15	Access level: 2 Function diagram: 8575 Unit selection: - Expert list: 1 Factory setting: 0
p0828[0...n] SERVO_840, SERVO_DBSI	Bl: Motor changeover feedback signal / Mot_chgov fdbk sig Can be changed: T Data type: Unsigned32 / Binary P-Group: Motor Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8575 Unit selection: - Expert list: 1 Factory setting: 0
r0830.0...15 SERVO_840, SERVO_DBSI	CO/BO: Motor changeover status word / Mot_chgov ZSW Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8575 Unit selection: - Expert list: 1 Factory setting: -

p0831[0...15] SERVO_840, SERVO_DBSI	BI: Motor changeover contactor feedback / Mot_chg cont fdbk Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Motor Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8575 Unit selection: - Expert list: 1 Factory setting: 0
r0832.0...15 SERVO_840, SERVO_DBSI	CO/BO: Mot. changeover contactor feedback sig. status word / Mot_chgov fdbk ZSW Can be changed: - Data type: Unsigned32 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8575 Unit selection: - Expert list: 1 Factory setting: -
p0833 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Data set changeover configuration / DS_chgov config Can be changed: C2(15) Data type: Unsigned16 P-Group: Data sets Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8575 Unit selection: - Expert list: 1 Factory setting: 0000 bin
r0835.0...12 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO/BO: Data set changeover status word / Data set sw ZSW Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8575 Unit selection: - Expert list: 1 Factory setting: -
r0836.0...3 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI, TM41	CO/BO: Command Data Set CDS selected / CDS selected Can be changed: - Data type: Unsigned8 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8560 Unit selection: - Expert list: 1 Factory setting: -
r0837.0...4 ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	CO/BO: Drive Data Set DDS selected / DDS selected Can be changed: - Data type: Unsigned8 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8565 Unit selection: - Expert list: 1 Factory setting: -

r0838[0...3] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Motor/Encoder Data Set selected / MDS/EDS selected Can be changed: - Data type: Unsigned8 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8565 Unit selection: - Expert list: 1 Factory setting: -
p0839 SERVO_840, SERVO_DBSI	Motor changeover contactor control delay time / Mot_chg ctrl t_del Can be changed: C2(3) Data type: Unsigned16 P-Group: Motor Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 500 [ms]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [ms]
p0840[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	BI: ON / OFF (OFF1) / ON / OFF (OFF1) Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501 Unit selection: - Expert list: 1 Factory setting: 0
p0840[0...n] A_INF_840, B_INF_840, S_INF_840	BI: ON / OFF (OFF1) / ON / OFF (OFF1) Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8720, 8820, 8920 Unit selection: - Expert list: 1 Factory setting: 0
p0840 TM41	BI: ON / OFF (OFF1) / ON / OFF (OFF1) Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9677 Unit selection: - Expert list: 1 Factory setting: 0
p0844[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	BI: No coast-down / coast-down (OFF2) signal source 1 / OFF2 s_s_1 Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501, 8720, 8820, 8920 Unit selection: - Expert list: 1 Factory setting: 1

p0844[0...n] A_INF_840, B_INF_840, S_INF_840	BI: No coast-down / coast-down (OFF2) signal source 1 / OFF2 s_s 1 Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8720, 8820, 8920 Unit selection: - Expert list: 1 Factory setting: 1
p0844 TM41	BI: No coast-down / coast-down (OFF2) / OFF2 Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9677 Unit selection: - Expert list: 1 Factory setting: 1
p0845[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	BI: No coast-down / coast-down (OFF2) signal source 2 / OFF2 s_s 2 Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501, 8720, 8820, 8920 Unit selection: - Expert list: 1 Factory setting: 1
p0845[0...n] A_INF_840, B_INF_840, S_INF_840	BI: No coast-down / coast-down (OFF2) signal source 2 / OFF2 s_s 2 Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8720, 8820, 8920 Unit selection: - Expert list: 1 Factory setting: 1
p0848[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	BI: No Quick Stop / Quick Stop (OFF3) signal source 1 / OFF3 s_s 1 Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501 Unit selection: - Expert list: 1 Factory setting: 1

p0848 TM41	Bl: No Quick Stop / Quick Stop (OFF3) / OFF3 Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9677 Unit selection: - Expert list: 1 Factory setting: 1
p0849[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Bl: No Quick Stop / Quick Stop (OFF3) signal source 2 / OFF3 s_s 2 Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501 Unit selection: - Expert list: 1 Factory setting: 1
p0852[0...n] A_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Bl: Enable operation/inhibit operation / Enable operation Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501, 8820, 8920 Unit selection: - Expert list: 1 Factory setting: 1
p0852 TM41	Bl: Enable operation/inhibit operation / Enable operation Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9677 Unit selection: - Expert list: 1 Factory setting: 1
p0854[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Bl: Control by PLC/no control by PLC / Master ctrl by PLC Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501, 8720, 8820, 8920 Unit selection: - Expert list: 1 Factory setting: 1
p0854 TM41	Bl: Control by PLC/no control by PLC / Master ctrl by PLC Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9677, 9678 Unit selection: - Expert list: 1 Factory setting: 1

p0854 ENC_840	BI: Control by PLC/no control by PLC / Master ctrl by PLC Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501, 8720, 8820, 8920 Unit selection: - Expert list: 1 Factory setting: 1
p0855[0...n] SERVO_840, SERVO_DBSI	BI: Unconditionally release holding brake / Uncond open brake Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501, 2701, 2707 Unit selection: - Expert list: 1 Factory setting: 0
p0856[0...n] SERVO_840, SERVO_DBSI	BI: Enable speed controller / n_ctrl enable Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501, 2701, 2707 Unit selection: - Expert list: 1 Factory setting: 1
p0856[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	BI: Enable velocity controller / v_ctrl enable Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501, 2701, 2707 Unit selection: - Expert list: 1 Factory setting: 1
p0857 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Power unit monitoring time / PU t_mon Can be changed: T Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 100.0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 60000.0 [ms]	Access level: 2 Function diagram: 8760, 8864, 8964 Unit selection: - Expert list: 1 Factory setting: 2000.0 [ms]

p0857 A_INF_840, B_INF_840, S_INF_840	Power unit monitoring time / PU t_mon Can be changed: T Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 100.0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 60000.0 [ms]	Access level: 2 Function diagram: 8760, 8864, 8964 Unit selection: - Expert list: 1 Factory setting: 6000.0 [ms]
p0858[0...n] SERVO_840	BI: Unconditionally close holding brake / Uncond close brake Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2501, 2701, 2707 Unit selection: - Expert list: 1 Factory setting: 9719.13
p0858[0...n] SERVO_DBSI	BI: Unconditionally close holding brake / Uncond close brake Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2501, 2701, 2707 Unit selection: - Expert list: 1 Factory setting: 10251.13
p0860 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	BI: Line contactor feedback signal / Line contact fdbk Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2634, 8734, 8834, 8934 Unit selection: - Expert list: 1 Factory setting: 863.1
p0861 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Line contactor monitoring time / Line cont t_mon Can be changed: T Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 5000 [ms]	Access level: 2 Function diagram: 2634, 8734, 8834, 8934 Unit selection: - Expert list: 1 Factory setting: 100 [ms]

p0862 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Power unit ON-delay / PU t_{on} Can be changed: T Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65000 [ms]	Access level: 3 Function diagram: 2610, 8732, 8832, 8932 Unit selection: - Expert list: 1 Factory setting: 0 [ms]
r0863.0 HLA_840, HLA_DBSI	CO/BO: System pressure status word / p_{sys} ZSW Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0863.0...2 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	CO/BO: Drive coupling status word/control word / CoupleZSW/STW Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0864 HLA_840, HLA_DBSI	BI: System pressure available / p_{sys} available Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p0864 SERVO_840, SERVO_DBSI	BI: Infeed operation / INF operation Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2610, 8710, 8910 Unit selection: - Expert list: 1 Factory setting: 0
p0865 HLA_840, HLA_DBSI	System pressure switch-on threshold / p_{sys} thr Can be changed: T Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.0 [bar]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000.0 [bar]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [bar]

p0866 HLA_840, HLA_DBSI	System pressure switch-on threshold hysteresis / p_sys hyst Can be changed: T Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.0 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000.0 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 20.0 [%]
p0867 SERVO_840, SERVO_DBSI	Power unit main contactor holding time after OFF1 / PU t_MC after OFF1 Can be changed: T Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 0.0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 5000.0 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 50.0 [ms]
p0868 SERVO_840, SERVO_DBSI	Power unit debounce time/wait time / PU t_debnc/t_wait Can be changed: T Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65000 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 65000 [ms]
p0869 SERVO_840, SERVO_DBSI	Sequence control configuration / Seq_ctrl config Can be changed: T Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p0869 A_INF_840, B_INF_840, S_INF_840	Sequence control configuration / Seq_ctrl config Can be changed: T Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8732, 8832, 8932 Unit selection: - Expert list: 1 Factory setting: 0000 bin
p0870 SERVO_840, SERVO_DBSI	BI: Close main contactor / Close main cont Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

r0873	CO/BO: Infeed total operation / INF total op		
B_INF_840, S_INF_840	Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8732, 8832 Unit selection: - Expert list: 1 Factory setting: -
p0874	BI: Smart/ Basic Line Module operation / SLM/BLM operation		
B_INF_840, S_INF_840	Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8732, 8832 Unit selection: - Expert list: 1 Factory setting: 0
r0887.0...13	BO: ESR status word / ESR ZSW		
HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR), SERVO_DBSI (ESR)	Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0888	ESR configuration / ESR configuration		
HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR), SERVO_DBSI (ESR)	Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4	Access level: 2 Function diagram: 3082 Unit selection: - Expert list: 1 Factory setting: 0
p0889	BI: ESR response enable / Response enab		
HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR), SERVO_DBSI (ESR)	Can be changed: T, U Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 3082 Unit selection: - Expert list: 1 Factory setting: 2090.9

p0890[0...4] HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR), SERVO_DBSI (ESR)	BI: ESR trigger / ESR trigger Can be changed: T, U Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 3082 Unit selection: - Expert list: 1 Factory setting: [0] 2090.2 [1] 9721.15 [2] 9723.1 [3] 9723.2 [4] 0
p0891 HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR), SERVO_DBSI (ESR)	ESR OFF ramp / ESR OFF ramp Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: 3082 Unit selection: - Expert list: 1 Factory setting: 0
p0892 HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR), SERVO_DBSI (ESR)	ESR timer / ESR timer Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.00 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20.00 [s]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.50 [s]
p0893 HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, Lin), SERVO_DBSI (ESR, Lin)	ESR velocity / ESR velocity Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -340.28235E36 [m/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 340.28235E36 [m/min]	Access level: 2 Function diagram: 3082 Unit selection: - Expert list: 1 Factory setting: 0 [m/min]
p0893 SERVO_840 (ESR), SERVO_DBSI (ESR)	ESR speed / ESR speed Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -340.28235E36 [rpm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 340.28235E36 [rpm]	Access level: 2 Function diagram: 3082 Unit selection: - Expert list: 1 Factory setting: 0 [rpm]

p0894 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Parking pre-setting / Parking pre-set Can be changed: T, U Data type: Unsigned32 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0001 bin
p0894 ENC_840	Parking pre-setting / Parking pre-set Can be changed: T, U Data type: Unsigned32 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0001 bin
p0895[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	BI: Activate/deactivate power unit components / PU_comp act/deact Can be changed: T Data type: Unsigned32 / Binary P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
r0896.0 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	BO: Parking axis, status word / Parking axis, ZSW Can be changed: - Data type: Unsigned8 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0897 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	BI: Parking axis selection / Parking axis sel Can be changed: T Data type: Unsigned32 / Binary P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r0898.0...15 CU_I_840, CU_NX_840	CO/BO: Control word drive object 1 / STW DO1 Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r0898.0...14 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO/BO: Control word sequence control / STW seq_ctrl Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2501 Unit selection: - Expert list: 1 Factory setting: -
r0898.0...14 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO/BO: Control word sequence control / STW seq_ctrl Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2501 Unit selection: - Expert list: 1 Factory setting: -
r0898.0...10 A_INF_840, S_INF_840	CO/BO: Control word sequence control infeed / STW seq_ctrl INF Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8820, 8920 Unit selection: - Expert list: 1 Factory setting: -
r0898.0...10 B_INF_840	CO/BO: Control word sequence control infeed / STW seq_ctrl INF Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8720 Unit selection: - Expert list: 1 Factory setting: -
r0898.0...13 TM41	CO/BO: Control word sequence control / STW seq_ctrl Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 9678 Unit selection: - Expert list: 1 Factory setting: -
r0898.10 ENC_840	CO/BO: Control word sequence control encoder DO / STW seq_ctrl encDO Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r0899.0...15 CO/BO: Status word drive object 1 / ZSW DO1

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0899.0...13 CO/BO: Status word sequence control / ZSW seq_ctrl

HLA_840, HLA_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0899.0...15 CO/BO: Status word sequence control / ZSW seq_ctrl

SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned16	Dynamic index: -	Function diagram: 2503
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0899.0...12 CO/BO: Status word sequence control infeed / ZSW seq_ctrl INF

A_INF_840, S_INF_840	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned16	Dynamic index: -	Function diagram: 8826, 8926
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0899.0...12 CO/BO: Status word sequence control infeed / ZSW seq_ctrl INF

B_INF_840	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned16	Dynamic index: -	Function diagram: 8726
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0899.0...15 CO/BO: Status word sequence control / ZSW seq_ctrl

TM41	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned16	Dynamic index: -	Function diagram: 9680
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r0899.7...9 ENC_840	CO/BO: Status word sequence control encoder DO / ZSW seq_ctrl encDO Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0915[0...35] TM17	TM17 PROFIdrive PZD setpoint assignment / TM17 PD PZD set Can be changed: T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4265	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 4201 [1] 4204 [2] 4211 [3] 4212 [4...35] 0
p0916[0...35] TM17	TM17 PROFIdrive PZD actual value assignment / TM17 PD PZD ActV Can be changed: T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4365	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 4301 [1] 4304 [2] 4311 [3] 4312 [4...35] 0
p0918 CU_I_840, CU_NX_840	PROFIBUS address / PB address Can be changed: T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 126	Access level: 2 Function diagram: 2401, 2410 Unit selection: - Expert list: 1 Factory setting: 126
p0922 CU_I_840	IF1 PROFIdrive PZD telegram selection / IF1 PZD tel Can be changed: C2(1), T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 390	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 1 Function diagram: 2401, 2420, 2423, 2481, 2483 Unit selection: - Expert list: 1 Factory setting: 391

p0922 CU_NX_840	IF1 PROFIdrive PZD telegram selection / IF1 PZD tel Can be changed: C2(1), T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 390	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 1 Function diagram: 2401, 2420, 2423, 2481, 2483 Unit selection: - Expert list: 1 Factory setting: 390
p0922 HLA_840, HLA_DBSI	IF1 PROFIdrive PZD telegram selection / IF1 PZD tel Can be changed: C2(1), T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 166	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 1 Function diagram: 2401, 2415, 2416, 2419, 2420, 2421, 2422, 2423 Unit selection: - Expert list: 1 Factory setting: 999
p0922 SERVO_840, SERVO_DBSI	IF1 PROFIdrive PZD telegram selection / IF1 PZD tel Can be changed: C2(1), T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 1 Function diagram: 2401, 2415, 2416, 2419, 2420, 2421, 2422, 2423 Unit selection: - Expert list: 1 Factory setting: 136
p0922 SERVO_840 (EPOS, EPOS, Pos ctrl, Pos ctrl, Spin_diag), SERVO_DBSI (EPOS, EPOS, Pos ctrl, Pos ctrl, Spin_diag)	IF1 PROFIdrive PZD telegram selection / IF1 PZD tel Can be changed: C2(1), T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 7	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 1 Function diagram: 2401, 2415, 2416, 2419, 2420, 2421, 2422, 2423 Unit selection: - Expert list: 1 Factory setting: 999
p0922 SERVO_840 (Pos ctrl, Pos ctrl, Spin_diag), SERVO_DBSI (Pos ctrl, Pos ctrl, Spin_diag)	IF1 PROFIdrive PZD telegram selection / IF1 PZD tel Can be changed: C2(1), T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 999	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 1 Function diagram: 2401, 2415, 2416, 2419, 2420, 2421, 2422, 2423 Unit selection: - Expert list: 1 Factory setting: 999

p0922 SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	IF1 PROFIdrive PZD telegram selection / IF1 PZD tel Can be changed: C2(1), T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 1 Function diagram: 2401, 2415, 2416, 2419, 2420, 2421, 2422, 2423 Unit selection: - Expert list: 1 Factory setting: 999
p0922 A_INF_840, B_INF_840, S_INF_840	IF1 PROFIdrive PZD telegram selection / IF1 PZD tel Can be changed: C2(1), T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 370	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 1 Function diagram: 2401, 2420, 2423, 2447, 2457, 2481, 2483 Unit selection: - Expert list: 1 Factory setting: 999
p0922 TM17	IF1 PROFIdrive PZD telegram selection / IF1 PZD tel Can be changed: C2(1), T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 0	Access level: 1 Function diagram: 2481, 2483 Unit selection: - Expert list: 1 Factory setting: 0
p0922 TM41	IF1 PROFIdrive PZD telegram selection / IF1 PZD tel Can be changed: C2(1), T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 3	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 1 Function diagram: 2401, 9677, 9679, 9681, 9683 Unit selection: - Expert list: 1 Factory setting: 999
p0922 ENC_840	IF1 PROFIdrive PZD telegram selection / IF1 PZD tel Can be changed: C2(1), T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 81	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 1 Function diagram: 2401, 2415, 2416, 2419, 2420, 2421, 2422, 2423 Unit selection: - Expert list: 1 Factory setting: 999

r0924[0...1] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	ZSW bit pulses enabled / ZSW pulse enab Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2454, 2456 Unit selection: - Expert list: 1 Factory setting: -
p0925 CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	PROFIdrive clock synchronous sign-of-life tolerance / PD SoL_tol Can be changed: T, U Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: 2410 Unit selection: - Expert list: 1 Factory setting: 1
r0930 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	PROFIdrive operating mode / PD operating mode Can be changed: - Data type: Unsigned16 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0944 All objects	CO: Counter for fault buffer changes / Fault buff change Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8060 Unit selection: - Expert list: 1 Factory setting: -
r0945[0...63] All objects	Fault code / Fault code Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8050, 8060 Unit selection: - Expert list: 1 Factory setting: -
r0946[0...65534] All objects	Fault code list / Fault code list Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -

r0947[0...63] All objects	Fault number / Fault number Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8050, 8060 Unit selection: - Expert list: 1 Factory setting: -
r0948[0...63] All objects	Fault time received in milliseconds / t_fault rcv ms Can be changed: - Data type: Unsigned32 P-Group: Messages Not for motor type: - Min: - [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ms]	Access level: 3 Function diagram: 8050, 8060 Unit selection: - Expert list: 1 Factory setting: - [ms]
r0949[0...63] All objects	Fault value / Fault value Can be changed: - Data type: Integer32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8050, 8060 Unit selection: - Expert list: 1 Factory setting: -
p0952 All objects	Fault cases counter / Fault cases qty Can be changed: T, U Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: 6700, 8060 Unit selection: - Expert list: 1 Factory setting: 0
r0964[0...6] CU_I_840	Device identification / Device ID Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r0964[0...6] CU_NX_840	Device identification / Device ID Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r0965	PROFIdrive profile number profile version / PD profile nr vers		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0969	System runtime relative / t_system relative		
CU_I_840, CU_NX_840	Can be changed: T Data type: Unsigned32 P-Group: Displays, signals Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295 [ms]	Access level: 3 Function diagram: 8050, 8060 Unit selection: - Expert list: 1 Factory setting: 0 [ms]
p0970	Reset drive parameters / Drive par reset		
HLA_840, HLA_DBSI	Can be changed: C2(30) Data type: Unsigned16 P-Group: Factory settings Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0970	Reset drive parameters / Drive par reset		
SERVO_840, SERVO_DBSI	Can be changed: C2(30) Data type: Unsigned16 P-Group: Factory settings Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0970	Reset infeed parameter / INF par reset		
A_INF_840, B_INF_840, S_INF_840	Can be changed: C2(30) Data type: Unsigned16 P-Group: Factory settings Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0970	TM120 reset parameters / TM120 par reset		
TM120	Can be changed: C2(30) Data type: Unsigned16 P-Group: Factory settings Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0970 TM150	TM150 reset parameters / TM150 par reset Can be changed: C2(30) Data type: Unsigned16 P-Group: Factory settings Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0970 TM15DI_DO	TM15DI/DO reset parameter / TM15D par reset Can be changed: C2(30) Data type: Unsigned16 P-Group: Factory settings Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0970 TM17	TM17 reset parameter / TM17 par reset Can be changed: C2(30) Data type: Unsigned16 P-Group: Factory settings Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0970 TM31	TM31 reset parameters / TM31 par reset Can be changed: C2(30) Data type: Unsigned16 P-Group: Factory settings Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0970 TM41	TM41 reset parameters / TM41 par reset Can be changed: C2(30) Data type: Unsigned16 P-Group: Factory settings Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0970 TB30	TB30 reset parameters / TB30 par reset Can be changed: C2(30) Data type: Unsigned16 P-Group: Factory settings Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0970 ENC_840	ENCODER reset parameters / ENC par reset Can be changed: C2(30) Data type: Unsigned16 P-Group: Factory settings Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0971 All objects	Save drive object parameters / DO par save Can be changed: T, U Data type: Unsigned16 P-Group: Factory settings Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0972 CU_I_840	Drive unit reset / Drv_unit reset Can be changed: T, U Data type: Unsigned16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0972 CU_NX_840	Drive unit reset / Drv_unit reset Can be changed: T, U Data type: Unsigned16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r0975[0...10] All objects	Drive object identification / DO identification Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p0976 CU_I_840, CU_NX_840	Reset and load all parameters / Reset load all par Can be changed: C1(30), C2(30) Data type: Unsigned16 P-Group: Factory settings Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1013	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p0977	Save all parameters / Save all par		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned16 P-Group: Factory settings Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1013	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p0978[0...n]	List of drive objects / List of the DO		
CU_I_840, CU_NX_840	Can be changed: C1(1) Data type: Unsigned8 P-Group: Topology Not for motor type: - Min: 0	Calculated: - Dynamic index: r0579 Unit group: - Scaling: - Max: 255	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 1 [1...24] 0
r0979[0...30]	PROFIdrive encoder format / PD encoder format		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: -
r0979[0...30]	PROFIdrive encoder format / PD encoder format		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: -
r0979[0...10]	PROFIdrive encoder format / PD encoder format		
ENC_840, TM41	Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: -
r0979[0...10]	PROFIdrive encoder format / PD encoder format		
ENC_840 (Lin_enc)	Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4704 Unit selection: - Expert list: 1 Factory setting: -

r0980[0...299]	List of existing parameters 1 / List avail par 1		
All objects	Can be changed: -	Calculated: -	Access level: 4
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r0981[0...299]	List of existing parameters 2 / List avail par 2		
All objects	Can be changed: -	Calculated: -	Access level: 4
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r0989[0...299]	List of existing parameters 10 / List avail par 10		
All objects	Can be changed: -	Calculated: -	Access level: 4
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r0990[0...99]	List of modified parameters 1 / List chang par 1		
All objects	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r0991[0...99]	List of modified parameters 2 / List chang par 2		
All objects	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r0999[0...99]	List of modified parameters 10 / List chang par 10		
All objects	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

p1000[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Macro Connector Inputs (CI) for speed setpoints / Macro CI n_set Can be changed: C2(1), T Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: 0	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: 999999	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1000[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Macro Connector Inputs (CI) for velocity setpoints / Macro CI v_set Can be changed: C2(1), T Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: 0	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: 999999	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1001[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Fixed velocity setpoint 1 / v_set_fix 1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -1000.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]
p1001[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO: Fixed speed setpoint 1 / n_set_fix 1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -210000.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 210000.000 [rpm]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]
p1002[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Fixed velocity setpoint 2 / v_set_fix 2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -1000.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]
p1002[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO: Fixed speed setpoint 2 / n_set_fix 2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -210000.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 210000.000 [rpm]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]

p1003[0...n]	CO: Fixed velocity setpoint 3 / v_set_fix 3		
SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3010
	P-Group: Setpoints	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-1000.000 [m/min]	1000.000 [m/min]	0.000 [m/min]

p1003[0...n]	CO: Fixed speed setpoint 3 / n_set_fix 3		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3010
	P-Group: Setpoints	Unit group: 3_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-210000.000 [rpm]	210000.000 [rpm]	0.000 [rpm]

p1004[0...n]	CO: Fixed velocity setpoint 4 / v_set_fix 4		
SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3010
	P-Group: Setpoints	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-1000.000 [m/min]	1000.000 [m/min]	0.000 [m/min]

p1004[0...n]	CO: Fixed speed setpoint 4 / n_set_fix 4		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3010
	P-Group: Setpoints	Unit group: 3_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-210000.000 [rpm]	210000.000 [rpm]	0.000 [rpm]

p1005[0...n]	CO: Fixed velocity setpoint 5 / v_set_fix 5		
SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3010
	P-Group: Setpoints	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-1000.000 [m/min]	1000.000 [m/min]	0.000 [m/min]

p1005[0...n]	CO: Fixed speed setpoint 5 / n_set_fix 5		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3010
	P-Group: Setpoints	Unit group: 3_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-210000.000 [rpm]	210000.000 [rpm]	0.000 [rpm]

p1006[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Fixed velocity setpoint 6 / v_set_fix 6 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -1000.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]
p1006[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO: Fixed speed setpoint 6 / n_set_fix 6 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -210000.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 210000.000 [rpm]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]
p1007[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Fixed velocity setpoint 7 / v_set_fix 7 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -1000.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]
p1007[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO: Fixed speed setpoint 7 / n_set_fix 7 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -210000.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 210000.000 [rpm]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]
p1008[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Fixed velocity setpoint 8 / v_set_fix 8 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -1000.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]
p1008[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO: Fixed speed setpoint 8 / n_set_fix 8 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -210000.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 210000.000 [rpm]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]

p1009[0...n]	CO: Fixed velocity setpoint 9 / v_set_fix 9		
SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3010
	P-Group: Setpoints	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-1000.000 [m/min]	1000.000 [m/min]	0.000 [m/min]

p1009[0...n]	CO: Fixed speed setpoint 9 / n_set_fix 9		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3010
	P-Group: Setpoints	Unit group: 3_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-210000.000 [rpm]	210000.000 [rpm]	0.000 [rpm]

p1010[0...n]	CO: Fixed velocity setpoint 10 / v_set_fix 10		
SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3010
	P-Group: Setpoints	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-1000.000 [m/min]	1000.000 [m/min]	0.000 [m/min]

p1010[0...n]	CO: Fixed speed setpoint 10 / n_set_fix 10		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3010
	P-Group: Setpoints	Unit group: 3_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-210000.000 [rpm]	210000.000 [rpm]	0.000 [rpm]

p1011[0...n]	CO: Fixed velocity setpoint 11 / v_set_fix 11		
SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3010
	P-Group: Setpoints	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-1000.000 [m/min]	1000.000 [m/min]	0.000 [m/min]

p1011[0...n]	CO: Fixed speed setpoint 11 / n_set_fix 11		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3010
	P-Group: Setpoints	Unit group: 3_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-210000.000 [rpm]	210000.000 [rpm]	0.000 [rpm]

p1012[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Fixed velocity setpoint 12 / v_set_fix 12 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -1000.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]
p1012[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO: Fixed speed setpoint 12 / n_set_fix 12 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -210000.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 210000.000 [rpm]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]
p1013[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Fixed velocity setpoint 13 / v_set_fix 13 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -1000.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]
p1013[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO: Fixed speed setpoint 13 / n_set_fix 13 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -210000.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 210000.000 [rpm]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]
p1014[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Fixed velocity setpoint 14 / v_set_fix 14 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -1000.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]
p1014[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO: Fixed speed setpoint 14 / n_set_fix 14 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -210000.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 210000.000 [rpm]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]

p1015[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Fixed velocity setpoint 15 / v_set_fix 15 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -1000.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]
p1015[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO: Fixed speed setpoint 15 / n_set_fix 15 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -210000.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 210000.000 [rpm]	Access level: 2 Function diagram: 3010 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]
p1020[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	BI: Fixed velocity setpoint selection Bit 0 / v_set_fixed bit 0 Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2505, 3010 Unit selection: - Expert list: 1 Factory setting: 0
p1020[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	BI: Fixed speed setpoint selection bit 0 / n_set_fixed bit 0 Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2505, 3010 Unit selection: - Expert list: 1 Factory setting: 0
p1021[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	BI: Fixed velocity setpoint selection Bit 1 / v_set_fixed bit 1 Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2505, 3010 Unit selection: - Expert list: 1 Factory setting: 0
p1021[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	BI: Fixed speed setpoint selection bit 1 / n_set_fixed bit 1 Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2505, 3010 Unit selection: - Expert list: 1 Factory setting: 0

p1022[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Bl: Fixed velocity setpoint selection Bit 2 / v_set_fixed bit 2 Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2505, 3010 Unit selection: - Expert list: 1 Factory setting: 0
p1022[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Bl: Fixed speed setpoint selection bit 2 / n_set_fixed bit 2 Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2505, 3010 Unit selection: - Expert list: 1 Factory setting: 0
p1023[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Bl: Fixed velocity setpoint selection Bit 3 / v_set_fixed bit 3 Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2505, 3010 Unit selection: - Expert list: 1 Factory setting: 0
p1023[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Bl: Fixed speed setpoint selection bit 3 / n_set_fixed bit 3 Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2505, 3010 Unit selection: - Expert list: 1 Factory setting: 0
r1024 SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Fixed velocity setpoint effective / v_set_fix eff Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 3001, 3010 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1024 SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO: Fixed speed setpoint effective / n_set_fix eff Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 3001, 3010 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]

p1030[0...n] Motorized potentiometer configuration / MoP configuration			
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T, U Data type: Unsigned16 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3020 Unit selection: - Expert list: 1 Factory setting: 0000 0110 bin
p1035[0...n] BI: Motorized potentiometer setpoint raise / MoP raise			
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2505, 3020 Unit selection: - Expert list: 1 Factory setting: 0
p1035 BI: Zero marks enable / ZM enable			
TM41	Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9677 Unit selection: - Expert list: 1 Factory setting: 0
p1036[0...n] BI: Motorized potentiometer lower setpoint / MoP lower			
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2505, 3020 Unit selection: - Expert list: 1 Factory setting: 0
p1037[0...n] Motorized potentiometer maximum velocity / MoP n_max			
SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -1000.000 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.000 [m/min]	Access level: 2 Function diagram: 3020 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]
p1037[0...n] Motorized potentiometer maximum speed / MoP n_max			
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -210000.000 [rpm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.000 [rpm]	Access level: 2 Function diagram: 3020 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]

p1038[0...n]	Motorized potentiometer minimum velocity / MoP n_min		
SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Can be changed: T, U	Calculated: CALC_MOD_LIM_REF	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3020
	P-Group: Setpoints	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -1000.000 [m/min]	Max: 1000.000 [m/min]	Factory setting: 0.000 [m/min]

p1038[0...n]	Motorized potentiometer minimum speed / MoP n_min		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T, U	Calculated: CALC_MOD_LIM_REF	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3020
	P-Group: Setpoints	Unit group: 3_1	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -210000.000 [rpm]	Max: 210000.000 [rpm]	Factory setting: 0.000 [rpm]

p1039[0...n]	BI: Motorized potentiometer inversion / MoP inv		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: CDS, p0170	Function diagram: 3020
	P-Group: Setpoints	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: 0

p1040[0...n]	Motorized potentiometer starting value / MoP start value		
SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3020
	P-Group: Setpoints	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -1000.000 [m/min]	Max: 1000.000 [m/min]	Factory setting: 0.000 [m/min]

p1040[0...n]	Motorized potentiometer starting value / MoP start value		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3020
	P-Group: Setpoints	Unit group: 3_1	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -210000.000 [rpm]	Max: 210000.000 [rpm]	Factory setting: 0.000 [rpm]

p1041[0...n]	BI: Motorized potentiometer manual/automatic / MoP manual/auto		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: CDS, p0170	Function diagram: 3020
	P-Group: Setpoints	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: 0

p1042[0...n]	CI: Motorized potentiometer automatic setpoint / MoP auto setpoint		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: CDS, p0170	Function diagram: 3020
	P-Group: Setpoints	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p1043[0...n]	BI: Motorized potentiometer accept setting value / MoP acc set val		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: CDS, p0170	Function diagram: 3020
	P-Group: Setpoints	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p1044[0...n]	CI: Motorized potentiometer setting value / MoP set val		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: CDS, p0170	Function diagram: 3020
	P-Group: Setpoints	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

r1045	CO: Mot. potentiom. velocity setp. in front of ramp-fct. gen. / MoP n_set bef RFG		
SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 3020
	P-Group: Setpoints	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	- [m/min]	- [m/min]	- [m/min]

r1045	CO: Mot. potentiometer speed setp. in front of ramp-fct. gen. / MoP n_set bef RFG		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 3020
	P-Group: Setpoints	Unit group: 3_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	- [rpm]	- [rpm]	- [rpm]

p1047[0...n]	Motorized potentiometer ramp-up time / MoP ramp-up time		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 3020
	P-Group: Setpoints	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000 [s]	1000.000 [s]	10.000 [s]

p1048[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Motorized potentiometer ramp-down time / MoP ramp-down time Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.000 [s]	Access level: 2 Function diagram: 3020 Unit selection: - Expert list: 1 Factory setting: 10.000 [s]
r1050 SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Motorized potentiometer setpoint after ramp-function generator / MoP set after RFG Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 3001, 3020 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1050 SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO: Motorized potentiometer setpoint after ramp-function generator / MoP set after RFG Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 3001, 3020 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
p1051[0...n] SERVO_840 (ESR, ESR, Ext setp, Ext setp, Lin, Lin, Lin), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp, Lin, Lin, Lin)	CI: Velocity limit RFG positive direction / v_limit RFG pos Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3050 Unit selection: - Expert list: 1 Factory setting: 1083[0]
p1051[0...n] HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	CI: Speed limit RFG positive direction of rotation / n_limit RFG pos Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3050 Unit selection: - Expert list: 1 Factory setting: 1083[0]
p1052[0...n] SERVO_840 (ESR, ESR, Ext setp, Ext setp, Lin, Lin, Lin), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp, Lin, Lin, Lin)	CI: Velocity limit RFG negative direction / v_limit RFG neg Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3050 Unit selection: - Expert list: 1 Factory setting: 1086[0]

p1052[0...n] HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	CI: Speed limit RFG negative direction of rotation / n_limit RFG neg Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3050 Unit selection: - Expert list: 1 Factory setting: 1086[0]
p1055[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	BI: Jog bit 0 / Jog bit 0 Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501, 3030 Unit selection: - Expert list: 1 Factory setting: 0
p1056[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	BI: Jog bit 1 / Jog bit 1 Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501, 3030 Unit selection: - Expert list: 1 Factory setting: 0
p1058[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Jog 1 velocity setpoint / Jog 1 v_set Can be changed: T Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -1000.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.000 [m/min]	Access level: 2 Function diagram: 3001, 3030 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]
p1058[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Jog 1 speed setpoint / Jog 1 n_set Can be changed: T Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -210000.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.000 [rpm]	Access level: 2 Function diagram: 3001, 3030 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]
p1059[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Jog 2 velocity setpoint / Jog 2 v_set Can be changed: T Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -1000.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.000 [m/min]	Access level: 2 Function diagram: 3001, 3030 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]

p1059[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Jog 2 speed setpoint / Jog 2 n_set Can be changed: T Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -210000.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.000 [rpm]	Access level: 2 Function diagram: 3001, 3030 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]
p1063[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Setpoint channel velocity limit / Set_chan v_lim Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.000 [m/min]	Access level: 1 Function diagram: 3040 Unit selection: p0505 Expert list: 1 Factory setting: 1000.000 [m/min]
p1063[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Setpoint channel speed limit / Set_chan n_lim Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.000 [rpm]	Access level: 1 Function diagram: 3040 Unit selection: p0505 Expert list: 1 Factory setting: 210000.000 [rpm]
p1070[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CI: Main setpoint / Main setpoint Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3001, 3030 Unit selection: - Expert list: 1 Factory setting: 1024[0]
p1071[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CI: Main setpoint scaling / Main set scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 3001, 3030 Unit selection: - Expert list: 1 Factory setting: 1
r1073 SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Main setpoint effective / Main setpoint eff Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 3030 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]

r1073 SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO: Main setpoint effective / Main setpoint eff Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 3030 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
p1075[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CI: Supplementary setp / Suppl set Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3001, 3030 Unit selection: - Expert list: 1 Factory setting: 0
p1076[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CI: Supplementary setpoint scaling / Suppl set scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 3001, 3030 Unit selection: - Expert list: 1 Factory setting: 1
r1077 SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Supplementary setpoint effective / Suppl setpoint eff Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 3030 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1077 SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO: Supplementary setpoint effective / Suppl setpoint eff Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 3030 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r1078 SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Total setpoint effective / Total setpoint eff Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 3030 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]

r1078 SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO: Total setpoint effective / Total setpoint eff Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 3030 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
p1080[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Minimum velocity / v_min Can be changed: C2(1), T Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.000 [m/min]	Access level: 1 Function diagram: 3050 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]
p1080[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Minimum speed / n_min Can be changed: C2(1), T Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 19500.000 [rpm]	Access level: 1 Function diagram: 3050 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]
p1081 SERVO_840, SERVO_DBSI	Maximum speed scaling / n_max scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 100.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: 105.00 [%]	Access level: 2 Function diagram: 3050, 3095 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p1081 HLA_840, HLA_DBSI, SERVO_840 (Lin), SERVO_DBSI (Lin)	Maximum velocity scaling / v_max scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 100.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: 105.00 [%]	Access level: 2 Function diagram: 3050, 3095 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p1082[0...n] HLA_840, HLA_DBSI	Maximum velocity / v_max Can be changed: C2(1), T Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.000 [m/min]	Access level: 1 Function diagram: 4965 Unit selection: p0505 Expert list: 1 Factory setting: 1000.000 [m/min]

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p1082[0...n] SERVO_840, SERVO_DBSI	Maximum speed / n_max Can be changed: C2(1), T Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [rpm]	Calculated: CALC_MOD_ALL Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.000 [rpm]	Access level: 1 Function diagram: 2820, 3020, 3050, 3060, 3070, 3095 Unit selection: p0505 Expert list: 1 Factory setting: 1500.000 [rpm]
p1082[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Maximum velocity / v_max Can be changed: C2(1), T Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [m/min]	Calculated: CALC_MOD_ALL Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1300.000 [m/min]	Access level: 1 Function diagram: 2820, 3020, 3050, 3060, 3070, 3095 Unit selection: p0505 Expert list: 1 Factory setting: 1000.000 [m/min]
r1082[0...n] TM41	Encoder emulation maximum speed / Enc_emul n_max Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: - [rpm]	Access level: 1 Function diagram: 9674, 9676 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
p1083[0...n] HLA_840, HLA_DBSI	CO: Velocity limit positive direction / v_limit pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 2 Function diagram: 4965 Unit selection: p0505 Expert list: 1 Factory setting: 1000.000 [m/min]
p1083[0...n] SERVO_840, SERVO_DBSI	CO: Speed limit in positive direction of rotation / n_limit pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 210000.000 [rpm]	Access level: 2 Function diagram: 3050, 3095 Unit selection: p0505 Expert list: 1 Factory setting: 210000.000 [rpm]

p1083[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity limit positive direction / v_limit pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 2 Function diagram: 3050, 3095 Unit selection: p0505 Expert list: 1 Factory setting: 1000.000 [m/min]
r1084 HLA_840, HLA_DBSI	CO: Velocity limit positive effective / v_limit pos eff Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1084 SERVO_840, SERVO_DBSI	CO: Speed limit positive effective / n_limit pos eff Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 3050, 3095 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r1084 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity limit positive effective / v_limit pos eff Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 3050, 3095 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
p1085[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CI: Velocity limit positive direction / v_limit pos Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3050 Unit selection: - Expert list: 1 Factory setting: 1083[0]
p1085[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CI: Speed limit in positive direction of rotation / n_limit pos Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3050 Unit selection: - Expert list: 1 Factory setting: 1083[0]

p1086[0...n] HLA_840, HLA_DBSI	CO: Velocity limit negative direction / v_limit neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -1000.000 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 0.000 [m/min]	Access level: 2 Function diagram: 4965 Unit selection: p0505 Expert list: 1 Factory setting: -1000.000 [m/min]
p1086[0...n] SERVO_840, SERVO_DBSI	CO: Speed limit in negative direction of rotation / n_limit neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -210000.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 0.000 [rpm]	Access level: 2 Function diagram: 3050, 3095 Unit selection: p0505 Expert list: 1 Factory setting: -210000.000 [rpm]
p1086[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity limit negative direction / v_limit neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -1000.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 0.000 [m/min]	Access level: 2 Function diagram: 3050, 3095 Unit selection: p0505 Expert list: 1 Factory setting: -1000.000 [m/min]
r1087 HLA_840, HLA_DBSI	CO: Velocity limit negative effective / v_limit neg eff Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1087 SERVO_840, SERVO_DBSI	CO: Speed limit negative effective / n_limit neg eff Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 3050, 3095 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r1087 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity limit negative effective / v_limit neg eff Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 3050, 3095 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]

p1088[0...n]	Cl: Velocity limit negative direction / n_limit neg		
SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3050 Unit selection: - Expert list: 1 Factory setting: 1086[0]

p1088[0...n]	Cl: Speed limit in negative direction of rotation / n_limit neg		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3050 Unit selection: - Expert list: 1 Factory setting: 1086[0]

p1091[0...n]	Skip velocity 1 / v_skip 1		
SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 3 Function diagram: 3050 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]

p1091[0...n]	Skip speed 1 / n_skip 1		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 210000.000 [rpm]	Access level: 3 Function diagram: 3050 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]

p1092[0...n]	Skip velocity 2 / v_skip 2		
SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 3 Function diagram: 3050 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]

p1092[0...n]	Skip speed 2 / n_skip 2		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 210000.000 [rpm]	Access level: 3 Function diagram: 3050 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]

p1093[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Skip velocity 3 / v_skip 3 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 3 Function diagram: 3050 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]
p1093[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Skip speed 3 / n_skip 3 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 210000.000 [rpm]	Access level: 3 Function diagram: 3050 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]
p1094[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Skip velocity 4 / v_skip 4 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 3 Function diagram: 3050 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]
p1094[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Skip speed 4 / n_skip 4 Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 210000.000 [rpm]	Access level: 3 Function diagram: 3050 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]
p1098[0...n] SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CI: Skip velocity scaling / v_skip scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 3050 Unit selection: - Expert list: 1 Factory setting: 1
p1098[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CI: Skip speed scaling / n_skip scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 3050 Unit selection: - Expert list: 1 Factory setting: 1

r1099.0	CO/BO: Skip band status word / Skip band ZSW		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: - Data type: Unsigned32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p1101[0...n]	Skip velocity bandwidth / v_skip bandwidth		
SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: p2000 Max: 1000.000 [m/min]	Access level: 3 Function diagram: 3050 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [m/min]
p1101[0...n]	Skip speed bandwidth / n_skip bandwidth		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: p2000 Max: 210000.000 [rpm]	Access level: 3 Function diagram: 3050 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rpm]
p1106[0...n]	CI: Minimum velocity signal source / v_min s_s		
SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3050 Unit selection: - Expert list: 1 Factory setting: 0
p1106[0...n]	CI: Minimum speed signal source / n_min s_s		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3050 Unit selection: - Expert list: 1 Factory setting: 0
p1110[0...n]	BI: Inhibit negative direction / Inhib neg dir		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2505, 3040 Unit selection: - Expert list: 1 Factory setting: 0

p1111[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	BI: Inhibit positive direction / Inhib pos dir Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2505, 3040 Unit selection: - Expert list: 1 Factory setting: 0
r1112 SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Velocity setpoint after minimum limiting / v_set aft min_lim Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 3050 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1112 SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO: Speed setpoint after minimum limiting / n_set aft min_lim Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 3050 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
p1113[0...n] SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	BI: Setpoint inversion / Set inv Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2441, 2442, 2505, 3040 Unit selection: - Expert list: 1 Factory setting: 0
r1114 SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	CO: Setpoint after the direction limiting / Set after limit Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 3001, 3040, 3050 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]

r1114	CO: Setpoint after the direction limiting / Set after limit		
SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 3001, 3040, 3050 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
p1115	Ramp-function generator selection / RFG selection		
HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	Can be changed: T Data type: Integer16 P-Group: Setpoints Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: 3001, 3080 Unit selection: - Expert list: 1 Factory setting: 0
r1119	CO: Ramp-function generator setpoint at the input / RFG set at inp		
HLA_840 (ESR), HLA_DBSI (ESR)	Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1119	CO: Ramp-function generator setpoint at the input / RFG set at inp		
SERVO_840 (ESR, ESR, Ext setp, Ext setp, Lin, Lin, Lin), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp, Lin, Lin, Lin)	Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 3001, 3050, 3060, 3070, 6300 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1119	CO: Ramp-function generator setpoint at the input / RFG set at inp		
SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 3001, 3050, 3060, 3070, 6300 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]

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p1120[0...n] HLA_840 (ESR), HLA_DBSI (ESR)	Ramp-function generator ramp-up time / RFG ramp-up time Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 999999.000 [s]	Access level: 1 Function diagram: 3060, 3070 Unit selection: - Expert list: 1 Factory setting: 10.000 [s]
p1120[0...n] SERVO_840 (ESR, ESR, Ext setp, Ext setp, Lin, Lin, Lin), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp, Lin, Lin, Lin)	Ramp-function generator ramp-up time / RFG ramp-up time Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 999999.000 [s]	Access level: 1 Function diagram: 3060, 3070 Unit selection: - Expert list: 1 Factory setting: 10.000 [s]
p1120[0...n] SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	Ramp-function generator ramp-up time / RFG ramp-up time Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 999999.000 [s]	Access level: 1 Function diagram: 3060, 3070 Unit selection: - Expert list: 1 Factory setting: 10.000 [s]
p1121[0...n] SERVO_840, SERVO_DBSI	Ramp-function generator ramp-down time / RFG ramp-down time Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 999999.000 [s]	Access level: 1 Function diagram: 3060, 3070 Unit selection: - Expert list: 1 Factory setting: 0.000 [s]
p1121[0...n] HLA_840, HLA_DBSI, SERVO_840 (Lin), SERVO_DBSI (Lin)	Ramp-function generator ramp-down time / RFG ramp-down time Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 999999.000 [s]	Access level: 1 Function diagram: 3060, 3070 Unit selection: - Expert list: 1 Factory setting: 0.000 [s]
p1122[0...n] HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	BI: Bypass ramp-function generator / Bypass RFG Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2505 Unit selection: - Expert list: 1 Factory setting: 0

p1130[0...n] HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	Ramp-function generator initial rounding-off time / RFG t_start_round Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 30.000 [s]	Access level: 2 Function diagram: 3070 Unit selection: - Expert list: 1 Factory setting: 0.000 [s]
p1131[0...n] HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	Ramp-function generator final rounding-off time / RFG t_end_delay Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 30.000 [s]	Access level: 2 Function diagram: 3070 Unit selection: - Expert list: 1 Factory setting: 0.000 [s]
p1134[0...n] HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	Ramp-function generator rounding-off type / RFG round-off type Can be changed: T, U Data type: Integer16 P-Group: Setpoints Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: 3070 Unit selection: - Expert list: 1 Factory setting: 0
p1135[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	OFF3 ramp-down time / OFF3 t_RD Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 600.000 [s]	Access level: 2 Function diagram: 3060, 3070 Unit selection: - Expert list: 1 Factory setting: 0.000 [s]
p1135[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	OFF3 ramp-down time / OFF3 t_RD Can be changed: C2(1), T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 600.000 [s]	Access level: 2 Function diagram: 3060, 3070 Unit selection: - Expert list: 1 Factory setting: 0.000 [s]
p1136[0...n] HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	OFF3 initial rounding-off time / RFGOFF3 t_strt_rnd Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 30.000 [s]	Access level: 2 Function diagram: 3070 Unit selection: - Expert list: 1 Factory setting: 0.000 [s]

p1137[0...n] HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	OFF3 final rounding-off time / RFG OFF3 t_end_del Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 30.000 [s]	Access level: 2 Function diagram: 3070 Unit selection: - Expert list: 1 Factory setting: 0.000 [s]
p1138[0...n] HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	CI: Ramp-function generator ramp-up time scaling / RFG t_RU scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 3060, 3070 Unit selection: - Expert list: 1 Factory setting: 1
p1139[0...n] HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	CI: Ramp-function generator ramp-down time scaling / RFG t_RD scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 3060, 3070 Unit selection: - Expert list: 1 Factory setting: 1
p1140[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	BI: Enable ramp-function generator/inhibit ramp-function generator / Enable RFG Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501 Unit selection: - Expert list: 1 Factory setting: 1
p1140 TM41	BI: Enable ramp-function generator/inhibit ramp-function generator / Enable RFG Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9678 Unit selection: - Expert list: 1 Factory setting: 1
p1141[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	BI: Continue ramp-function generator/freeze ramp-function generator / Continue RFG Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501 Unit selection: - Expert list: 1 Factory setting: 1

p1141 TM41	Bl: Continue ramp-function generator/freeze ramp-function generator / Continue RFG Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9678 Unit selection: - Expert list: 1 Factory setting: 1
p1142[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Bl: Enable setpoint/inhibit setpoint / Setpoint enable Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2501 Unit selection: - Expert list: 1 Factory setting: 1
p1142 TM41	Bl: Enable setpoint/inhibit setpoint / Setpoint enable Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9674, 9678 Unit selection: - Expert list: 1 Factory setting: 1
p1143[0...n] HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	Bl: Ramp-function generator, accept setting value / RFG accept set val Can be changed: T Data type: Unsigned32 / Binary P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3060, 3070 Unit selection: - Expert list: 1 Factory setting: 0
p1144[0...n] HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	Cl: Ramp-function generator setting value / RFG setting value Can be changed: T, U Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3060, 3070 Unit selection: - Expert list: 1 Factory setting: 0
p1145[0...n] SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	Ramp-function generator tracking intensity. / RFG track intens Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 50.0	Access level: 3 Function diagram: 3080 Unit selection: - Expert list: 1 Factory setting: 1.3

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p1148[0...n] HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp, Lin, Lin, Lin), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp, Lin, Lin, Lin)	Ramp-function gen. tolerance for ramp-up and ramp-down active / RFG tol HL/RL act Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 10.000 [m/min]	Access level: 3 Function diagram: 3060, 3070 Unit selection: p0505 Expert list: 1 Factory setting: 0.200 [m/min]
p1148[0...n] SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	Ramp-function gen. tolerance for ramp-up and ramp-down active / RFG tol HL/RL act Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: 0.000 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 1000.000 [rpm]	Access level: 3 Function diagram: 3060, 3070 Unit selection: p0505 Expert list: 1 Factory setting: 19.800 [rpm]
r1149 SERVO_840 (ESR, ESR, Ext setp, Ext setp, Lin, Lin, Lin), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp, Lin, Lin, Lin)	CO: Ramp-function generator acceleration / RFG acceleration Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/s ²]	Calculated: - Dynamic index: - Unit group: 22_2 Scaling: p2007 Max: - [m/s ²]	Access level: 3 Function diagram: 3060, 3070 Unit selection: p0505 Expert list: 1 Factory setting: - [m/s ²]
r1149 HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	CO: Ramp-function generator acceleration / RFG acceleration Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rev/s ²]	Calculated: - Dynamic index: - Unit group: 39_1 Scaling: p2007 Max: - [rev/s ²]	Access level: 3 Function diagram: 3060, 3070 Unit selection: p0505 Expert list: 1 Factory setting: - [rev/s ²]
r1150 HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp, Lin, Lin, Lin), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp, Lin, Lin, Lin)	CO: Ramp-function generator velocity setpoint at the output / RFG v_set at outp Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 3001, 3080 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1150 SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	CO: Ramp-function generator speed setpoint at the output / RFG n_set at outp Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 3001, 3080 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]

p1151[0...n] SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	Ramp-function generator configuration / RFG config Can be changed: T, U Data type: Unsigned16 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p1152 SERVO_840 (Ext brake), SERVO_DBSI (Ext brake)	Bl: Setpoint 2 enable / Set 2 enab Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2711, 4015 Unit selection: - Expert list: 1 Factory setting: 899.15
p1155[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Cl: Speed controller speed setpoint 1 / n_ctrl n_set 1 Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3001, 3080, 5030, 6031 Unit selection: - Expert list: 1 Factory setting: 0
p1155[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Cl: Velocity controller velocity setpoint 1 / v_ctrl v_set 1 Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3001, 3080, 5030, 6031 Unit selection: - Expert list: 1 Factory setting: 0
p1155 TM41	Cl: TM41 encoder emulation speed setpoint 1 / Enc_emulat n_set 1 Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 9674 Unit selection: - Expert list: 1 Factory setting: 0
p1160[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Cl: Speed controller speed setpoint 2 / n_ctrl n_set 2 Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3001, 3080 Unit selection: - Expert list: 1 Factory setting: 0

p1160[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CI: Velocity controller velocity setpoint 2 / v_ctrl v_set 2 Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3001, 3080 Unit selection: - Expert list: 1 Factory setting: 0
r1169 HLA_840, HLA_DBSI	CO: Velocity controller velocity setpoints 1 and 2 / v_ctrl v_set 1/2 Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1169 SERVO_840, SERVO_DBSI	CO: Speed controller speed setpoints 1 and 2 / n_ctrl n_set 1/2 Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 3080 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r1169 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity controller velocity setpoints 1 and 2 / v_ctrl n_set 1/2 Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 3080 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1170 HLA_840, HLA_DBSI	CO: Velocity controller setpoint sum / v_ctrl set sum Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1170 SERVO_840, SERVO_DBSI	CO: Speed controller setpoint sum / n_ctrl set sum Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 3001, 3050, 3080, 5019, 5020 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]

r1170 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity controller setpoint sum / v_ctrl set sum Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 3001, 3050, 3080, 5019, 5020 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
p1189[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Speed setpoint configuration / n_ctrl config Can be changed: T, U Data type: Unsigned16 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 3080 Unit selection: - Expert list: 1 Factory setting: 0011 bin
p1189[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity setpoint configuration / v_ctrl config Can be changed: T, U Data type: Unsigned16 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 3080 Unit selection: - Expert list: 1 Factory setting: 0011 bin
p1189 TM41	TM41 encoder simulation configuration / Enc_emulat config Can be changed: T, U Data type: Unsigned16 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 9674 Unit selection: - Expert list: 1 Factory setting: 0010 bin
p1190 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CI: DSC position deviation XERR / DSC XERR Can be changed: T Data type: Unsigned32 / Integer32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3001, 3090 Unit selection: - Expert list: 1 Factory setting: 0
p1191 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CI: DSC position controller gain KPC / DSC KPC Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3001, 3090 Unit selection: - Expert list: 1 Factory setting: 0

p1192[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	DSC encoder selection / DSC enc selection Can be changed: T, U Data type: Integer16 P-Group: Setpoints Not for motor type: - Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: 3090 Unit selection: - Expert list: 1 Factory setting: 1
p1193[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	DSC encoder adaptation factor / DSC enc adpt fact Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -1000000.00000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000000.00000	Access level: 3 Function diagram: 3090 Unit selection: - Expert list: 1 Factory setting: 1.00000
p1194 SERVO_840 (DSC spline, Lin), SERVO_DBSI (DSC spline, Lin)	CI: DSC control word DSC_STW / DSC_STW Can be changed: T Data type: Unsigned32 / Integer16 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3001, 3090 Unit selection: - Expert list: 1 Factory setting: 0
p1194 SERVO_840 (DSC spline), SERVO_DBSI (DSC spline)	CI: DSC control word DSC_STW / DSC_STW Can be changed: T Data type: Unsigned32 / Integer16 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3001, 3090 Unit selection: - Expert list: 1 Factory setting: 0
p1195 SERVO_840 (DSC spline, Lin), SERVO_DBSI (DSC spline, Lin)	CI: DSC symmetrizing time constant T_SYMM / DSC Tc_SYMM Can be changed: T Data type: Unsigned32 / Integer16 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3001, 3090 Unit selection: - Expert list: 1 Factory setting: 0
p1195 SERVO_840 (DSC spline), SERVO_DBSI (DSC spline)	CI: DSC symmetrizing time constant T_SYMM / DSC Tc_SYMM Can be changed: T Data type: Unsigned32 / Integer16 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3001, 3090 Unit selection: - Expert list: 1 Factory setting: 0

r1196 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: DSC position setpoint / DSC x_set Can be changed: - Data type: Integer32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: 3090 Unit selection: - Expert list: 1 Factory setting: -
r1197 SERVO_840 (Ext setp, Lin), SERVO_DBSI (Ext setp, Lin)	Fixed velocity setpoint number actual / n_set_fixed no act Can be changed: - Data type: Unsigned32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3010 Unit selection: - Expert list: 1 Factory setting: -
r1197 SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	Fixed speed setpoint number actual / n_set_fixed no act Can be changed: - Data type: Unsigned32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3010 Unit selection: - Expert list: 1 Factory setting: -
r1198.0...15 SERVO_840 (Ext setp), SERVO_DBSI (Ext setp)	CO/BO: Control word setpoint channel / STW set chan Can be changed: - Data type: Unsigned16 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2505 Unit selection: - Expert list: 1 Factory setting: -
r1199.0...8 HLA_840 (ESR), HLA_DBSI (ESR), SERVO_840 (ESR, ESR, Ext setp, Ext setp), SERVO_DBSI (ESR, ESR, Ext setp, Ext setp)	CO/BO: Ramp-function generator status word / RFG ZSW Can be changed: - Data type: Unsigned16 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3001, 3080 Unit selection: - Expert list: 1 Factory setting: -
p1200 HLA_840, HLA_DBSI	CI: Position offset incremental/absolute / x_offs inc/abs Can be changed: T, U Data type: Unsigned32 / Integer32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p1201[0...n] HLA_840, HLA_DBSI	CI: Position offset incremental/absolute valid / x_offs valid Can be changed: T Data type: Unsigned32 / Integer16 P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1206[0...9] A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Automatic restart faults not active / AR fault not act Can be changed: T, U Data type: Unsigned16 P-Group: Functions Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1207 A_INF_840, B_INF_840, S_INF_840	BI: AR connection following drive object / AR connection DO Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1208[0...1] SERVO_840, SERVO_DBSI	BI: AR modification infeed / AR modification Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1210 SERVO_840, SERVO_DBSI	Automatic restart mode / AR mode Can be changed: T, U Data type: Integer16 P-Group: Functions Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1210 A_INF_840	Automatic restart mode / AR mode Can be changed: T, U Data type: Integer16 P-Group: Functions Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p1210 B_INF_840	Automatic restart mode / AR mode Can be changed: T, U Data type: Integer16 P-Group: Functions Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1210 S_INF_840	Automatic restart mode / AR mode Can be changed: T, U Data type: Integer16 P-Group: Functions Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1211 SERVO_840, SERVO_DBSI	Automatic restart start attempts / AR start attempts Can be changed: T, U Data type: Unsigned16 P-Group: Functions Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 3
p1211 A_INF_840, B_INF_840, S_INF_840	Automatic restart start attempts / AR start attempts Can be changed: T, U Data type: Unsigned16 P-Group: Functions Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 3
p1212 SERVO_840, SERVO_DBSI	Automatic restart delay time start attempts / AR t_wait start Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: - Min: 0.1 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.0 [s]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.0 [s]
p1212 A_INF_840, B_INF_840, S_INF_840	Automatic restart delay time start attempts / AR t_wait start Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: - Min: 0.1 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.0 [s]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.0 [s]

p1213[0...1] SERVO_840, SERVO_DBSI	Automatic restart monitoring time / AR t_mon Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: - Min: 0.0 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000.0 [s]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [s]
p1213[0...1] A_INF_840, B_INF_840, S_INF_840	Automatic restart monitoring time / AR t_mon Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: - Min: 0.0 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000.0 [s]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [s]
r1214.0...15 SERVO_840, SERVO_DBSI	CO/BO: Automatic restart status / AR status Can be changed: - Data type: Unsigned16 P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r1214.0...15 A_INF_840, B_INF_840, S_INF_840	CO/BO: Automatic restart status / AR status Can be changed: - Data type: Unsigned16 P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p1215 SERVO_840, SERVO_DBSI	Motor holding brake configuration / Brake config Can be changed: T Data type: Integer16 P-Group: Functions Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 2 Function diagram: 2701, 2707, 2711 Unit selection: - Expert list: 1 Factory setting: 0
p1216 SERVO_840, SERVO_DBSI	Motor holding brake opening time / Brake t_open Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 2 Function diagram: 2701, 2711 Unit selection: - Expert list: 1 Factory setting: 100 [ms]

p1217 SERVO_840, SERVO_DBSI	Motor holding brake closing time / Brake t_close Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 2 Function diagram: 2701, 2711 Unit selection: - Expert list: 1 Factory setting: 100 [ms]
p1218[0...1] SERVO_840 (Ext brake), SERVO_DBSI (Ext brake)	BI: Open motor holding brake / Open brake Can be changed: T Data type: Unsigned32 / Binary P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2707 Unit selection: - Expert list: 1 Factory setting: 1
p1219[0...3] SERVO_840 (Ext brake), SERVO_DBSI (Ext brake)	BI: Immediately close motor holding brake / Close brake Can be changed: T Data type: Unsigned32 / Binary P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2707 Unit selection: - Expert list: 1 Factory setting: [0] 0 [1] 0 [2] 0 [3] 1229.9
p1220 SERVO_840 (Ext brake), SERVO_DBSI (Ext brake)	CI: Open motor holding brake signal source threshold / Open brake thr Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 2 Function diagram: 2707 Unit selection: - Expert list: 1 Factory setting: 1
p1221 SERVO_840 (Ext brake), SERVO_DBSI (Ext brake)	Open motor holding brake threshold / Open brake thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 200.00 [%]	Access level: 2 Function diagram: 2707 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]

p1222 SERVO_840 (Ext brake), SERVO_DBSI (Ext brake)	BI: Motor holding brake feedback signal brake closed / Brake fdbk closed Can be changed: T Data type: Unsigned32 / Binary P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2711 Unit selection: - Expert list: 1 Factory setting: 0
p1223 SERVO_840 (Ext brake), SERVO_DBSI (Ext brake)	BI: Motor holding brake feedback signal brake open / Brake fdbk open Can be changed: T Data type: Unsigned32 / Binary P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2711 Unit selection: - Expert list: 1 Factory setting: 1
p1224[0...3] SERVO_840 (Ext brake), SERVO_DBSI (Ext brake)	BI: Close motor holding brake at standstill / Brk close standst Can be changed: T Data type: Unsigned32 / Binary P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2704 Unit selection: - Expert list: 1 Factory setting: 0
p1225 SERVO_840 (Ext brake), SERVO_DBSI (Ext brake)	CI: Standstill detection threshold value / Standstill thr Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: p2000 Max: -	Access level: 2 Function diagram: 2704 Unit selection: - Expert list: 1 Factory setting: 63[0]
p1226[0...n] HLA_840, HLA_DBSI	Standstill detection velocity threshold / v_standst v_thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: - Min: 0.00 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 2 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 0.20 [m/min]
p1226[0...n] SERVO_840, SERVO_DBSI	Threshold for zero speed detection / n_standst n_thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: - Min: 0.00 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 2 Function diagram: 2701, 2704 Unit selection: p0505 Expert list: 1 Factory setting: 20.00 [rpm]

p1226[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Standstill detection velocity threshold / v_standst v_thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: - Min: 0.00 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 2 Function diagram: 2701, 2704 Unit selection: p0505 Expert list: 1 Factory setting: 0.20 [m/min]
p1227 HLA_840, HLA_DBSI	Zero speed detection monitoring time / Standst_id t_mon Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 300.000 [s]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 4.000 [s]
p1227 SERVO_840, SERVO_DBSI	Zero speed detection monitoring time / n_standst t_mon Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 300.000 [s]	Access level: 2 Function diagram: 2701, 2704 Unit selection: - Expert list: 1 Factory setting: 4.000 [s]
p1228 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Pulse suppression delay time / Pulse suppr t_del Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 299.000 [s]	Access level: 2 Function diagram: 2701, 2704 Unit selection: - Expert list: 1 Factory setting: 0.000 [s]
r1229.1...11 SERVO_840 (Ext brake), SERVO_DBSI (Ext brake)	CO/BO: Motor holding brake status word / Brake ZSW Can be changed: - Data type: Unsigned32 P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p1230[0...n] SERVO_840, SERVO_DBSI	BI: Armature short-circuit / DC braking activation / ASC/DC brk act Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Functions Not for motor type: RESM Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 7014, 7016, 7017 Unit selection: - Expert list: 1 Factory setting: 0

p1231[0...n] SERVO_840, SERVO_DBSI	Armature short-circuit / DC braking configuration / ASC/DCBRK config Can be changed: T, U Data type: Integer16 P-Group: Functions Not for motor type: RESM Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 14	Access level: 1 Function diagram: 7014, 7016, 7017 Unit selection: - Expert list: 1 Factory setting: 0
p1232[0...n] SERVO_840, SERVO_DBSI	DC braking braking current / DCBRK I_brake Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: PMSM, SESM, REL, RESM Min: 0.00 [Arms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 10000.00 [Arms]	Access level: 1 Function diagram: 7017 Unit selection: - Expert list: 1 Factory setting: 0.00 [Arms]
p1233[0...n] SERVO_840, SERVO_DBSI	DC braking time / DCBRK time Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: PMSM, SESM, REL, RESM Min: 0.0 [s]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 3600.0 [s]	Access level: 1 Function diagram: 7017 Unit selection: - Expert list: 1 Factory setting: 1.0 [s]
p1234[0...n] SERVO_840, SERVO_DBSI	Speed at the start of DC braking / DCBRK n_start Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: PMSM, SESM, REL, RESM Min: 0.00 [rpm]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 210000.00 [rpm]	Access level: 1 Function diagram: 7017 Unit selection: - Expert list: 1 Factory setting: 210000.00 [rpm]
p1234[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	DC braking starting velocity / DCBRK v_start Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: PMSM, SESM, REL, RESM Min: 0.00 [m/min]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 1300.00 [m/min]	Access level: 1 Function diagram: 7017 Unit selection: - Expert list: 1 Factory setting: 1000.00 [m/min]
p1235[0...n] SERVO_840, SERVO_DBSI	BI: External armature short-circuit contactor feedback signal / ASC ext feedback Can be changed: T Data type: Unsigned32 / Binary P-Group: Functions Not for motor type: ASM, RESM Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p1236[0...n] SERVO_840, SERVO_DBSI	Ext. armature short-cct. contactor feedback signal monit. time / ASC ext t_mon Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: ASM, RESM Min: 0 [ms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 1000 [ms]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 200 [ms]
p1237[0...n] SERVO_840, SERVO_DBSI	External armature short-circuit delay time when opening / ASC ext t_wait Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: ASM, RESM Min: 0 [ms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 1000 [ms]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 200 [ms]
r1238 SERVO_840, SERVO_DBSI	CO: Armature short-circuit external state / EASC state Can be changed: - Data type: Integer16 P-Group: Functions Not for motor type: ASM, SESM, RESM Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6	Access level: 1 Function diagram: 2610 Unit selection: - Expert list: 1 Factory setting: -
r1239.0...13 SERVO_840, SERVO_DBSI	CO/BO: Armature short-circuit / DC braking status word / ASC/DCBRK ZSW Can be changed: - Data type: Unsigned32 P-Group: Functions Not for motor type: RESM Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p1240[0...n] SERVO_840, SERVO_DBSI	Vdc controller or Vdc monitoring configuration / Vdc ctrl config Can be changed: T, U Data type: Integer16 P-Group: Functions Not for motor type: REL Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 9	Access level: 3 Function diagram: 3082, 5650 Unit selection: - Expert list: 1 Factory setting: 0
p1244[0...n] SERVO_840, SERVO_DBSI	DC link voltage threshold upper / Vdc upper thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: 165 [V]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1200 [V]	Access level: 3 Function diagram: 5650 Unit selection: - Expert list: 1 Factory setting: 750 [V]

p1248[0...n]	DC link voltage threshold lower / Vdc lower thr		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5650
	P-Group: Functions	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	50 [V]	1000 [V]	285 [V]

p1250[0...n]	Vdc controller proportional gain / Vdc_ctrl Kp		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5650
	P-Group: Functions	Unit group: 19_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [A/V]	100.00 [A/V]	1.00 [A/V]

p1275	Motor holding brake control word / Brake STW		
SERVO_840 (Ext brake), SERVO_DBSI (Ext brake)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Functions	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 bin

p1276	Motor holding brake standstill detection bypass / Brk standst bypass		
SERVO_840 (Ext brake), SERVO_DBSI (Ext brake)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2704
	P-Group: Functions	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000 [s]	300.000 [s]	300.000 [s]

p1277	Motor holding brake braking threshold delay exceeded / Del thr exc		
SERVO_840 (Ext brake), SERVO_DBSI (Ext brake)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2707
	P-Group: Functions	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000 [s]	300.000 [s]	0.000 [s]

p1278	Brake control diagnostics evaluation / Brake diagnostics		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Functions	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0

p1279[0...3] SERVO_840 (Ext brake), SERVO_DBSI (Ext brake)	Bl: Motor holding brake OR/AND logic operation / Brake OR AND Can be changed: T Data type: Unsigned32 / Binary P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2707 Unit selection: - Expert list: 1 Factory setting: 0
p1300[0...n] SERVO_840, SERVO_DBSI	Open-loop/closed-loop control operating mode / Op/cl-lp ctrl_mode Can be changed: C2(1), T Data type: Integer16 P-Group: V/f open-loop control Not for motor type: - Min: 20	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 23	Access level: 2 Function diagram: 5060, 8012 Unit selection: - Expert list: 1 Factory setting: 21
p1300[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Open-loop/closed-loop control operating mode / Op/cl-lp ctrl_mode Can be changed: C2(1), T Data type: Integer16 P-Group: V/f open-loop control Not for motor type: - Min: 20	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 23	Access level: 2 Function diagram: 5060, 8012 Unit selection: - Expert list: 1 Factory setting: 21
p1317[0...n] SERVO_840, SERVO_DBSI	U/f control activation / Uf act Can be changed: T Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: 5019, 5730 Unit selection: - Expert list: 1 Factory setting: 0
p1318[0...n] SERVO_840, SERVO_DBSI	U/f control ramp-up/ramp-down time / Uf t_rmp-up_rmp-dn Can be changed: T, U Data type: FloatingPoint32 P-Group: V/f open-loop control Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 999999.000 [s]	Access level: 3 Function diagram: 5300 Unit selection: - Expert list: 1 Factory setting: 10.000 [s]
p1319[0...n] SERVO_840, SERVO_DBSI	U/f control voltage at zero frequency / Uf U at f=0 Hz Can be changed: T, U Data type: FloatingPoint32 P-Group: V/f open-loop control Not for motor type: - Min: 0.0 [Vrms]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.0 [Vrms]	Access level: 3 Function diagram: 5300 Unit selection: - Expert list: 1 Factory setting: 0.0 [Vrms]

p1326[0...n] SERVO_840, SERVO_DBSI	U/f control characteristic frequency / Uf char f Can be changed: T, U Data type: FloatingPoint32 P-Group: V/f open-loop control Not for motor type: - Min: 0.00 [Hz]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000.00 [Hz]	Access level: 3 Function diagram: 5300 Unit selection: - Expert list: 1 Factory setting: 0.00 [Hz]
p1327[0...n] SERVO_840, SERVO_DBSI	U/f control characteristic voltage / Uf char U Can be changed: T, U Data type: FloatingPoint32 P-Group: V/f open-loop control Not for motor type: - Min: 0.0 [Vrms]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000.0 [Vrms]	Access level: 3 Function diagram: 5300 Unit selection: - Expert list: 1 Factory setting: 0.0 [Vrms]
p1338[0...n] SERVO_840, SERVO_DBSI	U/f mode resonance damping gain / Uf Res_damp gain Can be changed: T, U Data type: FloatingPoint32 P-Group: V/f open-loop control Not for motor type: - Min: 0.00	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.00	Access level: 3 Function diagram: 5300 Unit selection: - Expert list: 1 Factory setting: 1.00
p1339[0...n] SERVO_840, SERVO_DBSI	U/f mode resonance damping filter time constant / Uf Res_damp Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: V/f open-loop control Not for motor type: - Min: 1.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.00 [ms]	Access level: 3 Function diagram: 5300 Unit selection: - Expert list: 1 Factory setting: 20.00 [ms]
p1345[0...n] SERVO_840, SERVO_DBSI	DC braking proportional gain / DCBRK Kp Can be changed: T, U Data type: FloatingPoint32 P-Group: V/f open-loop control Not for motor type: - Min: 0.000	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100000.000	Access level: 3 Function diagram: 6300, 7017 Unit selection: - Expert list: 1 Factory setting: 0.000
p1346[0...n] SERVO_840, SERVO_DBSI	DC braking integral time / DCBRK Tn Can be changed: T, U Data type: FloatingPoint32 P-Group: V/f open-loop control Not for motor type: - Min: 0.000 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 50.000 [ms]	Access level: 3 Function diagram: 6300, 7017 Unit selection: - Expert list: 1 Factory setting: 0.030 [ms]

p1349[0...n] SERVO_840, SERVO_DBSI	U/f mode resonance damping maximum frequency / Uf res_damp f_max Can be changed: T, U Data type: FloatingPoint32 P-Group: V/f open-loop control Not for motor type: - Min: 0.00 [Hz]	Calculated: CALC_MOD_ALL Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 3000.00 [Hz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 3000.00 [Hz]
p1400[0...n] HLA_840, HLA_DBSI	Closed-loop control configuration / Ctrl config Can be changed: T, U Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 bin
p1400[0...n] SERVO_840, SERVO_DBSI	Speed control configuration / n_ctrl config Can be changed: T, U Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 5019, 5490 Unit selection: - Expert list: 1 Factory setting: 0000 0100 0000 0000 0000 0011 1010 0000 bin
p1400[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity control configuration / v_ctrl config Can be changed: T, U Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 5019, 5490 Unit selection: - Expert list: 1 Factory setting: 0000 0100 0000 0000 0000 0011 1010 0000 bin
p1402[0...n] SERVO_840, SERVO_DBSI	Closed-loop current control and motor model configuration / I_ctrl config Can be changed: T Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0100 bin

p1402[0...n]	Closed-loop current control and motor model configuration / I_ctrl config		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0100 bin
p1404[0...n]	Encoderless operation changeover speed / Encoderl op n_chg		
SERVO_840, SERVO_DBSI	Can be changed: T Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 3 Function diagram: 5019, 5060 Unit selection: p0505 Expert list: 1 Factory setting: 210000.00 [rpm]
p1404[0...n]	Encoderless operation changeover velocity / Encoderl op v_chg		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 3 Function diagram: 5019, 5060 Unit selection: p0505 Expert list: 1 Factory setting: 1000.00 [m/min]
r1406.8...12	CO/BO: Control word speed controller / STW n_ctrl		
SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2520 Unit selection: - Expert list: 1 Factory setting: -
r1406.8...12	CO/BO: Control word velocity controller / STW v_ctrl		
HLA_840, HLA_DBSI, SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: - Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2520 Unit selection: - Expert list: 1 Factory setting: -
r1407.0...20	CO/BO: Status word controller / ZSW ctrl		
HLA_840, HLA_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r1407.0...26 SERVO_840, SERVO_DBSI	CO/BO: Status word speed controller / ZSW n_ctrl Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2522 Unit selection: - Expert list: 1 Factory setting: -
r1407.0...26 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO/BO: Status word velocity controller / ZSW v_ctrl Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2522 Unit selection: - Expert list: 1 Factory setting: -
r1408.0...9 SERVO_840, SERVO_DBSI	CO/BO: Status word current controller / ZSW I_ctrl Can be changed: - Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2530, 5040 Unit selection: - Expert list: 1 Factory setting: -
p1409[0...n] SERVO_840, SERVO_DBSI	Speed control extended configuration / n_ctrl ext config Can be changed: C1(3) Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p1409[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity control extended configuration / v_ctrl ext config Can be changed: C1(3) Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p1412[0...n] TM41	TM41 increm. encoder emulation, speed setpoint filter deadtime / n_set dead time Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1.000 [ms]	Access level: 3 Function diagram: 9674 Unit selection: - Expert list: 1 Factory setting: 0.000 [ms]

4.2 SINAMICS parameters

p1413[0...n] HLA_840, HLA_DBSI	Velocity actual value filter activation / v_act_filt act Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0000 bin
p1413[0...n] SERVO_840, SERVO_DBSI	Speed actual value filter activation / n_act_filt act Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 5040, 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 0000 bin
p1413[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity actual value filter activation / v_act_filt act Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 5040, 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 0000 bin
p1414[0...n] HLA_840, HLA_DBSI	Velocity setpoint filter activation / v_set_filt act Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0000 bin
p1414[0...n] SERVO_840, SERVO_DBSI	Speed setpoint filter activation / n_set_filt act Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 5020 Unit selection: - Expert list: 1 Factory setting: 0000 bin
p1414[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity setpoint filter activation / v_set_filt act Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 5020 Unit selection: - Expert list: 1 Factory setting: 0000 bin

p1414[0...n] TM41	TM41 incr. encoder emulation speed setpoint filter activation / n_set_filt act Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9674 Unit selection: - Expert list: 1 Factory setting: 0000 bin
p1415[0...n] HLA_840, HLA_DBSI	Velocity setpoint filter 1 type / v_set_filt 1 type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0
p1415[0...n] SERVO_840, SERVO_DBSI	Speed setpoint filter 1 type / n_set_filt 1 type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 5020 Unit selection: - Expert list: 1 Factory setting: 0
p1415[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity setpoint filter 1 type / v_set_filt 1 type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 5020 Unit selection: - Expert list: 1 Factory setting: 0
p1416[0...n] HLA_840, HLA_DBSI	Velocity setpoint filter 1 time constant / v_set_filt 1 Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5000.00 [ms]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p1416[0...n] SERVO_840, SERVO_DBSI	Speed setpoint filter 1 time constant / n_set_filt 1 Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5000.00 [ms]	Access level: 3 Function diagram: 5020 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]

p1416[0...n]	Velocity setpoint filter 1 time constant / v_set_filt 1 Tc		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5020
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	5000.00 [ms]	0.00 [ms]

p1417[0...n]	Velocity setpoint filter 1 denominator natural frequency / v_set_filt1 fn_den		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4965
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	2000.0 [Hz]

p1417[0...n]	Speed setpoint filter 1 denominator natural frequency / n_set_filt1 fn_den		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5020
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	2000.0 [Hz]

p1417[0...n]	Velocity setpoint filter 1 denominator natural frequency / v_set_filt1 fn_den		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5020
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	2000.0 [Hz]

p1417[0...n]	TM41 Speed setpoint filter 1 denominator natural frequency / n_set_filt1 fn_den		
TM41	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 9674
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	2000.0 [Hz]

p1418[0...n]	Velocity setpoint filter 1 denominator damping / v_set_filt 1 D_den		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4965
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001	10.000	0.700

p1418[0...n] SERVO_840, SERVO_DBSI	Speed setpoint filter 1 denominator damping / n_set_filt 1 D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.001	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5020 Unit selection: - Expert list: 1 Factory setting: 0.700
p1418[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity setpoint filter 1 denominator damping / v_set_filt 1 D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.001	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5020 Unit selection: - Expert list: 1 Factory setting: 0.700
p1418[0...n] TM41	TM41 Speed setpoint filter 1 denominator damping / n_set_filt 1 D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.001	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1.000	Access level: 3 Function diagram: 9674 Unit selection: - Expert list: 1 Factory setting: 0.700
p1419[0...n] HLA_840, HLA_DBSI	Velocity setpoint filter 1 numerator natural frequency / v_set_filt1 fn_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]
p1419[0...n] SERVO_840, SERVO_DBSI	Speed setpoint filter 1 numerator natural frequency / n_set_filt1 fn_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5020 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]
p1419[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity setpoint filter 1 numerator natural frequency / v_set_filt1 fn_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5020 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]

p1420[0...n]	Velocity setpoint filter 1 numerator damping / v_set_filt 1 D_num		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4965
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000	10.000	0.700

p1420[0...n]	Speed setpoint filter 1 numerator damping / n_set_filt 1 D_num		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5020
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000	10.000	0.700

p1420[0...n]	Velocity setpoint filter 1 numerator damping / v_set_filt 1 D_num		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5020
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000	10.000	0.700

p1421[0...n]	Velocity setpoint filter 2 type / v_set_filt 2 type		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: DDS, p0180	Function diagram: 4965
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	2	0

p1421[0...n]	Speed setpoint filter 2 type / n_set_filt 2 type		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: DDS, p0180	Function diagram: 5020
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	2	0

p1421[0...n]	Velocity setpoint filter 2 type / v_set_filt 2 type		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: DDS, p0180	Function diagram: 5020
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	2	0

p1422[0...n] HLA_840, HLA_DBSI	Velocity setpoint filter 2 time constant / v_set_filt 2 Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5000.00 [ms]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p1422[0...n] SERVO_840, SERVO_DBSI	Speed setpoint filter 2 time constant / n_set_filt 2 Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5000.00 [ms]	Access level: 3 Function diagram: 5020 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p1422[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity setpoint filter 2 time constant / v_set_filt 2 Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5000.00 [ms]	Access level: 3 Function diagram: 5020 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p1423[0...n] HLA_840, HLA_DBSI	Velocity setpoint filter 2 denominator natural frequency / v_set_filt2 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]
p1423[0...n] SERVO_840, SERVO_DBSI	Speed setpoint filter 2 denominator natural frequency / n_set_filt2 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5020 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]
p1423[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity setpoint filter 2 denominator natural frequency / v_set_filt2 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5020 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]

p1424[0...n]	Velocity setpoint filter 2 denominator damping / v_set_filt 2 D_den		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4965
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001	10.000	0.700

p1424[0...n]	Speed setpoint filter 2 denominator damping / n_set_filt 2 D_den		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5020
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001	10.000	0.700

p1424[0...n]	Velocity setpoint filter 2 denominator damping / v_set_filt 2 D_den		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5020
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001	10.000	0.700

p1425[0...n]	Velocity setpoint filter 2 numerator natural frequency / v_set_filt2 fn_num		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4965
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	2000.0 [Hz]

p1425[0...n]	Speed setpoint filter 2 numerator natural frequency / n_set_filt2 fn_num		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5020
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	2000.0 [Hz]

p1425[0...n]	Velocity setpoint filter 2 numerator natural frequency / v_set_filt2 fn_num		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5020
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	2000.0 [Hz]

p1426[0...n] HLA_840, HLA_DBSI	Velocity setpoint filter 2 numerator damping / v_set_filt 2 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.700
p1426[0...n] SERVO_840, SERVO_DBSI	Speed setpoint filter 2 numerator damping / n_set_filt 2 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5020 Unit selection: - Expert list: 1 Factory setting: 0.700
p1426[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity setpoint filter 2 numerator damping / v_set_filt 2 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5020 Unit selection: - Expert list: 1 Factory setting: 0.700
p1427[0...n] SERVO_840 (DSC spline, Lin), SERVO_DBSI (DSC spline, Lin)	DSC symmetrizing time constant additive T_SYMM_ADD / DSC Tc_SYMM_ADD Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.00 [ms]	Access level: 3 Function diagram: 3090 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p1427[0...n] SERVO_840 (DSC spline), SERVO_DBSI (DSC spline)	DSC symmetrizing time constant additive T_SYMM_ADD / DSC Tc_SYMM_ADD Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.00 [ms]	Access level: 3 Function diagram: 3090 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p1428[0...n] HLA_840, HLA_DBSI	Velocity precontrol symmetrizing dead time / v_prectrSym t_dead Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 3.0	Access level: 3 Function diagram: 5030, 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 0.0

p1428[0...n] SERVO_840, SERVO_DBSI	Speed precontrol symmetrizing dead time / n_prectrSym t_dead Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2.0	Access level: 3 Function diagram: 5030, 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 0.0
p1428[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity precontrol symmetrizing dead time / v_prectrSym t_dead Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2.0	Access level: 3 Function diagram: 5030, 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 0.0
p1429[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Speed precontrol symmetrizing time constant / n_prectrl sym Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000.00 [ms]	Access level: 3 Function diagram: 5030, 5042, 5210, 6031 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p1429[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity precontrol symmetrizing time constant / v_prectrl sym Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000.00 [ms]	Access level: 3 Function diagram: 5030, 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p1430[0...n] HLA_840, HLA_DBSI	CI: Velocity precontrol / v_prectrl Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3001, 5019, 5030 Unit selection: - Expert list: 1 Factory setting: 0

p1430[0...n] SERVO_840, SERVO_DBSI	CI: Speed precontrol / n_prectrl Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3001, 5019, 5030 Unit selection: - Expert list: 1 Factory setting: 0
p1430[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CI: Velocity precontrol / v_prectrl Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3001, 5019, 5030 Unit selection: - Expert list: 1 Factory setting: 0
r1432[0...1] SERVO_840, SERVO_DBSI	CO: Speed precontrol / n_prectrl Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 5020, 5030 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r1432[0...1] SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity precontrol / v_precontrol Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 5020, 5030 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
p1433[0...n] HLA_840, HLA_DBSI	Velocity controller reference model natural frequency / v_ctrl RefMod fn Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.0 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 8000.0 [Hz]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.0 [Hz]
p1433[0...n] SERVO_840, SERVO_DBSI	Speed controller reference model natural frequency / n_ctrl RefMod fn Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.0 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 8000.0 [Hz]	Access level: 3 Function diagram: 5030 Unit selection: - Expert list: 1 Factory setting: 0.0 [Hz]

p1433[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity controller reference model natural frequency / v_ctrl RefMod fn Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.0 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 8000.0 [Hz]	Access level: 3 Function diagram: 5030 Unit selection: - Expert list: 1 Factory setting: 0.0 [Hz]
p1434[0...n] HLA_840, HLA_DBSI	Velocity controller reference model damping / v_ctrl RefMod D Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5.000	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 1.000
p1434[0...n] SERVO_840, SERVO_DBSI	Speed controller reference model damping / n_ctrl RefMod D Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5.000	Access level: 3 Function diagram: 5030, 6031 Unit selection: - Expert list: 1 Factory setting: 1.000
p1434[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity controller reference model damping / v_ctrl RefMod D Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5.000	Access level: 3 Function diagram: 5030, 6031 Unit selection: - Expert list: 1 Factory setting: 1.000
p1435[0...n] SERVO_840, SERVO_DBSI	Speed controller reference model dead time / n_ctrRefMod t_dead Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2.00	Access level: 2 Function diagram: 5030, 6031 Unit selection: - Expert list: 1 Factory setting: 0.00
p1435[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity controller reference model dead time / v_ctrRefMod t_dead Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2.00	Access level: 2 Function diagram: 5030, 6031 Unit selection: - Expert list: 1 Factory setting: 0.00

r1436 HLA_840, HLA_DBSI	CO: Velocity controller reference model velocity_setpoint output / RefMod v_set outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 4965 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1436 SERVO_840, SERVO_DBSI	CO: Speed controller reference model speed setpoint output / RefMod n_set outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 5030, 6031 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r1436 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity controller reference model velocity_setpoint output / RefMod v_set outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 5030, 6031 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1438 HLA_840, HLA_DBSI	CO: Velocity controller velocity setpoint / v_ctrl v_set Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 4965 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1438 SERVO_840, SERVO_DBSI	CO: Speed controller speed setpoint / n_ctrl n_set Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 3001, 5019, 5030, 5042, 5210 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r1438 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity controller velocity setpoint / v_ctrl v_set Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 3001, 5019, 5030, 5042, 5210 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]

r1439 SERVO_840, SERVO_DBSI	Speed setpoint I component / n_set I_comp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 5030, 5040, 6031 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r1439 SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity setpoint I component / v_set I_comp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 5030, 5040, 6031 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
p1441[0...n] HLA_840, HLA_DBSI	Actual velocity smoothing time / v_act t_smth Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 50.00 [ms]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p1441[0...n] SERVO_840, SERVO_DBSI	Actual speed smoothing time / n_act t_smth Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 50.00 [ms]	Access level: 3 Function diagram: 4710, 4715 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p1441[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Actual velocity smoothing time / v_act t_smth Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 50.00 [ms]	Access level: 3 Function diagram: 4710, 4715 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
r1444 HLA_840, HLA_DBSI	Velocity controller velocity setpoint static / v_ctrl v_set stat Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]

r1444 SERVO_840, SERVO_DBSI	Speed controller speed setpoint steady-state (static) / n_ctrl n_set stat Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 5030 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r1444 SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity controller velocity setpoint total / v_ctrl v_set stat Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 5030 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1445 HLA_840, HLA_DBSI	CO: Actual velocity smoothed / v_act smth Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 4965 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1445 SERVO_840, SERVO_DBSI	CO: Actual speed smoothed / n_act smth Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 5040, 5210 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r1445 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Actual velocity smoothed / v_act smth Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 5040, 5210 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
p1446[0...n] HLA_840, HLA_DBSI	Velocity actual value filter type / v_act_filt type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 2

p1446[0...n] SERVO_840, SERVO_DBSI	Speed actual value filter type / n_act_filt type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 5040, 5210 Unit selection: - Expert list: 1 Factory setting: 2
p1446[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity actual value filter type / v_act_filt type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 5040, 5210 Unit selection: - Expert list: 1 Factory setting: 2
p1447[0...n] HLA_840, HLA_DBSI	Velocity actual value filter denominator natural frequency / v_act_filt fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]
p1447[0...n] SERVO_840, SERVO_DBSI	Speed actual value filter denominator natural frequency / n_act_filt fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5040, 5210 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]
p1447[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity actual value filter denominator natural frequency / v_act_filt fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5040, 5210 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]
p1448[0...n] HLA_840, HLA_DBSI	Velocity actual value filter denominator damping / v_act_filt D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.001	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.700

p1448[0...n] SERVO_840, SERVO_DBSI	Speed actual value filter denominator damping / n_act_filt D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.001	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5040, 5210 Unit selection: - Expert list: 1 Factory setting: 0.700
p1448[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity actual value filter denominator damping / v_act_filt D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.001	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5040, 5210 Unit selection: - Expert list: 1 Factory setting: 0.700
p1449[0...n] HLA_840, HLA_DBSI	Velocity actual value filter numerator natural frequency / v_act_filt fn_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]
p1449[0...n] SERVO_840, SERVO_DBSI	Speed actual value filter numerator natural frequency / n_act_filt fn_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5040, 5210 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]
p1449[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity actual value filter numerator natural frequency / v_act_filt fn_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5040, 5210 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]
p1450[0...n] HLA_840, HLA_DBSI	Velocity actual value filter numerator damping / v_act_filt D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.700

p1450[0...n] SERVO_840, SERVO_DBSI	Speed actual value filter numerator damping / n_act_filt D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5040, 5210 Unit selection: - Expert list: 1 Factory setting: 0.700
p1450[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity actual value filter numerator damping / v_act_filt D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5040, 5210 Unit selection: - Expert list: 1 Factory setting: 0.700
p1451[0...n] SERVO_840, SERVO_DBSI	Speed actual value smoothing time sensorless / n_ActV t_smth sl Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL, RESM Min: 0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [ms]
p1451[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity actual value smoothing time sensorless / v_ActV t_smth sl Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL, RESM Min: 0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [ms]
r1454 HLA_840, HLA_DBSI	CO: Velocity controller system deviation I component / v_ctrl SysDev Tn Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r1454 SERVO_840, SERVO_DBSI	CO: Speed controller system deviation I component / n_ctrl SysDev Tn Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 5040 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]

r1454 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity controller system deviation I component / v_ctrl SysDev Tn Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 5040 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
p1455[0...n] SERVO_840, SERVO_DBSI	CI: Speed controller P gain adaptation signal / n_ctrl adpt_sig Kp Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 5050 Unit selection: - Expert list: 1 Factory setting: 0
p1455[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CI: Velocity controller P gain adaptation signal / v_ctrl adpt_sig Kp Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 5050 Unit selection: - Expert list: 1 Factory setting: 0
p1456[0...n] SERVO_840, SERVO_DBSI	Speed controller P gain adaptation lower starting point / n_ctrl adpt Kp low Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 400.00 [%]	Access level: 3 Function diagram: 5050 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p1456[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity controller P gain adaptation lower starting point / v_ctrl adpt Kp low Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 400.00 [%]	Access level: 3 Function diagram: 5050 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p1457[0...n] SERVO_840, SERVO_DBSI	Speed controller P gain adaptation upper starting point / n_ctrl adpt Kp up Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 400.00 [%]	Access level: 3 Function diagram: 5050 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]

p1457[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity controller P gain adaptation upper starting point / v_ctrl adpt KpUp Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 400.00 [%]	Access level: 3 Function diagram: 5050 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p1458[0...n] SERVO_840, SERVO_DBSI	Adaptation factor lower / Adapt_factor lower Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 200000.0 [%]	Access level: 3 Function diagram: 5050 Unit selection: - Expert list: 1 Factory setting: 100.0 [%]
p1459[0...n] SERVO_840, SERVO_DBSI	Adaptation factor upper / Adapt_factor upper Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 200000.0 [%]	Access level: 3 Function diagram: 5050 Unit selection: - Expert list: 1 Factory setting: 100.0 [%]
p1460[0...n] HLA_840, HLA_DBSI	Velocity controller P gain A / v_ctrl Kp A Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -100.000 [%]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.000 [%]	Access level: 2 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.000 [%]
p1460[0...n] SERVO_840, SERVO_DBSI	Speed controller P gain adaptation speed lower / n_ctrl Kp n lower Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.0000 [Nms/rad]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: 17_1 Scaling: - Max: 500000000.0000 [Nms/rad]	Access level: 2 Function diagram: 5040, 5042 Unit selection: p0505 Expert list: 1 Factory setting: 0.3000 [Nms/rad]
p1460[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity controller P gain adaptation velocity lower / v_ctrl Kp n lower Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.0000 [Ns/m]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: 24_2 Scaling: - Max: 500000000.0000 [Ns/m]	Access level: 2 Function diagram: 5040, 5042 Unit selection: p0505 Expert list: 1 Factory setting: 10.0000 [Ns/m]

p1461[0...n] HLA_840, HLA_DBSI	Velocity controller P gain / v_ctrl Kp Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -100.0 [%]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.0 [%]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.0 [%]
p1461[0...n] SERVO_840, SERVO_DBSI	Speed controller Kp adaptation speed upper scaling / n_ctr Kp n up scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.0 [%]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 200000.0 [%]	Access level: 3 Function diagram: 5050 Unit selection: - Expert list: 1 Factory setting: 100.0 [%]
p1461[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity controller Kp adaptation velocity upper scaling / v_ctr Kp n up scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.0 [%]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 200000.0 [%]	Access level: 3 Function diagram: 5050 Unit selection: - Expert list: 1 Factory setting: 100.0 [%]
p1462[0...n] HLA_840, HLA_DBSI	Velocity controller P gain B / v_ctrl Kp B Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -100.00 [%]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.00 [%]	Access level: 2 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p1462[0...n] SERVO_840, SERVO_DBSI	Speed controller integral time adaptation speed lower / n_ctrl Tn n lower Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100000.00 [ms]	Access level: 2 Function diagram: 5040, 5042, 6020, 6040 Unit selection: - Expert list: 1 Factory setting: 20.00 [ms]
p1462[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity contr. integral act. time adaptation velocity lower / v_ctrl Tn n lower Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100000.00 [ms]	Access level: 2 Function diagram: 5040, 5042 Unit selection: - Expert list: 1 Factory setting: 20.00 [ms]

p1463[0...n]	Velocity controller integral time / v_ctrl Tn		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4965
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0 [ms]	2000.0 [ms]	0.0 [ms]

p1463[0...n]	Speed controller Tn adaptation speed upper scaling / n_ctrl Tn n up scal		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5050
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0 [%]	200000.0 [%]	100.0 [%]

p1463[0...n]	Velocity controller Tn adaptation velocity upper scaling / v_ctrl Tn n up scal		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5050
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0 [%]	200000.0 [%]	100.0 [%]

p1464[0...n]	Velocity controller D component smoothing time constant / v_ctrl D comp Tc		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4965
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.25 [ms]	100.00 [ms]	0.25 [ms]

p1464[0...n]	Speed controller adaptation speed lower / n_ctrl n lower		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5050
	P-Group: Closed-loop control	Unit group: 3_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	210000.00 [rpm]	0.00 [rpm]

p1464[0...n]	Velocity controller adaptation velocity lower / v_ctrl n lower		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5050
	P-Group: Closed-loop control	Unit group: 4_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [m/min]	1000.00 [m/min]	0.00 [m/min]

p1465[0...n] HLA_840, HLA_DBSI	Velocity controller derivative-action time A / v_ctrl Tv A Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -1000.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.00 [ms]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p1465[0...n] SERVO_840, SERVO_DBSI	Speed controller adaptation speed upper / n_ctrl n upper Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [rpm]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 3 Function diagram: 5050 Unit selection: p0505 Expert list: 1 Factory setting: 210000.00 [rpm]
p1465[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity controller adaptation velocity upper / v_ctrl n upper Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [m/min]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 3 Function diagram: 5050 Unit selection: p0505 Expert list: 1 Factory setting: 1000.00 [m/min]
p1466[0...n] HLA_840, HLA_DBSI	Velocity controller derivative-action time / v_ctrl Tv Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -1000.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.00 [ms]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p1466[0...n] SERVO_840, SERVO_DBSI	CI: Speed controller P gain scaling / n_ctrl Kp scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 5050 Unit selection: - Expert list: 1 Factory setting: 1
p1466[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CI: Velocity controller P gain scaling / v_ctrl Kp scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 5050 Unit selection: - Expert list: 1 Factory setting: 1

p1467[0...n]	Velocity controller derivative-action time B / v_ctrl Tv B		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4965
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1000.00 [ms]	1000.00 [ms]	0.00 [ms]
r1468	Velocity controller P gain effective / v_ctrl Kp eff		
HLA_840, HLA_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [%]	- [%]	- [%]
r1468	Speed controller P gain effective / n_ctrl Kp eff		
SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 5040, 5042, 5210
	P-Group: Closed-loop control	Unit group: 17_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [Nms/rad]	- [Nms/rad]	- [Nms/rad]
r1468	Velocity controller P gain effective / v_ctrl Kp eff		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 5040, 5042, 5210
	P-Group: Closed-loop control	Unit group: 24_2	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [Ns/m]	- [Ns/m]	- [Ns/m]
r1469	Velocity controller derivative-action time active / v_ctrl Tv act		
HLA_840, HLA_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [ms]	- [ms]	- [ms]

r1469 SERVO_840, SERVO_DBSI	Speed controller integral time effective / n_ctrl Tn eff Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ms]	Access level: 3 Function diagram: 5040, 5042, 6040 Unit selection: - Expert list: 1 Factory setting: - [ms]
r1469 SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity controller integral time effective / v_ctrl Tn eff Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ms]	Access level: 3 Function diagram: 5040, 5042 Unit selection: - Expert list: 1 Factory setting: - [ms]
p1470[0...n] SERVO_840, SERVO_DBSI	Speed controller encoderless operation P gain / n_ctrl SL Kp Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00000 [Nms/rad]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: 17_1 Scaling: - Max: 999999.00000 [Nms/rad]	Access level: 2 Function diagram: 5210 Unit selection: p0505 Expert list: 1 Factory setting: 0.30000 [Nms/rad]
p1470[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity controller encoderless operation P gain / v_ctrl SLVC Kp Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00000 [Ns/m]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: 24_2 Scaling: - Max: 999999.00000 [Ns/m]	Access level: 2 Function diagram: 5210 Unit selection: p0505 Expert list: 1 Factory setting: 10.00000 [Ns/m]
p1472[0...n] SERVO_840, SERVO_DBSI	Speed controller encoderless operation integral time / n_ctrl SL Tn Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.0 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100000.0 [ms]	Access level: 2 Function diagram: 5210 Unit selection: - Expert list: 1 Factory setting: 20.0 [ms]
p1472[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity controller encoderless operation integral time / v_ctrl SLVC Tn Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.0 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100000.0 [ms]	Access level: 2 Function diagram: 5210 Unit selection: - Expert list: 1 Factory setting: 20.0 [ms]

p1475[0...n]	Velocity controller loop gain / v_ctrl loop_gain		
HLA_840, HLA_DBSI	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.0 [mm/Vmin]	Calculated: CALC_MOD_EQU Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 20000.0 [mm/Vmin]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [mm/Vmin]
p1476[0...n]	BI: Velocity controller hold integrator / v_ctrl integ stop		
HLA_840, HLA_DBSI	Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1476[0...n]	BI: Speed controller hold integrator / n_ctrl integ stop		
SERVO_840, SERVO_DBSI	Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2520, 5040, 5042, 5210, 6040 Unit selection: - Expert list: 1 Factory setting: 0
p1476[0...n]	BI: Velocity controller hold integrator / v_ctrl integ stop		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2520, 5040, 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 0
p1477[0...n]	BI: Velocity controller set integrator value / v_ctrl integ set		
HLA_840, HLA_DBSI	Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p1477[0...n] SERVO_840, SERVO_DBSI	BI: Speed controller set integrator value / n_ctrl integ set Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2520, 5040, 5042, 5210, 6040 Unit selection: - Expert list: 1 Factory setting: 0
p1477[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	BI: Velocity controller set integrator value / v_ctrl integ set Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2520, 5040, 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 0
p1478[0...n] HLA_840, HLA_DBSI	CI: Velocity controller integrator value / v_ctr integ_setVal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2003 Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1478[0...n] SERVO_840, SERVO_DBSI	CI: Speed controller integrator setting value / n_ctr integ_setVal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2003 Max: -	Access level: 3 Function diagram: 5040, 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 0
p1478[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CI: Velocity controller integrator value / v_ctr integ_setVal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2003 Max: -	Access level: 3 Function diagram: 5040, 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 0

r1480 HLA_840, HLA_DBSI	CO: Velocity controller PID output / v_ctrl PID outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [V]
r1480 SERVO_840, SERVO_DBSI	CO: Speed controller PI torque output / n_ctrl PI-M_outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 3 Function diagram: 5019, 5040, 5042, 5060, 5210, 6060 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r1480 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity controller PI force output / v_ctrl PI-F_outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: 5019, 5040, 5042, 5060, 5210 Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r1481 HLA_840, HLA_DBSI	CO: Velocity controller P component output / v_ctrl P outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [V]
r1481 SERVO_840, SERVO_DBSI	CO: Speed controller P torque output / n_ctrl P-M_outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 3 Function diagram: 5040, 5042, 5210, 6040 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]

r1481 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity controller P force output / v_ctrl P-F_outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: 5040, 5042, 5210 Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r1482 HLA_840, HLA_DBSI	CO: Velocity controller I component output / v_ctrl I outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: - [V]
r1482 SERVO_840, SERVO_DBSI	CO: Speed controller I torque output / n_ctrl I-M_outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 3 Function diagram: 5040, 5042, 5210, 6030, 6040 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r1482 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity controller I force output / v_ctrl I-F_outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: 5040, 5042, 5210 Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r1483 HLA_840, HLA_DBSI	CO: Velocity controller D component output / v_ctrl D outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: - [V]

r1484 SERVO_840, SERVO_DBSI	CO: Speed controller Kp adaptation as percentage / n_ctrl Kp adpt % Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 3 Function diagram: 5040, 5042, 5210 Unit selection: - Expert list: 1 Factory setting: - [%]
r1484 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Velocity controller Kp adaptation as percentage / v_ctrl Kp adpt % Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 3 Function diagram: 5040, 5042, 5210 Unit selection: - Expert list: 1 Factory setting: - [%]
r1493 SERVO_840, SERVO_DBSI	CO: Moment of inertia total / M_inert total Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [kgm ²]	Calculated: - Dynamic index: - Unit group: 25_1 Scaling: - Max: - [kgm ²]	Access level: 3 Function diagram: 5042, 5210 Unit selection: p0100 Expert list: 1 Factory setting: - [kgm ²]
r1493 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Total mass / Total mass Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [kg]	Calculated: - Dynamic index: - Unit group: 27_1 Scaling: - Max: - [kg]	Access level: 3 Function diagram: 5042, 5210 Unit selection: p0100 Expert list: 1 Factory setting: - [kg]
p1494[0...n] HLA_840, HLA_DBSI	Velocity controller integrator feedback time constant / v_ctr integ_fdbkTc Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.00 [ms]	Access level: 2 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]

p1494[0...n] SERVO_840, SERVO_DBSI	Speed controller integrator feedback time constant / n_ctr integ_fdbkTc Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.00 [ms]	Access level: 2 Function diagram: 5040, 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p1494[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity controller integrator feedback time constant / v_ctr integ_fdbkTc Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.00 [ms]	Access level: 2 Function diagram: 5040, 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p1495[0...n] HLA_840, HLA_DBSI	Integrator feedback velocity threshold / Integ_fdbk v_thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 120000.000 [m/min]	Access level: 3 Function diagram: 4965 Unit selection: p0505 Expert list: 1 Factory setting: 0.010 [m/min]
p1497[0...n] SERVO_840, SERVO_DBSI	CI: Moment of inertia scaling signal source / M_inert scal s_s Can be changed: T, U Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 5042, 5210, 6030, 6031 Unit selection: - Expert list: 1 Factory setting: 1
p1497[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CI: Mass scaling signal source / Mass scal s_s Can be changed: T, U Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 1

p1498[0...n] HLA_840, HLA_DBSI	Load mass / Load mass Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00000 [kg]	Calculated: - Dynamic index: DDS, p0180 Unit group: 27_1 Scaling: - Max: 100000.00000 [kg]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: 0.00000 [kg]
p1498[0...n] SERVO_840, SERVO_DBSI	Load moment of inertia / Load m_inert Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [kgm ²]	Calculated: - Dynamic index: DDS, p0180 Unit group: 25_1 Scaling: - Max: - [kgm ²]	Access level: 3 Function diagram: 5042, 5210 Unit selection: p0100 Expert list: 1 Factory setting: - [kgm ²]
p1498[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Load mass / Load mass Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [kg]	Calculated: - Dynamic index: DDS, p0180 Unit group: 27_1 Scaling: - Max: - [kg]	Access level: 3 Function diagram: 5042, 5210 Unit selection: p0100 Expert list: 1 Factory setting: - [kg]
p1500[0...n] SERVO_840, SERVO_DBSI	Macro Connector Inputs (CI) for torque setpoints / Macro CI M_set Can be changed: C2(1), T Data type: Unsigned32 P-Group: Commands Not for motor type: REL Min: 0	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: 999999	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1500[0...n] HLA_840, HLA_DBSI, SERVO_840 (Lin), SERVO_DBSI (Lin)	Macro Connector Inputs (CI) for force setpoints / Macro CI F_set Can be changed: C2(1), T Data type: Unsigned32 P-Group: Commands Not for motor type: REL Min: 0	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: 999999	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1501[0...n] SERVO_840, SERVO_DBSI	BI: Change over between closed-loop speed/torque control / Chgov n/M_ctrl Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2520, 6020 Unit selection: - Expert list: 1 Factory setting: 0

p1501[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Bl: Change over velocity/force control / Chgov n/F_ctrl Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2520, 6020 Unit selection: - Expert list: 1 Factory setting: 0
p1502[0...n] SERVO_840, SERVO_DBSI	Bl: Freeze moment of inertia estimator / J_estimator freeze Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1505 HLA_840, HLA_DBSI	Cl: Force actual value signal source / F_act s_s Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1506 HLA_840, HLA_DBSI	Force actual value reference value for 100% for p1505 / F_act ref 100% Can be changed: T Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.0 [Nm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20000000.0 [Nm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [Nm]
r1509 SERVO_840, SERVO_DBSI	CO: Torque setpoint before torque limiting / M_set before M_lim Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 3 Function diagram: 5019, 5060, 5610 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r1509 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Force setpoint before force limiting / F_set before F_lim Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: 5019, 5060, 5610 Unit selection: p0505 Expert list: 1 Factory setting: - [N]

p1511[0...n] HLA_840, HLA_DBSI	CI: Force setpoint / F_set Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2003 Max: -	Access level: 3 Function diagram: 4970 Unit selection: - Expert list: 1 Factory setting: 0
p1511[0...n] SERVO_840, SERVO_DBSI	CI: Supplementary torque 1 / M_suppl 1 Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2003 Max: -	Access level: 3 Function diagram: 5060 Unit selection: - Expert list: 1 Factory setting: 0
p1511[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CI: Supplementary force 1 / F_suppl 1 Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2003 Max: -	Access level: 3 Function diagram: 5060 Unit selection: - Expert list: 1 Factory setting: 0
p1512[0...n] HLA_840, HLA_DBSI	CI: Force setpoint scaling / F_set scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 4970 Unit selection: - Expert list: 1 Factory setting: 0
p1512[0...n] SERVO_840, SERVO_DBSI	CI: Supplementary torque 1 scaling / M_suppl 1 scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 5060, 6060 Unit selection: - Expert list: 1 Factory setting: 0
p1512[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CI: Supplementary force 1 scaling / F_suppl 1 scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 5060, 6060 Unit selection: - Expert list: 1 Factory setting: 0

p1513[0...n] SERVO_840, SERVO_DBSI	Cl: Supplementary torque 2 / M_suppl 2 Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2003 Max: -	Access level: 3 Function diagram: 5060 Unit selection: - Expert list: 1 Factory setting: 0
p1513[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Cl: Supplementary force 2 / F_suppl 2 Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2003 Max: -	Access level: 3 Function diagram: 5060 Unit selection: - Expert list: 1 Factory setting: 0
r1515 SERVO_840, SERVO_DBSI	Supplementary torque total / M_suppl total Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 2 Function diagram: 5060 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r1515 SERVO_840 (Lin), SERVO_DBSI (Lin)	Supplementary force total / F_suppl total Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 2 Function diagram: 5060 Unit selection: p0505 Expert list: 1 Factory setting: - [N]
p1517[0...n] SERVO_840, SERVO_DBSI	Accelerating torque smoothing time constant / M_a Tc_smoth Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.00 [ms]	Access level: 3 Function diagram: 5042, 5210, 6060 Unit selection: - Expert list: 1 Factory setting: 4.00 [ms]
p1517[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Acceleration force smoothing time constant / F_a Tc_smoth Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.00 [ms]	Access level: 3 Function diagram: 5042, 5210 Unit selection: - Expert list: 1 Factory setting: 4.00 [ms]

r1518[0...1] SERVO_840, SERVO_DBSI	CO: Accelerating torque / M_accel Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 3 Function diagram: 5042, 5210 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r1518[0...1] SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Accelerating force / F_accel Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: 5042, 5210 Unit selection: p0505 Expert list: 1 Factory setting: - [N]
p1520[0...n] SERVO_840, SERVO_DBSI	CO: Torque limit upper/motoring / M_max upper/mot Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [Nm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 7_1 Scaling: p2003 Max: 10000000.00 [Nm]	Access level: 2 Function diagram: 5620, 5630 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [Nm]
p1520[0...n] HLA_840, HLA_DBSI, SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Force limit upper/motoring / F_max upper/mot Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [N]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: p2003 Max: 10000000.00 [N]	Access level: 2 Function diagram: 5620, 5630 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [N]
p1521[0...n] SERVO_840, SERVO_DBSI	CO: Torque limit lower/regenerative / M_max lower/reg Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -1000000.00 [Nm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 7_1 Scaling: p2003 Max: 0.00 [Nm]	Access level: 2 Function diagram: 5620, 5630 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [Nm]

p1521[0...n] HLA_840, HLA_DBSI, SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Force limit lower/regenerative / F_max lower/reg Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -1000000.00 [N]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: p2003 Max: 0.00 [N]	Access level: 2 Function diagram: 5620, 5630 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [N]
p1522[0...n] SERVO_840, SERVO_DBSI	CI: Torque limit upper/motoring / M_max upper/mot Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2003 Max: -	Access level: 3 Function diagram: 5609, 5620, 5630, 6630 Unit selection: - Expert list: 1 Factory setting: 2902[5]
p1522[0...n] HLA_840, HLA_DBSI, SERVO_840 (Lin), SERVO_DBSI (Lin)	CI: Force limit upper/motoring / F_max upper/mot Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2003 Max: -	Access level: 3 Function diagram: 5609, 5620, 5630, 6630 Unit selection: - Expert list: 1 Factory setting: 2902[5]
p1523[0...n] SERVO_840, SERVO_DBSI	CI: Torque limit lower/regenerative / M_max lower/reg Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2003 Max: -	Access level: 3 Function diagram: 5609, 5620, 5630 Unit selection: - Expert list: 1 Factory setting: 2902[12]
p1523[0...n] HLA_840, HLA_DBSI, SERVO_840 (Lin), SERVO_DBSI (Lin)	CI: Force limit lower/regenerative / F_max lower/reg Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2003 Max: -	Access level: 3 Function diagram: 5609, 5620, 5630 Unit selection: - Expert list: 1 Factory setting: 2902[12]

p1524[0...n] HLA_840, HLA_DBSI	CO: Force limit upper/motoring scaling / F_max up/mot scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -2000.0 [%] Max: 2000.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: PERCENT Max: 2000.0 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.0 [%]
p1524[0...n] SERVO_840, SERVO_DBSI	CO: Torque limit upper/motoring scaling / M_max up/mot scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -2000.0 [%] Max: 2000.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: PERCENT Max: 2000.0 [%]	Access level: 3 Function diagram: 5620, 5630 Unit selection: - Expert list: 1 Factory setting: 100.0 [%]
p1524[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Force limit upper/motoring scaling / F_max up/mot scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -2000.0 [%] Max: 2000.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: PERCENT Max: 2000.0 [%]	Access level: 3 Function diagram: 5620, 5630 Unit selection: - Expert list: 1 Factory setting: 100.0 [%]
p1525[0...n] HLA_840, HLA_DBSI	CO: Force limit lower/regenerative scaling / F_max low/reg scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -2000.0 [%] Max: 2000.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: PERCENT Max: 2000.0 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.0 [%]
p1525[0...n] SERVO_840, SERVO_DBSI	CO: Torque limit lower/regenerative scaling / M_max low/reg scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -2000.0 [%] Max: 2000.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: PERCENT Max: 2000.0 [%]	Access level: 3 Function diagram: 5620, 5630 Unit selection: - Expert list: 1 Factory setting: 100.0 [%]
p1525[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Force limit lower/regenerative scaling / F_max low/reg scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -2000.0 [%] Max: 2000.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: PERCENT Max: 2000.0 [%]	Access level: 3 Function diagram: 5620, 5630 Unit selection: - Expert list: 1 Factory setting: 100.0 [%]

r1526 HLA_840, HLA_DBSI	CO: Force limit upper/motoring without offset / F_max up w/o offs Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r1526 SERVO_840, SERVO_DBSI	CO: Torque limit upper/motoring without offset / M_max up w/o offs Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 3 Function diagram: 5620, 5630 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r1526 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Force limit upper/motoring without offset / F_max up w/o offs Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: 5620, 5630 Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r1527 HLA_840, HLA_DBSI	CO: Force limit lower/regenerative without offset / F_max low w/o offs Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r1527 SERVO_840, SERVO_DBSI	CO: Torque limit lower/regenerative without offset / M_max low w/o offs Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 3 Function diagram: 5620, 5630 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r1527 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Force limit lower/regenerative without offset / F_max low w/o offs Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: 5620, 5630 Unit selection: p0505 Expert list: 1 Factory setting: - [N]

p1528[0...n] HLA_840, HLA_DBSI	CI: Force limit upper/motoring scaling / F_max up/mot scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1524[0]
p1528[0...n] SERVO_840, SERVO_DBSI	CI: Torque limit upper/motoring scaling / M_max up/mot scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 3617, 5609, 5620, 5630 Unit selection: - Expert list: 1 Factory setting: 1524[0]
p1528[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CI: Force limit upper/motoring scaling / F_max up/mot scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 3617, 5609, 5620, 5630 Unit selection: - Expert list: 1 Factory setting: 1524[0]
p1529[0...n] HLA_840, HLA_DBSI	CI: Force limit lower/regenerative scaling / F_max low/reg scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1525[0]
p1529[0...n] SERVO_840, SERVO_DBSI	CI: Torque limit lower/regenerative scaling / M_max low/reg scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 3617, 5609, 5620, 5630 Unit selection: - Expert list: 1 Factory setting: 1525[0]

p1529[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Cl: Force limit lower/regenerative scaling / F_max low/reg scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 3617, 5609, 5620, 5630 Unit selection: - Expert list: 1 Factory setting: 1525[0]
p1530[0...n] SERVO_840, SERVO_DBSI	Power limit motoring / P_max mot Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [kW]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 14_5 Scaling: - Max: 100000.00 [kW]	Access level: 2 Function diagram: 5640 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [kW]
p1530[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Power limit motoring / P_max mot Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [kW]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 14_8 Scaling: - Max: 100000.00 [kW]	Access level: 2 Function diagram: 5640 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [kW]
p1531[0...n] SERVO_840, SERVO_DBSI	Power limit regenerative / P_max reg Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -100000.00 [kW]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 14_5 Scaling: - Max: -0.01 [kW]	Access level: 2 Function diagram: 5640 Unit selection: p0505 Expert list: 1 Factory setting: -0.01 [kW]
p1531[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Power limit regenerative / P_max reg Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -100000.00 [kW]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 14_8 Scaling: - Max: -0.01 [kW]	Access level: 2 Function diagram: 5640 Unit selection: p0505 Expert list: 1 Factory setting: -0.01 [kW]

p1532[0...n] HLA_840, HLA_DBSI	CO: Force offset, force limit / F_max offset Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -100000.00 [N]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: p2003 Max: 100000.00 [N]	Access level: 3 Function diagram: 4970 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [N]
p1532[0...n] SERVO_840, SERVO_DBSI	CO: Torque limit offset / M_max offset Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -100000.00 [Nm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 7_1 Scaling: p2003 Max: 100000.00 [Nm]	Access level: 3 Function diagram: 5620, 5630, 5650, 7010, 8012 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [Nm]
p1532[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Force offset, force limit / F_max offset Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -100000.00 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: p2003 Max: 100000.00 [N]	Access level: 3 Function diagram: 5620, 5630, 5650, 7010, 8012 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [N]
r1533 SERVO_840, SERVO_DBSI	Current limit torque-generating total / Iq_max total Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: REL Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 5640, 5722 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r1533 SERVO_840 (Lin), SERVO_DBSI (Lin)	Current limit force-generating total / Iq_max total Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: REL Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 5640, 5722 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]

r1534 SERVO_840, SERVO_DBSI	CO: Total upper torque limit / M_max upper total Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 3 Function diagram: 5609, 5620, 5630, 5640 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r1534 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Force limit upper total / F_max upper total Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: 5609, 5620, 5630, 5640 Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r1535 SERVO_840, SERVO_DBSI	CO: Total lower torque limit / M_max lower total Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 3 Function diagram: 5609, 5620, 5630, 5640 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r1535 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Force limit lower total / F_max lower total Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: 5609, 5620, 5630, 5640 Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r1538 HLA_840, HLA_DBSI	CO: Upper force limit effective / F_max upper eff Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 2 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [N]

r1538 SERVO_840, SERVO_DBSI	CO: Upper effective torque limit / M_max upper eff Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 2 Function diagram: 5609, 5650 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r1538 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Upper force limit effective / F_max upper eff Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 2 Function diagram: 5609, 5650 Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r1539 HLA_840, HLA_DBSI	CO: Lower force limit effective / F_max lower eff Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 2 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r1539 SERVO_840, SERVO_DBSI	CO: Lower effective torque limit / M_max lower eff Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 2 Function diagram: 5609, 5650 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r1539 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Lower force limit effective / F_max lower eff Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 2 Function diagram: 5609, 5650 Unit selection: p0505 Expert list: 1 Factory setting: - [N]
p1542[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CI: Travel to fixed stop torque reduction / TfS M_red Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 5610 Unit selection: - Expert list: 1 Factory setting: 0

p1542[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CI: Travel to fixed stop force reduction / TfS F_red Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 5610 Unit selection: - Expert list: 1 Factory setting: 0
r1543 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Travel to fixed stop torque scaling / TfS M scal Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 3 Function diagram: 5610 Unit selection: - Expert list: 1 Factory setting: - [%]
r1543 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Travel to fixed stop force scaling / TfS F scal Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 3 Function diagram: 5610 Unit selection: - Expert list: 1 Factory setting: - [%]
p1544 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Travel to fixed stop evaluation torque reduction / TfS M_red eval Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535 [%]	Access level: 3 Function diagram: 5610 Unit selection: - Expert list: 1 Factory setting: 100 [%]
p1544 SERVO_840 (Lin), SERVO_DBSI (Lin)	Travel to fixed stop evaluation force reduction / TfS F_red eval Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535 [%]	Access level: 3 Function diagram: 5610 Unit selection: - Expert list: 1 Factory setting: 100 [%]
p1545[0...n] HLA_840, HLA_DBSI	BI: Activates travel to a fixed stop / TfS activation Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2520, 3617, 8012 Unit selection: - Expert list: 1 Factory setting: 0

p1545[0...n] SERVO_840, SERVO_DBSI	BI: Activates travel to a fixed stop / Tfs activation Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2520, 3617, 8012 Unit selection: - Expert list: 1 Factory setting: [0] 0 [1] 0
p1546 SERVO_840, SERVO_DBSI	Speed threshold motoring/regenerating / n_thr mot/reg Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 2 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 20.00 [rpm]
p1546 SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity threshold motoring/regenerative / v_thr mot/reg Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 2 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 0.20 [m/min]
r1549[0...1] SERVO_840, SERVO_DBSI	CO: Stall power actual value / P_stall Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [kW]	Calculated: - Dynamic index: - Unit group: 14_5 Scaling: r2004 Max: - [kW]	Access level: 3 Function diagram: 5640 Unit selection: p0505 Expert list: 1 Factory setting: - [kW]
r1549[0...1] SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Stall power actual value / P_stall Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [kW]	Calculated: - Dynamic index: - Unit group: 14_8 Scaling: r2004 Max: - [kW]	Access level: 3 Function diagram: 5640 Unit selection: p0505 Expert list: 1 Factory setting: - [kW]
p1550[0...n] SERVO_840, SERVO_DBSI	BI: Transfer actual torque as torque offset / Accept act torque Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 9718.23

p1550[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Bl: Transfer actual force as force offset / Accept act force Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 9718.23
p1551[0...n] SERVO_840, SERVO_DBSI	Bl: Torque limit variable/fixed signal source / M_lim var/fix s_s Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 5620, 5630, 6060, 6630 Unit selection: - Expert list: 1 Factory setting: 1
p1551[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Bl: Force limit variable/fixed signal source / F_lim var/fix s_s Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 5620, 5630, 6060, 6630 Unit selection: - Expert list: 1 Factory setting: 1
p1552[0...n] HLA_840, HLA_DBSI	Stiction velocity threshold / Stiction v_thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.000 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 10.000 [m/min]	Access level: 3 Function diagram: 4970 Unit selection: p0505 Expert list: 1 Factory setting: 0.010 [m/min]
p1552[0...n] SERVO_840, SERVO_DBSI	Cl: Torque limit upper scaling without offset / M_max up w/o offs Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 5060 Unit selection: - Expert list: 1 Factory setting: 1
p1552[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Cl: Force limit upper scaling without offset / F_max up w/o offs Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 5060 Unit selection: - Expert list: 1 Factory setting: 1

p1554[0...n] HLA_840, HLA_DBSI	Stiction shutdown rate action / Stict shutdown Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 3.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: PERCENT Max: 100.0 [%]	Access level: 3 Function diagram: 4970 Unit selection: - Expert list: 1 Factory setting: 40.0 [%]
p1554[0...n] SERVO_840, SERVO_DBSI	CI: Torque limit lower scaling without offset / M_max low w/o offs Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 5060 Unit selection: - Expert list: 1 Factory setting: 1
p1554[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	CI: Force limit lower scaling without offset / F_max low w/o offs Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 5060 Unit selection: - Expert list: 1 Factory setting: 1
p1555[0...n] HLA_840, HLA_DBSI	Stiction force velocity positive / Stiction F v pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -100000000.0 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_2 Scaling: - Max: 100000000.0 [N]	Access level: 3 Function diagram: 4970 Unit selection: p0505 Expert list: 1 Factory setting: 0.0 [N]
p1556[0...n] HLA_840, HLA_DBSI	Stiction force velocity negative / Stiction F v neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -100000000.0 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_2 Scaling: - Max: 100000000.0 [N]	Access level: 3 Function diagram: 4970 Unit selection: p0505 Expert list: 1 Factory setting: 0.0 [N]
p1558 SERVO_840, SERVO_DBSI	Measure/precontrol hanging/suspended axis force due to weight / Meas/prectr weight Can be changed: T, U Data type: Integer16 P-Group: Motor identification Not for motor type: - Min: -1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p1560[0...n] SERVO_840 (J_estimator, J_estimator / OBT, Lin, Lin), SERVO_DBSI (J_estimator, J_estimator / OBT, Lin, Lin)	Moment of inertia estimator accelerating force threshold value / J_est F thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: REL Min: 0.10 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10.00 [%]
p1560[0...n] SERVO_840 (J_estimator, J_estimator / OBT), SERVO_DBSI (J_estimator, J_estimator / OBT)	Moment of inertia estimator accelerating torque threshold value / J_est M thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: REL Min: 0.10 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10.00 [%]
p1561[0...n] SERVO_840 (J_estimator, J_estimator / OBT, Lin, Lin), SERVO_DBSI (J_estimator, J_estimator / OBT, Lin, Lin)	Inertia estimator change time high inertia mass / J_est t_chg M Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 10.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 50.00 [ms]
p1561[0...n] SERVO_840 (J_estimator, J_estimator / OBT), SERVO_DBSI (J_estimator, J_estimator / OBT)	Moment of inertia estimator change time moment of inertia / J_est t_chg J Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 10.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 50.00 [ms]
p1562[0...n] SERVO_840 (J_estimator, J_estimator / OBT, Lin, Lin), SERVO_DBSI (J_estimator, J_estimator / OBT, Lin, Lin)	Moment of inertia estimator change time load / J_est t load Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 5.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 500.00 [ms]
p1562[0...n] SERVO_840 (J_estimator, J_estimator / OBT), SERVO_DBSI (J_estimator, J_estimator / OBT)	Moment of inertia estimator change time load / J_est t load Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 5.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 500.00 [ms]

4.2 SINAMICS parameters

p1563[0...n] SERVO_840 (J_estimator, J_estimator / OBT, Lin, Lin), SERVO_DBSI (J_estimator, J_estimator / OBT, Lin, Lin)	CO: Moment of inertia estimator load force positive direction / J_est F pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -340.28235E36 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: p2003 Max: 340.28235E36 [N]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [N]
p1563[0...n] SERVO_840 (J_estimator, J_estimator / OBT), SERVO_DBSI (J_estimator, J_estimator / OBT)	CO: Mom. of inertia estimator load torque direction of rotation pos. / J_est M pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -340.28235E36 [Nm]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: p2003 Max: 340.28235E36 [Nm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [Nm]
p1564[0...n] SERVO_840 (J_estimator, J_estimator / OBT, Lin, Lin), SERVO_DBSI (J_estimator, J_estimator / OBT, Lin, Lin)	CO: Moment of inertia estimator load force negative direction / J_est F neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -340.28235E36 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: p2003 Max: 340.28235E36 [N]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [N]
p1564[0...n] SERVO_840 (J_estimator, J_estimator / OBT), SERVO_DBSI (J_estimator, J_estimator / OBT)	CO: Mom. of inertia estimator load torque direction of rotation neg. / J_est M neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -340.28235E36 [Nm]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: p2003 Max: 340.28235E36 [Nm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [Nm]
p1565 SERVO_840 (J_estimator, J_estimator / OBT), SERVO_DBSI (J_estimator, J_estimator / OBT)	Moment of inertia estimator reset moment of inertia / J_est reset J Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: -1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1569[0...n] SERVO_840, SERVO_DBSI	CI: Supplementary torque 3 / M_suppl 3 Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Functions Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2003 Max: -	Access level: 2 Function diagram: 7010 Unit selection: - Expert list: 1 Factory setting: 3841[0]

p1569[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Cl: Supplementary force 3 / F_suppl 3 Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Functions Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2003 Max: -	Access level: 2 Function diagram: 7010 Unit selection: - Expert list: 1 Factory setting: 3841[0]
p1570[0...n] HLA_840, HLA_DBSI	Stiction voltage pulse positive / Stiction U pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.000 [V]	Calculated: CALC_MOD_EQU Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000 [V]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.200 [V]
p1571[0...n] HLA_840, HLA_DBSI	Stiction voltage pulse negative / Stiction U neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: RESM Min: -10.000 [V]	Calculated: CALC_MOD_EQU Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 0.000 [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -0.200 [V]
p1572[0...n] HLA_840, HLA_DBSI	Stiction voltage pulse duration / Stiction U dur Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [ms]	Calculated: CALC_MOD_EQU Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 2.00 [ms]
p1578[0...n] SERVO_840, SERVO_DBSI	Flux reduction flux decrease smoothing time / Flux red dec t_sm Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: PMSM, SESM, REL Min: 20 [ms]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5000 [ms]	Access level: 3 Function diagram: 5722 Unit selection: - Expert list: 1 Factory setting: 200 [ms]
p1579[0...n] SERVO_840, SERVO_DBSI	Flux reduction flux build-up smoothing time / Flux red up t_smth Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: PMSM, SESM, REL Min: 0 [ms]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5000 [ms]	Access level: 3 Function diagram: 5722 Unit selection: - Expert list: 1 Factory setting: 4 [ms]

p1581[0...n] SERVO_840, SERVO_DBSI	Flux reduction factor / Flux red factor Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: PMSM, SESM, REL Min: 20 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100 [%]	Access level: 2 Function diagram: 5722 Unit selection: - Expert list: 1 Factory setting: 100 [%]
p1585[0...n] SERVO_840, SERVO_DBSI	Flux actual value smoothing time / Flux ActV t_smth Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: PMSM, REL, RESM Min: 0 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [ms]
p1590[0...n] SERVO_840, SERVO_DBSI	Flux controller P gain / Flux controller Kp Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: PMSM, REL, RESM Min: 0.0 [A/Vs]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 999999.0 [A/Vs]	Access level: 3 Function diagram: 5722 Unit selection: - Expert list: 1 Factory setting: 10.0 [A/Vs]
p1592[0...n] SERVO_840, SERVO_DBSI	Flux controller integral time / Flux controller Tn Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: PMSM, REL, RESM Min: 0 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000 [ms]	Access level: 3 Function diagram: 5722 Unit selection: - Expert list: 1 Factory setting: 30 [ms]
r1593 SERVO_840, SERVO_DBSI	Field weakening controller output / Field_ctrl outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL, RESM Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: - [Arms]	Access level: 4 Function diagram: 6723, 6724, 6726 Unit selection: - Expert list: 1 Factory setting: - [Arms]
p1603[0...n] SERVO_840, SERVO_DBSI	Field-generating current maximum / Id max Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.0 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 90.0 [%]

p1612[0...n] SERVO_840, SERVO_DBSI	Current setpoint open-loop control, encoderless / I_setCtrEncoderI Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [Arms]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: 6_2 Scaling: - Max: 10000.00 [Arms]	Access level: 2 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [Arms]
r1650 SERVO_840, SERVO_DBSI	Current setpoint torque-generating before filter / Iq_set before filt Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 5710 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r1650 SERVO_840 (Lin), SERVO_DBSI (Lin)	Current setpoint force-generating before filter / Iq_set before filt Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 5710 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r1651 SERVO_840, SERVO_DBSI	CO: Torque setpoint function generator / M_set FG Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r1651 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Force setpoint function generator / F_set FG Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [N]
p1656[0...n] HLA_840, HLA_DBSI	Manipulated variable filter velocity controller activation / Filt v_ctrl act Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0000 bin

p1656[0...n] SERVO_840, SERVO_DBSI	Activates current setpoint filter / I_set_filt act Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 5710 Unit selection: - Expert list: 1 Factory setting: 0001 bin
p1656 A_INF_840 (Suppl cl- loop ctrl)	Signal filter activation / I_set_filt act Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 bin
p1657[0...n] HLA_840, HLA_DBSI	Manipulated variable filter 1 velocity controller type / Filt 1 v_ctrl type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 1
p1657[0...n] SERVO_840, SERVO_DBSI	Current setpoint filter 1 type / I_set_filt 1 type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 5710, 6710 Unit selection: - Expert list: 1 Factory setting: 1
p1658[0...n] HLA_840, HLA_DBSI	Manip. var. filter 1 velocity controller denom. natural freq. / Filt1 v_ctr fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]
p1658[0...n] SERVO_840, SERVO_DBSI	Current setpoint filter 1 denominator natural frequency / I_set_filt1 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5710, 6710 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]

p1659[0...n] HLA_840, HLA_DBSI	Manip. variable filter 1 velocity controller denominator damping / Filt 1 v_ctr D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.001	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.700
p1659[0...n] SERVO_840, SERVO_DBSI	Current setpoint filter 1 denominator damping / I_set_filt 1 D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.001	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5710, 6710 Unit selection: - Expert list: 1 Factory setting: 0.700
p1660[0...n] HLA_840, HLA_DBSI	Manip. var. filter 1 velocity controller numerator natural freq. / Filt1 v_ctr fn_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]
p1660[0...n] SERVO_840, SERVO_DBSI	Current setpoint filter 1 numerator natural frequency / I_set_filt1 fn_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5710, 6710 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]
p1661[0...n] HLA_840, HLA_DBSI	Manip. variable filter 1 velocity controller numerator damping / Filt 1 v_ctr D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.700
p1661[0...n] SERVO_840, SERVO_DBSI	Current setpoint filter 1 numerator damping / I_set_filt 1 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5710, 6710 Unit selection: - Expert list: 1 Factory setting: 0.700

p1662[0...n] HLA_840, HLA_DBSI	Manipulated variable filter 2 velocity controller type / Filt 2 v_ctrl type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 1
p1662[0...n] SERVO_840, SERVO_DBSI	Current setpoint filter 2 type / I_set_filt 2 type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 5710, 6710 Unit selection: - Expert list: 1 Factory setting: 1
p1663[0...n] HLA_840, HLA_DBSI	Manip. var. filter 2 velocity controller denom. natural freq. / Filt2 v_ctr fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]
p1663[0...n] SERVO_840, SERVO_DBSI	Current setpoint filter 2 denominator natural frequency / I_set_filt2 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5710, 6710 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]
p1664[0...n] HLA_840, HLA_DBSI	Manip. variable filter 2 velocity controller denominator damping / Filt 2 v_ctr D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.001	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.700
p1664[0...n] SERVO_840, SERVO_DBSI	Current setpoint filter 2 denominator damping / I_set_filt 2 D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.001	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5710, 6710 Unit selection: - Expert list: 1 Factory setting: 0.700

p1665[0...n] HLA_840, HLA_DBSI	Manip. var. filter 2 velocity controller numerator natural freq. / Filt2 v_ctr fn_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]
p1665[0...n] SERVO_840, SERVO_DBSI	Current setpoint filter 2 numerator natural frequency / I_set_filt2 fn_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5710, 6710 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]
p1666[0...n] HLA_840, HLA_DBSI	Manip. variable filter 2 velocity controller numerator damping / Filt 2 v_ctr D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.700
p1666[0...n] SERVO_840, SERVO_DBSI	Current setpoint filter 2 numerator damping / I_set_filt 2 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5710, 6710 Unit selection: - Expert list: 1 Factory setting: 0.700
p1667[0...n] HLA_840, HLA_DBSI	Manipulated variable filter 3 velocity controller type / Filt 3 v_ctrl type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 1
p1667[0...n] SERVO_840, SERVO_DBSI	Current setpoint filter 3 type / I_set_filt 3 type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 5710 Unit selection: - Expert list: 1 Factory setting: 1

p1668[0...n]	Manip. var. filter 3 velocity controller denom. natural freq. / Filt3 v_ctr fn_den		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4965
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	1999.0 [Hz]

p1668[0...n]	Current setpoint filter 3 denominator natural frequency / I_set_filt3 fn_den		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5710
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	1999.0 [Hz]

p1669[0...n]	Manip. variable filter 3 velocity controller denominator damping / Filt 3 v_ctr D_den		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4965
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001	10.000	0.700

p1669[0...n]	Current setpoint filter 3 denominator damping / I_set_filt 3 D_den		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5710
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001	10.000	0.700

p1670[0...n]	Manip. var. filter 3 velocity controller numerator natural freq. / Filt3 v_ctr fn_num		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4965
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	1999.0 [Hz]

p1670[0...n]	Current setpoint filter 3 numerator natural frequency / I_set_filt3 fn_num		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5710
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	1999.0 [Hz]

p1671[0...n] HLA_840, HLA_DBSI	Manip. variable filter 3 velocity controller numerator damping / Filt 3 v_ctr D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 0.700
p1671[0...n] SERVO_840, SERVO_DBSI	Current setpoint filter 3 numerator damping / I_set_filt 3 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5710 Unit selection: - Expert list: 1 Factory setting: 0.700
p1672[0...n] HLA_840, HLA_DBSI	Manipulated variable filter 4 velocity controller type / Filt 4 v_ctrl type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 1
p1672[0...n] SERVO_840, SERVO_DBSI	Current setpoint filter 4 type / I_set_filt 4 type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 5710 Unit selection: - Expert list: 1 Factory setting: 1
p1673[0...n] HLA_840, HLA_DBSI	Manip. var. filter 4 velocity controller denom. natural freq. / Filt4 v_ctr fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 4965 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]
p1673[0...n] SERVO_840, SERVO_DBSI	Current setpoint filter 4 denominator natural frequency / I_set_filt4 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5710 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]

p1674[0...n]	Manip. variable filter 4 velocity controller denominator damping / Filt 4 v_ctr D_den		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4965
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001	10.000	0.700

p1674[0...n]	Current setpoint filter 4 denominator damping / I_set_filt 4 D_den		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5710
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001	10.000	0.700

p1675[0...n]	Manip. var. filter 4 velocity controller numerator natural freq. / Filt4 v_ctr fn_num		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4965
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	1999.0 [Hz]

p1675[0...n]	Current setpoint filter 4 numerator natural frequency / I_set_filt4 fn_den		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5710
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	1999.0 [Hz]

p1676[0...n]	Manip. variable filter 4 velocity controller numerator damping / Filt 4 v_ctr D_num		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4965
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000	10.000	0.700

p1676[0...n]	Current setpoint filter 4 numerator damping / I_set_filt 4 D_num		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5710
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000	10.000	0.700

p1677 A_INF_840 (Suppl cl-loop ctrl)	Vdc actual value filter 5 type / Vdc act_fil5 typ Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 2
p1678 A_INF_840 (Suppl cl-loop ctrl)	Vdc actual value filter 5 denominator natural frequency / VdcAct_fil5 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.5 [Hz]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 1000.0 [Hz]
p1679 A_INF_840 (Suppl cl-loop ctrl)	Vdc actual value filter 5 denominator damping / Vdc act_fil5 D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.001	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 0.700
p1680 A_INF_840 (Suppl cl-loop ctrl)	Vdc actual value filter 5 numerator natural frequency / VdcAct_fil5 fn_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.5 [Hz]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 1000.0 [Hz]
p1681 A_INF_840 (Suppl cl-loop ctrl)	Vdc actual value filter 5 numerator damping / Vdc act_fil5 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.000	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.010
p1699 HLA_840, HLA_DBSI	Filter data acceptance / Filt data accept Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p1699 SERVO_840, SERVO_DBSI	Filter data acceptance / Filt data accept Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1700[0...n] HLA_840, HLA_DBSI	Force controller loop gain / F_ctrl loop_gain Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.0 [N/V]	Calculated: CALC_MOD_EQU Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000000000.0 [N/V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [N/V]
p1701[0...n] SERVO_840, SERVO_DBSI	Current controller reference model dead time / I_ctrRefMod t_dead Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1.000	Access level: 3 Function diagram: 5714 Unit selection: - Expert list: 1 Factory setting: 1.000
p1703[0...n] SERVO_840, SERVO_DBSI	Isq current controller precontrol scaling / Isq_ctr_prectrScal Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 200.0 [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [%]
p1715[0...n] HLA_840, HLA_DBSI	Force controller P gain / F_ctrl Kp Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.000	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000.000	Access level: 3 Function diagram: 4970 Unit selection: - Expert list: 1 Factory setting: 0.000
p1715[0...n] SERVO_840, SERVO_DBSI	Current controller P gain / I_ctrl Kp Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000 [V/A]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: 18_1 Scaling: - Max: 100000.000 [V/A]	Access level: 3 Function diagram: 5714, 7017 Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [V/A]

p1716[0...n] HLA_840, HLA_DBSI	Force controller P gain weakening / F_ctrl Kp red Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.1 [%]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.0 [%]	Access level: 3 Function diagram: 4970 Unit selection: - Expert list: 1 Factory setting: 40.0 [%]
p1717[0...n] HLA_840, HLA_DBSI	Force controller integral time / F_ctrl Tn Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2000.00 [ms]	Access level: 3 Function diagram: 4970 Unit selection: - Expert list: 1 Factory setting: 40.00 [ms]
p1717[0...n] SERVO_840, SERVO_DBSI	Current controller integral-action time / I_ctrl Tn Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.00 [ms]	Access level: 3 Function diagram: 5714, 6700, 6714, 7017 Unit selection: - Expert list: 1 Factory setting: 2.00 [ms]
p1718[0...n] HLA_840, HLA_DBSI	Force controller D component smoothing time constant / F_ctrl D comp T Can be changed: T Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.250 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.000 [ms]	Access level: 3 Function diagram: 4970 Unit selection: - Expert list: 1 Factory setting: 0.500 [ms]
p1719[0...n] HLA_840, HLA_DBSI	Force controller derivative-action time / F_ctrl t_deriv Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -10000.0 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000.0 [ms]	Access level: 3 Function diagram: 4970 Unit selection: - Expert list: 1 Factory setting: 0.0 [ms]
p1720[0...n] HLA_840, HLA_DBSI	Force controller precontrol factor / F_ctrl prectr fact Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.0 [%]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 120.0 [%]	Access level: 3 Function diagram: 4970 Unit selection: - Expert list: 1 Factory setting: 100.0 [%]

p1721[0...n]	Precontrol filter activation / Prectrl_filt act		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: DDS, p0180	Function diagram: 4970
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 bin

p1722[0...n]	Precontrol filter type / Prectrl_filt type		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: Integer16	Dynamic index: DDS, p0180	Function diagram: 4970
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1	2	1

p1724[0...n]	Precontrol filter denominator natural frequency / Prectrl_filt fn_den		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4970
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	1999.0 [Hz]

p1725[0...n]	Precontrol filter denominator damping / Prectrl_filt D_den		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4970
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	0.001	10.000	0.700

p1726[0...n]	Precontrol filter numerator natural frequency / Prectrl_filt fn_num		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: CALC_MOD_ALL	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4970
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	1999.0 [Hz]

p1727[0...n]	Precontrol filter numerator damping / Prectrl_filt D_num		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4970
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000	10.000	0.700

r1732 SERVO_840, SERVO_DBSI	CO: Direct-axis voltage setpoint / Direct U set Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Vrms]	Calculated: - Dynamic index: - Unit group: 5_1 Scaling: p2001 Max: - [Vrms]	Access level: 3 Function diagram: 5700, 5714, 5718 Unit selection: p0505 Expert list: 1 Factory setting: - [Vrms]
r1733 SERVO_840, SERVO_DBSI	CO: Quadrature-axis voltage setpoint / Quad U set Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: - [Vrms]	Calculated: - Dynamic index: - Unit group: 5_1 Scaling: p2001 Max: - [Vrms]	Access level: 3 Function diagram: 5019, 5700, 5714 Unit selection: p0505 Expert list: 1 Factory setting: - [Vrms]
p1734[0...n] SERVO_840, SERVO_DBSI	Isq current controller precontrol eddy current compensation drop / Isq_ctr_prctr drop Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 200.0 [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10.0 [%]
p1735[0...n] SERVO_840, SERVO_DBSI	Isq current controller prectrl eddy current comp time constant / Isq_ctrl_prectrl Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5.00 [ms]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.75 [ms]
p1752[0...n] SERVO_840, SERVO_DBSI	Motor model changeover speed operation with encoder / MotMod n_chgov enc Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [rpm]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 210000.00 [rpm]
p1752[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Motor model with encoder changeover velocity / MotMod enc v_chgov Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [m/min]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 1000.00 [m/min]

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p1755[0...n]	Motor model changeover speed encoderless operation / MotMod n_chgSnsorI		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_REG	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: -
	P-Group: Closed-loop control	Unit group: 3_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	210000.00 [rpm]	210000.00 [rpm]

p1755[0...n]	Motor model changeover velocity encoderless operation / MotMod v_chgSnsorI		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: CALC_MOD_REG	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: -
	P-Group: Closed-loop control	Unit group: 4_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [m/min]	1000.00 [m/min]	1000.00 [m/min]

p1756	Motor model changeover speed hysteresis / MotMod n_chgov hys		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0 [%]	90.0 [%]	5.0 [%]

p1756	Motor model changeover velocity hysteresis / MotMod v_chgov hys		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0 [%]	90.0 [%]	5.0 [%]

r1778[0...2]	Motor model flux angle difference / MotMod ang diff		
SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: p2005	Expert list: 1
	Min:	Max:	Factory setting:
	- [°]	- [°]	- [°]

p1780[0...n]	Motor model adaptation configuration / MotMod adpt config		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: DDS, p0180	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0000 0000 bin

p1780[0...n] SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	Motor/converter model adaptation configuration / MotMod adpt config		
	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: DDS, p0180	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: 0000 0001 0010 1000 bin
p1795[0...n] SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	Motor model kT adaptation smoothing time / MotMod kT t_smth		
	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: ASM, SESM, REL, RESM	Scaling: -	Expert list: 1
	Min: 1 [ms]	Max: 10000 [ms]	Factory setting: 100 [ms]
r1797 SERVO_840 (Ext M_ctrl, Lin), SERVO_DBSI (Ext M_ctrl, Lin)	Motor model kT adaptation corrective value / MotMod kT corr		
	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: ASM, SESM, REL, RESM	Scaling: -	Expert list: 1
	Min: - [N/Arms]	Max: - [N/Arms]	Factory setting: - [N/Arms]
r1797 SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	Motor model kT adaptation corrective value / MotMod kT corr		
	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: ASM, SESM, REL, RESM	Scaling: -	Expert list: 1
	Min: - [Nm/A]	Max: - [Nm/A]	Factory setting: - [Nm/A]
p1800[0...n] HLA_840, HLA_DBSI	Manipulated variable filter activation / ManVarFilt act		
	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: DDS, p0180	Function diagram: 4966
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: 0000 bin
p1800[0...n] SERVO_840, SERVO_DBSI	Pulse frequency setpoint / Pulse freq set		
	Can be changed: T, U	Calculated: CALC_MOD_ALL	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 8021
	P-Group: Modulation	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 1.000 [kHz]	Max: 32.000 [kHz]	Factory setting: 4.000 [kHz]

p1800 A_INF_840	Pulse frequency / Pulse frequency Can be changed: T, U Data type: FloatingPoint32 P-Group: Modulation Not for motor type: - Min: 1.000 [kHz]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16.000 [kHz]	Access level: 4 Function diagram: 8021 Unit selection: - Expert list: 1 Factory setting: 8.000 [kHz]
p1801[0...n] HLA_840, HLA_DBSI	Manipulated variable filter type / ManVarFilt type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 4966 Unit selection: - Expert list: 1 Factory setting: 1
r1801 SERVO_840, SERVO_DBSI	Actual pulse frequency / Pulse freq act Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [kHz]	Calculated: - Dynamic index: - Unit group: - Scaling: p2000 Max: - [kHz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [kHz]
r1801 A_INF_840, S_INF_840	Actual pulse frequency / Pulse freq act Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [kHz]	Calculated: - Dynamic index: - Unit group: - Scaling: p2000 Max: - [kHz]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [kHz]
p1802[0...n] HLA_840, HLA_DBSI	Manipulated variable filter denominator natural frequency / ManVarFilt fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.5 [Hz]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 4966 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]
p1803[0...n] HLA_840, HLA_DBSI	Manipulated variable filter denominator damping / ManVar_filt D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.001	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 4966 Unit selection: - Expert list: 1 Factory setting: 0.700

p1804[0...n]	Manipulated variable filter numerator natural freq. / ManVarFilt fn_num		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4966
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	1999.0 [Hz]
p1805[0...n]	Manipulated variable filter numerator damping / ManVarFilt D_num		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4966
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000	10.000	0.700
p1810	Modulator configuration / Modulator config		
SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Modulation	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0000 0000 bin
p1810	Modulator configuration / Modulator config		
A_INF_840, S_INF_840	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Modulation	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	1000 0100 0001 0000 bin
p1811	Pulse frequency wobulation amplitude / Puls wobb ampl		
A_INF_840, S_INF_840	Can be changed: T	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Modulation	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0 [%]	20 [%]	0 [%]
p1815	Phase for PWM generation subgroup / Ph for PWM subgr		
A_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Modulation	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0001 bin

p1816 A_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Set phase for PWM generation manually / Set Ph for PWM Can be changed: T, U Data type: Integer16 P-Group: Modulation Not for motor type: - Min: -1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -1
p1818 CU_I_840, CU_NX_840	Phase for PWM generation configuration / Ph for PWM config Can be changed: T Data type: Integer16 P-Group: Modulation Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p1819 S_INF_840, SERVO_840, SERVO_DBSI	Phase for PWM generation / Ph for PWM Can be changed: T, U Data type: Integer16 P-Group: Modulation Not for motor type: - Min: -1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -1
p1819 A_INF_840	Phase for PWM generation / Ph for PWM Can be changed: T, U Data type: Integer16 P-Group: Modulation Not for motor type: - Min: -1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1820[0...n] HLA_840, HLA_DBSI	Invert output voltage / U_output inv Can be changed: C2(3) Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: 4966 Unit selection: - Expert list: 1 Factory setting: 0
p1821[0...n] HLA_840, HLA_DBSI	Direction / Direction Can be changed: C2(3) Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p1821[0...n] SERVO_840, SERVO_DBSI	Direction of rotation / Dir of rot Can be changed: C2(3) Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: 4704, 4710, 4711, 4715, 5730, 6730, 6731, 6732 Unit selection: - Expert list: 1 Factory setting: 0
p1821[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Direction / Direction Can be changed: C2(3) Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: 4704, 4710, 4711, 4715, 5730, 6730, 6731, 6732 Unit selection: - Expert list: 1 Factory setting: 0
p1822 SERVO_840, SERVO_DBSI	Power unit line phases monitoring tolerance time / PU ph mon t_tol Can be changed: T Data type: Unsigned32 P-Group: - Not for motor type: - Min: 500 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 540000 [ms]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1000 [ms]
p1827 A_INF_840, S_INF_840	Infeed compensation valve lockout time operating mode / INFcomp t_lockMode Can be changed: T, U Data type: Integer16 P-Group: Modulation Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1830[0...n] HLA_840, HLA_DBSI	Factor plane adaptation positive / Fact pl_adpt pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 10.0 [%]	Calculated: CALC_MOD_EQU Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 200.0 [%]	Access level: 3 Function diagram: 4965, 4970, 4975 Unit selection: - Expert list: 1 Factory setting: 100.0 [%]

p1831[0...n] HLA_840, HLA_DBSI	Factor plane adaptation negative / Fact pl_adpt neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 10.0 [%]	Calculated: CALC_MOD_EQU Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 200.0 [%]	Access level: 3 Function diagram: 4965, 4970, 4975 Unit selection: - Expert list: 1 Factory setting: 100.0 [%]
p1832[0...n] HLA_840, HLA_DBSI	Valve offset / Valve offset Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: -10.0000 [V]	Calculated: CALC_MOD_ALL Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 10.0000 [V]	Access level: 3 Function diagram: 4966 Unit selection: - Expert list: 1 Factory setting: 0.0000 [V]
p1833[0...n] HLA_840, HLA_DBSI	Transition point compensation Q1 positive zero range / Trans pt Q1 pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.01 [%]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 95.00 [%]	Access level: 3 Function diagram: 4966, 4975 Unit selection: - Expert list: 1 Factory setting: 0.01 [%]
r1833[0...2] A_INF_840, S_INF_840	Setpoints phase currents for HW current control / Set_I Can be changed: - Data type: FloatingPoint32 P-Group: Modulation Not for motor type: - Min: - [A]	Calculated: - Dynamic index: - Unit group: 6_5 Scaling: - Max: - [A]	Access level: 4 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [A]
p1834[0...n] HLA_840, HLA_DBSI	Transition point compensation U1 positive zero range / Trans pt U1 pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.00 [%]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 95.00 [%]	Access level: 3 Function diagram: 4966, 4975 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p1835[0...n] HLA_840, HLA_DBSI	Transition point compensation rounding 1 positive zero range / Trans pt rnd 1 pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 30.00 [%]	Access level: 3 Function diagram: 4966, 4975 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]

p1836[0...n] HLA_840, HLA_DBSI	Transition point compensation Q1 negative zero range / Trans pt Q1 neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.01 [%]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 95.00 [%]	Access level: 3 Function diagram: 4966, 4975 Unit selection: - Expert list: 1 Factory setting: 0.01 [%]
p1837[0...n] HLA_840, HLA_DBSI	Transition point compensation U1 negative zero range / Trans pt U1 neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.00 [%]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 95.00 [%]	Access level: 3 Function diagram: 4966, 4975 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p1838[0...n] HLA_840, HLA_DBSI	Transition point compensation rounding 1 negative zero range / Trans pt rnd 1 neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 30.00 [%]	Access level: 3 Function diagram: 4966, 4975 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
r1838.0...15 SERVO_840, SERVO_DBSI	CO/BO: Gating unit status word 1 / Gating unit ZSW1 Can be changed: - Data type: Unsigned16 P-Group: Modulation Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r1838.0...15 A_INF_840, S_INF_840	CO/BO: Gating unit status word 1 / Gating unit ZSW1 Can be changed: - Data type: Unsigned16 P-Group: Modulation Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p1839[0...n] HLA_840, HLA_DBSI	Transition point compensation Q2 positive / Trans pt Q2 pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.20 [%]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 95.00 [%]	Access level: 3 Function diagram: 4966, 4975 Unit selection: - Expert list: 1 Factory setting: 10.00 [%]

p1840[0...n]	Transition point compensation U2 positive / Trans pt U2 pos		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: CALC_MOD_REG	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4966, 4975
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [%]	95.00 [%]	10.00 [%]
p1841[0...n]	Transition point compensation rounding 2 positive / Trans pt rnd 2 pos		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: CALC_MOD_REG	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4966, 4975
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [%]	30.00 [%]	2.50 [%]
p1842[0...n]	Transition point compensation Q2 negative / Trans pt Q2 neg		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: CALC_MOD_REG	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4966, 4975
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [%]	95.00 [%]	10.00 [%]
p1843[0...n]	Transition point compensation U2 negative / Trans pt U2 neg		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: CALC_MOD_REG	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4966, 4975
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [%]	95.00 [%]	10.00 [%]
p1844[0...n]	Transition point compensation rounding 2 negative / Trans pt rnd 2 neg		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: CALC_MOD_REG	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4966, 4975
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [%]	30.00 [%]	2.50 [%]
p1845[0...n]	Transition point compensation Q3 positive saturation / TransPt Q3 pos sat		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: CALC_MOD_REG	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4975
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.20 [%]	100.00 [%]	100.00 [%]

p1846[0...n] HLA_840, HLA_DBSI	Transition point compensation U3 positive saturation / TransPt U3 pos sat Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.20 [%]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.00 [%]	Access level: 3 Function diagram: 4975 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p1847[0...n] HLA_840, HLA_DBSI	Transition point compensation Q3 negative saturation / TransPt Q3 neg sat Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.20 [%]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.00 [%]	Access level: 3 Function diagram: 4975 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p1848[0...n] HLA_840, HLA_DBSI	Transition point compensation U3 negative saturation / TransPt U3 neg sat Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.20 [%]	Calculated: CALC_MOD_REG Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.00 [%]	Access level: 3 Function diagram: 4975 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p1850[0...n] HLA_840, HLA_DBSI	Control voltage limiting positive / U_ctrl limit pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [V]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.0 [V]	Access level: 3 Function diagram: 4966 Unit selection: - Expert list: 1 Factory setting: 10.0 [V]
p1851[0...n] HLA_840, HLA_DBSI	Control voltage limiting negative / U_ctrl limit neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: -10.0 [V]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 0.0 [V]	Access level: 3 Function diagram: 4966 Unit selection: - Expert list: 1 Factory setting: -10.0 [V]
p1882 A_INF_840 (SW_gating unit)	Gating unit Flattop modulation angle offset / Flattop angle Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.0 [ms]	Calculated: CALC_MOD_REG Dynamic index: - Unit group: - Scaling: - Max: 10000.0 [ms]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 80.0 [ms]

p1903 HLA_840, HLA_DBSI	BI: Data identification control / Data ID ctrl Can be changed: T, U Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p1909 HLA_840, HLA_DBSI	Data identification without enabling activation / Data ID w/o enab Can be changed: T, U Data type: Unsigned16 P-Group: Motor identification Not for motor type: - Min: -	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p1909[0...n] SERVO_840, SERVO_DBSI	Motor data identification control word / MotID STW Can be changed: T Data type: Unsigned16 P-Group: Motor identification Not for motor type: - Min: -	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0010 0111 0000 0000 bin
p1909[0...n] SERVO_840 (Ext M_ctrl, Lin), SERVO_DBSI (Ext M_ctrl, Lin)	Motor data identification control word / MotID STW Can be changed: T Data type: Unsigned16 P-Group: Motor identification Not for motor type: - Min: -	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0110 0111 0000 0000 bin
p1909[0...n] SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	Motor data identification control word / MotID STW Can be changed: T Data type: Unsigned16 P-Group: Motor identification Not for motor type: - Min: -	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0110 0111 0000 0000 bin
p1909[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Motor data identification control word / MotID STW Can be changed: T Data type: Unsigned16 P-Group: Motor identification Not for motor type: - Min: -	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0010 0111 0000 0000 bin

p1910 HLA_840, HLA_DBSI	Valve offset calibration standstill activation / Valv_off_cal act Can be changed: T, U Data type: Integer16 P-Group: Motor identification Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1910 SERVO_840, SERVO_DBSI	Motor data identification routine stationary (standstill) / MotID standstill Can be changed: T Data type: Integer16 P-Group: Motor identification Not for motor type: - Min: -3	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r1912 SERVO_840, SERVO_DBSI	Stator resistance identified / R_stator ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [ohm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ohm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [ohm]
r1913 SERVO_840, SERVO_DBSI	Rotor time constant identified / Tc_rotor ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: PMSM, RESM Min: - [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [ms]
r1915 SERVO_840, SERVO_DBSI	Stator inductance identified / L_stator ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [mH]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mH]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mH]
r1925 SERVO_840, SERVO_DBSI	Threshold voltage identified / U_threshold ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [Vrms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Vrms]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Vrms]

r1927 SERVO_840, SERVO_DBSI	Rotor resistance identified / R_rotor ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [ohm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ohm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [ohm]
r1932[0...19] SERVO_840, SERVO_DBSI	d inductance identified / Ld ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [mH]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mH]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mH]
r1933[0...19] SERVO_840, SERVO_DBSI	d inductance identification current / Ld I_ID Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Arms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Arms]
r1934[0...9] SERVO_840, SERVO_DBSI	q inductance identified / Lq ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [mH]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mH]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mH]
r1935[0...20] SERVO_840, SERVO_DBSI	Identification current / I_ID Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Arms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Arms]
r1935[0...20] SERVO_840 (Lin), SERVO_DBSI (Lin)	Identification current / I_ID Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Arms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Arms]

r1936 SERVO_840, SERVO_DBSI	Magnetizing inductance identified / L_H ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [mH]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mH]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mH]
r1937[0...10] SERVO_840, SERVO_DBSI	Torque constant identified / kT ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [Nm/A]	Calculated: - Dynamic index: - Unit group: 28_1 Scaling: - Max: - [Nm/A]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: - [Nm/A]
r1937[0...10] SERVO_840 (Lin), SERVO_DBSI (Lin)	Force constant identified / kT ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [N/Arms]	Calculated: - Dynamic index: - Unit group: 29_1 Scaling: - Max: - [N/Arms]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: - [N/Arms]
r1938 SERVO_840, SERVO_DBSI	Voltage constant identified / kE ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [Vrms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Vrms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Vrms]
r1938 SERVO_840 (Lin), SERVO_DBSI (Lin)	Voltage constant identified / kE ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [Vrms s/m]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Vrms s/m]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Vrms s/m]
r1939 SERVO_840, SERVO_DBSI	Reluctance torque constant identified / kT_reluct ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [mH]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mH]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mH]

r1939 SERVO_840 (Lin), SERVO_DBSI (Lin)	Reluctance force constant identified / kT_reluct ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [mH]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mH]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mH]
r1947 SERVO_840, SERVO_DBSI	Optimum load angle identified / phi_load ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [°]
r1948 SERVO_840, SERVO_DBSI	Magnetizing current identified / I_mag ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Arms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Arms]
r1949.0...1 HLA_840, HLA_DBSI	CO/BO: Status word data identification / ZSW data ID Can be changed: - Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r1950[0...39] SERVO_840, SERVO_DBSI	Voltage emulation error voltage values / U_error U_values Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [V]
r1951[0...19] SERVO_840, SERVO_DBSI	Voltage emulation error current values / U_error I_error Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [A]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [A]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [A]

p1952[0...n] SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	Voltage emulation error final value / U_error final val Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.000 [V]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.000 [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [V]
p1953[0...n] SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	Voltage emulation error current offset / U_error I_offset Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.000 [A]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.000 [A]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [A]
p1954[0...n] SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	Voltage emulation error semiconductor voltage / U_error U_semi Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: -10.000 [V]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000 [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [V]
p1955[0...3] HLA_840, HLA_DBSI	Valve identification voltage / Valve ID U Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10.00 [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 0.00 [V] [1] 10.00 [V] [2] 2.00 [V] [3] 2.00 [V]
p1956[0...1] HLA_840, HLA_DBSI	Valve identification measuring distance / Valve ID dist Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.0 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.0 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 10.0 [%] [1] 90.0 [%]

p1957[0...1]	Valve identification measured value / Valve ID val		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Motor identification	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1000	[0] 100
			[1] 4
p1958[0...4]	Valve identification time / Valve ID t		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Motor identification	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [s]	100.00 [s]	[0] 0.10 [s]
			[1] 0.10 [s]
			[2] 0.10 [s]
			[3] 4.00 [s]
			[4] 4.00 [s]
p1958[0...n]	Rotating measurement ramp-up/ramp-down time / Rot meas t_r up/dn		
SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: -
	P-Group: Motor identification	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1.00 [s]	999999.00 [s]	-1.00 [s]
p1958[0...n]	Moving measurement ramp-up/ramp-down time / Mov meas t_r up/dn		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: -
	P-Group: Motor identification	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1.00 [s]	999999.00 [s]	-1.00 [s]
p1959[0...n]	Data identification moving configuration / Dat_ID mov config		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: CALC_MOD_ALL	Access level: 2
	Data type: Unsigned16	Dynamic index: DDS, p0180	Function diagram: -
	P-Group: Motor identification	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0001 0011 1111 bin

p1959[0...n] SERVO_840, SERVO_DBSI	Rotating measurement configuration / Rot meas config Can be changed: T Data type: Unsigned16 P-Group: Motor identification Not for motor type: REL Min: -	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 1110 1110 0111 bin
p1959[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Moving measurement configuration / Mov meas config Can be changed: T Data type: Unsigned16 P-Group: Motor identification Not for motor type: REL Min: -	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 1110 1110 0111 bin
p1960 HLA_840, HLA_DBSI	Moving measurement selection / Mov meas sel Can be changed: T, U Data type: Integer16 P-Group: Motor identification Not for motor type: REL Min: -3	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1960 SERVO_840, SERVO_DBSI	Rotating measurement selection / Rot meas sel Can be changed: T Data type: Integer16 P-Group: Motor identification Not for motor type: REL Min: -3	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1960 SERVO_840 (Lin), SERVO_DBSI (Lin)	Moving measurement selection / Mov meas sel Can be changed: T Data type: Integer16 P-Group: Motor identification Not for motor type: REL Min: -3	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r1961[0...511] HLA_840, HLA_DBSI	Valve identification voltage characteristic / Valve ID char U Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: RESM Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [V]

r1962[0...511] HLA_840, HLA_DBSI	Valve identification characteristic velocity / Valve ID char v Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: RESM Min: - [m/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [m/min]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [m/min]
r1962[0...9] SERVO_840, SERVO_DBSI	Saturation characteristic magnetizing current identified / Sat_char I_mag Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: PMSM, REL, RESM Min: - [A]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [A]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [A]
r1963[0...511] HLA_840, HLA_DBSI	Valve identification system pressure characteristic / Valve ID char pp Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: RESM Min: - [bar]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [bar]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [bar]
r1963[0...9] SERVO_840, SERVO_DBSI	Saturation characteristic rotor flux identified / Sat_char flux Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: PMSM, REL, RESM Min: - [mVs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mVs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mVs]
r1964[0...511] HLA_840, HLA_DBSI	Valve identification characteristic force / Valve ID char F Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: RESM Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: - Max: - [N]	Access level: 4 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r1969 SERVO_840, SERVO_DBSI	Moment of inertia identified / M_inert ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: REL Min: - [kgm²]	Calculated: - Dynamic index: - Unit group: 25_1 Scaling: - Max: - [kgm²]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: - [kgm²]

r1969 SERVO_840 (Lin), SERVO_DBSI (Lin)	High load inertia identified / High load inert id Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: REL Min: - [kg]	Calculated: - Dynamic index: - Unit group: 27_1 Scaling: - Max: - [kg]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: - [kg]
r1973[0...1] SERVO_840, SERVO_DBSI	Encoder pulse number identified / Pulse no ident Can be changed: - Data type: Integer32 P-Group: Motor identification Not for motor type: REL Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p1980[0...n] SERVO_840, SERVO_DBSI	PolID technique / PolID technique Can be changed: T, U Data type: Integer16 P-Group: Motor identification Not for motor type: - Min: 0	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 99	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 99
p1981[0...n] SERVO_840, SERVO_DBSI	PolID distance max / PolID distance max Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0 [°]	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 180 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10 [°]
p1982[0...n] SERVO_840, SERVO_DBSI	PolID selection / PolID selection Can be changed: T Data type: Integer16 P-Group: Motor identification Not for motor type: - Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1983 SERVO_840, SERVO_DBSI	PolID test / PolID test Can be changed: T, U Data type: Unsigned16 P-Group: Motor identification Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

r1984 SERVO_840, SERVO_DBSI	PolID angular difference / PolID ang diff Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [°] Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [°] Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [°]
r1985 HLA_840, HLA_DBSI	Chld v/U characteristic velocity measured / Chld v/U v meas Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [m/min] Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [m/min] Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [m/min]
r1985 SERVO_840, SERVO_DBSI	PolID saturation curve / PolID sat_char Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [Arms] Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Arms] Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Arms]
r1986 HLA_840, HLA_DBSI	Chld v/U characteristic velocity parameterized / Chld v/U v par Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [m/min] Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [m/min] Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [m/min]
r1986 SERVO_840, SERVO_DBSI	PolID saturation characteristic 2 / PoleID sat_curve 2 Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r1987 HLA_840, HLA_DBSI	Chld v/U characteristic voltage / Chld v/U U Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [V] Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [V] Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [V]

r1987 SERVO_840, SERVO_DBSI	PolID trigger characteristic / PolID trig_char Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [%]
p1990 SERVO_840, SERVO_DBSI	Encoder adjustment determine angular commutation offset / Enc_adj det ang Can be changed: T, U Data type: Integer16 P-Group: Motor identification Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p1991[0...n] SERVO_840, SERVO_DBSI	Motor changeover angular commutation correction / Ang_com corr Can be changed: T Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -180 [°]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 180 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [°]
r1992.0...15 SERVO_840, SERVO_DBSI	CO/BO: PolID diagnostics / PolID diag Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r1992.0...15 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO/BO: PolID diagnostics / PolID diag Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p1993[0...n] SERVO_840, SERVO_DBSI	PolID motion-based current / PolID I mtn_bas Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00 [Arms]	Calculated: CALC_MOD_EQU Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 20000.00 [Arms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [Arms]

p1994[0...n] SERVO_840, SERVO_DBSI	PolID motion-based rise time / PolID T mtn_bas Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 2500 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100 [ms]
p1995[0...n] SERVO_840, SERVO_DBSI	PolID motion-based gain / PolID kp mtn_bas Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.0000 [Nms/rad]	Calculated: CALC_MOD_CON Dynamic index: MDS, p0130 Unit group: 17_1 Scaling: - Max: 999999.0000 [Nms/rad]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 0.3000 [Nms/rad]
p1995[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	PolID motion-based gain / PolID kp mtn_bas Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.0000 [Ns/m]	Calculated: CALC_MOD_CON Dynamic index: MDS, p0130 Unit group: 24_2 Scaling: - Max: 999999.0000 [Ns/m]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 10.0000 [Ns/m]
p1996[0...n] SERVO_840, SERVO_DBSI	PolID motion-based integral time / PolID Tn mtn_bas Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.0 [ms]	Calculated: CALC_MOD_CON Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 500.0 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 2.0 [ms]
p1997[0...n] SERVO_840, SERVO_DBSI	PolID motion-based smoothing time / PolID t_sm mtn_bas Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.0 [ms]	Calculated: CALC_MOD_CON Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 50.0 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [ms]
p2000 HLA_840, HLA_DBSI	Reference velocity / v_ref Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 0.600 [m/min]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 600.000 [m/min]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 120.000 [m/min]

p2000 SERVO_840, SERVO_DBSI	Reference speed reference frequency / n_ref f_ref Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 6.00 [rpm]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 210000.00 [rpm]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 3000.00 [rpm]
p2000 SERVO_840 (Lin), SERVO_DBSI (Lin)	Reference velocity reference frequency / v_ref f_ref Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 0.60 [m/min]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 700.00 [m/min]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 120.00 [m/min]
p2000 A_INF_840, B_INF_840, S_INF_840	Reference frequency / f_ref Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 0.10 [Hz]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [Hz]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 50.00 [Hz]
p2000 TM41	Reference speed reference frequency / n_ref f_ref Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 6.00 [rpm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 210000.00 [rpm]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 3000.00 [rpm]
p2000 ENC_840	Reference speed reference frequency / n_ref f_ref Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 6.00 [rpm]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 210000.00 [rpm]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 3000.00 [rpm]
p2000 ENC_840 (Lin_enc)	Reference velocity reference frequency / v_ref f_ref Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 0.60 [m/min]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 600.00 [m/min]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 120.00 [m/min]

p2001 HLA_840, HLA_DBSI	Reference voltage / Reference voltage Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 10 [V]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 100000 [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1000 [V]
p2001 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI, TM41	Reference voltage / Reference voltage Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 10 [Vrms]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 100000 [Vrms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1000 [Vrms]
p2002 HLA_840, HLA_DBSI	Reference pressure / p_ref Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 0.10 [bar]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 5000.00 [bar]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [bar]
p2002 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI, TM41	Reference current / I_ref Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 0.10 [Arms]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 100000.00 [Arms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [Arms]
p2003 HLA_840, HLA_DBSI	Reference force / F_ref Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 0.01 [N]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: 8_2 Scaling: - Max: 20000000.00 [N]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 100.00 [N]
p2003 SERVO_840, SERVO_DBSI, TM41	Reference torque / M_ref Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 0.01 [Nm]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: 7_2 Scaling: - Max: 20000000.00 [Nm]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 1.00 [Nm]

p2003 SERVO_840 (Lin), SERVO_DBSI (Lin)	Reference force / Reference force Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 0.01 [N]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: 8_2 Scaling: - Max: 20000000.00 [N]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 100.00 [N]
r2004 HLA_840, HLA_DBSI	Reference power / P_ref Can be changed: - Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: - [kW]	Calculated: - Dynamic index: - Unit group: 14_10 Scaling: - Max: - [kW]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [kW]
r2004 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI, TM41	Reference power / P_ref Can be changed: - Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: - [kW]	Calculated: - Dynamic index: - Unit group: 14_10 Scaling: - Max: - [kW]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [kW]
p2005 A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	Reference angle / Reference angle Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 90.00 [°]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 180.00 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 90.00 [°]
p2006 A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	Reference temperature / Ref temp Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 50.00 [°C]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: 21_1 Scaling: - Max: 300.00 [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 100.00 [°C]
p2007 SERVO_840, SERVO_DBSI, TM41	Reference acceleration / a_ref Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 0.01 [rev/s²]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 500000.00 [rev/s²]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.01 [rev/s²]

p2007 HLA_840, HLA_DBSI, SERVO_840 (Lin), SERVO_DBSI (Lin)	Reference acceleration / a_ref Can be changed: T Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 0.01 [m/s ²]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: 22_1 Scaling: - Max: 10000.00 [m/s ²]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 0.01 [m/s ²]
r2019[0...7] CU_I_840	Comm IF error statistics / Comm err Can be changed: - Data type: Unsigned32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2032 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Master control control word effective / PcCtrl STW eff Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2032 SERVO_840 (Lin), SERVO_DBSI (Lin)	Master control control word effective / PcCtrl STW eff Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2032 A_INF_840, B_INF_840, S_INF_840	Master control control word effective / PcCtrl STW eff Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p2037 A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	IF1 PROFIdrive STW1.10 = 0 mode / IF1 PD STW1.10=0 Can be changed: T Data type: Integer16 P-Group: Communications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p2038 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	IF1 PROFIdrive STW/ZSW interface mode / PD STW/ZSW IF mode Can be changed: T Data type: Integer16 P-Group: Communications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p2038 SERVO_840 (EPOS, Pos ctrl, Pos ctrl), SERVO_DBSI (EPOS, Pos ctrl, Pos ctrl)	IF1 PROFIdrive STW/ZSW interface mode / PD STW/ZSW IF mode Can be changed: T Data type: Integer16 P-Group: Communications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p2039 CU_I_840	Select debug monitor interface / Debug mon select Can be changed: T, U Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p2040 CU_I_840, CU_LINK, CU_NX_840	COMM INT monitoring time / COMM INT t_mon Can be changed: T, U Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1999999 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 20 [ms]
r2043.0...2 CU_I_840, CU_NX_840	BO: IF1 PROFIdrive PZD state / IF1 PD PZD state Can be changed: - Data type: Unsigned8 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2410 Unit selection: - Expert list: 1 Factory setting: -
p2044 A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	IF1 PROFIdrive fault delay / IF1 PD fault delay Can be changed: T, U Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 0 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100 [s]	Access level: 3 Function diagram: 2410 Unit selection: - Expert list: 1 Factory setting: 0 [s]

p2045 CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	CI: PB/PN clock synchronous controller sign-of-life signal source / PB/PN ctr SoL s_s Can be changed: T Data type: Unsigned32 / Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2410 Unit selection: - Expert list: 1 Factory setting: 0
p2048 CU_I_840, CU_NX_840	IF1 PROFIdrive PZD sampling time / IF1 PZD t_samp Can be changed: C1(3) Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 1.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 4.00 [ms]
p2049 SERVO_840, SERVO_DBSI	PROFIdrive isochronous operation asynchronous participation / Isochron async Can be changed: C1(3) Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r2050[0...19] CU_I_840, CU_NX_840	CO: IF1 PROFIdrive PZD receive word / IF1 PZD rcv word Can be changed: - Data type: Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2050[0...21] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	CO: IF1 PROFIdrive PZD receive word / IF1 PZD rcv word Can be changed: - Data type: Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2440, 2468 Unit selection: - Expert list: 1 Factory setting: -
r2050[0...9] A_INF_840, B_INF_840, S_INF_840	CO: IF1 PROFIdrive PZD receive word / IF1 PZD rcv word Can be changed: - Data type: Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r2050[0...4] TB30, TM120, TM150, TM15DI_DO, TM31	CO: IF1 PROFIdrive PZD receive word / IF1 PZD recv word Can be changed: - Data type: Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2050[0...3] ENC_840	CO: IF1 PROFIdrive PZD receive word / IF1 PZD recv word Can be changed: - Data type: Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2440, 2468 Unit selection: - Expert list: 1 Factory setting: -
p2051[0...24] CU_I_840, CU_NX_840	CI: IF1 PROFIdrive PZD send word / IF1 PZD send word Can be changed: T, U Data type: Unsigned32 / Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p2051[0...27] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	CI: IF1 PROFIdrive PZD send word / IF1 PZD send word Can be changed: T, U Data type: Unsigned32 / Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2470 Unit selection: - Expert list: 1 Factory setting: 0
p2051[0...9] A_INF_840, B_INF_840, S_INF_840	CI: IF1 PROFIdrive PZD send word / IF1 PZD send word Can be changed: T, U Data type: Unsigned32 / Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p2051[0...4] TB30, TM120, TM150, TM15DI_DO, TM31	CI: IF1 PROFIdrive PZD send word / IF1 PZD send word Can be changed: T, U Data type: Unsigned32 / Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p2051[0...11] ENC_840	CI: IF1 PROFIdrive PZD send word / IF1 PZD send word Can be changed: T, U Data type: Unsigned32 / Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2470 Unit selection: - Expert list: 1 Factory setting: 0
r2053[0...24] CU_I_840, CU_NX_840	IF1 PROFIdrive diagnostics PZD send word / IF1 diag send word Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2053[0...27] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	IF1 PROFIdrive diagnostics PZD send word / IF1 diag send word Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2450, 2470 Unit selection: - Expert list: 1 Factory setting: -
r2053[0...9] A_INF_840, B_INF_840, S_INF_840	IF1 PROFIdrive diagnostics PZD send word / IF1 diag send word Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2053[0...4] TB30, TM120, TM150, TM15DI_DO, TM31	IF1 PROFIdrive diagnostics PZD send word / IF1 diag send word Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2053[0...11] ENC_840	IF1 PROFIdrive diagnostics PZD send word / IF1 diag send word Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2450, 2470 Unit selection: - Expert list: 1 Factory setting: -

r2054 CU_I_840, CU_LINK, CU_NX_840	COMM INT state / C INT state Can be changed: - Data type: Integer16 P-Group: Communications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 255	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2058[0...139] CU_I_840, CU_LINK, CU_NX_840	COMM INT receive configuration data / C INT E_config_dat Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2059[0...7] CU_I_840, CU_LINK, CU_NX_840	COMM INT identification data / C INT ID_dat Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2060[0...20] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	CO: IF1 PROFIdrive PZD receive double word / IF1 PZD recv DW Can be changed: - Data type: Integer32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2440, 2468 Unit selection: - Expert list: 1 Factory setting: -
r2060[0...2] ENC_840	CO: IF1 PROFIdrive PZD receive double word / IF1 PZD recv DW Can be changed: - Data type: Integer32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2440, 2468 Unit selection: - Expert list: 1 Factory setting: -
p2061[0...26] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	CI: IF1 PROFIdrive PZD send double word / IF1 PZD send DW Can be changed: T, U Data type: Unsigned32 / Integer32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2470 Unit selection: - Expert list: 1 Factory setting: 0

p2061[0...10] ENC_840	CI: IF1 PROFIdrive PZD send double word / IF1 PZD send DW Can be changed: T, U Data type: Unsigned32 / Integer32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2470 Unit selection: - Expert list: 1 Factory setting: 0
r2063[0...26] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	IF1 PROFIdrive diagnostics PZD send double word / IF1 diag send DW Can be changed: - Data type: Unsigned32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2450, 2470 Unit selection: - Expert list: 1 Factory setting: -
r2063[0...10] ENC_840	IF1 PROFIdrive diagnostics PZD send double word / IF1 diag send DW Can be changed: - Data type: Unsigned32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2450, 2470 Unit selection: - Expert list: 1 Factory setting: -
r2064[0...7] CU_I_840, CU_NX_840	PB/PN diagnostics clock cycle synchronism / PB/PN diag clock Can be changed: - Data type: Integer32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2410 Unit selection: - Expert list: 1 Factory setting: -
r2065 CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	PB/PN controller sign of life diagnostics / PB/PN ctr SoL diag Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2410 Unit selection: - Expert list: 1 Factory setting: -

r2067[0...1] A_INF_840, B_INF_840, CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	IF1 PZD maximum interconnected / IF1 PZDmaxIntercon Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p2070 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	IF1 PROFIdrive supplementary telegram receive beginning / Suppl_tel rcv beg Can be changed: T Data type: Unsigned8 P-Group: Communications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20	Access level: 3 Function diagram: 2423 Unit selection: - Expert list: 1 Factory setting: 0
p2071 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	IF1 PROFIdrive supplementary telegram send beginning / Suppl_tel send beg Can be changed: T Data type: Unsigned8 P-Group: Communications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 26	Access level: 3 Function diagram: 2423 Unit selection: - Expert list: 1 Factory setting: 0
p2072 SERVO_840, SERVO_DBSI	IF1 response receive value after PZD failure / Resp aft PZD fail Can be changed: T Data type: Unsigned32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
r2074[0...19] CU_I_840, CU_NX_840	IF1 PROFIdrive diagnostics bus address PZD receive / IF1diag addr rcv Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r2074[0...21] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	IF1 PROFIdrive diagnostics bus address PZD receive / IF1diag addr rcv Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2074[0...9] A_INF_840, B_INF_840, S_INF_840	IF1 PROFIdrive diagnostics bus address PZD receive / IF1diag addr rcv Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2074[0...4] TB30, TM120, TM150, TM15DI_DO, TM31	IF1 PROFIdrive diagnostics bus address PZD receive / IF1diag addr rcv Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2074[0...3] ENC_840	IF1 PROFIdrive diagnostics bus address PZD receive / IF1diag addr rcv Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2075[0...19] CU_I_840, CU_NX_840	IF1 PROFIdrive diagnostics telegram offset PZD receive / IF1 diag offs rcv Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2410 Unit selection: - Expert list: 1 Factory setting: -
r2075[0...21] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	IF1 PROFIdrive diagnostics telegram offset PZD receive / IF1 diag offs rcv Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2410 Unit selection: - Expert list: 1 Factory setting: -

r2075[0...9] A_INF_840, B_INF_840, S_INF_840	IF1 PROFIdrive diagnostics telegram offset PZD receive / IF1 diag offs recv Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2410 Unit selection: - Expert list: 1 Factory setting: -
r2075[0...4] TB30, TM120, TM150, TM15DI_DO, TM31	IF1 PROFIdrive diagnostics telegram offset PZD receive / IF1 diag offs recv Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2410 Unit selection: - Expert list: 1 Factory setting: -
r2075[0...3] ENC_840	IF1 PROFIdrive diagnostics telegram offset PZD receive / IF1 diag offs recv Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2410 Unit selection: - Expert list: 1 Factory setting: -
r2076[0...24] CU_I_840, CU_NX_840	IF1 PROFIdrive diagnostics telegram offset PZD send / IF1 diag offs send Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2410 Unit selection: - Expert list: 1 Factory setting: -
r2076[0...27] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	IF1 PROFIdrive diagnostics telegram offset PZD send / IF1 diag offs send Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2410 Unit selection: - Expert list: 1 Factory setting: -
r2076[0...9] A_INF_840, B_INF_840, S_INF_840	IF1 PROFIdrive diagnostics telegram offset PZD send / IF1 diag offs send Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2410 Unit selection: - Expert list: 1 Factory setting: -

r2076[0...4]	IF1 PROFIdrive diagnostics telegram offset PZD send / IF1 diag offs send		
TB30, TM120, TM150, TM15DI_DO, TM31	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: 2410
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

r2076[0...11]	IF1 PROFIdrive diagnostics telegram offset PZD send / IF1 diag offs send		
ENC_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: 2410
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

p2079	IF1 PROFIdrive PZD telegram selection extended / IF1 PZD tel ext		
CU_I_840, CU_NX_840	Can be changed: T	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 390	Max: 999	Factory setting: 999

p2079	IF1 PROFIdrive PZD telegram selection extended / IF1 PZD tel ext		
HLA_840, HLA_DBSI	Can be changed: T	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 166	Max: 999	Factory setting: 999

p2079	IF1 PROFIdrive PZD telegram selection extended / IF1 PZD tel ext		
SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 1	Max: 999	Factory setting: 136

p2079	IF1 PROFIdrive PZD telegram selection extended / IF1 PZD tel ext		
SERVO_840 (EPOS, EPOS, Pos ctrl, Pos ctrl, Spin_diag), SERVO_DBSI (EPOS, EPOS, Pos ctrl, Pos ctrl, Spin_diag)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 7	Max: 999	Factory setting: 999

p2079	IF1 PROFIdrive PZD telegram selection extended / IF1 PZD tel ext		
SERVO_840 (Pos ctrl, Pos ctrl, Spin_diag), SERVO_DBSI (Pos ctrl, Pos ctrl, Spin_diag)	Can be changed: T Data type: Integer16 P-Group: Communications Not for motor type: - Min: 999	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 999
p2079	IF1 PROFIdrive PZD telegram selection extended / IF1 PZD tel ext		
SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Can be changed: T Data type: Integer16 P-Group: Communications Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 999
p2079	IF1 PROFIdrive PZD telegram selection extended / IF1 PZD tel ext		
A_INF_840, B_INF_840, S_INF_840	Can be changed: T Data type: Integer16 P-Group: Communications Not for motor type: - Min: 370	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 999
p2079	IF1 PROFIdrive PZD telegram selection extended / IF1 PZD tel ext		
TM41	Can be changed: T Data type: Integer16 P-Group: Communications Not for motor type: - Min: 3	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 999
p2079	IF1 PROFIdrive PZD telegram selection extended / IF1 PZD tel ext		
ENC_840	Can be changed: T Data type: Integer16 P-Group: Communications Not for motor type: - Min: 81	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 999

4.2 SINAMICS parameters

p2080[0...15]	BI: IF1 binector-connector converter status word 1 / IF1 bin/con ZSW1		
A_INF_840, B_INF_840, CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2472 Unit selection: - Expert list: 1 Factory setting: 0

p2081[0...15]	BI: IF1 binector-connector converter status word 2 / IF1 bin/con ZSW2		
A_INF_840, B_INF_840, CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2472 Unit selection: - Expert list: 1 Factory setting: 0

p2082[0...15]	BI: IF1 binector-connector converter status word 3 / IF1 bin/con ZSW3		
A_INF_840, B_INF_840, CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2472 Unit selection: - Expert list: 1 Factory setting: 0

p2083[0...15]	BI: IF1 binector-connector converter status word 4 / IF1 bin/con ZSW4		
A_INF_840, B_INF_840, CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2472 Unit selection: - Expert list: 1 Factory setting: 0

p2084[0...15]	BI: IF1 binector-connector converter status word 5 / IF1 bin/con ZSW5		
A_INF_840, B_INF_840, CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2472 Unit selection: - Expert list: 1 Factory setting: 0

p2088[0...4]	IF1 invert binector-connector converter status word / Bin/con ZSW inv		
A_INF_840, B_INF_840, CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: T, U Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2472 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin

r2089[0...4]	CO: IF1 send binector-connector converter status word / Bin/con ZSW send		
A_INF_840, B_INF_840, CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2472 Unit selection: - Expert list: 1 Factory setting: -

r2090.0...15	BO: IF1 PROFIdrive PZD1 receive bit-serial / PZD1 recv bitw		
A_INF_840, B_INF_840, CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2468 Unit selection: - Expert list: 1 Factory setting: -

4.2 SINAMICS parameters

r2091.0...15	BO: IF1 PROFIdrive PZD2 receive bit-serial / PZD2 recv bitw		
A_INF_840, B_INF_840, CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2468 Unit selection: - Expert list: 1 Factory setting: -
r2092.0...15	BO: IF1 PROFIdrive PZD3 receive bit-serial / PZD3 recv bitw		
CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2468 Unit selection: - Expert list: 1 Factory setting: -
r2093.0...15	BO: IF1 PROFIdrive PZD4 receive bit-serial / PZD4 recv bitw		
CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2468 Unit selection: - Expert list: 1 Factory setting: -
r2094.0...15	BO: IF1 connector-binector converter binector output / Con/bin outp		
A_INF_840, B_INF_840, CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2468 Unit selection: - Expert list: 1 Factory setting: -
r2095.0...15	BO: IF1 connector-binector converter binector output / Con/bin outp		
A_INF_840, B_INF_840, CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2468 Unit selection: - Expert list: 1 Factory setting: -

p2098[0...1]	IF1 invert connector-binector converter binector output / Con/bin outp inv		
A_INF_840, B_INF_840, CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: T, U Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2468 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p2099[0...1]	CI: IF1 connector-binector converter signal source / Con/bin s_s		
A_INF_840, B_INF_840, CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: T, U Data type: Unsigned32 / Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2468 Unit selection: - Expert list: 1 Factory setting: 0
p2100[0...19]	Change fault response fault number / Chg resp flt_no		
A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HUB, S_INF_840, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: T, U Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: 8050, 8075 Unit selection: - Expert list: 1 Factory setting: 0
p2100[0...19]	Change fault response fault number / Chg resp flt_no		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: T, U Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: 8050, 8075 Unit selection: - Expert list: 1 Factory setting: [0] 7841 [1...19] 0
p2101[0...19]	Change fault response response / Chg resp resp		
CU_I_840, CU_LINK, CU_NX_840, ENC_840, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31	Can be changed: T, U Data type: Integer16 P-Group: Messages Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 0	Access level: 3 Function diagram: 8050, 8075 Unit selection: - Expert list: 1 Factory setting: 0

p2101[0...19] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Change fault response response / Chg resp resp Can be changed: T, U Data type: Integer16 P-Group: Messages Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 7	Access level: 3 Function diagram: 8050, 8075 Unit selection: - Expert list: 1 Factory setting: [0] 3 [1...19] 0
p2101[0...19] TM41	Change fault response response / Chg resp resp Can be changed: T, U Data type: Integer16 P-Group: Messages Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 7	Access level: 3 Function diagram: 8050, 8075 Unit selection: - Expert list: 1 Factory setting: 0
p2101[0...19] A_INF_840, B_INF_840, S_INF_840	Change fault response response / Chg resp resp Can be changed: T, U Data type: Integer16 P-Group: Messages Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 8050, 8075 Unit selection: - Expert list: 1 Factory setting: 0
p2102 CU_I_840, CU_NX_840	BI: Acknowledge all faults / Ackn all faults Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2546, 8060 Unit selection: - Expert list: 1 Factory setting: 2090.7
p2103 CU_I_840, CU_LINK, CU_NX_840, ENC_840, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31	BI: 1st acknowledge faults / 1st acknowledge Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p2103[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	BI: 1st acknowledge faults / 1st acknowledge Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2441, 2442, 2443, 2447, 2475, 2546, 9220, 9677, 9678 Unit selection: - Expert list: 1 Factory setting: 0
p2104 CU_I_840, CU_LINK, CU_NX_840, ENC_840, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31	BI: 2nd acknowledge faults / 2nd acknowledge Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p2104[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	BI: 2nd acknowledge faults / 2nd acknowledge Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2546, 8060 Unit selection: - Expert list: 1 Factory setting: 0
p2105 CU_I_840, CU_LINK, CU_NX_840, ENC_840, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31	BI: 3rd acknowledge faults / 3rd acknowledge Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p2105[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	BI: 3rd acknowledge faults / 3rd acknowledge Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2546, 8060 Unit selection: - Expert list: 1 Factory setting: 0
p2106 CU_I_840, CU_LINK, CU_NX_840, ENC_840, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31	BI: External fault 1 / External fault 1 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1

p2106[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	BI: External fault 1 / External fault 1 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2546 Unit selection: - Expert list: 1 Factory setting: 1
p2107 CU_I_840, CU_LINK, CU_NX_840, ENC_840, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31	BI: External fault 2 / External fault 2 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p2107[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	BI: External fault 2 / External fault 2 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2546 Unit selection: - Expert list: 1 Factory setting: 1
p2108 CU_I_840, CU_LINK, CU_NX_840, ENC_840, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31	BI: External fault 3 / External fault 3 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p2108[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	BI: External fault 3 / External fault 3 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2546 Unit selection: - Expert list: 1 Factory setting: 1
p2108[0...n] A_INF_840, B_INF_840, S_INF_840	BI: External fault 3 / External fault 3 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2546 Unit selection: - Expert list: 1 Factory setting: 0

r2109[0...63] All objects	Fault time removed in milliseconds / t_{flt rem} ms Can be changed: - Data type: Unsigned32 P-Group: Messages Not for motor type: - Min: - [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ms]	Access level: 3 Function diagram: 8050, 8060 Unit selection: - Expert list: 1 Factory setting: - [ms]
r2110[0...63] All objects	Alarm number / Alarm number Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8065 Unit selection: - Expert list: 1 Factory setting: -
p2111 All objects	Alarm counter / Alarm counter Can be changed: T, U Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: 8050, 8065 Unit selection: - Expert list: 1 Factory setting: 0
p2112 CU_I_840, CU_LINK, CU_NX_840, ENC_840, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31	BI: External alarm 1 / External alarm 1 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p2112[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	BI: External alarm 1 / External alarm 1 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2546 Unit selection: - Expert list: 1 Factory setting: 1
r2114[0...1] CU_I_840, CU_NX_840	System runtime total / Sys runtime tot Can be changed: - Data type: Unsigned32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p2116 CU_I_840, CU_LINK, CU_NX_840, ENC_840, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31	BI: External alarm 2 / External alarm 2 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p2116[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	BI: External alarm 2 / External alarm 2 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2546 Unit selection: - Expert list: 1 Factory setting: 1
p2117 CU_I_840, CU_LINK, CU_NX_840, ENC_840, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31	BI: External alarm 3 / External alarm 3 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p2117[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	BI: External alarm 3 / External alarm 3 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2546 Unit selection: - Expert list: 1 Factory setting: 1
p2118[0...19] All objects	Change message type message number / Chg type msg_no Can be changed: T, U Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: 8050, 8075 Unit selection: - Expert list: 1 Factory setting: 0
p2119[0...19] All objects	Change message type type / Change type type Can be changed: T, U Data type: Integer16 P-Group: Messages Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: 8050, 8075 Unit selection: - Expert list: 1 Factory setting: 1

r2120	CO: Sum of fault and alarm buffer changes / Sum buffer changed		
All objects	Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: 8065 Unit selection: - Expert list: 1 Factory setting: -
r2121	CO: Counter alarm buffer changes / A buff changed		
All objects	Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8065 Unit selection: - Expert list: 1 Factory setting: -
r2122[0...63]	Alarm code / Alarm code		
All objects	Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8050, 8065 Unit selection: - Expert list: 1 Factory setting: -
r2123[0...63]	Alarm time received in milliseconds / t_alarm rcv ms		
All objects	Can be changed: - Data type: Unsigned32 P-Group: Messages Not for motor type: - Min: - [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ms]	Access level: 3 Function diagram: 8050, 8065 Unit selection: - Expert list: 1 Factory setting: - [ms]
r2124[0...63]	Alarm value / Alarm value		
All objects	Can be changed: - Data type: Integer32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8050, 8065 Unit selection: - Expert list: 1 Factory setting: -
r2125[0...63]	Alarm time removed in milliseconds / t_alarm rem ms		
All objects	Can be changed: - Data type: Unsigned32 P-Group: Messages Not for motor type: - Min: - [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ms]	Access level: 3 Function diagram: 8050, 8065 Unit selection: - Expert list: 1 Factory setting: - [ms]

p2126[0...19]	Change acknowledge mode fault number / Chg ackn flt_no		
All objects	Can be changed: T, U Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: 8050, 8075 Unit selection: - Expert list: 1 Factory setting: 0
p2127[0...19]	Change acknowledge mode mode / Chg ackn mode		
All objects	Can be changed: T, U Data type: Integer16 P-Group: Messages Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: 8050, 8075 Unit selection: - Expert list: 1 Factory setting: 1
p2128[0...15]	Faults/alarms trigger selection / F/A trigger sel		
All objects	Can be changed: T, U Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: 8050, 8070 Unit selection: - Expert list: 1 Factory setting: 0
r2129.0...15	CO/BO: Faults/alarms trigger word / F/A trigger word		
All objects	Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8070 Unit selection: - Expert list: 1 Factory setting: -
r2130[0...63]	Fault time received in days / t_fault rcv days		
All objects	Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8060 Unit selection: - Expert list: 1 Factory setting: -
r2131	CO: Actual fault code / Act fault code		
All objects	Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8060 Unit selection: - Expert list: 1 Factory setting: -

r2132	CO: Actual alarm code / Alarm code act		
All objects	Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8065 Unit selection: - Expert list: 1 Factory setting: -
r2133[0...63]	Fault value for float values / Fault val float		
All objects	Can be changed: - Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8060 Unit selection: - Expert list: 1 Factory setting: -
r2134[0...63]	Alarm value for float values / Alarm value float		
All objects	Can be changed: - Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8065 Unit selection: - Expert list: 1 Factory setting: -
r2135.0...15	CO/BO: Status word faults/alarms 2 / ZSW fault/alarm 2		
All objects	Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2548 Unit selection: - Expert list: 1 Factory setting: -
r2136[0...63]	Fault time removed in days / t_fit rem days		
All objects	Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8060 Unit selection: - Expert list: 1 Factory setting: -
r2138.7...15	CO/BO: Control word faults/alarms / STW fault/alarm		
All objects	Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2546 Unit selection: - Expert list: 1 Factory setting: -

r2139.0...15	CO/BO: Status word faults/alarms 1 / ZSW fault/alarm 1		
All objects	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned16	Dynamic index: -	Function diagram: 2548
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

p2140[0...n]	Hysteresis speed 2 / n_hysteresis 2		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_LIM_REF	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 8010
	P-Group: Messages	Unit group: 3_1	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	300.00 [rpm]	90.00 [rpm]

p2140[0...n]	Hysteresis velocity 2 / v_hysteresis 2		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: CALC_MOD_LIM_REF	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 8010
	P-Group: Messages	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [m/min]	10.00 [m/min]	0.90 [m/min]

p2141[0...n]	Speed threshold 1 / n_thr val 1		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_LIM_REF	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 8010
	P-Group: Messages	Unit group: 3_1	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	210000.00 [rpm]	5.00 [rpm]

p2141[0...n]	Velocity threshold value 1 / v_thr val 1		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: CALC_MOD_LIM_REF	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 8010
	P-Group: Messages	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [m/min]	1000.00 [m/min]	0.05 [m/min]

p2142[0...n] SERVO_840, SERVO_DBSI	Hysteresis speed 1 / n_hysteresis 1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [rpm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 300.00 [rpm]	Access level: 3 Function diagram: 8010 Unit selection: p0505 Expert list: 1 Factory setting: 2.00 [rpm]
p2142[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Hysteresis speed 1 / n_hysteresis 1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 10.00 [m/min]	Access level: 3 Function diagram: 8010 Unit selection: p0505 Expert list: 1 Factory setting: 0.02 [m/min]
p2144[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	BI: Motor stall monitoring enable (negated) / Mot stall enab neg Can be changed: T, U Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8012 Unit selection: - Expert list: 1 Factory setting: 0
r2145[0...63] All objects	Alarm time received in days / t_alarm recv days Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8065 Unit selection: - Expert list: 1 Factory setting: -
r2146[0...63] All objects	Alarm time removed in days / t_alarm rem days Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8065 Unit selection: - Expert list: 1 Factory setting: -
p2147 CU_I_840, CU_NX_840	Delete fault buffer of all drive objects / Del fault buffer Can be changed: T, U Data type: Integer16 P-Group: Displays, signals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 4 Function diagram: 8060 Unit selection: - Expert list: 1 Factory setting: 0

p2148[0...n] SERVO_840, SERVO_DBSI	BI: RFG active / RFG active Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: CALC_MOD_LIM_REF Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8011 Unit selection: - Expert list: 1 Factory setting: 0
p2149[0...n] SERVO_840, SERVO_DBSI	Monitoring configuration / Mon config Can be changed: T, U Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p2150[0...n] SERVO_840, SERVO_DBSI	Hysteresis speed 3 / n_hysteresis 3 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [rpm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 300.00 [rpm]	Access level: 3 Function diagram: 8010, 8011 Unit selection: p0505 Expert list: 1 Factory setting: 2.00 [rpm]
p2150[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Hysteresis velocity 3 / v_hysteresis 3 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 3.00 [m/min]	Access level: 3 Function diagram: 8010, 8011 Unit selection: p0505 Expert list: 1 Factory setting: 0.02 [m/min]
p2151[0...n] SERVO_840, SERVO_DBSI	CI: Speed setpoint for messages/signals / n_set for msg Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 8011 Unit selection: - Expert list: 1 Factory setting: 1438[0]

p2151[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Cl: Velocity setpoint for messages/signals / v_set for msg Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 8011 Unit selection: - Expert list: 1 Factory setting: 1438[0]
p2153[0...n] HLA_840, HLA_DBSI	Velocity actual value filter time constant / v_ActV flt Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000000 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [ms]
p2153[0...n] SERVO_840, SERVO_DBSI	Speed actual value filter time constant / n_ActV flt Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000000 [ms]	Access level: 3 Function diagram: 8010 Unit selection: - Expert list: 1 Factory setting: 0 [ms]
p2153[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity actual value filter time constant / v_ActV flt Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000000 [ms]	Access level: 3 Function diagram: 8010 Unit selection: - Expert list: 1 Factory setting: 0 [ms]
p2154[0...n] SERVO_840, SERVO_DBSI	Cl: Speed setpoint 2 / n_set 2 Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 8010 Unit selection: - Expert list: 1 Factory setting: 0
p2154[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Cl: Velocity setpoint 2 / v_set 2 Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 8010 Unit selection: - Expert list: 1 Factory setting: 0

4.2 SINAMICS parameters

p2155[0...n] SERVO_840, SERVO_DBSI	Speed threshold 2 / n_thr val 2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [rpm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 3 Function diagram: 8010 Unit selection: p0505 Expert list: 1 Factory setting: 900.00 [rpm]
p2155[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity threshold value 2 / v_thr val 2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 3 Function diagram: 8010 Unit selection: p0505 Expert list: 1 Factory setting: 9.00 [m/min]
p2156[0...n] SERVO_840, SERVO_DBSI	On-delay comparison value reached / t_on cmpr val rchd Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000.0 [ms]	Access level: 2 Function diagram: 8010 Unit selection: - Expert list: 1 Factory setting: 0.0 [ms]
p2161[0...n] SERVO_840, SERVO_DBSI	Speed threshold 3 / n_thr val 3 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [rpm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 3 Function diagram: 8010, 8011 Unit selection: p0505 Expert list: 1 Factory setting: 5.00 [rpm]
p2161[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity threshold value 3 / v_thr val 3 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 3 Function diagram: 8010, 8011 Unit selection: p0505 Expert list: 1 Factory setting: 0.05 [m/min]

p2162[0...n] SERVO_840, SERVO_DBSI	Hysteresis speed $n_{act} > n_{max} / \text{Hyst } n_{act} > n_{max}$ Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [rpm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 60000.00 [rpm]	Access level: 2 Function diagram: 8010 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [rpm]
p2162[0...n] HLA_840, HLA_DBSI, SERVO_840 (Lin), SERVO_DBSI (Lin)	Hysteresis velocity $v_{act} > v_{max} / \text{Hyst } v_{act} > v_{max}$ Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 2 Function diagram: 8010 Unit selection: p0505 Expert list: 1 Factory setting: 6.00 [m/min]
p2163[0...n] HLA_840, HLA_DBSI	Velocity threshold value 4 / v_{thr} val 4 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 2 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 0.90 [m/min]
p2163[0...n] SERVO_840, SERVO_DBSI	Speed threshold 4 / n_{thr} val 4 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [rpm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 2 Function diagram: 8011 Unit selection: p0505 Expert list: 1 Factory setting: 90.00 [rpm]
p2163[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Velocity threshold value 4 / v_{thr} val 4 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 2 Function diagram: 8011 Unit selection: p0505 Expert list: 1 Factory setting: 0.90 [m/min]

p2164[0...n] HLA_840, HLA_DBSI	Hysteresis velocity 4 / v_hysteresis 4 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 10.00 [m/min]	Access level: 2 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 0.02 [m/min]
p2164[0...n] SERVO_840, SERVO_DBSI	Hysteresis speed 4 / n_hysteresis 4 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [rpm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 200.00 [rpm]	Access level: 2 Function diagram: 8011 Unit selection: p0505 Expert list: 1 Factory setting: 2.00 [rpm]
p2164[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Hysteresis velocity 4 / v_hysteresis 4 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 10.00 [m/min]	Access level: 2 Function diagram: 8011 Unit selection: p0505 Expert list: 1 Factory setting: 0.02 [m/min]
p2166[0...n] HLA_840, HLA_DBSI	Off-delay v_act = v_set / t_del_off n_i=n_so Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000.0 [ms]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 200.0 [ms]
p2166[0...n] SERVO_840, SERVO_DBSI	Off-delay n_act = n_set / t_del_off n_i=n_so Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000.0 [ms]	Access level: 2 Function diagram: 8011 Unit selection: - Expert list: 1 Factory setting: 200.0 [ms]

p2166[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Off-delay $v_{act} = v_{set} / t_{del\_off} n_i = n_{so}$ Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000.0 [ms]	Access level: 2 Function diagram: 8011 Unit selection: - Expert list: 1 Factory setting: 200.0 [ms]
p2167[0...n] SERVO_840, SERVO_DBSI	Switch-on delay $n_{act} = n_{set} / t_{on} n_{act} = n_{set}$ Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000.0 [ms]	Access level: 2 Function diagram: 8011 Unit selection: - Expert list: 1 Factory setting: 200.0 [ms]
p2167[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	On-delay $v_{act} = v_{set} / t_{on} n_{act} = n_{set}$ Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000.0 [ms]	Access level: 2 Function diagram: 8011 Unit selection: - Expert list: 1 Factory setting: 200.0 [ms]
r2169 HLA_840, HLA_DBSI	CO: Actual velocity smoothed signals / v_{act} smth message Can be changed: - Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 2 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r2169 SERVO_840, SERVO_DBSI	CO: Actual speed smoothed signals / n_{act} smth message Can be changed: - Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 2 Function diagram: 8010 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r2169 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Actual velocity smoothed signals / v_{act} smth message Can be changed: - Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 2 Function diagram: 8010 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]

p2174[0...n] SERVO_840, SERVO_DBSI	Torque threshold value 1 / M_thr val 1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [Nm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 7_1 Scaling: - Max: 20000000.00 [Nm]	Access level: 2 Function diagram: 8012 Unit selection: p0505 Expert list: 1 Factory setting: 5.13 [Nm]

p2174[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Force threshold value 1 / F_thr val 1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: - Max: 20000000.00 [N]	Access level: 2 Function diagram: 8012 Unit selection: p0505 Expert list: 1 Factory setting: 1000.00 [N]

p2175[0...n] HLA_840, HLA_DBSI	Motor blocked velocity threshold / Mot blk v_thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 3 Function diagram: 8012 Unit selection: p0505 Expert list: 1 Factory setting: 1.20 [m/min]

p2175[0...n] SERVO_840, SERVO_DBSI	Motor blocked speed threshold / Mot blk n_thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [rpm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 3 Function diagram: 8012 Unit selection: p0505 Expert list: 1 Factory setting: 120.00 [rpm]

p2175[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Motor blocked velocity threshold / Mot blk v_thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 3 Function diagram: 8012 Unit selection: p0505 Expert list: 1 Factory setting: 1.20 [m/min]

p2177[0...n] HLA_840, HLA_DBSI	Motor blocked delay time / Mot blk t_del Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.000 [s]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 65.000 [s]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.000 [s]
p2177[0...n] SERVO_840, SERVO_DBSI	Motor blocked delay time / Mot blk t_del Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.000 [s]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 65.000 [s]	Access level: 2 Function diagram: 8012 Unit selection: - Expert list: 1 Factory setting: 1.000 [s]
p2181[0...n] SERVO_840 (Ext msg), SERVO_DBSI (Ext msg)	Load monitoring response / Load mon resp Can be changed: T, U Data type: Integer16 P-Group: Messages Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 6	Access level: 3 Function diagram: 8013 Unit selection: - Expert list: 1 Factory setting: 0
p2182[0...n] SERVO_840 (Ext msg, Lin), SERVO_DBSI (Ext msg, Lin)	Load monitoring velocity threshold 1 / v_thr 1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 3 Function diagram: 8013 Unit selection: p0505 Expert list: 1 Factory setting: 0.05 [m/min]
p2182[0...n] SERVO_840 (Ext msg), SERVO_DBSI (Ext msg)	Load monitoring speed threshold value 1 / n_thr 1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 3 Function diagram: 8013 Unit selection: p0505 Expert list: 1 Factory setting: 150.00 [rpm]
p2183[0...n] SERVO_840 (Ext msg, Lin), SERVO_DBSI (Ext msg, Lin)	Load monitoring velocity threshold 2 / v_thr 2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 3 Function diagram: 8013 Unit selection: p0505 Expert list: 1 Factory setting: 0.05 [m/min]

4.2 SINAMICS parameters

p2183[0...n]	Load monitoring speed threshold value 2 / n_thr 2		
SERVO_840 (Ext msg), SERVO_DBSI (Ext msg)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 3 Function diagram: 8013 Unit selection: p0505 Expert list: 1 Factory setting: 900.00 [rpm]

p2184[0...n]	Load monitoring velocity threshold 3 / v_thr 3		
SERVO_840 (Ext msg, Lin), SERVO_DBSI (Ext msg, Lin)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 3 Function diagram: 8013 Unit selection: p0505 Expert list: 1 Factory setting: 0.05 [m/min]

p2184[0...n]	Load monitoring speed threshold value 3 / n_thr 3		
SERVO_840 (Ext msg), SERVO_DBSI (Ext msg)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 3 Function diagram: 8013 Unit selection: p0505 Expert list: 1 Factory setting: 1500.00 [rpm]

p2185[0...n]	Load monitoring force threshold 1 upper / F_thr 1 upper		
SERVO_840 (Ext msg, Lin), SERVO_DBSI (Ext msg, Lin)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: - Max: 100000.00 [N]	Access level: 3 Function diagram: 8013 Unit selection: p0505 Expert list: 1 Factory setting: 100000.00 [N]

p2185[0...n]	Load monitoring torque threshold 1 upper / M_thr 1 upper		
SERVO_840 (Ext msg), SERVO_DBSI (Ext msg)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [Nm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 7_1 Scaling: - Max: 20000000.00 [Nm]	Access level: 3 Function diagram: 8013 Unit selection: p0505 Expert list: 1 Factory setting: 10000000.00 [Nm]

p2186[0...n]	Load monitoring force threshold 1 lower / F_thr 1 lower		
SERVO_840 (Ext msg, Lin), SERVO_DBSI (Ext msg, Lin)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: - Max: 100000.00 [N]	Access level: 3 Function diagram: 8013 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [N]

p2186[0...n] SERVO_840 (Ext msg), SERVO_DBSI (Ext msg)	Load monitoring torque threshold 1 lower / M_thr 1 lower Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [Nm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 7_1 Scaling: - Max: 20000000.00 [Nm]	Access level: 3 Function diagram: 8013 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [Nm]
p2187[0...n] SERVO_840 (Ext msg, Lin), SERVO_DBSI (Ext msg, Lin)	Load monitoring force threshold 2 upper / F_thr 2 upper Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: - Max: 100000.00 [N]	Access level: 3 Function diagram: 8013 Unit selection: p0505 Expert list: 1 Factory setting: 100000.00 [N]
p2187[0...n] SERVO_840 (Ext msg), SERVO_DBSI (Ext msg)	Load monitoring torque threshold 2 upper / M_thr 2 upper Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [Nm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 7_1 Scaling: - Max: 20000000.00 [Nm]	Access level: 3 Function diagram: 8013 Unit selection: p0505 Expert list: 1 Factory setting: 10000000.00 [Nm]
p2188[0...n] SERVO_840 (Ext msg, Lin), SERVO_DBSI (Ext msg, Lin)	Load monitoring force threshold 2 lower / F_thr 2 lower Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: - Max: 100000.00 [N]	Access level: 3 Function diagram: 8013 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [N]
p2188[0...n] SERVO_840 (Ext msg), SERVO_DBSI (Ext msg)	Load monitoring torque threshold 2 lower / M_thr 2 lower Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [Nm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 7_1 Scaling: - Max: 20000000.00 [Nm]	Access level: 3 Function diagram: 8013 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [Nm]
p2189[0...n] SERVO_840 (Ext msg, Lin), SERVO_DBSI (Ext msg, Lin)	Load monitoring force threshold 3 upper / F_thr 3 upper Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.00 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: - Max: 100000.00 [N]	Access level: 3 Function diagram: 8013 Unit selection: p0505 Expert list: 1 Factory setting: 100000.00 [N]

p2189[0...n]	Load monitoring torque threshold 3 upper / M_thr 3 upper		
SERVO_840 (Ext msg), SERVO_DBSI (Ext msg)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 8013
	P-Group: Messages	Unit group: 7_1	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [Nm]	20000000.00 [Nm]	10000000.00 [Nm]

p2190[0...n]	Load monitoring force threshold 3 lower / F_thr 3 lower		
SERVO_840 (Ext msg, Lin), SERVO_DBSI (Ext msg, Lin)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 8013
	P-Group: Messages	Unit group: 8_1	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [N]	100000.00 [N]	0.00 [N]

p2190[0...n]	Load monitoring torque threshold 3 lower / M_thr 3 lower		
SERVO_840 (Ext msg), SERVO_DBSI (Ext msg)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 8013
	P-Group: Messages	Unit group: 7_1	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [Nm]	20000000.00 [Nm]	0.00 [Nm]

p2192[0...n]	Load monitoring delay time / Load mon t_del		
SERVO_840 (Ext msg), SERVO_DBSI (Ext msg)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 8013
	P-Group: Messages	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [s]	65.00 [s]	10.00 [s]

p2194[0...n]	Torque threshold value 2 / M_thr val 2		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_LIM_REF	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 8012
	P-Group: Messages	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [%]	100.00 [%]	90.00 [%]

p2194[0...n]	Force threshold value 2 / F_thr val 2		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: CALC_MOD_LIM_REF	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 8012
	P-Group: Messages	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [%]	100.00 [%]	90.00 [%]

p2195[0...n] SERVO_840, SERVO_DBSI	Torque utilization switch-off delay / M_util t_off Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.0 [ms]	Access level: 2 Function diagram: 8012 Unit selection: - Expert list: 1 Factory setting: 800.0 [ms]
p2195[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Force utilization switch-off delay / F_util t_off Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0.0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.0 [ms]	Access level: 2 Function diagram: 8012 Unit selection: - Expert list: 1 Factory setting: 800.0 [ms]
p2196[0...n] SERVO_840, SERVO_DBSI	Torque utilization scaling / M_util scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.00 [%]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
r2197.1...13 HLA_840, HLA_DBSI	CO/BO: Status word monitoring 1 / ZSW mon 1 Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2197.1...13 SERVO_840, SERVO_DBSI	CO/BO: Status word monitoring 1 / ZSW mon 1 Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2534 Unit selection: - Expert list: 1 Factory setting: -
r2197.1...13 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO/BO: Status word monitoring 1 / ZSW mon 1 Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2534 Unit selection: - Expert list: 1 Factory setting: -

r2198.4...12 SERVO_840, SERVO_DBSI	CO/BO: Status word monitoring 2 / ZSW monitor 2 Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2536 Unit selection: - Expert list: 1 Factory setting: -
r2198.4...12 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO/BO: Status word monitoring 2 / ZSW monitor 2 Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2536 Unit selection: - Expert list: 1 Factory setting: -
r2199.0...11 SERVO_840, SERVO_DBSI	CO/BO: Status word monitoring 3 / ZSW monitor 3 Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2537 Unit selection: - Expert list: 1 Factory setting: -
r2199.0...11 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO/BO: Status word monitoring 3 / ZSW monitor 3 Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2537 Unit selection: - Expert list: 1 Factory setting: -
p2200[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	BI: Technology controller enable / Tec_ctrl enable Can be changed: T Data type: Unsigned32 / Binary P-Group: Technology Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 0
p2201[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller fixed value 1 / Tec_ctrl FixVal 1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -200.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: 9_1 Scaling: PERCENT Max: 200.00 [%]	Access level: 2 Function diagram: 7950, 7951 Unit selection: p0595 Expert list: 1 Factory setting: 10.00 [%]

p2202[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller fixed value 2 / Tec_ctrl FixVal 2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -200.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: 9_1 Scaling: PERCENT Max: 200.00 [%]	Access level: 2 Function diagram: 7950, 7951 Unit selection: p0595 Expert list: 1 Factory setting: 20.00 [%]
p2203[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller fixed value 3 / Tec_ctrl FixVal 3 Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -200.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: 9_1 Scaling: PERCENT Max: 200.00 [%]	Access level: 2 Function diagram: 7950, 7951 Unit selection: p0595 Expert list: 1 Factory setting: 30.00 [%]
p2204[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller fixed value 4 / Tec_ctrl FixVal 4 Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -200.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: 9_1 Scaling: PERCENT Max: 200.00 [%]	Access level: 2 Function diagram: 7950, 7951 Unit selection: p0595 Expert list: 1 Factory setting: 40.00 [%]
p2205[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller fixed value 5 / Tec_ctrl FixVal 5 Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -200.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: 9_1 Scaling: PERCENT Max: 200.00 [%]	Access level: 2 Function diagram: 7950 Unit selection: p0595 Expert list: 1 Factory setting: 50.00 [%]
p2206[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller fixed value 6 / Tec_ctrl FixVal 6 Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -200.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: 9_1 Scaling: PERCENT Max: 200.00 [%]	Access level: 2 Function diagram: 7950 Unit selection: p0595 Expert list: 1 Factory setting: 60.00 [%]
p2207[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller fixed value 7 / Tec_ctrl FixVal 7 Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -200.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: 9_1 Scaling: PERCENT Max: 200.00 [%]	Access level: 2 Function diagram: 7950 Unit selection: p0595 Expert list: 1 Factory setting: 70.00 [%]

p2208[0...n]	CO: Technology controller fixed value 8 / Tec_ctrl FixVal 8		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7950
	P-Group: Technology	Unit group: 9_1	Unit selection: p0595
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	-200.00 [%]	200.00 [%]	80.00 [%]

p2209[0...n]	CO: Technology controller fixed value 9 / Tec_ctrl FixVal 9		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7950
	P-Group: Technology	Unit group: 9_1	Unit selection: p0595
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	-200.00 [%]	200.00 [%]	90.00 [%]

p2210[0...n]	CO: Technology controller fixed value 10 / Tec_ctrl FixVal 10		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7950
	P-Group: Technology	Unit group: 9_1	Unit selection: p0595
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	-200.00 [%]	200.00 [%]	100.00 [%]

p2211[0...n]	CO: Technology controller fixed value 11 / Tec_ctrl FixVal 11		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7950
	P-Group: Technology	Unit group: 9_1	Unit selection: p0595
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	-200.00 [%]	200.00 [%]	110.00 [%]

p2212[0...n]	CO: Technology controller fixed value 12 / Tec_ctrl FixVal 12		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7950
	P-Group: Technology	Unit group: 9_1	Unit selection: p0595
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	-200.00 [%]	200.00 [%]	120.00 [%]

p2213[0...n]	CO: Technology controller fixed value 13 / Tec_ctrl FixVal 13		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7950
	P-Group: Technology	Unit group: 9_1	Unit selection: p0595
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	-200.00 [%]	200.00 [%]	130.00 [%]

p2214[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller fixed value 14 / Tec_ctrl FixVal 14 Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -200.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: 9_1 Scaling: PERCENT Max: 200.00 [%]	Access level: 2 Function diagram: 7950 Unit selection: p0595 Expert list: 1 Factory setting: 140.00 [%]
p2215[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller fixed value 15 / Tec_ctrl FixVal 15 Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -200.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: 9_1 Scaling: PERCENT Max: 200.00 [%]	Access level: 2 Function diagram: 7950 Unit selection: p0595 Expert list: 1 Factory setting: 150.00 [%]
p2216[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller fixed value selection method / Tec_ctr FixVal sel Can be changed: T Data type: Integer16 P-Group: Technology Not for motor type: - Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 2 Function diagram: 7950, 7951 Unit selection: - Expert list: 1 Factory setting: 2
p2220[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	BI: Technology controller fixed value selection bit 0 / Tec_ctrl sel bit 0 Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 7950, 7951 Unit selection: - Expert list: 1 Factory setting: 0
p2221[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	BI: Technology controller fixed value selection bit 1 / Tec_ctrl sel bit 1 Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 7950, 7951 Unit selection: - Expert list: 1 Factory setting: 0
p2222[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	BI: Technology controller fixed value selection bit 2 / Tec_ctrl sel bit 2 Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 7950, 7951 Unit selection: - Expert list: 1 Factory setting: 0

p2223[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	BI: Technology controller fixed value selection bit 3 / Tec_ctrl sel bit 3 Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 7950, 7951 Unit selection: - Expert list: 1 Factory setting: 0
r2224 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller fixed value effective / Tec_ctr FixVal eff Can be changed: - Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: 9_1 Scaling: PERCENT Max: - [%]	Access level: 2 Function diagram: 7950, 7951 Unit selection: p0595 Expert list: 1 Factory setting: - [%]
r2225.0 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO/BO: Technology controller fixed value selection status word / Tec_ctr FixVal ZSW Can be changed: - Data type: Unsigned16 P-Group: Technology Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2229 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller number actual / Tec_ctrl no act Can be changed: - Data type: Unsigned32 P-Group: Technology Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 7950 Unit selection: - Expert list: 1 Factory setting: -
p2230[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller motorized potentiometer configuration / Tec_ctr moP config Can be changed: T, U Data type: Unsigned32 P-Group: Technology Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 7954 Unit selection: - Expert list: 1 Factory setting: 0000 0100 bin
r2231 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller motorized potentiometer setpoint memory / Tec_ctrl moP mem Can be changed: - Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: 9_1 Scaling: - Max: - [%]	Access level: 2 Function diagram: 7954 Unit selection: p0595 Expert list: 1 Factory setting: - [%]

p2235[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Bl: Technology controller motorized potentiometer raise setpoint / Tec_ctrl moP raise Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 7954 Unit selection: - Expert list: 1 Factory setting: 0
p2236[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Bl: Technology controller motorized potentiometer lower setpoint / Tec_ctrl moP lower Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 7954 Unit selection: - Expert list: 1 Factory setting: 0
p2237[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller motorized potentiometer maximum value / Tec_ctrl moP max Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -200.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: 9_1 Scaling: - Max: 200.00 [%]	Access level: 2 Function diagram: 7954 Unit selection: p0595 Expert list: 1 Factory setting: 100.00 [%]
p2238[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller motorized potentiometer minimum value / Tec_ctrl moP min Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -200.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: 9_1 Scaling: - Max: 200.00 [%]	Access level: 2 Function diagram: 7954 Unit selection: p0595 Expert list: 1 Factory setting: -100.00 [%]
p2240[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller motorized potentiometer starting value / Tec_ctrl moP start Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -200.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: 9_1 Scaling: - Max: 200.00 [%]	Access level: 2 Function diagram: 7954 Unit selection: p0595 Expert list: 1 Factory setting: 0.00 [%]
r2245 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller mot. potentiometer setpoint before RFG / Tec_ctr mop befRFG Can be changed: - Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: 9_1 Scaling: PERCENT Max: - [%]	Access level: 2 Function diagram: 7954 Unit selection: p0595 Expert list: 1 Factory setting: - [%]

p2247[0...n]	Technology controller motorized potentiometer ramp-up time / Tec_ctr moP t_r-up		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.0 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.0 [s]	Access level: 2 Function diagram: 7954 Unit selection: - Expert list: 1 Factory setting: 10.0 [s]
p2248[0...n]	Technology controller motorized potentiometer ramp-down time / Tec_ctrMoP t_rdown		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.0 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.0 [s]	Access level: 2 Function diagram: 7954 Unit selection: - Expert list: 1 Factory setting: 10.0 [s]
r2250	CO: Technology controller motorized potentiometer setpoint after RFG / Tec_ctr moP aftRFG		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: - Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: 9_1 Scaling: PERCENT Max: - [%]	Access level: 2 Function diagram: 7954 Unit selection: p0595 Expert list: 1 Factory setting: - [%]
p2252	Technology controller configuration / Tec_ctrl config		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U Data type: Unsigned16 P-Group: Modulation Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0111 bin
p2253[0...n]	CI: Technology controller setpoint 1 / Tec_ctrl set 1		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U Data type: Unsigned32 / FloatingPoint32 P-Group: Technology Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 2 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 0
p2254[0...n]	CI: Technology controller setpoint 2 / Tec_ctrl set 2		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U Data type: Unsigned32 / FloatingPoint32 P-Group: Technology Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 0

p2255 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller setpoint 1 scaling / Tec_ctrl set1 scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [%]	Access level: 3 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p2256 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller setpoint 2 scaling / Tec_ctrl set2 scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [%]	Access level: 3 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p2257 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller ramp-up time / Tec_ctrl t_ramp-up Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.00 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 650.00 [s]	Access level: 2 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 1.00 [s]
p2258 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller ramp-down time / Tec_ctrl t_ramp-dn Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.00 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 650.00 [s]	Access level: 2 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 1.00 [s]
r2260 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller setpoint after ramp-function generator / Tec_ctr set aftRFG Can be changed: - Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: 9_1 Scaling: PERCENT Max: - [%]	Access level: 2 Function diagram: 7958 Unit selection: p0595 Expert list: 1 Factory setting: - [%]
p2261 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller setpoint filter time constant / Tec_ctrl set Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 60.000 [s]	Access level: 3 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 0.000 [s]

r2262	CO: Technology controller setpoint after filter / Tec_ctr set aftFil		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: - Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: 9_1 Scaling: PERCENT Max: - [%]	Access level: 3 Function diagram: 7958 Unit selection: p0595 Expert list: 1 Factory setting: - [%]
p2263	Technology controller type / Tec_ctrl type		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T Data type: Integer16 P-Group: Technology Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 0
p2264[0...n]	CI: Technology controller actual value / Tec_ctrl ActV		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U Data type: Unsigned32 / FloatingPoint32 P-Group: Technology Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 2 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 0
p2265	Technology controller actual value filter time constant / Tec_ctrl act Tc		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 60.000 [s]	Access level: 2 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 0.000 [s]
r2266	CO: Technology controller actual value after filter / Tec_ctr act aftFil		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: - Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: 9_1 Scaling: PERCENT Max: - [%]	Access level: 2 Function diagram: 7958 Unit selection: p0595 Expert list: 1 Factory setting: - [%]
p2267	Technology controller upper limit actual value / Tec_ctrl u_lim act		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -10000.00 [%]	Calculated: - Dynamic index: - Unit group: 9_1 Scaling: PERCENT Max: 10000.00 [%]	Access level: 3 Function diagram: 7958 Unit selection: p0595 Expert list: 1 Factory setting: 200.00 [%]

p2268 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller lower limit actual value / Tec_ctrl I_lim act Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -10000.00 [%]	Calculated: - Dynamic index: - Unit group: 9_1 Scaling: PERCENT Max: 10000.00 [%]	Access level: 3 Function diagram: 7958 Unit selection: p0595 Expert list: 1 Factory setting: -200.00 [%]
p2269 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller gain actual value / Tec_ctrl gain ActV Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 500.00 [%]	Access level: 3 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p2270 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller actual value function / Tec_ctr ActV fct Can be changed: T, U Data type: Integer16 P-Group: Technology Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 0
p2271 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller actual value inversion (sensor type) / Tec_ctrl ActV inv Can be changed: T Data type: Integer16 P-Group: Technology Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 0
r2272 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller actual value scaled / Tec_ctrl ActV scal Can be changed: - Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: 9_1 Scaling: PERCENT Max: - [%]	Access level: 2 Function diagram: 7958 Unit selection: p0595 Expert list: 1 Factory setting: - [%]
r2273 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller system deviation / Tec_ctrl SysDev Can be changed: - Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: 9_1 Scaling: PERCENT Max: - [%]	Access level: 2 Function diagram: 7958 Unit selection: p0595 Expert list: 1 Factory setting: - [%]

4.2 SINAMICS parameters

p2274 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller differentiation time constant / Tec_ctrl D comp Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 60.000 [s]	Access level: 2 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 0.000 [s]
p2280 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller proportional gain / Tec_ctrl Kp Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.000	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.000	Access level: 2 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 1.000
p2285 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller integral time / Tec_ctrl Tn Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 60.000 [s]	Access level: 2 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 0.000 [s]
p2286[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	BI: Hold technology controller integrator / Tec_ctr integ hold Can be changed: T Data type: Unsigned32 / Binary P-Group: Technology Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 0
p2289[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CI: Technology controller precontrol signal / Tec_ctr prectr_sig Can be changed: T, U Data type: Unsigned32 / FloatingPoint32 P-Group: Technology Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 2 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 0
p2291 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller maximum limiting / Tec_ctrl max_lim Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -200.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: 200.00 [%]	Access level: 2 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]

p2292 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller minimum limiting / Tec_ctrl min_lim Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -200.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: 200.00 [%]	Access level: 2 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p2293 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller ramp-up/ramp-down time / Tec_ctr t_RU/RD Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.00 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [s]	Access level: 3 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 1.00 [s]
r2294 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller output signal / Tec_ctrl outp_sig Can be changed: - Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 2 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: - [%]
p2295 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller output scaling / Tec_ctrl outp scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -100.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: 100.00 [%]	Access level: 3 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p2296[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CI: Technology controller output scaling / Tec_ctrl outp scal Can be changed: T, U Data type: Unsigned32 / FloatingPoint32 P-Group: Technology Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 2 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 2295[0]
p2297[0...n] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CI: Technology controller maximum limit signal source / Tec_ctrl max_l s_s Can be changed: T, U Data type: Unsigned32 / FloatingPoint32 P-Group: Technology Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: PERCENT Max: -	Access level: 2 Function diagram: 7958 Unit selection: - Expert list: 1 Factory setting: 2291[0]

p2298[0...n]	CI: Technology controller minimum limit signal source / Tec_ctrl min_l s_s		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: CDS, p0170	Function diagram: 7958
	P-Group: Technology	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	2292[0]

p2299[0...n]	CI: Technology controller limit offset / Tec_ctrl lim offs		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: CDS, p0170	Function diagram: 7958
	P-Group: Technology	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p2306	Technology controller system deviation inversion / Tec_ctr SysDev inv		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 7958
	P-Group: Technology	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0

p2310	CI: Technology controller Kp adaptation input value signal source / Kp adpt inp s_s		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T	Calculated: -	Access level: 2
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: 7959
	P-Group: Technology	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p2311	Technology controller Kp adaptation lower value / Kp adpt lower val		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7959
	P-Group: Technology	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000	1000.000	1.000

p2312	Technology controller Kp adaptation upper value / Kp adpt upper val		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7959
	P-Group: Technology	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000	1000.000	10.000

p2313 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller Kp adaptation lower starting point / Kp adpt lower pt Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: 400.00 [%]	Access level: 2 Function diagram: 7959 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p2314 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller Kp adaptation upper starting point / Kp adpt upper pt Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: 400.00 [%]	Access level: 2 Function diagram: 7959 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p2315 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CI: Technology controller Kp adaptation scaling signal source / Kp adpt scal s_s Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Technology Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 7959 Unit selection: - Expert list: 1 Factory setting: 1
r2316 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Technology controller, Kp adaptation output / Kp adpt outp Can be changed: - Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 7959 Unit selection: - Expert list: 1 Factory setting: -
p2317 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CI: Technology controller Tn adaptation input value signal source / Tn adpt inp s_s Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Technology Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 2 Function diagram: 7959 Unit selection: - Expert list: 1 Factory setting: 0
p2318 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Technology controller Tn adaptation upper value / Tn adpt upper val Can be changed: T, U Data type: FloatingPoint32 P-Group: Technology Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 60.000 [s]	Access level: 2 Function diagram: 7959 Unit selection: - Expert list: 1 Factory setting: 3.000 [s]

p2319	Technology controller Tn adaptation lower value / Tn adpt lower val		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7959
	P-Group: Technology	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.000 [s]	Max: 60.000 [s]	Factory setting: 10.000 [s]

p2320	Technology controller Tn adaptation lower starting point / Tn adpt lower pt		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7959
	P-Group: Technology	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min: 0.00 [%]	Max: 400.00 [%]	Factory setting: 0.00 [%]

p2321	Technology controller Tn adaptation upper starting point / Tn adpt upper pt		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7959
	P-Group: Technology	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min: 0.00 [%]	Max: 400.00 [%]	Factory setting: 100.00 [%]

r2322	CO: Technology controller Tn adaptation output / Tn adapt outp		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: -	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7959
	P-Group: Technology	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: - [s]	Max: - [s]	Factory setting: - [s]

r2349.0...13	CO/BO: Technology controller status word / Tec_ctrl ZSW		
SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: 7958
	P-Group: Technology	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

p2502[0...n]	LR encoder assignment / Encoder assignment		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: C2(25)	Calculated: -	Access level: 1
	Data type: Integer16	Dynamic index: DDS, p0180	Function diagram: 4010
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0	Max: 3	Factory setting: 1

p2503[0...n]	LR length unit LU per 10 mm / LU per 10 mm		
SERVO_840 (APC, APC, AVS/APC-ECO, AVS/APC-ECO, Pos ctrl, Pos ctrl, Pos ctrl), SERVO_DBSI (APC, APC, AVS/APC-ECO, AVS/APC-ECO, Pos ctrl, Pos ctrl, Pos ctrl)	Can be changed: C2(25) Data type: Unsigned32 P-Group: Closed-loop position control Not for motor type: - Min: 1 [LU]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2147483647 [LU]	Access level: 1 Function diagram: 4010 Unit selection: - Expert list: 1 Factory setting: 10000 [LU]
p2504[0...n]	LR motor/load motor distance / Mot/load mot dis		
SERVO_840 (APC, APC, AVS/APC-ECO, AVS/APC-ECO, Lin, Lin, Lin, Lin, Lin, Pos ctrl, Pos ctrl, Pos ctrl), SERVO_DBSI (APC, APC, AVS/APC-ECO, AVS/APC-ECO, Lin, Lin, Lin, Lin, Lin, Pos ctrl, Pos ctrl, Pos ctrl)	Can be changed: C2(25) Data type: Unsigned32 P-Group: Closed-loop position control Not for motor type: - Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1048576	Access level: 1 Function diagram: 4010, 4704, 4711 Unit selection: - Expert list: 1 Factory setting: 1
p2504[0...n]	LR motor/load motor revolutions / Mot/load mot rev		
SERVO_840 (APC, APC, AVS/APC-ECO, AVS/APC-ECO, Pos ctrl, Pos ctrl, Pos ctrl), SERVO_DBSI (APC, APC, AVS/APC-ECO, AVS/APC-ECO, Pos ctrl, Pos ctrl, Pos ctrl)	Can be changed: C2(25) Data type: Unsigned32 P-Group: Closed-loop position control Not for motor type: - Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1048576	Access level: 1 Function diagram: 4010, 4704, 4711 Unit selection: - Expert list: 1 Factory setting: 1
p2505[0...n]	LR motor/load load revolutions / Mot/load load rev		
SERVO_840 (APC, APC, AVS/APC-ECO, AVS/APC-ECO, Pos ctrl, Pos ctrl, Pos ctrl), SERVO_DBSI (APC, APC, AVS/APC-ECO, AVS/APC-ECO, Pos ctrl, Pos ctrl, Pos ctrl)	Can be changed: C2(25) Data type: Integer32 P-Group: Closed-loop position control Not for motor type: - Min: -1048576	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1048576	Access level: 1 Function diagram: 4010, 4704, 4711 Unit selection: - Expert list: 1 Factory setting: 1
p2506[0...n]	LR length unit LU per load path / LU per load path		
SERVO_840 (APC, APC, AVS/APC-ECO, AVS/APC-ECO, Lin, Lin, Lin, Lin, Lin, Pos ctrl, Pos ctrl, Pos ctrl), SERVO_DBSI (APC, APC, AVS/APC-ECO, AVS/APC-ECO, Lin, Lin, Lin, Lin, Lin, Pos ctrl, Pos ctrl, Pos ctrl)	Can be changed: C2(25) Data type: Unsigned32 P-Group: Closed-loop position control Not for motor type: - Min: 1 [LU]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2147483647 [LU]	Access level: 1 Function diagram: 4010 Unit selection: - Expert list: 1 Factory setting: 10000 [LU]

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p2506[0...n]	LR length unit LU per load revolution / LU per load rev		
SERVO_840 (APC, APC, AVS/APC-ECO, AVS/APC-ECO, Pos ctrl, Pos ctrl), SERVO_DBSI (APC, APC, AVS/APC-ECO, AVS/APC-ECO, Pos ctrl, Pos ctrl)	Can be changed: C2(25) Data type: Unsigned32 P-Group: Closed-loop position control Not for motor type: - Min: 1 [LU]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2147483647 [LU]	Access level: 1 Function diagram: 4010 Unit selection: - Expert list: 1 Factory setting: 10000 [LU]
p2507[0...n]	LR absolute encoder adjustment status / Abs_enc_adj stat		
SERVO_840 (EPOS, Pos ctrl, Pos ctrl), SERVO_DBSI (EPOS, Pos ctrl, Pos ctrl)	Can be changed: T, U Data type: Integer16 P-Group: Closed-loop position control Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 4	Access level: 1 Function diagram: 4010 Unit selection: - Expert list: 1 Factory setting: 1
p2508[0...3]	BI: LR activate reference mark search / Ref_mark act		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4010 Unit selection: - Expert list: 1 Factory setting: 0
p2509[0...3]	BI: LR activate measuring probe evaluation / MT_eval act		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4010 Unit selection: - Expert list: 1 Factory setting: 0
p2510[0...3]	BI: LR selecting measuring probe evaluation / MT_eval select		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3615, 4010 Unit selection: - Expert list: 1 Factory setting: 0
p2511[0...3]	BI: LR measuring probe evaluation edge / MT_eval edge		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3615, 4010 Unit selection: - Expert list: 1 Factory setting: 0

p2512[0...3] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Bl: LR pos. actual value preprocessing activate corr. value (edge) / ActV_prepCorrAct Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4010, 4015 Unit selection: - Expert list: 1 Factory setting: 0
p2513[0...3] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Cl: LR Position actual value preprocessing corrective value / ActV_prep corr Can be changed: T Data type: Unsigned32 / Integer32 P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4010, 4015 Unit selection: - Expert list: 1 Factory setting: 0
p2514[0...3] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Bl: LR activate position actual value setting / s_act setting act Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4010 Unit selection: - Expert list: 1 Factory setting: 0
p2515[0...3] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Cl: LR position actual setting setting value / s_act set setVal Can be changed: T Data type: Unsigned32 / Integer32 P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4010 Unit selection: - Expert list: 1 Factory setting: 0
p2516[0...3] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Cl: LR position offset / Position offset Can be changed: T Data type: Unsigned32 / Integer32 P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4010 Unit selection: - Expert list: 1 Factory setting: 0
p2517[0...2] SERVO_840 (Dig IO, Pos ctrl), SERVO_DBSI (Dig IO, Pos ctrl)	LR direct measuring probe 1 / Direct MT 1 Can be changed: T, U Data type: Integer16 P-Group: Closed-loop position control Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 51	Access level: 3 Function diagram: 4010 Unit selection: - Expert list: 1 Factory setting: 0

p2517[0...2]	LR direct measuring probe 1 / Direct MT 1		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 4010
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	18	0

p2518[0...2]	LR direct measuring probe 2 / Direct MT 2		
SERVO_840 (Dig IO, Pos ctrl), SERVO_DBSI (Dig IO, Pos ctrl)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 4010
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	51	0

p2518[0...2]	LR direct measuring probe 2 / Direct MT 2		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 4010
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	18	0

p2519[0...n]	LR position actual value preprocessing config. DDS changeover / s_act config DDS		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: Integer16	Dynamic index: DDS, p0180	Function diagram: -
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	5	1

r2520[0...2]	CO: LR Position actual value preprocessing encoder control word / ActV_prep STW		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned16	Dynamic index: -	Function diagram: 4010
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r2521[0...3]	CO: LR position actual value / s_act		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: -	Calculated: -	Access level: 1
	Data type: Integer32	Dynamic index: -	Function diagram: 4010
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [LU]	- [LU]	- [LU]

r2522[0...3] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	CO: LR velocity actual value / v_act Can be changed: - Data type: Integer32 P-Group: Closed-loop position control Not for motor type: - Min: - [1000 LU/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [1000 LU/min]	Access level: 1 Function diagram: 4010 Unit selection: - Expert list: 1 Factory setting: - [1000 LU/min]
r2523[0...3] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	CO: LR measured value / Measured value Can be changed: - Data type: Integer32 P-Group: Closed-loop position control Not for motor type: - Min: - [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [LU]	Access level: 1 Function diagram: 4010 Unit selection: - Expert list: 1 Factory setting: - [LU]
r2524 SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)	CO: LR LU/mm / LU/mm Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: - [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [LU]	Access level: 1 Function diagram: 3630, 4010 Unit selection: - Expert list: 1 Factory setting: - [LU]
r2524 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	CO: LR LU/revolution / LU/revolution Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: - [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [LU]	Access level: 1 Function diagram: 3630, 4010 Unit selection: - Expert list: 1 Factory setting: - [LU]
p2525[0...n] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	CO: LR encoder adjustment offset / Enc_adj offset Can be changed: T Data type: Unsigned32 P-Group: Closed-loop position control Not for motor type: - Min: 0 [LU]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 4294967295 [LU]	Access level: 4 Function diagram: 4010 Unit selection: - Expert list: 1 Factory setting: 0 [LU]
r2526.0...9 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	CO/BO: LR status word / ZSW Can be changed: - Data type: Unsigned16 P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r2527.0...2	CO/BO: LR actual value sensing status word encoder 1 / ActV SensZSW enc 1		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -
r2528.0...2	CO/BO: LR actual value sensing status word encoder 2 / ActV SensZSW enc 2		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -
r2529.0...2	CO/BO: LR actual value sensing status word encoder 3 / ActV SensZSW enc 3		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -
p2530	CI: LR position setpoint / s_set		
SERVO_840 (EPOS, Pos ctrl, Pos ctrl), SERVO_DBSI (EPOS, Pos ctrl, Pos ctrl)	Can be changed: T	Calculated: -	Access level: 1
	Data type: Unsigned32 / Integer32	Dynamic index: -	Function diagram: 4015, 4020
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: 0
p2531	CI: LR velocity setpoint / v_set		
SERVO_840 (EPOS, Pos ctrl, Pos ctrl), SERVO_DBSI (EPOS, Pos ctrl, Pos ctrl)	Can be changed: T	Calculated: -	Access level: 1
	Data type: Unsigned32 / Integer32	Dynamic index: -	Function diagram: 4015
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: 0
p2532	CI: LR position actual value / s_act		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / Integer32	Dynamic index: -	Function diagram: 4015, 4020, 4025
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: 2521[0]

p2533[0...n] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	LR position setpoint filter time constant / s_set_filt Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.00 [ms]	Access level: 1 Function diagram: 4015 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p2534[0...n] SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)	LR velocity precontrol factor / v_prectrl fact Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 200.00 [%]	Access level: 1 Function diagram: 4015, 4025 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p2534[0...n] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	LR speed precontrol factor / n_prectrl fact Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 200.00 [%]	Access level: 1 Function diagram: 4015, 4025 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p2535[0...n] SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)	LR velocity precontrol symmetrizing filter dead time / v_prectrlFil t_dead Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: 0.00	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2.00	Access level: 1 Function diagram: 4015 Unit selection: - Expert list: 1 Factory setting: 0.00
p2535[0...n] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	LR speed precontrol symmetrizing filter dead time / n_prectrlFil t_dead Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: 0.00	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2.00	Access level: 1 Function diagram: 4015 Unit selection: - Expert list: 1 Factory setting: 0.00
p2536[0...n] SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)	LR velocity precontrol symmetrizing filter PT1 / v_prectrl filt PT1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.00 [ms]	Access level: 1 Function diagram: 4015 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]

p2536[0...n]	LR speed precontrol symmetrizing filter PT1 / n_prectrl filt PT1		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4015
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.00 [ms]	Max: 100.00 [ms]	Factory setting: 0.00 [ms]

p2537	CI: LR position controller adaptation / Adaptation		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T	Calculated: -	Access level: 1
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: 4015
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min: -	Max: -	Factory setting: 1

p2538[0...n]	LR proportional gain / Kp		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4015
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.000 [1000 rpm]	Max: 300.000 [1000 rpm]	Factory setting: 1.000 [1000 rpm]

p2539[0...n]	LR integral time / Tn		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 4015
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.00 [ms]	Max: 100000.00 [ms]	Factory setting: 0.00 [ms]

p2540	CO: LR position controller output velocity limit / LR_outp v_lim		
SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 4015
	P-Group: Closed-loop position control	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min: 0.000 [m/min]	Max: 1000.000 [m/min]	Factory setting: 1000.000 [m/min]

p2540	CO: LR position controller output speed limit / LR_outp n_lim		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 4015
	P-Group: Closed-loop position control	Unit group: 3_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min: 0.000 [rpm]	Max: 210000.000 [rpm]	Factory setting: 210000.000 [rpm]

p2541	Cl: LR position controller output velocity limit signal source / LR_outp v_lim s_s		
SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)	Can be changed: T	Calculated: -	Access level: 1
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: 4015
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	2540[0]

p2541	Cl: LR position controller output speed limit signal source / LR_outp n_lim s_s		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T	Calculated: -	Access level: 1
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: 4015
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	2540[0]

p2542	LR standstill window / Standstill window		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: 4020
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0 [LU]	2147483647 [LU]	200 [LU]

p2543	LR standstill monitoring time / t_standstill mon		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 4020
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	100000.00 [ms]	200.00 [ms]

p2544	LR positioning window / Pos_window		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: 4020
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0 [LU]	2147483647 [LU]	40 [LU]

p2545	LR positioning monitoring time / t_pos_mon		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 4020
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	100000.00 [ms]	1000.00 [ms]

p2546[0...n] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	LR dynamic following error monitoring tolerance / s_delta_mon tol Can be changed: T, U Data type: Unsigned32 P-Group: Closed-loop position control Not for motor type: - Min: 0 [LU]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2147483647 [LU]	Access level: 1 Function diagram: 4025 Unit selection: - Expert list: 1 Factory setting: 1000 [LU]
p2547 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	LR cam switching position 1 / Cam position 1 Can be changed: T, U Data type: Integer32 P-Group: Closed-loop position control Not for motor type: - Min: -2147483648 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147483647 [LU]	Access level: 1 Function diagram: 4025 Unit selection: - Expert list: 1 Factory setting: 0 [LU]
p2548 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	LR cam switching position 2 / Cam position 2 Can be changed: T, U Data type: Integer32 P-Group: Closed-loop position control Not for motor type: - Min: -2147483648 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147483647 [LU]	Access level: 1 Function diagram: 4025 Unit selection: - Expert list: 1 Factory setting: 0 [LU]
p2549 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	BI: LR enable 1 / Enable 1 Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4015 Unit selection: - Expert list: 1 Factory setting: 899.2
p2550[0...n] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	BI: LR enable 2 / Enable 2 Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4015 Unit selection: - Expert list: 1 Factory setting: 0
p2551 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	BI: LR setpoint signal fixed / Mess set fixed Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4020 Unit selection: - Expert list: 1 Factory setting: 0

p2552 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Bl: LR signal travel to fixed stop active / Signal TfS act Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4025 Unit selection: - Expert list: 1 Factory setting: 0
p2553 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Bl: LR signal fixed stop reached / Signal fixed stop Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4025 Unit selection: - Expert list: 1 Factory setting: 0
p2554 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Bl: LR signal traversing command active / Sig trav_cmnd act Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4020 Unit selection: - Expert list: 1 Factory setting: 0
p2555 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Cl: LR LU/revolution LU/mm / LU/rev LU/mm Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4015 Unit selection: - Expert list: 1 Factory setting: 2524[0]
r2556 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	CO: LR position setpoint after setpoint smoothing / s_set after interp Can be changed: - Data type: Integer32 P-Group: Closed-loop position control Not for motor type: - Min: - [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [LU]	Access level: 1 Function diagram: 4015 Unit selection: - Expert list: 1 Factory setting: - [LU]
r2557 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	CO: LR position controller input system deviation / LR_inp SysDev Can be changed: - Data type: Integer32 P-Group: Closed-loop position control Not for motor type: - Min: - [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [LU]	Access level: 1 Function diagram: 4015 Unit selection: - Expert list: 1 Factory setting: - [LU]

r2558	CO: LR position controller output P component / LR_outp P comp		
SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)	Can be changed: -	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 4015
	P-Group: Closed-loop position control	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	- [m/min]	- [m/min]	- [m/min]

r2558	CO: LR position controller output P component / LR_outp P comp		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: -	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 4015
	P-Group: Closed-loop position control	Unit group: 3_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	- [rpm]	- [rpm]	- [rpm]

r2559	CO: LR position controller output I component / LR_outp I comp		
SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)	Can be changed: -	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 4015
	P-Group: Closed-loop position control	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	- [m/min]	- [m/min]	- [m/min]

r2559	CO: LR position controller output I component / LR_outp I comp		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: -	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 4015
	P-Group: Closed-loop position control	Unit group: 3_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	- [rpm]	- [rpm]	- [rpm]

r2560	CO: LR velocity setpoint / v_set		
SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)	Can be changed: -	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 4015
	P-Group: Closed-loop position control	Unit group: 4_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	- [m/min]	- [m/min]	- [m/min]

r2560	CO: LR speed setpoint / n_set		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: -	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 4015
	P-Group: Closed-loop position control	Unit group: 3_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	- [rpm]	- [rpm]	- [rpm]

r2561 SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)	CO: LR velocity precontrol value / v_prectrl val Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 1 Function diagram: 4015 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r2561 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	CO: LR speed precontrol value / n_prectrl val Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 1 Function diagram: 4015 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r2562 SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)	CO: LR velocity setpoint total / v_set total Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 1 Function diagram: 4015 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r2562 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	CO: LR total speed setpoint / n_set total Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 1 Function diagram: 4015 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r2563 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	CO: LR following error dynamic model / Follow error dyn Can be changed: - Data type: Integer32 P-Group: Closed-loop position control Not for motor type: - Min: - [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [LU]	Access level: 1 Function diagram: 4025 Unit selection: - Expert list: 1 Factory setting: - [LU]
r2564 SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)	CO: LR force precontrol value / F_prectrl val Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 1 Function diagram: 4015 Unit selection: p0505 Expert list: 1 Factory setting: - [N]

r2564 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	CO: LR torque precontrol value / M_prectrl val Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 1 Function diagram: 4015 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r2565 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	CO: LR following error actual / Following err act Can be changed: - Data type: Integer32 P-Group: Closed-loop position control Not for motor type: - Min: - [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [LU]	Access level: 1 Function diagram: 4015 Unit selection: - Expert list: 1 Factory setting: - [LU]
r2566 SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)	LR velocity input precontrol / v_inp prectrl Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 1 Function diagram: 4015 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r2566 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	LR speed input precontrol / n_inp prectrl Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 1 Function diagram: 4015 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
p2567[0...n] SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)	LR force precontrol mass / F_prectrl mass Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: 0.000000 [kg]	Calculated: - Dynamic index: DDS, p0180 Unit group: 27_1 Scaling: - Max: 100000.000000 [kg]	Access level: 3 Function diagram: 4015 Unit selection: p0100 Expert list: 1 Factory setting: 1.000000 [kg]
p2567[0...n] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	LR torque precontrol moment of inertia / M_prectrl M_inert Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: 0.000000 [kgm ²]	Calculated: - Dynamic index: DDS, p0180 Unit group: 25_1 Scaling: - Max: 100000.000000 [kgm ²]	Access level: 3 Function diagram: 4015 Unit selection: p0100 Expert list: 1 Factory setting: 0.159155 [kgm ²]

p2568 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS STOP cam activation / STOP cam act Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3630 Unit selection: - Expert list: 1 Factory setting: 0
p2569 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS STOP cam minus / STOP cam minus Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3630 Unit selection: - Expert list: 1 Factory setting: 1
p2570 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS STOP cam plus / STOP cam plus Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3630 Unit selection: - Expert list: 1 Factory setting: 1
p2571 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS maximum velocity / v_max Can be changed: T, U Data type: Unsigned32 P-Group: Basic positioner Not for motor type: - Min: 1 [1000 LU/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 40000000 [1000 LU/min]	Access level: 1 Function diagram: 3630 Unit selection: - Expert list: 1 Factory setting: 30000 [1000 LU/min]
p2572 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS maximum acceleration / a_max Can be changed: T Data type: Unsigned32 P-Group: Basic positioner Not for motor type: - Min: 1 [1000 LU/s ²]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2000000 [1000 LU/s ²]	Access level: 1 Function diagram: 3630 Unit selection: - Expert list: 1 Factory setting: 100 [1000 LU/s ²]
p2573 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS maximum deceleration / -a_max Can be changed: T Data type: Unsigned32 P-Group: Basic positioner Not for motor type: - Min: 1 [1000 LU/s ²]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2000000 [1000 LU/s ²]	Access level: 1 Function diagram: 3630 Unit selection: - Expert list: 1 Factory setting: 100 [1000 LU/s ²]

p2574 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS jerk limiting / Jerk lim Can be changed: T, U Data type: Unsigned32 P-Group: Basic positioner Not for motor type: - Min: 1 [1000 LU/s ³]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100000000 [1000 LU/s ³]	Access level: 1 Function diagram: 3635 Unit selection: - Expert list: 1 Factory setting: 10000 [1000 LU/s ³]
p2575 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS jerk limiting activation / Jerk limit act Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3635 Unit selection: - Expert list: 1 Factory setting: 0
p2576 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS modulo correction modulo range / Modulo corr range Can be changed: T Data type: Unsigned32 P-Group: Basic positioner Not for motor type: - Min: 1 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147482647 [LU]	Access level: 1 Function diagram: 3635 Unit selection: - Expert list: 1 Factory setting: 360000 [LU]
p2577 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS modulo correction activation / Modulo corr act Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3630, 3635 Unit selection: - Expert list: 1 Factory setting: 0
p2578 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CI: EPOS software limit switch minus signal source / SW lim sw min s_s Can be changed: T Data type: Unsigned32 / Integer32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3630 Unit selection: - Expert list: 1 Factory setting: 2580[0]
p2579 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CI: EPOS software limit switch plus signal source / SW lim sw plus s_s Can be changed: T Data type: Unsigned32 / Integer32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3630 Unit selection: - Expert list: 1 Factory setting: 2581[0]

p2580 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS software limit switch minus / SW lim sw minus Can be changed: T, U Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: -2147482648 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147482647 [LU]	Access level: 1 Function diagram: 3630 Unit selection: - Expert list: 1 Factory setting: -2147482648 [LU]
p2581 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS software limit switch plus / SW lim sw plus Can be changed: T, U Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: -2147482648 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147482647 [LU]	Access level: 1 Function diagram: 3630 Unit selection: - Expert list: 1 Factory setting: 2147482647 [LU]
p2582 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS software limit switch activation / SW lim sw act Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3630 Unit selection: - Expert list: 1 Factory setting: 0
p2583 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS backlash compensation / Backlash comp Can be changed: T, U Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: -200000 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 200000 [LU]	Access level: 1 Function diagram: 3635 Unit selection: - Expert list: 1 Factory setting: 0 [LU]
p2584 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS functions configuration / EPOS fct config Can be changed: T Data type: Unsigned32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p2585 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS jog 1 setpoint velocity / Jog 1 v_set Can be changed: T, U Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: -40000000 [1000 LU/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 40000000 [1000 LU/min]	Access level: 1 Function diagram: 3610 Unit selection: - Expert list: 1 Factory setting: -300 [1000 LU/min]

p2586 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS jog 2 setpoint velocity / Jog 2 v_set Can be changed: T, U Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: -40000000 [1000 LU/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 40000000 [1000 LU/min]	Access level: 1 Function diagram: 3610 Unit selection: - Expert list: 1 Factory setting: 300 [1000 LU/min]
p2587 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS jog 1 traversing distance / Jog 1 distance Can be changed: T, U Data type: Unsigned32 P-Group: Basic positioner Not for motor type: - Min: 0 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147482647 [LU]	Access level: 1 Function diagram: 3610 Unit selection: - Expert list: 1 Factory setting: 1000 [LU]
p2588 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS jog 2 traversing distance / Jog 2 distance Can be changed: T, U Data type: Unsigned32 P-Group: Basic positioner Not for motor type: - Min: 0 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147482647 [LU]	Access level: 1 Function diagram: 3610 Unit selection: - Expert list: 1 Factory setting: 1000 [LU]
p2589 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS jog 1 signal source / Jog 1 s_s Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3610, 3625 Unit selection: - Expert list: 1 Factory setting: 0
p2590 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS jog 2 signal source / Jog 2 s_s Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3610, 3625 Unit selection: - Expert list: 1 Factory setting: 0
p2591 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS jogging incremental / Jog incr Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3610 Unit selection: - Expert list: 1 Factory setting: 0

p2593 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CI: EPOS LU/revolution LU/mm / LU/rev LU/mm Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3630 Unit selection: - Expert list: 1 Factory setting: 2524[0]
p2594[0...2] SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CI: EPOS Maximum velocity externally limited / v_max ext lim Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 3630 Unit selection: - Expert list: 1 Factory setting: 0
p2595 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS referencing start / Ref start Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3612, 3625, 3614 Unit selection: - Expert list: 1 Factory setting: 0
p2596 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS set reference point / Set ref_pt Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3612 Unit selection: - Expert list: 1 Factory setting: 0
p2597 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS referencing type selection / Ref_typ sel Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3612, 3614, 3625 Unit selection: - Expert list: 1 Factory setting: 0

p2598[0...3]	CI: EPOS reference point coordinate signal source / Ref_pt coord s_s		
SERVO_840 (EPOS, Pos ctrl, Pos ctrl), SERVO_DBSI (EPOS, Pos ctrl, Pos ctrl)	Can be changed: T Data type: Unsigned32 / Integer32 P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3612, 3614 Unit selection: - Expert list: 1 Factory setting: [0] 2599[0] [1] 0 [2] 0 [3] 0
p2599	CO: EPOS reference point coordinate value / Ref_pt coord val		
SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Can be changed: T, U Data type: Integer32 P-Group: Closed-loop position control Not for motor type: - Min: -2147482648 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147482647 [LU]	Access level: 1 Function diagram: 3612 Unit selection: - Expert list: 1 Factory setting: 0 [LU]
p2600	EPOS search for reference reference point offset / Ref_pt offset		
SERVO_840 (EPOS), SERVO_DBSI (EPOS)	Can be changed: T, U Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: -2147482648 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147482647 [LU]	Access level: 1 Function diagram: 3612 Unit selection: - Expert list: 1 Factory setting: 0 [LU]
p2601	EPOS flying referencing inner window / Inner window		
SERVO_840 (EPOS), SERVO_DBSI (EPOS)	Can be changed: T, U Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: 0 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147482647 [LU]	Access level: 1 Function diagram: 3614 Unit selection: - Expert list: 1 Factory setting: 0 [LU]
p2602	EPOS flying referencing outer window / Outer window		
SERVO_840 (EPOS), SERVO_DBSI (EPOS)	Can be changed: T, U Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: 0 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147482647 [LU]	Access level: 1 Function diagram: 3614 Unit selection: - Expert list: 1 Factory setting: 0 [LU]

p2603 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS flying referencing, positioning mode relative / Pos_mode relative Can be changed: T, U Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 1 Function diagram: 3635 Unit selection: - Expert list: 1 Factory setting: 1
p2604 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS search for reference start direction / Srch for ref dir Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3612 Unit selection: - Expert list: 1 Factory setting: 0
p2605 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS search for reference approach velocity reference cam / v_appr ref_cam Can be changed: T, U Data type: Unsigned32 P-Group: Basic positioner Not for motor type: - Min: 1 [1000 LU/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 40000000 [1000 LU/min]	Access level: 1 Function diagram: 3612 Unit selection: - Expert list: 1 Factory setting: 5000 [1000 LU/min]
p2606 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS search for reference reference cam maximum distance / Ref_cam max s Can be changed: T, U Data type: Unsigned32 P-Group: Basic positioner Not for motor type: - Min: 0 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147482647 [LU]	Access level: 1 Function diagram: 3612 Unit selection: - Expert list: 1 Factory setting: 2147482647 [LU]
p2607 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS search for reference reference cam present / Ref_cam pres Can be changed: T, U Data type: Unsigned8 P-Group: Basic positioner Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 1 Function diagram: 3612 Unit selection: - Expert list: 1 Factory setting: 1
p2608 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS search for reference approach velocity zero mark / v_appr ref_ZM Can be changed: T, U Data type: Unsigned32 P-Group: Basic positioner Not for motor type: - Min: 1 [1000 LU/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 40000000 [1000 LU/min]	Access level: 1 Function diagram: 3612 Unit selection: - Expert list: 1 Factory setting: 300 [1000 LU/min]

p2609	EPOS search for reference max distance ref cam and zero mark / Max s ref_cam ZM		
SERVO_840 (EPOS), SERVO_DBSI (EPOS)	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: 3612
	P-Group: Basic positioner	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0 [LU]	2147482647 [LU]	20000 [LU]

p2610	EPOS search for ref. tol. bandwidth for distance to zero mark / Tol_band to ZM		
SERVO_840 (EPOS), SERVO_DBSI (EPOS)	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: 3612
	P-Group: Basic positioner	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0 [LU]	2147482647 [LU]	2147482647 [LU]

p2611	EPOS search for reference approach velocity reference point / v_appr ref_pt		
SERVO_840 (EPOS), SERVO_DBSI (EPOS)	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: 3612
	P-Group: Basic positioner	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1 [1000 LU/min]	40000000 [1000 LU/min]	300 [1000 LU/min]

p2612	BI: EPOS search for reference reference cam / Ref_cam		
SERVO_840 (EPOS), SERVO_DBSI (EPOS)	Can be changed: T	Calculated: -	Access level: 1
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 3612
	P-Group: Basic positioner	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p2613	BI: EPOS search for reference reversing cam minus / Rev minus		
SERVO_840 (EPOS), SERVO_DBSI (EPOS)	Can be changed: T	Calculated: -	Access level: 1
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 3612
	P-Group: Basic positioner	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	1

p2614	BI: EPOS search for reference reversing cam plus / Rev cam plus		
SERVO_840 (EPOS), SERVO_DBSI (EPOS)	Can be changed: T	Calculated: -	Access level: 1
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 3612
	P-Group: Basic positioner	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	1

p2615 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS maximum number of traversing blocks / Trav_block qty max Can be changed: C2(17) Data type: Unsigned8 P-Group: Basic positioner Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 64	Access level: 1 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: 64
p2616[0...n] SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS traversing block block number / Trav_blk, blk no Can be changed: T, U Data type: Integer16 P-Group: Basic positioner Not for motor type: - Min: -1	Calculated: - Dynamic index: p2615 Unit group: - Scaling: - Max: 63	Access level: 1 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: -1
p2617[0...n] SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS traversing block position / Trav_block pos Can be changed: T, U Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: -2147482648 [LU]	Calculated: - Dynamic index: p2615 Unit group: - Scaling: - Max: 2147482647 [LU]	Access level: 1 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: 0 [LU]
p2618[0...n] SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS traversing block velocity / Trav_block v Can be changed: T, U Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: 1 [1000 LU/min]	Calculated: - Dynamic index: p2615 Unit group: - Scaling: - Max: 40000000 [1000 LU/min]	Access level: 1 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: 600 [1000 LU/min]
p2619[0...n] SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS traversing block acceleration override / Trav_block a_over Can be changed: T, U Data type: FloatingPoint32 P-Group: Basic positioner Not for motor type: - Min: 1.0 [%]	Calculated: - Dynamic index: p2615 Unit group: - Scaling: - Max: 100.0 [%]	Access level: 1 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: 100.0 [%]
p2620[0...n] SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS traversing deceleration override / Trav_block -a_over Can be changed: T, U Data type: FloatingPoint32 P-Group: Basic positioner Not for motor type: - Min: 1.0 [%]	Calculated: - Dynamic index: p2615 Unit group: - Scaling: - Max: 100.0 [%]	Access level: 1 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: 100.0 [%]

p2621[0...n] SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS traversing block task / Trav_block task Can be changed: T, U Data type: Integer16 P-Group: Basic positioner Not for motor type: - Min: 1	Calculated: - Dynamic index: p2615 Unit group: - Scaling: - Max: 9	Access level: 1 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: 1
p2622[0...n] SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS traversing block task parameter / Trav_blk task_par Can be changed: T, U Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: -2147483648	Calculated: - Dynamic index: p2615 Unit group: - Scaling: - Max: 2147483647	Access level: 1 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: 0
p2623[0...n] SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS traversing block task mode / Trav_block mode Can be changed: T, U Data type: Unsigned16 P-Group: Basic positioner Not for motor type: - Min: 0	Calculated: - Dynamic index: p2615 Unit group: - Scaling: - Max: 65535	Access level: 1 Function diagram: 3515, 3616 Unit selection: - Expert list: 1 Factory setting: 0
p2624 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS traversing block sorting / Trav_block sort Can be changed: T, U Data type: Unsigned16 P-Group: Basic positioner Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 1 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: 0
p2625 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS traversing block selection bit 0 / Trav_blk sel bit 0 Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3616, 3640 Unit selection: - Expert list: 1 Factory setting: 0
p2626 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS traversing block selection bit 1 / Trav_blk sel bit 1 Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3616, 3640 Unit selection: - Expert list: 1 Factory setting: 0

p2627 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS traversing block selection bit 2 / Trav_blk sel bit 2 Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3616, 3640 Unit selection: - Expert list: 1 Factory setting: 0
p2628 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS traversing block selection bit 3 / Trav_blk sel bit 3 Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3616, 3640 Unit selection: - Expert list: 1 Factory setting: 0
p2629 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS traversing block selection bit 4 / Trav_blk sel bit 4 Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3616, 3640 Unit selection: - Expert list: 1 Factory setting: 0
p2630 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS traversing block selection bit 5 / Trav_blk sel bit 5 Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3616, 3640 Unit selection: - Expert list: 1 Factory setting: 0
p2631 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS activate traversing task (0 -> 1) / Trav_task act Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3616, 3625 Unit selection: - Expert list: 1 Factory setting: 0
p2632 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS external block change evaluation / Ext blk chg eval Can be changed: T Data type: Integer16 P-Group: Basic positioner Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 1 Function diagram: 3615, 3616 Unit selection: - Expert list: 1 Factory setting: 0

p2633 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS external block change (0 -> 1) / Ext blk chg (0->1) Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3615 Unit selection: - Expert list: 1 Factory setting: 0
p2634[0...n] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	EPOS fixed stop maximum following error / Following err max Can be changed: T, U Data type: Unsigned32 P-Group: Closed-loop position control Not for motor type: - Min: 0 [LU]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2147482647 [LU]	Access level: 1 Function diagram: 3617, 4025 Unit selection: - Expert list: 1 Factory setting: 1000 [LU]
p2635 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	EPOS fixed stop monitoring window / Fixed stop mon Can be changed: T, U Data type: Unsigned32 P-Group: Closed-loop position control Not for motor type: - Min: 0 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147482647 [LU]	Access level: 1 Function diagram: 3617, 4025 Unit selection: - Expert list: 1 Factory setting: 100 [LU]
p2637 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS fixed stop reached / Fixed stop reached Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3616, 3617 Unit selection: - Expert list: 1 Factory setting: 2526.4
p2638 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS fixed stop outside the monitoring window / Fixed stop outside Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3616, 3617 Unit selection: - Expert list: 1 Factory setting: 2526.5
p2639 SERVO_840 (EPOS, Lin), SERVO_DBSI (EPOS, Lin)	BI: EPOS force limit reached / F_limit reached Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: 1407.7

p2639 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS torque limit reached / M_limit reached Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: 1407.7
p2640 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS intermediate stop (0 signal) / Intermediate stop Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3616, 3620, 3625 Unit selection: - Expert list: 1 Factory setting: 0
p2641 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS reject traversing task (0 signal) / Trav_task reject Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3616, 3620, 3625 Unit selection: - Expert list: 1 Factory setting: 0
p2642 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CI: EPOS direct setpoint input/MDI position setpoint / MDI s_set Can be changed: T Data type: Unsigned32 / Integer32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3618 Unit selection: - Expert list: 1 Factory setting: 2690[0]
p2643 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CI: EPOS direct setpoint input/MDI velocity setpoint / MDI v_set Can be changed: T Data type: Unsigned32 / Integer32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3618 Unit selection: - Expert list: 1 Factory setting: 2691[0]
p2644 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CI: EPOS direct setpoint input/MDI acceleration override / MDI a_over Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 1 Function diagram: 3618 Unit selection: - Expert list: 1 Factory setting: 2692[0]

p2645 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CI: EPOS direct setpoint input/MDI deceleration override / MDI -a_over		
	Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 1 Function diagram: 3618 Unit selection: - Expert list: 1 Factory setting: 2693[0]
p2646 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CI: EPOS velocity override / v_over		
	Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 1 Function diagram: 3630 Unit selection: - Expert list: 1 Factory setting: 1
p2647 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS direct setpoint input/MDI selection / MDI selection		
	Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3620, 3625, 3640 Unit selection: - Expert list: 1 Factory setting: 0
p2648 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS direct setpoint input/MDI positioning type / MDI pos_type		
	Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3620 Unit selection: - Expert list: 1 Factory setting: 0
p2649 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS direct setpoint input/MDI transfer type selection / MDI trans_type sel		
	Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3620 Unit selection: - Expert list: 1 Factory setting: 0
p2650 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS direct setpoint input/MDI setpoint acceptance edge / MDI set_accept		
	Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3620 Unit selection: - Expert list: 1 Factory setting: 0

p2651 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS direct setpoint input/MDI direction selection, positive / MDI dir_sel pos Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3620 Unit selection: - Expert list: 1 Factory setting: 0
p2652 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS direct setpoint input/MDI direction selection negative / MDI dir_sel neg Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3620 Unit selection: - Expert list: 1 Factory setting: 0
p2653 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS direct setpoint input/MDI setting-up selection / MDI setting-up sel Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3620 Unit selection: - Expert list: 1 Factory setting: 0
p2654 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CI: EPOS direct setpoint input/MDI mode adaptation / MDI mode adapt Can be changed: T Data type: Unsigned32 / Integer16 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3620 Unit selection: - Expert list: 1 Factory setting: 0
p2655[0...1] SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS select tracking mode / Sel tracking mode Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3635 Unit selection: - Expert list: 1 Factory setting: [0] 1 [1] 2526.7
p2656 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS enable basic positioner / EPOS enable Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3635 Unit selection: - Expert list: 1 Factory setting: 2526.3

p2657 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CI: EPOS position actual value/position setting value / Pos act/set value Can be changed: T Data type: Unsigned32 / Integer32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3610, 3616, 3620, 3635 Unit selection: - Expert list: 1 Factory setting: 2521[0]
p2658 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS position actual value valid feedback signal / Pos valid feedback Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3635 Unit selection: - Expert list: 1 Factory setting: 2526.0
p2659 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS referencing active feedback signal / Ref act fdbk Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3612 Unit selection: - Expert list: 1 Factory setting: 2526.1
p2660 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CI: EPOS measured value referencing / Meas val ref Can be changed: T Data type: Unsigned32 / Integer32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3612, 3614 Unit selection: - Expert list: 1 Factory setting: 2523[0]
p2661 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS measured value valid feedback signal / MeasVal valid fdbk Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3612, 3614, 3615 Unit selection: - Expert list: 1 Factory setting: 2526.2
p2662 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS adjustment value valid feedback signal / Adj val valid FS Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 2526.9

p2663 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	BI: EPOS clamping active feedback signal / Clamping act FS Can be changed: T Data type: Unsigned32 / Binary P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: 2526.8
r2665 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS position setpoint / s_set Can be changed: - Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: - [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [LU]	Access level: 1 Function diagram: 3635 Unit selection: - Expert list: 1 Factory setting: - [LU]
r2666 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS velocity setpoint / v_set Can be changed: - Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: - [1000 LU/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [1000 LU/min]	Access level: 1 Function diagram: 3635 Unit selection: - Expert list: 1 Factory setting: - [1000 LU/min]
r2667 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS backlash compensation value / Backlash value Can be changed: - Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: - [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [LU]	Access level: 1 Function diagram: 3635 Unit selection: - Expert list: 1 Factory setting: - [LU]
r2669 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO/BO: EPOS actual operating mode / Op mode act Can be changed: - Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3625, 3630 Unit selection: - Expert list: 1 Factory setting: -
r2670.0...15 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO/BO: EPOS status word active traversing block / ZSW act trav_blk Can be changed: - Data type: Unsigned32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3615, 3625, 3650 Unit selection: - Expert list: 1 Factory setting: -

r2671 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS actual position setpoint / s_set act Can be changed: - Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: - [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [LU]	Access level: 1 Function diagram: 3610, 3616, 3620 Unit selection: - Expert list: 1 Factory setting: - [LU]
r2672 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS actual velocity setpoint / v_set act Can be changed: - Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: - [1000 LU/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [1000 LU/min]	Access level: 1 Function diagram: 3610, 3612, 3616, 3620 Unit selection: - Expert list: 1 Factory setting: - [1000 LU/min]
r2673 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS actual acceleration override / a_over act Can be changed: - Data type: FloatingPoint32 P-Group: Basic positioner Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%]	Access level: 1 Function diagram: 3610, 3612, 3616, 3620 Unit selection: - Expert list: 1 Factory setting: - [%]
r2674 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS actual deceleration override / -a_over act Can be changed: - Data type: FloatingPoint32 P-Group: Basic positioner Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%]	Access level: 1 Function diagram: 3610, 3612, 3616, 3620 Unit selection: - Expert list: 1 Factory setting: - [%]
r2675 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS actual task / Task act Can be changed: - Data type: Integer16 P-Group: Basic positioner Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 9	Access level: 1 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: -

r2676 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS actual task parameter / Task par act Can be changed: - Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: -
r2677 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS actual task mode / Task mode act Can be changed: - Data type: Unsigned16 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: -
r2678 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS external block change actual position / Ext blk chg s_act Can be changed: - Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: - [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [LU]	Access level: 1 Function diagram: 3615, 3616, 3620 Unit selection: - Expert list: 1 Factory setting: - [LU]
r2680 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS clearance reference cam and zero mark / Clear ref_cams/NM Can be changed: - Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: - [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [LU]	Access level: 1 Function diagram: 3612 Unit selection: - Expert list: 1 Factory setting: - [LU]
r2681 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS velocity override effective / v_over effective Can be changed: - Data type: FloatingPoint32 P-Group: Basic positioner Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%]	Access level: 1 Function diagram: 3630 Unit selection: - Expert list: 1 Factory setting: - [%]
r2682 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS residual distance to go / Residual distance Can be changed: - Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: - [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [LU]	Access level: 1 Function diagram: 3635 Unit selection: - Expert list: 1 Factory setting: - [LU]

r2683.0...14 CO/BO: EPOS status word 1 / POS_ZSW1

SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)

Can be changed: -

Data type: Unsigned16

P-Group: Closed-loop position control

Not for motor type: -

Min:

-

Calculated: -

Dynamic index: -

Unit group: -

Scaling: -

Max:

-

Access level: 1

Function diagram: 3645

Unit selection: -

Expert list: 1

Factory setting:

-

r2683.0...14 CO/BO: EPOS status word 1 / POS_ZSW1

SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)

Can be changed: -

Data type: Unsigned16

P-Group: Closed-loop position control

Not for motor type: -

Min:

-

Calculated: -

Dynamic index: -

Unit group: -

Scaling: -

Max:

-

Access level: 1

Function diagram: 3645

Unit selection: -

Expert list: 1

Factory setting:

-

r2684.0...15 CO/BO: EPOS status word 2 / POS_ZSW2

SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)

Can be changed: -

Data type: Unsigned16

P-Group: Closed-loop position control

Not for motor type: -

Min:

-

Calculated: -

Dynamic index: -

Unit group: -

Scaling: -

Max:

-

Access level: 1

Function diagram: 3646

Unit selection: -

Expert list: 1

Factory setting:

-

r2685 CO: EPOS corrective value / Correction value

SERVO_840 (EPOS), SERVO_DBSI (EPOS)

Can be changed: -

Data type: Integer32

P-Group: Basic positioner

Not for motor type: -

Min:

- [LU]

Calculated: -

Dynamic index: -

Unit group: -

Scaling: -

Max:

- [LU]

Access level: 1

Function diagram: 3635

Unit selection: -

Expert list: 1

Factory setting:

- [LU]

r2686[0...1] CO: EPOS force limit effective / F_limit eff

SERVO_840 (EPOS, Lin), SERVO_DBSI (EPOS, Lin)

Can be changed: -

Data type: FloatingPoint32

P-Group: Basic positioner

Not for motor type: -

Min:

- [%]

Calculated: -

Dynamic index: -

Unit group: -

Scaling: -

Max:

- [%]

Access level: 3

Function diagram: 3616, 3617

Unit selection: -

Expert list: 1

Factory setting:

- [%]

r2686[0...1] CO: EPOS torque limiting effective / M_limit eff

SERVO_840 (EPOS), SERVO_DBSI (EPOS)

Can be changed: -

Data type: FloatingPoint32

P-Group: Basic positioner

Not for motor type: -

Min:

- [%]

Calculated: -

Dynamic index: -

Unit group: -

Scaling: -

Max:

- [%]

Access level: 3

Function diagram: 3616, 3617

Unit selection: -

Expert list: 1

Factory setting:

- [%]

r2687 SERVO_840 (EPOS, Lin), SERVO_DBSI (EPOS, Lin)	CO: EPOS force setpoint / F_set Can be changed: - Data type: FloatingPoint32 P-Group: Basic positioner Not for motor type: - Min: - [N]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [N]	Access level: 3 Function diagram: 3616, 3617 Unit selection: - Expert list: 1 Factory setting: - [N]
r2687 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS torque setpoint / M_set Can be changed: - Data type: FloatingPoint32 P-Group: Basic positioner Not for motor type: - Min: - [Nm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Nm]	Access level: 3 Function diagram: 3616, 3617 Unit selection: - Expert list: 1 Factory setting: - [Nm]
p2688 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	EPOS position feedback signal tolerance window / Pos_FS tol Can be changed: T, U Data type: Unsigned32 P-Group: Basic positioner Not for motor type: - Min: 0 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147482647 [LU]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 40 [LU]
r2689[0...1] SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS position feedback signal display / Pos_FS display Can be changed: - Data type: Unsigned32 P-Group: Basic positioner Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 3616 Unit selection: - Expert list: 1 Factory setting: -
p2690 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS position fixed setpoint / Pos fixed val Can be changed: T, U Data type: Integer32 P-Group: Basic positioner Not for motor type: - Min: -2147482648 [LU]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147482647 [LU]	Access level: 1 Function diagram: 3618 Unit selection: - Expert list: 1 Factory setting: 0 [LU]
p2691 SERVO_840 (EPOS), SERVO_DBSI (EPOS)	CO: EPOS velocity fixed setpoint / v fixed value Can be changed: T, U Data type: Unsigned32 P-Group: Basic positioner Not for motor type: - Min: 1 [1000 LU/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 40000000 [1000 LU/min]	Access level: 1 Function diagram: 3618 Unit selection: - Expert list: 1 Factory setting: 600 [1000 LU/min]

p2692	CO: EPOS acceleration override, fixed setpoint / a_over fixed val		
SERVO_840 (EPOS), SERVO_DBSI (EPOS)	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 3618
	P-Group: Basic positioner	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.100 [%]	100.000 [%]	100.000 [%]

p2693	CO: EPOS deceleration override, fixed setpoint / -a_over fixed val		
SERVO_840 (EPOS), SERVO_DBSI (EPOS)	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 3618
	P-Group: Basic positioner	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.100 [%]	100.000 [%]	100.000 [%]

p2694	CI: LR supplementary setpoint position / Suppl set pos		
SERVO_840 (EPOS, Pos ctrl, Pos ctrl), SERVO_DBSI (EPOS, Pos ctrl, Pos ctrl)	Can be changed: T	Calculated: -	Access level: 1
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p2695	CI: LR supplementary setpoint velocity / Suppl set v		
SERVO_840 (EPOS, Pos ctrl, Pos ctrl), SERVO_DBSI (EPOS, Pos ctrl, Pos ctrl)	Can be changed: T	Calculated: -	Access level: 1
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop position control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

r2696	CO: EPOS position setpoint fine resolution / s_set fine res		
SERVO_840 (EPOS), SERVO_DBSI (EPOS)	Can be changed: -	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Basic positioner	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [LU]	- [LU]	- [LU]

r2697	CO: EPOS velocity setpoint fine resolution / v_set fine res		
SERVO_840 (EPOS), SERVO_DBSI (EPOS)	Can be changed: -	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Basic positioner	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [1000 LU/min]	- [1000 LU/min]	- [1000 LU/min]

r2700 ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	CO: Reference speed/reference frequency / n_ref/f_ref Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2700 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Reference velocity/reference frequency actual / v_ref/f_ref act Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2700 A_INF_840, B_INF_840	CO: Reference frequency / f_ref Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2700 S_INF_840	CO: Reference frequency actual / f_ref act Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2700 ENC_840 (Lin_enc)	CO: Reference velocity/reference frequency actual / v_ref/f_ref act Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2701 HLA_840, HLA_DBSI	CO: Reference voltage / Reference voltage Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r2701 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI, TM41	CO: Reference voltage / Reference voltage Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2702 A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	CO: Reference current / Reference current Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2703 SERVO_840, SERVO_DBSI, TM41	CO: Reference torque / Reference torque Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2703 HLA_840, HLA_DBSI, SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: Reference force actual / Ref force cur Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2704 A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	CO: Reference power / Reference power Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2705 A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	CO: Reference angle / Reference angle Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r2706 A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM31, TM41	CO: Reference temperature / Reference temp Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r2707 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	CO: Reference acceleration / Ref a Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p2720[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Load gear configuration / Load gear config Can be changed: C2(1, 4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p2721[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Load gear rotary absolute encoder revolutions virtual / Abs rot rev Can be changed: C2(1, 4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 4194303	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p2722[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Load gear position tracking tolerance window / Pos track tol Can be changed: C2(1, 4) Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: 0.00	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 4294967300.00	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00
r2723[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Load gear absolute value / Load gear AbsV Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4010, 4704 Unit selection: - Expert list: 1 Factory setting: -

r2724[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Load gear position difference / Load gear pos diff Can be changed: - Data type: Integer32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p2730[0...3] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	BI: LR pos. actual value preprocessing activate neg. corr. (edge) / ActV_prep neg corr Can be changed: T Data type: Unsigned32 / Binary P-Group: Closed-loop position control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 4010, 4015 Unit selection: - Expert list: 1 Factory setting: 0
p2733[0...n] SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	CO: LR encoder adjustment DDS / Enc_adj DDS Can be changed: T Data type: Unsigned8 P-Group: Closed-loop position control Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 255	Access level: 4 Function diagram: 4010 Unit selection: - Expert list: 1 Factory setting: 0
p2740 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	Position controller preassignment torque precontrol / Preassgn M_prectrl Can be changed: T Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r2741 SERVO_840 (Lin, Pos ctrl), SERVO_DBSI (Lin, Pos ctrl)	CO: LR acceleration precontrol value / a_prectrl value Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: - [m/s ²]	Calculated: - Dynamic index: - Unit group: 22_2 Scaling: p2007 Max: - [m/s ²]	Access level: 1 Function diagram: 4015 Unit selection: p0505 Expert list: 1 Factory setting: - [m/s ²]
r2741 SERVO_840 (Pos ctrl), SERVO_DBSI (Pos ctrl)	CO: LR acceleration precontrol value / a_prectrl value Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop position control Not for motor type: - Min: - [rev/s ²]	Calculated: - Dynamic index: - Unit group: 39_1 Scaling: p2007 Max: - [rev/s ²]	Access level: 1 Function diagram: 4015 Unit selection: p0505 Expert list: 1 Factory setting: - [rev/s ²]

p2780[0...5] SERVO_840 (Ctrl_par adapt), SERVO_DBSI (Ctrl_par adapt)	Activate adaptation block / Act adpt block Can be changed: T Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 5055 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 bin
p2782[0...5] SERVO_840 (Ctrl_par adapt), SERVO_DBSI (Ctrl_par adapt)	Adaptation mode / Adpt mode Can be changed: T Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 8	Access level: 3 Function diagram: 5055 Unit selection: - Expert list: 1 Factory setting: 0
p2783[0...5] SERVO_840 (Ctrl_par adapt), SERVO_DBSI (Ctrl_par adapt)	Adaptation lower limit value / Adpt lower lim val Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: 5055 Unit selection: - Expert list: 1 Factory setting: 500
p2784[0...5] SERVO_840 (Ctrl_par adapt), SERVO_DBSI (Ctrl_par adapt)	Adaptation upper limit value / Adpt upper lim val Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: 5055 Unit selection: - Expert list: 1 Factory setting: 2000
p2788[0...5] SERVO_840 (Ctrl_par adapt), SERVO_DBSI (Ctrl_par adapt)	CI: Adaptation factor signal source / Adpt fact s_s Can be changed: T Data type: Unsigned32 / Integer32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 5055 Unit selection: - Expert list: 1 Factory setting: 0
r2789[0...5] SERVO_840 (Ctrl_par adapt), SERVO_DBSI (Ctrl_par adapt)	Active adaptation factor / Act adpt fact Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%]	Access level: 3 Function diagram: 5055 Unit selection: - Expert list: 1 Factory setting: - [%]

r2790[0...5]	Adaptation denominator natural frequency active / Adapt fn_den act		
SERVO_840 (Ctrl_par adapt), SERVO_DBSI (Ctrl_par adapt)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 5055
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [Hz]	- [Hz]	- [Hz]

r2791[0...5]	Adaptation numerator natural frequency active / Adapt fn_num act		
SERVO_840 (Ctrl_par adapt), SERVO_DBSI (Ctrl_par adapt)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 5055
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [Hz]	- [Hz]	- [Hz]

p2810[0...1]	BI: AND logic operation inputs / AND inputs		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: -	Access level: 2
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 2634
	P-Group: Functions	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

r2811.0	CO/BO: AND logic operation result / AND result		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2634
	P-Group: Functions	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

p2816[0...1]	BI: OR logic operation inputs / OR inputs		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: -	Access level: 2
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 2634
	P-Group: Functions	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

r2817.0	CO/BO: OR logic operation result / OR result		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2634
	P-Group: Functions	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

p2822[0...3] SERVO_840, SERVO_DBSI	BI: NOT logic operation input / NOT input Can be changed: T Data type: Unsigned32 / Binary P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2634 Unit selection: - Expert list: 1 Factory setting: 0
r2823.0...3 SERVO_840, SERVO_DBSI	CO/BO: NOT logic operation result / NOT result Can be changed: - Data type: Unsigned32 P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2634 Unit selection: - Expert list: 1 Factory setting: -
p2900[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Fixed value 1 [%] / Fixed value 1 [%] Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -10000.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: PERCENT Max: 10000.00 [%]	Access level: 3 Function diagram: 1021 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p2900 A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Line transf, Suppl cl- loop ctrl, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	CO: Fixed value 1 [%] / Fixed value 1 [%] Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -10000.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: 10000.00 [%]	Access level: 3 Function diagram: 1021 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p2901[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Fixed value 2 [%] / Fixed value 2 [%] Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -10000.00 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: PERCENT Max: 10000.00 [%]	Access level: 3 Function diagram: 1021 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p2901 A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Line transf, Suppl cl- loop ctrl, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	CO: Fixed value 2 [%] / Fixed value 2 [%] Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -10000.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: 10000.00 [%]	Access level: 3 Function diagram: 1021 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]

r2902[0...14]	CO: Fixed values [%] / Fixed values [%]		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 1 Function diagram: 1021 Unit selection: - Expert list: 1 Factory setting: - [%]

p2930[0...n]	CO: Fixed value F [N] / Fixed value F [N]		
HLA_840, HLA_DBSI	Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: REL Min: -100000.00 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: p2003 Max: 100000.00 [N]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [N]

p2930[0...n]	CO: Fixed value M [Nm] / Fixed value M [Nm]		
SERVO_840, SERVO_DBSI	Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: REL Min: -100000.00 [Nm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 7_1 Scaling: p2003 Max: 100000.00 [Nm]	Access level: 3 Function diagram: 1021 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [Nm]

p2930[0...n]	CO: Fixed value F [N] / Fixed value F [N]		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: REL Min: -100000.00 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: p2003 Max: 100000.00 [N]	Access level: 3 Function diagram: 1021 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [N]

p2952[0...n]	Flux characteristic coefficient K01 / Psid_mod K01		
SERVO_840, SERVO_DBSI	Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, SESM, REL Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p2953[0...n]	Flux characteristic coefficient K02 / Psid_mod K02		
SERVO_840, SERVO_DBSI	Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: PMSM, SESM, REL Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p2954[0...n] SERVO_840, SERVO_DBSI	Flux characteristic coefficient K03 / Psid_mod K03 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: SESM, REL Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p2955[0...n] SERVO_840, SERVO_DBSI	Flux characteristic coefficient K04 / Psid_mod K04 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p2980[0...n] SERVO_840, SERVO_DBSI	Quadrature axis flux model coefficient K01 / Psiq_mod K01 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p2981[0...n] SERVO_840, SERVO_DBSI	Quadrature axis flux model coefficient K02 / Psiq_mod K02 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p2982[0...n] SERVO_840, SERVO_DBSI	Quadrature axis flux model coefficient K03 / Psiq_mod K03 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p2983[0...n] SERVO_840, SERVO_DBSI	Quadrature axis flux model coefficient K04 / Psiq_mod K04 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: -	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p3011[0...n]	MotID current control adaptation lower starting point identified / I_adapt low ident		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_ALL	Access level: 3
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: -
	P-Group: Motor identification	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [Arms]	6000.00 [Arms]	0.00 [Arms]

p3012[0...n]	MotID current control adaptation upper starting point identified / I_adapt up ident		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_ALL	Access level: 3
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: -
	P-Group: Motor identification	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [Arms]	6000.00 [Arms]	0.00 [Arms]

p3013[0...n]	MotID current controller adaptation P gain identified / I_adapt Kp ident		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_ALL	Access level: 3
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: -
	P-Group: Motor identification	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [%]	1000.00 [%]	0.00 [%]

p3016	MotID torque constant identified / kT ident		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_ALL	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Motor identification	Unit group: 28_1	Unit selection: p0100
	Not for motor type: ASM, SESM, REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [Nm/A]	100.00 [Nm/A]	0.00 [Nm/A]

p3016	MotID force constant identified / kT ident		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: CALC_MOD_ALL	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Motor identification	Unit group: 29_1	Unit selection: p0100
	Not for motor type: ASM, SESM, REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [N/Arms]	1000.00 [N/Arms]	0.00 [N/Arms]

p3017	MotID voltage constant identified / kE ident		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: CALC_MOD_ALL	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Motor identification	Unit group: -	Unit selection: -
	Not for motor type: ASM, SESM, REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0 [Vrms]	10000.0 [Vrms]	0.0 [Vrms]

p3017 SERVO_840 (Lin), SERVO_DBSI (Lin)	MotId voltage constant identified / kE ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: ASM, SESM, REL Min: 0.0 [Vrms s/m]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 1000.0 [Vrms s/m]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [Vrms s/m]
p3020 SERVO_840, SERVO_DBSI	MotId magnetizing current identified / I_mag ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: SESM, REL Min: 0.000 [Arms]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 5000.000 [Arms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [Arms]
p3027 SERVO_840, SERVO_DBSI	MotId optimum load angle identified / phi_load opt ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: ASM, SESM, REL Min: 0.0 [°]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 135.0 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [°]
p3028 SERVO_840, SERVO_DBSI	MotId reluctance torque constant identified / kT_reluct ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: ASM, SESM, REL Min: -1000.00 [mH]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [mH]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [mH]
p3028 SERVO_840 (Lin), SERVO_DBSI (Lin)	MotId reluctance force constant identified / kT_reluct ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: ASM, SESM, REL Min: -1000.00 [mH]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [mH]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [mH]
p3030 HLA_840, HLA_DBSI	ChId factor plane adaptation positive / ChId pl_adpt pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 10.00 [%]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 200.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [%]

p3030 SERVO_840, SERVO_DBSI	MotId angular commutation offset identified / Ang_com offset Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: -180.00 [°] Max: 180.00 [°]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 180.00 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [°]
p3031 HLA_840, HLA_DBSI	ChId factor plane adaptation negative / ChId pl_adpt neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 10 [%] Max: 200 [%]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 200 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100 [%]
p3031 SERVO_840, SERVO_DBSI	MotId encoder inversion actual value identified / EnclInvActV ident Can be changed: T, U Data type: Unsigned16 P-Group: Motor identification Not for motor type: - Min: - Max: -	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p3031 SERVO_840 (Lin), SERVO_DBSI (Lin)	MotId encoder inversion actual value identified / EnclInvActV ident Can be changed: T, U Data type: Unsigned16 P-Group: Motor identification Not for motor type: - Min: - Max: -	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p3032 SERVO_840, SERVO_DBSI	MotId: flux characteristic coefficient K01 identified / Psid_mod K01 ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: PMSM, SESM, REL Min: - Max: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p3033 HLA_840, HLA_DBSI	ChId transition point compensation Q1 positive zero range / ChId tr pt Q1 pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.01 [%] Max: 95.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 95.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.01 [%]

p3033 SERVO_840, SERVO_DBSI	MotId: flux characteristic coefficient K02 identified / Psid_mod K02 ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: PMSM, SESM, REL Min: -100000.0000	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100000.0000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0000
p3034 HLA_840, HLA_DBSI	ChId transition point compensation U1 positive zero range / ChId tr pt U1 pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 95.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p3034 SERVO_840, SERVO_DBSI	MotId: flux characteristic coefficient K03 identified / Psid_mod K03 ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: PMSM, SESM, REL Min: -100000.0000	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100000.0000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0000
p3035 HLA_840, HLA_DBSI	ChId transition point compensation rounding 1 pos. zero range / ChId TrPtRnd 1 pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p3035 SERVO_840, SERVO_DBSI	MotId: quadrature flux model coefficient K01 identified / Psiq_mod K01 ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.0000	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 5.0000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0000
p3036 HLA_840, HLA_DBSI	ChId transition point compensation Q1 negative zero range / ChId tr pt Q1 neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.01 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 95.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.01 [%]

p3036 SERVO_840, SERVO_DBSI	MotId: quadrature flux model coefficient K02 identified / Psiq_mod K02 ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p3037 HLA_840, HLA_DBSI	ChId transition point compensation U1 negative zero range / ChId tr pt U1 neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 95.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p3037 SERVO_840, SERVO_DBSI	MotId: quadrature flux model coefficient K03 identified / Psiq_mod K03 ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p3038 HLA_840, HLA_DBSI	ChId transition point compensation rounding 1 neg. zero range / ChId TrPtRnd 1 neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p3038 SERVO_840, SERVO_DBSI	MotId: quadrature flux model coefficient K04 identified / Psiq_mod K04 ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p3039 HLA_840, HLA_DBSI	ChId transition point compensation Q2 positive / ChId tr pt Q2 pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.02 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 95.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10.00 [%]

p3040 HLA_840, HLA_DBSI	Chld transition point compensation U2 positive / Chld tr pt U2 pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00 [%] Max: 95.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 95.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10.00 [%]
p3041 HLA_840, HLA_DBSI	Chld transition point compensation rounding 2 positive / Chld TrPtRnd 2 pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00 [%] Max: 30.00 [%]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 30.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p3041 SERVO_840, SERVO_DBSI	MotId moment of inertia identified / M_inertia ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: REL Min: 0.000000 [kgm ²] Max: 100000.000000 [kgm ²]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: 25_1 Scaling: - Max: 100000.000000 [kgm ²]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: 0.000000 [kgm ²]
p3041 SERVO_840 (Lin), SERVO_DBSI (Lin)	MotId motor mass identified / Mot mass ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: REL Min: 0.000000 [kg] Max: 10000.000000 [kg]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: 27_1 Scaling: - Max: 10000.000000 [kg]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: 0.000000 [kg]
p3042 HLA_840, HLA_DBSI	Chld transition point compensation Q2 negative / Chld tr pt Q2 neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00 [%] Max: 95.00 [%]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 95.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p3042 SERVO_840, SERVO_DBSI	MotId load moment of inertia identified / Load m_inert ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [kgm ²] Max: - [kgm ²]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: 25_1 Scaling: - Max: - [kgm ²]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: - [kgm ²]

p3042 SERVO_840 (Lin), SERVO_DBSI (Lin)	Motld load mass identified / Load mass ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: - [kg]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: 27_1 Scaling: - Max: - [kg]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: - [kg]
p3043 HLA_840, HLA_DBSI	Chld transition point compensation U2 negative / Chld tr pt U2 neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 95.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p3044 HLA_840, HLA_DBSI	Chld transition point compensation rounding 2 negative / Chld TrPtRnd 2 neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p3045 HLA_840, HLA_DBSI	Chld transition point compensation Q3 positive saturation / Chld TrPt Q3 pos S Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.20 [%]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 100.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p3045 SERVO_840 (Ext M_ctrl, Lin), SERVO_DBSI (Ext M_ctrl, Lin)	Motld force characteristic kT1 identified / kT1 ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: ASM, SESM, REL Min: -340.28235E36 [N/Arms]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 340.28235E36 [N/Arms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [N/Arms]
p3045 SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	Motld torque characteristic kT1 identified / kT1 ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: ASM, SESM, REL Min: -340.28235E36 [Nm/A]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 340.28235E36 [Nm/A]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [Nm/A]

p3046	Chld transition point compensation U3 positive saturation / Chld TrPt U3 pos S
HLA_840, HLA_DBSI	Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.20 [%] Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 100.00 [%] Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p3046	MotId force characteristic kT3 identified / kT3 ident
SERVO_840 (Ext M_ctrl, Lin), SERVO_DBSI (Ext M_ctrl, Lin)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: ASM, SESM, REL Min: - Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: - Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p3046	MotId torque characteristic kT3 identified / kT3 ident
SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: ASM, SESM, REL Min: - Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: - Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p3047	Chld transition point compensation Q3 negative saturation / Chld TrPt Q3 neg S
HLA_840, HLA_DBSI	Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.20 [%] Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 100.00 [%] Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p3047	MotId force characteristic kT5 identified / kT5 ident
SERVO_840 (Ext M_ctrl, Lin), SERVO_DBSI (Ext M_ctrl, Lin)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: ASM, SESM, REL Min: - Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: - Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p3047	MotId torque characteristic kT5 identified / kT5 ident
SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: ASM, SESM, REL Min: - Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: - Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p3048 HLA_840, HLA_DBSI	Chld transition point compensation U3 negative saturation / Chld TrPt U3 neg S Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.20 [%]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 100.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p3048 SERVO_840 (Ext M_ctrl, Lin), SERVO_DBSI (Ext M_ctrl, Lin)	Motld force characteristic kT7 identified / kT7 ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: ASM, SESM, REL Min: -	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p3048 SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	Motld torque characteristic kT7 identified / kT7 ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: ASM, SESM, REL Min: -	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p3049[0...n] SERVO_840, SERVO_DBSI	Motld Speed at start of field weakening identified / ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00000 [rpm]	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 210000.00000 [rpm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00000 [rpm]
p3049[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Motld Speed at start of field weakening identified / v_Fieldweak ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00000 [m/min]	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 1300.00000 [m/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00000 [m/min]
p3050[0...n] SERVO_840, SERVO_DBSI	Motorld stator resistance identified / R_stator ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00000 [ohm]	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: 16_1 Scaling: - Max: 2000.00000 [ohm]	Access level: 3 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: 0.00000 [ohm]

p3054[0...n] SERVO_840, SERVO_DBSI	MotId rotor resistance identified / R_rotor ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: PMSM, REL Min: 0.00000 [ohm]	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: 16_1 Scaling: - Max: 300.00000 [ohm]	Access level: 3 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: 0.00000 [ohm]
p3056[0...n] SERVO_840, SERVO_DBSI	MotId stator leakage inductance identified / L_stator leak Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00000 [mH]	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: 15_1 Scaling: - Max: 1000.00000 [mH]	Access level: 3 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: 0.00000 [mH]
p3058[0...n] SERVO_840, SERVO_DBSI	MotId rotor leakage inductance identified / L_rotor leak Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: PMSM, REL Min: 0.00000 [mH]	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: 15_1 Scaling: - Max: 1000.00000 [mH]	Access level: 3 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: 0.00000 [mH]
p3060[0...n] SERVO_840, SERVO_DBSI	MotId magnetizing inductance identified / MotId Lh ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: PMSM, REL Min: 0.00000 [mH]	Calculated: CALC_MOD_ALL Dynamic index: MDS, p0130 Unit group: 15_1 Scaling: - Max: 10000.00000 [mH]	Access level: 3 Function diagram: - Unit selection: p0349 Expert list: 1 Factory setting: 0.00000 [mH]
p3065 SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	MotID periodic position error amplitude 1 / MotID pos err amp1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20000.0	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0
p3066 SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	MotID periodic position error angle 1 / MotID pos err ang1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: -180.00 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 180.00 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [°]

p3067 SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	MotID periodic position error amplitude 2 / MotID pos err amp2 Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20000.0	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0
p3068 SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	MotID periodic position error angle 2 / MotID pos err ang2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: -180.00 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 180.00 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [°]
p3070 SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	MotID voltage emulation error final value identified / U_err final ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.000 [V]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 100.000 [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [V]
p3071 SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	MotID voltage emulation error current offset identified / U_error I_offset Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.000 [A]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 100.000 [A]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [A]
p3072 SERVO_840 (Ext M_ctrl), SERVO_DBSI (Ext M_ctrl)	MotID voltage emulation error semiconductor voltage identified / U_error_semi ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: -10.000 [V]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 10.000 [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [V]
p3075 HLA_840, HLA_DBSI	Chld velocity controller loop gain / Chld v loop_gain Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.0 [mm/Vmin]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20000.0 [mm/Vmin]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [mm/Vmin]

p3080 SERVO_840, SERVO_DBSI	MotId flux controller P gain identified / Flux ctrl Kp ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: PMSM, REL Min: 0.0 [A/Vs]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 999999.0 [A/Vs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [A/Vs]
p3081 SERVO_840, SERVO_DBSI	MotId flux controller integral time identified / Flux ctrl Tn ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: PMSM, REL Min: 0 [ms]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [ms]
p3082 SERVO_840, SERVO_DBSI	MotId current controller P gain identified / I_ctrl Kp ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: REL Min: 0.000 [V/A]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: 18_1 Scaling: - Max: 100000.000 [V/A]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [V/A]
p3083 HLA_840, HLA_DBSI	ChId maximum positive velocity / ChId v_max pos Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.000 [m/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1300.000 [m/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [m/min]
p3083 SERVO_840, SERVO_DBSI	MotId current controller integral time identified / I_ctrl Tn ident Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: REL Min: 0.00 [ms]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p3086 HLA_840, HLA_DBSI	ChId maximum negative velocity / ChId v_max neg Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: -1300.000 [m/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 0.000 [m/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [m/min]

p3088	MotId Motor model changeover speed operation with encoder ident. / MotMod n_chgSnsorI		
SERVO_840, SERVO_DBSI	Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00000 [rpm]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 210000.00000 [rpm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00000 [rpm]
p3088	MotId Motor model changeover vel. operat. with encod. ident. / v_chg Ident encod		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.00000 [m/min]	Calculated: CALC_MOD_ALL Dynamic index: - Unit group: - Scaling: - Max: 1300.00000 [m/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00000 [m/min]
p3090[0...n]	PolID elasticity-based configuration / PolID el config		
SERVO_840, SERVO_DBSI	Can be changed: T, U Data type: Unsigned16 P-Group: Motor identification Not for motor type: - Min: -	Calculated: CALC_MOD_CON Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p3091[0...n]	PolID elasticity-based ramp time / PolID el t_ramp		
SERVO_840, SERVO_DBSI	Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.0 [ms]	Calculated: CALC_MOD_CON Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 1000.0 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 250.0 [ms]
p3092[0...n]	PolID elasticity-based wait time / PolID el t_wait		
SERVO_840, SERVO_DBSI	Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.0 [ms]	Calculated: CALC_MOD_CON Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 1000.0 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.0 [ms]
p3093[0...n]	PolID elasticity-based measurement number / PolID el meas		
SERVO_840, SERVO_DBSI	Can be changed: T, U Data type: Unsigned16 P-Group: Motor identification Not for motor type: - Min: 6	Calculated: CALC_MOD_CON Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 56	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 12

p3094[0...n] SERVO_840, SERVO_DBSI	PolID elasticity-based deflection expected / PolID el defl exp Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.0000 [°]	Calculated: CALC_MOD_CON Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 90.0000 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0030 [°]
p3094[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	PolID elasticity-based deflection expected / PolID el defl exp Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.0000 [mm]	Calculated: CALC_MOD_CON Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 90.0000 [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0030 [mm]
p3095[0...n] SERVO_840, SERVO_DBSI	PolID elasticity-based deflection permissible / PolID el defl exp Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.0000 [°]	Calculated: CALC_MOD_CON Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 90.0000 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.0000 [°]
p3095[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	PolID elasticity-based deflection permissible / PolID el defl exp Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.0000 [mm]	Calculated: CALC_MOD_CON Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 90.0000 [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.0000 [mm]
p3096[0...n] SERVO_840, SERVO_DBSI	PolID elasticity-based current / PolID el curr Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: - Min: 0.000 [Arms]	Calculated: CALC_MOD_CON Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 20000.000 [Arms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [Arms]
r3097.0...31 SERVO_840, SERVO_DBSI	BO: PolID elasticity-based status / PolID el status Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p3100	RTC time stamp mode / RTC t_stamp mode		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 2
p3101[0...1]	Setting UTC time / Set UTC time		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned32 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r3102[0...1]	Displaying UTC time / Display UTC time		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p3103	UTC synchronization process / UTC sync_process		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p3104	BI: UTC PING synchronization / UTC PING sync		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r3107[0...3]	UTC synchronization time out of tolerance / UTC t_sync out tol		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r3108[0...1]	UTC synchronization deviation / UTC sync_dev		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p3109	UTC synchronization tolerance / UTC sync tol		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100 [ms]
p3110	External fault 3 switch-on delay / Ext fault 3 t_on		
All objects	Can be changed: T, U Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000 [ms]	Access level: 3 Function diagram: 2546 Unit selection: - Expert list: 1 Factory setting: 0 [ms]
p3111	BI: External fault 3 enable / Ext fault 3 enab		
CU_I_840, CU_LINK, CU_NX_840, ENC_840, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31	Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2546 Unit selection: - Expert list: 1 Factory setting: 1
p3111[0...n]	BI: External fault 3 enable / Ext fault 3 enab		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p3111[0...n]	BI: External fault 3 enable / Ext fault 3 enab		
A_INF_840, B_INF_840, S_INF_840	Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 3405.2

p3112 CU_I_840, CU_LINK, CU_NX_840, ENC_840, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31	BI: External fault 3 enable negated / Ext flt 3 enab neg Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2546 Unit selection: - Expert list: 1 Factory setting: 0
p3112[0...n] A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	BI: External fault 3 enable negated / Ext flt 3 enab neg Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r3113.0...15 All objects	CO/BO: NAMUR message bit bar / NAMUR bit bar Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3114.9...11 CU_I_840, CU_NX_840	CO/BO: Messages status word global / Msg ZSW global Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3115[0...63] All objects	Fault drive object initiating / Flt DO initiating Can be changed: - Data type: Integer32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8050, 8060 Unit selection: - Expert list: 1 Factory setting: -
p3116 CU_I_840, CU_NX_840	BI: Suppress automatic acknowledgment / Ackn suppress Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p3117 CU_I_840, CU_NX_840	Change safety message type / Chg SI msg type Can be changed: C1(1) Data type: Unsigned32 P-Group: Messages Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r3120[0...63] All objects	Component fault / Comp fault Can be changed: - Data type: Unsigned32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8060 Unit selection: - Expert list: 1 Factory setting: -
r3121[0...63] All objects	Component alarm / Comp alarm Can be changed: - Data type: Unsigned32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8065 Unit selection: - Expert list: 1 Factory setting: -
r3122[0...63] All objects	Diagnostic attribute fault / Diag_attr fault Can be changed: - Data type: Unsigned32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8060 Unit selection: - Expert list: 1 Factory setting: -
r3123[0...63] All objects	Diagnostic attribute alarm / Diag_attr alarm Can be changed: - Data type: Unsigned32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8065 Unit selection: - Expert list: 1 Factory setting: -
r3131 All objects	CO: Actual fault value / Act fault val Can be changed: - Data type: Integer32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8060 Unit selection: - Expert list: 1 Factory setting: -

r3132 All objects	CO: Actual component number / Comp_no act Can be changed: - Data type: Integer32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8060 Unit selection: - Expert list: 1 Factory setting: -
p3135 A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	Suppress active fault / Supp act flt Can be changed: T, U Data type: Unsigned32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: 8060 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p3233[0...n] SERVO_840 (Ext msg), SERVO_DBSI (Ext msg)	Torque actual value filter time constant / M_act_filt Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000000 [ms]	Access level: 3 Function diagram: 8013 Unit selection: - Expert list: 1 Factory setting: 0 [ms]
p3235 SERVO_840, SERVO_DBSI	Phase failure signal motor monitoring time / Ph_fail t_mon Can be changed: T, U Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2000 [ms]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 320 [ms]
p3290 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Variable signaling function start / Var sig start Can be changed: T, U Data type: Unsigned8 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 5301 Unit selection: - Expert list: 1 Factory setting: 0000 0010 bin
p3291[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CI: Variable signaling function input signal signal source / Var sig inp s_s Can be changed: T, U Data type: Unsigned32 / Integer16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 5301 Unit selection: - Expert list: 1 Factory setting: 0

p3292[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Variable signaling function signal source address / Var sig s_s addr Can be changed: T, U Data type: Unsigned32 P-Group: - Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 4 Function diagram: 5301 Unit selection: - Expert list: 1 Factory setting: 0000 hex
p3293[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Variable signaling function signal source data type / Var sig s_s type Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 7	Access level: 4 Function diagram: 5301 Unit selection: - Expert list: 1 Factory setting: 0
r3294.0...2 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	BO: Variable signaling function output signal / Var sig outp_sig Can be changed: - Data type: Unsigned8 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 5301 Unit selection: - Expert list: 1 Factory setting: -
p3295[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Variable signaling function threshold value / Var sig thr_val Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -340.28235E36	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 340.28235E36	Access level: 3 Function diagram: 5301 Unit selection: - Expert list: 1 Factory setting: 0.000
p3296[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Variable signaling function hysteresis / Var sig hyst Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.000	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 340.28235E36	Access level: 3 Function diagram: 5301 Unit selection: - Expert list: 1 Factory setting: 0.000
p3297[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Variable signaling function pickup delay / Var sig t_pickup Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 3 Function diagram: 5301 Unit selection: - Expert list: 1 Factory setting: 0 [ms]

p3298[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Variable signaling function dropout delay / Var sig t_dropout Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 3 Function diagram: 5301 Unit selection: - Expert list: 1 Factory setting: 0 [ms]
p3299[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Variable signaling function sampling time / Var sig t_samp Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 1.000 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4.000 [ms]	Access level: 3 Function diagram: 5301 Unit selection: - Expert list: 1 Factory setting: 4.000 [ms]
p3400 A_INF_840, S_INF_840	Infeed configuration word / INF config_word Can be changed: T Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 0000 1010 bin
r3402 A_INF_840, S_INF_840	Infeed internal state / INF status int Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 12	Access level: 2 Function diagram: 8732, 8832, 8932 Unit selection: - Expert list: 1 Factory setting: -
r3402 B_INF_840	Infeed status internal BIC / INF status int Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6	Access level: 2 Function diagram: 8932 Unit selection: - Expert list: 1 Factory setting: -
r3405.0...7 A_INF_840, S_INF_840, SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO/BO: Infeed status word / Inf ZSW Can be changed: - Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 8828, 8928 Unit selection: - Expert list: 1 Factory setting: -

r3405.7 B_INF_840	CO/BO: Infeed status word / Inf ZSW Can be changed: - Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: - Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p3409 A_INF_840, S_INF_840	Infeed line frequency setting / INF f_line_mode Can be changed: T Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 0 Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1 Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p3410 A_INF_840, S_INF_840	Infeed identification method / INF ID_type Can be changed: C2(1), T Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 0 Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6 Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r3411[0...1] A_INF_840, S_INF_840	Infeed identified inductance / INF L ident Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [mH] Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mH] Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mH]
r3412[0...1] A_INF_840, S_INF_840	Infeed DC link capacitance identified / INF C_DClink ident Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [mF] Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mF] Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mF]
r3414[0...1] A_INF_840, S_INF_840	Infeed line supply inductance identified / INF L_line ident Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [mH] Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mH] Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mH]

p3415[0...1] Infeed excitation current L identification / INF I_exc L-ID

A_INF_840, S_INF_840	Can be changed: T	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1.00 [%]	75.00 [%]	20.00 [%]

p3416 Infeed excitation amplitude C identification / INF exc_amp C_ID

A_INF_840, S_INF_840	Can be changed: T	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.10 [%]	20.00 [%]	2.00 [%]

p3417 Infeed excitation frequency C identification / INF f_exc C_ID

A_INF_840, S_INF_840	Can be changed: T	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	10.00 [Hz]	200.00 [Hz]	50.00 [Hz]

p3421 Infeed inductance / INF L

A_INF_840, S_INF_840	Can be changed: T	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001 [mH]	2000.000 [mH]	1.000 [mH]

p3422 Infeed DC link capacitance / INF C_DCL

A_INF_840, S_INF_840, SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.20 [mF]	2000.00 [mF]	2.00 [mF]

p3424 Infeed line supply inductance / INF L_line

A_INF_840, S_INF_840	Can be changed: T	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001 [mH]	1000.000 [mH]	0.001 [mH]

p3425[0...5]	Infeed control loop parameter scaling / INF par scal		
A_INF_840, S_INF_840	Can be changed: T Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 1.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p3440	Smart Mode configuration / Smart Mode config		
A_INF_840, S_INF_840	Can be changed: T Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0001 bin
p3441[0...1]	Smart Mode Vdc ctrl Kp/Tn / SLM Vdc_ctrl Kp/Tn		
A_INF_840, S_INF_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p3442[0...1]	Smart Mode smoothing times / SLM t_smth		
A_INF_840, S_INF_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 0.25 [ms] [1] 1.00 [ms]
p3443[0...1]	Smart Mode line commutation current threshold values / SLM line com I_thr		
A_INF_840, S_INF_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 100.00 [%] [1] 200.00 [%]

p3444[0...3]	Smart Mode voltages / SLM voltages		
A_INF_840, S_INF_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 105.00 [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 90.00 [%] [1] 100.50 [%] [2] 70.00 [%] [3] 70.00 [%]
r3445[0...1]	Smart Mode voltages display / SLM voltages disp		
A_INF_840, S_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: 5_2 Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [V]
r3446[0...2]	Smart Mode currents / SLM currents		
A_INF_840, S_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: - Unit group: 6_4 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r3447	Smart Mode OFF angle / SLM phi_OFF		
A_INF_840, S_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°]	Calculated: - Dynamic index: - Unit group: - Scaling: p2005 Max: - [°]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [°]
p3448[0...1]	Smart Mode inductance/DC link capacitance / SLM L/C		
A_INF_840, S_INF_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 10.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000.00 [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 110.00 [%] [1] 100.00 [%]

r3452	Infeed PLL status / INF PLL status		
A_INF_840, S_INF_840	Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 7	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p3457[0...2]	Infeed PLL supplementary settings / INF PLL suppl_set		
A_INF_840, S_INF_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 300.00 [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p3458[0...1]	Infeed PLL smoothing time / INF PLL t_smth		
A_INF_840, S_INF_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 1.0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.0 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 23.1 [ms] [1] 9.1 [ms]
r3460	Infeed PLL system deviation / INF PLL SysDev		
A_INF_840, S_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [°]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [°]
r3461	Infeed PLL system deviation after filtering / INF PLL SysDev sm		
A_INF_840, S_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [°]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [°]

p3462[0...2] Infeed phase failure detection times / INF ph_fail_det t

A_INF_840, S_INF_840	Can be changed: T	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [s]	10000.00 [s]	[0] 0.00 [s]
			[1] 3.00 [s]
			[2] 60.00 [s]

p3463 Infeed phase failure detection line supply angle change / INF ph_fail phi

A_INF_840, S_INF_840	Can be changed: T	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-180.0 [°]	180.0 [°]	15.0 [°]

p3465[0...5] Infeed current symmetry monitoring thresholds / INF I_sym thr

A_INF_840, S_INF_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0 [%]	200.0 [%]	[0] 60.0 [%]
			[1] 100.0 [%]
			[2] 25.0 [%]
			[3] 90.0 [%]
			[4] 100.0 [%]
			[5] 12.5 [%]

r3466[0...2] CO: Infeed phase current rms value smoothed / INF I_ph rms smth

A_INF_840, S_INF_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: 6_2	Unit selection: p0505
	Not for motor type: -	Scaling: p2002	Expert list: 1
	Min:	Max:	Factory setting:
	- [Arms]	- [Arms]	- [Arms]

r3467[0...3] CO: Infeed current alpha/beta / INF I a/b

A_INF_840, S_INF_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [A]	- [A]	- [A]

r3468[0...5]	CO: Infeed voltage alpha/beta / INF U a/b		
A_INF_840, S_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [V]
p3469[0...n]	Latch delay time correction, zero crossover detection / t_latch corr PLL		
A_INF_840, S_INF_840	Can be changed: T Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -10000.0 [μs]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 10000.0 [μs]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [μs]
r3470	CO: Infeed active current filter / INF I_act filter		
A_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r3471	CO: Infeed reactive current filter / INF I_react filt		
A_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
p3472[0...4]	Line supply PLL line supply voltage smoothing time / Line PLL U_l t_sm		
A_INF_840, S_INF_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 1.0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30000.0 [ms]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 200.0 [ms] [1] 100.0 [ms] [2] 5000.0 [ms] [3] 8.0 [ms] [4] 8.0 [ms]

p3473[0...3]	CI: cos phi display current signal source / cos phi I s_s		
A_INF_840 (cos phi)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: 8951
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2002	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	[0] 3467[0]
			[1] 3467[1]
			[2] 3467[2]
			[3] 3467[3]

p3474[0...3]	CI: cos phi display voltage signal source / cos phi U s_s		
A_INF_840 (cos phi)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: 8951
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	[0] 3468[0]
			[1] 3468[1]
			[2] 3468[2]
			[3] 3468[3]

p3475[0...1]	cos phi display configuration / cos phi config		
A_INF_840 (cos phi)	Can be changed: T	Calculated: -	Access level: 2
	Data type: Unsigned16	Dynamic index: -	Function diagram: 8951
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 bin

p3476[0...1]	cos phi display smoothing time / cos phi t_smth		
A_INF_840 (cos phi)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8951
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	2000.00 [ms]	200.00 [ms]

r3477[0...1]	CO: cos phi display actual value sign / cos phi ActV sign		
A_INF_840 (cos phi)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8951
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r3478[0...1] A_INF_840 (cos phi)	CO: cos phi display absolute actual value / cos phi ActV abs Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: p2001 Max: -	Access level: 3 Function diagram: 8951 Unit selection: - Expert list: 1 Factory setting: -
p3479[0...1] A_INF_840 (cos phi)	cos phi display current measurement dead time / cos phi I_m t_dead Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -10000.000 [µs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000.000 [µs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 620.000 [µs]
p3480 A_INF_840	Infeed modulation depth limit / INF mod_depth lim Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 50.0 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 110.0 [%]	Access level: 3 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 97.0 [%]
p3481 A_INF_840	Infeed standby controller dynamic response / INF resp_ctrl dyn Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.0 [ms]	Access level: 4 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 7.5 [ms]
r3485 A_INF_840	Infeed standby controller output / INF res_ctrl outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: - [V]
p3490 A_INF_840, B_INF_840, S_INF_840	Infeed delay time OFF1 command / INF t_del OFF1 Can be changed: T Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000000.0 [ms]	Access level: 2 Function diagram: 8732, 8832, 8932 Unit selection: - Expert list: 1 Factory setting: 0.0 [ms]

p3491	Infeed I-offset measurement monitoring time / INF I_offs t_mon		
A_INF_840, S_INF_840	Can be changed: T	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8832, 8932
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0 [ms]	65000 [ms]	2000 [ms]
p3492	Infeed, line supply undervoltage delay time / INF U_line t_del		
A_INF_840, S_INF_840	Can be changed: T	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0 [s]	300 [s]	0 [s]
r3496[0...1]	CO: cos phi display actual value / cos phi disp ActV		
A_INF_840 (cos phi)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8951
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-
p3508	Infeed step-up factor maximum / Step-up factor max		
A_INF_840	Can be changed: T	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Converter	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1.60	3.00	1.60
p3510	Infeed DC link voltage setpoint / INF Vdc set		
A_INF_840, SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8910, 8940
	P-Group: Closed-loop control	Unit group: 5_2	Unit selection: p0505
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	100.00 [V]	1600.00 [V]	600.00 [V]
p3511	CI: Infeed DC link voltage supplementary setpoint / INF Vdc Z_set		
A_INF_840, SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: 8940
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p3513 SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Bl: Voltage-controlled operation inhibit / U_ctrl op inhib Can be changed: T, U Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 0
p3513 A_INF_840	Bl: Voltage-controlled operation inhibit / U_ctrl op inhib Can be changed: T, U Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 0
p3514 A_INF_840	Infeed supplementary active current steady-state / INF I_sup_eff stat Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -2000.00 [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: - Max: 2000.00 [Arms]	Access level: 3 Function diagram: 8940 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [Arms]
p3515 A_INF_840	Cl: Infeed supplementary active current / INF I_suppl act Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: -	Access level: 3 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 0
p3516 A_INF_840	Infeed current distribution factor / INF I_dist_factor Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [%]	Access level: 3 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
r3517 A_INF_840, SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: Infeed active current controller unlimited setpoint / INF I_act ctrl set Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 8940 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]

p3519[0...3] A_INF_840, SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CI: Infeed precontrol power (scaled) / INF prectrl P scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: r2004 Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p3520[0...3] A_INF_840, SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CI: Infeed precontrol power (not scaled) / INF prctr P n Scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p3521[0...3] A_INF_840, SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Infeed precontrol power scaling / INF prectrl P scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -100000.00000 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: 100000.00000 [%]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00000 [%]
r3522[0...4] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	CO: DC link voltage control precontrol display / Vdc_ctr prectr dis Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [kW]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [kW]	Access level: 4 Function diagram: 7960 Unit selection: - Expert list: 1 Factory setting: - [kW]
r3522 A_INF_840	CO: Infeed precontrol power display / INF prectrl P_disp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [kW]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [kW]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [kW]
p3523[0...3] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Infeed precontrol power smoothing / INF prectrl P smth Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000 [ms]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [ms]

p3524[0...2]	Cl: Infeed reactive/apparent power limit scaling / I_{react}/app_lim sc		
A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 8945 Unit selection: - Expert list: 1 Factory setting: 1
p3525	Infeed inductive reactive current limit / I_{react_lim} ind		
A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -100.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 0.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -100.00 [%]
p3526	Infeed capacitive reactive current limit / I_{react_lim} cap		
A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p3527	Infeed absolute apparent current limit / I_{app_lim} abs		
A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [%]	Access level: 3 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p3528	Cl: Infeed current limit motoring scaling / INF I_{lim} mot scal		
A_INF_840	Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 1
p3529	Cl: Infeed current limit regenerative scaling / INF I_{lim} reg scal		
A_INF_840	Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 1

p3530 A_INF_840	Infeed active current limit motoring / INF I_lim mot Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 1.00 [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: - Max: 100000.00 [Arms]	Access level: 3 Function diagram: 8940 Unit selection: p0505 Expert list: 1 Factory setting: 10000.00 [Arms]
p3531 A_INF_840	Infeed active current limit generating / INF I_lim gen Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -100000.00 [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: - Max: -1.00 [Arms]	Access level: 3 Function diagram: 8940 Unit selection: p0505 Expert list: 1 Factory setting: -10000.00 [Arms]
p3532 A_INF_840	BI: Infeed inhibit motoring / INF mot mode inhib Can be changed: T Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8920 Unit selection: - Expert list: 1 Factory setting: 0
p3533 A_INF_840, S_INF_840	BI: Infeed inhibit generator mode / INF gen mode inhib Can be changed: T Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8820, 8920 Unit selection: - Expert list: 1 Factory setting: 0
r3534 A_INF_840	Infeed line filter maximum current / INF filter I_max Can be changed: - Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Arms]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Arms]
r3535[0...4] A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	CO: Infeed current limit display / INF I_lim disp Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Arms]	Access level: 3 Function diagram: 8945 Unit selection: - Expert list: 1 Factory setting: - [Arms]

r3536.0...4 A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	BO: Infeed current limit status display / INF I_lim statDisp Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: -	Access level: 3 Function diagram: 8945 Unit selection: - Expert list: 1 Factory setting: -
r3554[0...1] SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Vdc controller output / INF Vdc_ctrl outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 2 Function diagram: 7960 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r3554[0...1] A_INF_840	Infeed Vdc controller output / INF Vdc_ctrl outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 2 Function diagram: 8940 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
p3555[0...5] A_INF_840, S_INF_840	Infeed Vdc controller integral component fast intervention / Vdc_ctr I-compFast Can be changed: T Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 200.00 [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 2.00 [%] [1] 102.00 [%] [2] 0.00 [%] [3] 5.00 [%] [4] 100.00 [%] [5] 0.00 [%]
p3560 A_INF_840, SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Infeed Vdc controller proportional gain / INF Vdc_ctrl Kp Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.01 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [%]	Access level: 2 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]

p3561	CI: Infeed Vdc controller proportional gain scaling / INF Vdc ctr Kpscal		
A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 1
p3562	Infeed Vdc controller integral time / INF Vdc_ctrl Tn		
A_INF_840, SERVO_840 (Tech_ctrl), SERVO_DBSI (Tech_ctrl)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.10 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100000.00 [%]	Access level: 2 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p3564	Infeed Vdc monitor time constant / INF Vdc mon Tc		
A_INF_840	Can be changed: T Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.0 [ms]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.2 [ms]
p3566	Infeed Vdc ramp duration / INF Vdc t_ramp		
A_INF_840	Can be changed: T Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 40 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000 [ms]	Access level: 2 Function diagram: 8932 Unit selection: - Expert list: 1 Factory setting: 100 [ms]
p3570	CI: Master/slave active current setpoint / I_act_set		
A_INF_840 (Master/Slave)	Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: -	Access level: 3 Function diagram: 8940 Unit selection: - Expert list: 1 Factory setting: 3573[0]
p3571[0...3]	CI: Master/slave active current setpoint multiplexer input / I_act multi inp		
A_INF_840 (Master/Slave)	Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: -	Access level: 3 Function diagram: 8948 Unit selection: - Expert list: 1 Factory setting: 0

p3572 A_INF_840 (Master/ Slave)	CI: Master/slave active current setpoint multiplexer selection / I_act multi sel Can be changed: T Data type: Unsigned32 / Integer16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8948 Unit selection: - Expert list: 1 Factory setting: 0
r3573 A_INF_840 (Master/ Slave)	CO: Master/slave active current setpoint multiplexer output / I_act multi outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms]	Access level: 3 Function diagram: 8948 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
p3574[0...3] A_INF_840 (Master/ Slave)	Master/slave DC link voltage monitoring / Vdc monitoring Can be changed: C2(1), T Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: -60 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 60 [V]	Access level: 3 Function diagram: 8948 Unit selection: - Expert list: 1 Factory setting: [0] 20 [V] [1] -20 [V] [2] 5 [V] [3] -5 [V]
r3575.0...2 A_INF_840 (Master/ Slave)	BO: Master/slave DC link voltage monitoring status / Vdc mon status Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8948 Unit selection: - Expert list: 1 Factory setting: -
p3576[0...5] A_INF_840 (Master/ Slave)	Master/slave current distribution factor multiplexer input / I_dist_factor inp Can be changed: T Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [%]	Access level: 3 Function diagram: 8948 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]

p3577	CI: Master/slave current distribution factor multiplexer selection / I_dist_factor sel		
A_INF_840 (Master/Slave)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / Integer16	Dynamic index: -	Function diagram: 8948
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: 0

r3578	CO: Master/slave current distribution factor multiplexer output / I_dist_factor outp		
A_INF_840 (Master/Slave)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8948
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: - [%]	Max: - [%]	Factory setting: - [%]

p3579	CI: Master/Slave current distribution factor / I_dist_factor		
A_INF_840 (Master/Slave)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: 8940
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min: -	Max: -	Factory setting: 3578[0]

r3602	Infeed control status / INF ctrl status		
A_INF_840	Can be changed: -	Calculated: -	Access level: 4
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0	Max: 8	Factory setting: -

p3603	Infeed current precontrol factor D component / INF I_ctrl D comp		
A_INF_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8946
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.00 [%]	Max: 500.00 [%]	Factory setting: 100.00 [%]

p3604	CI: Infeed current precontrol factor D component scaling / INF I_ctrl D scale		
A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min: -	Max: -	Factory setting: 1

r3606 A_INF_840	Infeed active current controller system deviation / INF I_act ctrl dev		
	Can be changed: -	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8946
	P-Group: Closed-loop control	Unit group: 6_2	Unit selection: p0505
	Not for motor type: -	Scaling: p2002	Expert list: 1
	Min:	Max:	Factory setting:
	- [Arms]	- [Arms]	- [Arms]
r3608 A_INF_840	Infeed reactive current controller system deviation / INF I_reactCtrlDev		
	Can be changed: -	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8946
	P-Group: Closed-loop control	Unit group: 6_2	Unit selection: p0505
	Not for motor type: -	Scaling: p2002	Expert list: 1
	Min:	Max:	Factory setting:
	- [Arms]	- [Arms]	- [Arms]
p3610 A_INF_840	Infeed reactive current fixed setpoint / INF I_react set		
	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8910, 8946
	P-Group: Closed-loop control	Unit group: 6_2	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-10000.0 [Arms]	10000.0 [Arms]	0.0 [Arms]
p3611 A_INF_840	CI: Infeed reactive current supplementary setpoint / INF I_react Z_set		
	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: 8946
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2002	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0
p3614[0...3] A_INF_840	Infeed current actual value filter smoothing time / INF I_ActV t_smth		
	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8950
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000 [ms]	2.000 [ms]	0.000 [ms]
p3615 A_INF_840	Infeed current controller P gain / INF I_ctrl Kp		
	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8946
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [%]	1000.00 [%]	100.00 [%]

p3616 A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	CI: Infeed current controller P gain scaling / INF I_ctrl Kp scal Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p3617 A_INF_840	Infeed current controller integral time / INF I_ctrl Tn Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.10 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100000.00 [%]	Access level: 2 Function diagram: 8946 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
r3618 A_INF_840	Infeed active current controller integral component / INF I_act_ctrl Tn Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Vrms]	Calculated: - Dynamic index: - Unit group: 5_1 Scaling: p2001 Max: - [Vrms]	Access level: 2 Function diagram: 8946 Unit selection: p0505 Expert list: 1 Factory setting: - [Vrms]
r3619 A_INF_840	Infeed reactive current controller integral component / INF I_react_ctrl Tn Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Vrms]	Calculated: - Dynamic index: - Unit group: 5_1 Scaling: p2001 Max: - [Vrms]	Access level: 2 Function diagram: 8946 Unit selection: p0505 Expert list: 1 Factory setting: - [Vrms]
p3620 A_INF_840	Infeed current controller adaptation lower switch-in threshold / INF I_adpt thr low Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 40.00 [%]
p3622 A_INF_840	Infeed current controller adaptation reduction factor / INF I_adpt factor Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.01 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 85.00 [%]

p3624[0...1] A_INF_840	Infeed harmonics controller order / INF harm_ctr order Can be changed: T Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: 5	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: 13	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 5 [1] 7
p3625[0...1] A_INF_840	Infeed harmonics controller scaling / INF harm_ctrl scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.0 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: 300.0 [%]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.0 [%]
r3626[0...1] A_INF_840	Infeed harmonics control output / INF harm_ctrl outp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Vrms]	Calculated: - Dynamic index: - Unit group: 5_1 Scaling: - Max: - [Vrms]	Access level: 2 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [Vrms]
r3632 A_INF_840	Infeed input voltage Vsd (active component) / INF U_inp Vsd Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Vrms]	Calculated: - Dynamic index: - Unit group: 5_1 Scaling: p2001 Max: - [Vrms]	Access level: 3 Function diagram: 8910, 8946, 8950 Unit selection: p0505 Expert list: 1 Factory setting: - [Vrms]
r3633 A_INF_840	Infeed input voltage Vsq (reactive component) / INF U_inp Vsq Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Vrms]	Calculated: - Dynamic index: - Unit group: 5_1 Scaling: p2001 Max: - [Vrms]	Access level: 3 Function diagram: 8910, 8946, 8950 Unit selection: p0505 Expert list: 1 Factory setting: - [Vrms]

4.2 SINAMICS parameters

r3635 A_INF_840	CO: Infeed input voltage angle / INF U_inp angle Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [°] Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [°] Access level: 2 Function diagram: 8950 Unit selection: - Expert list: 1 Factory setting: - [°]
r3637[0...3] A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	CO: Negative phase-sequence system controller current setpoint / Neg_seq_ctrl I_set Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms] Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms] Access level: 3 Function diagram: 7987 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
r3638[0...3] A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	CO: Negative phase-sequence system controller current actual value / Neg_seq_ctr I_act Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Arms] Calculated: - Dynamic index: - Unit group: 6_2 Scaling: p2002 Max: - [Arms] Access level: 3 Function diagram: 7987 Unit selection: p0505 Expert list: 1 Factory setting: - [Arms]
p3639[0...3] A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	Negative phase-sequence system controller scaling values / Neg_sys_ctrl scal Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [%] Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 300.00 [%] Access level: 3 Function diagram: 7987 Unit selection: - Expert list: 1 Factory setting: [0] 100.00 [%] [1] 0.10 [%] [2] 200.00 [%] [3] 1.00 [%]
p3640 A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	Negative phase-sequence system controller configuration / Neg_sys_ctr config Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: - Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - Access level: 3 Function diagram: 7987 Unit selection: - Expert list: 1 Factory setting: 0000 bin

p3641[0...1]	CI: Negative phase-sequence system controller setpoint pointer / Neg_seq ctrl set		
A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: -	Access level: 4 Function diagram: 7987 Unit selection: - Expert list: 1 Factory setting: 0
r3642[0...1]	CO: Negative phase-sequence system controller manipulated variable / NegSeqCtr ManipVar		
A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [V]	Access level: 3 Function diagram: 7987 Unit selection: - Expert list: 1 Factory setting: - [V]
r3643[0...1]	Neg phase-sequence system controller DC link voltage correction / NegSeqCtr Vdc corr		
A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [V]	Access level: 3 Function diagram: 7987 Unit selection: - Expert list: 1 Factory setting: - [V]
p3645	Neg phase-seq system controller Vdc actual value filter damping / NegSysCtr FiltDamp		
A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.000	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.300
r3646[0...1]	Negative phase-sequence system controller integral component / neg_sys_ctrl int		
A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl)	Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Vrms]	Calculated: - Dynamic index: - Unit group: 5_1 Scaling: p2001 Max: - [Vrms]	Access level: 3 Function diagram: 7987 Unit selection: p0505 Expert list: 1 Factory setting: - [Vrms]

p3647[0...2] Negative phase-sequence system controller phase asymmetry / Neg_seq ctrl asym

A_INF_840 (Dyn. grid support, Dyn. grid support, Line transf, Line transf, Line transf, Suppl cl-loop ctrl, Suppl cl-loop ctrl)

Can be changed: T, U
Data type: FloatingPoint32
P-Group: Closed-loop control
Not for motor type: -
Min:
 0.00 [%]

Calculated: -
Dynamic index: -
Unit group: -
Scaling: -
Max:
 300.00 [%]

Access level: 3
Function diagram: -
Unit selection: -
Expert list: 1
Factory setting:
 [0] 15.00 [%]
 [1] 10.00 [%]
 [2] 50.00 [%]

r3648[0...1] CO: Transformer DC component controller current actual value / Tr DC_ctrl I_act

A_INF_840 (Line transf)

Can be changed: -
Data type: FloatingPoint32
P-Group: Displays, signals
Not for motor type: -
Min:
 - [Arms]

Calculated: -
Dynamic index: -
Unit group: 6_2
Scaling: p2002
Max:
 - [Arms]

Access level: 3
Function diagram: 7987
Unit selection: p0505
Expert list: 1
Factory setting:
 - [Arms]

p3649 Transformer DC component controller integral time / Tr DC_ctrl Tn

A_INF_840 (Line transf)

Can be changed: T, U
Data type: FloatingPoint32
P-Group: Closed-loop control
Not for motor type: -
Min:
 0.00 [%]

Calculated: -
Dynamic index: -
Unit group: -
Scaling: -
Max:
 300.00 [%]

Access level: 3
Function diagram: 7987
Unit selection: -
Expert list: 1
Factory setting:
 100.00 [%]

p3650 Transformer DC component controller proportional gain / Tr DC_ctrl Kp

A_INF_840 (Line transf)

Can be changed: T, U
Data type: FloatingPoint32
P-Group: Closed-loop control
Not for motor type: -
Min:
 0.00 [%]

Calculated: -
Dynamic index: -
Unit group: -
Scaling: -
Max:
 300.00 [%]

Access level: 3
Function diagram: 7987
Unit selection: -
Expert list: 1
Factory setting:
 0.00 [%]

p3651 Transformer DC component controller limiting / Tr DC_ctrl lim

A_INF_840 (Line transf)

Can be changed: T, U
Data type: FloatingPoint32
P-Group: Displays, signals
Not for motor type: -
Min:
 2.0 [%]

Calculated: -
Dynamic index: -
Unit group: -
Scaling: -
Max:
 10.0 [%]

Access level: 3
Function diagram: 7987
Unit selection: -
Expert list: 1
Factory setting:
 5.0 [%]

r3652[0...1] A_INF_840 (Line transf)	CO: Transformer DC component controller manipulated variable / Tr DC_ctrl man_var		
	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7987
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	- [V]	- [V]	- [V]
p3654 A_INF_840 (Line transf)	Transformer DC component controller PT2 limit frequency / Tr DC_ctrl PT2 f		
	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7987
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.40 [Hz]	10.00 [Hz]	10.00 [Hz]
p3660 A_INF_840, S_INF_840	VSM input line supply voltage voltage scaler / VSM inp U_scaler		
	Can be changed: T	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9880
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [%]	100000.00 [%]	0.00 [%]
r3661 A_INF_840, S_INF_840	CO: VSM input line supply voltage u1 - u2 / VSM inp u1-u2		
	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8850, 8950, 9880
	P-Group: Closed-loop control	Unit group: 5_3	Unit selection: p0505
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	- [V]	- [V]	- [V]
r3662 A_INF_840, S_INF_840	CO: VSM input line supply voltage u2 - u3 / VSM inp u2-u3		
	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8850, 8950, 9880
	P-Group: Closed-loop control	Unit group: 5_3	Unit selection: p0505
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	- [V]	- [V]	- [V]
r3664.0...1 A_INF_840, S_INF_840	BO: VSM temperature evaluation status / VSM temp status		
	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: 9886
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

p3665[0...n]	VSM temperature evaluation sensor type / VSM temp sens type		
A_INF_840, S_INF_840	Can be changed: T	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: p0140	Function diagram: 9886
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	6	0

r3666	CO: VSM temperature actual value / VSM Temp_ActV		
A_INF_840, S_INF_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9886
	P-Group: Closed-loop control	Unit group: 21_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2006	Expert list: 1
	Min:	Max:	Factory setting:
	- [°C]	- [°C]	- [°C]

p3667	VSM line filter overtemperature alarm threshold / VSM filt temp thr		
A_INF_840, S_INF_840	Can be changed: T	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9886
	P-Group: -	Unit group: 21_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2006	Expert list: 1
	Min:	Max:	Factory setting:
	-100 [°C]	301 [°C]	150 [°C]

p3668	VSM line filter overtemperature shutdown threshold / VSM filt_T F_thr		
A_INF_840, S_INF_840	Can be changed: T	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9886
	P-Group: -	Unit group: 21_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2006	Expert list: 1
	Min:	Max:	Factory setting:
	-100 [°C]	301 [°C]	180 [°C]

p3669	VSM line filter overtemperature hysteresis / VSM filt T hyst		
A_INF_840, S_INF_840	Can be changed: T	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9886
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2006	Expert list: 1
	Min:	Max:	Factory setting:
	1.0 [K]	50.0 [K]	3.0 [K]

p3670	VSM 10 V input CT gain / VSM CT_gain		
A_INF_840, S_INF_840	Can be changed: T	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9880
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2002	Expert list: 1
	Min:	Max:	Factory setting:
	0.000 [A]	1000.000 [A]	1.000 [A]

r3671	CO: VSM 10 V input CT 1 actual value / VSM CT 1 I_ActV		
A_INF_840, S_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [A]	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: 9880 Unit selection: - Expert list: 1 Factory setting: - [A]
r3672	CO: VSM 10 V input CT 2 actual value / VSM CT 2 I_ActV		
A_INF_840, S_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [A]	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: 9880 Unit selection: - Expert list: 1 Factory setting: - [A]
r3673	CO: VSM 10 V input 1 actual value / VSM inp 1 U_ActV		
A_INF_840, S_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: 9880 Unit selection: - Expert list: 1 Factory setting: - [V]
r3674	CO: VSM 10 V input 2 actual value / VSM inp 2 U_ActV		
A_INF_840, S_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: 9880 Unit selection: - Expert list: 1 Factory setting: - [V]
p3676	VSM line filter capacitance alarm threshold / VSMfilt C A_thr		
A_INF_840, S_INF_840	Can be changed: T Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
r3677[0...2]	CO: VSM line filter capacitance / VSM filt C		
A_INF_840, S_INF_840	Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [µF]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [µF]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [µF]

p3678[0...1]	Filter monitoring threshold values / Filter mon thr		
A_INF_840 (Line transf)	Can be changed: C2(1, 2)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7991
	P-Group: Converter	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [%]	10000.00 [%]	[0] 0.00 [%]
			[1] 0.00 [%]

p3679[0...1]	Transformer filter monitoring times / Filter mon times		
A_INF_840 (Line transf)	Can be changed: C2(1, 2)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7991
	P-Group: Converter	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	40.00 [ms]	[0] 20.00 [ms]
			[1] 0.50 [ms]

p3680	BI: Braking Module internal inhibit / BM int inhib		
B_INF_840	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p3681	BI: Activating Braking Module internal DC link fast discharge / BM intDCdischg act		
B_INF_840	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p3682	Braking Module internal DC link fast discharge delay time / BM int DC dischg t		
B_INF_840	Can be changed: C1(3), T	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	500 [ms]	4294967295 [ms]	1000 [ms]

p3683 B_INF_840	Braking Module internal activation threshold brake chopper / BM int act thr Can be changed: C2(1, 2) Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 110.00 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 780.00 [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 760.00 [V]
r3685 B_INF_840	BO: Digital Braking Module: Pre-alarm I2t shutdown / Dig BM A I2t shutd Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3686 B_INF_840	BO: Digital Braking Module fault / Dig BM fault Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3687 B_INF_840	BO: Digital Braking Module pre-alarm overtemperature / Dig BM A overtemp Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3688 B_INF_840	BO: Braking Module internal overtemperature shutdown / BM int temp shutd Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3689 B_INF_840	BO: Digital Braking Module Uce fault / Dig BM Uce fault Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p3700 SERVO_840 (APC, AVS/ APC-ECO), SERVO_DBSI (APC, AVS/APC-ECO)	AVS/APC configuration / APC config Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p3701 SERVO_840 (APC), SERVO_DBSI (APC)	APC encoder selection / APC enc sel Can be changed: C1(4), C2(15) Data type: Integer16 P-Group: Data sets Not for motor type: - Min: 2	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 2
p3702[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC load speed/motor speed weighting / APC n_load/mot wt Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -10.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.000
p3704[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC filter activation / APC filter act Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p3705[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC filter type / APC filter type Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p3706[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC sub-sampling filter 2.x / APC sub-samp 2.x Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 64	Access level: 3 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 1

p3707[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC sub-sampling filter 3.x / APC sub-samp 3.x Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 64	Access level: 3 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 1
p3708[0...n] SERVO_840 (APC, Lin), SERVO_DBSI (APC, Lin)	APC velocity actual value smoothing time encoder 2 / APCv_ActV t_smth 2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 50.00 [ms]	Access level: 3 Function diagram: 4711 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p3708[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC speed actual value smoothing time encoder 2 / APCn_ActV t_smth 2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 50.00 [ms]	Access level: 3 Function diagram: 4711 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p3709[0...n] SERVO_840 (APC, AVS/ APC-ECO, Lin, Lin), SERVO_DBSI (APC, AVS/ APC-ECO, Lin, Lin)	AVS/APC velocity actual value smoothing time encoder 3 / APCv_ActV t_smth 3 Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 500.00 [ms]	Access level: 3 Function diagram: 4711 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p3709[0...n] SERVO_840 (APC, AVS/ APC-ECO), SERVO_DBSI (APC, AVS/APC-ECO)	AVS/APC speed act value smoothing time encoder3/ w/o load sensor / APC n_act t_smth 3 Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 500.00 [ms]	Access level: 3 Function diagram: 4711 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p3711[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC filter 1.1 denominator natural frequency / APC filt1.1 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]

p3712[0...n]	APC filter 1.1 denominator damping / APC Filt 1.1 D_den		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.050	10.000	0.700

p3713[0...n]	APC filter 1.1 numerator natural frequency / APC filt 1 fn_num		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	2000.0 [Hz]

p3714[0...n]	APC filter 1.1 numerator damping / APC Filt 1.1 D_num		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000	10.000	0.700

p3721[0...n]	APC filter 2.1 denominator natural frequency / APC filt2.1 fn_den		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	2000.0 [Hz]

p3722[0...n]	APC filter 2.1 denominator damping / APC Filt 2.1 D_den		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.050	10.000	0.700

p3723[0...n]	APC filter 2.1 numerator natural frequency / APC filt2.1 fn_num		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	2000.0 [Hz]

p3724[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC filter 2.1 numerator damping / APC Filt 2.1 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 0.700
p3726[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC filter 2.2 denominator natural frequency / APC filt2.2 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]
p3727[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC filter 2.2 denominator damping / APC Filt 2.2 D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.050	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 0.700
p3728[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC filter 2.2 numerator natural frequency / APC filt2.2 fn_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]
p3729[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC filter 2.2 numerator damping / APC Filt 2.2 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 7029 Unit selection: - Expert list: 1 Factory setting: 0.700
p3731[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC filter 3.1 denominator natural frequency / APC filt3.1 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]

p3732[0...n]	APC filter 3.1 denominator damping / APC Filt 3.1 D_den		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.050	Max: 10.000	Factory setting: 0.700

p3733[0...n]	APC filter 3.1 numerator natural frequency / APC filt3.1 fn_num		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.5 [Hz]	Max: 16000.0 [Hz]	Factory setting: 2000.0 [Hz]

p3734[0...n]	APC filter 3.1 numerator damping / APC Filt 3.1 D_num		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.000	Max: 10.000	Factory setting: 0.700

p3736[0...n]	APC filter 3.2 denominator natural frequency / APC filt3.2 fn_den		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.5 [Hz]	Max: 16000.0 [Hz]	Factory setting: 2000.0 [Hz]

p3737[0...n]	APC filter 3.2 denominator damping / APC Filt 3.2 D_den		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.050	Max: 10.000	Factory setting: 0.700

p3738[0...n]	APC filter 3.2 numerator natural frequency / APC filt3.2 fn_num		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.5 [Hz]	Max: 16000.0 [Hz]	Factory setting: 2000.0 [Hz]

p3739[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC filter 3.2 numerator damping / APC Filt 3.2 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 0.700
p3740[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC torque setpoint filter 1 denominator natural frequency / APC M fil 1 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5060 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]
p3741[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC torque setpoint filter 1 denominator damping / APC M fil 1 D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.001	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5060 Unit selection: - Expert list: 1 Factory setting: 0.700
p3742[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC torque setpoint filter 1 numerator natural frequency / APC M fil 1 fn_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5060 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]
p3743[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC torque setpoint filter 1 numerator damping / APC M fil 1 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5060 Unit selection: - Expert list: 1 Factory setting: 0.700
p3744[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC torque setpoint filter 2 denominator natural frequency / APC M fil 2 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5060 Unit selection: - Expert list: 1 Factory setting: 2000.0 [Hz]

p3745[0...n]	APC torque setpoint filter 2 denominator damping / APC M fil 2 D_den		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5060
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001	10.000	0.700

p3746[0...n]	APC torque setpoint filter 2 numerator natural frequency / APC M fil 2 fn_num		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5060
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	2000.0 [Hz]

p3747[0...n]	APC torque setpoint filter 2 numerator damping / APC M fil 2 D_num		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5060
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000	10.000	0.700

p3748[0...n]	APC velocity input scaling / APC v_input scale		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Setpoints	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1000000.000	1000000.000	1.000

p3749[0...n]	CI: APC velocity actual value external input / APC v_ActV ext inp		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: CDS, p0170	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: p2000	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p3750[0...n]	CI: APC acceleration sensor input / APC a input		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T	Calculated: -	Access level: 2
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: CDS, p0170	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: p2007	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p3751[0...n] SERVO_840 (APC, AVS/ APC-ECO), SERVO_DBSI (APC, AVS/APC-ECO)	AVS/APC acceleration sensor high pass time constant / APC a DT1 Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000.00 [ms]	Access level: 2 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 100.00 [ms]
p3752[0...n] SERVO_840 (APC, AVS/ APC-ECO), SERVO_DBSI (APC, AVS/APC-ECO)	AVS controller preassignment natural oscillation frequency / AVS ctr_preassn fn Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.0 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.0 [Hz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [Hz]
p3753[0...n] SERVO_840 (APC, AVS/ APC-ECO), SERVO_DBSI (APC, AVS/APC-ECO)	APC torque setpoint preassignment natural oscillation frequency / APC M_filt def fn Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.0 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.0 [Hz]	Access level: 3 Function diagram: 5060 Unit selection: - Expert list: 1 Factory setting: 0.0 [Hz]
p3754[0...n] SERVO_840 (APC, AVS/ APC-ECO), SERVO_DBSI (APC, AVS/APC-ECO)	APC torque setpoint filter preassignment gain / APC M_filt def V Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2.0	Access level: 3 Function diagram: 5060 Unit selection: - Expert list: 1 Factory setting: 0.0
p3755[0...n] SERVO_840 (APC, AVS/ APC-ECO, Lin, Lin), SERVO_DBSI (APC, AVS/ APC-ECO, Lin, Lin)	AVS/APC motor mass factor / APC mot_mass fact Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.25	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 500.00	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.00
p3755[0...n] SERVO_840 (APC, AVS/ APC-ECO), SERVO_DBSI (APC, AVS/APC-ECO)	AVS/APC motor moment of inertia factor / APC m_inert factor Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.25	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 500.00	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.00

p3760[0...n]	APC load velocity controller 1 P gain / APC v_load ctr1 Kp		
SERVO_840 (APC, Lin), SERVO_DBSI (APC, Lin)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: -100.000	Max: 100.000	Factory setting: 0.000

p3760[0...n]	APC load speed controller 1 P gain / APC n_load ctr1 Kp		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: -100.000	Max: 100.000	Factory setting: 0.000

p3761[0...n]	AVS/APC load velocity controller 1 rate time / APC v_load ctr1 Tv		
SERVO_840 (APC, AVS/ APC-ECO, Lin, Lin), SERVO_DBSI (APC, AVS/ APC-ECO, Lin, Lin)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: -500.00 [ms]	Max: 500.00 [ms]	Factory setting: 0.00 [ms]

p3761[0...n]	AVS/APC load speed controller 1 rate time / APC n_load ctr1 Tv		
SERVO_840 (APC, AVS/ APC-ECO), SERVO_DBSI (APC, AVS/APC-ECO)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: -500.00 [ms]	Max: 500.00 [ms]	Factory setting: 0.00 [ms]

r3762	AVS/APC load speed controller 1 rate time active / APC n_ctr 1 Tv act		
SERVO_840 (APC, AVS/ APC-ECO), SERVO_DBSI (APC, AVS/APC-ECO)	Can be changed: -	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 5055
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: - [ms]	Max: - [ms]	Factory setting: - [ms]

p3765[0...n]	APC load velocity controller 2 P gain / APC v_load ctr2 Kp		
SERVO_840 (APC, Lin), SERVO_DBSI (APC, Lin)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7012
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: -100.000	Max: 100.000	Factory setting: 0.000

p3765[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC load speed controller 2 P gain / APC n_load ctr2 Kp Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -100.000	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.000	Access level: 2 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 0.000
p3766[0...n] SERVO_840 (APC, Lin), SERVO_DBSI (APC, Lin)	APC load velocity controller 2 rate time / APC v_load ctr2 Tv Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -500.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 500.00 [ms]	Access level: 2 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p3766[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC load speed controller 2 rate time / APC n_load ctr2 Tv Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -500.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 500.00 [ms]	Access level: 2 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p3767[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC differential position high pass time constant / APC s_dif DT1 Tc Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10000.00 [ms]	Access level: 2 Function diagram: 7013 Unit selection: - Expert list: 1 Factory setting: 100.00 [ms]
p3768[0...n] SERVO_840 (APC, Lin), SERVO_DBSI (APC, Lin)	APC differential position gain factor / APC s_dif Kp Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -50000.00 [Nm/rad]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: 49_1 Scaling: - Max: 50000.00 [Nm/rad]	Access level: 2 Function diagram: 7013 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [Nm/rad]
p3768[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC differential position gain factor / APC s_dif Kp Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -50000.00 [Nm/rad]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: 49_1 Scaling: - Max: 50000.00 [Nm/rad]	Access level: 2 Function diagram: 7013 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [Nm/rad]

r3769	CO: APC differential position force setpoint / APC s_dif F_set		
SERVO_840 (APC, Lin), SERVO_DBSI (APC, Lin)	Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 2 Function diagram: 5040, 7013 Unit selection: p0505 Expert list: 1 Factory setting: - [N]
r3769	CO: APC differential position torque setpoint / APC s_dif M_set		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 2 Function diagram: 5040, 7013 Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
r3770	CO: APC load velocity / APC v_load		
SERVO_840 (APC, Lin), SERVO_DBSI (APC, Lin)	Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 4711, 7012 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r3770	CO: APC load speed / APC n_load		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 4711, 7012 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r3771[0...1]	CO: APC velocity actual value / APC v_act		
SERVO_840 (APC, Lin), SERVO_DBSI (APC, Lin)	Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 4711, 5040, 5042 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r3771[0...1]	CO: APC speed actual value / APC n_act		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 4711, 5040, 5042 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]

r3772[0...1] SERVO_840 (APC, Lin), SERVO_DBSI (APC, Lin)	APC filter branch 2 display values / APC branch 2 val Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 7012 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r3772[0...1] SERVO_840 (APC), SERVO_DBSI (APC)	APC filter branch 2 display values / APC branch 2 val Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 7012 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r3773[0...1] SERVO_840 (APC, Lin), SERVO_DBSI (APC, Lin)	APC filter branch 3 display values / APC branch 3 val Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 7012 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r3773[0...1] SERVO_840 (APC), SERVO_DBSI (APC)	APC filter branch 3 display values / APC branch 3 val Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 7012 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
p3774[0...n] SERVO_840 (APC, Lin), SERVO_DBSI (APC, Lin)	APC differential speed gain factor / APC n_dif Kp Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -10000000.00 [Ns/m]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: 24_2 Scaling: - Max: 10000000.00 [Ns/m]	Access level: 2 Function diagram: 7013 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [Ns/m]
p3774[0...n] SERVO_840 (APC), SERVO_DBSI (APC)	APC differential speed gain factor / APC n_dif Kp Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -10000000.00 [Nms/rad]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: 17_1 Scaling: - Max: 10000000.00 [Nms/rad]	Access level: 2 Function diagram: 7013 Unit selection: p0505 Expert list: 1 Factory setting: 0.00 [Nms/rad]

r3777[0...1]	CO: APC filter branch 1 display values / APC branch 1 val		
SERVO_840 (APC, AVS/ APC-ECO, Lin, Lin), SERVO_DBSI (APC, AVS/ APC-ECO, Lin, Lin)	Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 7012 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]

r3777[0...1]	CO: APC filter branch 1 display values / APC branch 1 val		
SERVO_840 (APC, AVS/ APC-ECO), SERVO_DBSI (APC, AVS/APC-ECO)	Can be changed: - Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 7012 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]

p3778[0...n]	APC velocity limit / APC v_limit		
SERVO_840 (APC, Lin), SERVO_DBSI (APC, Lin)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [m/min]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 1000.00 [m/min]	Access level: 2 Function diagram: 7012 Unit selection: p0505 Expert list: 1 Factory setting: 1000.00 [m/min]

p3778[0...n]	APC speed limit / APC n_limit		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00 [rpm]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 2 Function diagram: 7012 Unit selection: p0505 Expert list: 1 Factory setting: 210000.00 [rpm]

p3779[0...n]	APC velocity limit monitoring time / APC v_limit t		
SERVO_840 (APC, Lin), SERVO_DBSI (APC, Lin)	Can be changed: T, U Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: REL Min: 0 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000000 [ms]	Access level: 2 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 0 [ms]

p3779[0...n]	APC speed limit monitoring time / APC n_limit t		
SERVO_840 (APC), SERVO_DBSI (APC)	Can be changed: T, U Data type: Unsigned32 P-Group: Closed-loop control Not for motor type: REL Min: 0 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000000 [ms]	Access level: 2 Function diagram: 7012 Unit selection: - Expert list: 1 Factory setting: 0 [ms]

p3820[0...n] SERVO_840, SERVO_DBSI	Friction characteristic value n0 / Friction n0 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: 0.00 [rpm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 15.00 [rpm]
p3820[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Friction characteristic value v0 / Friction v0 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: 0.00 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 21000.00 [m/min]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 1.50 [m/min]
p3821[0...n] SERVO_840, SERVO_DBSI	Friction characteristic value n1 / Friction n1 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: 0.00 [rpm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 30.00 [rpm]
p3821[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Friction characteristic value v1 / Friction v1 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: 0.00 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 21000.00 [m/min]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 3.00 [m/min]
p3822[0...n] SERVO_840, SERVO_DBSI	Friction characteristic value n2 / Friction n2 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: 0.00 [rpm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 60.00 [rpm]

p3822[0...n]	Friction characteristic value v2 / Friction v2		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T	Calculated: CALC_MOD_LIM_REF	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 4_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.00 [m/min]	Max: 21000.00 [m/min]	Factory setting: 6.00 [m/min]

p3823[0...n]	Friction characteristic value n3 / Friction n3		
SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: CALC_MOD_LIM_REF	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 3_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.00 [rpm]	Max: 210000.00 [rpm]	Factory setting: 120.00 [rpm]

p3823[0...n]	Friction characteristic value v3 / Friction v3		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T	Calculated: CALC_MOD_LIM_REF	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 4_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.00 [m/min]	Max: 21000.00 [m/min]	Factory setting: 12.00 [m/min]

p3824[0...n]	Friction characteristic value n4 / Friction n4		
SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: CALC_MOD_LIM_REF	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 3_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.00 [rpm]	Max: 210000.00 [rpm]	Factory setting: 150.00 [rpm]

p3824[0...n]	Friction characteristic value v4 / Friction v4		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T	Calculated: CALC_MOD_LIM_REF	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 4_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.00 [m/min]	Max: 21000.00 [m/min]	Factory setting: 15.00 [m/min]

p3825[0...n] SERVO_840, SERVO_DBSI	Friction characteristic value n5 / Friction n5 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: 0.00 [rpm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 300.00 [rpm]
p3825[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Friction characteristic value v5 / Friction v5 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: 0.00 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 21000.00 [m/min]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 30.00 [m/min]
p3826[0...n] SERVO_840, SERVO_DBSI	Friction characteristic value n6 / Friction n6 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: 0.00 [rpm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 600.00 [rpm]
p3826[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Friction characteristic value v6 / Friction v6 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: 0.00 [m/min]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 4_1 Scaling: - Max: 21000.00 [m/min]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 60.00 [m/min]
p3827[0...n] SERVO_840, SERVO_DBSI	Friction characteristic value n7 / Friction n7 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: 0.00 [rpm]	Calculated: CALC_MOD_LIM_REF Dynamic index: DDS, p0180 Unit group: 3_1 Scaling: - Max: 210000.00 [rpm]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 1200.00 [rpm]

p3827[0...n]	Friction characteristic value v7 / Friction v7		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T	Calculated: CALC_MOD_LIM_REF	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 4_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.00 [m/min]	Max: 21000.00 [m/min]	Factory setting: 120.00 [m/min]

p3828[0...n]	Friction characteristic value n8 / Friction n8		
SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: CALC_MOD_LIM_REF	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 3_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.00 [rpm]	Max: 210000.00 [rpm]	Factory setting: 1500.00 [rpm]

p3828[0...n]	Friction characteristic value v8 / Friction v8		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T	Calculated: CALC_MOD_LIM_REF	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 4_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.00 [m/min]	Max: 21000.00 [m/min]	Factory setting: 150.00 [m/min]

p3829[0...n]	Friction characteristic value n9 / Friction n9		
SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: CALC_MOD_LIM_REF	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 3_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.00 [rpm]	Max: 210000.00 [rpm]	Factory setting: 3000.00 [rpm]

p3829[0...n]	Friction characteristic value v9 / Friction v9		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T	Calculated: CALC_MOD_LIM_REF	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 4_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.00 [m/min]	Max: 21000.00 [m/min]	Factory setting: 300.00 [m/min]

p3830[0...n] SERVO_840, SERVO_DBSI	Friction characteristic value M0 / Friction M0 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: -1000000.0000 [Nm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 7_1 Scaling: - Max: 1000000.0000 [Nm]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 0.0000 [Nm]
p3830[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Friction characteristic value F0 / Friction F0 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: -1000000.0000 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: - Max: 1000000.0000 [N]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 0.0000 [N]
p3831[0...n] SERVO_840, SERVO_DBSI	Friction characteristic value M1 / Friction M1 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: -1000000.0000 [Nm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 7_1 Scaling: - Max: 1000000.0000 [Nm]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 0.0000 [Nm]
p3831[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Friction characteristic value F1 / Friction F1 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: -1000000.0000 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: - Max: 1000000.0000 [N]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 0.0000 [N]
p3832[0...n] SERVO_840, SERVO_DBSI	Friction characteristic value M2 / Friction M2 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: -1000000.0000 [Nm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 7_1 Scaling: - Max: 1000000.0000 [Nm]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 0.0000 [Nm]
p3832[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Friction characteristic value F2 / Friction F2 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: -1000000.0000 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: - Max: 1000000.0000 [N]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 0.0000 [N]

p3833[0...n]	Friction characteristic value M3 / Friction M3		
SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 7_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: -1000000.0000 [Nm]	Max: 1000000.0000 [Nm]	Factory setting: 0.0000 [Nm]

p3833[0...n]	Friction characteristic value F3 / Friction F3		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 8_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: -1000000.0000 [N]	Max: 1000000.0000 [N]	Factory setting: 0.0000 [N]

p3834[0...n]	Friction characteristic value M4 / Friction M4		
SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 7_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: -1000000.0000 [Nm]	Max: 1000000.0000 [Nm]	Factory setting: 0.0000 [Nm]

p3834[0...n]	Friction characteristic value F4 / Friction F4		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 8_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: -1000000.0000 [N]	Max: 1000000.0000 [N]	Factory setting: 0.0000 [N]

p3835[0...n]	Friction characteristic value M5 / Friction M5		
SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 7_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: -1000000.0000 [Nm]	Max: 1000000.0000 [Nm]	Factory setting: 0.0000 [Nm]

p3835[0...n]	Friction characteristic value F5 / Friction F5		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 8_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: -1000000.0000 [N]	Max: 1000000.0000 [N]	Factory setting: 0.0000 [N]

p3836[0...n] SERVO_840, SERVO_DBSI	Friction characteristic value M6 / Friction M6 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: -1000000.0000 [Nm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 7_1 Scaling: - Max: 1000000.0000 [Nm]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 0.0000 [Nm]
p3836[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Friction characteristic value F6 / Friction F6 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: -1000000.0000 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: - Max: 1000000.0000 [N]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 0.0000 [N]
p3837[0...n] SERVO_840, SERVO_DBSI	Friction characteristic value M7 / Friction M7 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: -1000000.0000 [Nm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 7_1 Scaling: - Max: 1000000.0000 [Nm]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 0.0000 [Nm]
p3837[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Friction characteristic value F7 / Friction F7 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: -1000000.0000 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: - Max: 1000000.0000 [N]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 0.0000 [N]
p3838[0...n] SERVO_840, SERVO_DBSI	Friction characteristic value M8 / Friction M8 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: -1000000.0000 [Nm]	Calculated: - Dynamic index: DDS, p0180 Unit group: 7_1 Scaling: - Max: 1000000.0000 [Nm]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 0.0000 [Nm]
p3838[0...n] SERVO_840 (Lin), SERVO_DBSI (Lin)	Friction characteristic value F8 / Friction F8 Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: -1000000.0000 [N]	Calculated: - Dynamic index: DDS, p0180 Unit group: 8_1 Scaling: - Max: 1000000.0000 [N]	Access level: 2 Function diagram: 7010 Unit selection: p0505 Expert list: 1 Factory setting: 0.0000 [N]

p3839[0...n]	Friction characteristic value M9 / Friction M9		
SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 7_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1000000.0000 [Nm]	1000000.0000 [Nm]	0.0000 [Nm]

p3839[0...n]	Friction characteristic value F9 / Friction F9		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 7010
	P-Group: Functions	Unit group: 8_1	Unit selection: p0505
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1000000.0000 [N]	1000000.0000 [N]	0.0000 [N]

r3840.0...8	CO/BO: Friction characteristic status word / Friction ZSW		
SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: 7010
	P-Group: Functions	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r3841	CO: Friction characteristic output / Frict outp		
SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7010
	P-Group: Functions	Unit group: 7_1	Unit selection: p0505
	Not for motor type: REL	Scaling: p2003	Expert list: 1
	Min:	Max:	Factory setting:
	- [Nm]	- [Nm]	- [Nm]

r3841	CO: Friction characteristic output / Frict outp		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: -	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7010
	P-Group: Functions	Unit group: 8_1	Unit selection: p0505
	Not for motor type: REL	Scaling: p2003	Expert list: 1
	Min:	Max:	Factory setting:
	- [N]	- [N]	- [N]

p3842	Friction characteristic activation / Friction act		
SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: -	Access level: 2
	Data type: Integer16	Dynamic index: -	Function diagram: 7010
	P-Group: Functions	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0

p3845 SERVO_840, SERVO_DBSI	Record friction characteristic activation / Frict record act Can be changed: T Data type: Integer16 P-Group: Functions Not for motor type: REL Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 2 Function diagram: 7010 Unit selection: - Expert list: 1 Factory setting: 0
p3846[0...n] SERVO_840, SERVO_DBSI	Record friction characteristic ramp-up/ramp-down time / Frict rec t_RU/RD Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: 0.000 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 999999.000 [s]	Access level: 2 Function diagram: 7010 Unit selection: - Expert list: 1 Factory setting: 10.000 [s]
p3847[0...n] SERVO_840, SERVO_DBSI	Record friction characteristic time to warm up / Frict rec t_warm Can be changed: T Data type: FloatingPoint32 P-Group: Functions Not for motor type: REL Min: 0.000 [s]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 3600.000 [s]	Access level: 2 Function diagram: 7010 Unit selection: - Expert list: 1 Factory setting: 0.000 [s]
p3848[0...n] SERVO_840, SERVO_DBSI	CI: Friction characteristic speed actual value signal source / Frict n_act s_s Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: -	Calculated: - Dynamic index: CDS, p0170 Unit group: - Scaling: p2000 Max: -	Access level: 3 Function diagram: 7010 Unit selection: - Expert list: 1 Factory setting: 63[0]
p3860 A_INF_840 (Brk Mod ext), B_INF_840 (Brk Mod ext), S_INF_840 (Brk Mod ext)	Number of Braking Modules connected in parallel / BM qty para_cct Can be changed: C2(2) Data type: Unsigned8 P-Group: Converter Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 8	Access level: 3 Function diagram: 9951 Unit selection: - Expert list: 1 Factory setting: 1
r3861.0...7 A_INF_840 (Brk Mod ext), B_INF_840 (Brk Mod ext), S_INF_840 (Brk Mod ext)	BO: Braking Module inhibit/acknowledgment / BM inhib/ackn Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9951 Unit selection: - Expert list: 1 Factory setting: -

p3862	Braking Module DC link fast discharge delay time / BM DC-dischg t_del		
A_INF_840 (Brk Mod ext), B_INF_840 (Brk Mod ext), S_INF_840 (Brk Mod ext)	Can be changed: C1(3), T	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: 9951
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	500 [ms]	4294967295 [ms]	1000 [ms]

p3863	BI: Activating Braking Module DC link fast discharge / BM DC-dischg act		
A_INF_840 (Brk Mod ext), B_INF_840 (Brk Mod ext), S_INF_840 (Brk Mod ext)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 9951
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

r3864.0...7	BO: Braking Module DC link fast discharge / BM DC link dischg		
A_INF_840 (Brk Mod ext), B_INF_840 (Brk Mod ext), S_INF_840 (Brk Mod ext)	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: 9951
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

p3865[0...7]	BI: Braking Module pre-alarm I2t shutdown / BM pre-A I2t shutd		
A_INF_840 (Brk Mod ext), B_INF_840 (Brk Mod ext), S_INF_840 (Brk Mod ext)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 9951
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p3866[0...7]	BI: Braking Module fault / BM fault		
A_INF_840 (Brk Mod ext), B_INF_840 (Brk Mod ext), S_INF_840 (Brk Mod ext)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 9951
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p3870	Long stator configuration / Long stator config		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 bin

p3871 SERVO_840, SERVO_DBSI	Bl: Set long stator signal source commutation angle (p3872) / Set s_s com ang Can be changed: T Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p3872 SERVO_840, SERVO_DBSI	Cl: Long stator signal source commutation angle / s_s com angle Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: p2005 Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 3878[0]
p3873 SERVO_840, SERVO_DBSI	Bl: Long stator sig. source changeover to cl.-loop ctrl w/ enc. / s_s ctrl w/ enc Can be changed: T Data type: Unsigned32 / Binary P-Group: Functions Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p3874 SERVO_840, SERVO_DBSI	Cl: Long stator signal source commutation angle oper. with encoder / s_s com angle enc Can be changed: T Data type: Unsigned32 / FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: p2005 Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 3879[0]
r3875.0...1 SERVO_840, SERVO_DBSI	CO/BO: Long stator status word / Long stator ZSW Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3875.0...1 SERVO_840 (Lin), SERVO_DBSI (Lin)	CO/BO: Long stator status word / Long stator ZSW Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p3876 SERVO_840, SERVO_DBSI	BI: Unpark long stator signal source 1 encoder / s_s 1 enc unpark Can be changed: T Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p3878 SERVO_840, SERVO_DBSI	CO: Long stator commutation angle 1 / Com_angle 1 Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -180 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: p2005 Max: 180 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [°]
p3879 SERVO_840, SERVO_DBSI	CO: Long stator commutation angle 2 / Com_angle 2 Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -180 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: p2005 Max: 180 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [°]
p3900 HLA_840, HLA_DBSI	Completion of quick commissioning / Compl quick_com Can be changed: C2(1) Data type: Integer16 P-Group: Displays, signals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p3900 SERVO_840, SERVO_DBSI	Completion of quick commissioning / Compl quick_com Can be changed: C2(1) Data type: Integer16 P-Group: Displays, signals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p3900 A_INF_840, B_INF_840, S_INF_840	Completion of quick commissioning / Compl quick_com Can be changed: C2(1) Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p3901[0...n] A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Power unit EEPROM Vdc offset calibration / PU EEPROM Vdc offs Can be changed: C1, C2(1), T Data type: FloatingPoint32 P-Group: All groups Not for motor type: - Min: -40.0 [V]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 40.0 [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [V]
r3925[0...n] SERVO_840, SERVO_DBSI	Identification final display / ID final_disp Can be changed: - Data type: Unsigned32 P-Group: Motor Not for motor type: - Min: -	Calculated: CALC_MOD_ALL Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3927[0...n] SERVO_840, SERVO_DBSI	Motor data identification induction motor data determined / MotID ASM dat det Can be changed: - Data type: Unsigned32 P-Group: Motor identification Not for motor type: - Min: -	Calculated: CALC_MOD_ALL Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3928[0...n] SERVO_840, SERVO_DBSI	Motor data identification synchronous motor data determined / MotId PMSM dat det Can be changed: - Data type: Unsigned32 P-Group: Motor identification Not for motor type: REL Min: -	Calculated: CALC_MOD_ALL Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p3940[0...n] SERVO_840, SERVO_DBSI	Motor/controller data calculation / Mot/ctrl_data calc Can be changed: T Data type: Integer16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p3950 CU_I_840, CU_NX_840	Service parameter / Serv par Can be changed: C1, T, U Data type: Unsigned16 P-Group: All groups Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r3974	Drive unit status word / Drv_unit ZSW		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3977	BICO counter topology / BICO counter topo		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3978	BICO CounterDevice / BICO CounterDevice		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3979	BICO counter drive object / BICO counter DO		
A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p3981	Acknowledge drive object faults / Ackn DO faults		
All objects	Can be changed: T, U Data type: Unsigned8 P-Group: Messages Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: 8060 Unit selection: - Expert list: 1 Factory setting: 0

p3985 A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Master control mode selection / PcCtrl mode select Can be changed: T, U Data type: Integer16 P-Group: Setpoints Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r3986 All objects	Number of parameters / Par count Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3988[0...1] CU_I_840	Boot state / Boot_state Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10800	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3988[0...1] CU_NX_840	Boot state / Boot_state Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10800	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3996[0...1] All objects	Parameter write inhibit status / Par_write inhib st Can be changed: - Data type: Unsigned8 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3998 HLA_840, HLA_DBSI	First device commissioning / First dev_com Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r3998[0...n] SERVO_840, SERVO_DBSI	First drive commissioning / First drv_com Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r3998 A_INF_840, B_INF_840, S_INF_840	First infeed commissioning / First INF_com Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4021 SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	Digital inputs terminal actual value / DI actual value Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2201 Unit selection: - Expert list: 1 Factory setting: -
r4021 TM15DI_DO	TM15DI/DO digital inputs, terminal actual value / TM15D DI ActV Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 9400, 9401, 9402 Unit selection: - Expert list: 1 Factory setting: -
r4021 TM31	TM31 digital inputs terminal actual value / TM31 DI ActV Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 9549, 9550, 9552, 9560, 9562 Unit selection: - Expert list: 1 Factory setting: -
r4021 TM41	TM41 digital inputs terminal actual value / TM41 DI ActV Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r4021 TB30	TB30 digital inputs terminal actual value / TB30 DI ActV Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 9100 Unit selection: - Expert list: 1 Factory setting: -
r4022.0...1 SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	CO/BO: Digital inputs status / DI status Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2201 Unit selection: - Expert list: 1 Factory setting: -
r4022.0...23 TM15DI_DO	CO/BO: TM15DI/DO digital inputs status / TM15D DI status Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9399, 9400, 9401, 9402 Unit selection: - Expert list: 1 Factory setting: -
r4022.0...11 TM31	CO/BO: TM31 digital inputs status / TM31 DI status Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9549, 9550, 9552, 9560, 9562 Unit selection: - Expert list: 1 Factory setting: -
r4022.0...11 TM41	CO/BO: TM41 digital inputs status / TM41 DI status Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9659, 9660, 9661, 9662 Unit selection: - Expert list: 1 Factory setting: -

r4022.0...3	CO/BO: TB30 digital inputs status / TB30 DI status		
TB30	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: 9099, 9100
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -
r4023.0...1	BO: Digital inputs status inverted / DI status inv		
SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2201
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -
r4023.0...23	CO/BO: TM15DI/DO digital inputs status inverted / TM15D DI stat inv		
TM15DI_DO	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: 9399, 9400, 9401, 9402
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -
r4023.0...11	CO/BO: TM31 digital inputs status inverted / TM31 DI status inv		
TM31	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: 9549, 9550, 9552, 9560, 9562
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -
r4023.0...11	BO: TM41 digital inputs status inverted / TM41 DI status inv		
TM41	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: 9659, 9660, 9661, 9662
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

r4023.0...3 TB30	BO: TB30 digital inputs status inverted / TB30 DI status inv Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9099, 9100 Unit selection: - Expert list: 1 Factory setting: -
r4024 TM15DI_DO	CO: TM15DI/DO digital inputs 16 ... 23 status / TM15D DI 16-23 st Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9402 Unit selection: - Expert list: 1 Factory setting: -
r4025 TM15DI_DO	CO: TM15DI/DO digital inputs 16 ... 23 status inverted / TM15D DI 16-23 inv Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9402 Unit selection: - Expert list: 1 Factory setting: -
p4028 SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	Set input or output / DI or DO Can be changed: T Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2201 Unit selection: - Expert list: 1 Factory setting: 0000 bin
p4028 TM15DI_DO	TM15DI/DO set input or output / TM15D DI or DO Can be changed: T Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9399, 9400, 9401, 9402 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 0000 bin
p4028 TM17	TM17 set input or output / TM17 DI or DO Can be changed: T Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 9419 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin

p4028	TM31 set input or output / TM31 DI or DO		
TM31	Can be changed: T Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9549, 9560, 9562 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p4028	TM41 set input or output / TM41 DI or DO		
TM41	Can be changed: T Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9659, 9661, 9662 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p4030	BI: TM15DI/DO signal source for terminal DI/DO 0 / TM15D s_s DI/DO 0		
TM15DI_DO	Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9399, 9400 Unit selection: - Expert list: 1 Factory setting: 0
p4030	BI: TM31 signal source for terminal DO 0 / TM31 s_s DO 0		
TM31	Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9549, 9556 Unit selection: - Expert list: 1 Factory setting: 0
p4030	BI: TB30 signal source for terminal DO 0 / TB30 s_s DO 0		
TB30	Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9099, 9102 Unit selection: - Expert list: 1 Factory setting: 0
p4031	BI: TM15DI/DO signal source for terminal DI/DO 1 / TM15D s_s DI/DO 1		
TM15DI_DO	Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9400 Unit selection: - Expert list: 1 Factory setting: 0

p4031 TM31	BI: TM31 signal source for terminal DO 1 / TM31 s_s DO 1 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9549, 9556 Unit selection: - Expert list: 1 Factory setting: 0
p4031 TB30	BI: TB30 signal source for terminal DO 1 / TB30 s_s DO 1 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9102 Unit selection: - Expert list: 1 Factory setting: 0
p4032 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 2 / TM15D s_s DI/DO 2 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9400 Unit selection: - Expert list: 1 Factory setting: 0
p4032 TB30	BI: TB30 signal source for terminal DO 2 / TB30 s_s DO 2 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9102 Unit selection: - Expert list: 1 Factory setting: 0
p4033 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 3 / TM15D s_s DI/DO 3 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9400 Unit selection: - Expert list: 1 Factory setting: 0
p4033 TB30	BI: TB30 signal source for terminal DO 3 / TB30 s_s DO 3 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9099, 9102 Unit selection: - Expert list: 1 Factory setting: 0

p4034	BI: TM15DI/DO signal source for terminal DI/DO 4 / TM15D s_s DI/DO 4		
TM15DI_DO	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 9400
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p4035	BI: TM15DI/DO signal source for terminal DI/DO 5 / TM15D s_s DI/DO 5		
TM15DI_DO	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 9400
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p4036	BI: TM15DI/DO signal source for terminal DI/DO 6 / TM15D s_s DI/DO 6		
TM15DI_DO	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 9400
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p4037	BI: TM15DI/DO signal source for terminal DI/DO 7 / TM15D s_s DI/DO 7		
TM15DI_DO	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 9400
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p4038	BI: Signal source for terminal DI/DO 0 distributed / s_s DI/DO 0 dis		
SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 2201
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p4038	BI: TM15DI/DO signal source for terminal DI/DO 8 / TM15D s_s DI/DO 8		
TM15DI_DO	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 9401
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p4038 TM31	BI: TM31 signal source for terminal DI/DO 8 / TM31 s_s DI/DO8 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9549, 9560 Unit selection: - Expert list: 1 Factory setting: 0
p4038 TM41	BI: TM41 signal source for terminal DI/DO 0 / TM41 s_s DI/DO 0 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9661 Unit selection: - Expert list: 1 Factory setting: 0
p4039 SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	BI: Signal source for terminal DI/DO 1 distributed / s_s DI/DO 1 dis Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2201 Unit selection: - Expert list: 1 Factory setting: 0
p4039 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 9 / TM15D s_s DI/DO 9 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9401 Unit selection: - Expert list: 1 Factory setting: 0
p4039 TM31	BI: TM31 signal source for terminal DI/DO 9 / TM31 s_s DI/DO9 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9560 Unit selection: - Expert list: 1 Factory setting: 0
p4039 TM41	BI: TM41 signal source for terminal DI/DO 1 / TM41 s_s DI/DO 1 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9661 Unit selection: - Expert list: 1 Factory setting: 0

p4040 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 10 / TM15D s_s DI/DO 10 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9401 Unit selection: - Expert list: 1 Factory setting: 0
p4040 TM31	BI: TM31 signal source for terminal DI/DO 10 / TM31 s_s DI/DO 10 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9562 Unit selection: - Expert list: 1 Factory setting: 0
p4040 TM41	BI: TM41 signal source for terminal DI/DO 2 / TM41 s_s DI/DO 2 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9662 Unit selection: - Expert list: 1 Factory setting: 0
p4041 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 11 / TM15D s_s DI/DO 11 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9401 Unit selection: - Expert list: 1 Factory setting: 0
p4041 TM31	BI: TM31 signal source for terminal DI/DO 11 / TM31 s_s DI/DO 11 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9549, 9562 Unit selection: - Expert list: 1 Factory setting: 0
p4041 TM41	BI: TM41 signal source for terminal DI/DO 3 / TM41 s_s DI/DO 3 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9662 Unit selection: - Expert list: 1 Factory setting: 0

p4042 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 12 / TM15D s_s DI/DO 12 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9401 Unit selection: - Expert list: 1 Factory setting: 0
p4043 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 13 / TM15D s_s DI/DO 13 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9401 Unit selection: - Expert list: 1 Factory setting: 0
p4044 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 14 / TM15D s_s DI/DO 14 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9401 Unit selection: - Expert list: 1 Factory setting: 0
p4045 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 15 / TM15D s_s DI/DO 15 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9401 Unit selection: - Expert list: 1 Factory setting: 0
p4046 TM31	TM31 digital outputs limit current / TM31 DO limit curr Can be changed: T Data type: Integer16 P-Group: Commands Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: 9560 Unit selection: - Expert list: 1 Factory setting: 0
r4047 SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	Digital outputs status / DO status Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 2201 Unit selection: - Expert list: 1 Factory setting: -

r4047 TM15DI_DO	TM15DI/DO digital outputs status / TM15D DO status		
	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: 9400, 9401, 9402
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -
r4047 TM31	TM31 digital outputs status / TM31 DO status		
	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: 9556, 9560, 9562
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -
r4047 TM41	TM41 digital outputs status / TM41 DO status		
	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -
r4047 TB30	TB30 digital outputs status / TB30 DO status		
	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: 9102
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -
p4048 SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	Invert digital outputs / DO inv		
	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2201
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: 0000 bin

p4048 TM15DI_DO	TM15DI/DO invert digital outputs / TM15D DO inv Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9400, 9401, 9402 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 0000 bin
p4048 TM17	TM17 invert digital inputs/outputs / TM17 DI/DO inv Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p4048 TM31	TM31 invert digital outputs / TM31 DO inv Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9556, 9560, 9562 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p4048 TM41	TM41 invert digital outputs / TM41 DO inv Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p4048 TB30	TB30 invert digital outputs / TB30 DO inv Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9102 Unit selection: - Expert list: 1 Factory setting: 0000 bin

p4049	TM17 digital inputs/outputs set the mode / TM17 DI/DO mode		
TM17	Can be changed: T	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0000 0000 bin
r4052[0...1]	CO: TM31 analog inputs current input voltage/current / TM31 AI U/I_inp		
TM31	Can be changed: -	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9566, 9568
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-
r4052[0]	CO: TM41 analog inputs actual input voltage / TM41 AI U_inp act		
TM41	Can be changed: -	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9663
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [V]	- [V]	- [V]
r4052[0...1]	CO: TB30 analog inputs actual input voltage / TB30 AI U_inp act		
TB30	Can be changed: -	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9104
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [V]	- [V]	- [V]
p4053[0...1]	TM31 analog inputs smoothing time constant / TM31 AI Tc_smth		
TM31	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9566, 9568
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0 [ms]	1000.0 [ms]	0.0 [ms]
p4053[0]	TM41 analog inputs smoothing time constant / TM41 AI Tc_smth		
TM41	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9663
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0 [ms]	1000.0 [ms]	0.0 [ms]

p4053[0...1] TB30	TB30 analog inputs smoothing time constant / TB30 AI Tc_smth Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: 0.0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.0 [ms]	Access level: 1 Function diagram: 9104 Unit selection: - Expert list: 1 Factory setting: 0.0 [ms]
r4055[0...1] TM31	CO: TM31 analog inputs actual value in percent / TM31 AI value in % Can be changed: - Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 1 Function diagram: 9549, 9566, 9568 Unit selection: - Expert list: 1 Factory setting: - [%]
r4055[0] TM41	CO: TM41 analog inputs actual value in percent / TM41 AI value in % Can be changed: - Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 1 Function diagram: 9663 Unit selection: - Expert list: 1 Factory setting: - [%]
r4055[0...1] TB30	CO: TB30 analog inputs actual value in percent / TB30 AI value in % Can be changed: - Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 1 Function diagram: 9099, 9104 Unit selection: - Expert list: 1 Factory setting: - [%]
p4056[0...1] TM31	TM31 analog inputs type / TM31 AI type Can be changed: T, U Data type: Integer16 P-Group: Terminals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 5	Access level: 1 Function diagram: 9566, 9568 Unit selection: - Expert list: 1 Factory setting: 4
r4056 TM41	TM41 analog input type / TM41 AI type Can be changed: - Data type: Integer16 P-Group: Terminals Not for motor type: - Min: 4	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r4056[0...1] TB30	TB30 analog inputs type / TB30 AI type Can be changed: - Data type: Integer16 P-Group: Terminals Not for motor type: - Min: 4	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p4057[0...1] TM31	TM31 analog inputs characteristic value x1 / TM31 AI char x1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -20.000	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20.000	Access level: 2 Function diagram: 9566, 9568 Unit selection: - Expert list: 1 Factory setting: 0.000
p4057[0] TM41	TM41 analog input characteristic value x1 / TM41 AI char x1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -20.000 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20.000 [V]	Access level: 2 Function diagram: 9663 Unit selection: - Expert list: 1 Factory setting: 0.000 [V]
p4057[0...1] TB30	TB30 analog inputs characteristic value x1 / TB30 AI char x1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -11.000 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 11.000 [V]	Access level: 2 Function diagram: 9104 Unit selection: - Expert list: 1 Factory setting: 0.000 [V]
p4058[0...1] TM31	TM31 analog inputs characteristic value y1 / TM31 AI char y1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -1000.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [%]	Access level: 2 Function diagram: 9566, 9568 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p4058[0] TM41	TM41 analog input characteristic value y1 / TM41 AI char y1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -1000.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [%]	Access level: 2 Function diagram: 9663 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]

p4058[0...1] TB30	TB30 analog inputs characteristic value y1 / TB30 AI char y1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -1000.00 [%] Max: 1000.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [%]	Access level: 2 Function diagram: 9104 Unit selection: - Expert list: 1 Factory setting: 0.00 [%]
p4059[0...1] TM31	TM31 analog inputs characteristic value x2 / TM31 AI char x2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -20.000 Max: 20.000	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20.000	Access level: 2 Function diagram: 9566, 9568 Unit selection: - Expert list: 1 Factory setting: 10.000
p4059[0] TM41	TM41 analog input characteristic value x2 / TM41 AI char x2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -20.000 [V] Max: 20.000 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20.000 [V]	Access level: 2 Function diagram: 9663 Unit selection: - Expert list: 1 Factory setting: 10.000 [V]
p4059[0...1] TB30	TB30 analog inputs characteristic value x2 / TB30 AI char x2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -11.000 [V] Max: 11.000 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 11.000 [V]	Access level: 2 Function diagram: 9104 Unit selection: - Expert list: 1 Factory setting: 10.000 [V]
p4060[0...1] TM31	TM31 analog inputs characteristic value y2 / TM31 AI char y2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -1000.00 [%] Max: 1000.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [%]	Access level: 2 Function diagram: 9566, 9568 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p4060[0] TM41	TM41 analog input characteristic value y2 / TM41 AI char y2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -1000.00 [%] Max: 1000.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [%]	Access level: 2 Function diagram: 9663 Unit selection: - Expert list: 1 Factory setting: 100.00 [%]

p4060[0...1]	TB30 analog inputs characteristic value y2 / TB30 AI char y2		
TB30	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9104
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1000.00 [%]	1000.00 [%]	100.00 [%]
p4061[0...1]	TM31 analog inputs wire breakage monitoring response threshold / TM31 wire brk thr		
TM31	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9566, 9568
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mA]	20.00 [mA]	2.00 [mA]
p4062[0...1]	TM31 analog inputs wire breakage monitoring delay time / TM31 wirebrk t_del		
TM31	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: Unsigned16	Dynamic index: -	Function diagram: 9566, 9568
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0 [ms]	1000 [ms]	100 [ms]
p4063[0...1]	TM31 analog inputs offset / TM31 AI offset		
TM31	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9566, 9568
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-20.000	20.000	0.000
p4063[0]	TM41 analog input offset / TM41 AI offset		
TM41	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9663
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-20.000 [V]	20.000 [V]	0.000 [V]
p4063[0...1]	TB30 analog inputs offset / TB30 AI offset		
TB30	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9104
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-20.000 [V]	20.000 [V]	0.000 [V]

p4066[0...1] TM31	TM31 analog inputs activate absolute value generation / TM31 AI AbsV act Can be changed: T, U Data type: Integer16 P-Group: Terminals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: 9566, 9568 Unit selection: - Expert list: 1 Factory setting: 0
p4066[0] TM41	TM41 analog input activate absolute value generation / TM41 AI AbsV act Can be changed: T, U Data type: Integer16 P-Group: Terminals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: 9663 Unit selection: - Expert list: 1 Factory setting: 0
p4066[0...1] TB30	TB30 analog inputs activate absolute value generation / TB30 AI AbsV act Can be changed: T, U Data type: Integer16 P-Group: Terminals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: 9104 Unit selection: - Expert list: 1 Factory setting: 0
p4067[0...1] TM31	BI: TM31 analog inputs invert signal source / TM31 AI inv s_s Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9566, 9568 Unit selection: - Expert list: 1 Factory setting: 0
p4067[0] TM41	BI: TM41 analog input invert signal source / TM41 AI inv s_s Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9663 Unit selection: - Expert list: 1 Factory setting: 0
p4067[0...1] TB30	BI: TB30 analog inputs invert signal source / TB30 AI inv s_s Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9104 Unit selection: - Expert list: 1 Factory setting: 0

p4068[0...1]	TM31 analog inputs window to suppress noise / TM31 AI window		
TM31	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9566, 9568
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [%]	20.00 [%]	0.00 [%]
p4068[0]	TM41 analog input window to suppress noise / TM41 AI window		
TM41	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9663
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [%]	20.00 [%]	0.00 [%]
p4068[0...1]	TB30 analog inputs noise suppression window / TB30 AI window		
TB30	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9104
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [%]	20.00 [%]	0.00 [%]
p4069[0...1]	BI: TM31 analog inputs signal source for enable / TM31 AI enable		
TM31	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 9566, 9568
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	1
p4069[0]	BI: TM41 analog input signal source for enable / TM41 AI enable		
TM41	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 9663
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	1
p4069[0...1]	BI: TB30 analog inputs signal source for enable / TB30 AI enable		
TB30	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 9104
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	1

p4071[0...1]	CI: TM31 analog outputs signal source / TM31 AO s_s		
TM31	Can be changed: T, U Data type: Unsigned32 / FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 1 Function diagram: 9549, 9572 Unit selection: - Expert list: 1 Factory setting: 0
p4071[0...1]	CI: TB30 analog outputs signal source / TB30 AO s_s		
TB30	Can be changed: T, U Data type: Unsigned32 / FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 1 Function diagram: 9099, 9106 Unit selection: - Expert list: 1 Factory setting: 0
r4072[0...1]	TM31 analog outputs output value currently referred / TM31 AO outp_val		
TM31	Can be changed: - Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%]	Access level: 1 Function diagram: 9572 Unit selection: - Expert list: 1 Factory setting: - [%]
r4072[0...1]	TB30 analog outputs output value currently referred / TB30 AO outp_val		
TB30	Can be changed: - Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%]	Access level: 1 Function diagram: 9106 Unit selection: - Expert list: 1 Factory setting: - [%]
p4073[0...1]	TM31 analog outputs smoothing time constant / TM31 AO Tc_smth		
TM31	Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: 0.0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.0 [ms]	Access level: 1 Function diagram: 9572 Unit selection: - Expert list: 1 Factory setting: 0.0 [ms]
p4073[0...1]	TB30 analog outputs smoothing time constant / TB30 AO Tc_smth		
TB30	Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: 0.0 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.0 [ms]	Access level: 1 Function diagram: 9106 Unit selection: - Expert list: 1 Factory setting: 0.0 [ms]

r4074[0...1]	TM31 analog outputs current output voltage/current / TM31 AO U/I_outp		
TM31	Can be changed: -	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9572
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r4074[0...1]	TB30 analog outputs actual output voltage / TB30 AO U_outp		
TB30	Can be changed: -	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9106
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [V]	- [V]	- [V]

p4075[0...1]	TM31 analog outputs activate absolute value generation / TM31 AO AbsV act		
TM31	Can be changed: T	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 9572
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0

p4075[0...1]	TB30 analog outputs activate absolute value generation / TB30 AO AbsV act		
TB30	Can be changed: T	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 9106
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0

p4076[0...1]	TM31 analog outputs type / TM31 AO type		
TM31	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: Integer16	Dynamic index: -	Function diagram: 9572
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	4	4

r4076[0...1]	TB30 analog outputs type / TB30 AO type		
TB30	Can be changed: -	Calculated: -	Access level: 1
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	4	4	-

p4077[0...1]	TM31 analog outputs characteristic value x1 / TM31 AO char x1		
TM31	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9572
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1000.00 [%]	1000.00 [%]	0.00 [%]
p4077[0...1]	TB30 analog outputs characteristic value x1 / TB30 AO char x1		
TB30	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9106
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1000.00 [%]	1000.00 [%]	0.00 [%]
p4078[0...1]	TM31 analog outputs characteristic value y1 / TM31 AO char y1		
TM31	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9572
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-20.000	20.000	0.000
p4078[0...1]	TB30 analog outputs characteristic value y1 / TB30 AO char y1		
TB30	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9106
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-11.000 [V]	11.000 [V]	0.000 [V]
p4079[0...1]	TM31 analog outputs characteristic value x2 / TM31 AO char x2		
TM31	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9572
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1000.00 [%]	1000.00 [%]	100.00 [%]
p4079[0...1]	TB30 analog outputs characteristic value x2 / TB30 AO char x2		
TB30	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9106
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1000.00 [%]	1000.00 [%]	100.00 [%]

p4080[0...1]	TM31 analog outputs characteristic value y2 / TM31 AO char y2		
TM31	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9572
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-20.000	20.000	10.000

p4080[0...1]	TB30 analog outputs characteristic value y2 / TB30 AO char y2		
TB30	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9106
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-11.000 [V]	11.000 [V]	10.000 [V]

p4082[0...1]	BI: TM31 analog outputs invert signal source / TM31 AO inv s_s		
TM31	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 9572
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p4082[0...1]	BI: TB30 analog outputs invert signal source / TB30 AO inv s_s		
TB30	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 9106
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p4083[0...1]	TM31 analog outputs offset / TM31 AO offset		
TM31	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9572
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-20.000	20.000	0.000

p4083[0...1]	TB30 analog outputs offset / TB30 AO offset		
TB30	Can be changed: T, U	Calculated: -	Access level: 1
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9106
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-10.000	10.000	0.000

p4086 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 16 / TM15D s_s DI/DO 16 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9402 Unit selection: - Expert list: 1 Factory setting: 0
p4087 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 17 / TM15D s_s DI/DO 17 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9402 Unit selection: - Expert list: 1 Factory setting: 0
p4088 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 18 / TM15D s_s DI/DO 18 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9402 Unit selection: - Expert list: 1 Factory setting: 0
p4089 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 19 / TM15D s_s DI/DO 19 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9402 Unit selection: - Expert list: 1 Factory setting: 0
p4090 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 20 / TM15D s_s DI/DO 20 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9402 Unit selection: - Expert list: 1 Factory setting: 0
p4091 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 21 / TM15D s_s DI/DO 21 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9402 Unit selection: - Expert list: 1 Factory setting: 0

p4092 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 22 / TM15D s_s DI/DO 22 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9402 Unit selection: - Expert list: 1 Factory setting: 0
p4093 TM15DI_DO	BI: TM15DI/DO signal source for terminal DI/DO 23 / TM15D s_s DI/DO 23 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9402 Unit selection: - Expert list: 1 Factory setting: 0
r4094.0...23 TM15DI_DO	BO: TM15 digital inputs status inverted raw data internal / TM15 DI st raw dat Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p4095 SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	S120M digital inputs simulation mode / S120M DI sim_mode Can be changed: T, U Data type: Unsigned32 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p4095 TM15DI_DO	TM15DI/DO digital inputs simulation mode / TM15D DI sim_mode Can be changed: T, U Data type: Unsigned32 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 9400, 9401, 9402 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 0000 bin

p4095	TM31 digital inputs simulation mode / TM31 DI sim_mode		
TM31	Can be changed: T, U Data type: Unsigned32 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 9549, 9550, 9552, 9560, 9562 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p4095	TM41 digital inputs simulation mode / TM41 DI sim_mode		
TM41	Can be changed: T, U Data type: Unsigned32 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p4095	TB30 digital inputs simulation mode / TB30 DI sim_mode		
TB30	Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 9099, 9100 Unit selection: - Expert list: 1 Factory setting: 0000 bin
p4096	S120M digital inputs simulation mode setpoint / S120M DI sim set		
SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p4096	TM15DI/DO digital inputs simulation mode, setpoint / TM15D DI sim set		
TM15DI_DO	Can be changed: T, U Data type: Unsigned32 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 9400, 9401, 9402 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 0000 bin

p4096	TM31 digital inputs simulation mode setpoint / TM31 DI sim set		
TM31	Can be changed: T, U Data type: Unsigned32 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 9549, 9550, 9552, 9560, 9562 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p4096	TM41 digital inputs simulation mode setpoint / TM41 DI sim set		
TM41	Can be changed: T, U Data type: Unsigned32 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p4096	TB30 digital inputs simulation mode setpoint / TB30 DI sim set		
TB30	Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 9099, 9100 Unit selection: - Expert list: 1 Factory setting: 0000 bin
p4097[0...1]	TM31 analog inputs simulation mode / TM31 AI sim_mode		
TM31	Can be changed: T, U Data type: Integer16 P-Group: Terminals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: 9566, 9568 Unit selection: - Expert list: 1 Factory setting: 0
p4097[0]	TM41 analog input simulation mode / TM41 AI sim_mode		
TM41	Can be changed: T, U Data type: Integer16 P-Group: Terminals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: 9663 Unit selection: - Expert list: 1 Factory setting: 0
p4097[0...1]	TB30 analog inputs simulation mode / TB30 AI sim_mode		
TB30	Can be changed: T, U Data type: Integer16 P-Group: Terminals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 2 Function diagram: 9104 Unit selection: - Expert list: 1 Factory setting: 0

p4098[0...1] TM31	TM31 analog inputs simulation mode setpoint / TM31 AI sim set Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -20.000	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20.000	Access level: 2 Function diagram: 9566, 9568 Unit selection: - Expert list: 1 Factory setting: 0.000
p4098[0] TM41	TM41 analog input simulation mode setpoint / TM41 AI sim set Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -20.000 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20.000 [V]	Access level: 2 Function diagram: 9663 Unit selection: - Expert list: 1 Factory setting: 0.000 [V]
p4098[0...1] TB30	TB30 analog inputs simulation mode setpoint / TB30 AI sim set Can be changed: T, U Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: -11.000 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 11.000 [V]	Access level: 2 Function diagram: 9104 Unit selection: - Expert list: 1 Factory setting: 0.000 [V]
p4099 SERVO_840 (Dig IO), SERVO_DBSI (Dig IO)	Inputs/outputs sampling time / I/O t_samp Can be changed: C1(3) Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 125.00 [µs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 5000.00 [µs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 4000.00 [µs]
p4099 TM15DI_DO	TM15DI/DO inputs/outputs sampling time / TM15D I/O t_samp Can be changed: C1(3) Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 0.00 [µs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 5000.00 [µs]	Access level: 3 Function diagram: 9399, 9400 Unit selection: - Expert list: 1 Factory setting: 4000.00 [µs]
p4099 TM17	TM17 inputs/outputs sampling time / TM17 I/O t_samp Can be changed: C1(3) Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 31.25 [µs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 500.00 [µs]	Access level: 3 Function diagram: 9419 Unit selection: - Expert list: 1 Factory setting: 125.00 [µs]

p4099[0...2]	TM31 inputs/outputs sampling time / TM31 I/O t_samp		
TM31	Can be changed: C1(3)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9549, 9550
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	5000.00 [μs]	4000.00 [μs]
p4099[0...3]	TM41 inputs/outputs sampling time / TM41 I/O t_samp		
TM41	Can be changed: C1(3)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9659, 9660
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	5000.00 [μs]	[0] 4000.00 [μs]
			[1] 4000.00 [μs]
			[2] 0.00 [μs]
			[3] 125.00 [μs]
p4099[0...2]	TB30 inputs/outputs sampling time / TB30 I/O t_samp		
TB30	Can be changed: C1(3)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 9099, 9100
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	5000.00 [μs]	[0] 4000.00 [μs]
			[1] 4000.00 [μs]
			[2] 4000.00 [μs]
p4100	Spindle supplementary temperature sensor type / Sup_temp sens type		
SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Can be changed: T	Calculated: -	Access level: 1
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	6	0
p4100[0...3]	TM120 temperature evaluation, sensor type / TM120 sensor type		
TM120	Can be changed: T	Calculated: -	Access level: 1
	Data type: Integer16	Dynamic index: -	Function diagram: 9605, 9606
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	6	1

p4100[0...11] TM150	TM150 sensor type / TM150 sensor type Can be changed: T Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6	Access level: 1 Function diagram: 9626, 9627 Unit selection: - Expert list: 1 Factory setting: 5
p4100 TM31	TM31 sensor type / TM31 sensor type Can be changed: T Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6	Access level: 1 Function diagram: 9576 Unit selection: - Expert list: 1 Factory setting: 0
r4101[0...3] TM120	TM120 sensor resistance / TM120 R_sensor Can be changed: - Data type: Unsigned16 P-Group: Terminals Not for motor type: - Min: - [ohm]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [ohm]	Access level: 3 Function diagram: 9605, 9606 Unit selection: - Expert list: 1 Factory setting: - [ohm]
r4101[0...11] TM150	TM150 sensor resistance / TM150 R_sensor Can be changed: - Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: - [ohm]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [ohm]	Access level: 3 Function diagram: 9626, 9627 Unit selection: - Expert list: 1 Factory setting: - [ohm]
r4101 TM31	TM31 sensor resistance / TM31 R_sensor Can be changed: - Data type: Unsigned16 P-Group: Terminals Not for motor type: - Min: - [ohm]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [ohm]	Access level: 3 Function diagram: 9576 Unit selection: - Expert list: 1 Factory setting: - [ohm]
p4102[0...1] SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Spindle supplementary temperature fault threshold/alarm thresh. / Suppl_temp F/A_thr Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -300.0 [°C]	Calculated: - Dynamic index: - Unit group: 21_1 Scaling: - Max: 9999.0 [°C]	Access level: 1 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: [0] 120.0 [°C] [1] 155.0 [°C]

p4102[0...7]	TM120 fault threshold/alarm threshold / TM120 F/A_thr		
TM120	Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: -48 [°C]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 251 [°C]	Access level: 1 Function diagram: 9605, 9606 Unit selection: - Expert list: 1 Factory setting: 251 [°C]
p4102[0...23]	TM150 fault threshold/alarm threshold / TM150 F/A_thr		
TM150	Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: -99 [°C]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 251 [°C]	Access level: 1 Function diagram: 9626, 9627 Unit selection: - Expert list: 1 Factory setting: 251 [°C]
p4102[0...1]	TM31 fault threshold/alarm threshold / TM31 F/A_thr		
TM31	Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: -48 [°C]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 251 [°C]	Access level: 1 Function diagram: 9576 Unit selection: - Expert list: 1 Factory setting: [0] 100 [°C] [1] 120 [°C]
p4103	Spindle supplementary temperature delay time / Suppl_temp t_delay		
SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.000 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 600.000 [s]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [s]
p4103[0...3]	TM120 temperature evaluation delay time / TM120 temp t_delay		
TM120	Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.000 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 600000.000 [ms]	Access level: 1 Function diagram: 9605, 9606 Unit selection: - Expert list: 1 Factory setting: 0.000 [ms]
p4103[0...11]	TM150 delay time / TM150 t_delay		
TM150	Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.0 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 600.0 [s]	Access level: 1 Function diagram: 9626, 9627 Unit selection: - Expert list: 1 Factory setting: 0.0 [s]

p4103 TM31	TM31 temperature evaluation delay time / TM31 temp t_delay Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: - Min: 0.000 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 600000.000 [ms]	Access level: 1 Function diagram: 9576 Unit selection: - Expert list: 1 Factory setting: 0.000 [ms]
r4104.0...2 SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	BO: Spindle supplementary temperature status / Suppl_temp status Can be changed: - Data type: Unsigned16 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4104.0...7 TM120	BO: TM120 temperature evaluation status / TM120 temp status Can be changed: - Data type: Unsigned16 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9605, 9606 Unit selection: - Expert list: 1 Factory setting: -
r4104.0...23 TM150	BO: TM150 temperature evaluation status / TM150 temp status Can be changed: - Data type: Unsigned32 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9626, 9627 Unit selection: - Expert list: 1 Factory setting: -
r4104.0...1 TM31	BO: TM31 temperature evaluation status / TM31 temp status Can be changed: - Data type: Unsigned16 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9549, 9576 Unit selection: - Expert list: 1 Factory setting: -
r4105 SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	CO: Spindle supplementary temperature actual value / Suppl_temp ActV Can be changed: - Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: - Scaling: p2006 Max: - [°C]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [°C]

r4105[0...3] TM120	CO: TM120 temperature actual value / TM120 temp_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: - Scaling: p2006 Max: - [°C]	Access level: 1 Function diagram: 8016, 9605, 9606 Unit selection: - Expert list: 1 Factory setting: - [°C]
r4105[0...11] TM150	CO: TM150 temperature actual value / TM150 temp_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: - Scaling: p2006 Max: - [°C]	Access level: 1 Function diagram: 9626, 9627 Unit selection: - Expert list: 1 Factory setting: - [°C]
r4105 TM31	CO: TM31 temperature actual value / TM31 temp_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: - Scaling: p2006 Max: - [°C]	Access level: 1 Function diagram: 9549, 9576 Unit selection: - Expert list: 1 Factory setting: - [°C]
r4107 SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Spindle supplementary temperature sensor use / Sup_temp_sens_use Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p4108[0...5] TM150	TM150 terminal block measuring method / TM150 meas method Can be changed: T Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 1 Function diagram: 9625, 9626, 9627 Unit selection: - Expert list: 1 Factory setting: 1
p4109[0...11] TM150	TM150 wire resistance measurement / TM150 R_wire meas Can be changed: T Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 1 Function diagram: 9626, 9627 Unit selection: - Expert list: 1 Factory setting: 0

p4110[0...11] TM150	TM150 wire resistance value / TM150 R_wire value Can be changed: T Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.00 [ohm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3000.00 [ohm]	Access level: 1 Function diagram: 9626, 9627 Unit selection: - Expert list: 1 Factory setting: 0.00 [ohm]
p4111[0...2] TM150	TM150 group channel assignment / TM150 grp channel Can be changed: T Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: 9625 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
r4112[0...2] TM150	CO: TM150 group temperature actual value maximum value / TM150 grp temp max Can be changed: - Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: - Scaling: p2006 Max: - [°C]	Access level: 1 Function diagram: 9625 Unit selection: - Expert list: 1 Factory setting: - [°C]
r4113[0...2] TM150	CO: TM150 group temperature actual value minimum value / TM150 grp temp min Can be changed: - Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: - Scaling: p2006 Max: - [°C]	Access level: 1 Function diagram: 9625 Unit selection: - Expert list: 1 Factory setting: - [°C]
r4114[0...2] TM150	CO: TM150 group temperature average actual value / TM150 grp tempActV Can be changed: - Data type: FloatingPoint32 P-Group: Terminals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: - Scaling: p2006 Max: - [°C]	Access level: 1 Function diagram: 9625 Unit selection: - Expert list: 1 Factory setting: - [°C]
p4117[0...2] TM150	TM150 group sensor error effect / TM150 error effect Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 1 Function diagram: 9625 Unit selection: - Expert list: 1 Factory setting: 0

p4118[0...11]	TM150 fault threshold/alarm threshold hysteresis / TM150 thr hyst		
TM150	Can be changed: T	Calculated: -	Access level: 1
	Data type: Unsigned16	Dynamic index: -	Function diagram: 9626, 9627
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0 [K]	50 [K]	5 [K]
p4119[0...11]	TM150 activate/deactivate smoothing / TM150 smth act		
TM150	Can be changed: T	Calculated: -	Access level: 1
	Data type: Integer16	Dynamic index: -	Function diagram: 9626, 9627
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0
r4120[0...11]	TM150 actual smoothing time in ms / TM150 ActV t ms		
TM150	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned16	Dynamic index: -	Function diagram: 9626, 9627
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [ms]	- [ms]	- [ms]
p4121	TM150 filter rated line frequency / TM150 filt f_line		
TM150	Can be changed: T	Calculated: -	Access level: 1
	Data type: Integer16	Dynamic index: -	Function diagram: 9626, 9627
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0
p4122[0...11]	TM150 smoothing time constant / TM150 Tc		
TM150	Can be changed: T	Calculated: -	Access level: 1
	Data type: Unsigned16	Dynamic index: -	Function diagram: 9626, 9627
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	100 [ms]	10000 [ms]	100 [ms]
r4154	TM41 diagnostics speed setpoint non-filtered / Diag n_set nfil		
TM41	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [rpm]	- [rpm]	- [rpm]

r4155	TM41 diagnostics speed setpoint / TM41 diag n_set		
TM41	Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [rpm]	Access level: 3 Function diagram: 9674 Unit selection: - Expert list: 1 Factory setting: - [rpm]
r4201	TM17 system time for synchronization / TM17 t_system sync		
TM17	Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4204	TM17 control digital output 0 ... 15 / TM17 ctrl DO 0-15		
TM17	Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4211	TM17 edge mode digital input 0 ... 7 / TM17 EdgMd DI 0-7		
TM17	Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4212	TM17 edge mode digital input 8 ... 15 / TM17 EdgMd DI 8-15		
TM17	Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p4220	TM17 enable DI/DO 0 ... 5 / TM17 enable 0-5		
TM17	Can be changed: T Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin

p4221	TM17 smoothing time constant digital input 0 ... 15 / TM17 Tc_sm DI 0-15		
TM17	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0000 0000 bin

p4222	TM17 time absolute/relative digital output 0 ... 15 / TM17 abs/rel 0-15		
TM17	Can be changed: T	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0000 0000 bin

r4250	TM17 set/reset time digital output 0 / TM17 t_set DO 0		
TM17	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r4251	TM17 set/reset time digital output 1 / TM17 t_set DO 1		
TM17	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r4252	TM17 set/reset time digital output 2 / TM17 t_set DO 2		
TM17	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r4253	TM17 set/reset time digital output 3 / TM17 t_set DO 3		
TM17	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r4254	TM17 set/reset time digital output 4 / TM17 t_set DO 4		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4255	TM17 set/reset time digital output 5 / TM17 t_set DO 5		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4256	TM17 set/reset time digital output 6 / TM17 t_set DO 6		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4257	TM17 set/reset time digital output 7 / TM17 t_set DO 7		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4258	TM17 set/reset time digital output 8 / TM17 t_set DO 8		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4259	TM17 set/reset time digital output 9 / TM17 t_set DO 9		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r4260	TM17 set/reset time digital output 10 / TM17 t_set DO 10		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4261	TM17 set/reset time digital output 11 / TM17 t_set DO 11		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4262	TM17 set/reset time digital output 12 / TM17 t_set DO 12		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4263	TM17 set/reset time digital output 13 / TM17 t_set DO 13		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4264	TM17 set/reset time digital output 14 / TM17 t_set DO 14		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4265	TM17 set/reset time digital output 15 / TM17 t_set DO 15		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r4301	TM17 module synchronization / TM17 module sync		
TM17	Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4304	TM17 status digital input 0 ... 15 / TM17 st DI 0-15		
TM17	Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4311	TM17 edge status digital input 0 ... 7 / TM17 edg st DI 0-7		
TM17	Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4312	TM17 edge status digital input 8 ... 15 / TM17 edgSt DI 8-15		
TM17	Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4350	TM17 edge times digital input 0 / TM17 edge_t DI 0		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4351	TM17 edge times digital input 1 / TM17 edge_t DI 1		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r4352	TM17 edge times digital input 2 / TM17 edge_t DI 2		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4353	TM17 edge times digital input 3 / TM17 edge_t DI 3		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4354	TM17 edge times digital input 4 / TM17 edge_t DI 4		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4355	TM17 edge times digital input 5 / TM17 edge_t DI 5		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4356	TM17 edge times digital input 6 / TM17 edge_t DI 6		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4357	TM17 edge times digital input 7 / TM17 edge_t DI 7		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r4358	TM17 edge times digital input 8 / TM17 edge_t DI 8		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4359	TM17 edge times digital input 9 / TM17 edge_t DI 9		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4360	TM17 edge times digital input 10 / TM17 edge_t DI 10		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4361	TM17 edge times digital input 11 / TM17 edge_t DI 11		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4362	TM17 edge times digital input 12 / TM17 edge_t DI 12		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4363	TM17 edge times digital input 13 / TM17 edge_t DI 13		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r4364	TM17 edge times digital input 14 / TM17 edge_t DI 14		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4365	TM17 edge times digital input 15 / TM17 edge_t DI 15		
TM17	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p4400	TM41 encoder emulation operating mode / Enc_emulat mode		
TM41	Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: 9674, 9676 Unit selection: - Expert list: 1 Factory setting: 0
p4401	TM41 encoder emulation mode / Enc_emulat mode		
TM41	Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9674, 9676 Unit selection: - Expert list: 1 Factory setting: 1111 0011 bin
r4402.0...2	CO/BO: TM41 encoder emulation status / Enc_emulat status		
TM41	Can be changed: - Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9674, 9676 Unit selection: - Expert list: 1 Factory setting: -
r4403	TM41 encoder emulation operating mode active / Enc_emul mode act		
TM41	Can be changed: - Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9674, 9676 Unit selection: - Expert list: 1 Factory setting: -

p4404	TM41 encoder emulation controller options / Enc_emul ctrl_opt		
TM41	Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0001 bin
p4408	TM41 encoder emulation pulse number leading encoder / TM41 enc puls no.		
TM41	Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16384	Access level: 3 Function diagram: 9674, 9676 Unit selection: - Expert list: 1 Factory setting: 0
p4418	TM41 encoder emulation fine resolution leading encoder / TM41 fine res		
TM41	Can be changed: C2(4) Data type: Unsigned8 P-Group: Encoder Not for motor type: - Min: 2	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 18	Access level: 3 Function diagram: 9676 Unit selection: - Expert list: 1 Factory setting: 11
r4419	TM41 encoder emulation diagnostics position setpoint / TM41 diag s_set		
TM41	Can be changed: - Data type: Integer32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9676 Unit selection: - Expert list: 1 Factory setting: -
p4420	CI: TM41 encoder emulation position setpoint / Enc_emul s_set		
TM41	Can be changed: T Data type: Unsigned32 / Integer32 P-Group: Setpoints Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 9676 Unit selection: - Expert list: 1 Factory setting: 0
p4421	TM41 encoder emulation deadtime compensation / Enc_emul t_dead		
TM41	Can be changed: T, U Data type: FloatingPoint32 P-Group: Setpoints Not for motor type: - Min: -10.00	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10.00	Access level: 3 Function diagram: 9676 Unit selection: - Expert list: 1 Factory setting: 0.00

p4422	TM41 encoder emulation position setpoint inversion / Enc_emul s_set inv		
TM41	Can be changed: C2(4)	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: 9676
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0
p4423	TM41 encoder emulation standstill adaptation / Enc_standst_adpt		
TM41	Can be changed: C2(4)	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: 9676
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	2000	4
p4426	TM41 encoder emulation pulses for zero mark / Enc_emul pulses ZM		
TM41	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: 9674, 9676
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	16384	0
r4427	TM41 encoder emulation zero mark position / TM41 NM_position		
TM41	Can be changed: -	Calculated: -	Access level: 4
	Data type: Integer32	Dynamic index: -	Function diagram: -
	P-Group: Encoder	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-
p4600[0...n]	Motor temperature sensor 1 sensor type / Temp_sens 1 type		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: Integer16	Dynamic index: EDS, p0140	Function diagram: 8016
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	60	0
p4601[0...n]	Motor temperature sensor 2 sensor type / Temp_sens 2 type		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: Integer16	Dynamic index: EDS, p0140	Function diagram: 8016
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	60	0

p4602[0...n] SERVO_840, SERVO_DBSI	Motor temperature sensor 3 sensor type / Temp_sens 3 type Can be changed: T, U Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 60	Access level: 2 Function diagram: 8016 Unit selection: - Expert list: 1 Factory setting: 0
p4603[0...n] SERVO_840, SERVO_DBSI	Motor temperature sensor 4 sensor type / Temp_sens 4 type Can be changed: T, U Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 60	Access level: 2 Function diagram: 8016 Unit selection: - Expert list: 1 Factory setting: 0
p4610[0...n] SERVO_840, SERVO_DBSI	Motor temperature sensor 1 sensor type MDS / Temp sens1 typ MDS Can be changed: T, U Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 32	Access level: 2 Function diagram: 8016 Unit selection: - Expert list: 1 Factory setting: 10
p4611[0...n] SERVO_840, SERVO_DBSI	Motor temperature sensor 2 sensor type MDS / Temp sens2 typ MDS Can be changed: T, U Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 32	Access level: 2 Function diagram: 8016 Unit selection: - Expert list: 1 Factory setting: 10
p4612[0...n] SERVO_840, SERVO_DBSI	Motor temperature sensor 3 sensor type MDS / Temp sens3 typ MDS Can be changed: T, U Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 32	Access level: 2 Function diagram: 8016 Unit selection: - Expert list: 1 Factory setting: 10
p4613[0...n] SERVO_840, SERVO_DBSI	Motor temperature sensor 4 sensor type MDS / Temp sens4 typ MDS Can be changed: T, U Data type: Integer16 P-Group: Motor Not for motor type: - Min: 0	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 32	Access level: 2 Function diagram: 8016 Unit selection: - Expert list: 1 Factory setting: 10

p4618 SERVO_840, SERVO_DBSI	Motor Module temperature sensor type / MM temp_sens type Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r4619 SERVO_840, SERVO_DBSI	CO: Motor Module temperature sensor actual value / MM temp_sens actV Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 2 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r4620[0...3] SERVO_840, SERVO_DBSI	Motor temperature measured / Mot_temp meas Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: 8016 Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
p4622[0...n] SERVO_840, SERVO_DBSI	Temperature sensor error lower threshold / Temp_sens low thr Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -140 [°C]	Calculated: - Dynamic index: MDS, p0130 Unit group: 21_1 Scaling: - Max: 20 [°C]	Access level: 3 Function diagram: 8016 Unit selection: p0505 Expert list: 1 Factory setting: -140 [°C]
p4630[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Absolute encoder linear measuring step factor / Abs_enc meas fact Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 1	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p4631[0...n] HLA_840, HLA_DBSI	Cylinder distance per encoder revolution / x_cyl per rev Can be changed: C2(1, 4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0 [µm]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 4294967295 [µm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [µm]

p4635[0...n] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder scaling factor acceleration / Scale factor accel Can be changed: T Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: -340.28235E36 [rev/s ²]	Calculated: - Dynamic index: EDS, p0140 Unit group: 39_1 Scaling: - Max: 340.28235E36 [rev/s ²]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 0.000 [rev/s ²]
r4636[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Encoder acceleration value 1 / Acceleration 1 Can be changed: - Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: - [rev/s ²]	Calculated: - Dynamic index: - Unit group: 39_1 Scaling: p2007 Max: - [rev/s ²]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [rev/s ²]
r4637[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Encoder acceleration value 2 / Acceleration 2 Can be changed: - Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: - [rev/s ²]	Calculated: - Dynamic index: - Unit group: 39_1 Scaling: p2007 Max: - [rev/s ²]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [rev/s ²]
r4638[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Encoder acceleration value 3 / Acceleration 3 Can be changed: - Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: - [rev/s ²]	Calculated: - Dynamic index: - Unit group: 39_1 Scaling: p2007 Max: - [rev/s ²]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [rev/s ²]
r4639[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Encoder supplementary value / Suppl value Can be changed: - Data type: Integer16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4640[0...95] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder diagnostics state machine / Enc diag stat_ma Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p4641[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	OEM encoder diagnostic signal selection / OEM enc diag sel Can be changed: T, U Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p4642 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder fault test function / Encoder fault test Can be changed: T, U Data type: Unsigned8 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 255	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p4643[0...n] SERVO_840, SERVO_DBSI	DRIVE-CLiQ encoder repeat telegram / DQ enc repeat Can be changed: C1(3), C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0001 0000 0001 bin
p4644 SERVO_840, SERVO_DBSI	Simulated motor encoder configuration / Sim mot_enc config Can be changed: T Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0011 bin
r4648.0 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO/BO: Encoder status word / Enc status word Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p4649[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder function reserve amplitude limit incremental signals / Enc fct amp inc Can be changed: C2(4) Data type: Unsigned16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 500	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p4650 CU_I_840, CU_NX_840	Encoder functional reserve component number / Enc fct_res no Can be changed: T, U Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 399	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r4651[0...3] CU_I_840, CU_NX_840	Encoder functional reserve / Enc fct_reserve Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [%]
p4652[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	XIST1_ERW reset mode / XIST1_ERW res mode Can be changed: C1(3) Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: 4750 Unit selection: - Expert list: 1 Factory setting: 0
p4652 ENC_840	XIST1_ERW reset mode / XIST1_ERW res mode Can be changed: C1(3) Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: 4750 Unit selection: - Expert list: 1 Factory setting: 0
r4653[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: XIST1_ERW actual value / XIST1_ERW ActV Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4750 Unit selection: - Expert list: 1 Factory setting: -
r4653 ENC_840	CO: XIST1_ERW actual value / XIST1_ERW ActV Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4750 Unit selection: - Expert list: 1 Factory setting: -

r4654.0...16	CO/BO: XIST1_ERW status / XIST1_ERW stat		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4750 Unit selection: - Expert list: 1 Factory setting: -

r4654.0	CO/BO: XIST1_ERW status / XIST1_ERW stat		
ENC_840	Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4750 Unit selection: - Expert list: 1 Factory setting: -

p4655[0...2]	BI: XIST1_ERW reset signal source / XIST1_ERW res s_s		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: T Data type: Unsigned32 / Binary P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4750 Unit selection: - Expert list: 1 Factory setting: 0

p4655	BI: XIST1_ERW reset signal source / XIST1_ERW res s_s		
ENC_840	Can be changed: T Data type: Unsigned32 / Binary P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 4750 Unit selection: - Expert list: 1 Factory setting: 0

p4660[0...2]	Sensor Module filter bandwidth / SM Filt_bandw		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(4) Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: 0.00 [kHz]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20000.00 [kHz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [kHz]

p4660	Sensor Module filter bandwidth / SM Filt_bandw		
ENC_840	Can be changed: C2(4) Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: 0.00 [kHz]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 20000.00 [kHz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [kHz]

r4661[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Sensor Module filter bandwidth display / SM Filt_bandw disp Can be changed: - Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: - [kHz]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [kHz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [kHz]
r4661 ENC_840	Sensor Module filter bandwidth display / SM Filt_bandw disp Can be changed: - Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: - [kHz]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [kHz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [kHz]
p4662[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder characteristic type / Enc char_type Can be changed: C2(4) Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 1	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p4663[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder characteristic K0 / Enc char K0 Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p4664[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder characteristic K1 / Enc char K1 Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p4665[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder characteristic K2 / Enc char K2 Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p4666[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Encoder characteristic K3 / Enc char K3 Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p4670[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Analog sensor configuration / Ana_sens config Can be changed: T, U Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 0000 bin
p4671[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Analog sensor input / Ana_sens inp Can be changed: C2(4) Data type: Integer16 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 3	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p4672[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Analog sensor channel A voltage at actual value zero / Ana_sens A U at 0 Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -10.0000 [V]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 10.0000 [V]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0000 [V]
p4673[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Analog sensor channel A voltage per encoder period / Ana_sens A U/per Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -10.0000 [V]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 10.0000 [V]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 6.0000 [V]
p4674[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Analog sensor channel B voltage at actual value zero / Ana_sens B U at 0 Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -10.0000 [V]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 10.0000 [V]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0000 [V]

p4675[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Analog sensor channel B voltage per encoder period / Ana_sens B U/per Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -10.0000 [V]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 10.0000 [V]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 6.0000 [V]
p4676[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Analog sensor range limit threshold / Ana_sens lim thr Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.0 [%]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 100.0 [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.0 [%]
p4677[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Analog sensor LVDT configuration / Ana_sens LVDT conf Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p4678[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Analog sensor LVDT ratio / An_sens LVDT ratio Can be changed: C2(4) Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 200.00 [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 50.00 [%]
p4679[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Analog sensor LVDT phase / An_sens LVDT ph Can be changed: T Data type: FloatingPoint32 P-Group: Encoder Not for motor type: - Min: -360.00 [°]	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 360.00 [°]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [°]
p4680[0...n] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Zero mark monitoring tolerance permissible / ZM_mon tol perm Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 1000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 4

p4681[0...n]	Zero mark monitoring tolerance window limit 1 positive / ZM tol lim 1 pos		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 1000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 2
p4682[0...n]	Zero mark monitoring tolerance window limit 1 negative / ZM tol lim 1 neg		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(4) Data type: Integer32 P-Group: Encoder Not for motor type: - Min: -1001	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 0	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -1001
p4683[0...n]	Zero mark monitoring tolerance window alarm threshold positive / ZM tol A_thr pos		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 100000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p4684[0...n]	Zero mark monitoring tolerance window alarm threshold negative / ZM tol A_thr neg		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(4) Data type: Integer32 P-Group: Encoder Not for motor type: - Min: -100001	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 0	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -100001
p4685[0...n]	Speed actual value average value generation / n_act mean val		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 20	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p4686[0...n]	Zero mark minimum length / ZM min length		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(4) Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: 0	Calculated: - Dynamic index: EDS, p0140 Unit group: - Scaling: - Max: 10	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1

p4688[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Zero mark monitoring differential pulse count / ZM diff_puls qty Can be changed: T Data type: Integer32 P-Group: - Not for motor type: - Min: -2147483648	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147483647	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p4688 ENC_840	CO: Zero mark monitoring differential pulse count / ZM diff_puls qty Can be changed: T Data type: Integer32 P-Group: - Not for motor type: - Min: -2147483648	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147483647	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r4689[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	CO: Square-wave encoder diagnostics / Sq wave enc diag Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4689 ENC_840	CO: Square-wave encoder diagnostics / Sq wave enc diag Can be changed: - Data type: Unsigned32 P-Group: Encoder Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p4690 CU_I_840, CU_NX_840	SMI spare part component number / SMI comp_no Can be changed: T Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 399	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p4691 CU_I_840, CU_NX_840	SMI spare part save/download data / Save/DL SMI data Can be changed: T Data type: Integer16 P-Group: Displays, signals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 39	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p4692	SMI spare part save data of all SMIs / Save SMI data		
CU_I_840, CU_NX_840	Can be changed: T Data type: Integer16 P-Group: Displays, signals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 29	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p4693[0...1]	SMI spare part data backup directory / SMI dat_bkup dir		
CU_I_840, CU_NX_840	Can be changed: T Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 399	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r4694[0...19]	SMI spare part data backup motor article number / SMI dat_bkup MLFB		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned8 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p4700[0...1]	Trace control / Trace control		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Integer16 P-Group: Trace and function generator Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
p4701	Measuring function control / Meas fct ctrl		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Integer16 P-Group: Trace and function generator Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
p4703[0...1]	Trace options / Trace options		
CU_I_840, CU_NX_840	Can be changed: T Data type: Unsigned16 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0000 bin

r4705[0...1]	Trace status / Trace status		
CU_I_840, CU_NX_840	Can be changed: - Data type: Integer16 P-Group: Trace and function generator Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
r4706	Measuring function status / Meas fct status		
CU_I_840, CU_NX_840	Can be changed: - Data type: Integer16 P-Group: Trace and function generator Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 5	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
p4707	Measurement function configuration / Meas fct config		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Integer16 P-Group: Trace and function generator Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
r4708[0...1]	Trace memory space required / Trace mem required		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
r4709[0...1]	Trace memory space required for measuring functions / Trace mem required		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
p4710[0...1]	Trace trigger condition / Trace Trig_cond		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Integer16 P-Group: Trace and function generator Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 8	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 2

p4711[0...5]	Trace trigger signal / Trace trig_signal		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
p4712[0...1]	Trace trigger threshold / Trace trig_thr		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Trace and function generator Not for motor type: - Min: -340.28235E36	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 340.28235E36	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0.00
p4713[0...1]	Trace tolerance band trigger threshold 1 / Trace trig_thr 1		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Trace and function generator Not for motor type: - Min: -340.28235E36	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 340.28235E36	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0.00
p4714[0...1]	Trace tolerance band trigger threshold 2 / Trace trig_thr 2		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Trace and function generator Not for motor type: - Min: -340.28235E36	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 340.28235E36	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0.00
p4715[0...1]	Trace bit mask trigger, bit mask / Trace trig_mask		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
p4716[0...1]	Trace bit mask trigger trigger condition / Trace Trig_cond		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0

p4717	Measuring function number of averaging operations / Meas fct avg qty		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned8 P-Group: Trace and function generator Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 255	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
p4718	Measuring function number of stabilizing periods / MeasFct StabPerQty		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned8 P-Group: Trace and function generator Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 255	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
r4719[0...1]	Trace trigger index / Trace Trig_index		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
p4720[0...1]	Trace recording cycle / Trace record_cyc		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Trace and function generator Not for motor type: - Min: 0.000 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 60000.000 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 1.000 [ms]
p4721[0...1]	Trace recording time / Trace record_time		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Trace and function generator Not for motor type: - Min: 0.000 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 340.28235E36 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 1000.000 [ms]
p4722[0...1]	Trace trigger delay / Trace trig_delay		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Trace and function generator Not for motor type: - Min: -340.28235E36 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 340.28235E36 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0.000 [ms]

p4723[0...1]	Trace time slice cycle / Trace cycle		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0.03125 [ms]	4.00000 [ms]	0.12500 [ms]
p4724[0...1]	Trace average in the time range / Trace average		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned8	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0000 bin	0001 bin	0000 bin
r4725[0...1]	Trace data type 1 traced / Trace rec type 1		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-
r4726[0...1]	Trace data type 2 traced / Trace rec type 2		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-
r4727[0...1]	Trace data type 3 traced / Trace rec type 3		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-
r4728[0...1]	Trace data type 4 traced / Trace rec type 4		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r4729[0...1]	Trace number of recorded values / Trace rec values		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
p4730[0...5]	Trace record signal 0 / Trace record sig 0		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
p4731[0...5]	Trace record signal 1 / Trace record sig 1		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
p4732[0...5]	Trace record signal 2 / Trace record sig 2		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
p4733[0...5]	Trace record signal 3 / Trace record sig 3		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
p4734[0...5]	Trace record signal 4 / Trace record sig 4		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0

p4735[0...5] Trace record signal 5 / Trace record sig 5

CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	0

p4736[0...5] Trace record signal 6 / Trace record sig 6

CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	0

p4737[0...5] Trace record signal 7 / Trace record sig 7

CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	0

r4740[0...16383] Trace 0 trace buffer signal 0 floating point / Trace 0 rec sig 0

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r4741[0...16383] Trace 0 trace buffer signal 1 floating point / Trace 0 rec sig 1

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r4742[0...16383] Trace 0 trace buffer signal 2 floating point / Trace 0 rec sig 2

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r4743[0...16383] Trace 0 trace buffer signal 3 floating point / Trace 0 rec sig 3

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4744[0...16383] Trace 0 trace buffer signal 4 floating point / Trace 0 rec sig 4

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4745[0...16383] Trace 0 trace buffer signal 5 floating point / Trace 0 rec sig 5

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4746[0...16383] Trace 0 trace buffer signal 6 floating point / Trace 0 rec sig 6

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4747[0...16383] Trace 0 trace buffer signal 7 floating point / Trace 0 rec sig 7

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4750[0...16383] Trace 1 trace buffer signal 0 floating point / Trace 1 rec sig 0

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4751[0...16383] Trace 1 trace buffer signal 1 floating point / Trace 1 rec sig 1

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4752[0...16383] Trace 1 trace buffer signal 2 floating point / Trace 1 rec sig 2

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4753[0...16383] Trace 1 trace buffer signal 3 floating point / Trace 1 rec sig 3

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4754[0...16383] Trace 1 trace buffer signal 4 floating point / Trace 1 rec sig 4

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4755[0...16383] Trace 1 trace buffer signal 5 floating point / Trace 1 rec sig 5

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4756[0...16383] Trace 1 trace buffer signal 6 floating point / Trace 1 rec sig 6

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4757[0...16383] Trace 1 trace buffer signal 7 floating point / Trace 1 rec sig 7

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4760[0...16383] Trace 0 trace buffer signal 0 / Trace 0 rec sig 0

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4761[0...16383] Trace 0 trace buffer signal 1 / Trace 0 rec sig 1

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4762[0...16383] Trace 0 trace buffer signal 2 / Trace 0 rec sig 2

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4763[0...16383] Trace 0 trace buffer signal 3 / Trace 0 rec sig 3

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4764[0...16383] Trace 0 trace buffer signal 4 / Trace 0 rec sig 4

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4765[0...16383] Trace 0 trace buffer signal 5 / Trace 0 rec sig 5

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4766[0...16383] Trace 0 trace buffer signal 6 / Trace 0 rec sig 6

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4767[0...16383] Trace 0 trace buffer signal 7 / Trace 0 rec sig 7

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4770[0...16383] Trace 1 trace buffer signal 0 / Trace 1 rec sig 0

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4771[0...16383] Trace 1 trace buffer signal 1 / Trace 1 rec sig 1

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4772[0...16383] Trace 1 trace buffer signal 2 / Trace 1 rec sig 2

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min: -	Max: -	Factory setting: -

r4773[0...16383] Trace 1 trace buffer signal 3 / Trace 1 rec sig 3

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r4774[0...16383] Trace 1 trace buffer signal 4 / Trace 1 rec sig 4

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r4775[0...16383] Trace 1 trace buffer signal 5 / Trace 1 rec sig 5

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r4776[0...16383] Trace 1 trace buffer signal 6 / Trace 1 rec sig 6

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r4777[0...16383] Trace 1 trace buffer signal 7 / Trace 1 rec sig 7

CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

p4780[0...1] Trace physical address signal 0 / Trace PhyAddr Sig0

CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0000 bin	1111 1111 1111 1111 1111 1111 1111 1111 bin	0000 bin

p4781[0...1]	Trace physical address signal 1 / Trace PhyAddr Sig1		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0000 bin	1111 1111 1111 1111 1111 1111 1111 1111 bin	0000 bin
p4782[0...1]	Trace physical address signal 2 / Trace PhyAddr Sig2		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0000 bin	1111 1111 1111 1111 1111 1111 1111 1111 bin	0000 bin
p4783[0...1]	Trace physical address signal 3 / Trace PhyAddr Sig3		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0000 bin	1111 1111 1111 1111 1111 1111 1111 1111 bin	0000 bin
p4784[0...1]	Trace physical address signal 4 / Trace PhyAddr Sig4		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0000 bin	1111 1111 1111 1111 1111 1111 1111 1111 bin	0000 bin
p4785[0...1]	Trace physical address signal 5 / Trace PhyAddr Sig5		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0000 bin	1111 1111 1111 1111 1111 1111 1111 1111 bin	0000 bin

p4786[0...1]	Trace physical address signal 6 / Trace PhyAddr Sig6		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0000 bin	1111 1111 1111 1111 1111 1111 1111 1111 bin	0000 bin

p4787[0...1]	Trace physical address signal 7 / Trace PhyAddr Sig7		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0000 bin	1111 1111 1111 1111 1111 1111 1111 1111 bin	0000 bin

p4789[0...1]	Trace physical address trigger signal / Trace PhyAddr Trig		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0000 hex	FFFF FFFF hex	0000 hex

r4790[0...1]	Trace data type 5 traced / Trace rec type 5		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r4791[0...1]	Trace data type 6 traced / Trace rec type 6		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r4792[0...1]	Trace data type 7 traced / Trace rec type 7		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r4793[0...1]	Trace data type 8 traced / Trace rec type 8		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
p4795	Trace memory bank changeover / Trace mem chgov		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 500	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
r4797[0...1]	Trace 0 trigger instant / Trace 0 t_trigger		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
r4798[0...1]	Trace 1 trigger instant / Trace 1 t_trigger		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
r4799	Trace memory location free / Trace mem free		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
p4800	Function generator control / FG control		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Integer16 P-Group: Trace and function generator Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0

r4805	Function generator status / FG status		
CU_I_840, CU_NX_840	Can be changed: - Data type: Integer16 P-Group: Trace and function generator Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
r4806.0	BO: Function generator status signal / FG status signal		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
p4810	Function generator mode / FG operating mode		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Integer16 P-Group: Trace and function generator Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 99	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
p4812	Function generator physical address / FG phys address		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned32 P-Group: Trace and function generator Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
p4813	Function generator physical address reference value / FG phys addr ref		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Trace and function generator Not for motor type: - Min: 1.00	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000000.00	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 1.00
p4815[0...2]	Function generator drive number / FG drive number		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned16 P-Group: Trace and function generator Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0

p4816	Function generator output signal integer number scaling / FG outp integ scal		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: Integer32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147483648	2147483647	0

r4817	CO: Function generator output signal integer number / FG outp integ no		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 4
	Data type: Integer32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r4818	CO: Function generator output signal / FG outp_sig		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 0
	Min:	Max:	Factory setting:
	- [%]	- [%]	- [%]

p4819	BI: Function generator control / FG control		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	1

p4820	Function generator signal shape / FG signal shape		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	1	5	1

p4821	Function generator period / FG period duration		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0.00 [ms]	60000.00 [ms]	1000.00 [ms]

p4822	Function generator pulse width / FG pulse width		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Trace and function generator Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 60000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 500.00 [ms]
p4823	Function generator bandwidth / FG bandwidth		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Trace and function generator Not for motor type: - Min: 0.0025 [Hz]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16000.0000 [Hz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 4000.0000 [Hz]
p4824	Function generator amplitude / FG amplitude		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Trace and function generator Not for motor type: - Min: -1600.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1600.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 5.00 [%]
p4825	Function generator 2nd amplitude / FG 2nd amplitude		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Trace and function generator Not for motor type: - Min: -1600.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1600.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 7.00 [%]
p4826	Function generator offset / FG offset		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Trace and function generator Not for motor type: - Min: -1600.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1600.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0.00 [%]
p4827	Function generator ramp-up time to offset / FG ramp-up offset		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Trace and function generator Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 32.00 [ms]

p4828	Function generator lower limit / FG lower limit		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-10000.00 [%]	0.00 [%]	-100.00 [%]
p4829	Function generator upper limit / FG upper limit		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0.00 [%]	10000.00 [%]	100.00 [%]
p4830	Function generator time slice cycle / FG time slice		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0.03125 [ms]	2.00000 [ms]	0.12500 [ms]
p4831	Function generator amplitude scaling / FG amplitude scal		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0.00000 [%]	200.00000 [%]	100.00000 [%]
p4832[0...2]	Function generator amplitude scaling / FG amplitude scal		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-340.28235E36 [%]	340.28235E36 [%]	100.00000 [%]
p4833[0...2]	Function generator offset scaling / FG offset scal		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-340.28235E36 [%]	340.28235E36 [%]	100.00000 [%]

r4834[0...4]	CO: Function generator free measurement output signal / FG fr MeasFct outp		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 0
	Min:	Max:	Factory setting:
	- [%]	- [%]	- [%]
p4835[0...4]	Function generator free measurement function scaling / FG fr MeasFct scal		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Trace and function generator	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-200.00000 [%]	200.00000 [%]	100.00000 [%]
r4899	Status word sequence control / ZSW seq_ctrl		
TM41	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-
r4950	TEC DO-specific number / TEC DO qty		
All objects	Can be changed: -	Calculated: -	Access level: 4
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: OEM range	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	32	-
r4951	TEC DO-specific identifier total length / TEC DO ident tot_l		
All objects	Can be changed: -	Calculated: -	Access level: 4
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: OEM range	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	288	-
r4952	TEC DO-specific GUID total length / TEC DO GUID length		
All objects	Can be changed: -	Calculated: -	Access level: 4
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: OEM range	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	576	-

r4955[0...n]	TEC DO-specific identifier / TEC DO ident		
All objects	Can be changed: - Data type: Unsigned8 P-Group: OEM range Not for motor type: - Min: -	Calculated: - Dynamic index: r4951 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p4956[0...n]	TEC DO-specific activation / TEC DO act		
All objects	Can be changed: C1, T Data type: Integer16 P-Group: OEM range Not for motor type: - Min: 0	Calculated: - Dynamic index: r4950 Unit group: - Scaling: - Max: 1	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r4957[0...n]	TEC DO-specific version / TEC DO version		
All objects	Can be changed: - Data type: Unsigned32 P-Group: OEM range Not for motor type: - Min: 0	Calculated: - Dynamic index: r4950 Unit group: - Scaling: - Max: 4294967295	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4958[0...n]	TEC DO-specific interface version / TEC DO intf_vers		
All objects	Can be changed: - Data type: Unsigned32 P-Group: OEM range Not for motor type: - Min: -	Calculated: - Dynamic index: r4950 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4959[0...n]	TEC DO-specific GUID / TEC DO GUID		
All objects	Can be changed: - Data type: Unsigned8 P-Group: OEM range Not for motor type: - Min: -	Calculated: - Dynamic index: r4952 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4960[0...n]	TEC DO-specific GUID drive object / TEC DO GUID DO		
All objects	Can be changed: - Data type: Unsigned8 P-Group: OEM range Not for motor type: - Min: -	Calculated: - Dynamic index: r4952 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p4961[0...n] All objects	TEC DO-specific logbook module selection / TEC DO log module Can be changed: T Data type: Unsigned32 P-Group: OEM range Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: r4950 Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
r4975 CU_I_840, CU_NX_840	TEC invalid number / TEC inv qty Can be changed: - Data type: Unsigned16 P-Group: OEM range Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4976 CU_I_840, CU_NX_840	TEC invalid identifier total length / TEC inval ID tot_l Can be changed: - Data type: Unsigned16 P-Group: OEM range Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4978[0...n] CU_I_840, CU_NX_840	TEC invalid identifier / TEC inval ID Can be changed: - Data type: Unsigned8 P-Group: OEM range Not for motor type: - Min: -	Calculated: - Dynamic index: r4976 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4979[0...n] CU_I_840, CU_NX_840	TEC invalid error code / TEC inv error code Can be changed: - Data type: Unsigned32 P-Group: OEM range Not for motor type: - Min: -	Calculated: - Dynamic index: r4975 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4985 CU_I_840, CU_NX_840	TEC number / TEC qty Can be changed: - Data type: Unsigned16 P-Group: OEM range Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 32	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r4986	TEC identifier total length / TEC ident tot_l		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned16 P-Group: OEM range Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 288	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4987	TEC GUID total length / TEC GUID tot_lgth		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned16 P-Group: OEM range Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 576	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4988[0...n]	TEC identifier / TEC ident		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned8 P-Group: OEM range Not for motor type: - Min: -	Calculated: - Dynamic index: r4986 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4989[0...n]	TEC version / TEC version		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: OEM range Not for motor type: - Min: -	Calculated: - Dynamic index: r4985 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4990[0...n]	TEC interface version / TEC intf_vers		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: OEM range Not for motor type: - Min: -	Calculated: - Dynamic index: r4985 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4991[0...n]	TEC GUID / TEC GUID		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned8 P-Group: OEM range Not for motor type: - Min: -	Calculated: - Dynamic index: r4987 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r4992[0...n]	TEC GUID ES / TEC GUID ES		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned8 P-Group: OEM range Not for motor type: - Min: -	Calculated: - Dynamic index: r4987 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4993[0...n]	TEC activation status / TEC act stat		
CU_I_840, CU_NX_840	Can be changed: - Data type: Integer16 P-Group: OEM range Not for motor type: - Min: 0	Calculated: - Dynamic index: r4985 Unit group: - Scaling: - Max: 1	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4994[0...n]	TEC properties / TEC properties		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: OEM range Not for motor type: - Min: -	Calculated: - Dynamic index: r4985 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r4995[0...n]	TEC external version / TEC ext version		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: OEM range Not for motor type: - Min: -	Calculated: - Dynamic index: r4985 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r5000	CO: Spindle properties/status / Prop/status		
SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r5001	CO: Spindle clamp state / Clamp state		
SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 11	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r5002 SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	CO: Spindle analog sensor S1 measured value / Ana_sensS1 MeasVal Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r5003 SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	CO: Spindle digital sensors status / Dig_sens status Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r5004 SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	CO: Spindle supplementary value / Spindle suppl_val Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r5005 SERVO_840, SERVO_DBSI	Spindle file system status / File sys stat Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p5007 SERVO_840, SERVO_DBSI	Spindle file system selection / File sys select Can be changed: T Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 0000 bin
p5009 SERVO_840, SERVO_DBSI	Adapt spindle file system / Adpt file sys Can be changed: T Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 53	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

r5012 SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Spindle Sensor Module properties / SM properties Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p5016 SERVO_840, SERVO_DBSI	Enable spindle commissioning / Enable com Can be changed: T Data type: Integer16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p5019 CU_I_840, CU_NX_840	Spindle password / Password Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r5020 SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Spindle manufacturer / Manufacturer Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 48	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r5021[0...18] SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Spindle article number / Article no Can be changed: - Data type: Unsigned8 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r5022[0...15] SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Spindle serial number / Serial_no Can be changed: - Data type: Unsigned8 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r5023 SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Spindle production date / Prod_date Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r5032 SERVO_840 (Lin, Spin_diag), SERVO_DBSI (Lin, Spin_diag)	Maximum spindle speed / n_max Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [m/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [m/min]
r5032 SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Maximum spindle speed / n_max Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [rpm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [rpm]
r5033 SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Spindle angular commutation offset / Commut_ang_offs Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [°]
r5034 SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Spindle current controller sampling time maximum / I_ctrl t_samp max Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [µs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [µs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [µs]
p5040 SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Spindle voltage threshold values tolerance / U_thr tol Can be changed: T Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.0 [mV]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.0 [mV]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [mV]

p5041[0...5] SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Spindle voltage threshold values / U_thresh Can be changed: T Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.0 [mV]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 340.28235E36 [mV]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [mV]
p5042[0...1] SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Spindle transition times / t_transition Can be changed: T Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.0 [μs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 340.28235E36 [μs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [μs]
p5043[0...6] SERVO_840 (Lin, Spin_diag), SERVO_DBSI (Lin, Spin_diag)	Spindle speed limits / n_limits Can be changed: T Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.0 [m/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535.0 [m/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [m/min]
p5043[0...6] SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Spindle speed limits / n_limits Can be changed: T Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.0 [rpm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535.0 [rpm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [rpm]
r5044 SERVO_840 (Lin, Spin_diag), SERVO_DBSI (Lin, Spin_diag)	Maximum permissible spindle velocity limit / Sp v_lim MaxPerm Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [m/min]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [m/min]
r5044 SERVO_840 (Spin_diag), SERVO_DBSI (Spin_diag)	Maximum permissible spindle speed limit / Sp n_lim MaxPerm Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [rpm]	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [rpm]

r5170[0...5] SERVO_840, SERVO_DBSI	HF phase current actual values / HF I_ph ActV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: - Unit group: 6_5 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r5171 SERVO_840, SERVO_DBSI	CO: HF damping voltage actual value / HF U_damp ActV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: 5_2 Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [V]
r5172[0...3] SERVO_840, SERVO_DBSI	CO: HF temperatures / HF temp Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: - Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r5173 SERVO_840, SERVO_DBSI	CO: HF Damping Module I2t overload / HF DM overl I2t Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [%]
p5174 SERVO_840, SERVO_DBSI	HF control word / HF control word Can be changed: T Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: CALC_MOD_REG Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
r5175[0...1] SERVO_840, SERVO_DBSI	HF diagnostics / HF diag Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p5200[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 5 ... 10 activation / I_set_filt act Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 0000 0000 bin
p5200 A_INF_840 (Suppl cl-loop ctrl)	Signal filter activation / Sig_filt act Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: CALC_MOD_CON Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 8946 Unit selection: - Expert list: 1 Factory setting: 0000 bin
p5201[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 5 type / I_set_filt 5 type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 1
p5201 A_INF_840 (Suppl cl-loop ctrl)	Output voltage setpoint filter 5 type / U_set_filt 5 type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 1	Calculated: CALC_MOD_CON Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 8946 Unit selection: - Expert list: 1 Factory setting: 2
p5202[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 5 denominator natural frequency / I_set_filt5 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]
p5202 A_INF_840 (Suppl cl-loop ctrl)	Output voltage setpoint filter 5 denominator natural frequency / U_set_filt5 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.5 [Hz]	Calculated: CALC_MOD_CON Dynamic index: - Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 8946 Unit selection: - Expert list: 1 Factory setting: 1000.0 [Hz]

p5203[0...n]	Current setpoint filter 5 denominator damping / I_set_filt 5 D_den		
SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5711
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.001	Max: 10.000	Factory setting: 0.700

p5203	Output voltage setpoint filter 5 denominator damping / U_set_filt 5 D_den		
A_INF_840 (Suppl cl-loop ctrl)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8946
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.001	Max: 10.000	Factory setting: 0.700

p5204[0...n]	Current setpoint filter 5 numerator natural frequency / I_set_filt5 fn_num		
SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5711
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.5 [Hz]	Max: 16000.0 [Hz]	Factory setting: 1999.0 [Hz]

p5204	Output voltage setpoint filter 5 numerator natural frequency / U_set_filt5 fn_num		
A_INF_840 (Suppl cl-loop ctrl)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8946
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.5 [Hz]	Max: 16000.0 [Hz]	Factory setting: 1000.0 [Hz]

p5205[0...n]	Current setpoint filter 5 numerator damping / I_set_filt 5 D_num		
SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5711
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.000	Max: 10.000	Factory setting: 0.700

p5205	Output voltage setpoint filter 5 numerator damping / U_set_filt 5 D_num		
A_INF_840 (Suppl cl-loop ctrl)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8946
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.000	Max: 10.000	Factory setting: 0.010

p5206[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 6 type / I_set_filt 6 type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 1
p5207[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 6 denominator natural frequency / I_set_filt6 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]
p5208[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 6 denominator damping / I_set_filt 6 D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.001	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 0.700
p5209[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 6 numerator natural frequency / I_set_filt6 fn_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]
p5210[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 6 numerator damping / I_set_filt 6 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 0.700
p5211[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 7 type / I_set_filt 7 type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 1

p5211	Current actual value filter 7 type / I_act_filt 7 type		
A_INF_840 (Suppl cl-loop ctrl)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 8946
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1	2	2

p5212[0...n]	Current setpoint filter 7 denominator natural frequency / I_set_filt7 fn_den		
SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5711
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	1999.0 [Hz]

p5212	Current actual value filter 7 denominator natural frequency / I_act_filt7 fn_den		
A_INF_840 (Suppl cl-loop ctrl)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8946
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	1000.0 [Hz]

p5213[0...n]	Current setpoint filter 7 denominator damping / I_set_filt 7 D_den		
SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5711
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001	10.000	0.700

p5213	Current actual value filter 7 denominator damping / I_act_filt 7 D_den		
A_INF_840 (Suppl cl-loop ctrl)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 8946
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001	10.000	0.700

p5214[0...n]	Current setpoint filter 7 numerator natural frequency / I_set_filt7 fn_num		
SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5711
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.5 [Hz]	16000.0 [Hz]	1999.0 [Hz]

p5214 A_INF_840 (Suppl cl-loop ctrl)	Current actual value filter 7 numerator natural frequency / I_act_filt7 fn_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.5 [Hz]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 8946 Unit selection: - Expert list: 1 Factory setting: 1000.0 [Hz]
p5215[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 7 numerator damping / I_set_filt 7 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 0.700
p5215 A_INF_840 (Suppl cl-loop ctrl)	Current actual value filter 7 numerator damping / I_act_filt 7 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.000	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 8946 Unit selection: - Expert list: 1 Factory setting: 0.010
p5216[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 8 type / I_set_filt 8 type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 1
p5217[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 8 denominator natural frequency / I_set_filt8 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]
p5218[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 8 denominator damping / I_set_filt 8 D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.001	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 0.700

p5219[0...n]	Current setpoint filter 8 numerator natural frequency / I_set_filt8 fn_num		
SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5711
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.5 [Hz]	Max: 16000.0 [Hz]	Factory setting: 1999.0 [Hz]

p5220[0...n]	Current setpoint filter 8 numerator damping / I_set_filt 8 D_num		
SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5711
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.000	Max: 10.000	Factory setting: 0.700

p5221[0...n]	Current setpoint filter 9 type / I_set_filt 9 type		
SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: Integer16	Dynamic index: DDS, p0180	Function diagram: 5711
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 1	Max: 2	Factory setting: 1

p5222[0...n]	Current setpoint filter 9 denominator natural frequency / I_set_filt9 fn_den		
SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5711
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.5 [Hz]	Max: 16000.0 [Hz]	Factory setting: 1999.0 [Hz]

p5223[0...n]	Current setpoint filter 9 denominator damping / I_set_filt 9 D_den		
SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Can be changed: T, U	Calculated: CALC_MOD_CON	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5711
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.001	Max: 10.000	Factory setting: 0.700

p5224[0...n]	Current setpoint filter 9 numerator natural frequency / I_set_filt9 fn_num		
SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: 5711
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min: 0.5 [Hz]	Max: 16000.0 [Hz]	Factory setting: 1999.0 [Hz]

p5225[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 9 numerator damping / I_set_filt 9 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 0.700
p5226[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 10 type / I_set_filt 10 type Can be changed: T, U Data type: Integer16 P-Group: Closed-loop control Not for motor type: REL Min: 1	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 1
p5227[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 10 denominator natural frequency / I_set_filt1 fn_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]
p5228[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 10 denominator damping / I_set_filt10 D_den Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.001	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 0.700
p5229[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 10 numerator natural frequency / I_set_filt 10 fn Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.5 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 16000.0 [Hz]	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 1999.0 [Hz]
p5230[0...n] SERVO_840 (Ext I_setp_filt), SERVO_DBSI (Ext I_setp_filt)	Current setpoint filter 10 numerator damping / I_set_filt10 D_num Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 0.000	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10.000	Access level: 3 Function diagram: 5711 Unit selection: - Expert list: 1 Factory setting: 0.700

p5250[0...n] SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Compensation configuration / Comp config Can be changed: T, U Data type: Unsigned8 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p5251 SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Activate learn cogging torque compensation / Cog_M_comp_learn Can be changed: T, U Data type: Unsigned8 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 bin
p5252 SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Cogging torque compensation table length / Cog_M_comp length Can be changed: T Data type: Unsigned8 P-Group: Closed-loop control Not for motor type: - Min: 6	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 12	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10
p5253 SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Cogging torque compensation periodicity factor / Cog_M_comp_period Can be changed: T Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.00000	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 32768.00000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.00000
r5254[0...3] SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Cogging torque compensation diagnostics / Cog_M_comp diag Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r5255[0...1] SERVO_840 (Cog_M_comp, Lin), SERVO_DBSI (Cog_M_comp, Lin)	CO: Cogging torque compensation input/output / Cog_M_comp I/O Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: p2003 Max: - [N]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [N]

r5255[0...1]	CO: Cogging torque compensation input/output / Cog_M_comp I/O		
SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: p2003 Max: - [Nm]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [Nm]
p5256[0...n]	Cogging torque compensation direction reversal hysteresis / Cog_M_comp hyst		
SERVO_840 (Cog_M_comp, Lin), SERVO_DBSI (Cog_M_comp, Lin)	Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.00 [m/min]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.00 [m/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.40 [m/min]
p5256[0...n]	Cogging torque compensation direction reversal hysteresis / Cog_M_comp hyst		
SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.00 [rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.00 [rpm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 20.00 [rpm]
p5257[0...19]	Cogging torque compensation frequency range real part / Cog_M_comp f real		
SERVO_840 (Cog_M_comp, Lin), SERVO_DBSI (Cog_M_comp, Lin)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -1000000.000000 [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: - Max: 1000000.000000 [N]	Access level: 4 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 0.000000 [N]
p5257[0...19]	Cogging torque compensation frequency range real part / Cog_M_comp f real		
SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -1000000.000000 [Nm]	Calculated: - Dynamic index: - Unit group: 7_1 Scaling: - Max: 1000000.000000 [Nm]	Access level: 4 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 0.000000 [Nm]
p5258[0...19]	Cogging torque compensation frequency range imaginary part / Cog_M_comp f imag		
SERVO_840 (Cog_M_comp, Lin), SERVO_DBSI (Cog_M_comp, Lin)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -1000000.000000 [N]	Calculated: - Dynamic index: - Unit group: 8_1 Scaling: - Max: 1000000.000000 [N]	Access level: 4 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 0.000000 [N]

p5258[0...19]	Cogging torque compensation frequency range imaginary part / Cog_M_comp f imag		
SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: 7_1	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1000000.000000 [Nm]	1000000.000000 [Nm]	0.000000 [Nm]

p5259[0...19]	Cogging torque compensation frequency range multiplicity / Cog_M_comp f multi		
SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	2048	0

p5260[0...4095]	Cogging torque compensation table / Cog_M_comp table		
SERVO_840 (Cog_M_comp, Lin), SERVO_DBSI (Cog_M_comp, Lin)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: 8_1	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1000000.000000 [N]	1000000.000000 [N]	0.000000 [N]

p5260[0...4095]	Cogging torque compensation table / Cog_M_comp table		
SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: 7_1	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1000000.000000 [Nm]	1000000.000000 [Nm]	0.000000 [Nm]

p5261[0...4095]	Cogging torque compensation table negative direction / Cog_M_comp tab neg		
SERVO_840 (Cog_M_comp, Lin), SERVO_DBSI (Cog_M_comp, Lin)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1000000.000000 [N]	1000000.000000 [N]	0.000000 [N]

p5261[0...4095]	Cogging torque compensation table negative direction / Cog_M_comp tab neg		
SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1000000.000000 [Nm]	1000000.000000 [Nm]	0.000000 [Nm]

r5263	Cogging torque compensation status word / Cog_M_comp ZSW		
SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Can be changed: - Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p5265[0...n]	Periodic position error compensation amplitude 1 / Pos err comp ampl1		
SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 20000.0	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0
p5266[0...n]	Periodic position error compensation angle 1 / Pos err comp ang 1		
SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -180.00 [°]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 180.00 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [°]
p5267[0...n]	Periodic position error compensation amplitude 2 / Pos err comp ampl2		
SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 20000.0	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0
p5268[0...n]	Periodic position error compensation angle 2 / Pos err comp ang 2		
SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -180.00 [°]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 180.00 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [°]
p5271[0...n]	Online / One Button Tuning configuration / Ot OBT config		
SERVO_840 (J_estimator / OBT, Lin), SERVO_DBSI (J_estimator / OBT, Lin)	Can be changed: T Data type: Unsigned16 P-Group: - Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 1100 bin

p5271[0...n] SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Online / One Button Tuning configuration / Ot OBT config Can be changed: T Data type: Unsigned16 P-Group: - Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 1100 bin
p5272[0...n] SERVO_840 (J_estimator / OBT, Lin), SERVO_DBSI (J_estimator / OBT, Lin)	Online tuning dynamic factor / Ot dyn_factor Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: REL Min: 5.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.0 [%]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.0 [%]
p5272[0...n] SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Online tuning dynamic factor / Ot dyn_factor Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: REL Min: 5.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.0 [%]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.0 [%]
p5273[0...n] SERVO_840 (J_estimator / OBT, Lin), SERVO_DBSI (J_estimator / OBT, Lin)	Online tuning dynamic factor load / Ot dyn_factor load Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: REL Min: 0.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.0 [%]	Access level: 3 Function diagram: 5045 Unit selection: - Expert list: 1 Factory setting: 30.0 [%]
p5273[0...n] SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Online tuning dynamic factor load / Ot dyn_factor load Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: REL Min: 0.0 [%]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100.0 [%]	Access level: 3 Function diagram: 5045 Unit selection: - Expert list: 1 Factory setting: 30.0 [%]
r5274 SERVO_840 (J_estimator / OBT, Lin), SERVO_DBSI (J_estimator / OBT, Lin)	CO: Online / One Button Tuning dynamic response estimated / Ot dyn estimate Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: REL Min: - [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ms]	Access level: 3 Function diagram: 5045 Unit selection: - Expert list: 1 Factory setting: - [ms]

r5274	CO: Online / One Button Tuning dynamic response estimated / Ot dyn estimate		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: REL Min: - [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ms]	Access level: 3 Function diagram: 5045 Unit selection: - Expert list: 1 Factory setting: - [ms]
p5275[0...n]	Online / One Button Tuning dynamic response time constant / Ot dyn Tc		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: REL Min: 0.0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 60.0 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 7.5 [ms]
r5276[0...n]	Online / One Button Tuning maximum Kv factor estimated / Ot Kv estimated		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: REL Min: 0.00 [1000 rpm]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100000.00 [1000 rpm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [1000 rpm]
r5277[0...n]	Online/One Button Tuning precontrol symmetrizing time estimated / Ot FFW estim		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: REL Min: 0.00 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 100000.00 [ms]	Access level: 3 Function diagram: 5045 Unit selection: - Expert list: 1 Factory setting: - [ms]
p5280[0...n]	Current setpoint filter adaptation configuration / Filt adpt config		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: -1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p5281[0...n]	Current setpoint filter adaptation assignment / Filt adpt assign		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 10	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p5282[0...n]	Current setpoint filter adaptation limit frequency lower / Filt adpt f lower		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	50 [Hz]	5000 [Hz]	250 [Hz]

p5283[0...n]	Current setpoint filter adaptation limit frequency upper / Filt adpt f upper		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	200 [Hz]	10000 [Hz]	1500 [Hz]

p5284[0...n]	Current setpoint filter adaptation activation threshold / Filt adpt thr		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0 [%]	10000 [%]	100 [%]

r5285[0...n]	Current setpoint filter adaptation actual frequency / Filt adpt act f		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: DDS, p0180	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [Hz]	- [Hz]	- [Hz]

p5291	FFT tuning configuration / FFT tun config		
SERVO_840 (J_estimator / OBT, Lin), SERVO_DBSI (J_estimator / OBT, Lin)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0000 0000 0000 0000 0011 1001 bin

p5291	FFT tuning configuration / FFT tun config		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0000 0000 0000 0000 0011 1001 bin

p5292 SERVO_840 (J_estimator / OBT, Lin), SERVO_DBSI (J_estimator / OBT, Lin)	FFT tuning dynamic factor / FFT tun dyn_factor Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: REL Min: 25.0 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 125.0 [%]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 80.0 [%]
p5292 SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	FFT tuning dynamic factor / FFT tun dyn_factor Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: REL Min: 25.0 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 125.0 [%]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 80.0 [%]
r5293 SERVO_840 (J_estimator / OBT, Lin), SERVO_DBSI (J_estimator / OBT, Lin)	Velocity controller gain identified / FFT tun Kp ident Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Ns/m]	Calculated: - Dynamic index: - Unit group: 24_2 Scaling: - Max: - [Ns/m]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [Ns/m]
r5293 SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	FFT tuning speed controller P gain identified / FFT tun Kp ident Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Nms/rad]	Calculated: - Dynamic index: - Unit group: 17_1 Scaling: - Max: - [Nms/rad]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [Nms/rad]
r5294[0...5] SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	FFT tuning zero position identified / FFT tun zero ident Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Hz]	Calculated: - Dynamic index: - Unit group: 2_1 Scaling: - Max: - [Hz]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [Hz]
r5295[0...5] SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	FFT tuning pole position identified / FFT tun pole ident Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [Hz]	Calculated: - Dynamic index: - Unit group: 2_1 Scaling: - Max: - [Hz]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [Hz]

4.2 SINAMICS parameters

p5296[0...2]	FFT tuning PRBS amplitude / FFT tun PRBS ampl		
SERVO_840 (J_estimator / OBT, Lin), SERVO_DBSI (J_estimator / OBT, Lin)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1.0 [%]	300.0 [%]	[0] 10.0 [%]
			[1] 30.0 [%]
			[2] 5.0 [%]

p5296[0...2]	FFT tuning PRBS amplitude / FFT tun PRBS ampl		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1.0 [%]	300.0 [%]	[0] 10.0 [%]
			[1] 30.0 [%]
			[2] 5.0 [%]

p5297[0...2]	FFT tuning PRBS offset / FFT tun PRBS offs		
SERVO_840 (J_estimator / OBT, Lin), SERVO_DBSI (J_estimator / OBT, Lin)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-210000.0000 [m/min]	210000.0000 [m/min]	0.0000 [m/min]

p5297[0...2]	FFT tuning PRBS offset / FFT tun PRBS offs		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-210000.0000 [rpm]	210000.0000 [rpm]	0.0000 [rpm]

r5298	FFT tuning amplitude response / FFT tun ampl_resp		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r5299 SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	FFT tuning phase response / FFT tun ph_resp Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p5300[0...n] SERVO_840 (J_estimator / OBT, Lin), SERVO_DBSI (J_estimator / OBT, Lin)	Autotuning selection / Autotuning sel Can be changed: T Data type: Integer16 P-Group: - Not for motor type: REL Min: -1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p5300[0...n] SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Autotuning selection / Autotuning sel Can be changed: T Data type: Integer16 P-Group: - Not for motor type: REL Min: -1	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 2	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p5301[0...n] SERVO_840 (J_estimator / OBT, Lin), SERVO_DBSI (J_estimator / OBT, Lin)	One Button Tuning configuration / OBT config Can be changed: T, U Data type: Unsigned32 P-Group: - Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0111 bin
p5301[0...n] SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	One Button Tuning configuration / OBT config Can be changed: T, U Data type: Unsigned32 P-Group: - Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0111 bin
p5302[0...n] SERVO_840 (J_estimator / OBT, Lin), SERVO_DBSI (J_estimator / OBT, Lin)	Online tuning configuration / Ot config Can be changed: T, U Data type: Unsigned32 P-Group: - Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 1100 bin

p5302[0...n]	Online tuning configuration / Ot config		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: T, U Data type: Unsigned32 P-Group: - Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 1100 bin

r5306[0...n]	Autotuning status / Autotuning stat		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p5307[0...n]	Activate One Button Tuning test signal / Act OBT test sig		
SERVO_840 (J_estimator / OBT, Lin), SERVO_DBSI (J_estimator / OBT, Lin)	Can be changed: T Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin

p5307[0...n]	Activate One Button Tuning test signal / Act OBT test sig		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: T Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin

p5308[0...n]	One Button Tuning test signal distance limiting / OBT test sig lim		
SERVO_840 (J_estimator / OBT, Lin), SERVO_DBSI (J_estimator / OBT, Lin)	Can be changed: T Data type: Integer32 P-Group: - Not for motor type: - Min: -30000 [mm]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 30000 [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [mm]

p5308[0...n]	One Button Tuning test signal distance limiting / OBT test sig lim		
SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Can be changed: T Data type: Integer32 P-Group: - Not for motor type: - Min: -30000 [°]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 30000 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [°]

p5309[0...n] SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	One Button Tuning test signal duration / OBT test sig dur Can be changed: T Data type: Unsigned32 P-Group: - Not for motor type: - Min: 0 [ms]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5000 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 2000 [ms]
p5316[0...n] SERVO_840 (J_estimator, J_estimator / OBT, Lin, Lin), SERVO_DBSI (J_estimator, J_estimator / OBT, Lin, Lin)	Inertia precontrol change time inertia / J_prectrl t_chg J Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 10.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 500.00 [ms]
p5316[0...n] SERVO_840 (J_estimator, J_estimator / OBT), SERVO_DBSI (J_estimator, J_estimator / OBT)	Moment of inertia precontrol change time moment of inertia / J_prectrl t_chg J Can be changed: T, U Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: REL Min: 10.00 [ms]	Calculated: CALC_MOD_CON Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 5000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 500.00 [ms]
p5320 SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Select moment of inertia determination / Sel m_inert_determ Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: REL Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r5321 SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Moment of inertia determination status word / J_determ ZSW Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: REL Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p5322[0...n] SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Moment of inertia determination configuration / J_determ config Can be changed: T, U Data type: Unsigned32 P-Group: - Not for motor type: REL Min: -	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0001 bin

p5323[0...n] SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Moment of inertia determination lower frequency limit / J_determ f_lim low Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: REL Min: 0.0 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.0 [Hz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [Hz]
p5324[0...n] SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Moment of inertia determination upper frequency limit / J_determ f_lim up Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: REL Min: 0.0 [Hz]	Calculated: - Dynamic index: DDS, p0180 Unit group: - Scaling: - Max: 1000.0 [Hz]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0 [Hz]
r5325 SERVO_840 (J_estimator / OBT, Lin), SERVO_DBSI (J_estimator / OBT, Lin)	High load inertia identified / High load inert id Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: REL Min: - [kg]	Calculated: - Dynamic index: - Unit group: 27_1 Scaling: - Max: - [kg]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: - [kg]
r5325 SERVO_840 (J_estimator / OBT), SERVO_DBSI (J_estimator / OBT)	Moment of inertia identified / J_ident Can be changed: - Data type: FloatingPoint32 P-Group: Motor identification Not for motor type: REL Min: - [kgm ²]	Calculated: - Dynamic index: - Unit group: 25_1 Scaling: - Max: - [kgm ²]	Access level: 3 Function diagram: - Unit selection: p0100 Expert list: 1 Factory setting: - [kgm ²]
p5340[0...n] SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Cogging torque compensation load-dependent amplitude linear / CTC loadDep amp x Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -20000.000	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 20000.000	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000
p5341[0...n] SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Cogging torque compensation load-dependent amplitude quadratic / CTC loadDep amp x2 Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.000	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 20000.000	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000

p5342[0...n] SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Cogging torque compensation load-dependent phase positive / CTC loadDep ph pos Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -180.000 [°]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 180.000 [°]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [°]
p5343[0...n] SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Cogging torque compensation load-dependent phase negative / CTC loadDep ph neg Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -180.000 [°]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 180.000 [°]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [°]
p5344[0...n] SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Cogging torque compensation load-dependent phase linear / CTC loadDep ph lin Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -360.000 [°]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 360.000 [°]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [°]
p5345[0...n] SERVO_840 (Cog_M_comp, Lin), SERVO_DBSI (Cog_M_comp, Lin)	Cogging torque compensation load-dependent shutdown velocity / CTC loadDep shutd Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.0 [m/min]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 2000.0 [m/min]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 200.0 [m/min]
p5345[0...n] SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Cogging torque compensation load-dependent shutdown speed / CTC loadDep shutd Can be changed: T, U Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 0.0 [rpm]	Calculated: - Dynamic index: MDS, p0130 Unit group: - Scaling: - Max: 210000.0 [rpm]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1500.0 [rpm]
p5346[0...6] SERVO_840 (Cog_M_comp), SERVO_DBSI (Cog_M_comp)	Cogging torque compensation serial numbers after learning / CTC ser_noAftLearn Can be changed: T, U Data type: Unsigned32 P-Group: - Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex

p5350[0...n]	Mot_temp_mod 1/3 boost factor at standstill / Standst boost_fact		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: 8017
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: ASM, SESM, REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1.0000	2.0000	2.0000

p5350[0...n]	Mot_temp_mod 1/3 boost factor at standstill / Standst boost_fact		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: 8017
	P-Group: Motor	Unit group: -	Unit selection: -
	Not for motor type: ASM, SESM, REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1.0000	2.0000	2.0000

r5386[0...4]	CO: Mot_temp remaining time until fault / t_remain to fault		
SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [s]	- [s]	- [s]

r5387[0...n]	Mot_temp_mod 3 timer / Mod 3 timer		
SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: MDS, p0130	Function diagram: 8019
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: ASM, SESM, REL	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [s]	- [s]	- [s]

p5388	BI: Mot_temp current reduction inhibit signal source / I_red inhib s_s		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 8016
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

r5389.0...8	CO/BO: Mot_temp status word faults/alarms / Mot_temp ZSW F/A		
SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned16	Dynamic index: -	Function diagram: 8015
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

p5390[0...n] SERVO_840, SERVO_DBSI	Mot_temp_mod 1/3 alarm threshold / A thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: 0.0 [°C]	Calculated: - Dynamic index: MDS, p0130 Unit group: 21_1 Scaling: - Max: 200.0 [°C]	Access level: 2 Function diagram: 8017 Unit selection: p0505 Expert list: 1 Factory setting: 110.0 [°C]
p5391[0...n] SERVO_840, SERVO_DBSI	Mot_temp_mod 1/3 fault threshold / F thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Motor Not for motor type: ASM, SESM, REL Min: 0.0 [°C]	Calculated: - Dynamic index: MDS, p0130 Unit group: 21_1 Scaling: - Max: 200.0 [°C]	Access level: 2 Function diagram: 8017 Unit selection: p0505 Expert list: 1 Factory setting: 120.0 [°C]
r5397 SERVO_840, SERVO_DBSI	Mot_temp_mod 1/3 ambient temperature image p0613 / AmbTmp image p613 Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: ASM, SESM, REL Min: - [°C]	Calculated: - Dynamic index: - Unit group: 21_1 Scaling: - Max: - [°C]	Access level: 2 Function diagram: 8019 Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r5398[0...n] SERVO_840, SERVO_DBSI	Mot_temp_mod 1/3 alarm threshold image p5390 / A thr image p5390 Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: ASM, SESM, REL Min: - [°C]	Calculated: - Dynamic index: MDS, p0130 Unit group: 21_1 Scaling: - Max: - [°C]	Access level: 2 Function diagram: 8019 Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r5399[0...n] SERVO_840, SERVO_DBSI	Mot_temp_mod 1/3 fault threshold image p5391 / F thr image p5391 Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: ASM, SESM, REL Min: - [°C]	Calculated: - Dynamic index: MDS, p0130 Unit group: 21_1 Scaling: - Max: - [°C]	Access level: 2 Function diagram: 8019 Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
p5406[0...1] A_INF_840 (Line droop ctrl, Line transf)	Cl: Line droop control frequency droop supplementary setpoint / Ldrp f_suppl_set Can be changed: T, U Data type: Unsigned32 / FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 3 Function diagram: 7982 Unit selection: - Expert list: 1 Factory setting: [0] 0 [1] 5582[0]

p5416[0...1]	CI: Line droop control voltage droop supplementary setpoint / Ldrp U_suppl_set		
A_INF_840 (Line droop ctrl, Line transf)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: 7982
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	[0] 0
			[1] 5582[1]

p5427	Line droop control voltage control integration time / Ldrp U_ctrl Ti		
A_INF_840 (Line droop ctrl, Line transf, Line transf)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7982
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0 [ms]	10000.0 [ms]	500.0 [ms]

p5460[0...n]	VSM2/3 input line supply voltage, voltage divider / VSM2/3 inp U_divid		
A_INF_840 (Line transf)	Can be changed: T	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: p0150	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [%]	100000.00 [%]	0.00 [%]

r5461[0...n]	CO: VSM2 input line supply voltage u1 - u2 / VSM2 inp u1-u2		
A_INF_840 (Line transf)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: p0150	Function diagram: -
	P-Group: Closed-loop control	Unit group: 5_3	Unit selection: p0505
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	- [V]	- [V]	- [V]

r5462[0...n]	CO: VSM2 input line supply voltage u2 - u3 / VSM2 inp u2-u3		
A_INF_840 (Line transf)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: p0150	Function diagram: -
	P-Group: Closed-loop control	Unit group: 5_3	Unit selection: p0505
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	- [V]	- [V]	- [V]

r5464[0...n]	CO: VSM2 temperature evaluation status / VSM2 temp status		
A_INF_840 (Line transf)	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: p0150	Function diagram: -
	P-Group: Terminals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

p5465[0...n] A_INF_840 (Line transf)	VSM2 temperature evaluation sensor type / VSM2 temp sens_typ Can be changed: T Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 0	Calculated: - Dynamic index: p0150 Unit group: - Scaling: - Max: 6	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r5466[0...n] A_INF_840 (Line transf)	CO: VSM2 temperature actual value / VSM2 temp_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: p0150 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
p5467[0...n] A_INF_840 (Line transf)	VSM2 overtemperature alarm threshold / VSM2 temp A_thr Can be changed: T Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -100.00 [°C]	Calculated: - Dynamic index: p0150 Unit group: 21_1 Scaling: p2006 Max: 301.00 [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 150.00 [°C]
p5468[0...n] A_INF_840 (Line transf)	VSM2 overtemperature shutdown threshold / VSM2 temp F_thr Can be changed: T Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -100.00 [°C]	Calculated: - Dynamic index: p0150 Unit group: 21_1 Scaling: p2006 Max: 301.00 [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 180.00 [°C]
p5469[0...n] A_INF_840 (Line transf)	VSM2 overtemperature hysteresis / VSM2 temp hyst Can be changed: T Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: 1.00 [K]	Calculated: - Dynamic index: p0150 Unit group: 21_2 Scaling: p2006 Max: 50.00 [K]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: 3.00 [K]
p5470[0...n] A_INF_840 (Line transf)	VSM2 10 V input CT gain / VSM2 CT_gain Can be changed: T Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: 0.000 [A]	Calculated: - Dynamic index: p0150 Unit group: - Scaling: p2002 Max: 1000.000 [A]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.000 [A]

r5471[0...n] A_INF_840 (Line transf)	CO: VSM2 10 V input CT 1 actual value / VSM2 CT1 I_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [A]	Calculated: - Dynamic index: p0150 Unit group: - Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [A]
r5472[0...n] A_INF_840 (Line transf)	CO: VSM2 10 V input CT 2 actual value / VSM2 CT2 I_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [A]	Calculated: - Dynamic index: p0150 Unit group: - Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [A]
r5473[0...n] A_INF_840 (Line transf)	CO: VSM2 10 V input 1 actual value / VSM2 inp 1 U_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [V]	Calculated: - Dynamic index: p0150 Unit group: - Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [V]
r5474[0...n] A_INF_840 (Line transf)	CO: VSM2 10 V input 2 actual value / VSM2 inp 2 U_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [V]	Calculated: - Dynamic index: p0150 Unit group: - Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [V]
p5480 A_INF_840 (Line transf)	Transformer magnetization mode / Tr mag mode Can be changed: T Data type: Integer16 P-Group: Commands Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 102	Access level: 3 Function diagram: 7990 Unit selection: - Expert list: 1 Factory setting: 0

p5481[0...2] A_INF_840 (Line transf)	Transformer magnetization times / Tr mag t Can be changed: T Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 0.04 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [s]	Access level: 3 Function diagram: 7988, 7993, 7994 Unit selection: - Expert list: 1 Factory setting: [0] 2.00 [s] [1] 1.00 [s] [2] 1.00 [s]
r5482 A_INF_840 (Line transf)	CO: Line synchronization status / Line sync status Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 207	Access level: 3 Function diagram: 7988, 7989, 7994 Unit selection: - Expert list: 1 Factory setting: -
p5483 A_INF_840 (Line transf)	BI: Line circuit breaker enable / Line LSS enab Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 7988, 7990, 7994 Unit selection: - Expert list: 1 Factory setting: 0
p5484[0...2] A_INF_840 (Line transf)	Magnetization transformer controller dynamics / Mag tr ctrl_dyn Can be changed: T Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [ms]	Access level: 3 Function diagram: 7993 Unit selection: - Expert list: 1 Factory setting: [0] 50.00 [ms] [1] 50.00 [ms] [2] 100.00 [ms]
p5485[0...1] A_INF_840 (Line transf)	Transformer magnetization voltage thresholds / Tr mag U_thr Can be changed: T Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 0.0 [V]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 300.0 [V]	Access level: 3 Function diagram: 7993 Unit selection: - Expert list: 1 Factory setting: [0] 35.0 [V] [1] 3.5 [V]

p5486[0...1]	Transformer rated voltage primary / Tr U_{rated pri}		
A_INF_840 (Line transf)	Can be changed: C2(1, 2)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7990
	P-Group: Converter	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [Vrms]	63000.00 [Vrms]	400.00 [Vrms]

p5487[0...3]	CI: Transformer primary voltage signal source / Transf U_{pri s_s}		
A_INF_840 (Line transf)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: 7990
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	[0] 5461[0]
			[1] 5462[0]
			[2] 0
			[3] 0

r5488[0...5]	CO: Transformer secondary voltage transformed / Tr U_{sec trans}		
A_INF_840 (Line transf)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7990
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	- [V]	- [V]	- [V]

r5489	Transformer leakage inductance identified / Tr L_{leak ident}		
A_INF_840 (Line transf)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Converter	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [mH]	- [mH]	- [mH]

p5490	Transformer leakage inductance / Tr L_{leak}		
A_INF_840 (Line transf)	Can be changed: C2(1), T	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7990
	P-Group: Converter	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001 [mH]	1000.000 [mH]	0.100 [mH]

r5491 A_INF_840 (Line transf)	Transformer magnetizing inductance identified / Tr L_H ident Can be changed: - Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: - [mH]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mH]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mH]
p5492 A_INF_840 (Line transf)	Transformer magnetizing inductance / Tr L_H Can be changed: C2(1), T Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 0.10 [mH]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000.00 [mH]	Access level: 3 Function diagram: 7990 Unit selection: - Expert list: 1 Factory setting: 250.00 [mH]
r5493.0...1 A_INF_840 (Line transf)	CO/BO: Line circuit breaker control signals / LSS control sig Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 7990 Unit selection: - Expert list: 1 Factory setting: -
p5494[0...1] A_INF_840 (Line transf)	Transformer magnetization scaling values / Tr mag scal Can be changed: T Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 10.0 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 150.0 [%]	Access level: 3 Function diagram: 7993 Unit selection: - Expert list: 1 Factory setting: [0] 100.0 [%] [1] 40.0 [%]
p5495 A_INF_840 (Line transf)	Transformer operating mode configuration / Tr op config Can be changed: T, U Data type: Unsigned16 P-Group: Closed-loop control Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
r5497[0...1] A_INF_840 (Line transf)	CO: Transformer secondary current / Tr I_second Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [A]	Calculated: - Dynamic index: - Unit group: - Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [A]

r5498[0...2]	CO: Transformer secondary voltage / Tr U_{second}		
A_INF_840 (Line transf)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7990
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	- [V]	- [V]	- [V]

r5499.0...6	CO/BO: Line synchronization status word / Sync status word		
A_INF_840 (Line transf)	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

p5571	BI: Line PLL2 activation signal source / Line PLL2 act s_s		
A_INF_840 (Line transf)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 7992
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	5499.5

r5572.0...3	CO/BO: Line PLL2 status word / Line PLL2 status		
A_INF_840 (Line transf)	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

p5574[0...1]	CI: Line PLL2 voltage signal source / Line PLL2 U_{s_s}		
A_INF_840 (Line transf)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: 7992
	P-Group: Closed-loop control	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	[0] 0
			[1] 0

p5580	Island grid black start mode / Black start mode		
A_INF_840 (Line transf)	Can be changed: T	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 7988
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	3	0

p5581[0...8] A_INF_840 (Line transf)	Island grid times / Island grid t Can be changed: T Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 0.10 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [s]	Access level: 3 Function diagram: 7988, 7989 Unit selection: - Expert list: 1 Factory setting: [0] 2.00 [s] [1] 1.00 [s] [2] 60.00 [s] [3] 1.00 [s] [4] 0.10 [s] [5] 1.00 [s] [6] 60.00 [s] [7] 1.00 [s] [8] 0.10 [s]
r5582[0...1] A_INF_840 (Line transf)	CO: Island grid synchronization setpoint control / Island sync set Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%]	Access level: 3 Function diagram: 7995 Unit selection: - Expert list: 1 Factory setting: - [%]
p5583[0...2] A_INF_840 (Line transf)	BI: Island grid synchronization signal sources / Island sync s_s Can be changed: T Data type: Unsigned32 / Binary P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 7989, 7990 Unit selection: - Expert list: 1 Factory setting: [0] 0 [1] 0 [2] 0
p5584[0...2] A_INF_840 (Line transf)	Island grid synchronization controller dynamics / Island sync dyn Can be changed: T Data type: FloatingPoint32 P-Group: Commands Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [ms]	Access level: 3 Function diagram: 7995 Unit selection: - Expert list: 1 Factory setting: [0] 100.00 [ms] [1] 100.00 [ms] [2] 100.00 [ms]

p5585[0...1] A_INF_840 (Line transf)	Island grid synchronization voltage thresholds / Island sync U_thr		
	Can be changed: T	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7995
	P-Group: Commands	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.0 [V]	Max: 300.0 [V]	Factory setting: [0] 35.0 [V] [1] 3.5 [V]
p5586[0...6] A_INF_840 (Line transf)	Island grid scaling values / Island scal_val		
	Can be changed: T	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 7988, 7989, 7995
	P-Group: Converter	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.1 [%]	Max: 200.0 [%]	Factory setting: [0] 3.0 [%] [1] 0.5 [%] [2] 1.0 [%] [3] 1.0 [%] [4] 4.0 [%] [5] 0.4 [%] [6] 2.0 [%]
r6311[0...1] A_INF_840 (Line transf)	CO: Line PLL2 frequency / Line PLL2 f		
	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p0514	Expert list: 1
	Min: - [Hz]	Max: - [Hz]	Factory setting: - [Hz]
r6313 A_INF_840 (Line transf)	CO: Line PLL2 smoothed voltage / Line PLL2 U smth		
	Can be changed: -	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 6799, 8026
	P-Group: Displays, signals	Unit group: 5_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min: - [Vrms]	Max: - [Vrms]	Factory setting: - [Vrms]
r6314 A_INF_840 (Line transf)	CO: Line PLL2 phase angle / Line PLL2 ph_angle		
	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2005	Expert list: 1
	Min: - [°]	Max: - [°]	Factory setting: - [°]

r6316 A_INF_840 (Line transf)	CO: Line PLL2 line supply angle measured / Line PLL2 ang meas Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°]	Calculated: - Dynamic index: - Unit group: - Scaling: p2005 Max: - [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [°]
p6420[0...1] A_INF_840 (Line transf)	Phase shift input voltage VSM to the drive converter / INF U VSM/conv Can be changed: T Data type: FloatingPoint32 P-Group: All groups Not for motor type: - Min: -180.00 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 179.90 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [°]
p6421[0...1] A_INF_840 (Line transf)	Line supply voltage sensing gain adaptation / U_line gain Can be changed: T Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 50.000 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 200.000 [%]	Access level: 3 Function diagram: 7990 Unit selection: - Expert list: 1 Factory setting: 100.000 [%]
p6422 A_INF_840 (Line transf)	Line supply voltage rotating field direction / U_line field dir Can be changed: T Data type: Integer16 P-Group: Converter Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p6423 A_INF_840 (Line transf)	PLL dynamic / PLL dynamic Can be changed: T Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 2.000 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 500.000 [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 20.000 [%]
p6425 A_INF_840 (Line transf)	Line voltage active/react. power comp. smoothing time constant / U_line p/q Tc_smth Can be changed: T Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: 1.000 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 5000.000 [ms]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.000 [ms]

r6440 A_INF_840 (Line transf)	Transf phase offset identified / Tr ph_shift ident Can be changed: - Data type: FloatingPoint32 P-Group: All groups Not for motor type: - Min: - [°] Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [°] Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [°]
r6441 A_INF_840 (Line transf)	Transformer gain adaptation identified / Tr gain ident Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [%] Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%] Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [%]
r6991[0...4] A_INF_840 (Rec), B_INF_840 (Rec), S_INF_840 (Rec), SERVO_840 (Rec), SERVO_DBSI (Rec)	Recorder settings display / Rec setting disp Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - Access level: 4 Function diagram: 8144 Unit selection: - Expert list: 1 Factory setting: -
r6992.0...15 A_INF_840 (Rec), B_INF_840 (Rec), S_INF_840 (Rec), SERVO_840 (Rec), SERVO_DBSI (Rec)	CO/BO: Recorder status word / Rec ZSW Can be changed: - Data type: Unsigned16 P-Group: Displays, signals Not for motor type: - Min: - Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - Access level: 4 Function diagram: 8144, 8145 Unit selection: - Expert list: 1 Factory setting: -
p6993[0...2] A_INF_840 (Rec), B_INF_840 (Rec), S_INF_840 (Rec), SERVO_840 (Rec), SERVO_DBSI (Rec)	Recorder trigger 2 bit mask / Rec trig 2 mask Can be changed: T, U Data type: Unsigned32 P-Group: - Not for motor type: - Min: 0000 hex Calculated: - Dynamic index: - Unit group: - Scaling: - Max: FFFF FFFF hex Access level: 4 Function diagram: 8144 Unit selection: - Expert list: 1 Factory setting: 0001 hex
p6994[0...2] A_INF_840 (Rec), B_INF_840 (Rec), S_INF_840 (Rec), SERVO_840 (Rec), SERVO_DBSI (Rec)	CI: Recorder trigger 2 signal source / Rec trig 2 s_s Can be changed: T, U Data type: Unsigned32 / Integer32 P-Group: - Not for motor type: - Min: - Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - Access level: 4 Function diagram: 8144 Unit selection: - Expert list: 1 Factory setting: 0

p6996[0...63]	Recorder signals / Rec sig		
SERVO_840 (Rec), SERVO_DBSI (Rec)	Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 996553699	Access level: 4 Function diagram: 8144 Unit selection: - Expert list: 1 Factory setting: [0] 3600 [1] 3700 [2] 3701 [3] 3703 [4] 3705 [5] 3706 [6] 3707 [7] 3708 [8] 3709 [9] 3710 [10] 3711 [11] 3712 [12] 3713 [13] 3714 [14] 3715 [15] 3716 [16] 3717 [17] 3718 [18] 5600 [19] 6000 [20] 6100 [21] 6300 [22] 6600 [23] 6800 [24] 6900 [25] 6901 [26] 6902 [27] 6906 [28] 7000 [29] 7200 [30] 7300 [31] 7400 [32] 7500 [33] 7600 [34] 7700 [35] 7800 [36] 8000 [37] 8200 [38] 8300 [39] 8400 [...] ...

p6996[0...63] Recorder signals / Rec sig

A_INF_840 (Rec)

Can be changed: T, U**Data type:** Unsigned32**P-Group:** Commands**Not for motor type:** -**Min:**

0

Calculated: -**Dynamic index:** -**Unit group:** -**Scaling:** -**Max:**

996553699

Access level: 4**Function diagram:** 8144**Unit selection:** -**Expert list:** 1**Factory setting:**

[0] 3600

[1] 3700

[2] 3701

[3] 3703

[4] 3705

[5] 3706

[6] 3707

[7] 3708

[8] 3709

[9] 3710

[10] 3713

[11] 3714

[12] 3715

[13] 3716

[14] 3717

[15] 3718

[16] 6600

[17] 6900

[18] 6901

[19] 6902

[20] 6906

[21] 6800

[22] 7000

[23] 7400

[24] 7500

[25] 7600

[26] 7700

[27] 7800

[28] 8200

[29] 8800

[30] 9400

[31] 89800

[32] 89900

[33] 7201

[34] 340200

[35] 355400

[36] 366100

[37] 366200

[38] 183800

[39] 183900

[...] ...

p6996[0...63]	Recorder signals / Rec sig		
B_INF_840 (Rec)	Can be changed: T, U Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 996553699	Access level: 4 Function diagram: 8144 Unit selection: - Expert list: 1 Factory setting: [0] 3600 [1] 3700 [2] 3701 [3] 3703 [4] 3711 [5] 3712 [6] 6600 [7] 6800 [8] 7000 [9] 8200 [10] 9400 [11] 89800 [12] 89900 [13] 7200 [14] 183800 [15] 183900 [16] 723000 [17] 723001 [18] 703100 [19...63] 0

p6996[0...63] Recorder signals / Rec sig

S_INF_840 (Rec)

Can be changed: T, U**Data type:** Unsigned32**P-Group:** Commands**Not for motor type:** -**Min:**

0

Calculated: -**Dynamic index:** -**Unit group:** -**Scaling:** -**Max:**

996553699

Access level: 4**Function diagram:** 8144**Unit selection:** -**Expert list:** 1**Factory setting:**

[0] 3600

[1] 3700

[2] 3701

[3] 3703

[4] 3705

[5] 3706

[6] 3707

[7] 3708

[8] 3709

[9] 3710

[10] 3711

[11] 3712

[12] 3713

[13] 3714

[14] 3715

[15] 3716

[16] 3717

[17] 3718

[18] 6600

[19] 6900

[20] 6901

[21] 6902

[22] 6906

[23] 6800

[24] 7000

[25] 7600

[26] 7700

[27] 7800

[28] 9400

[29] 89800

[30] 89900

[31] 7200

[32] 183800

[33] 183900

[34] 340500

[35] 345200

[36] 344501

[37] 344602

[38] 344700

[39] 366100

[...] ...

r6997	CO: Recorder sequencer state / Rec state		
A_INF_840 (Rec), B_INF_840 (Rec), S_INF_840 (Rec), SERVO_840 (Rec), SERVO_DBSI (Rec)	Can be changed: - Data type: Integer16 P-Group: Closed-loop control Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 60	Access level: 4 Function diagram: 8145 Unit selection: - Expert list: 1 Factory setting: -
p6998[0...4]	BI: Recorder trigger 1 signal sources / Rec trig 1 s_s		
A_INF_840 (Rec), B_INF_840 (Rec), S_INF_840 (Rec), SERVO_840 (Rec), SERVO_DBSI (Rec)	Can be changed: T, U Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: 8144 Unit selection: - Expert list: 1 Factory setting: [0] 1 [1...4] 0
p6999[0...4]	Recorder parameterization / Rec par		
A_INF_840 (Rec), B_INF_840 (Rec), S_INF_840 (Rec), SERVO_840 (Rec), SERVO_DBSI (Rec)	Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2000	Access level: 4 Function diagram: 8144, 8145 Unit selection: - Expert list: 1 Factory setting: [0] 1 [1] 1000 [2] 900 [3] 0 [4] 0
r7000	CO: Par_circuit No. of active power units / Qty active PU		
A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: - Data type: Unsigned16 P-Group: Modulation Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p7001[0...n]	Par_circuit power units enable / PU enable		
A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: T Data type: Integer16 P-Group: Modulation Not for motor type: - Min: 0	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1

r7002[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit status power units / Status PU Can be changed: - Data type: Integer16 P-Group: Modulation Not for motor type: - Min: 0	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p7010 A_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit current asymmetry alarm threshold / i_asym A thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Modulation Not for motor type: - Min: 2 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: 100 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 20 [%]
p7011 A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit DC link voltage asymmetry alarm threshold / Vdc_dissym A thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Modulation Not for motor type: - Min: 2 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: 100 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10 [%]
r7020[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit deviation current in phase U / Phase U curr dev Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: PDS, p0120 Unit group: 6_5 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r7021[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit deviation current in phase V / Phase V curr dev Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: PDS, p0120 Unit group: 6_5 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r7022[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit deviation current in phase W / Phase W curr dev Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: PDS, p0120 Unit group: 6_5 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [A]

r7025 A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit max. deviation currents phase U / Phase U Max i_dev Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: - Unit group: 6_5 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r7026 A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit max. deviation currents phase V / Phase V Max i_dev Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: - Unit group: 6_5 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r7027 A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit max. deviation currents phase W / Phase W Max i_dev Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: - Unit group: 6_5 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r7030[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit DC link voltage deviation / Vdc deviation Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [V]
r7031 A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit DC link voltage maximum deviation / Vdc deviation max Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: - Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [V]
p7035 A_INF_840 (Parallel), S_INF_840 (Parallel)	Infeed par_circuit circulating current control operating mode / I_cct_ctrl mode Can be changed: T, U Data type: Integer16 P-Group: Modulation Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1

p7036	Infeed par_cct circulating current controller proportional gain / Circ_I Kp		
A_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Modulation	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.00000 [%]	Max: 1000.00000 [%]	Factory setting: 100.00000 [%]
p7037	Infeed par_cct circulating current control integral time / I_cct Tn		
A_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Modulation	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.0 [%]	Max: 100000.0 [%]	Factory setting: 100.0 [%]
p7038	Infeed par_circuit circulating current control limit / I_cct limit		
A_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Modulation	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 1 [%]	Max: 100 [%]	Factory setting: 100 [%]
p7040[0...n]	Par_circuit correction valve lockout time phase U / Comp t_lockout U		
A_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Modulation	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -1000000.00 [μs]	Max: 1000000.00 [μs]	Factory setting: 0.00 [μs]
p7042[0...n]	Par_circuit correction valve lockout time phase V / Comp t_lockout V		
A_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Modulation	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -1000000.00 [μs]	Max: 1000000.00 [μs]	Factory setting: 0.00 [μs]
p7044[0...n]	Par_circuit correction valve lockout time phase W / Comp t_lockout W		
A_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Modulation	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -1000000.00 [μs]	Max: 1000000.00 [μs]	Factory setting: 0.00 [μs]

r7050[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit circulating current phase U / Circ_I_phase U Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: PDS, p0120 Unit group: 6_5 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r7051[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit circulating current phase V / Circ_I_phase V Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: PDS, p0120 Unit group: 6_5 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r7052[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit circulating current phase W / Circ_I_phase W Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: PDS, p0120 Unit group: 6_5 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r7100[0...99] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit ring buffer fault/alarm code / Fault/alarm code Can be changed: - Data type: Unsigned32 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7101[0...99] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit ring buffer data set number / Ring buffer Ds_no Can be changed: - Data type: Unsigned32 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7102[0...99] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit ring buffer fault/alarm received / F/A received Can be changed: - Data type: Unsigned32 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r7103[0...99] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit ring buffer fault/alarm gone / F/A gone Can be changed: - Data type: Unsigned32 P-Group: Displays, signals Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7198[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_connection power unit temperatures cooling unit intake / PU temp RKA intake Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r7199[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit power unit temperatures capacitor air discharge / PU temp capacitor Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r7200[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit power unit overload I2t / PU overload I2t Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: PERCENT Max: - [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [%]
r7201[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit power unit temperatures max. inverter / PU temp max inv Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r7202[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit power unit temperatures max. depletion layer / PU TempMaxDepLayer Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]

r7203[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit power unit temperatures max. rectifier / PU temp max rect Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r7204[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit power unit temperatures air intake / PU temp air intake Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r7205[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit power unit temperatures electronics / PU temp electr Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r7206[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit power unit temperatures inverter 1 / PU temp inv 1 Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r7207[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit power unit temperatures inverter 2 / PU temp inv 2 Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r7208[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit power unit temperatures inverter 3 / PU temp inv 3 Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]

r7209[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit power unit temperatures inverter 4 / PU temp inv 4 Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r7210[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit power unit temperatures inverter 5 / PU temp inv 5 Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r7211[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit power unit temperatures inverter 6 / PU temp inv 6 Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r7212[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit power unit temperatures inverter 1 / PU temp rect 1 Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r7213[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit power unit temperatures inverter 2 / PU temp rect 2 Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]
r7214[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit power unit temperatures depletion layer 1 / PU temp DepLayer 1 Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: PDS, p0120 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]

r7215[0...n]	Par_circuit power unit temperatures depletion layer 2 / PU temp DepLayer 2		
A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: 21_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2006	Expert list: 1
	Min:	Max:	Factory setting:
	- [°C]	- [°C]	- [°C]

r7216[0...n]	Par_circuit power unit temperatures depletion layer 3 / PU temp DepLayer 3		
A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: 21_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2006	Expert list: 1
	Min:	Max:	Factory setting:
	- [°C]	- [°C]	- [°C]

r7217[0...n]	Par_circuit power unit temperatures depletion layer 4 / PU temp DepLayer 4		
A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: 21_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2006	Expert list: 1
	Min:	Max:	Factory setting:
	- [°C]	- [°C]	- [°C]

r7218[0...n]	Par_circuit power unit temperatures depletion layer 5 / PU temp DepLayer 5		
A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: 21_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2006	Expert list: 1
	Min:	Max:	Factory setting:
	- [°C]	- [°C]	- [°C]

r7219[0...n]	Par_circuit power unit temperatures depletion layer 6 / PU temp DepLayer 6		
A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: 21_1	Unit selection: p0505
	Not for motor type: -	Scaling: p2006	Expert list: 1
	Min:	Max:	Factory setting:
	- [°C]	- [°C]	- [°C]

r7220[0...n]	Infeed par_circuit absolute current value motoring permissible / INF I_abs mot perm		
A_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2002	Expert list: 1
	Min:	Max:	Factory setting:
	- [Arms]	- [Arms]	- [Arms]

r7221[0...n] Infeed par_circuit absolute current regenerating permissible / INF I_absRegenPerm

A_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: p2002	Expert list: 1
	Min:	Max:	Factory setting:
	- [Arms]	- [Arms]	- [Arms]

r7222[0...n] CO: Par_circuit absolute current actual value / I_act AbsV

A_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: 6_2	Unit selection: p0505
	Not for motor type: -	Scaling: p2002	Expert list: 1
	Min:	Max:	Factory setting:
	- [Arms]	- [Arms]	- [Arms]

r7223[0...n] CO: Par_circuit phase current actual value phase U / I_phase U ActV

A_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: 6_5	Unit selection: p0505
	Not for motor type: -	Scaling: p2002	Expert list: 1
	Min:	Max:	Factory setting:
	- [A]	- [A]	- [A]

r7224[0...n] CO: Par_circuit phase current actual value phase V / I_phase V ActV

A_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: 6_5	Unit selection: p0505
	Not for motor type: -	Scaling: p2002	Expert list: 1
	Min:	Max:	Factory setting:
	- [A]	- [A]	- [A]

r7225[0...n] CO: Par_circuit phase current actual value phase W / I_phase W ActV

A_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: 6_5	Unit selection: p0505
	Not for motor type: -	Scaling: p2002	Expert list: 1
	Min:	Max:	Factory setting:
	- [A]	- [A]	- [A]

r7226[0...n] CO: Par_circuit phase current actual value phase U offset / I_phase U offset

A_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: 6_5	Unit selection: p0505
	Not for motor type: -	Scaling: p2002	Expert list: 1
	Min:	Max:	Factory setting:
	- [A]	- [A]	- [A]

r7227[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit phase current actual value phase V offset / I_phase V offset Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: PDS, p0120 Unit group: 6_5 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r7228[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit phase current actual value phase W offset / I_phase W offset Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: PDS, p0120 Unit group: 6_5 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r7229[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit phase current actual value sum U, V, W / I_phase sum UVW Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [A]	Calculated: - Dynamic index: PDS, p0120 Unit group: 6_5 Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [A]
r7230[0...n] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit DC link voltage actual value / Vdc_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: PDS, p0120 Unit group: 5_2 Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [V]
r7231[0...n] S_INF_840 (Parallel)	CO: Par_circuit phase voltage actual value phase U / U_phase U ActV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: PDS, p0120 Unit group: 5_3 Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [V]
r7231[0...n] A_INF_840 (Parallel)	CO: Par_circuit phase voltage actual value phase U / U_phase U ActV Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: PDS, p0120 Unit group: 5_3 Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [V]

r7232[0...n]	CO: Par_circuit phase voltage actual value phase V / U_phase V ActV		
S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: 5_3	Unit selection: p0505
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	- [V]	- [V]	- [V]

r7232[0...n]	CO: Par_circuit phase voltage actual value phase V / U_phase V ActV		
A_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: 5_3	Unit selection: p0505
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	- [V]	- [V]	- [V]

r7233[0...n]	CO: Par_circuit phase voltage actual value phase W / U_phase W ActV		
S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: 5_3	Unit selection: p0505
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	- [V]	- [V]	- [V]

r7233[0...n]	CO: Par_circuit phase voltage actual value phase W / U_phase W ActV		
A_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: 5_3	Unit selection: p0505
	Not for motor type: -	Scaling: p2001	Expert list: 1
	Min:	Max:	Factory setting:
	- [V]	- [V]	- [V]

r7240[0...n]	Par_circuit gating unit status word 1 / Gating unit ZSW1		
A_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 4
	Data type: Unsigned16	Dynamic index: PDS, p0120	Function diagram: -
	P-Group: Displays, signals	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r7250[0...4]	Par_circuit power unit rated power / PU P_rated		
A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Can be changed: -	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Converter	Unit group: 14_6	Unit selection: p0100
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [kW]	- [kW]	- [kW]

r7251[0...4] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit power unit rated current / PU PI_rated Can be changed: - Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Arms]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Arms]
r7252[0...4] A_INF_840 (Parallel), B_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit maximum power unit current / PU I_max Can be changed: - Data type: FloatingPoint32 P-Group: Converter Not for motor type: - Min: - [Arms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Arms]	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [Arms]
r7300[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit VSM input line voltage u1 - u2 / VSM inp u1-u2 Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [V]	Calculated: - Dynamic index: p0140 Unit group: - Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [V]
r7301[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit VSM input line voltage u2 - u3 / VSM inp u2-u3 Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [V]	Calculated: - Dynamic index: p0140 Unit group: - Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [V]
r7305[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit VSM temperature evaluation status / VSM temp status Can be changed: - Data type: Unsigned16 P-Group: Terminals Not for motor type: - Min: -	Calculated: - Dynamic index: p0140 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7306[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_connect VSM temperature actual value / VSM Temp_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [°C]	Calculated: - Dynamic index: p0140 Unit group: 21_1 Scaling: p2006 Max: - [°C]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [°C]

r7310[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit VSM 10 V input CT1 actual value / VSM CT 1 I_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [A]	Calculated: - Dynamic index: p0140 Unit group: - Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [A]
r7311[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit VSM 10 V input CT2 actual value / VSM CT 2 I_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [A]	Calculated: - Dynamic index: p0140 Unit group: - Scaling: p2002 Max: - [A]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [A]
r7315[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit VSM 10 V input 1 actual value / VSM inp 1 U_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [V]	Calculated: - Dynamic index: p0140 Unit group: - Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [V]
r7316[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_circuit VSM 10 V input 2 actual value / VSM inp 2 U_ActV Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [V]	Calculated: - Dynamic index: p0140 Unit group: - Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [V]
r7320[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit VSM line filter capacitance phase U / VSM filt C phase U Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [μF]	Calculated: - Dynamic index: p0140 Unit group: - Scaling: - Max: - [μF]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [μF]
r7321[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit VSM line filter capacitance phase V / VSM filt C phase V Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [μF]	Calculated: - Dynamic index: p0140 Unit group: - Scaling: - Max: - [μF]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [μF]

r7322[0...n] A_INF_840 (Parallel), S_INF_840 (Parallel)	Par_circuit VSM line filter capacitance phase W / VSM filt C phase W Can be changed: - Data type: FloatingPoint32 P-Group: Closed-loop control Not for motor type: - Min: - [μF]	Calculated: - Dynamic index: p0140 Unit group: - Scaling: - Max: - [μF]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [μF]
p7324 A_INF_840 (Parallel), S_INF_840 (Parallel)	Par_connection VSM voltage asymmetry alarm threshold / VSM volt asym thr Can be changed: T, U Data type: FloatingPoint32 P-Group: Modulation Not for motor type: - Min: 2 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: 100 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10 [%]
r7325 A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_connection VSM maximum deviation voltage u1 - u2 / VSM max dev U 12 Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: 5_3 Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [V]
r7326 A_INF_840 (Parallel), S_INF_840 (Parallel)	CO: Par_connection VSM maximum deviation voltage u2 - u3 / VSM max dev U 23 Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [V]	Calculated: - Dynamic index: - Unit group: 5_3 Scaling: p2001 Max: - [V]	Access level: 3 Function diagram: - Unit selection: p0505 Expert list: 1 Factory setting: - [V]
r7740[0...n] A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	IGBT power cycling counter valve 1 / IGBT load count 1 Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7741[0...n] A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	IGBT power cycling counter valve 2 / IGBT load count 2 Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r7742[0...n]	IGBT power cycling counter valve 3 / IGBT load count 3		
A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7743[0...n]	IGBT power cycling counter valve 4 / IGBT load count 4		
A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7744[0...n]	IGBT power cycling counter valve 5 / IGBT load count 5		
A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7745[0...n]	IGBT power cycling counter valve 6 / IGBT load count 6		
A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7746	IGBT load counter dynamic / IGBT load dyn		
A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: - Data type: FloatingPoint32 P-Group: Displays, signals Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [%]
r7760.0...12	CO/BO: Write protection/know-how protection status / Wr_prot/KHP stat		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r7760 A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Write protection/know-how protection status / Wr_prot/KHP stat Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p7761 CU_I_840, CU_NX_840	Write protection / Write protection Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p7762 CU_I_840, CU_NX_840	Write protection multi-master fieldbus system access behavior / Fieldbus acc_behav Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p7763 A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	KHP OEM exception list number of indices for p7764 / KHP OEM qty p7764 Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 500	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p7764[0...n] CU_LINK, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	KHP OEM exception list / KHP OEM excep list Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: p7763 Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p7770 A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	NVRAM action / NVRAM action Can be changed: T Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p7775 CU_I_840, CU_NX_840	NVRAM data backup/import/delete / NVRAM backup Can be changed: C1, T, U Data type: Integer16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 17	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p7786[0...n] A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Service report / Service report Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p7788 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Power unit sign-of-life monitoring tolerance window / PU SoL mon tol Can be changed: T, U Data type: Unsigned16 P-Group: Converter Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10
p7789 A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI	Power unit sign-of-life monitoring fault threshold / PU SoL mon F_thr Can be changed: T, U Data type: Unsigned16 P-Group: Converter Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p7820 CU_I_840, CU_NX_840	DRIVE-CLiQ component component number / DQ comp_no Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p7821	DRIVE-CLiQ component parameter number / DQ par_no		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p7822[0...1]	DRIVE-CLiQ component parameter index/number / DQ par_index/qty		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 0 [1] 1
r7823[0...254]	DRIVE-CLiQ component read parameter value / Read DQ value		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7825[0...6]	DRIVE-CLiQ component versions / DQ comp version		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p7826	Firmware update automatic / FW update auto		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
r7827	Firmware update progress display / FW update progress		
CU_I_840, CU_NX_840	Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [%]

p7828[0...1]	Firmware download component number / FW downl comp_no		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	399	0
p7829	Activate firmware download / FW download act		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1	999	0
p7830	Telegram diagnostics selection / Tel diag sel		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: -	Access level: 4
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	3	0
r7831[0...23]	Telegram diagnostics signals / Tel diag sig		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 4
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	15157	-
r7832[0...23]	Telegram diagnostics numerical format / Tel diag format		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 4
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-1	14	-
r7833[0...23]	Telegram diagnostics unsigned / Tel diag unsign		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 4
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r7834[0...23] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Telegram diagnostics signed / Tel diag sign Can be changed: - Data type: Integer32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7835[0...23] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Telegram diagnostics real / Tel diag real Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7836[0...23] ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Telegram diagnostics unit / Tel diag unit Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: -1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 147	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7843[0...20] CU_I_840	Memory card serial number / Mem_card ser_no Can be changed: - Data type: Unsigned8 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7844[0...3] CU_I_840	Memory card/device memory firmware version / Mem_crd/dev_mem FW Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7850[0...n] CU_I_840, CU_NX_840	Drive object operational/not operational / DO ready for op Can be changed: - Data type: Integer16 P-Group: - Not for motor type: - Min: -32786	Calculated: - Dynamic index: r0095 Unit group: - Scaling: - Max: 32767	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p7852	Number of indices for r7853 / Qty indices r7853		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 200	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
r7853[0...n]	Component available/not available / Comp present		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: p7852 Unit group: - Scaling: - Max: FFFF hex	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p7857	Sub-boot mode / Sub-boot mode		
A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p7859[0...199]	Component number global / Comp_no global		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Integer16 P-Group: - Not for motor type: - Min: -32786	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 32767	Access level: 4 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
r7867	Status/configuration changes global / Changes global		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r7868[0...24]	Configuration changes drive object reference / Config_chg DO ref		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7869[0...24]	Status changes drive object reference / Status_chg DO ref		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7870[0...8]	Configuration changes global / Config_chg global		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7871[0...15]	Configuration changes drive object / Config_chg DO		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7871[0...15]	Configuration changes drive object / Config_chg DO		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r7871[0...15]	Configuration changes drive object / Config_chg DO		
A_INF_840, B_INF_840, S_INF_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r7871[0...15]	Configuration changes drive object / Config_chg DO		
CU_LINK, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: -	Calculated: -	Access level: 4
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

r7871[0...15]	Configuration changes drive object / Config_chg DO		
ENC_840	Can be changed: -	Calculated: -	Access level: 4
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

r7872[0...3]	Drive object status changes / DO stat_chg		
All objects	Can be changed: -	Calculated: -	Access level: 4
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

p7900[0...23]	Drive objects priority / DO priority		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0	Max: 65535	Factory setting: 0

r7901[0...81]	Sampling times / t_samp		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: - [μs]	Max: - [μs]	Factory setting: - [μs]

r7903	Hardware sampling times still assignable / HW t_samp free		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

p8500[0...7] CU_LINK, CU_NX_840	Bl: Send data transfer bit-serially 0 / Send trans bit 0 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2194 Unit selection: - Expert list: 1 Factory setting: 0
p8500[0...7] CU_I_840	Bl: Input signal bit-serially 0 / Input_sig bit 0 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2195 Unit selection: - Expert list: 1 Factory setting: 0
p8501[0...21] CU_NX_840	Bl: Send data transfer bit-serially 1 / Send trans bit 1 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2194 Unit selection: - Expert list: 1 Factory setting: [0] 722.0 [1] 722.1 [2] 722.2 [3] 722.3 [4...7] 0 [8] 722.8 [9] 722.9 [10] 722.10 [11] 722.11 [12...15] 0 [16] 722.16 [17] 722.17 [18...21] 0
p8501[0...21] CU_I_840	Bl: Input signal bit-serially 1 / Input_sig bit 1 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2195 Unit selection: - Expert list: 1 Factory setting: 0

p8501[0...21]	BI: Send data transfer bit-serially 1 / Send trans bit 1		
CU_LINK	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 2194
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	[0] 722.0
			[1] 722.1
			[2] 722.2
			[3] 722.3
			[4] 722.4
			[5] 722.5
			[6] 722.6
			[7] 722.7
			[8] 722.8
			[9] 722.9
			[10] 722.10
			[11] 722.11
			[12] 722.12
			[13] 722.13
			[14] 722.14
			[15] 722.15
			[16] 722.16
			[17] 722.17
			[18] 0
			[19] 0
			[20] 722.20
			[21] 722.21

p8502	CI: Send data transfer word-serially 0 / Send trans word 0		
CU_LINK, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: Unsigned32 / FloatingPoint32	Dynamic index: -	Function diagram: 2194
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p8502	CI: Input signal word-serially 0 / Input_sig word 0		
CU_I_840	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: Unsigned32 / Integer32	Dynamic index: -	Function diagram: 2195
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p8503 CU_LINK, CU_NX_840	Cl: Send data transfer word-serially 1 / Send trans word 1 Can be changed: T, U Data type: Unsigned32 / FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2194 Unit selection: - Expert list: 1 Factory setting: 0
p8503 CU_I_840	Cl: Input signal word-serially 1 / Input_sig word 1 Can be changed: T, U Data type: Unsigned32 / Integer32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 2 Function diagram: 2195 Unit selection: - Expert list: 1 Factory setting: 0
p8504 CU_LINK, CU_NX_840	Cl: Send data transfer word-serially 2 / Send trans word 2 Can be changed: T, U Data type: Unsigned32 / FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2194 Unit selection: - Expert list: 1 Factory setting: 0
p8504 CU_I_840	Cl: Input signal word-serially 2 / Input_sig word 2 Can be changed: T, U Data type: Unsigned32 / Integer32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 2 Function diagram: 2195 Unit selection: - Expert list: 1 Factory setting: 0
p8505 CU_LINK, CU_NX_840	Cl: Send data transfer word-serially 3 / Send trans word 3 Can be changed: T, U Data type: Unsigned32 / FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2194 Unit selection: - Expert list: 1 Factory setting: 0
p8505 CU_I_840	Cl: Input signal word-serially 3 / Input_sig word 3 Can be changed: T, U Data type: Unsigned32 / Integer32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: -	Access level: 2 Function diagram: 2195 Unit selection: - Expert list: 1 Factory setting: 0

r8510.0...7	BO: Receive data transfer bit-serially 0 / Recv trans bit 0		
CU_LINK, CU_NX_840	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2194
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r8510.0...7	BO: Output signal bit-serially 0 / Outp_sig bit 0		
CU_I_840	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2195
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r8511.0...21	BO: Receive data transfer bit-serially 1 / Recv trans bit 1		
CU_LINK, CU_NX_840	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2194
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r8511.0...21	BO: Output signal bit-serially 1 / Outp_sig bit 1		
CU_I_840	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2195
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r8512	CO: Receive data transfer word-serially 0 / Recv trans word 0		
CU_LINK, CU_NX_840	Can be changed: -	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2194
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r8512	CO: Output signal word-serially 0 / Outp_sig word 0		
CU_I_840	Can be changed: -	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2195
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: PERCENT	Expert list: 1
	Min:	Max:	Factory setting:
	- [%]	- [%]	- [%]

r8513 CU_LINK, CU_NX_840	CO: Receive data transfer word-serially 1 / Recv trans word 1 Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2194 Unit selection: - Expert list: 1 Factory setting: -
r8513 CU_I_840	CO: Output signal word-serially 1 / Outp_sig word 1 Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 2 Function diagram: 2195 Unit selection: - Expert list: 1 Factory setting: - [%]
r8514 CU_LINK, CU_NX_840	CO: Receive data transfer word-serially 2 / Recv trans word 2 Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2194 Unit selection: - Expert list: 1 Factory setting: -
r8514 CU_I_840	CO: Output signal word-serially 2 / Outp_sig word 2 Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 2 Function diagram: 2195 Unit selection: - Expert list: 1 Factory setting: - [%]
r8515 CU_LINK, CU_NX_840	CO: Receive data transfer word-serially 3 / Recv trans word 3 Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2194 Unit selection: - Expert list: 1 Factory setting: -
r8515 CU_I_840	CO: Output signal word-serially 3 / Outp_sig word 3 Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: PERCENT Max: - [%]	Access level: 2 Function diagram: 2195 Unit selection: - Expert list: 1 Factory setting: - [%]

p8520[0...3]	Data transfer word-serial scaling / Trans word scal		
CU_LINK, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2194
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00010	10000.00000	1.00000

p8550	AOP LOCAL/REMOTE / AOP LOCAL/REMOTE		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0000 1001 bin

r8570[0...39]	Macro drive object / Macro DO		
TM120, TM150, TM15DI_DO, TM31	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r8571[0...39]	Macro Binector Input (BI) / Macro BI		
A_INF_840, B_INF_840, CU_I_840, CU_NX_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM15DI_DO, TM31	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r8572[0...39]	Macro Connector Inputs (CI) for speed setpoints / Macro CI n_set		
A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r8573[0...39]	Macro Connector Inputs (CI) for torque setpoints / Macro CI M_set		
A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	-

r8585 A_INF_840, B_INF_840, CU_I_840, CU_NX_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31	Macro execution actual / Macro executed Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
p8837 A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	IF2 STW1.10 = 0 mode / IF2 STW1.10=0 Can be changed: T Data type: Integer16 P-Group: Communications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 2
p8844 A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	IF2 fault delay / IF2 flt delay Can be changed: T, U Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 0 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100 [s]	Access level: 3 Function diagram: 2410 Unit selection: - Expert list: 1 Factory setting: 0 [s]
p8848 CU_I_840, CU_NX_840	IF2 PZD sampling time / IF2 PZD t_sample Can be changed: C1(3) Data type: FloatingPoint32 P-Group: Communications Not for motor type: - Min: 1.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 4.00 [ms]
r8850[0...21] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	CO: IF2 PZD receive word / IF2 PZD rcv word Can be changed: - Data type: Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2485, 2491, 9204, 9206 Unit selection: - Expert list: 1 Factory setting: -
r8850[0...9] A_INF_840, B_INF_840, S_INF_840	CO: IF2 PZD receive word / IF2 PZD rcv word Can be changed: - Data type: Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2491 Unit selection: - Expert list: 1 Factory setting: -

r8850[0...4] TB30, TM120, TM150, TM15DI_DO, TM31	CO: IF2 PZD receive word / IF2 PZD rcv word Can be changed: - Data type: Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2491 Unit selection: - Expert list: 1 Factory setting: -
r8850[0...3] ENC_840	CO: IF2 PZD receive word / IF2 PZD rcv word Can be changed: - Data type: Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2485, 2491, 9204, 9206 Unit selection: - Expert list: 1 Factory setting: -
p8851[0...27] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	CI: IF2 PZD send word / IF2 PZD send word Can be changed: T, U Data type: Unsigned32 / Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2487, 9208 Unit selection: - Expert list: 1 Factory setting: 0
p8851[0...9] A_INF_840, B_INF_840, S_INF_840	CI: IF2 PZD send word / IF2 PZD send word Can be changed: T, U Data type: Unsigned32 / Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2493, 9210 Unit selection: - Expert list: 1 Factory setting: 0
p8851[0...4] TB30, TM120, TM150, TM15DI_DO, TM31	CI: IF2 PZD send word / IF2 PZD send word Can be changed: T, U Data type: Unsigned32 / Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2493, 9210 Unit selection: - Expert list: 1 Factory setting: 0
p8851[0...11] ENC_840	CI: IF2 PZD send word / IF2 PZD send word Can be changed: T, U Data type: Unsigned32 / Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2487, 9208 Unit selection: - Expert list: 1 Factory setting: 0

r8853[0...27] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	IF2 diagnostics PZD send / IF2 diag PZD send Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2487, 9208, 9210 Unit selection: - Expert list: 1 Factory setting: -
r8853[0...9] A_INF_840, B_INF_840, S_INF_840	IF2 diagnostics PZD send / IF2 diag PZD send Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2493 Unit selection: - Expert list: 1 Factory setting: -
r8853[0...4] TB30, TM120, TM150, TM15DI_DO, TM31	IF2 diagnostics PZD send / IF2 diag PZD send Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2493 Unit selection: - Expert list: 1 Factory setting: -
r8853[0...11] ENC_840	IF2 diagnostics PZD send / IF2 diag PZD send Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2487, 9208, 9210 Unit selection: - Expert list: 1 Factory setting: -
r8860[0...20] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	CO: IF2 PZD receive double word / IF2 PZD recv DW Can be changed: - Data type: Integer32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2485, 9204, 9206 Unit selection: - Expert list: 1 Factory setting: -

r8860[0...2] ENC_840	CO: IF2 PZD receive double word / IF2 PZD recv DW Can be changed: - Data type: Integer32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2485, 9204, 9206 Unit selection: - Expert list: 1 Factory setting: -
p8861[0...26] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	CI: IF2 PZD send double word / IF2 PZD send DW Can be changed: T, U Data type: Unsigned32 / Integer32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2487, 9208, 9210 Unit selection: - Expert list: 1 Factory setting: 0
p8861[0...10] ENC_840	CI: IF2 PZD send double word / IF2 PZD send DW Can be changed: T, U Data type: Unsigned32 / Integer32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: 2487, 9208, 9210 Unit selection: - Expert list: 1 Factory setting: 0
r8863[0...26] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	IF2 diagnostics PZD send double word / IF2 diag send DW Can be changed: - Data type: Unsigned32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2487 Unit selection: - Expert list: 1 Factory setting: -
r8863[0...10] ENC_840	IF2 diagnostics PZD send double word / IF2 diag send DW Can be changed: - Data type: Unsigned32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2487 Unit selection: - Expert list: 1 Factory setting: -

p8864	IF1 PROFIdrive first supplementary telegram selection / IF1 Pd 1. sup_tel		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(1), T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 700	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 3 Function diagram: 2423 Unit selection: - Expert list: 1 Factory setting: 999
p8865	IF1 PROFIdrive second supplementary telegram selection / IF1 Pd 2. sup_tel		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(1), T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 700	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 3 Function diagram: 2423 Unit selection: - Expert list: 1 Factory setting: 999
r8867[0...1]	IF2 PZD maximum interconnected / IF2 PZDmaxIntercon		
A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p8870[0...15]	SINAMICS Link PZD receive word / PZD recv word		
ENC_840 (PN CBE20), HLA_840 (PN CBE20), HLA_DBSI (PN CBE20), TB30 (PN CBE20), TM120 (PN CBE20), TM150 (PN CBE20), TM15DI_DO (PN CBE20), TM17 (PN CBE20), TM31 (PN CBE20), TM41 (PN CBE20)	Can be changed: T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 32	Access level: 3 Function diagram: 2198, 2199 Unit selection: - Expert list: 1 Factory setting: 0
p8871[0...15]	SINAMICS Link PZD send word / PZD send word		
ENC_840 (PN CBE20), HLA_840 (PN CBE20), HLA_DBSI (PN CBE20), TB30 (PN CBE20), TM120 (PN CBE20), TM150 (PN CBE20), TM15DI_DO (PN CBE20), TM17 (PN CBE20), TM31 (PN CBE20), TM41 (PN CBE20)	Can be changed: T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 32	Access level: 3 Function diagram: 2198, 2199 Unit selection: - Expert list: 1 Factory setting: 0

p8872[0...15]	SINAMICS Link PZD receive address / PZD rcv addr		
ENC_840 (PN CBE20), HLA_840 (PN CBE20), HLA_DBSI (PN CBE20), TB30 (PN CBE20), TM120 (PN CBE20), TM150 (PN CBE20), TM15DI_DO (PN CBE20), TM17 (PN CBE20), TM31 (PN CBE20), TM41 (PN CBE20)	Can be changed: T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 64	Access level: 3 Function diagram: 2198, 2199 Unit selection: - Expert list: 1 Factory setting: 0
r8874[0...21]	IF2 diagnostics bus address PZD receive / IF2 diag addr rcv		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r8874[0...9]	IF2 diagnostics bus address PZD receive / IF2 diag addr rcv		
A_INF_840, B_INF_840, S_INF_840	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r8874[0...4]	IF2 diagnostics bus address PZD receive / IF2 diag addr rcv		
TB30, TM120, TM150, TM15DI_DO, TM31	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r8874[0...3]	IF2 diagnostics bus address PZD receive / IF2 diag addr rcv		
ENC_840	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r8875[0...21] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	IF2 diagnostics telegram offset PZD receive / IF diag offs rcv Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r8875[0...9] A_INF_840, B_INF_840, S_INF_840	IF2 diagnostics telegram offset PZD receive / IF diag offs rcv Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r8875[0...4] TB30, TM120, TM150, TM15DI_DO, TM31	IF2 diagnostics telegram offset PZD receive / IF diag offs rcv Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r8875[0...3] ENC_840	IF2 diagnostics telegram offset PZD receive / IF diag offs rcv Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r8876[0...27] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	IF2 diagnostics telegram offset PZD send / IF2 diag offs send Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r8876[0...9] A_INF_840, B_INF_840, S_INF_840	IF2 diagnostics telegram offset PZD send / IF2 diag offs send Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r8876[0...4]	IF2 diagnostics telegram offset PZD send / IF2 diag offs send		
TB30, TM120, TM150, TM15DI_DO, TM31	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -
r8876[0...11]	IF2 diagnostics telegram offset PZD send / IF2 diag offs send		
ENC_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -
p8880[0...15]	BI: IF2 binector-connector converter status word 1 / Bin/con ZSW1		
A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 2489
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: 0
p8881[0...15]	BI: IF2 binector-connector converter status word 2 / Bin/con ZSW2		
A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 2489
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: 0
p8882[0...15]	BI: IF2 binector-connector converter status word 3 / Bin/con ZSW3		
A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 2489
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: 0

p8883[0...15] A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM31, TM41	BI: IF2 binector-connector converter status word 4 / Bin/con ZSW4 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2489 Unit selection: - Expert list: 1 Factory setting: 0
p8884[0...15] A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM31, TM41	BI: IF2 binector-connector converter status word 5 / Bin/con ZSW5 Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2489 Unit selection: - Expert list: 1 Factory setting: 0
p8888[0...4] A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM31, TM41	IF2 invert binector-connector converter status word / Bin/con ZSW inv Can be changed: T, U Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2489 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
r8889[0...4] A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM31, TM41	CO: IF2 send binector-connector converter status word / Bin/con ZSW send Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r8890.0...15 A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	BO: IF2 PZD1 receive bit-serial / IF2 PZD1 recv bitw Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2485, 2491, 9204, 9206 Unit selection: - Expert list: 1 Factory setting: -

4.2 SINAMICS parameters

r8891.0...15	BO: IF2 PZD2 receive bit-serial / IF2 PZD2 recv bitw		
A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2485, 2491, 9204, 9206 Unit selection: - Expert list: 1 Factory setting: -
r8892.0...15	BO: IF2 PZD3 receive bit-serial / IF2 PZD3 recv bitw		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2485, 9204, 9206 Unit selection: - Expert list: 1 Factory setting: -
r8893.0...15	BO: IF2 PZD4 receive bit-serial / IF2 PZD4 recv bitw		
ENC_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI, TM41	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2485, 9204, 9206 Unit selection: - Expert list: 1 Factory setting: -
r8894.0...15	BO: IF2 connector-binector converter binector output / Con/bin outp		
A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2485, 2491 Unit selection: - Expert list: 1 Factory setting: -
r8895.0...15	BO: IF2 connector-binector converter binector output / Con/bin outp		
A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM31, TM41	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2485, 2491 Unit selection: - Expert list: 1 Factory setting: -

p8898[0...1] A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM31, TM41	IF2 invert connector-binector converter binector output / Con/bin outp inv Can be changed: T, U Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2485, 2491 Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin
p8899[0...1] A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM31, TM41	CI: IF2 connector-binector converter signal source / Con/bin s_s Can be changed: T, U Data type: Unsigned32 / Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2485, 2491 Unit selection: - Expert list: 1 Factory setting: 0
r8960[0...3] A_INF_840, B_INF_840, CU_I_840, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41	PN subslot controller assignment / PN subslot assign Can be changed: - Data type: Unsigned8 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 8	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p8966[0...31] CU_I_840 (PZD ext), CU_NX_840 (PZD ext)	CI: IF1 PZD extension PZD send word / PZD ext send word Can be changed: T, U Data type: Unsigned32 / Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p8967[0...30] CU_I_840 (PZD ext), CU_NX_840 (PZD ext)	CI: IF1 PZD extension PZD send double word / PZD ext send DW Can be changed: T, U Data type: Unsigned32 / Integer16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: 4000H Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

r8970[0...3]	CBExx subslot controller assignment / CBExx subslot		
ENC_840 (PN CBE20), HLA_840 (PN CBE20), HLA_DBSI (PN CBE20), TB30 (PN CBE20), TM120 (PN CBE20), TM150 (PN CBE20), TM15DI_DO (PN CBE20), TM17 (PN CBE20), TM31 (PN CBE20), TM41 (PN CBE20)	Can be changed: - Data type: Unsigned8 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 8	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r8977[0...31]	IF1 PZD extension diagnostics PZD send word / PZD ext diag word		
CU_I_840 (PZD ext), CU_NX_840 (PZD ext)	Can be changed: - Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r8978[0...30]	IF1 PZD extension diagnostics PZD send double word / PZD ext diag DW		
CU_I_840 (PZD ext), CU_NX_840 (PZD ext)	Can be changed: - Data type: Unsigned32 P-Group: Communications Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p9206[0...2]	Topology direct access / Topo access		
CU_I_840, CU_NX_840	Can be changed: T Data type: Unsigned32 P-Group: Topology Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r9207	Topology direct access integer value / Topo access int		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: Topology Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r9208[0...50]	Topology direct access string / Topo access string		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned8 P-Group: Topology Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p9210	Flashing component number / Flash comp_no		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned16 P-Group: Topology Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 499	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9211	Flash function / Flash fct		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Integer16 P-Group: Topology Not for motor type: - Min: -1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -1
r9220	Statistics number of entries / Stat entries qty		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p9221	Statistic components Id / Stat comp Id		
CU_I_840, CU_NX_840	Can be changed: T Data type: Unsigned8 P-Group: - Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 00FF hex	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0002 hex
r9222[0...n]	Statistic DRIVE-CLiQ acyclic communication / Stat DQ acycl comm		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: r9220 Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p9300	SI Motion monitoring clock cycle (Motor Module) / SI Mtn clock MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	500.00 [µs]	25000.00 [µs]	12000.00 [µs]

p9301	SI Motion enable safety functions (Motor Module) / SI Mtn enable MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0000 0000 0000 0000 0000 0000 bin

p9302	SI Motion axis type (Motor Module) / SI Mtn AxisType MM		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0

p9303	SI Motion SCA (SN) enable (MM) / SI Mtn SCA enab MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0000 0000 0000 0000 0000 0000 bin

p9305	SI Motion SP modulo value (Motor Module) / SI mtn SP mod MM		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0 [°]	737280 [°]	0 [°]

p9306	SI Motion function specification (Motor Module) / SI Mtn fct_spc MM		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	2	0

p9306	SI Motion function specification (Motor Module) / SI Mtn fct_spc MM		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	3	0
p9307	SI Motion function configuration MM / SI mtn config MM		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0010 bin
p9307	SI Motion function configuration MM / SI mtn config MM		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0010 bin
p9309	SI Motion behavior during pulse suppression (Motor Module) / SI Mtn behav IL MM		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 1111 1111 bin
p9311	SI Motion actual value sensing clock cycle (Motor Module) / SI Mtn act clk MM		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0000 [μs]	25000.0000 [μs]	0.0000 [μs]
p9311	SI Motion actual value sensing clock cycle (Motor Module) / SI Mtn act clk MM		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0000 [μs]	25000.0000 [μs]	0.0000 [μs]

p9312	Select SI Motion safety functions without selection (MM) / SI Mtn w/o sel MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0001 0000 bin
p9313	SI Motion non safety-relevant measuring steps POS1 (MM) / nsrPOS1 MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	4294967295	22000
p9314	SI Motion absolute encoder linear measuring steps (MM) / EnLinMeasStep MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0 [nm]	4294967295 [nm]	100 [nm]
p9315	SI Motion coarse position value configuration (Motor Module) / SI Mtn s config MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0000 0000 0000 0000 0000 0000 bin
p9316	SI Motion encoder configuration, safety functions (Motor Module) / SI Mtn enc_conf MM		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0001 bin
p9316	SI Motion encoder configuration, safety functions (Motor Module) / SI Mtn enc_conf MM		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 bin

p9317	SI Motion linear scale grid division (Motor Module) / SI Mtn grid MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [nm]	250000000.00 [nm]	10000.00 [nm]
p9318	SI Motion encoder pulses per revolution (Motor Module) / SI Mtn p/rev MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	16777215	2048
p9319	SI Motion fine resolution G1_XIST1 (Motor Module) / SI Mtn G1_XIST1 MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	2	18	11
p9320	SI Motion spindle pitch (Motor Module) / SI Mtn sp_pitch MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.1000 [mm]	8388.0000 [mm]	10.0000 [mm]
p9321[0...7]	SI Motion gearbox encoder (motor)/load denom (Motor Module) / SI Mtn grbxDenomMM		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1	2147000000	1
p9321[0...7]	SI Motion gearbox encoder (motor)/load denom (Motor Module) / SI Mtn grbxDenomMM		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1	2147000000	1

p9322[0...7] HLA_DBSI	SI Motion gearbox encoder (motor)/load numerator (Motor Module) / SI Mtn grbx num MM Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147000000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p9322[0...7] SERVO_DBSI	SI Motion gearbox encoder (motor)/load numerator (Motor Module) / SI Mtn grbx num MM Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147000000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p9323 HLA_DBSI, SERVO_DBSI	SI Motion red. coarse position value valid bits (Motor Module) / Valid bits MM Can be changed: C2(95) Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 9
p9324 HLA_DBSI, SERVO_DBSI	SI Motion redundant coarse pos. value fine resolution bits (MM) / SI Mtn fine bit MM Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: -16	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -2
p9325 HLA_DBSI, SERVO_DBSI	SI Motion redundant coarse pos. value relevant bits (MM) / Relevant bits MM Can be changed: C2(95) Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 16
p9326 HLA_DBSI	SI Motion encoder assignment (Motor Module) / SI Mtn encoder MM Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 2

p9326 SERVO_DBSI	SI Motion encoder assignment (Motor Module) / SI Mtn encoder MM Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p9328[0...11] HLA_DBSI, SERVO_DBSI	SI Motion Sensor Module Node Identifier (Motor Module) / SI Mtn SM Ident MM Can be changed: C2(95) Data type: Unsigned8 P-Group: Safety Integrated Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 00FF hex	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
p9329 HLA_DBSI, SERVO_DBSI	SI Motion Gx_XIST1 coarse pos safe most significant bit (MM) / Gx_XIST1 MSB MM Can be changed: C2(95) Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 31	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 14
p9330 HLA_DBSI, SERVO_DBSI	SI Motion standstill tolerance (Motor Module) / SI Mtn SOS Tol MM Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.000 [mm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.000 [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.000 [mm]
p9330 SERVO_DBSI (Safety rot)	SI Motion standstill tolerance (Motor Module) / SI Mtn SOS Tol MM Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.000 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.000 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.000 [°]
p9331[0...3] HLA_DBSI, SERVO_DBSI	SI Motion SLS limit values (Motor Module) / SI Mtn SLS lim MM Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [mm/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000000.00 [mm/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 2000.00 [mm/min]

p9331[0...3]	SI Motion SLS limit values (Motor Module) / SI Mtn SLS lim MM		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	1000000.00 [rpm]	2000.00 [rpm]
p9334[0...1]	SI Motion SLP upper limit values (Motor Module) / SI Mtn SLP uplimMM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2822
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [mm]	2147000.000 [mm]	100000.000 [mm]
p9334[0...1]	SI Motion SLP upper limit values (Motor Module) / SI Mtn SLP uplimMM		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2822
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [°]	2147000.000 [°]	100000.000 [°]
p9335[0...1]	SI Motion SLP lower limit values (Motor Module) / SI Mtn SLPlowLimMM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2822
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [mm]	2147000.000 [mm]	-100000.000 [mm]
p9335[0...1]	SI Motion SLP lower limit values (Motor Module) / SI Mtn SLPlowLimMM		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2822
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [°]	2147000.000 [°]	-100000.000 [°]
p9336[0...29]	SI Motion SCA (SN) plus cam position (MM) / SI Mtn SCA+ MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [mm]	2147000.000 [mm]	10.000 [mm]

p9336[0...29] SERVO_DBSI (Safety rot)	SI Motion SCA (SN) plus cam position (MM) / SI Mtn SCA+ MM Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: -2147000.000 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147000.000 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10.000 [°]
p9337[0...29] HLA_DBSI, SERVO_DBSI	SI Motion SCA (SN) minus cam position (MM) / SI Mtn SCA- MM Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: -2147000.000 [mm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147000.000 [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -10.000 [mm]
p9337[0...29] SERVO_DBSI (Safety rot)	SI Motion SCA (SN) minus cam position (MM) / SI Mtn SCA- MM Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: -2147000.000 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147000.000 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -10.000 [°]
p9339[0...7] HLA_DBSI, SERVO_DBSI	SI Motion gearbox direction of rotation reversal (Motor Module) / SI Mtn grbx rev MM Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9340 HLA_DBSI, SERVO_DBSI	SI Motion SCA (SN) tolerance (MM) / SI Mtn SCA tol MM Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.0010 [mm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10.0000 [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.1000 [mm]
p9340 SERVO_DBSI (Safety rot)	SI Motion SCA (SN) tolerance (MM) / SI Mtn SCA tol MM Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.0010 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10.0000 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.1000 [°]

p9341	SI Motion encoder comparison algorithm (Motor Module) / Enc comp algo MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	255	255
p9342	SI Motion act val comparison tol (cross-check) (Motor Module) / SI Mtn ActV tol MM		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [mm]	360.0000 [mm]	0.1000 [mm]
p9342	SI Motion act val comparison tol (cross-check) (Motor Module) / SI Mtn ActV tol MM		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [mm]	360.0000 [mm]	0.1000 [mm]
p9342	SI Motion act val comparison tol (cross-check) (Motor Module) / SI Mtn ActV tol MM		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [°]	360.0000 [°]	0.1000 [°]
p9343	SI Motion gearbox switching position tolerance (MM) / SI Mtn grbx tol MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1	1000	1
p9344	SI Motion actual value comparison tolerance (referencing) (MM) / SI mtn ref tol MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0000 [mm]	36.0000 [mm]	0.0100 [mm]

p9344	SI Motion actual value comparison tolerance (referencing) (MM) / SI mtn ref tol MM		
SERVO_DBSI (Safety rot)	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.0000 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 36.0000 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.0100 [°]
p9345	SI Motion SSM filter time (Motor Module) / SI Mtn SSM filt MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [µs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 500000.00 [µs]	Access level: 3 Function diagram: 2823 Unit selection: - Expert list: 1 Factory setting: 0.00 [µs]
p9346	SI Motion SSM velocity limit (Motor Module) / SI Mtn SSM v_limMM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [mm/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000000.00 [mm/min]	Access level: 3 Function diagram: 2823 Unit selection: - Expert list: 1 Factory setting: 20.00 [mm/min]
p9346	SI Motion SSM velocity limit (Motor Module) / SI Mtn SSM v_limMM		
SERVO_DBSI (Safety rot)	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [rpm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000000.00 [rpm]	Access level: 3 Function diagram: 2823 Unit selection: - Expert list: 1 Factory setting: 20.00 [rpm]
p9347	SI Motion SSM velocity hysteresis (Motor Module) / SI Mtn SSM hyst MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.0010 [mm/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 500.0000 [mm/min]	Access level: 3 Function diagram: 2823 Unit selection: - Expert list: 1 Factory setting: 10.0000 [mm/min]
p9347	SI Motion SSM velocity hysteresis (Motor Module) / SI Mtn SSM hyst MM		
SERVO_DBSI (Safety rot)	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.0010 [rpm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 500.0000 [rpm]	Access level: 3 Function diagram: 2823 Unit selection: - Expert list: 1 Factory setting: 10.0000 [rpm]

p9348	SI Motion SAM actual velocity tolerance (Motor Module) / SI Mtn SAM tol MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	120000.00 [mm/min]	300.00 [mm/min]
p9348	SI Motion SAM actual velocity tolerance (Motor Module) / SI Mtn SAM tol MM		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	120000.00 [rpm]	300.00 [rpm]
p9349	SI Motion slip velocity tolerance (Motor Module) / SI Mtn slip MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	6000.00 [mm/min]	6.00 [mm/min]
p9349	SI Motion slip velocity tolerance (Motor Module) / SI Mtn slip MM		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	6000.00 [rpm]	6.00 [rpm]
p9351	SI Motion SLS(SG) changeover/SOS (SBH) delay time (MM) / SI SLS/SOS t MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2819, 2820
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	600000000.00 [μs]	100000.00 [μs]
p9352	SI Motion transition time STOP C to SOS (Motor Module) / SI Mtn t C->SOS MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2819
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	600000000.00 [μs]	100000.00 [μs]

p9353	SI Motion transition time STOP D to SOS (Motor Module) / SI Mtn t D->SOS MM
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Calculated: - Access level: 3 Data type: FloatingPoint32 Dynamic index: - Function diagram: 2819 P-Group: Safety Integrated Unit group: - Unit selection: - Not for motor type: - Scaling: - Expert list: 1 Min: Max: Factory setting: 0.00 [μs] 600000000.00 [μs] 100000.00 [μs]
p9354	SI Motion transition time STOP E to SOS (Motor Module) / SI Mtn t E->SOS MM
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Calculated: - Access level: 3 Data type: FloatingPoint32 Dynamic index: - Function diagram: - P-Group: Safety Integrated Unit group: - Unit selection: - Not for motor type: - Scaling: - Expert list: 1 Min: Max: Factory setting: 0.00 [μs] 600000000.00 [μs] 100000.00 [μs]
p9355	SI Motion transition time STOP F to STOP B (Motor Module) / SI Mtn t F->B MM
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Calculated: - Access level: 3 Data type: FloatingPoint32 Dynamic index: - Function diagram: 2819 P-Group: Safety Integrated Unit group: - Unit selection: - Not for motor type: - Scaling: - Expert list: 1 Min: Max: Factory setting: 0.00 [μs] 600000000.00 [μs] 0.00 [μs]
p9356	SI Motion STOP A delay time (Motor Module) / SI Mtn IL t_del MM
HLA_DBSI	Can be changed: C2(95) Calculated: - Access level: 3 Data type: FloatingPoint32 Dynamic index: - Function diagram: 2819 P-Group: Safety Integrated Unit group: - Unit selection: - Not for motor type: - Scaling: - Expert list: 1 Min: Max: Factory setting: 0.00 [μs] 3600000000.00 [μs] 100000.00 [μs]
p9356	SI Motion STOP A delay time (Motor Module) / SI Mtn IL t_del MM
SERVO_DBSI	Can be changed: C2(95) Calculated: - Access level: 3 Data type: FloatingPoint32 Dynamic index: - Function diagram: 2819 P-Group: Safety Integrated Unit group: - Unit selection: - Not for motor type: - Scaling: - Expert list: 1 Min: Max: Factory setting: 0.00 [μs] 3600000000.00 [μs] 100000.00 [μs]
p9357	SI Motion STO test time (Motor Module) / SI Mtn IL t MM
HLA_DBSI	Can be changed: C2(95) Calculated: - Access level: 3 Data type: FloatingPoint32 Dynamic index: - Function diagram: - P-Group: Safety Integrated Unit group: - Unit selection: - Not for motor type: - Scaling: - Expert list: 1 Min: Max: Factory setting: 0.00 [μs] 10000000.00 [μs] 500000.00 [μs]

p9357	SI Motion STO test time (Motor Module) / SI Mtn IL t MM		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	10000000.00 [μs]	100000.00 [μs]
p9358	SI Motion acceptance test mode time limit (Motor Module) / SI Mtn acc t MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	5000000.00 [μs]	100000000.00 [μs]	40000000.00 [μs]
p9360	SI Motion STO shutdown velocity (Motor Module) / SI Mtn IL v_sh MM		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	6000.00 [mm/min]	0.00 [mm/min]
p9360	SI Motion STO shutdown velocity (Motor Module) / SI Mtn IL v_sh MM		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	6000.00 [mm/min]	0.00 [mm/min]
p9360	SI Motion pulse suppression shutdown speed (Motor Module) / SI Mtn IL n_sh MM		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	6000.00 [rpm]	0.00 [rpm]
p9362[0...1]	SI Motion SLP stop response (Motor Module) / SI mtn SLP stop MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	14	2

p9363[0...3]	SI Motion SLS stop response (Motor Module) / SI Mtn SLS Stop MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 14	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 2
p9364	SI Motion SDI tolerance (Motor Module) / SI Mtn SDI tol MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.001 [mm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 360.000 [mm]	Access level: 3 Function diagram: 2824 Unit selection: - Expert list: 1 Factory setting: 12.000 [mm]
p9364	SI Motion SDI tolerance (Motor Module) / SI Mtn SDI tol MM		
SERVO_DBSI (Safety rot)	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.001 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 360.000 [°]	Access level: 3 Function diagram: 2824 Unit selection: - Expert list: 1 Factory setting: 12.000 [°]
p9365	SI Motion SDI delay time (Motor Module) / SI Mtn SDI t MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [µs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 600000000.00 [µs]	Access level: 3 Function diagram: 2824 Unit selection: - Expert list: 1 Factory setting: 100000.00 [µs]
p9366	SI Motion SDI Stop response (Motor Module) / SI Mtn SDI Stop MM		
HLA_DBSI	Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 14	Access level: 3 Function diagram: 2824 Unit selection: - Expert list: 1 Factory setting: 1
p9366	SI Motion SDI Stop response (Motor Module) / SI Mtn SDI Stop MM		
SERVO_DBSI	Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 14	Access level: 3 Function diagram: 2824 Unit selection: - Expert list: 1 Factory setting: 1

p9367	SI Motion switchover velocity to SOS/SLS level (MM) / SI Mtn v_SOS/SG MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	1000.00 [mm/min]	0.00 [mm/min]

p9367	SI Motion switchover velocity to SOS/SLS level (MM) / SI Mtn v_SOS/SG MM		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	1000.00 [rpm]	0.00 [rpm]

p9368	SI Motion SAM/SBR velocity limit (Motor Module) / SI Mtn SAM v_limMM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	1000.00 [mm/min]	0.00 [mm/min]

p9368	SI Motion SAM/SBR velocity limit (Motor Module) / SI Mtn SAM v_limMM		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	1000.00 [rpm]	0.00 [rpm]

p9369	SI Motion transition time to SOS/SLS level after standstill (MM) / SI Mtn t SOS/SG MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	10000000.00 [μs]	100000.00 [μs]

p9370	SI Motion acceptance test mode (Motor Module) / SI Mtn acc_mod MM		
HLA_DBSI, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0000 hex	00AC hex	0000 hex

r9371	SI Motion acceptance test status (Motor Module) / SI Mtn acc_stat MM		
HLA_DBSI, SERVO_DBSI	Can be changed: - Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 00AC hex	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p9374	SI Motion safe position scaling (Motor Module) / SI mtn SP scal MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: Integer32 P-Group: Safety Integrated Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1000
p9376	SI Motion SLA filter time (MM) / SI Mtn SLA filt MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [μs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 500000.00 [μs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [μs]
p9377	SI Motion SLP delay time (Motor Module) / SI mtn SLP t MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [μs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 600000000.00 [μs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [μs]
p9378	SI Motion SLA acceleration limit (MM) / SI Mtn SLA lim_MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [m/s ²]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [m/s ²]	Access level: 3 Function diagram: 2838 Unit selection: - Expert list: 1 Factory setting: 1.00 [m/s ²]
p9378	SI Motion SLA acceleration limit (MM) / SI Mtn SLA lim_MM		
SERVO_DBSI (Safety rot)	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [rev/s ²]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [rev/s ²]	Access level: 3 Function diagram: 2838 Unit selection: - Expert list: 1 Factory setting: 1.00 [rev/s ²]

p9379	SI Motion SLA stop response (Motor Module) / SI Mtn SLA stop MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 2838
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	14	1

p9380	SI Motion stop response delay bus failure (Motor Module) / SI Mtn t to IL MM		
HLA_840, SERVO_840	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	800000.00 [μs]	0.00 [μs]

p9380	SI Motion stop response delay bus failure (Motor Module) / SI Mtn t to IL MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	800000.00 [μs]	0.00 [μs]

p9381	SI Motion brake ramp reference value (Motor Module) / SI Mtn ramp ref MM		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	600.0000 [mm/min]	1000000.0000 [mm/min]	1500.0000 [mm/min]

p9381	SI Motion brake ramp reference value (Motor Module) / SI Mtn ramp ref MM		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	600.0000 [rpm]	1000000.0000 [rpm]	1500.0000 [rpm]

p9382	SI Motion brake ramp delay time (Motor Module) / SI Mtn rp t_del MM		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	10000.00 [μs]	99000000.00 [μs]	250000.00 [μs]

p9383	SI Motion brake ramp monitoring time (Motor Module) / SI Mtn rp t_mon MM
SERVO_DBSI	Can be changed: C2(95) Calculated: - Access level: 3 Data type: FloatingPoint32 Dynamic index: - Function diagram: - P-Group: Safety Integrated Unit group: - Unit selection: - Not for motor type: - Scaling: - Expert list: 1 Min: Max: Factory setting: 500.00 [ms] 3600000.00 [ms] 10000.00 [ms]
p9385	SI Motion actual value sensing sensorless fault tolerance (MM) / ActV sl tol MM
SERVO_DBSI	Can be changed: C2(95) Calculated: - Access level: 3 Data type: Integer32 Dynamic index: - Function diagram: - P-Group: Safety Integrated Unit group: - Unit selection: - Not for motor type: - Scaling: - Expert list: 1 Min: Max: Factory setting: -1 4 -1
p9386	SI Motion actual value sensing sensorless delay time (MM) / ActV sl t_del MM
SERVO_DBSI	Can be changed: C2(95) Calculated: - Access level: 3 Data type: FloatingPoint32 Dynamic index: - Function diagram: - P-Group: Safety Integrated Unit group: - Unit selection: - Not for motor type: - Scaling: - Expert list: 1 Min: Max: Factory setting: 5.00 [ms] 1000.00 [ms] 100.00 [ms]
p9387	SI Motion actual value sensing sensorless filter time (MM) / ActV sl t_filt MM
SERVO_DBSI	Can be changed: C2(95) Calculated: - Access level: 3 Data type: FloatingPoint32 Dynamic index: - Function diagram: - P-Group: Safety Integrated Unit group: - Unit selection: - Not for motor type: - Scaling: - Expert list: 1 Min: Max: Factory setting: 0.00 [μs] 100000.00 [μs] 25000.00 [μs]
p9388	SI Motion actual value sensing sensorless minimum current (MM) / ActV sl I_min MM
SERVO_DBSI	Can be changed: C2(95) Calculated: - Access level: 3 Data type: FloatingPoint32 Dynamic index: - Function diagram: - P-Group: Safety Integrated Unit group: - Unit selection: - Not for motor type: - Scaling: - Expert list: 1 Min: Max: Factory setting: 0.00 [%] 1000.00 [%] 10.00 [%]
p9389	SI Motion actual value sensing sensorless accel. limit (MM) / ActV sl a_lim MM
SERVO_DBSI	Can be changed: C2(95) Calculated: - Access level: 3 Data type: FloatingPoint32 Dynamic index: - Function diagram: - P-Group: Safety Integrated Unit group: - Unit selection: - Not for motor type: - Scaling: - Expert list: 1 Min: Max: Factory setting: 10.00 [%] 3300.00 [%] 100.00 [%]

r9390[0...3] SI Motion version safety motion monitoring (Motor Module) / SI Mtn version MM

HLA_DBSI, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

r9398[0...1] SI Motion actual checksum SI parameters (Motor Module) / SI Mtn act CRC MM

HLA_DBSI, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

p9399[0...1] SI Motion reference checksum SI parameters (Motor Module) / SI Mtn set CRC MM

HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0000 hex	Max: FFFF FFFF hex	Factory setting: 0000 hex

r9406[0...19] PS file parameter number parameter not transferred / PS par_no n transf

All objects	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

r9407[0...19] PS file parameter index parameter not transferred / PS parameter index

All objects	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

r9408[0...19] PS file fault code parameter not transferred / PS fault code

All objects	Can be changed: -	Calculated: -	Access level: 1
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: -

r9409	Number of parameters to be saved / Qty par to save		
All objects	Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9450[0...29]	Reference value change parameter with unsuccessful calculation / Ref_chg par n poss		
A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9451[0...29]	Units changeover adapted parameters / Unit_chgov par		
A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9481	Number of BICO interconnections / BICO count		
A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
r9482[0...n]	BICO interconnections BI/CI parameters / BICO BI/CI par		
A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: r9481 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -

4.2 SINAMICS parameters

r9483[0...n]	BICO interconnections BO/CO parameters / BICO BO/CO par		
A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: r9481 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
p9484	BICO interconnections search signal source / BICO s_s srch		
A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: T, U Data type: Unsigned32 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
r9485	BICO interconnections signal source search count / BICO s_s srch qty		
A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
r9486	BICO interconnections signal source search first index / BICO s_s srch idx		
A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: - Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
r9490	Number of BICO interconnections to other drives / Qty BICO to drive		
All objects	Can be changed: - Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r9491[0...9]	BI/CI of BICO interconnections to other drives / BI/CI to drive		
All objects	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9492[0...9]	BO/CO of BICO interconnections to other drives / BO/CO to drive		
All objects	Can be changed: - Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p9493[0...9]	Reset BICO interconnections to other drives / Reset BICO to drv		
All objects	Can be changed: T Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 15	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 15
p9495	BICO behavior for deactivated drive objects / Behav for deact DO		
A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: T Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9496	BICO behavior when activating drive objects / Behav when act DO		
A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: T Data type: Integer16 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

4.2 SINAMICS parameters

p9497	BICO interconnections to deactivated drive objects number / Interconn obj qty		
A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: T Data type: Unsigned16 P-Group: Commands Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p9498[0...29]	BICO BI/CI parameters to deactivated drive objects / BI/CI to deact obj		
A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: T Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p9499[0...29]	BICO BO/CO parameters to deactivated drive objects / BO/CO to deact obj		
A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41	Can be changed: T Data type: Unsigned32 P-Group: Commands Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p9500	SI Motion monitoring clock cycle (Control Unit) / SI Mtn clock CU		
HLA_840, SERVO_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.50000 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 25.00000 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 12.00000 [ms]

p9500	SI Motion monitoring clock cycle (Control Unit) / SI Mtn clock CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.50000 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 25.00000 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 12.00000 [ms]

p9501	SI Motion enable safety functions (Control Unit) / SI Mtn enable CU		
HLA_840, SERVO_840	Can be changed: T, U Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 0000 bin
p9501	SI Motion enable safety functions (Control Unit) / SI Mtn enable CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 0000 bin
p9502	SI Motion axis type (Control Unit) / SI Mtn ax type CU		
HLA_840, SERVO_840	Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9502	SI Motion axis type (Control Unit) / SI Mtn ax type CU		
SERVO_DBSI	Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9503	SI Motion SCA (SN) enable (Control Unit) / SI Mtn SCA enab		
HLA_840, SERVO_840	Can be changed: T, U Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 0000 bin

p9503	SI Motion SCA (SN) enable (Control Unit) / SI Mtn SCA enab		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 0000 0000 0000 0000 bin
p9505	SI Motion SCA (SN) modulo value (Control Unit) / SI Mtn SCA modulo		
HLA_840, SERVO_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 737280 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [°]
p9505	SI Motion SP modulo value (Control Unit) / SI mtn SP mod CU		
SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 737280 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0 [°]
p9506	SI Motion function specification (Control Unit) / SI Mtn fct_spc CU		
HLA_DBSI	Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9506	SI Motion function specification (Control Unit) / SI Mtn fct_spc CU		
SERVO_DBSI	Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9507	SI Motion function specification (Control Unit) / SI Mtn config CU		
HLA_DBSI	Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0010 bin

p9507	SI Motion function specification (Control Unit) / SI Mtn config CU		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0010 bin
p9509	SI Motion behavior during pulse suppression (Control Unit) / SI Mtn behav IL CU		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 1111 1111 bin
p9510	SI Motion isochronous PROFIBUS master / SI Mtn sync master		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 4
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0
p9511	SI Motion actual value sensing cycle clock (Control Unit) / SI Mtn act clk CU		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00000 [ms]	25.00000 [ms]	0.00000 [ms]
p9511	SI Motion actual value sensing cycle clock (Control Unit) / SI Mtn act clk CU		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00000 [ms]	25.00000 [ms]	0.00000 [ms]
p9512	Select SI Motion safety functions without selection (CU) / SI Mtn w/o sel CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0001 0000 bin

p9513	SI Motion non safety-relevant measuring steps POS1 (CU) / nsrPOS1 CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	4294967295	22000

p9513	SI Motion non safety-relevant measuring steps POS1 (CU) / nsrPOS1 CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	4294967295	22000

p9514	SI Motion absolute encoder linear measuring steps (CU) / EncLinMeasStep CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0 [nm]	4294967295 [nm]	100 [nm]

p9514	SI Motion absolute encoder linear measuring steps (CU) / EncLinMeasStep CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0 [nm]	4294967295 [nm]	100 [nm]

p9515	SI Motion encoder coarse position value config (Control Unit) / SI Mtn s config CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0000 0000 0000 0000 0000 0000 bin

p9515	SI Motion encoder coarse position value config (Control Unit) / SI Mtn s config CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 0000 0000 0000 0000 0000 0000 bin

p9516	SI Motion encoder configuration safety functions (Control Unit) / SI Mtn enc_conf CU		
HLA_DBSI	Can be changed: C2(95) Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0001 bin
p9516	SI Motion encoder configuration safety functions (Control Unit) / SI Mtn enc_conf CU		
HLA_840, SERVO_840	Can be changed: T, U Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 bin
p9516	SI Motion encoder configuration safety functions (Control Unit) / SI Mtn enc_conf CU		
SERVO_DBSI	Can be changed: C2(95) Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 bin
p9517	SI Motion linear encoder grid division (Control Unit) / SI Mtn grid CU		
HLA_840, SERVO_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [nm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 250000000.00 [nm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10000.00 [nm]
p9517	SI Motion linear encoder grid division (Control Unit) / SI Mtn grid CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [nm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 250000000.00 [nm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10000.00 [nm]
p9518	SI Motion encoder pulses per revolution (Control Unit) / SI Mtn puls/rev CU		
HLA_840, SERVO_840	Can be changed: T, U Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16777215	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 2048

p9518	SI Motion encoder pulses per revolution (Control Unit) / SI Mtn puls/rev CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	16777215	2048

p9519	SI Motion fine resolution G1_XIST1 (Control Unit) / SI Mtn G1_XIST1 CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	2	18	11

p9519	SI Motion fine resolution G1_XIST1 (Control Unit) / SI Mtn G1_XIST1 CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	2	18	11

p9520	SI Motion spindle pitch (Control Unit) / SI Mtn sp_pitch CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.1000 [mm]	8388.0000 [mm]	10.0000 [mm]

p9520	SI Motion spindle pitch (Control Unit) / SI Mtn sp_pitch CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.1000 [mm]	8388.0000 [mm]	10.0000 [mm]

p9521[0...7]	SI Motion gearbox encoder/load denominator (Control Unit) / SI Mtn grbx den CU		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1	2147000000	1

p9521[0...7] HLA_840, SERVO_840	SI Motion gearbox encoder/load denominator (Control Unit) / SI Mtn grbx den CU Can be changed: T, U Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147000000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p9521[0...7] SERVO_DBSI	SI Motion gearbox enc (motor)/load denominator (Control Unit) / SI Mtn grbx den CU Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147000000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p9522[0...7] HLA_DBSI	SI Motion gearbox encoder/load numerator (Control Unit) / SI Mtn grbx num CU Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147000000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p9522[0...7] HLA_840, SERVO_840	SI Motion gearbox encoder/load numerator (Control Unit) / SI Mtn grbx num CU Can be changed: T, U Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147000000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p9522[0...7] SERVO_DBSI	SI Motion gearbox encoder (motor)/load numerator (Control Unit) / SI Mtn grbx num CU Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2147000000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p9523 HLA_840, SERVO_840	SI Motion redundant coarse pos. value valid bits (Control Unit) / Valid bits CU Can be changed: T, U Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 9

p9523	SI Motion redundant coarse pos. value valid bits (Control Unit) / Valid bits CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	16	9
p9524	SI Motion Redundant coarse pos. value fine resolution bits (CU) / SI Mtn fine bit CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-16	16	-2
p9524	SI Motion Redundant coarse pos. value fine resolution bits (CU) / SI Mtn fine bit CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-16	16	-2
p9525	SI Motion Redundant coarse pos. value relevant bits (CU) / Relevant bits CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	16	16
p9525	SI Motion Redundant coarse pos. value relevant bits (CU) / Relevant bits CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	16	16
p9526	SI Motion encoder assignment second channel / SI Mtn enc chan 2		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1	3	2

p9526	SI Motion encoder assignment second channel / SI Mtn enc chan 2		
HLA_840, SERVO_840	Can be changed: T, U Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p9526	SI Motion encoder assignment second channel / SI Mtn enc chan 2		
SERVO_DBSI	Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p9529	SI Motion Gx_XIST1 coarse pos. safe most significant bit (CU) / Gx_XIST1 MSB CU		
HLA_840, SERVO_840	Can be changed: T, U Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 31	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 14
p9529	SI Motion Gx_XIST1 coarse pos. safe most significant bit (CU) / Gx_XIST1 MSB CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 31	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 14
p9530	SI Motion standstill tolerance (Control Unit) / SI Mtn standst_tol		
HLA_840, SERVO_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.000 [mm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.000 [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.000 [mm]
p9530	SI Motion standstill tolerance (Control Unit) / SI Mtn standst_tol		
SERVO_840 (Safety rot)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.000 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.000 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.000 [°]

p9530 SI Motion standstill tolerance (Control Unit) / SI Mtn standst_tol			
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.000 [mm]	Max: 100.000 [mm]	Factory setting: 1.000 [mm]

p9530 SI Motion standstill tolerance (Control Unit) / SI Mtn standst_tol			
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.000 [°]	Max: 100.000 [°]	Factory setting: 1.000 [°]

p9531[0...3] SI Motion SLS (SG) limit values (Control Unit) / SI Mtn SLS lim CU			
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.00 [mm/min]	Max: 1000000.00 [mm/min]	Factory setting: 2000.00 [mm/min]

p9531[0...3] SI Motion SLS (SG) limit values (Control Unit) / SI Mtn SLS lim CU			
SERVO_840 (Safety rot)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.00 [rpm]	Max: 1000000.00 [rpm]	Factory setting: 2000.00 [rpm]

p9531[0...3] SI Motion SLS (SG) limit values (Control Unit) / SI Mtn SLS lim CU			
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.00 [mm/min]	Max: 1000000.00 [mm/min]	Factory setting: 2000.00 [mm/min]

p9531[0...3] SI Motion SLS (SG) limit values (Control Unit) / SI Mtn SLS lim CU			
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0.00 [rpm]	Max: 1000000.00 [rpm]	Factory setting: 2000.00 [rpm]

p9532[0...15]	SI Motion SLS (SG) override factor (Control Unit) / SI Mtn SLS over CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000 [%]	100.000 [%]	100.000 [%]
p9532[0...15]	SI Motion SLS (SG) override factor (Control Unit) / SI Mtn SLS over CU		
HLA_DBSI, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000 [%]	100.000 [%]	100.000 [%]
p9533	SI Motion SLS setpoint speed limiting (Control Unit) / SI Mtn SLS set_lim		
HLA_840, HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000 [%]	100.000 [%]	80.000 [%]
p9533	SI Motion SLS setpoint speed limiting (Control Unit) / SI Mtn SLS set_lim		
SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.000 [%]	100.000 [%]	80.000 [%]
p9534[0...1]	SI Motion SLP (SE) upper limit values (Control Unit) / SI Mtn SLP up lim		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2822
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [mm]	2147000.000 [mm]	100000.000 [mm]
p9534[0...1]	SI Motion SLP (SE) upper limit values (Control Unit) / SI Mtn SLP up lim		
SERVO_840 (Safety rot)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2822
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [°]	2147000.000 [°]	100000.000 [°]

p9534[0...1]	SI Motion SLP (SE) upper limit values (Control Unit) / SI Mtn SLP up lim		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2822
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [mm]	2147000.000 [mm]	100000.000 [mm]

p9534[0...1]	SI Motion SLP (SE) upper limit values (Control Unit) / SI Mtn SLP up lim		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2822
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [°]	2147000.000 [°]	100000.000 [°]

p9535[0...1]	SI Motion SLP (SE) lower limit values (Control Unit) / SI Mtn SLP low lim		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2822
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [mm]	2147000.000 [mm]	-100000.000 [mm]

p9535[0...1]	SI Motion SLP (SE) lower limit values (Control Unit) / SI Mtn SLP low lim		
SERVO_840 (Safety rot)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2822
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [°]	2147000.000 [°]	-100000.000 [°]

p9535[0...1]	SI Motion SLP (SE) lower limit values (Control Unit) / SI Mtn SLP low lim		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2822
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [mm]	2147000.000 [mm]	-100000.000 [mm]

p9535[0...1]	SI Motion SLP (SE) lower limit values (Control Unit) / SI Mtn SLP low lim		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2822
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [°]	2147000.000 [°]	-100000.000 [°]

p9536[0...29]	SI Motion SCA (SN) plus cam position (Control Unit) / SI Mtn SCA+		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [mm]	2147000.000 [mm]	10.000 [mm]
p9536[0...29]	SI Motion SCA (SN) plus cam position (Control Unit) / SI Mtn SCA+		
SERVO_840 (Safety rot)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [°]	2147000.000 [°]	10.000 [°]
p9536[0...29]	SI Motion SCA (SN) plus cam position (Control Unit) / SI Mtn SCA+		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [mm]	2147000.000 [mm]	10.000 [mm]
p9536[0...29]	SI Motion SCA (SN) plus cam position (Control Unit) / SI Mtn SCA+		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [°]	2147000.000 [°]	10.000 [°]
p9537[0...29]	SI Motion SCA (SN) minus cam position (Control Unit) / SI Mtn SCA-		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [mm]	2147000.000 [mm]	-10.000 [mm]
p9537[0...29]	SI Motion SCA (SN) minus cam position (Control Unit) / SI Mtn SCA-		
SERVO_840 (Safety rot)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [°]	2147000.000 [°]	-10.000 [°]

p9537[0...29]	SI Motion SCA (SN) minus cam position (Control Unit) / SI Mtn SCA-		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [mm]	2147000.000 [mm]	-10.000 [mm]

p9537[0...29]	SI Motion SCA (SN) minus cam position (Control Unit) / SI Mtn SCA-		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-2147000.000 [°]	2147000.000 [°]	-10.000 [°]

p9538[0...29] SI Motion SCA (SN) cam track assignment (Control Unit) / SI Mtn SCA assign			
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	100	414	[0] 100
			[1] 101
			[2] 102
			[3] 103
			[4] 104
			[5] 105
			[6] 106
			[7] 107
			[8] 108
			[9] 109
			[10] 110
			[11] 111
			[12] 112
			[13] 113
			[14] 114
			[15] 200
			[16] 201
			[17] 202
			[18] 203
			[19] 204
			[20] 205
			[21] 206
			[22] 207
			[23] 208
			[24] 209
			[25] 210
			[26] 211
			[27] 212
			[28] 213
			[29] 214

p9538[0...29] SI Motion SCA (SN) cam track assignment (Control Unit) / SI Mtn SCA assign			
SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	100	414	[0] 100
			[1] 101
			[2] 102
			[3] 103
			[4] 104
			[5] 105
			[6] 106
			[7] 107
			[8] 108
			[9] 109
			[10] 110
			[11] 111
			[12] 112
			[13] 113
			[14] 114
			[15] 200
			[16] 201
			[17] 202
			[18] 203
			[19] 204
			[20] 205
			[21] 206
			[22] 207
			[23] 208
			[24] 209
			[25] 210
			[26] 211
			[27] 212
			[28] 213
			[29] 214
p9539[0...7] SI Motion gearbox direction of rotation reversal (Control Unit) / SI Mtn grbx rev CU			
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0

p9539[0...7] SI Motion gearbox direction of rotation reversal (Control Unit) / SI Mtn grbx rev CU

HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0

p9540 SI Motion SCA (SN) tolerance (Control Unit) / SI Mtn SCA tol CU

HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [mm]	10.0000 [mm]	0.1000 [mm]

p9540 SI Motion SCA (SN) tolerance (Control Unit) / SI Mtn SCA tol CU

SERVO_840 (Safety rot)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [°]	10.0000 [°]	0.1000 [°]

p9540 SI Motion SCA (SN) tolerance (Control Unit) / SI Mtn SCA tol CU

HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [mm]	10.0000 [mm]	0.1000 [mm]

p9540 SI Motion SCA (SN) tolerance (Control Unit) / SI Mtn SCA tol CU

SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [°]	10.0000 [°]	0.1000 [°]

p9541 SI Motion encoder comparison algorithm (CU) / Enc comp algo

HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	255	255

p9541	SI Motion encoder comparison algorithm (CU) / Enc comp algo		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	255	255
p9542	SI Motion act val comparison tol (cross-check) (Control Unit) / SI Mtn act tol CU		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [mm]	360.0000 [mm]	0.1000 [mm]
p9542	SI Motion act val comparison tol (cross-check) (Control Unit) / SI Mtn act tol CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [mm]	360.0000 [mm]	0.1000 [mm]
p9542	SI Motion act val comparison tol (cross-check) (Control Unit) / SI Mtn act tol CU		
SERVO_840 (Safety rot)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [°]	360.0000 [°]	0.1000 [°]
p9542	SI Motion act val comparison tol (cross-check) (Control Unit) / SI Mtn act tol CU		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [mm]	360.0000 [mm]	0.1000 [mm]
p9542	SI Motion act val comparison tol (cross-check) (Control Unit) / SI Mtn act tol CU		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [°]	360.0000 [°]	0.1000 [°]

p9543 SI Motion gearbox switching position tolerance factor (CU) / SI Mtn grbx tol CU

HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1	1000	1

p9544 SI Motion actual value comparison tolerance (referencing) (CU) / SI Mtn ref tol

HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0000 [mm]	36.0000 [mm]	0.0100 [mm]

p9544 SI Motion actual value comparison tolerance (referencing) (CU) / SI Mtn ref tol

SERVO_840 (Safety rot)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0000 [°]	36.0000 [°]	0.0100 [°]

p9544 SI Motion actual value comparison tolerance (referencing) (CU) / SI Mtn ref tol

HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0000 [mm]	36.0000 [mm]	0.0100 [mm]

p9544 SI Motion actual value comparison tolerance (referencing) (CU) / SI Mtn ref tol

SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0000 [°]	36.0000 [°]	0.0100 [°]

p9545 SI Motion SSM (SGA n < nx) filter time (Control Unit) / SI Mtn SSM filt CU

HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2823
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	500.00 [ms]	0.00 [ms]

p9545	SI Motion SSM (SGA n < nx) filter time (Control Unit) / SI Mtn SSM flt CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2823
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	500.00 [ms]	0.00 [ms]

p9546	SI Motion SSM (SGA n < nx) speed limit (CU) / SI Mtn SSM n_limCU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2823
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	1000000.00 [mm/min]	20.00 [mm/min]

p9546	SI Motion SSM (SGA n < nx) speed limit (CU) / SI Mtn SSM n_limCU		
SERVO_840 (Safety rot)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2823
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	1000000.00 [rpm]	20.00 [rpm]

p9546	SI Motion SSM (SGA n < nx) speed limit (CU) / SI Mtn SSM n_limCU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2823
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	1000000.00 [mm/min]	20.00 [mm/min]

p9546	SI Motion SSM (SGA n < nx) speed limit (CU) / SI Mtn SSM n_limCU		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2823
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	1000000.00 [rpm]	20.00 [rpm]

p9547	SI Motion SSM (SGA n < nx) velocity hysteresis (CU) / SI Mtn SSM hyst CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2823
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [mm/min]	500.0000 [mm/min]	10.0000 [mm/min]

p9547	SI Motion SSM (SGA n < nx) velocity hysteresis (CU) / SI Mtn SSM hyst CU		
SERVO_840 (Safety rot)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2823
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [rpm]	500.0000 [rpm]	10.0000 [rpm]

p9547	SI Motion SSM (SGA n < nx) velocity hysteresis (CU) / SI Mtn SSM hyst CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2823
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [mm/min]	500.0000 [mm/min]	10.0000 [mm/min]

p9547	SI Motion SSM (SGA n < nx) velocity hysteresis (CU) / SI Mtn SSM hyst CU		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2823
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.0010 [rpm]	500.0000 [rpm]	10.0000 [rpm]

p9548	SI Motion SAM actual speed tolerance (Control Unit) / SI Mtn SAM tol CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	120000.00 [mm/min]	300.00 [mm/min]

p9548	SI Motion SAM actual speed tolerance (Control Unit) / SI Mtn SAM tol CU		
SERVO_840 (Safety rot)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	120000.00 [rpm]	300.00 [rpm]

p9548	SI Motion SAM actual speed tolerance (Control Unit) / SI Mtn SAM tol CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	120000.00 [mm/min]	300.00 [mm/min]

p9548	SI Motion SAM actual speed tolerance (Control Unit) / SI Mtn SAM tol CU		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	120000.00 [rpm]	300.00 [rpm]
p9549	SI Motion slip velocity tolerance (Control Unit) / SI Mtn slip tol		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	6000.00 [mm/min]	6.00 [mm/min]
p9549	SI Motion slip velocity tolerance (Control Unit) / SI Mtn slip tol		
SERVO_840 (Safety rot)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	6000.00 [rpm]	6.00 [rpm]
p9549	SI Motion slip velocity tolerance (Control Unit) / SI Mtn slip tol		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	6000.00 [mm/min]	6.00 [mm/min]
p9549	SI Motion slip velocity tolerance (Control Unit) / SI Mtn slip tol		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	6000.00 [rpm]	6.00 [rpm]
p9550	SI Motion SGE changeover tolerance time (Control Unit) / SI Mtn SGE chg tol		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	10000.00 [ms]	500.00 [ms]

p9550	SI Motion SGE changeover tolerance time (Control Unit) / SI Mtn SGE chg tol		
HLA_DBSI, SERVO_DBSI	Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000.00 [ms]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 500.00 [ms]
p9551	SI Motion SLS(SG) changeover/SOS (SBH) delay time (CU) / SI SLS/SOS t CU		
HLA_840, SERVO_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 600000.00 [ms]	Access level: 3 Function diagram: 2819, 2820 Unit selection: - Expert list: 1 Factory setting: 100.00 [ms]
p9551	SI Motion SLS(SG) changeover/SOS (SBH) delay time (CU) / SI SLS/SOS t CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 600000.00 [ms]	Access level: 3 Function diagram: 2819, 2820 Unit selection: - Expert list: 1 Factory setting: 100.00 [ms]
p9552	SI Motion transition time STOP C to SOS (SBH) (Control Unit) / SI Mtn t C->SOS CU		
HLA_840, SERVO_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 600000.00 [ms]	Access level: 3 Function diagram: 2819 Unit selection: - Expert list: 1 Factory setting: 100.00 [ms]
p9552	SI Motion transition time STOP C to SOS (SBH) (Control Unit) / SI Mtn t C->SOS CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 600000.00 [ms]	Access level: 3 Function diagram: 2819 Unit selection: - Expert list: 1 Factory setting: 100.00 [ms]
p9553	SI Motion transition time STOP D to SOS (SBH) (Control Unit) / SI Mtn t D->SOS CU		
HLA_840, SERVO_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 600000.00 [ms]	Access level: 3 Function diagram: 2819 Unit selection: - Expert list: 1 Factory setting: 100.00 [ms]

p9553	SI Motion transition time STOP D to SOS (SBH) (Control Unit) / SI Mtn t D->SOS CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2819
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	600000.00 [ms]	100.00 [ms]
p9554	SI Motion transition time STOP E to SOS (SBH) (Control Unit) / SI Mtn t E->SOS CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	600000.00 [ms]	100.00 [ms]
p9554	SI Motion transition time STOP E to SOS (SBH) (Control Unit) / SI Mtn t E->SOS CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	600000.00 [ms]	100.00 [ms]
p9555	SI Motion transition time STOP F to STOP B (Control Unit) / SI Mtn t F->B CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2819
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	600000.00 [ms]	0.00 [ms]
p9555	SI Motion transition time STOP F to STOP B (Control Unit) / SI Mtn t F->B CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2819
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	600000.00 [ms]	0.00 [ms]
p9556	SI Motion STOP A delay time (Control Unit) / SI Mtn IL t_del CU		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2819
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	3600000.00 [ms]	100.00 [ms]

p9556 HLA_840, SERVO_840	SI Motion STOP A delay time (Control Unit) / SI Mtn IL t_del CU Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3600000.00 [ms]	Access level: 3 Function diagram: 2819 Unit selection: - Expert list: 1 Factory setting: 100.00 [ms]
p9556 SERVO_DBSI	SI Motion STOP A delay time (Control Unit) / SI Mtn IL t_del CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3600000.00 [ms]	Access level: 3 Function diagram: 2819 Unit selection: - Expert list: 1 Factory setting: 100.00 [ms]
p9557 HLA_840	SI Motion STO test time (Control Unit) / SI Mtn STO t_test Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 500.00 [ms]
p9557 HLA_DBSI	SI Motion STO test time (Control Unit) / SI Mtn STO t_test Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 500.00 [ms]
p9557 SERVO_840	SI Motion STO test time (Control Unit) / SI Mtn STO t_test Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [ms]
p9557 SERVO_DBSI	SI Motion STO test time (Control Unit) / SI Mtn STO t_test Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [ms]

p9558	SI Motion acceptance test mode time limit (Control Unit) / SI Mtn acc t CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	5000.00 [ms]	100000.00 [ms]	40000.00 [ms]

p9558	SI Motion acceptance test mode time limit (Control Unit) / SI Mtn acc t CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	5000.00 [ms]	100000.00 [ms]	40000.00 [ms]

p9559	SI Motion forced checking procedure timer (Control Unit) / SI Mtn dyn timer		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [h]	9000.00 [h]	8.00 [h]

p9560	SI Motion STO shutdown velocity (Control Unit) / SI Mtn IL v_sh CU		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	6000.00 [mm/min]	0.00 [mm/min]

p9560	SI Motion STO shutdown velocity (Control Unit) / SI Mtn IL v_sh CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	6000.00 [mm/min]	0.00 [mm/min]

p9560	SI Motion pulse suppression shutdown speed (Control Unit) / SI Mtn IL n_sh CU		
SERVO_840 (Safety rot)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	6000.00 [rpm]	0.00 [rpm]

p9560 SERVO_DBSI	SI Motion STO shutdown velocity (Control Unit) / SI Mtn IL v_sh CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [mm/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6000.00 [mm/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [mm/min]
p9560 SERVO_DBSI (Safety rot)	SI Motion pulse suppression shutdown speed (Control Unit) / SI Mtn IL n_sh CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [rpm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6000.00 [rpm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [rpm]
p9561 HLA_840, SERVO_840	SI Motion SLS (SG) stop response (Control Unit) / SI Mtn SLS resp Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 14	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 5
p9561 HLA_DBSI, SERVO_DBSI	SI Motion SLS (SG) stop response (Control Unit) / SI Mtn SLS resp Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 14	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 5
p9562[0...1] HLA_840, SERVO_840	SI Motion SLP (SE) stop response (Control Unit) / SI Mtn SLP Stop CU Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 2	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 2
p9562[0...1] HLA_DBSI, SERVO_DBSI	SI Motion SLP (SE) stop response (Control Unit) / SI Mtn SLP Stop CU Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 14	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 2

p9563[0...3] HLA_DBSI	SI Motion SLS (SG)-specific stop response (Control Unit) / SI Mtn SLS stop CU		
	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	14	2
p9563[0...3] HLA_840, SERVO_840	SI Motion SLS (SG)-specific stop response (Control Unit) / SI Mtn SLS stop CU		
	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	14	2
p9563[0...3] SERVO_DBSI	SI Motion SLS (SG)-specific stop response (Control Unit) / SI Mtn SLS stop CU		
	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	14	2
p9564 HLA_840, SERVO_840	SI Motion SDI tolerance (Control Unit) / SI Mtn SDI tol CU		
	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2824
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001 [mm]	360.000 [mm]	12.000 [mm]
p9564 SERVO_840 (Safety rot)	SI Motion SDI tolerance (Control Unit) / SI Mtn SDI tol CU		
	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2824
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001 [°]	360.000 [°]	12.000 [°]
p9564 HLA_DBSI, SERVO_DBSI	SI Motion SDI tolerance (Control Unit) / SI Mtn SDI tol CU		
	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2824
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001 [mm]	360.000 [mm]	12.000 [mm]

p9564 SERVO_DBSI (Safety rot)	SI Motion SDI tolerance (Control Unit) / SI Mtn SDI tol CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.001 [°] Max: 360.000 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 360.000 [°]	Access level: 3 Function diagram: 2824 Unit selection: - Expert list: 1 Factory setting: 12.000 [°]
p9565 HLA_840, SERVO_840	SI Motion SDI delay time (Control Unit) / SI Mtn SDI t CU Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms] Max: 600000.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 600000.00 [ms]	Access level: 4 Function diagram: 2824 Unit selection: - Expert list: 1 Factory setting: 100.00 [ms]
p9565 HLA_DBSI, SERVO_DBSI	SI Motion SDI delay time (Control Unit) / SI Mtn SDI t CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms] Max: 600000.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 600000.00 [ms]	Access level: 3 Function diagram: 2824 Unit selection: - Expert list: 1 Factory setting: 100.00 [ms]
p9566 HLA_DBSI	SI Motion SDI stop response (Control Unit) / SI Mtn SDI Stop CU Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0 Max: 14	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 14	Access level: 3 Function diagram: 2824 Unit selection: - Expert list: 1 Factory setting: 1
p9566 HLA_840, SERVO_840	SI Motion SDI stop response (Control Unit) / SI Mtn SDI Stop CU Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0 Max: 14	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 14	Access level: 4 Function diagram: 2824 Unit selection: - Expert list: 1 Factory setting: 1
p9566 SERVO_DBSI	SI Motion SDI stop response (Control Unit) / SI Mtn SDI Stop CU Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0 Max: 14	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 14	Access level: 3 Function diagram: 2824 Unit selection: - Expert list: 1 Factory setting: 1

p9567	SI Motion switchover velocity to SOS/SLS level (CU) / SI Mtn v_SOS/SG CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	1000.00 [mm/min]	0.00 [mm/min]

p9567	SI Motion switchover velocity to SOS/SLS level (CU) / SI Mtn v_SOS/SG CU		
HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	1000.00 [mm/min]	0.00 [mm/min]

p9567	SI Motion switchover velocity to SOS/SLS level (CU) / SI Mtn v_SOS/SG CU		
SERVO_840 (Safety rot)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	1000.00 [rpm]	0.00 [rpm]

p9567	SI Motion switchover velocity to SOS/SLS level (CU) / SI Mtn v_SOS/SG CU		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	1000.00 [rpm]	0.00 [rpm]

p9568	SI Motion SAM/SBR velocity limit (Control Unit) / SI Mtn SAM v_limCU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [mm/min]	1000.00 [mm/min]	0.00 [mm/min]

p9568	SI Motion SAM/SBR velocity limit (Control Unit) / SI Mtn SAM v_limCU		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [rpm]	1000.00 [rpm]	0.00 [rpm]

p9569 SI Motion transition time to SOS/SLS level after standstill (CU) / SI Mtn t SOS/SG CU

HLA_840, SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	10000.00 [ms]	100.00 [ms]

p9569 SI Motion transition time to SOS/SLS level after standstill (CU) / SI Mtn t SOS/SG CU

HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	10000.00 [ms]	100.00 [ms]

p9570 SI Motion acceptance test mode (Control Unit) / SI Mtn acc_mode

HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0000 hex	00AC hex	0000 hex

r9571 SI Motion acceptance test status (Control Unit) / SI Mtn acc_status

HLA_DBSI, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0000 hex	00AC hex	-

p9572 SI Motion reference position (Control Unit) / SI mtn ref_pos

HLA_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-737280.000 [mm]	737280.000 [mm]	0.000 [mm]

p9572 SI Motion reference position (Control Unit) / SI mtn ref_pos

SERVO_DBSI	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-737280.000 [mm]	737280.000 [mm]	0.000 [mm]

p9572	SI Motion reference position (Control Unit) / SI mtn ref_pos		
SERVO_DBSI (Safety rot)	Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: -737280.000 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 737280.000 [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.000 [°]
p9573	SI Motion accept reference position (Control Unit) / SI mtn ref_pos		
HLA_DBSI, SERVO_DBSI	Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 263	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9574	SI Motion safe position scaling (Control Unit) / SI mtn SP scal CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: Integer32 P-Group: Safety Integrated Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100000	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1000
p9575	SI Motion acceptance test SLP (SE) (Control Unit) / SI Mtn accept SLP		
HLA_DBSI, SERVO_DBSI	Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 00AC hex	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
p9576	SI Motion SLA filter time (CU) / SI Mtn SLA filt CU		
HLA_840, HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 500.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p9577	SI Motion SLP delay time (Control Unit) / SI Mtn SLP t CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 600000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]

p9578	SI Motion SLA acceleration limit (CU) / SI Mtn SLA lim_CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [m/s ²]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [m/s ²]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.00 [m/s ²]
p9578	SI Motion SLA acceleration limit (CU) / SI Mtn SLA lim_CU		
SERVO_DBSI (Safety rot)	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [rev/s ²]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [rev/s ²]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1.00 [rev/s ²]
p9579	SI Motion SLA stop response (Control Unit) / SI Mtn SLA stop CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 14	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p9580	SI Motion stop response delay bus failure (Control Unit) / SI Mtn t to IL CU		
HLA_840, SERVO_840	Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 800.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p9580	SI Motion stop response delay bus failure (Control Unit) / SI Mtn t to IL CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 800.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p9581	SI Motion brake ramp reference value (Control Unit) / SI Mtn ramp ref CU		
SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 600.0000 [mm/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000000.0000 [mm/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1500.0000 [mm/min]

p9581 SERVO_DBSI (Safety rot)	SI Motion brake ramp reference value (Control Unit) / SI Mtn ramp ref CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 600.0000 [rpm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000000.0000 [rpm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1500.0000 [rpm]
p9582 SERVO_DBSI	SI Motion brake ramp delay time (Control Unit) / SI Mtn rp t_del CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 10.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 99000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 250.00 [ms]
p9583 SERVO_DBSI	SI Motion brake ramp monitoring time (Control Unit) / SI Mtn rp t_mon CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.50 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3600.00 [s]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10.00 [s]
p9585 SERVO_DBSI	SI Motion actual value sensing sensorless fault tolerance (CU) / ActV sl tol CU Can be changed: C2(95) Data type: Integer32 P-Group: Safety Integrated Not for motor type: - Min: -1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -1
p9586 SERVO_DBSI	SI Motion actual value sensing sensorless delay time (CU) / ActV sl t_del CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 5.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [ms]
p9587 HLA_840, SERVO_840	SI Motion actual value sensing sensorless filter time (CU) / ActV sl t_filt CU Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [ms]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 25.00 [ms]

p9587 SERVO_DBSI	SI Motion actual value sensing sensorless filter time (CU) / ActV sl t_filt CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 25.00 [ms]
p9588 HLA_840, SERVO_840	SI Motion actual value sensing sensorless minimum current (CU) / ActV sl I_min CU Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10.00 [%]
p9588 SERVO_DBSI	SI Motion actual value sensing sensorless minimum current (CU) / ActV sl I_min CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 10.00 [%]
p9589 HLA_840, SERVO_840	SI Motion act. value sensing sensorless acceleration limit (CU) / ActV sl a_lim CU Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 10.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3300.00 [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
p9589 SERVO_DBSI	SI Motion act. value sensing sensorless acceleration limit (CU) / ActV sl a_lim CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 10.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 3300.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 100.00 [%]
r9590[0...3] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI Motion version safety motion monitoring (Control Unit) / SI Mtn version CU Can be changed: - Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p9601 HLA_DBSI	SI enable functions integrated in the drive (Control Unit) / SI enable fct CU		
	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: 0000 0000 bin
p9601 HLA_840, SERVO_840	SI enable functions integrated in the drive (Control Unit) / SI enable fct CU		
	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: 0000 bin
p9601 SERVO_DBSI	SI enable functions integrated in the drive (Control Unit) / SI enable fct CU		
	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: -	Max: -	Factory setting: 0000 0000 bin
p9602 SERVO_840, SERVO_DBSI	SI enable Safe Brake Control (Control Unit) / SI enable SBC CU		
	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 2814
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0	Max: 1	Factory setting: 0
p9610 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI PROFIsafe address (Control Unit) / SI PROFIsafe CU		
	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0	Max: 65534	Factory setting: 0
p9611 HLA_DBSI, SERVO_DBSI	SI PROFIsafe telegram selection (Control Unit) / SI Ps telegram CU		
	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min: 0	Max: 998	Factory setting: 998

p9612	SI PROFIsafe failure response (Control Unit) / SI Ps fail CU		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9620[0...7]	BI: SI signal source for STO (SH)/SS1 (Control Unit) / SI s_s STO/SS1 CU		
HLA_840, HLA_DBSI	Can be changed: C2(95) Data type: Unsigned32 / Binary P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2810 Unit selection: - Expert list: 1 Factory setting: 0
p9620[0...7]	BI: SI signal source for STO (SH)/SBC/SS1 (Control Unit) / SI s_s STO/SS1 CU		
SERVO_840, SERVO_DBSI	Can be changed: C2(95) Data type: Unsigned32 / Binary P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2810 Unit selection: - Expert list: 1 Factory setting: 0
p9621	BI: SI Safe Brake Adapter signal source (Control Unit) / SI SBA s_s CU		
SERVO_840, SERVO_DBSI	Can be changed: C2(95) Data type: Unsigned32 / Binary P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2814 Unit selection: - Expert list: 1 Factory setting: 0
p9622[0...1]	SI SBA relay delay times (Control Unit) / SI SBA relay t CU		
SERVO_840, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1000.00 [ms]	Access level: 3 Function diagram: 2814 Unit selection: - Expert list: 1 Factory setting: [0] 100.00 [ms] [1] 65.00 [ms]

p9625[0...1] HLA_840, HLA_DBSI	SI HLA shutoff valve wait time (CU) / Shutoff valve t CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: [0] 250.00 [ms] [1] 250.00 [ms]
p9626 HLA_840, HLA_DBSI	SI HLA shutoff valve feedback signal contact configuration (CU) / FS config CU Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 5	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9650 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI SGE changeover discrepancy time (Control Unit) / SI SGE chgov t CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2000.00 [ms]	Access level: 3 Function diagram: 2810 Unit selection: - Expert list: 1 Factory setting: 500.00 [ms]
p9651 HLA_840, HLA_DBSI	SI STO/SS1 debounce time (Control Unit) / SI STO t_debou CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p9651 SERVO_840, SERVO_DBSI	SI STO/SBC/SS1 debounce time (Control Unit) / SI STO t_debou CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p9652 HLA_DBSI	SI Safe Stop 1 delay time / SI Stop 1 t_del Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 300.00 [s]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [s]

p9652	SI Safe Stop 1 delay time / SI Stop 1 t_{del}		
HLA_840, SERVO_840, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [s]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 300.00 [s]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [s]
p9653	SI Safe Stop 1 drive-based braking response / SI SS1 drv resp		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9658	SI transition time STOP F to STOP A (Control Unit) / SI STOP F->A CU		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30000.00 [ms]	Access level: 3 Function diagram: 2802 Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p9659	SI forced checking procedure timer / SI FCP Timer		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [h]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 9000.00 [h]	Access level: 3 Function diagram: 2810 Unit selection: - Expert list: 1 Factory setting: 8.00 [h]
r9660	SI forced checking procedure remaining time / SI FCP remain		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [h]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [h]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [h]
p9665[0...255]	SI Motor Module parameter save / SI MM par save		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: T, U Data type: Unsigned8 P-Group: Safety Integrated Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 00FF hex	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex

p9670 CU_I_840, CU_NX_840, HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI module identification Control Unit / Module ID CU Can be changed: T Data type: Unsigned32 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9671[0...n] HLA_840, HLA_DBSI	SI module identifier Hydraulic Module / Module ID HM Can be changed: T Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9671[0...n] SERVO_840, SERVO_DBSI	SI module identifier Motor Module / Module ID MM Can be changed: T Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: PDS, p0120 Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9672 SERVO_840, SERVO_DBSI	SI module identifier Power Module / Module ID PM Can be changed: T Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9673 SERVO_840, SERVO_DBSI	SI module identifier Sensor Module channel 1 / Module ID SM 1 Can be changed: T Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9674 SERVO_840, SERVO_DBSI	SI module identifier Sensor Module channel 2 / Module ID SM 2 Can be changed: T Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p9675 SERVO_840, SERVO_DBSI	SI module identifier sensor channel 1 / Module ID sensor 1 Can be changed: T Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9676 SERVO_840, SERVO_DBSI	SI module identifier sensor channel 2 / Module ID sensor 2 Can be changed: T Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9677[0...1] HLA_840, SERVO_840	SI Motion offset POS1 POS2 encoder / SI Mtn offs POS1/2 Can be changed: T, U Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9677[0...1] HLA_DBSI, SERVO_DBSI	SI Motion offset POS1 POS2 encoder / SI Mtn offs POS1/2 Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9697 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI Motion bus failure STO/SH delay time (CU) / SI Mtn STO t CU Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 800.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p9700 HLA_DBSI	SI Motion copy function / SI Mtn copy fct Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 00D0 hex	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex

p9700 SERVO_DBSI	SI Motion copy function / SI Mtn copy fct Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 00D0 hex	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
p9701 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Acknowledge SI motion data change / Ackn SI Mtn dat Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 00EC hex	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
p9702 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI Acknowledge component replacement / Comp_replace ackn Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 29	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r9703.0...31 HLA_DBSI, SERVO_DBSI	CO/BO: SI Motion SCA status signal (Control Unit) / SI Mtn SCA stat CU Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2840, 2905 Unit selection: - Expert list: 1 Factory setting: -
p9705 HLA_DBSI, SERVO_DBSI	BI: SI Motion test stop signal source / SI Mtn test stop Can be changed: C2(95) Data type: Unsigned32 / Binary P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2837 Unit selection: - Expert list: 1 Factory setting: 0
r9707[0...2] HLA_840, SERVO_840	CO: SI Motion diagnostics encoder position actual value GX_XIST1 / SI Mtn XIST1 Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r9707[0...2]	CO: SI Motion diagnostics encoder position actual value GX_XIST1 / SI Mtn XIST1		
HLA_DBSI, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9708[0...5]	SI Motion diagnostics safe position / SI mtn safe pos		
HLA_840, SERVO_840	Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [mm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mm]	Access level: 3 Function diagram: 2822, 2836 Unit selection: - Expert list: 1 Factory setting: - [mm]
r9708[0...5]	SI Motion diagnostics safe position / SI mtn safe pos		
SERVO_840 (Safety rot)	Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [°]	Access level: 3 Function diagram: 2822, 2836 Unit selection: - Expert list: 1 Factory setting: - [°]
r9708[0...5]	SI Motion diagnostics safe position / SI mtn safe pos		
HLA_DBSI, SERVO_DBSI	Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [mm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mm]	Access level: 3 Function diagram: 2822, 2836 Unit selection: - Expert list: 1 Factory setting: - [mm]
r9708[0...5]	SI Motion diagnostics safe position / SI mtn safe pos		
SERVO_DBSI (Safety rot)	Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [°]	Access level: 3 Function diagram: 2822, 2836 Unit selection: - Expert list: 1 Factory setting: - [°]
r9710[0...1]	SI Motion diagnostics result list 1 / SI Mtn res_list 1		
HLA_840, SERVO_840	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r9710[0...1]	SI Motion diagnostics result list 1 / SI Mtn res_list 1		
HLA_DBSI, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9711[0...1]	SI Motion diagnostics result list 2 / SI Mtn res_list 2		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9712	CO: SI motion diagnostics position actual value on the actuator side / SI Mtn s_act act		
HLA_840, HLA_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9712	CO: SI Motion diagnostics position actual value motor side / SI Mtn s_act mot		
SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9713[0...5]	CO: SI Motion diagnostics position actual value load side / SI Mtn s_act load		
HLA_840, SERVO_840	Can be changed: - Data type: Integer32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9713[0...5]	CO: SI Motion diagnostics position actual value load side / SI Mtn s_act load		
HLA_DBSI, SERVO_DBSI	Can be changed: - Data type: Integer32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r9714[0...3] HLA_840, HLA_DBSI	CO: SI motion diagnostics velocity / SI Mtn diag v Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [mm/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mm/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mm/min]
r9714[0...3] SERVO_840, SERVO_DBSI	CO: SI motion diagnostics velocity / SI Mtn diag v Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [mm/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mm/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mm/min]
r9714[0...3] SERVO_840 (Safety rot), SERVO_DBSI (Safety rot)	CO: SI motion diagnostics velocity / SI Mtn diag v Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [rpm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [rpm]
r9718.23 SERVO_840	CO/BO: SI Motion control signals 1 / SI Mtn ctrl_sig 1 Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9718.23 HLA_840, SERVO_840 (Lin)	CO/BO: SI Motion control signals 1 / SI Mtn ctrl_sig 1 Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9718.23 HLA_DBSI, SERVO_DBSI	CO/BO: SI Motion control signals 1 / SI Mtn ctrl_sig 1 Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r9718.23 SERVO_DBSI (Lin)	CO/BO: SI Motion control signals 1 / SI Mtn ctrl_sig 1 Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9719.0...31 HLA_DBSI	CO/BO: SI Motion control signals 2 / SI Mtn ctrl_sig 2 Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9719.0...31 HLA_840, SERVO_840	CO/BO: SI Motion control signals 2 / SI Mtn ctrl_sig 2 Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9719.0...31 SERVO_DBSI	CO/BO: SI Motion control signals 2 / SI Mtn ctrl_sig 2 Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9720.0...29 HLA_DBSI, SERVO_DBSI	CO/BO: SI Motion control signals integrated in the drive / SI Mtn integ STW Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2840, 2905 Unit selection: - Expert list: 1 Factory setting: -
r9721.0...15 HLA_DBSI	CO/BO: SI Motion status signals (Control Unit) / SI Mtn stat_sig CU Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r9721.0...15	CO/BO: SI Motion status signals / SI Mtn stat_sig		
HLA_840, SERVO_840	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9721.0...15	CO/BO: SI Motion status signals (Control Unit) / SI Mtn stat_sig CU		
SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9722.0...31	CO/BO: SI Motion drive-integrated status signals (Control Unit) / SI Mtn int stat CU		
HLA_DBSI, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2840, 2905 Unit selection: - Expert list: 1 Factory setting: -
r9722.0...31	CO/BO: SI Motion drive-integrated status signals (Control Unit) / SI Mtn int stat CU		
SERVO_DBSI (Lin)	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2840, 2905 Unit selection: - Expert list: 1 Factory setting: -
r9723.0...17	CO/BO: SI Motion diagnostic signals integrated in the drive / SI Mtn integ diag		
HLA_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9723.0...17	CO/BO: SI Motion diagnostic signals integrated in the drive / SI Mtn integ diag		
HLA_840, SERVO_840	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r9723.0...17 SERVO_DBSI	CO/BO: SI Motion diagnostic signals integrated in the drive / SI Mtn integ diag Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9724 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI Motion cross-check clock cycle / SI Mtn KDV clk cyc Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [ms]
r9725[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI Motion diagnostics STOP F / SI Mtn diag STOP F Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p9726 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI Motion user agreement selection/deselection / SI Mtn UserAgr sel Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 00AC hex	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
r9727 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI Motion user agreement inside the drive / SI Mtn UserAgr int Can be changed: - Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2822 Unit selection: - Expert list: 1 Factory setting: -
r9728[0...2] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI Motion actual checksum SI parameters / SI Mtn act CRC Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p9729[0...2]	SI Motion reference checksum SI parameters / SI Mtn ref CRC		
HLA_840, SERVO_840	Can be changed: T, U Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
p9729[0...2]	SI Motion reference checksum SI parameters / SI Mtn ref CRC		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
r9730	SI Motion Safe maximum velocity / SI mtn safe v_max		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [mm/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mm/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mm/min]
r9730	SI Motion Safe maximum velocity / SI mtn safe v_max		
SERVO_840 (Safety rot), SERVO_DBSI (Safety rot)	Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [rpm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [rpm]
r9731	SI Motion safe position accuracy / SI Mtn pos_accur		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [mm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mm]
r9731	SI Motion safe position accuracy / SI Mtn pos_accur		
SERVO_840 (Safety rot), SERVO_DBSI (Safety rot)	Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [°]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [°]

r9732[0...1] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI Motion velocity resolution / SI Mtn v_res Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [mm/min]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mm/min]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mm/min]
r9732[0...1] SERVO_840 (Safety rot), SERVO_DBSI (Safety rot)	SI Motion velocity resolution / SI Mtn v_res Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [rpm]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [rpm]
r9733[0...2] HLA_840, HLA_DBSI	CO: SI Motion setpoint speed limit effective / SI Mtn set_lim Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 2820, 2824, 3630 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]
r9733[0...2] SERVO_840, SERVO_DBSI	CO: SI Motion setpoint speed limit effective / SI Mtn set_lim Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [rpm]	Calculated: - Dynamic index: - Unit group: 3_1 Scaling: p2000 Max: - [rpm]	Access level: 3 Function diagram: 2820, 2824, 3630 Unit selection: p0505 Expert list: 1 Factory setting: - [rpm]
r9733[0...2] SERVO_840 (Lin), SERVO_DBSI (Lin)	CO: SI Motion setpoint speed limit effective / SI Mtn set_lim Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [m/min]	Calculated: - Dynamic index: - Unit group: 4_1 Scaling: p2000 Max: - [m/min]	Access level: 3 Function diagram: 2820, 2824, 3630 Unit selection: p0505 Expert list: 1 Factory setting: - [m/min]

r9734.0...15	CO/BO: SI Safety Information Channel status word S_ZSW1B / SIC S_ZSW1B		
HLA_DBSI, SERVO_DBSI	Can be changed: - Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9735[0...1]	SI Motion diagnostics result list 3 / SI Mtn res_list 3		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9736[0...1]	SI Motion diagnostics result list 4 / SI Mtn res_list 4		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9737[0...1]	SI Motion diagnostics result list 5 / SI Mtn res_list 5		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9738[0...1]	SI Motion diagnostics result list 6 / SI Mtn res_list 6		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9739[0...1]	SI Motion diagnostics result list 7 / SI Mtn res_list 7		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

p9740	SI Motion user agreement selection/deselection MM / SI mtn UserAgr MM		
HLA_DBSI, SERVO_DBSI	Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 00AC hex	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
r9741	SI Motion user agreement inside the drive MM / SI Mtn UserAgr int		
HLA_DBSI, SERVO_DBSI	Can be changed: - Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2822 Unit selection: - Expert list: 1 Factory setting: -
r9743.4...15	CO/BO: SI Safety Information Channel status word S_ZSW2B / SIC S_ZSW2B		
HLA_DBSI, SERVO_DBSI	Can be changed: - Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9744	SI message buffer changes counter / SI msg_buffer chg		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9745[0...63]	SI components / SI comp		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9747[0...63]	SI message code / SI msg_code		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r9748[0...63] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI message time received in milliseconds / SI t_msg rcv ms Can be changed: - Data type: Unsigned32 P-Group: Messages Not for motor type: - Min: - [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [ms]
r9749[0...63] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI message value / SI msg_value Can be changed: - Data type: Integer32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9750[0...63] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI diagnostic attributes / SI diag_attr Can be changed: - Data type: Unsigned32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p9752 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI message cases counter / SI msg_cases count Can be changed: T, U Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r9753[0...63] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI message value for float values / SI msg_val float Can be changed: - Data type: FloatingPoint32 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9754[0...63] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI message time received in days / SI t_msg rcv days Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -

r9755[0...63] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI message time removed in milliseconds / SI t_msg rem ms Can be changed: - Data type: Unsigned32 P-Group: Messages Not for motor type: - Min: - [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [ms]
r9756[0...63] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI message time removed in days / SI t_msg rem days Can be changed: - Data type: Unsigned16 P-Group: Messages Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p9761 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI password input / SI password inp Can be changed: C1, T Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 3 Function diagram: 2800 Unit selection: - Expert list: 1 Factory setting: 0000 hex
p9762 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI password new / SI password new Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 3 Function diagram: 2800 Unit selection: - Expert list: 1 Factory setting: 0000 hex
p9763 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI password acknowledgment / SI ackn password Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 3 Function diagram: 2800 Unit selection: - Expert list: 1 Factory setting: 0000 hex
r9765 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI Motion forced check procedure remaining time (Control Unit) / SI Mtn dyn remain Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [h]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [h]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [h]

r9768[0...7] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI PROFIsafe receive control words (Control Unit) / SI Ps PZD recv CU Can be changed: - Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9769[0...7] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI PROFIsafe send status words (Control Unit) / SI Ps PZD send CU Can be changed: - Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9770[0...3] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI version drive-integrated safety function (Control Unit) / SI version CU Can be changed: - Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2802 Unit selection: - Expert list: 1 Factory setting: -
r9771 HLA_840, HLA_DBSI	SI common functions (Control Unit) / SI common fct CU Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2804 Unit selection: - Expert list: 1 Factory setting: -
r9771 SERVO_840, SERVO_DBSI	SI common functions (Control Unit) / SI common fct CU Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2804 Unit selection: - Expert list: 1 Factory setting: -
r9772.0...23 HLA_840, HLA_DBSI	CO/BO: SI status (Control Unit) / SI status CU Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2804 Unit selection: - Expert list: 1 Factory setting: -

r9772.0...23	CO/BO: SI status (Control Unit) / SI status CU		
SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2804
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r9773.0...31	CO/BO: SI status (Control Unit + Hydraulic Module) / SI status CU+HM		
HLA_840, HLA_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2804
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r9773.0...31	CO/BO: SI status (Control Unit + Motor Module) / SI status CU+MM		
SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2804
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r9774.0...31	CO/BO: SI status (group STO) / SI stat group STO		
HLA_840, HLA_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2804
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r9774.0...31	CO/BO: SI status (group STO) / SI stat group STO		
SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2804
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r9776.0...3	BO: SI diagnostics / SI diag		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r9780 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI monitoring clock cycle (Control Unit) / SI monitor_clk CU Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [ms]	Access level: 3 Function diagram: 2802 Unit selection: - Expert list: 1 Factory setting: - [ms]
r9781[0...1] CU_I_840, CU_NX_840	SI checksum to check changes (Control Unit) / SI chg chksm CU Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9782[0...1] CU_I_840, CU_NX_840	SI time stamps to check changes (Control Unit) / SI chg t CU Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [h]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [h]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [h]
p9783 SERVO_DBSI	SI Motion act. value sensing sensorless synchr. motor I_inject / Actv sl sync I_inj Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: -50.00 [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 0.00 [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -20.00 [%]
r9784[0...1] SERVO_DBSI	SI Motion diagnostics sensorless acceleration / Diag sl a Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [mm/s ²]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [mm/s ²]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [mm/s ²]
r9784[0...1] SERVO_DBSI (Safety rot)	SI Motion diagnostics sensorless acceleration / Diag sl a Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [rev/s ²]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [rev/s ²]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [rev/s ²]

r9785[0...1]	SI Motion diagnostics sensorless minimum current / Diag sl I_min		
SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: 6_3	Unit selection: p0505
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [mA]	- [mA]	- [mA]

r9786[0...2]	SI Motion diagnostics sensorless angle / Diag sl angle		
SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [°]	- [°]	- [°]

r9787	SI Motion diagnostics sensorless velocity deviation / Diag sl v_dev		
SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [mm/min]	- [mm/min]	- [mm/min]

r9787	SI Motion diagnostics sensorless velocity deviation / Diag sl v_dev		
SERVO_DBSI (Safety rot)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [rpm]	- [rpm]	- [rpm]

r9789[0...2]	CO: SI Motion SLA acceleration diagnostics / SI Mtn SLA a diag		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [m/s ²]	- [m/s ²]	- [m/s ²]

r9789[0...2]	CO: SI Motion SLA acceleration diagnostics / SI Mtn SLA a diag		
SERVO_840 (Safety rot), SERVO_DBSI (Safety rot)	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [rev/s ²]	- [rev/s ²]	- [rev/s ²]

r9790[0...1]	SI Motion SLA acceleration resolution / SI Mtn SLA a_res		
HLA_DBSI, SERVO_DBSI	Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [m/s ²]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [m/s ²]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [m/s ²]
r9790[0...1]	SI Motion SLA acceleration resolution / SI Mtn SLA a_res		
SERVO_DBSI (Safety rot)	Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [rev/s ²]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [rev/s ²]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [rev/s ²]
r9793[0...9]	SI diagnostics component replacement / Diag comp_replace		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned8 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9794[0...19]	SI cross-check list (Control Unit) / SI KDV_list CU		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2802 Unit selection: - Expert list: 1 Factory setting: -
r9795	SI diagnostics STOP F (Control Unit) / SI diag STOP F CU		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2802 Unit selection: - Expert list: 1 Factory setting: -
r9798	SI actual checksum SI parameters (Control Unit) / SI act_checksum CU		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2800 Unit selection: - Expert list: 1 Factory setting: -

p9799	SI reference checksum SI parameters (Control Unit) / SI set_checksum CU		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2800
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0000 hex	FFFF FFFF hex	0000 hex

p9801	SI enable functions integrated in the drive (Motor Module) / SI enable fct MM		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 bin

p9801	SI enable functions integrated in the drive (Motor Module) / SI enable fct MM		
HLA_840, SERVO_840	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 bin

p9801	SI enable functions integrated in the drive (Motor Module) / SI enable fct MM		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0000 0000 bin

p9802	SI enable Safe Brake Control (Motor Module) / SI enable SBC MM		
SERVO_840, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer32	Dynamic index: -	Function diagram: 2814
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0

p9810	SI PROFIsafe address (Motor Module) / SI Ps address MM		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	65534	0

p9811	SI PROFIsafe telegram selection (Motor Module) / SI Ps telegram MM		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	998	998
p9811	SI PROFIsafe telegram selection (Motor Module) / SI Ps telegram MM		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	998	998
p9812	SI PROFIsafe failure response (Motor Module) / SI Ps fail MM		
HLA_DBSI, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0
p9821	BI: SI Safe Brake Adapter signal source (Motor Module) / SI SBA s_s MM		
SERVO_840, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Unsigned32 / Binary	Dynamic index: -	Function diagram: 2814
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0
p9822[0...1]	SI SBA relay delay times (Motor Module) / SI SBA relay t MM		
SERVO_840, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2814
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	1000000.00 [μs]	[0] 100000.00 [μs] [1] 65000.00 [μs]

p9825[0...1]	SI HLA shutoff valve wait time (MM) / Shutoff valve t MM		
HLA_840, HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	2000000.00 [μs]	[0] 250000.00 [μs] [1] 250000.00 [μs]
p9826	SI HLA shutoff valve feedback signal contact configuration (MM) / FS config MM		
HLA_840, HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	5	0
p9850	SI SGE changeover discrepancy time (Motor Module) / SI SGE chgov t MM		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2810
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	2000000.00 [μs]	500000.00 [μs]
p9851	SI STO/SS1 debounce time (Motor Module) / SI STO t_debou MM		
HLA_840, HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	100000.00 [μs]	0.00 [μs]
p9851	SI STO/SBC/SS1 debounce time (Motor Module) / SI STO t_debou MM		
SERVO_840, SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [μs]	100000.00 [μs]	0.00 [μs]
p9852	SI Safe Stop 1 delay time (Motor Module) / SI Stop 1 t_del MM		
HLA_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.00 [ms]	300000.00 [ms]	0.00 [ms]

p9852 HLA_840, SERVO_840	SI Safe Stop 1 delay time (Motor Module) / SI Stop 1 t_del MM Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 300000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p9852 SERVO_DBSI	SI Safe Stop 1 delay time (Motor Module) / SI Stop 1 t_del MM Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 300000.00 [ms]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [ms]
p9858 HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI transition time STOP F to STOP A (Motor Module) / SI STOP F->A MM Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [μs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 30000000.00 [μs]	Access level: 3 Function diagram: 2802 Unit selection: - Expert list: 1 Factory setting: 0.00 [μs]
r9870[0...3] HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	SI version drive-integrated safety function (Motor Module) / SI version MM Can be changed: - Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2802 Unit selection: - Expert list: 1 Factory setting: -
r9871 HLA_840, HLA_DBSI	SI common functions (Motor Module) / SI general fct MM Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2804 Unit selection: - Expert list: 1 Factory setting: -
r9871 SERVO_840, SERVO_DBSI	SI common functions (Motor Module) / SI general fct MM Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2804 Unit selection: - Expert list: 1 Factory setting: -

r9872.0...26	CO/BO: SI status list (Motor Module) / SI status MM		
HLA_840, HLA_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2804
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r9872.0...24	CO/BO: SI status list (Motor Module) / SI status MM		
SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2804
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r9880	SI monitoring clock cycle (Motor Module) / SI monitor_clk MM		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2802
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [ms]	- [ms]	- [ms]

r9881[0...11]	SI Motion Sensor Module Node Identifier second channel / SI Mtn SM Ident		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned8	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r9890[0...2]	SI version (Sensor Module) / SI version SM		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r9894[0...19]	SI cross-check list (Motor Module) / SI KDV_list MM		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: 2802
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r9895	SI diagnostics STOP F (Motor Module) / SI diag STOP F MM		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 2 Function diagram: 2802 Unit selection: - Expert list: 1 Factory setting: -
p9897	SI Motion bus failure STO delay time (MM) / SI Mtn IL t_del MM		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.00 [µs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 800000.00 [µs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0.00 [µs]
r9898	SI actual checksum SI parameters (Motor Module) / SI act_checksum MM		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2800 Unit selection: - Expert list: 1 Factory setting: -
p9899	SI reference checksum SI parameters (Motor Module) / SI set_checksum MM		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 3 Function diagram: 2800 Unit selection: - Expert list: 1 Factory setting: 0000 hex
r9900	Actual topology number of indices / Act topo indices		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned16 P-Group: Topology Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -
r9901[0...n]	Actual topology / Act topo		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned16 P-Group: Topology Not for motor type: - Min: -	Calculated: - Dynamic index: r9900 Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: -

p9902	Target topology number of indices / TargetTopo indices		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned16 P-Group: Topology Not for motor type: - Min: 1	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 65535	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 1
p9903[0...n]	Target topology / Target topo		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned16 P-Group: Topology Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: p9902 Unit group: - Scaling: - Max: FFFF hex	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0000 hex
p9904	Topology comparison acknowledge differences / Topo_compare ackn		
CU_I_840, CU_NX_840	Can be changed: C1(1) Data type: Unsigned32 P-Group: Topology Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
p9905	Device specialization / Specialization		
CU_I_840, CU_NX_840	Can be changed: C1(1) Data type: Unsigned16 P-Group: Topology Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9906	Topology comparison all components comparison level / Topo_comp all lev		
CU_I_840, CU_NX_840	Can be changed: C1(1) Data type: Integer16 P-Group: Topology Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 99	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9907	Topology comparison component number / Topo_cmpr comp_no		
CU_I_840, CU_NX_840	Can be changed: C1(1) Data type: Unsigned8 P-Group: Topology Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 199	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p9908	Topology comparison of a component comparison level / Topo_comp level 1		
CU_I_840, CU_NX_840	Can be changed: C1(1) Data type: Integer16 P-Group: Topology Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 99	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9909	Topology comparison component replacement / Topo_cmpr replace		
CU_I_840, CU_NX_840	Can be changed: C1(1) Data type: Unsigned8 P-Group: Topology Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 1
p9910	Target topology accept additional components / Add comp accept		
CU_I_840, CU_NX_840	Can be changed: C1(1) Data type: Integer16 P-Group: Topology Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 6	Access level: 1 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9911[0...6]	Insert drive object / DO insert		
CU_I_840, CU_NX_840	Can be changed: C1(1) Data type: Unsigned32 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 4294967295	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
p9912[0...1]	Delete drive object / DO delete		
CU_I_840, CU_NX_840	Can be changed: C1(3) Data type: Unsigned16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 62	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0
p9913[0...2]	Change drive object number / Change DO_no		
CU_I_840, CU_NX_840	Can be changed: C1(4) Data type: Unsigned16 P-Group: All groups Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 62	Access level: 3 Function diagram: - Unit selection: - Expert list: 0 Factory setting: 0

p9914[0...2]	Change component number / Change comp_no		
CU_I_840, CU_NX_840	Can be changed: C1	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: All groups	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0	199	0

p9915	DRIVE-CLiQ data transfer error shutdown threshold master / DQ fault master		
CU_I_840, CU_NX_840	Can be changed: C1(1)	Calculated: -	Access level: 4
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Topology	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0000 hex	0007 07FF hex	0007 02FF hex

p9916	DRIVE-CLiQ data transfer error shutdown threshold slave / DQ fault slave		
CU_I_840, CU_NX_840	Can be changed: C1(1)	Calculated: -	Access level: 4
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Topology	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0000 hex	0007 07FF hex	0007 02FF hex

p9917[0...1]	Delete component / Delete comp		
CU_I_840, CU_NX_840	Can be changed: C1(30)	Calculated: -	Access level: 3
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: All groups	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0	199	0

r9925[0...99]	Firmware file incorrect / FW file incorr		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned8	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r9926	Firmware check status / FW check status		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 2
	Data type: Unsigned8	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

p9930[0...8]	System logbook activation / SYSLOG activation		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned8 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 255	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p9931[0...194]	System logbook module selection / SYSLOG mod sel		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned32 P-Group: - Not for motor type: - Min: 0000 hex	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: FFFF FFFF hex	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 hex
p9932	Save system logbook EEPROM / SYSLOG EEPROM save		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned8 P-Group: - Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 255	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
r9935.0	BO: POWER ON delay signal / POWER ON t_delay		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned8 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9936[0...199]	DRIVE-CLiQ diagnostic error counter connection / DQdiag err counter		
CU_I_840, CU_NX_840	Can be changed: - Data type: Integer32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p9937	DRIVE-CLiQ diagnostic configuration / DQ diag config		
CU_I_840, CU_NX_840	Can be changed: T, U Data type: Unsigned16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 0000 0000 0000 bin

p9938	DRIVE-CLiQ detailed diagnostics configuration / DQ diag config		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: Integer16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	6	0

p9939	DRIVE-CLiQ detailed diagnostics time interval / DQ detail t_interv		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1 [s]	3600 [s]	1 [s]

p9940	Configuration auto commissioning (p97/p9910) / Config auto comm		
CU_I_840, CU_NX_840	Can be changed: C1(1)	Calculated: -	Access level: 1
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Topology	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	-	-	0101 bin

p9941	Target topology feature delete all components / Feature delete		
CU_I_840, CU_NX_840	Can be changed: C1(1)	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: Topology	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 0
	Min:	Max:	Factory setting:
	0	1	0

p9942	DRIVE-CLiQ detailed diagnostics select individual connection / DQ detail conn		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	199	0

r9943	DRIVE-CLiQ detailed diagn. individual connection error counter / DQ det err counter		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 4
	Data type: Integer32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r9975[0...7]	System utilization measured / Sys util meas		
CU_I_840, CU_NX_840	Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [%]
r9976[0...7]	System utilization / Sys util		
CU_I_840, CU_NX_840	Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [%]
r9979	Sampling time with largest total utilization / t_samp lg total		
CU_I_840, CU_NX_840	Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [µs]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [µs]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [µs]
r9980[0...165]	Sampling times utilization calculated / t_samp util calc		
CU_I_840, CU_NX_840	Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [%]
r9981[0...165]	Sampling times utilization measured / t_samp util meas		
CU_I_840, CU_NX_840	Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%]	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [%]
r9982[0...4]	Data memory utilization / Mem_util dat_mem		
CU_I_840, CU_NX_840	Can be changed: - Data type: FloatingPoint32 P-Group: - Not for motor type: - Min: - [%]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [%]	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: - [%]

r9983[0...4]	Measured data memory utilization (actual load) / Mem_util dat_meas		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 4
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [%]	- [%]	- [%]
r9984[0...4]	Data memory utilization TEC / Data mem util TEC		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [%]	- [%]	- [%]
r9986[0...7]	DRIVE-CLiQ system load / DQ system load		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [%]	- [%]	- [%]
r9987[0...7]	DRIVE-CLiQ bandwidth load / DQ bandw load		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [%]	- [%]	- [%]
r9988[0...7]	DRIVE-CLiQ DPRAM load / DQ DPRAM load		
CU_I_840, CU_NX_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [%]	- [%]	- [%]
p9990	DO memory usage actual value determination selection / Mem_use ActV sel		
CU_I_840, CU_NX_840	Can be changed: T, U	Calculated: -	Access level: 4
	Data type: Unsigned16	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	65535	0

r9991[0...4]	Memory usage drive object actual value / Mem_use DO ActV		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9992[0...4]	Memory usage drive object reference value / Mem_use DO ref val		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9993[0...4]	Memory utilization Technology Extension / Mem_util TEC		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 4 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
r9999[0...99]	Software error internal supplementary diagnostics / SW_err int diag		
CU_I_840, CU_NX_840	Can be changed: - Data type: Unsigned32 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p10201	SI Motion SBT enable / SBT enable		
SERVO_840	Can be changed: T, U Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin
p10201	SI Motion SBT enable / SBT enable		
SERVO_DBSI	Can be changed: C2(95) Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0000 bin

p10202[0...1] SERVO_840	SI Motion SBT brake selection / SBT brake sel Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p10202[0...1] SERVO_DBSI	SI Motion SBT brake selection / SBT brake sel Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p10203 SERVO_840	SI Motion SBT control selection / SBT control sel Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 2837 Unit selection: - Expert list: 1 Factory setting: 0
p10203 SERVO_DBSI	SI Motion SBT control selection / SBT control sel Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 2	Access level: 3 Function diagram: 2837 Unit selection: - Expert list: 1 Factory setting: 0
p10204 SERVO_840	SI Motion SBT motor type / SBT motor type Can be changed: T, U Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p10204 SERVO_DBSI	SI Motion SBT motor type / SBT motor type Can be changed: C2(95) Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

p10208[0...1] SERVO_840	SI Motion SBT test torque ramp time / SBT M_test t_ramp Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 20 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1000 [ms]
p10208[0...1] SERVO_840 (Lin)	SI Motion SBT test force ramp time / SBT F_test t_ramp Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 20 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1000 [ms]
p10208[0...1] SERVO_DBSI	SI Motion SBT test torque ramp time / SBT M_test t_ramp Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 20 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1000 [ms]
p10208[0...1] SERVO_DBSI (Lin)	SI Motion SBT test force ramp time / SBT F_test t_ramp Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 20 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1000 [ms]
p10209[0...1] SERVO_840	SI Motion SBT brake holding torque / SBT brake M_stop Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.05 [Nm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 60000.00 [Nm]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 10.00 [Nm]
p10209[0...1] SERVO_840 (Lin)	SI Motion SBT brake holding force / SBT brake F_stop Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 1.00 [N]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 100000.00 [N]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 10.00 [N]

p10209[0...1]	SI Motion SBT brake holding torque / SBT brake M_stop		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.05 [Nm]	60000.00 [Nm]	10.00 [Nm]

p10209[0...1]	SI Motion SBT brake holding force / SBT brake F_stop		
SERVO_DBSI (Lin)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	1.00 [N]	100000.00 [N]	10.00 [N]

p10210[0...1]	SI Motion SBT test torque factor sequence 1 / SBT M_test fact 1		
SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.30	1.00	1.00

p10210[0...1]	SI Motion SBT test force factor sequence 1 / SBT F_test fact 1		
SERVO_840 (Lin)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.30	1.00	1.00

p10210[0...1]	SI Motion SBT test torque factor sequence 1 / SBT M_test fact 1		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.30	1.00	1.00

p10210[0...1]	SI Motion SBT test force factor sequence 1 / SBT F_test fact 1		
SERVO_DBSI (Lin)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.30	1.00	1.00

p10211[0...1] SERVO_840	SI Motion SBT test duration sequence 1 / SBT t_test seq 1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 20 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1000 [ms]
p10211[0...1] SERVO_840 (Lin)	SI Motion SBT test duration sequence 1 / SBT t_test seq 1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 20 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1000 [ms]
p10211[0...1] SERVO_DBSI	SI Motion SBT test duration sequence 1 / SBT t_test seq 1 Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 20 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1000 [ms]
p10211[0...1] SERVO_DBSI (Lin)	SI Motion SBT test duration sequence 1 / SBT t_test seq 1 Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 20 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1000 [ms]
p10212[0...1] SERVO_840	SI Motion SBT position tolerance sequence 1 / SBT pos_tol seq 1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.001 [mm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 360.000 [mm]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1.000 [mm]
p10212[0...1] SERVO_840 (Safety rot)	SI Motion SBT position tolerance sequence 1 / SBT pos_tol seq 1 Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.001 [°]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 360.000 [°]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1.000 [°]

p10212[0...1]	SI Motion SBT position tolerance sequence 1 / SBT pos_tol seq 1		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001 [mm]	360.000 [mm]	1.000 [mm]

p10212[0...1]	SI Motion SBT position tolerance sequence 1 / SBT pos_tol seq 1		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001 [°]	360.000 [°]	1.000 [°]

p10218	SI Motion SBT test torque sign / SBT M_test sign		
SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 2837
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0

p10218	SI Motion SBT test force sign / SBT F_test sign		
SERVO_840 (Lin)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 2837
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0

p10218	SI Motion SBT test torque sign / SBT M_test sign		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 2837
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0

p10218	SI Motion SBT test force sign / SBT F_test sign		
SERVO_DBSI (Lin)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: Integer16	Dynamic index: -	Function diagram: 2837
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0	1	0

p10220[0...1] SERVO_840	SI Motion SBT test torque factor sequence 2 / SBT M_test fact 2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.30	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1.00	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1.00
p10220[0...1] SERVO_840 (Lin)	SI Motion SBT test force factor sequence 2 / SBT F_test fact 2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.30	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1.00	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1.00
p10220[0...1] SERVO_DBSI	SI Motion SBT test torque factor sequence 2 / SBT M_test fact 2 Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.30	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1.00	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1.00
p10220[0...1] SERVO_DBSI (Lin)	SI Motion SBT test force factor sequence 2 / SBT F_test fact 2 Can be changed: C2(95) Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 0.30	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 1.00	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1.00
p10221[0...1] SERVO_840	SI Motion SBT test duration sequence 2 / SBT t_test seq 2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 20 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1000 [ms]
p10221[0...1] SERVO_840 (Lin)	SI Motion SBT test duration sequence 2 / SBT t_test seq 2 Can be changed: T, U Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: 20 [ms]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 10000 [ms]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: 1000 [ms]

p10221[0...1]	SI Motion SBT test duration sequence 2 / SBT t_test seq 2		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	20 [ms]	10000 [ms]	1000 [ms]

p10221[0...1]	SI Motion SBT test duration sequence 2 / SBT t_test seq 2		
SERVO_DBSI (Lin)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	20 [ms]	10000 [ms]	1000 [ms]

p10222[0...1]	SI Motion SBT position tolerance sequence 2 / SBT pos_tol seq 2		
SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001 [mm]	360.000 [mm]	1.000 [mm]

p10222[0...1]	SI Motion SBT position tolerance sequence 2 / SBT pos_tol seq 2		
SERVO_840 (Safety rot)	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001 [°]	360.000 [°]	1.000 [°]

p10222[0...1]	SI Motion SBT position tolerance sequence 2 / SBT pos_tol seq 2		
SERVO_DBSI	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001 [mm]	360.000 [mm]	1.000 [mm]

p10222[0...1]	SI Motion SBT position tolerance sequence 2 / SBT pos_tol seq 2		
SERVO_DBSI (Safety rot)	Can be changed: C2(95)	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.001 [°]	360.000 [°]	1.000 [°]

p10230[0...5] SERVO_840	Bl: SI Motion SBT control word / SBT STW Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2837 Unit selection: - Expert list: 1 Factory setting: 0
p10230[0...5] SERVO_840 (Lin)	Bl: SI Motion SBT control word / SBT STW Can be changed: T, U Data type: Unsigned32 / Binary P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2837 Unit selection: - Expert list: 1 Factory setting: 0
p10230[0...5] SERVO_DBSI	Bl: SI Motion SBT control word / SBT STW Can be changed: C2(95) Data type: Unsigned32 / Binary P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2837 Unit selection: - Expert list: 1 Factory setting: 0
p10230[0...5] SERVO_DBSI (Lin)	Bl: SI Motion SBT control word / SBT STW Can be changed: C2(95) Data type: Unsigned32 / Binary P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2837 Unit selection: - Expert list: 1 Factory setting: 0
r10231 SERVO_840, SERVO_DBSI	SI Motion SBT control word diagnostics / SBT STW diag Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2836, 2837 Unit selection: - Expert list: 1 Factory setting: -
r10231 SERVO_840 (Lin), SERVO_DBSI (Lin)	SI Motion SBT control word diagnostics / SBT STW diag Can be changed: - Data type: Unsigned32 P-Group: Safety Integrated Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: 2836, 2837 Unit selection: - Expert list: 1 Factory setting: -

r10234.11...15	CO/BO: SI Safety Information Channel status word S_ZSW3B / SIC S_ZSW3B		
HLA_840, HLA_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r10234.0...15	CO/BO: SI Safety Information Channel status word S_ZSW3B / SIC S_ZSW3B		
SERVO_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r10234.0...15	CO/BO: SI Safety Information Channel status word S_ZSW3B / SIC S_ZSW3B		
SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

p10235	CI: SI Safety Control Channel control word S_STW3B / SCC S_STW3B		
SERVO_840	Can be changed: T, U	Calculated: -	Access level: 3
	Data type: Unsigned32 / Integer16	Dynamic index: -	Function diagram: 2837
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

p10235	CI: SI Safety Control Channel control word S_STW3B / SCC S_STW3B		
SERVO_DBSI	Can be changed: T	Calculated: -	Access level: 3
	Data type: Unsigned32 / Integer16	Dynamic index: -	Function diagram: 2837
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	0

r10240	SI Motion SBT test torque diagnostics / SBT M_test diag		
SERVO_840, SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: 2836
	P-Group: Safety Integrated	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	- [Nm]	- [Nm]	- [Nm]

r10240 SERVO_840 (Lin), SERVO_DBSI (Lin)	SI Motion SBT test force diagnostics / SBT F_test diag Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [N]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [N]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: - [N]
r10241 SERVO_840, SERVO_DBSI	SI Motion SBT load torque diagnostics / SBT M_load diag Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [Nm]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [Nm]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: - [Nm]
r10241 SERVO_840 (Lin), SERVO_DBSI (Lin)	SI Motion SBT load force diagnostics / SBT F_load diag Can be changed: - Data type: FloatingPoint32 P-Group: Safety Integrated Not for motor type: - Min: - [N]	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: - [N]	Access level: 3 Function diagram: 2836 Unit selection: - Expert list: 1 Factory setting: - [N]
r10242 SERVO_840, SERVO_DBSI	SI Motion SBT state diagnostics / SBT state diag Can be changed: - Data type: Integer16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 16	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: -
p10250 SERVO_840	CI: SI Safety Control Channel control word S_STW1B / SCC S_STW1B Can be changed: T, U Data type: Unsigned32 / Integer16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p10250 HLA_840, HLA_DBSI, SERVO_DBSI	CI: SI Safety Control Channel control word S_STW1B / SCC S_STW1B Can be changed: T Data type: Unsigned32 / Integer16 P-Group: - Not for motor type: - Min: -	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: -	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0

r10251.8...12	CO/BO: SI Safety Control Channel control word S_STW1B diagnostics / SCC S_STW1B diag		
HLA_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r10251.8...12	CO/BO: SI Safety Control Channel control word S_STW1B diagnostics / SCC S_STW1B diag		
HLA_840, SERVO_840	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

r10251.8...13	CO/BO: SI Safety Control Channel control word S_STW1B diagnostics / SCC S_STW1B diag		
SERVO_DBSI	Can be changed: -	Calculated: -	Access level: 3
	Data type: Unsigned32	Dynamic index: -	Function diagram: -
	P-Group: -	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	-	-	-

p60000	PROFIdrive reference speed reference frequency / PD n_ref f_ref		
ENC_840, SERVO_840, SERVO_DBSI	Can be changed: T	Calculated: CALC_MOD_ALL	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	6.00 [rpm]	210000.00 [rpm]	3000.00 [rpm]

p60000	Reference velocity reference frequency / v_ref f_ref		
SERVO_840 (Lin), SERVO_DBSI (Lin)	Can be changed: T	Calculated: CALC_MOD_ALL	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.60 [m/min]	700.00 [m/min]	120.00 [m/min]

p60000	PROFIdrive reference velocity reference frequency / PD v_ref f_ref		
ENC_840 (Lin_enc)	Can be changed: T	Calculated: CALC_MOD_ALL	Access level: 2
	Data type: FloatingPoint32	Dynamic index: -	Function diagram: -
	P-Group: Communications	Unit group: -	Unit selection: -
	Not for motor type: -	Scaling: -	Expert list: 1
	Min:	Max:	Factory setting:
	0.60 [m/min]	600.00 [m/min]	120.00 [m/min]

p60022	PROFIsafe telegram selection / Ps tel_sel		
HLA_DBSI, SERVO_DBSI	Can be changed: T Data type: Unsigned16 P-Group: Safety Integrated Not for motor type: - Min: 0	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 903	Access level: 3 Function diagram: - Unit selection: - Expert list: 1 Factory setting: 0
p60122	IF1 PROFIdrive SIC/SCC telegram selection / IF1 SIC/SCC tel		
HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI	Can be changed: T Data type: Unsigned16 P-Group: Communications Not for motor type: - Min: 700	Calculated: - Dynamic index: - Unit group: - Scaling: - Max: 999	Access level: 3 Function diagram: 2423 Unit selection: - Expert list: 1 Factory setting: 999

Appendix

A.1 List of abbreviations

Abbreviation	Derivation of the abbreviation	Meaning
ADI4	Analog Drive Interface for 4 Axis	
AC	Adaptive Control	
ALM	Active Line Module	Infeed module for drives
AP	User program	
AS	Automation system	
ASCII	American Standard Code for Information Interchange	American coding standard for the exchange of information
ASIC	Application Specific Integrated Circuit	User switching circuit
ASUP	Asynchronous subprogram	
AUTO		Operating mode "Automatic"
AUXFU	Auxiliary Function	Auxiliary functions
STL	Statement list	
BA	Operating mode	
Mode group	Mode group	
BERO	Proximity limit switch with feedback oscillator	
BI	Binector Input	
HHU	Handheld unit	
BICO	Binector Connector	Interconnection technology for the drive
BIN	Binary Files	Binary files
BIOS	Basic Input Output System	
BCS	Basic coordinate system	
BO	Binector Output	
OPI	Operator Panel Interface	
CAD	Computer-Aided Design	
CAM	Computer-Aided Manufacturing	
CC	Compile Cycle	Compile cycles
CI	Connector Input	
CF-Card	Compact Flash-Card	
CNC	Computerized Numerical Control	Computerized numerical control
CO	Connector Output	
COM Board	Communication Board	
CP	Communication Processor	
CPU	Central Processing Unit	Central processing unit
CR	Carriage Return	
CRC	Cyclic Redundancy Check	Checksum test
CRT	Cathode Ray Tube	Picture tube

Abbreviation	Derivation of the abbreviation	Meaning
CSB	Central Service Board	PLC module
CTS	Clear To Send	Signals that data is ready to be sent for serial data interfaces
CUTCOM	Cutter Radius Compensation	Tool radius compensation
DB	Data block	Data block in the PLC
DBB	Data-block byte	Data block-byte in the PLC
DBW	Data-block word	Data-block word in the PLC
DBX	Data-block bit	Data-block bit in the PLC
DDE	Dynamic Data Exchange	Dynamic data exchange
DDS	Drive Data Set	Drive data set
DIN	Deutsche Industrie Norm (German Industry Standard)	
DIR	Directory	Directory
DLL	Dynamic Link Library	
DO	Drive Object	Drive object
DPM	Dual Port Memory	
DRAM	Dynamic Random Access Memory	Dynamic memory block
DRF	Differential Resolver Function	Differential resolver function (handwheel)
DRIVE-CLiQ	Drive Component Link with IQ	
DRY	Dry Run	DRY run feedrate
DSB	Decoding Single Block	Decoding single block
DSC	Dynamic Servo Control / Dynamic Stiffness Control	
DSR	Data Send Ready	Signals the availability of serial data interfaces
DW	Data word	
DWORD	Double word (currently 32 bits)	
I	Input	
I/O	Input/Output	
ENC	Encoder	Actual value encoder
EPROM	Erasable Programmable Read Only Memory	Erasable, electronically programmable read-only memory
EQN		Type designation for an absolute encoder with 2048 sine signals per revolution
ESR	Extended stop and retract	
ETC	ETC key	Expansion of the softkey bar in the same menu
FB	Function block	
FBS	Flat screen	
FC	Function Call	Function block in the PLC
FDD	Feed Disable	Feed disable
FdStop	Feed Stop	Feed stop
FEPROM	Flash-EPROM	Read and write memory
FIFO	First In - First Out	Method of storing and retrieving data in a memory
FIPO	Fine interpolator	
FM	Function Module	

Abbreviation	Derivation of the abbreviation	Meaning
FM-NC	Function Module Numerical Control	Numerical control
FPU	Floating Point Unit	Floating-point unit
FRA	Frame block	
FRAME	Data set	Coordinate conversion with the components work off-set, rotation, scaling, mirroring
CRC	Cutter radius compensation	
FST	Feed Stop	Feed stop
CSF	Control system flowchart (PLC programming method)	
FW	Firmware	
GC	Global Control	PROFIBUS: Broadcast telegram
GD	Global data	
GEO	Geometry, e.g. geometry axis	
GP	Basic program	
GS	Gear stage	
GUD	Global User Data	Global user data
HD	Hard Disk	Hard disk
HEX	Abbreviation for hexadecimal number	
AuxF	Auxiliary function	
HMI	Human Machine Interface	SINUMERIK user interface
MSD	Main spindle drive	
HT	Handheld Terminal	Handheld unit
HW	Hardware	
COMM	Commissioning	
IF	Drive module pulse enable	
IK (GD)	Implicit communication (global data)	
IKA	Interpolative Compensation	Interpolatory compensation
IM	Interface Modul	Interface module
INC	Increment	Increment
INI	Initializing Data	Initializing data
IGBT	Insulated Gate Bipolar Transistor	
IPO	Interpolator	
ISO	International Organization for Standardization	International Organization for Standardization
JOG	"Jogging" operating mode	
KD	Coordinate rotation	
KDV	Crosswise data comparison	Crosswise data comparison between the NC and PLC
K _v	Servo-gain factor	Gain factor of control loop
LAD	Ladder diagram	PLC programming method
LCD	Liquid Crystal Display	Liquid crystal display
LED	Light Emitting Diode	Light emitting diode
LF	Line Feed	
LMS		Position measuring system
LSB	Least Significant Bit	Least significant bit

Abbreviation	Derivation of the abbreviation	Meaning
LUD	Local User Data	User data
MAC	Media Access Control	
MAIN	Main program	Main program (OB1, PLC)
MB	Megabyte	
MCI	Motion Control Interface	
MCIS	Motion Control Information System	
MCP	Machine Control Panel	Machine control panel
MD	Machine data	
MDI	"Manual Data Automatic" operating mode	Manual input
MCS	Machine coordinate system	
MPF	Main Program File	Main program (NC part program)
MPI	Multi Point Interface	Multi-point interface
NC	Numerical Control	Numerical control
NCK	Numerical Control Kernel	Numerical control kernel
NCSD	NC Start Disable	NC start disable
NCU	Numerical Control Unit	NC hardware unit
IF	Interfaces	Interface signal
WO	Zero offset	
NX	Numerical Extension	Axis expansion module
OB	Organization block in the PLC	
OEM	Original Equipment Manufacturer	
OP	Operation Panel	Operator panel
OPI	Operation Panel Interface	Interface for connection to the operator panel
OSI	Open Systems Interconnection	Standard for computer communications
OPT	Options	Options
PIQ	Process Image Output	
PII	Process Image Input	
P bus	Peripheral bus	
PC	Personal Computer	
PCMCIA	Personal Computer Memory Card International Association	Standard for plug-in memory cards
PCU	Programmable Control Unit	
PI	Programm Instanz	
PG	Programming device	
PLC	Programmable Logic Control	Programmable Logic Controller
PN	PROFINET	
PO	POWER ON	
POU	Program organization unit	Unit in the PLC user program
PPU	Panel Processing Unit	Panel-based control
PTP	Point to Point	Point-to-point
PZD	Process data for drives	
QEC	Quadrant Error Compensation	Quadrant error compensation
QEC	Quadrant error compensation	

Abbreviation	Derivation of the abbreviation	Meaning
RAM	Random Access Memory	Program memory that can be read and written to
REF POINT		Function "Reference point approach" in JOG mode
REPOS		Function "Repositioning" in JOG mode
RID	Read In Disable	Read-in disable
RPA	R-Parameter Active	Memory area on the NC for R parameter numbers
RPY	Roll Pitch Yaw	Rotation type of a coordinate system
RTC	Real Time Clock	Real-time clock
RTS	Request To Send	RTS, control signal of serial data interfaces
SBL	Single Block	Single block
SBR	Subroutine	Subroutine (PLC)
SBT	Safe Brake Test	Safe Brake Test
SCC	Safety Control Channel	
SD	Setting-Datum	
SDB	System data block	
SDI	Safe Direction	Safe Motion Direction
SBT	Safe Brake Test	Safe Brake Control
SEA	Setting Data Active	Identifier (file type) for setting data
SERUPRO	Search-Run by Program Test	Search run by program test
SFC	System Function Call	
SGE	Safety-related input	
SGA	Safety-related output	
SH	Safe Stop	
SIC	Safety Info Channel	
SK	Softkey	
SKP	Skip	Skip block
SLM	Smart Line Module	
SLP	Safe Limited Position	Safely-Limited Position
SLS	Safely Limited Speed	Safely-Limited Speed
SM	Stepper Motor	
SOS	Safe Operating Stop	Safe Operating Stop
SS1	Safe Stop 1	Safe Stop 1 (time-monitored, ramp-monitored)
SS2	Safe Stop 2	Safe Stop 2
SPF	Subprogram file	Subprogram (NC)
SPL	Safe Programmable Logic	
PLC	Programmable Logic Controller	
SRAM	Static Random Access Memory	Static memory block
TNRC	Tool nose radius compensation	
LEC	Leadscrew error compensation	
SSI	Serial synchronous interface	Serial synchronous interface
STO	Safe Torque Off	Safe Torque Off
STW	Control word	
GWPS	Grinding wheel peripheral speed	
SW	Software	

Abbreviation	Derivation of the abbreviation	Meaning
SYF	System Files	System files
SYNACT	SYNACT Synchronized Action	Synchronized action
TB	Terminal Board (SINAMICS)	
TEA	Testing Data Aktive	Identifier for machine data
TCP	Tool Center Point	Tool tip
TCU	Thin Client Unit	
TEA	Testing Data Active	Identifier for machine data
TM	Terminal Module (SINAMICS)	
TO	Tool Offset	Tool offset
TOA	Tool Offset Active	Identifier (file type) for tool offsets
TRANSMIT	Transform Milling into Turning	Coordinate conversion on turning machines for milling operations
TTL	Transistor–Transistor–Logik	Interface type
UFR	User Frame	Zero offset
SR	Subroutine	
USB	Universal Serial Bus	
UPS	Uninterruptible Power Supply	
VDI		Internal communication interface between NC and PLC
FDD	Feed drive	
VPM	Voltage Protection Module	
VSM	Voltage Sensing Module	
WAB		Function "Smooth Approach and Retraction"
WCS	Workpiece coordinate system	
T	Tool coordinate system:	
TLC	Tool length compensation	
WPD	Work Piece Directory	Workpiece directory
T	Tool	
TM	Tool management	
TC	Tool change	
ZWS		Buffer location
ZOA	Zero Offset Active	Identifier (file type) for zero offset data
ZSW	Status word (of drive)	

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 r0924[0...1], 920

