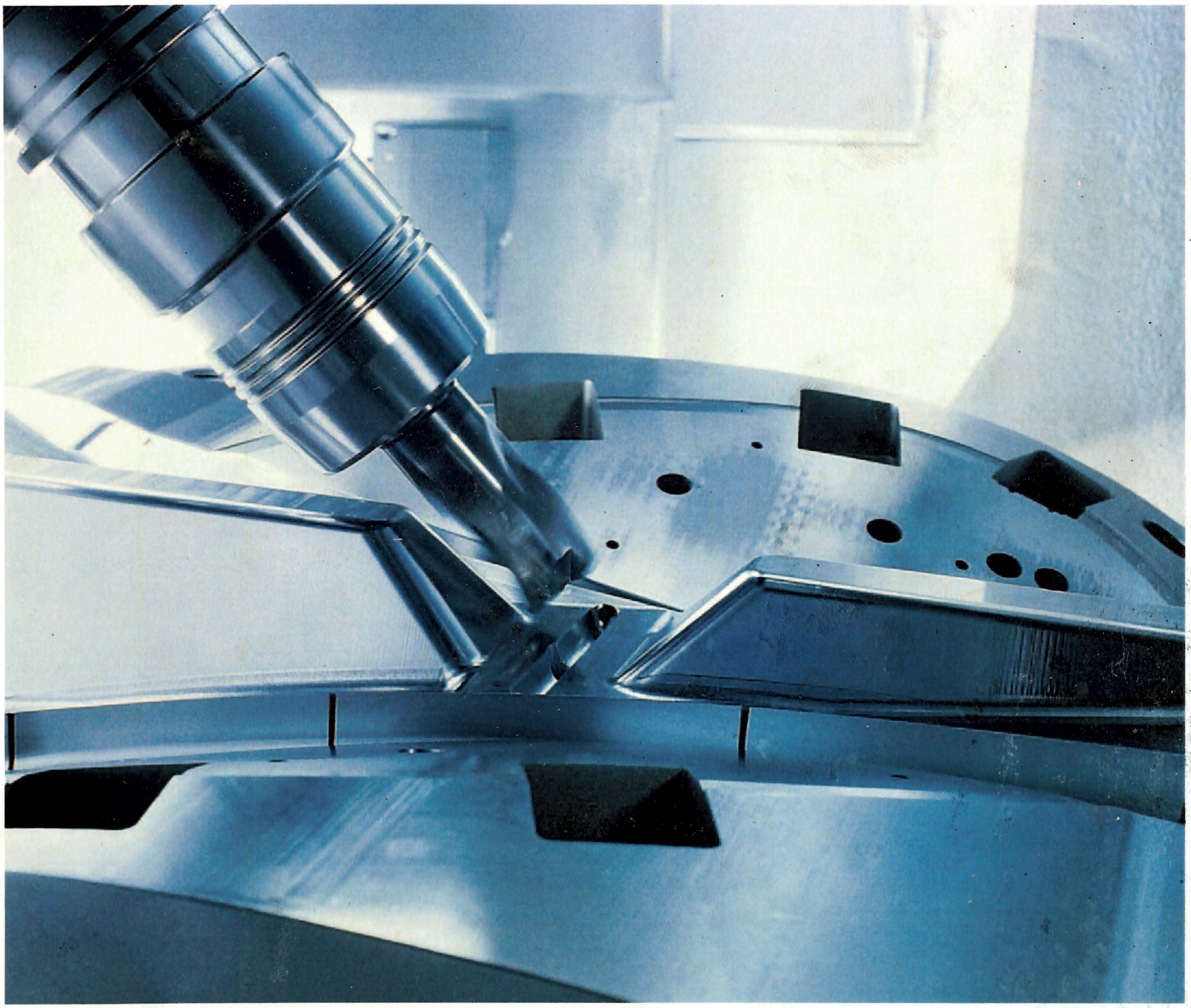
DMU 50

SIEMENS 840D

TECHNICS >> ELECTRICITY

Document on maintenance and service works.
Only for service people of the manufacturer and for qualified staff.



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DMG

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The language acquisition of the manufacturer (German) prevails for the technical content.

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CONTENTS

Contents

2 Safety instructions

1

1 General information

1.1 Basic information

The machines by the DECKEL MAHO Gildemeister group are built state-of-the-art in accordance with the EC machine directives 2006/42/EC and are safe to operate.

The following are prerequisites for perfect and safe operation of this machine:

- correct transport,
- correct installation and commissioning,
- careful operation, maintenance and repair.

1.1.1 Prerequisites

This machine is a sturdy and high-performance yet technically demanding machine requiring careful handling.

For this reason, ensure that the machine is only operated by trained personnel.

The required knowledge can be acquired during special training courses. In addition, the user must know the technical basics of chip removal (e.g. cutting materials, materials, cutting values, cooling, etc.). Basics in handling the CNC technology at the machine and control system must also be known.

The operating personnel must have read and understood these operating instructions, especially the **chapter Safety Information** prior to starting work on the machine.

1.1.2 Protection of the environment and ground water

The machine described here is an HBV system (system for the usage of water polluting substances) in accordance with § 19g Wasserhaushaltsgesetz (German law on water resources).

During operation, decommissioning or disassembly of the machine or parts thereof, the requirements of the **Water Management Act** (WHG) must be observed. For detailed information refer to the regulations pertaining to systems used to handle water endangering substances (VAwS) at the respective installation sites.

1.1.3 Company responsibility

A determination must be made within the company as to who is responsible for the machine (owner/user) and who is allowed to work on or with it (operator).

Clearly define the responsibilities of the personnel with regard to the transport, installation, make-ready, setup, operation, care, maintenance and repair. Check to ensure compliance.

Duties of the owner/user as per regulation on operational safety, §4 and health and safety standards, § 4 in Germany and according to the European directives 89/391/EC and 89/655/EC

The owner must

- inform himself on the applicable and valid health and safety regulations and observe them.
- carry out a risk evaluation on the workplace on the machine with regard to the workpieces to be machined.
- determine the risks arising from the specific workpiece machining processes.
- take additional safety measures where applicable.
- draw up operating instructions giving clear regulations for machine operation.

1.1.4 Qualification of personnel

Only allow appropriately qualified and authorised personnel to work on this machine.

The training can take place:

- at one of our DMG training centres,
- through advanced vocational training institutes,
- in-house.

1.1.5 Maintenance, repair

Ensure that the maintenance work is only performed in accordance with the specifications in the operating manual.

Ensure that the repair work is only performed by **qualified persons specially trained** for the respective area of expertise.

NOTE! Observe all relevant safety information.

Any liability of the manufacturer is excluded:

- in the event the machine is used other than for the intended purpose.
- if the machine is operated when it is not in technically perfect condition.
- when malfunctions which can impair the safety are not rectified **prior to commissioning/start-up** of the machine.
- In any **modification**, **bypassing** or **deactivating** of devices on the machine serving for trouble-free functioning, unlimited utilization and for active and passive safety.

CAUTION! Impending danger exists in the event that the specifications in the operating instructions and all relevant safety information are not observed. Risk of injuries and machine damage. Observe all relevant safety information.

1.2 Documentation scope

The machine documentation consists of the following components:

OPERATING INSTRUCTIONS

The operating instructions contain all information required to operate the machine, the safety information and the intended use of our product.

TECHNICS >> PROGRAMMING

These instructions contain information concerning the operation and programming of the control system.

TECHNICS >> ELECTRICITY

This document contains the electrical diagrams of the system, as well as parts lists and site plans.

TECHNICS >> MECHANICS

This document contains the fluid plans for the hydraulics, pneumatics, central lubrication and coolant lubricant system, as well as parts lists.

The spare parts drawings of the main components of the system, as well as parts lists.

TECHNICS >> EXTERNAL MODULES

Documents regarding the third-party components used in your machine.

1.3 Technical/electrical documentation

1.3.1 General

The technical/electrical documentation is intended to allow localising electrical and/or electronic errors, identifying and ordering spare parts to be able to carry out repair work properly.

NOTE! In addition to the technical/electrical documentation also observe:

- the binding regulations pertaining to accident prevention and environmental protection valid in the country of destination and at the application site.
- the approved rules for safe and correct working methods.

1.3.2 Contents

This technical/electrical documentation contains:

- the site map of the electrical devices at the machine, on the operating desk, in the electrical switch cabinet.
- the wiring diagram.
- the device list, the wear parts list.
- the description of the safety and monitoring modules, standard optional assembly groups.

NOTE! If you require further information or face problems which are not dealt with in sufficient detail in the operating instructions, please contact your DMG agency.

1.3.3 Symbols

Note

This symbol refers to texts providing application information and useful information concerning optimum handling and utilisation of the machine.

Caution

Symbol and words of warning are used:

- to identify a low risk hazard, which may result in minor or moderate bodily injuries or property damage if it is not avoided.

Warning

Symbol and words of warning are used:

- to identify a moderate risk hazard, which may result in death or serious bodily injuries, if it is not avoided.

Danger

Symbol and words of warning are used:

- to identify a high risk hazard, which will result in immediate death or serious bodily injuries, if it is not avoided.

1.4 Warranty

The Gildemeister Group grants the legal warranty after commissioning has been completed by the DMG customer service fitter.

Please refer to the purchase agreement of your machine for all further details and the agreed warranty periods.

1.5 Warranty exclusion

DMG will assume neither liability nor warranty, if

- the operating and programming instructions, the design documents, transport and installation instructions are not observed.
- the machine including peripheral equipment is not properly serviced and maintained/repaired.
- all of the maintenance work is not performed according to the maintenance instructions and documented in the logbook.
- the safety devices have been tampered with.
- the seals on the terminals on the machine's operating hours counter are damaged.
- the machine including the peripheral equipment is operated incorrectly.
- any technical or functional modifications are made which are not authorised by the manufacturer.
- the access rights for the set-up users are changed, causing the access for the DMG service fitters to be denied.

1.6 Anti-virus program

If a virus scanner is installed by the customer, it must only be started when the machine is at standstill.

DMG is not liable for the content of faulty hard drives, resulting from the installation of third-party software, updates or additional user software.

NOTE! If service missions by DMG are required after these types of modifications to programs or data, the service costs incurred will be invoiced.

1.7 Machine collision

1.7.1 Machine during the warranty period

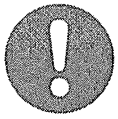
In the event of a machine collision during the warranty period, contact the responsible DMG service immediately.

NOTE! Nonobservance will lead to negative effects on the warranty!

1.7.2 Behaviour in the event of a collision

In the event of a collision, do not make any changes to the machine and/or actuate any keys - **except for EMERGENCY STOP** -.

Save the following data:



NOTE! The saving/back-up process is described in the operating instructions for the control system.

- Save the NC program:
  - the called-up program,
  - the sub-routines,
- the tool data,
- the zero offsets,
- if necessary, the tool administration,
- if necessary, the parameter data,
- the logbook data as a file.

Additionally required information:

- Digital photos of
  - the complete screen,
  - the machine,
  - the current collision point,
  - the machining compartment,
  - the transfer position of the tool magazine (if available),
  - the pallet changer (if available).

Data transmission

Send the above listed data and information to DMG service.

NOTE! If net service is available, data back-up (**except for digital photos**) can also take place via the net service.

1.8 Declaration of conformity

In the event that the safety information is not observed, the conformity declaration supplied with the machine, according to the EC Machine Directive 2006/42/EC, and the CE sign attached to the machine become invalid.

NOTE! Please refer to the folder spine of this operating manual for the precise machine designation, the machine type and the machine serial number.

1.9 Directives, standards

The following directives and standards apply to this machine:

1.9.1 EC Directives

EC Machine Directive 2006/42/EC in its current amended version.

EC EMC Directive 2004/108/EC in its current amended version.

EC Pressure Equipment Directive 97/23/EC in its current amended version.

1.9.2 EN Standards

EN 12100-1.

EN 12100-2.

EN 60204-1.

respective type C standard, e.g. EN 12415, EN 12417.

2

2 Safety instructions

2.1 General Safety Instructions

2.1.1 Hazards

Danger may emanate from the machine when it is used improperly, not in conformity with its intended purpose or operated and/or serviced by untrained persons. This may result in **danger** to

- health and life.
- the machine and other user assets.
- the efficient work of the machine.

NOTE! The owner/user must ensure that only respectively qualified and authorised personnel is working on this machine.

Check at regular intervals, to ensure that the personnel is working in a safety and danger conscious manner. In doing so, observe the operating instructions and safety information.

2.1.2 Machine status

2.1.2.1 Technical status

Requirements placed on the technical status to ensure safe/reliable and perfect operation of the machine:

- Never perform any unauthorised conversions, manipulations, changes to the machine.
- Perform maintenance work on the machine at regular intervals.
- Ensure that the safety devices are functioning.

Ensure free access to the machine and peripheral equipment.

2.1.2.2 Machine operation

Prior to switching on the machine, check the filling levels and top up, if necessary.

Check the machine for existing leaks and eliminate the cause.

Ensure that the working place at the machine is clean and clearly arranged.

NOTE! Exercise caution when removing the chips, only use chip hook and hand broom.

Never throw waste into the coolant lubricant or chip disposal.

After longer shut-down periods (more than 2 days) set additional lubricating pulses.

2.1.2.3 Intended use

The operator and owner/user must ensure that the machine is only used for its intended purpose.

Intended use means:

- Chip removal from workpieces made of wood, metal or plastic using tools and devices suitable for this purpose.
- The handling of workpieces and materials to be machined in connection with the supplied peripheral equipment.
- Execution of the described functions and processes according to the operating instructions.
- Applying the information obtained in the DMG training courses.
- Using the machine with the supplied CNC parameters, PLC program and hardware configuration.
- The employment of qualified and authorised personnel.
- Observing the safety information.

2.1.3 Personnel

2.1.3.1 Obligations of the owner/user

Keep the safety and danger information at/on the machine in legible condition.

Immediately replace safety and danger information signs that are damaged or have fallen off.

Ensure operator training at regular intervals.

Ensure that the relevant regulations concerning safety at work are observed.

Where required, obligate the operators to wear personal protection equipment.

Only use the additional equipment provided or authorised by the manufacturer.

Only use the spare and wear parts provided by the manufacturer.

Observe the maintenance intervals and work specified in the operating instructions.

2.1.3.2 Obligations of the operator

Wear appropriate clothing, e.g. in accordance with EN 510 and personal protection equipment, if required.

In the event that changes have occured on this machine which impair the safety, the following measures must be undertaken:

- Immediately stop and secure the machine.
- Inform the supervisor.
- Have the malfunctions rectified immediately.

2.1.3.3 Health and safety at work

The following points must be observed when working on/with the machine:

- Avoid open long hair. Do not wear jewelry, including rings.
- Never wear loose clothing or accessories that can be caught by the machine (e.g.neck-ties, open belts).
- Never reach into the machine with your hands or auxiliary means while the machine is moving or clamping means and workpieces are rotating.
- Never program rotational speeds higher than the specified maximum speed of the clamping means and/or tools used.
- Never change or render the safety devices, e.g. safety position switches, locking devices and covers inoperative.
- Never paint over or remove labels, information signs, etc.
- Only allow authorised and instructed persons to operate the machine.
- Never process workpieces made of ceramic, magnesium and/or resin-bonded laminated wood.
- Never undertake program changes (software) to programmable control systems.
- Never change the DMG manufacturer cycles and/or the standard cycles of the control system manufacturer.
- Never route electric cables that produce strong electromagnetic radiation in the direct proximity of the machine.
- Never use devices that produce strong magnetic radiation within a radius of 2 m from the machine (e.g. electric welders).
- Never use mobile phones, as they considerably impair the machine operator's concentration (e.g. increased risk of collision in the machine during set-up).
- Never operate the machine when the safety window is damaged.
- Do not enter the machining compartment during the machining process.
- Never take medications, drugs, alcoholic beverages or other intoxicating substances which impair the concentration or reaction time.
- Never undertake any welding work on the machine.
- Never work without wearing safety shoes.
- Never operate the machine in an explosive environment.

2.1.4 Noise protection

The machine is so designed that the noise emission figure at the workplace does not exceed the figure stated in the technical data. Cutting noise could cause the quoted value being exceeded under unfavourable conditions. In these cases, lower the noise emission values by changing the chip removal, tool or clamping conditions.

Always inform the supervisor and safety representative of your company when the noise emission value is exceeded.

NOTE! Wear hearing protection in the event of extreme noise development.

2.2 General information about health and safety at work

2.2.1 Machine safety area

Keep the safety area around the machine clear.

Avoid trip hazards and points of danger.

CAUTION! Coolant lubricant and cutting oil in the machine surroundings. Risk of injury due to slipping.

- Avoid using excessive coolant lubricant and grease.
- Use suitable floor covering, e.g. furnish the work place with slip-resistant floor grids or rubber coating.
- Wear anti-slip safety shoes.
- Clean the machine surroundings and safety area at regular intervals.

2.2.2 Accessible machining compartment

Ensure that anti-slip steps (floor grating) are provided and used.

Remove any sharp-edged tools prior to starting work or move them into a position noncritical for personnel.

It is prohibited to be within the traversing range of the machining spindle and machining table during set-up mode.

Ensure that the door of the machining compartment is not unintentionally closed when a person is in the machining compartment.

Always check the function of the EMERGENCY unlocking device of the machining compartment door.

2.3 Safety devices

2.3.1 General

This machine has the safety features described in the following. Furthermore, additional safety measures are integrated as part of the machine and control system according to the specifications of EC Machine Directive 2006/42/EC.

Always return the safety devices/guards to their safe status following repair work.

Include the safety devices/guards in the routine maintenance.

Ensure that all machining compartment doors, doors and covers are closed prior to commissioning/starting up the machine and are not opened during operation.

Never render installed safety devices/guards inoperative.

2.3.2 Cabin

The machine is covered on all sides. Access to compartments within the framework of setting and maintenance work, in which dangerous movements are taking place, are electrically monitored.

The machining compartment door or flaps can only be opened using special tools.

2.3.2.1 Machining compartment door

The machining compartment poses special hazards due to the movements taking place in this area. It is fitted with casings on all sides. Access is only possible through a locked machining compartment door. The movements can only be started when the machining compartment door is closed or by means of the agreement key during set-up mode.

CAUTION! Rendering the safety devices/guards inoperative. Risk of injury due to moving machine parts. Ensure that the machining compartment doors are not bypassed.

When working with open machining compartment door, **without direct protection against accidental contact** of the rotating tool/workpiece, additional protective measures are required.

The cladding and the machining compartment doors with the safety window are designed such, that clamping means or tools ejected as a result of breakage or collision are held back.

NOTE! However, this only applies if admissible speeds and the size (diameter) of the tools/clamping means are not exceeded.

WARNING! Breakage or collision in the event of inadmissible sizes or speeds of clamping means or tools. Risk of injury, which may result in death or serious bodily injuries, due to ejecting clamping means or tools. Only operate the machine according to the intended use and admissible operating parameters.

Following a collision, always replace damaged parts. This applies, in particular to the safety window of the machining compartment door and its frame.

It is only possible to open the machining compartment door when the spindles and advance/feed drives are standing still.

2.3.2.2 Electrical switch cabinet doors

Ensure that the electrical switch cabinet doors are closed.

Operation of the machine when the electrical switch cabinet doors are open leads to soiling of the units in the electrical switch cabinet.

NOTE! Assembly element failures due to soiling are not covered by the warranty.

2.3.3 Emergency Stop button

The EMERGENCY STOP buttons are identified boldly in **red-yellow** and must be actuated in the event of danger.

Function when the button is actuated:

- All movements will be stopped.
- Drives that could produce a hazard are electrically isolated.

Once the dangerous situation has been overcome, rearm the EMERGENCY STOP button.

2.3.4 SMARTkey® (operating mode selection)

Access to certain operating modes or settings is only possible using a SMARTkey® or password.

The owner/user must provide appropriate operating instructions to ensure that the SMARTkey® is only used by authorised users.

2.3.5 Agreement key

When the machining compartment door is open, movements can only be started in manual mode, when the agreement key is actuated by one hand and a function key by the other hand.

The movement will be stopped if the button or key is released.

2.3.6 Speed checks

It is only allowed to use clamping features that are designed for the maximum speed of the machine.

The maximum machine speeds are listed in the technical data contained in the operating instructions.

2.3.7 Workpiece clamping

Check the clamping and unclamping path of the tool clamp.

2.4 Workpiece machining

Check suitability of the existing clamping means.

Following collisions during which the clamping means were damaged, always consult the respective clamping means manufacturer concerning the continued use of the clamping means.

Each time the clamping means is changed, reset the monitoring function (parameters) for the clamping stroke and clamping pressure.

Only actuate the manual clamping means using the original clamping means spanner. Always remove the clamping means spanner from the clamping means **prior to spindle start**.

Adhere to the specifications to set the clamping pressure and to monitor the path.

Check the function of the power clamping means at regular intervals using a clamping force measuring device.

Insert the workpieces correctly and ensure that the system is clean.

CAUTION! Non-secured or insufficiently secured workpieces during clamping or unclamping. Risk of injury due to crushing. Always secure the workpiece against falling prior to clamping and unclamping.

WARNING! Incorrectly clamped workpieces. Risk of injury, which may result in death or serious bodily injuries, due to ejection of the workpiece. Clamp the workpiece correctly.

WARNING! Breakage or collision in the event of inadmissible sizes or speeds. Risk of injury, which may result in death or serious bodily injuries, due to ejection of the workpiece. Only operate the machine according to the intended use and admissible operating parameters.

Remove the workpieces from the clamping means prior to switching off the machine.

Take the machining compartment limitations into account when equipping and swivelling the turret.

2.5 Hazardous substances

Hazardous substances include oils, coolant lubricants and antifreeze agents.

These agents pose a possible hazard to health and environment due to their additives.

Selection and use are on sole risk of the owner/user.

When these agents are used or prepared, dangerous substances may be released (e.g. through vapour).

The operating instructions on the handling of these agents, prepared by the owner/user, must contain:

- Agent designation.
- Designation of hazards to man and environment.
- Protective measures and behaviour rules, e.g.
  - wearing protective gloves made of resistant plastic,
  - avoiding contact with the skin and eyes,
  - not breathing in the vapour and mist,
  - fire, naked flame and smoking are prohibited.
- How to behave in the event of danger, First Aid.
- Proper disposal.

2.5.1 Explosive / flammable substances

The dust of flammable substances is explosive in a sufficient concentration and if the particle size is small enough.

Typical explosive/flammable substances are:

- organic, natural dust from coal or wood,
- inorganic dust from magnesium, aluminium or zinc.

2.5.2 Emissions

The machines creating hazardous materials and substances during the machining process must be connected to suitable oil/emulsion mist separators. For this purpose, use the opening in the cladding of the machining compartment.

When connected to a machine-specific or central oil/emulsion mist separator, this opening must be equipped with an appropriate baffle plate to ensure the extraction of the materials and substances created.

When the machine is in operation, ensure that the extraction systems, required for the process, are switched on.

2.5.3 Working with magnesium

When machining materials containing magnesium (aluminium / magnesium alloys), spontaneously combustible or explosive particles (powder, dust, chips) can be released.

WARNING! Explosive substances!

Risk of injury, which may result in death or serious bodily injuries, due to fire, explosion or deflagration.

- Duty to give notice to the responsible Employers' Liability Insurance and to the Fire Prevention Authority.
- Take suitable protective measures and establish appropriate behavioural rules for the handling of magnesium.
- Train the employees at regular intervals.
- Provide appropriate extraction systems and explosion relief openings.
- Provide a suitable fire extinguishing system.

Do not extinguish with water! Water and water-containing fire extinguishing agents will produce dangerous reactions with burning magnesium (explosive gas). In the event of a magnesium fire, use only approved fire extinguishing agents to extinguish the fire. It is not allowed to use water or CO_2.

2.5.4 Coolant lubricants not mixable with water

WARNING! Explosive substances!

In the event of using flammable oils, a potentially explosive coolant lubricant-vapour-aerosol-air mixture may be produced in the machining compartment of the machine.

Risk of injury, which may result in death or serious bodily injuries, due to fire, explosion or deflagration.

- For safety reasons, the use of coolant lubricants not mixable with water (cutting oils) is not allowed without a specific fire extinguishing system.
- The fire extinguishing system must be active when machining with cutting oils.

2.6 Fire protection

2.6.1 Fire extinguishing system

The owner/user of the machine must enter into a service or maintenance agreement with the manufacturer of the fire extinguishing system (DIN VDE 0833-1, Directive 89/655/EC, BGR 134 Point 6.3).

If this agreement is not made, the conformity agreement of the machine becomes invalid 3 months following the inspection of the fire extinguishing system by its manufacturer.

The fire extinguishing agent is CO_2 (carbon dioxide). Other gases can also be used in certain circumstances.

Ensure that the rules concerning health protection and safety are observed.

In order to prevent unintentional triggering of the fire alarms, protect them from UV light sources.

PROHIBITED! Due to the sensitive sensors, never use mobile phones, radio equipment (walkie/talkie) or cameras with flashlight.

Always switch off the fire extinguishing system prior to starting any service, maintenance/repair and/or cleaning work in the machining compartment.

The owner/user of the machine must be appropriately trained by the manufacturer of the fire extinguishing system.

Rooms filled with extinguishing gas are only allowed to be entered again after airing and specific approval.

2.7 Media supply

2.7.1 Hydraulic group

Replace hydraulic lines in adequate time intervals.

Always depressurise the hydraulic unit prior to working on it.

Enter the replacement of the hydraulic lines in the machine logbook.

The pressure vessels are subject to the pressure vessel regulation or EC directives for pressure units.

Inspections at regular intervals are required by the owner/user of the machine.

2.7.2 Coolant lubricant system

Ensure that the coolant lubricant system is only filled with premixed coolant lubricant.

Change the coolant lubricant at regular intervals.

Observe all information in section "Hazardous substances".

Strictly avoid any contamination of the coolant lubricant through old oil, cigarette ends or other waste.

Never adjust the coolant lubricant nozzles while the machine is running.

2.7.3 Chip disposal / Chip conveyor

Avoid contact with the chips and coolant lubricant.

Use suitable tools for chip disposal, e.g. chip hook, brush, hand broom, industrial vacuum cleaner.

Operation of the chip conveyor is only permitted with the chip collector trough in place.

Never reach into the discharge channel of the chip conveyor.

Never climb into the chip conveyor.

Never remove the chips while the machine is running.

It is prohibited to clean with compressed air! Never clean the workpiece and the machine using compressed air. **Risk of injury** exists as a result of ejected chips, particularly for the eyes.

Prohibited! Using propeller tools for cleaning is prohibited.

2.8 Tools and tool change

2.8.1 Tools

Only use tools suitable for the machine.

CAUTION! Avoid sharp-edged tool blades. Risk of injury due to accidental contact with the tool blades. Never get close to a clamped tool. Always wear protective gloves.

Check the condition of the tools prior to starting work.

When using large tools, take the distance and the machining compartment limitations into account.

Never reach for a tool while the tool is still rotating.

Wear protective gloves! To avoid cutting injuries, always wear protective gloves.

2.8.2 Manual tool change

The tool must be moved free for the manual tool change.

Always perform the tool change yourself to avoid an operating error by a second person.

- Always keep a good grip on the tool when unclamping/releasing the tool clamping device in order to prevent the tool from falling.

CAUTION! Erratic movement with high pull-in force during the clamping process. Risk of injury due to crushing. Never reach between the tool dog flange and the spindle nose.

2.8.3 Automatic tool change

NOTE! Only insert the tools at the loading station of the tool magazine into the magazine positions provided for this purpose.

2.9 Operation

Adhere to the switch-on and switch-off procedures specified in the operating instructions for all work relating to the operation.

After switching on the machine, always check the function of the machining compartment monitoring unit.

Ensure that the safety information and instructions detailed in chapter **Operation** have been read and understood.

Check the machine prior to operation:

- Check to ensure perfect function of the safety devices/guards.
- Ensure that the operator knows the location of the **EMERGENCY STOP buttons**.
- Ensure that no one is in the working area. In addition, ensure that no persons are in areas not visible from the operating position.
- Check the machine for loose, damaged or worn parts.

NOTE! Damaged pipe and hose lines can lead to oil leaks. Damaged electric lines can lead to electric shock.

Strictly observe the proper sequence when switching the machine on and off, and when switching it on again after an interruption. Machine damage may result.

Ensure that the main switch is not switched off during the machining sequence as this will lead to machine damage.

Set the correct operating mode and secure by pulling off the SMARTkey®.

Never change the operating mode while the machining spindle is running. Changing the operating mode results in **Feed Stop** and **Spindle Stop**.

2.10 Operating modes (OM)

NOTE! The operating modes are selected using the SMARTkey®. This should only be given to authorized and especially trained personnel.

Load and unload the workpiece in the STANDARD OPERATING MODE.

NOTE! Protective gloves may only be worn when handling workpieces.

Operating mode 1: Normal mode (automatic mode)

Operating mode 2: Set-up mode (with agreement key)

The set-up mode is an operating mode in which the operator carries out adjustments for the following machining process.

Operating mode 3: Manual intervention under restricted conditions (with agreement key)

Machine operation under manual or limited numerical control with open separating protective devices of the working area.

- Part cycle with agreement key.

Operating mode 4: Process monitoring during production and/or extended manual intervention under restricted conditions (without agreement key)

Machine operation under manual or limited numerical control with open separating protective devices of the working area.

- Part cycle without agreement key.

This operating mode is a special operating mode.

2.10.1 Operating mode 2

Intended use:

This operating mode can only be used by appropriately qualified and authorized personnel that has been especially trained.

Laymen and semi-skilled persons can not have access to operating mode 2.

Once work is completed in operating mode 2, the STANDARD OPERATING MODE must be selected using the SMARTkey®.

NOTE! Prior to and during machining, always check if this work can also be performed when the machining compartment door is closed or in operating mode 1 or 2.

NOTE! The SMARTkey® must be pulled off and safeguarded by the person responsible for the use of the machine.

Take protective measures to ensure the safety and health of the operator.

The personal protection equipment must be determined by the safety representative of the owner/user, e.g. protective goggles, safety shoes, skin protection, hair protection, no protective gloves.

NOTE! The machine can not be operated unattended in the operating mode 2.

The spindle speed and advancing speeds are limited by DMG, taking the latest state of the art technology, the risks and safety criteria as well as the specifications of the relevant type C-EN standard into account.

In spite of these limitations, the operating mode 2 still poses a high safety risk for the authorized personnel, e.g. due to crushing, shearing, crashing, breaking through, retracting, winding, flying workpieces or liquids, vapors. The machine owner must appropriately train the personnel.

The owner/user is responsible to ensure that the measures listed in the safety information/instructions are carried out in order to reduce the inherent risks (persons and/or property damage).

2.10.2 Operating mode 3

Intended use:

This operating mode can only be used by appropriately qualified and authorized personnel that has been especially trained.

Laymen and semi-skilled persons can not have access to operating mode 3.

The owner/user must ensure through organisational measures that operating mode 3 is only used in special cases.

Its use can only be ordered by the person responsible for the use of the machine.

Once work is completed in operating mode 3, the STANDARD OPERATING MODE must be selected using the SMARTkey®.

NOTE! The SMARTkey® must be pulled off and safeguarded by the person responsible for the use of the machine. Unauthorised persons are not allowed to have access to operating mode 3.

Take protective measures to ensure the safety and health of the operator.

The personal protection equipment must be determined by the safety representative of the owner/user, e.g. protective goggles, safety shoes, skin protection, hair protection, no protective gloves.

NOTE! The machine can not be operated unattended in the operating mode 3.

When work is performed in operating mode 3, the operator must always have direct access to the EMERGENCY STOP button, so that he/she can immediately switch off the machine in the event of danger.

NOTE! Prior to and during machining, always check if this work can also be performed when the machining compartment door is closed or in operating mode 1 or 2.

The spindle speed and advancing speeds are limited by DMG, taking the latest state of the art technology, the risks and safety criteria as well as the specifications of the relevant type C-EN standard into account.

In spite of these limitations, an increased safety risk remains for the instructed qualified and authorised personnel in operating mode 3, e.g. crushing or shearing, bumping, piercing, being pulled in, wound-up, ejected parts or fluids, vapour. The machine owner must appropriately train the personnel.

The owner/user is responsible to ensure that the measures listed in the safety information/instructions are carried out in order to reduce the inherent risks (persons and/or property damage). In order to reduce the existing risks and to clarify any possibly necessary, additional protective measures, we recommend contacting the responsible, technical supervising official of the responsible Employers' Liability Insurance as well as DMG.

2.10.3 Operating mode 4

Special mode

This special operating mode can only be used by appropriately qualified and authorized personnel that has been especially trained.

Laymen and semi-skilled persons can not have access to the special operating mode.

The machine owner must ensure that this special operating mode is only used in special cases by taking organizational measures.

Its use can only be ordered by the person responsible for the use of the machine.

After completing the work in this special operating mode, select the NORMAL operating mode with the SMARTkey®.

NOTE! The SMARTkey® must be pulled off and safeguarded by the person responsible for the use of the machine. Unauthorised individuals must not have access to operating mode 4.

Take protective measures to ensure the safety and health of the operator.

The personal protection equipment must be determined by the safety representative of the owner/user, e.g. protective goggles, safety shoes, skin protection, hair protection, no protective gloves.

NOTE! The machine can not be operated unattended in the special operating mode.

When working in the special operating mode, the operator must always have the EMERGENCY STOP button ready to hand in order to switch off the machine immediately in case of danger.

NOTE! Before and during the application of this special operating mode, check if these operations can also be carried out with the machining compartment door closed or in the operating mode 1, 2 or 3.

The spindle speed and advancing speeds are limited by DMG, taking the latest state of the art technology, the risks and safety criteria as well as the specifications of the relevant type C-EN standard into account.

In spite of these limitations, the operating mode 4 still poses a high safety risk for the authorized personnel, e.g. due to crushing, shearing, crashing, breaking through, retracting, winding, flying workpieces or liquids, vapors. The employees must be appropriately informed by the owner/user of the machine.

The owner/user is responsible to ensure that the measures listed in the safety information/instructions are carried out in order to reduce the inherent risks (persons and/or property damage).

To reduce the existing risks and to clear any complementary protective measures that may possibly be needed, we recommend to contact the respon-

sible technical supervisory staff of the relevant professional association and DMG. The risk of injuries must be kept as low as possible.

Council directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work and Council directive 89/655/EEC concerning the minimum safety and health requirements for the use of work equipment by workers at work must be followed.

The DMG Service can execute a customized reduction of the limit values for the spindle speed and feed rate specified by DECKEL MAHO. The requirements for this change must be defined by the persons responsible for the utilisation of the machine.

2.10.4 Underlying directives and standards

The following directives and standards apply to this machine:

- EC Machine directive 2006/42/EC
- EN 12100
- Type C standard: EN 12415 (lathes), EN 12417 (milling machines).

2.11 Maintenance and service

CAUTION! Automatic machine operation. Risk of injury through unintentional machine movements if all protection measures are not taken. Prior to performing any maintenance work, set the main switch to OFF and secure against switching on again by means of a padlock or barrier. Attach information sign to protect against switching on.

WARNING! Dangerous electric voltage!

Current carrying (live), uncovered components in the switch cabinet. Risk of injury, which may result in death or serious bodily injuries, due to electric shock.

- Never touch uncovered components in the switch cabinet.
- Isolate the mains supply line from the power, secure against switching on and attach appropriate danger sign/information.

Adhere to the switch-off procedures specified in the operating instructions for all work relating to maintenance and service.

Please contact the DMG Service or your nearest DMG branch if you have any questions concerning maintenance or in the event of machine malfunctions.

Restrict maintenance and care to appropriately qualified and authorised persons, observing the specifications in the operating instructions.

- Only use lint-free cloths for cleaning purposes.
- Use suitable, environmentally safe cleaning agents.

NOTE! Never use aggressive solvents, e.g. chlorinated hydrocarbons, acetone or similar agents. These will damage the plastic parts or seals (scrapers).

- Never clean the machine using compressed air, propeller tools or high pressure power washers (steam jet). Chips could get into the guide tracks, spindle bearings or turrets.
- Prior to cleaning the machine with water or other cleaning agents, cover/ tape over all openings into which no fluid is permitted to ingress for safety and/or functional reasons. The electric motors and electric switch cabinets are at particular risk.
- Reopen all covered/taped over openings once the cleaning work has been completed.
- Reattach any removed cladding and/or protection devices/guards once the maintenance work has been completed.
- Once the maintenance work has been completed, check to ensure perfect function of the safety and protection devices/guards.

NOTE! Fire extinguishing systems (option) must be safely deactivated prior to starting any work in the machining compartment of the machine. Once the work has been completed, reactivate the fire extinguishing system.

2.11.1 Vertical or angled axes

No person may stand beneath a vertical or angled axis unless adequate security measures have been taken.

WARNING! Incorrectly or wrongly secured vertical or angled axes. Risk of injury, which may result in death or serious bodily injuries, due to unintentionally moving machine parts. Prior to working beneath these types of axes, ensure that they are brought into a safe position and adequately secured. Example: Build a substructure beneath the axis or secure by means of a suspension device.

2.12 Transport and installation

Adhere to the national specifications:

- the specific transport and installation instructions,
- chapters "Design, transport, installation" in the operating instructions.

2.13 Behaviour in dangerous situations and in case of accidents

2.13.1 Behaviour in dangerous situations

Actuate the EMERGENCY STOP button, when

- human life is in danger.
- Danger exists that the machine or the workpiece can be damaged.

In general, the following behavioural rules apply in the event of an accident or fire. They do not replace the required in-company regulations and operating instructions.

2.13.1.1 Behaviour in case of an accident

1 Undertake immediate measures at the accident site.

2 Report the accident:

- Type of EMERGENCY.
- Where did the accident take place?
- What happened?
- How many people are injured?
- What type of injuries are involved?
- Who is reporting the accident?
- Wait and answer questions.

3 Perform First Aid.

4 Direct the rescue service.

The following information must be known in addition:

- Who is the first to administer aid?
- Where is the closest first aid kit?
- Where is the accident reporting place?
- What is the Emergency telephone number for first aid/accidents?
- In-company regulations and operating instructions.

2.13.1.2 Behaviour in case of fire

WARNING! Hot gases and open flames. Risk of injury, which may result in death or serious bodily injuries, due to explosion or fire. Only extinguish the fire or prevent it from spreading when this is possible without risk.

WARNING! Explosive substances!

Some parts of the machine contain hot oil. Risk of injury, which may result in death or serious bodily injuries, due to exploding oil when water is used as an extinguishing agent. Only fight fire in hydraulic units using carbon dioxide, foam or powder.

WARNING! Dangerous electric voltage!

The machine is connected to the electric operating network. Risk of injury, which may result in death or serious bodily injuries, due to electric shock when water is used as an extinguishing agent. Only fight fire in electrical systems using carbon dioxide (CO_2).

1 Undertake immediate measures.

2 Report fire:

- Type of EMERGENCY.
- Where is the fire?
- What is on fire?
- How many people are injured?
- What type of injuries are involved?
- Who is reporting the accident?
- Wait and answer questions.

3 Perform First Aid.

4 Extinguish the fire.

5 Direct the fire brigade.

The following information must be known in addition:

- Where is the closest fire extinguisher and how is it used?
- Where is the closest fire alarm?
- Where is the closest telephone?
- What is the Emergency telephone number of the fire brigade?
- Which fire reporting and fire fighting measures must be observed?
- Who is the first to administer aid?
- Where is the closest first aid kit?
- Where is the accident reporting place?
- What is the Emergency telephone number for first aid/accidents?
- In-company regulations and operating instructions.

3

3 Position plan machine, switch cabinet

See chapter 4.

4

4 Circuit diagrams

Dear customer,

in this chapter, you can file away the circuit diagram which is located in the control cabinet.

circuit diagram

Elaborated by:	DECKEL MAHO Seebach GmbH
Machine:	DMU 50
series:	4526
project number:	113022
CNC unit:	SIEMENS

Deckel Maho Seebach GmbH

Neue Straße 61

D-99846 Seebach

Telephone (036929) 812-0

Telefax (036929) 812-405

electrical data

Power connection	400V 3/N,PE 60Hz
total power	31 kVA
In max.	45 A
max. fuse	50 A
DC-control voltage	24 VDC
AC-control voltage	
AC power supply voltage	230 VAC
equipment 1	
equipment 2	
equipment 3	
equipment 4	

equipment

SIEMENS	swivel circular table servo
CNC 840D SL	measuring sensor
Main drive 14.000 U/min	Tool break monitoring
tool magazine 60 tools	Rotoclear inspection window
measuring systems X-Y-Z-axis	Chip conveyor
band filter unit	CSA-Model
	handling system
	clamping device

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Cover page	object DMU 50	DCC & EAA	Place +S	⇦	
			change	MEF	113022						⇨	
			chec.					series 4526	circuit diagram No.: 2652185	language EN	sheet	1/
Revision	Date	Name	Created by		rep. by	rep. of	source					1

table of contents

		Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	table of contents	object	DCC	Place	⇦
		change	MEF	113022			DMU 50	& EAB		⇨ 2
		chec.					series	circuit diagram No.:	language	sheet 1
		Created by		rep. by	rep. of	source	4526	2652185	EN	

table of contents

Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	table of contents	object	DCC	Place	⇦	1
change	MEF	113022			DMU 50	& EAB		⇨	3
chec.					series	circuit diagram No.:	language	sheet	2
Created by		rep. by	rep. of	source	4526	2652185	EN		

table of contents

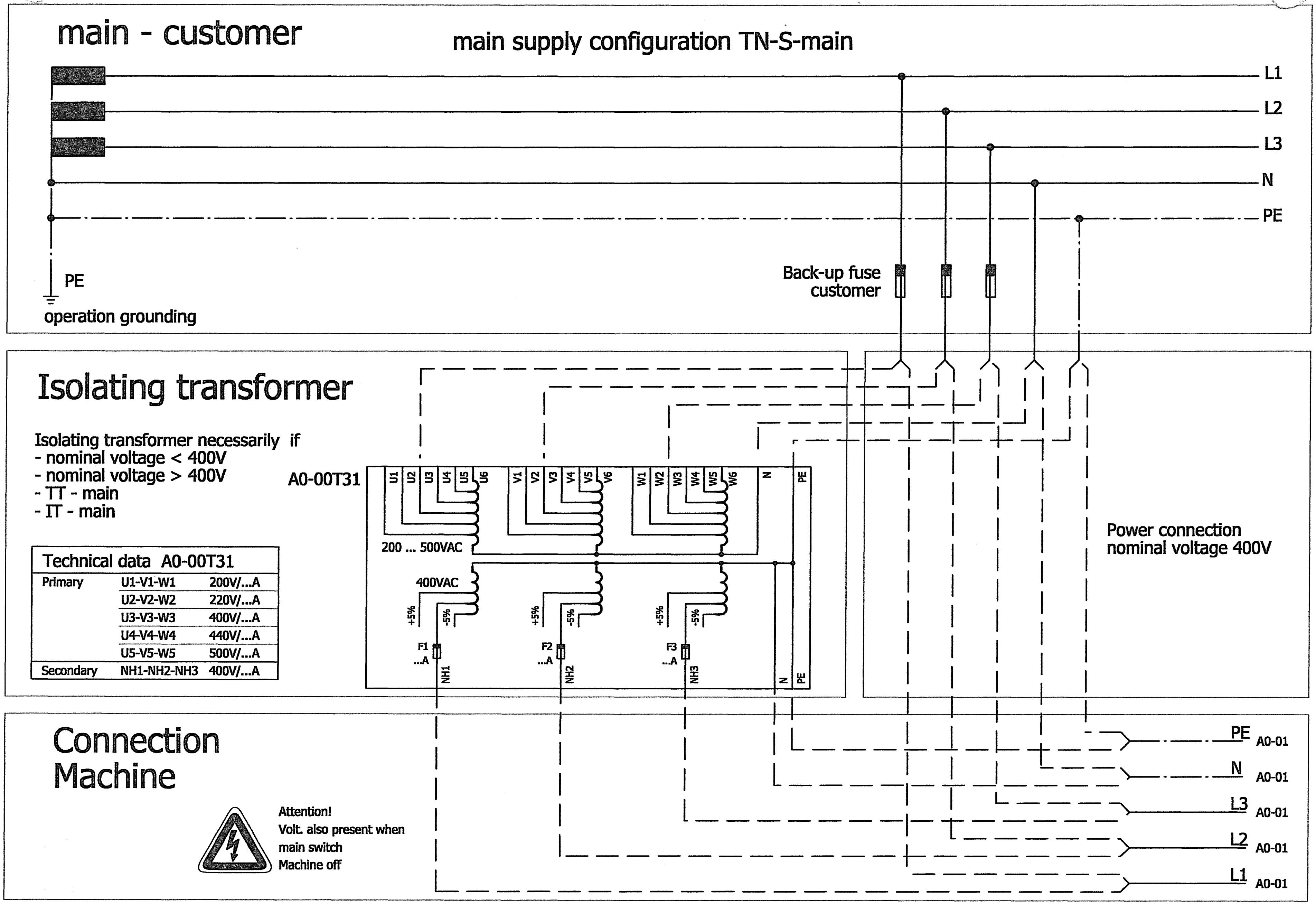
		Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	table of contents	object	DCC	Place	⇦ 2
		change	MEF	113022			DMU 50	& EAB		⇨ 4
		chec.					series	circuit diagram No.:	language	sheet 3
		Created by		rep. by	rep. of	source	4526	2652185	EN	

table of contents

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	table of contents	object	DCC	Place	⇦ 3
			change	MEF	113022			DMU 50	& EAB		⇨ 5
			chec.					series	circuit diagram No.:	language	sheet 4
			Created by		rep. by	rep. of	source	4526	2652185	EN	

table of contents

drawing contents	Designation	sheet	Change	revision
153/schematic diagram	Control cabinet Mounting plate	5		
154/schematic diagram	Control cabinet side view	6		
155/schematic diagram	Control cabinet front indicating plate	7		
156/schematic diagram	command station	8		
157/schematic diagram	Option Handwheel	9		
158/schematic diagram	Machine Front view	11		
159/schematic diagram	Machine side view	12		
160/schematic diagram	Machine tool magazine	17		
161/schematic diagram	Machine Media suply	18		
162/schematic diagram	Chip conveyor	19		
163/schematic diagram	Coolant system Control cabinet	30		
164/schematic diagram	Coolant system Plan view	31		
165/schematic diagram	Clamping hydraulics	50		
166/schematic diagram	lateral door to working area	60		
167/Allocation list		1		
168/Allocation list		2		
169/Allocation list		3		
170/Allocation list		4		
171/Allocation list		5		
172/Allocation list		6		
173/Allocation list		1		



Technical data A0-00T31		
Primary	U1-V1-W1	200V/...A
	U2-V2-W2	220V/...A
	U3-V3-W3	400V/...A
	U4-V4-W4	440V/...A
	U5-V5-W5	500V/...A
Secondary	NH1-NH2-NH3	400V/...A

Date	02.02.2011	project number 113022
change	MEF	
chec.		
revision / Date / Name / Created by		rep. by / rep. of / source

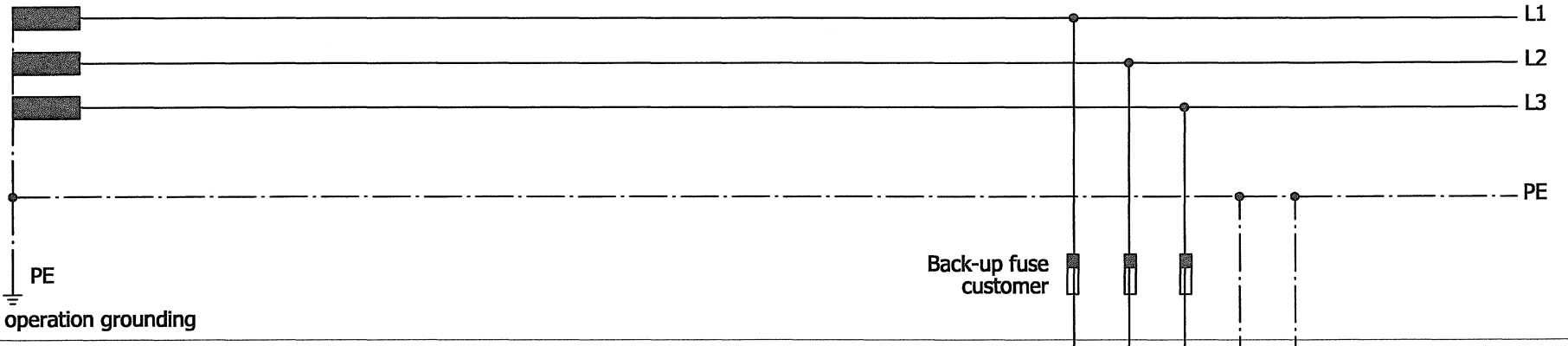
DECKEL MAHO Seebach GmbH

Schematic diagram
Power connection
TN-S-Netz

object	DCC	Place	
DMU 50	& EFS	+M	002
series 4526	circuit diagram Nr.: 2652185	language EN	sheet A0-00/001 7

main - customer

main supply configuration TN-C-main

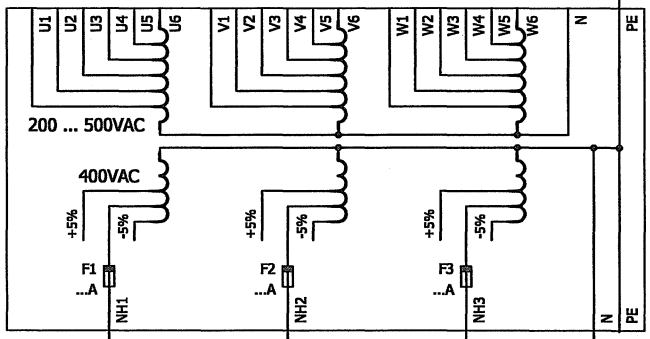


Isolating transformer

Isolating transformer necessarily if
- nominal voltage < 400V
- nominal voltage > 400V
- TT - main
- IT - main

Technical data A0-00T31		
Primary	U1-V1-W1	200V/...A
	U2-V2-W2	220V/...A
	U3-V3-W3	400V/...A
	U4-V4-W4	440V/...A
	U5-V5-W5	500V/...A
Secondary	NH1-NH2-NH3	400V/...A

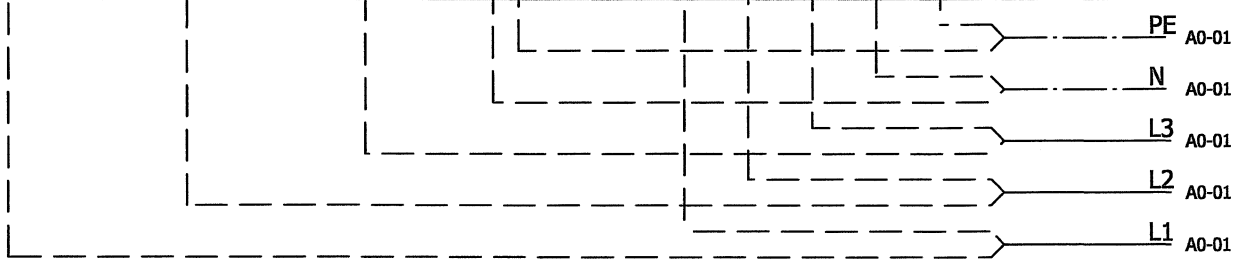
A0-00T31



Power connection
nominal voltage 400V

Connection Machine

Attention!
Volt. also present when
main switch
Machine off



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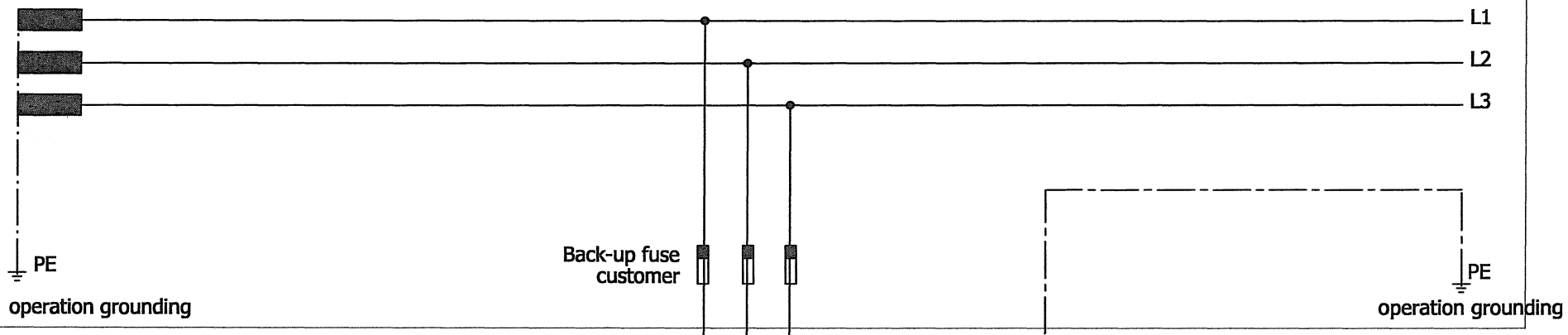
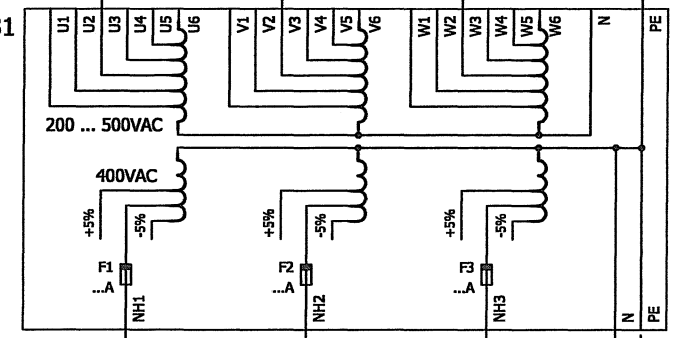
			change	MEF	113022		Power connection TN-C-Netz	DMU 50	& EFS	+M	⇨ 003
			chec.					series	circuit diagram Nr.:	language	sheet A0-00/002
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	8

main - customer

main supply configuration TT-main



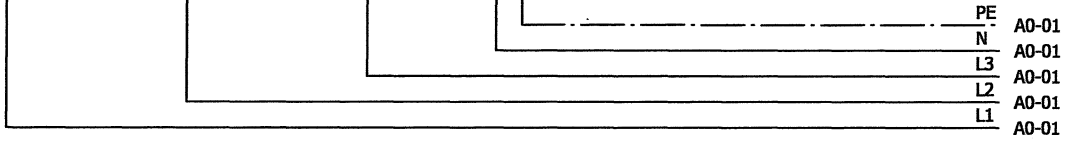
disconnect. transformer



Technical data A0-00T31		
Primary	U1-V1-W1	200V/...A
	U2-V2-W2	220V/...A
	U3-V3-W3	400V/...A
	U4-V4-W4	440V/...A
	U5-V5-W5	500V/...A
Secondary	NH1-NH2-NH3	400V/...A

Connection Machine

Attention!
Volt. also present when
main switch
Machine off



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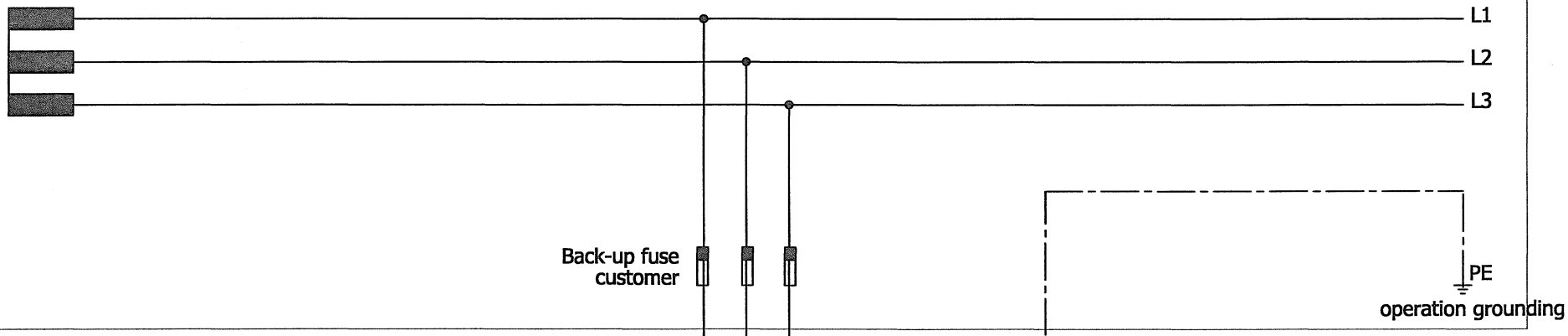
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	9

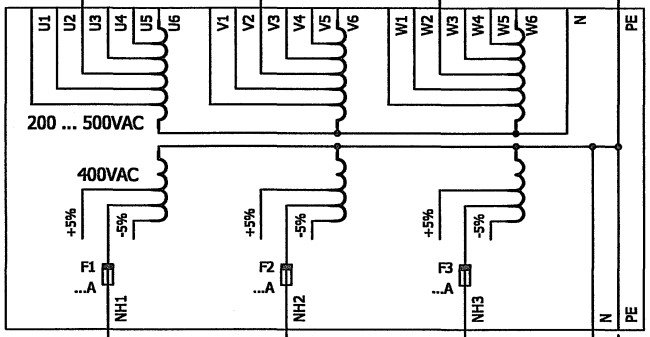
1 2 3 4 5 6 7 8

main - customer

main supply configuration IT-main



disconnect. transformer



Technical data A0-00T31		
Primary	U1-V1-W1	200V/...A
	U2-V2-W2	220V/...A
	U3-V3-W3	400V/...A
	U4-V4-W4	440V/...A
	U5-V5-W5	500V/...A
Secondary	NH1-NH2-NH3	400V/...A

Connection Machine

Attention!
Volt. also present when
main switch
Machine off

PE A0-01
N A0-01
L3 A0-01
L2 A0-01
L1 A0-01

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	003
			change	MEF	113022		Power connection IT-Netz	DMU 50	& EFS	+M	
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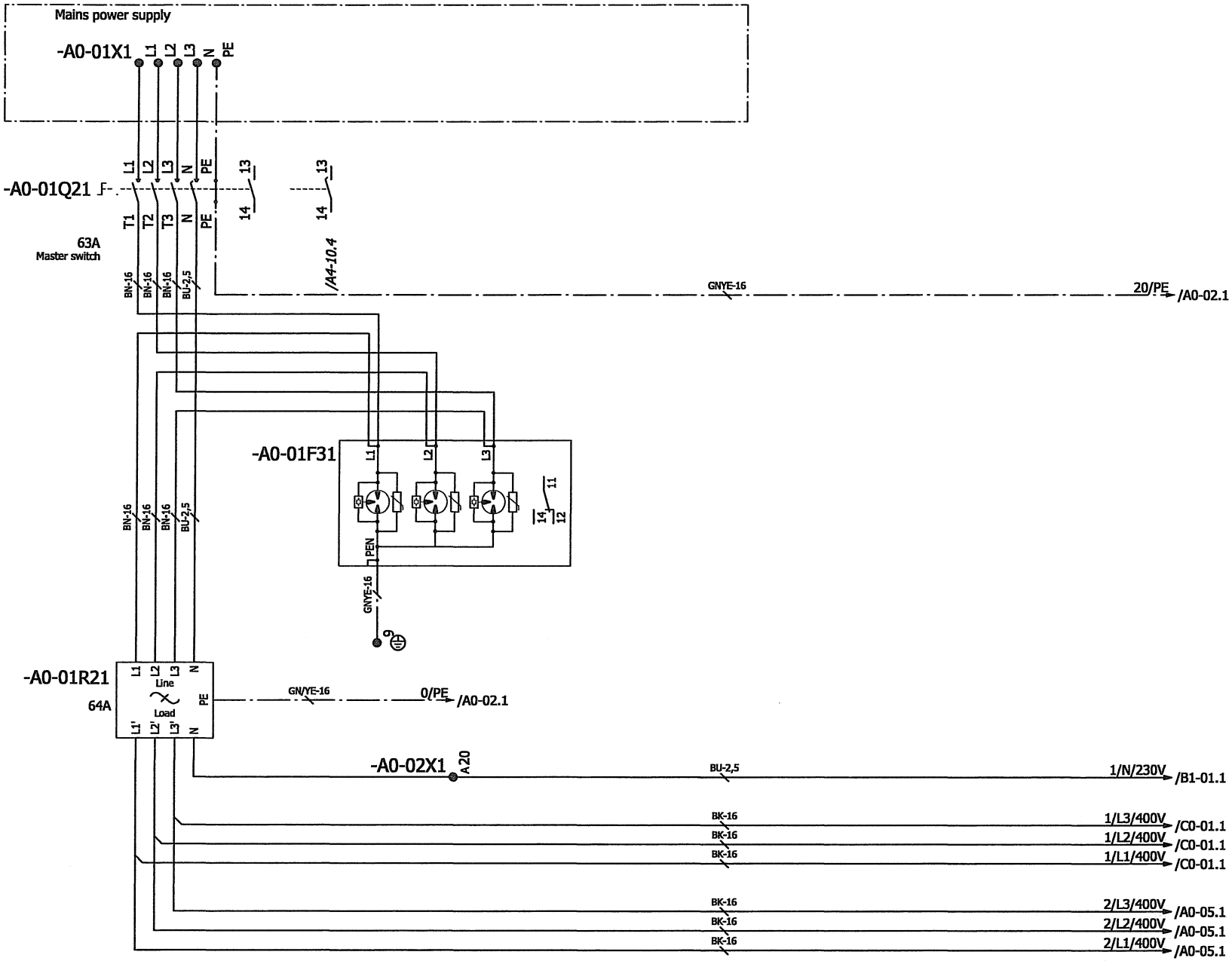

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			chec.				Master switch	series	circuit diagram Nr.:	language	sheet A0-01/001
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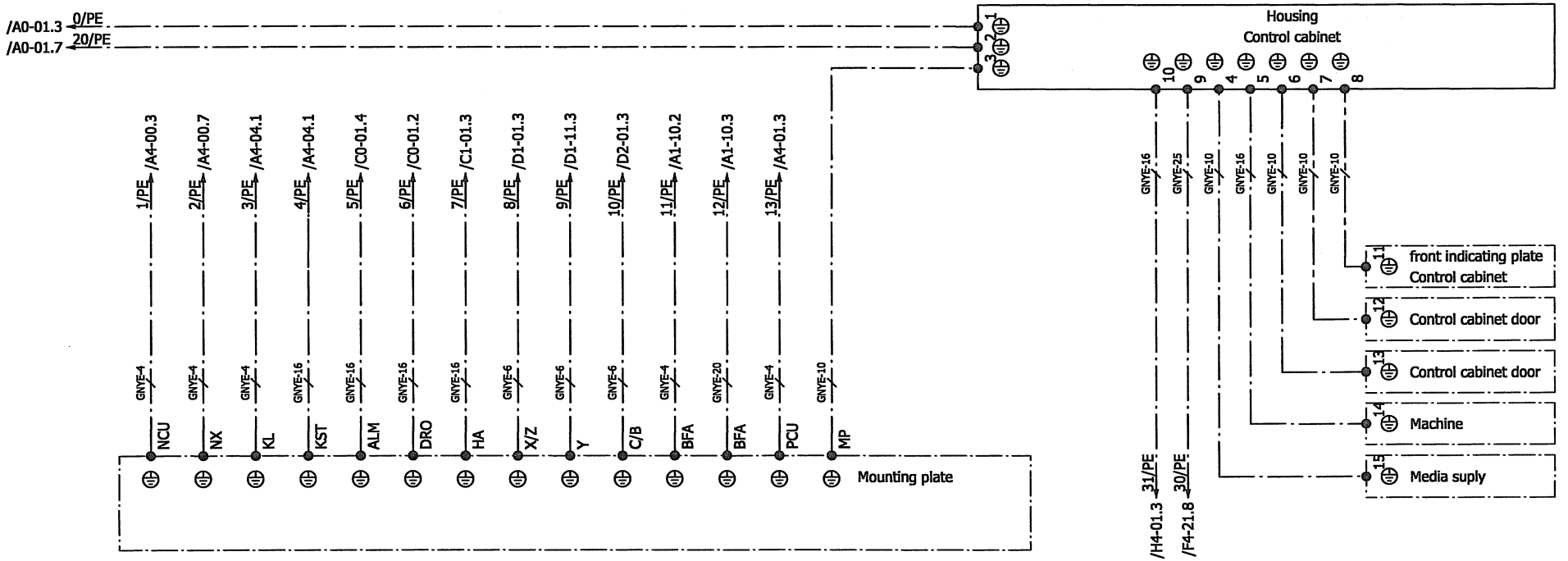

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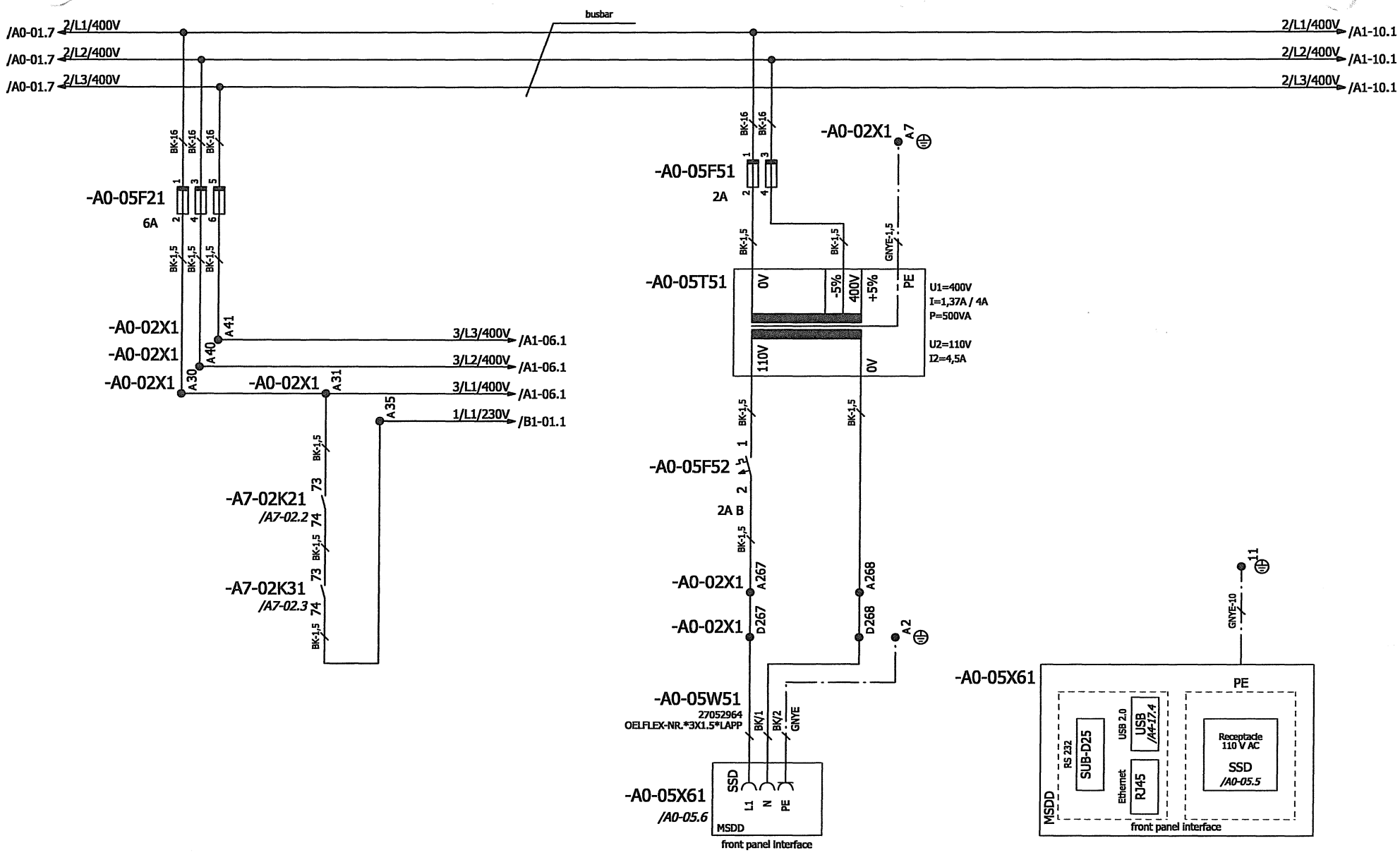

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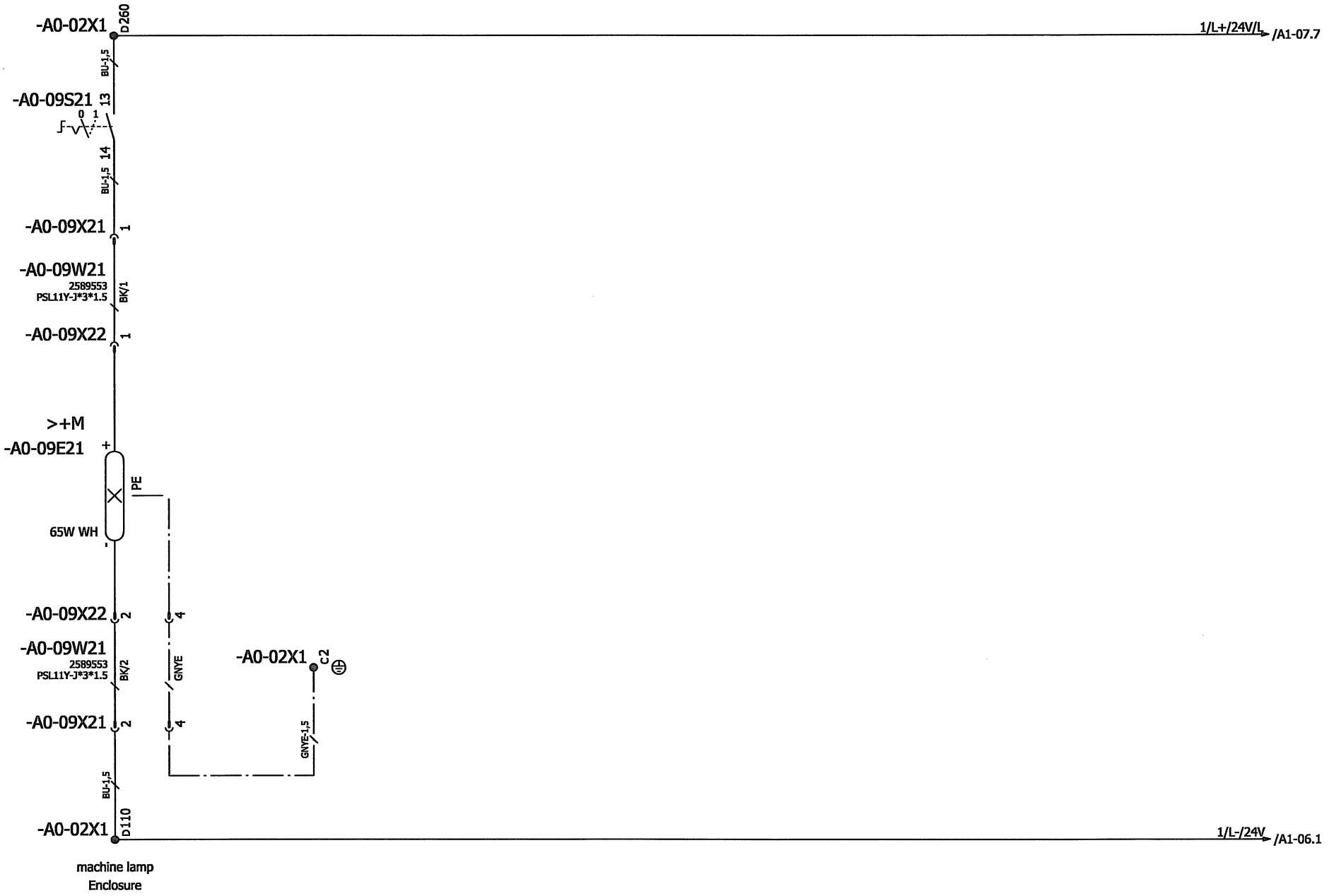

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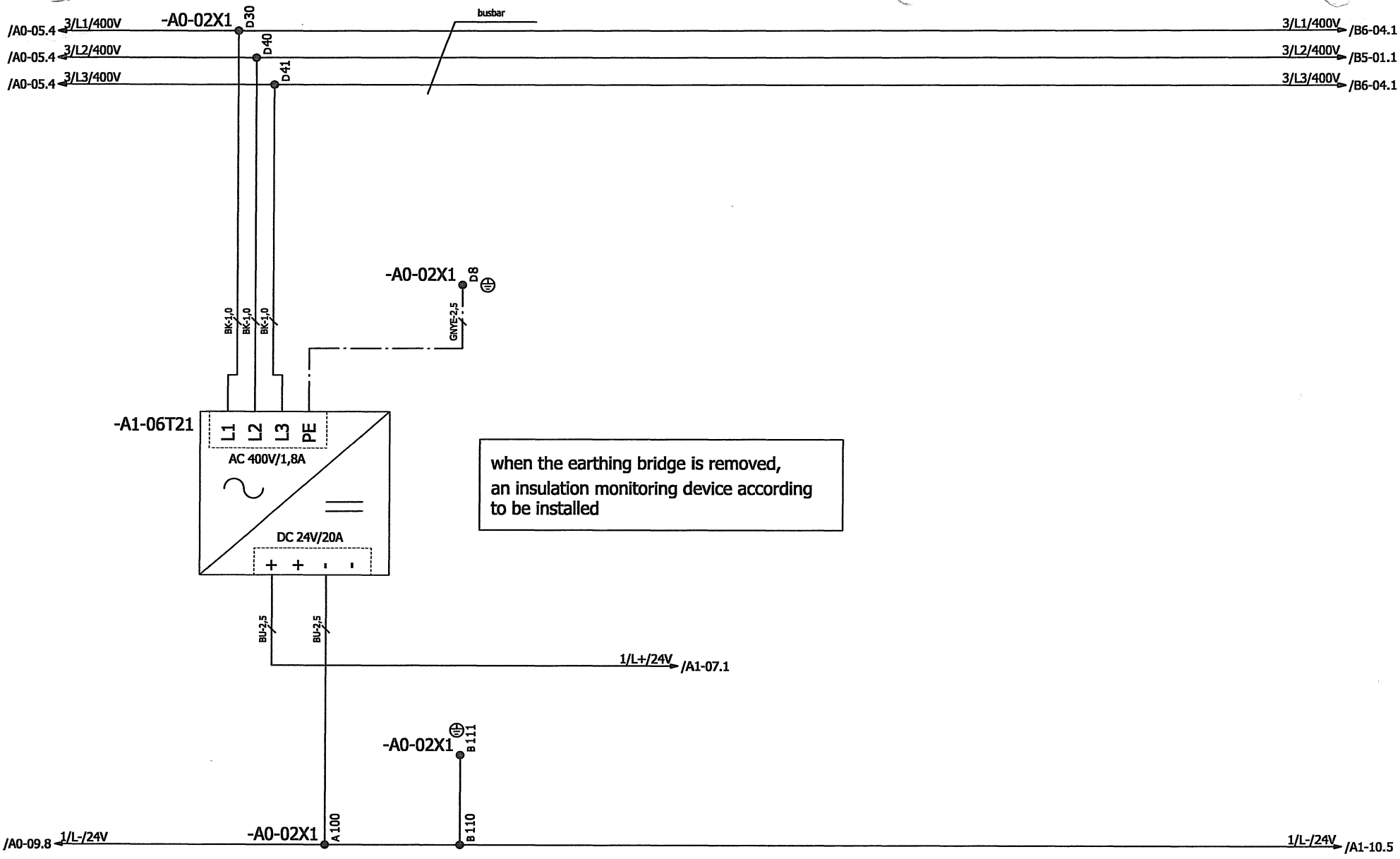

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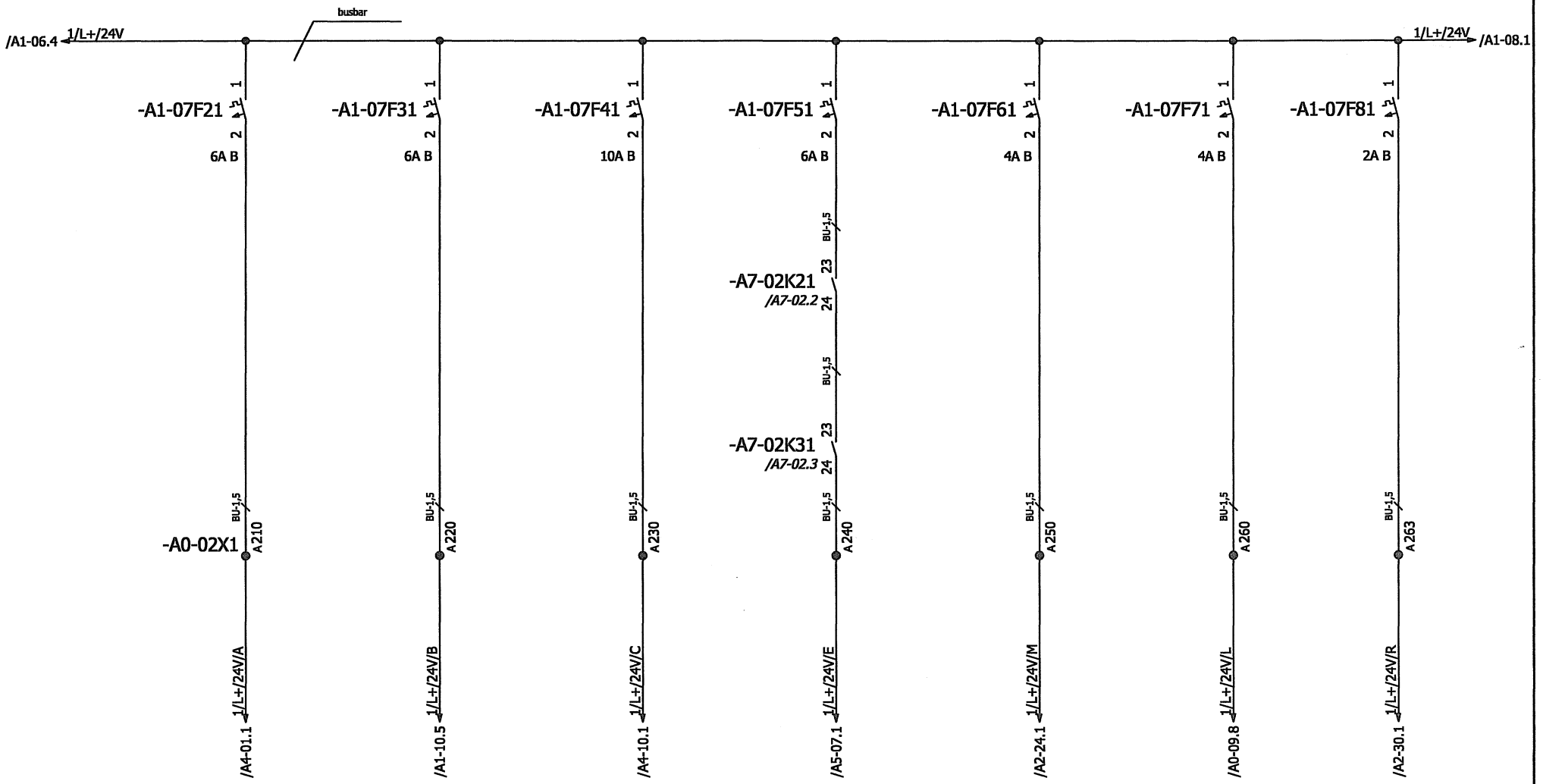

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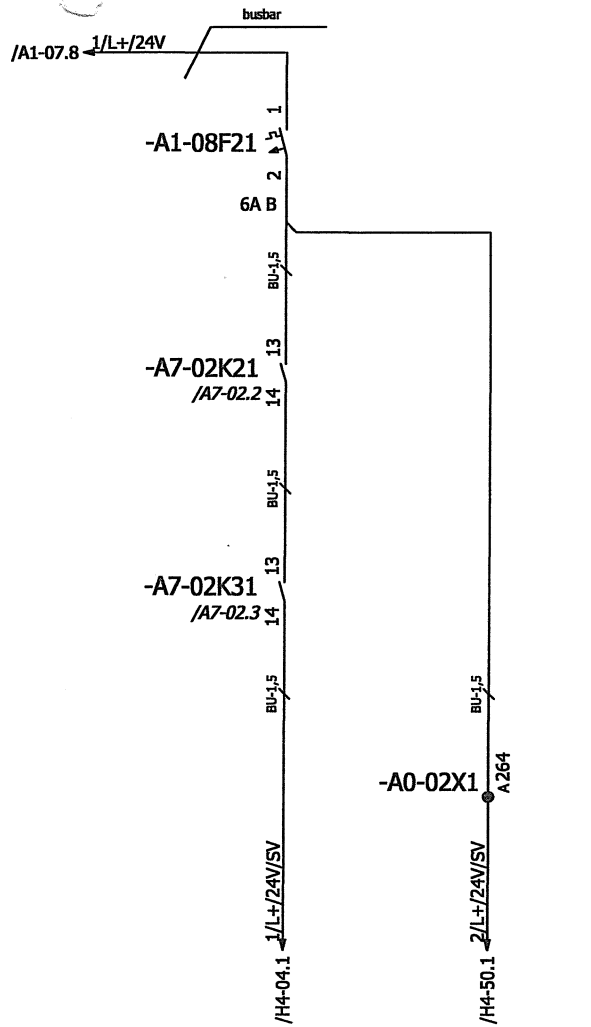

EMERGENCY STOP
control circuit
Clamping hydraulics

control circuit
Clamping hydraulics

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		DC-control voltage fuse protection	DMU 50	& EFS	+M+EC	⇨
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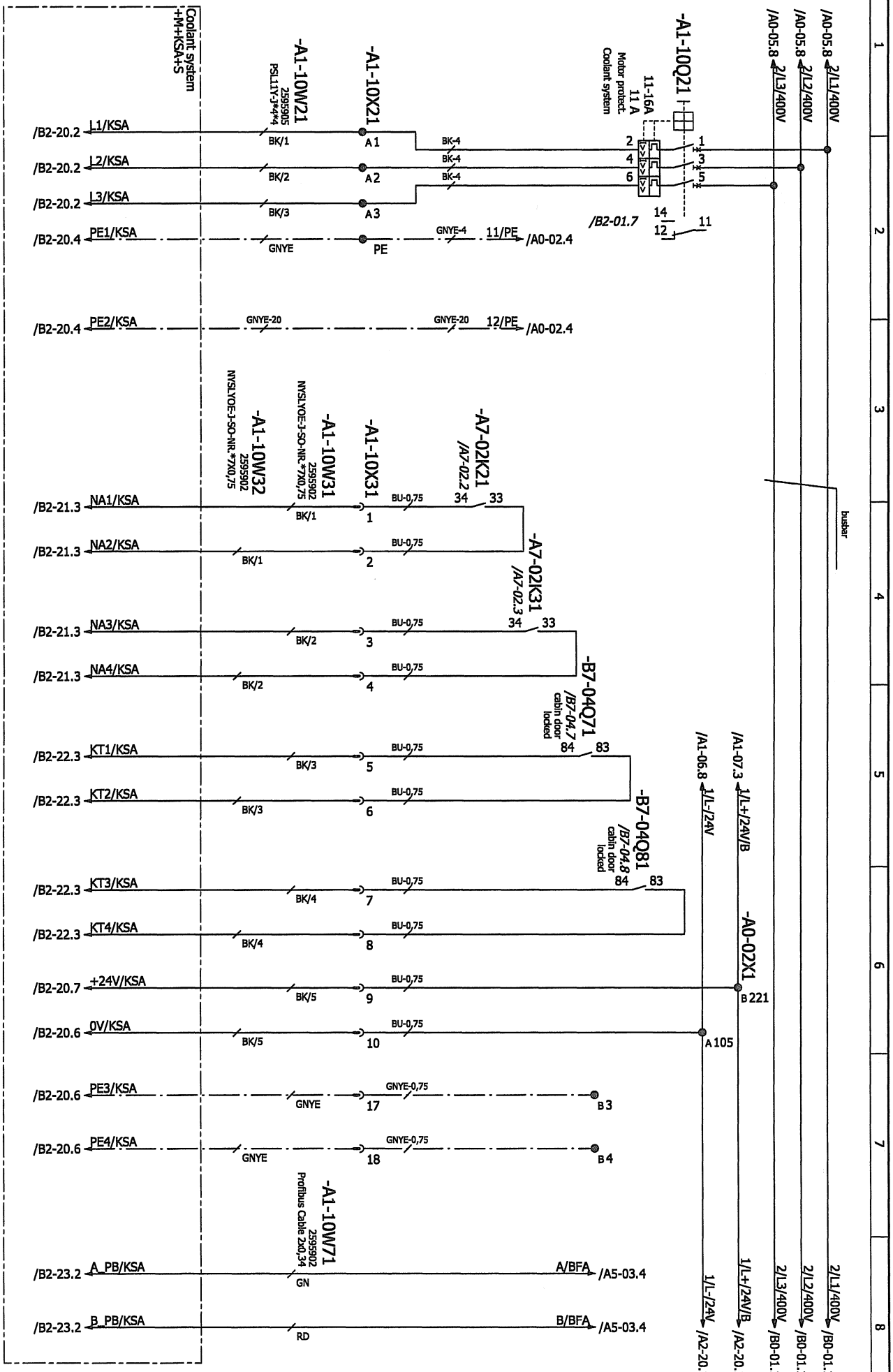


revision	Name	Date
	Created by	02.02.2011
	chec.	
	change	MEF

project number: 113022

rep. by

rep. of

DECKEL MAHO Seebach GmbH

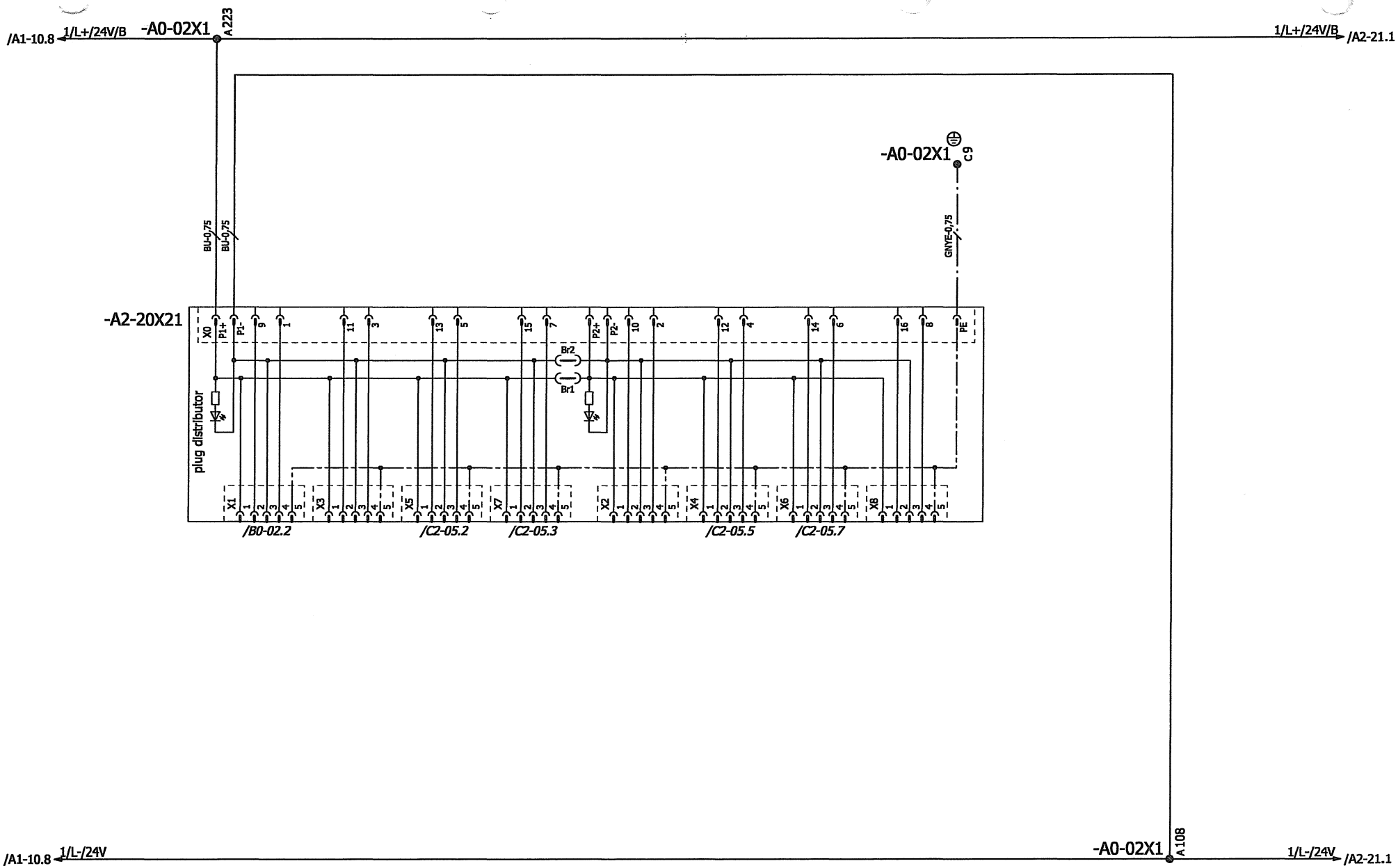
source

Schematic diagram
power supply
Coolantanlage

object: DMU 50
series: 4526
circuit diagram Nr.: 2652185
DCC & EFS
Place: +M+EC
language: EN

sheet A1-10/001

18



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
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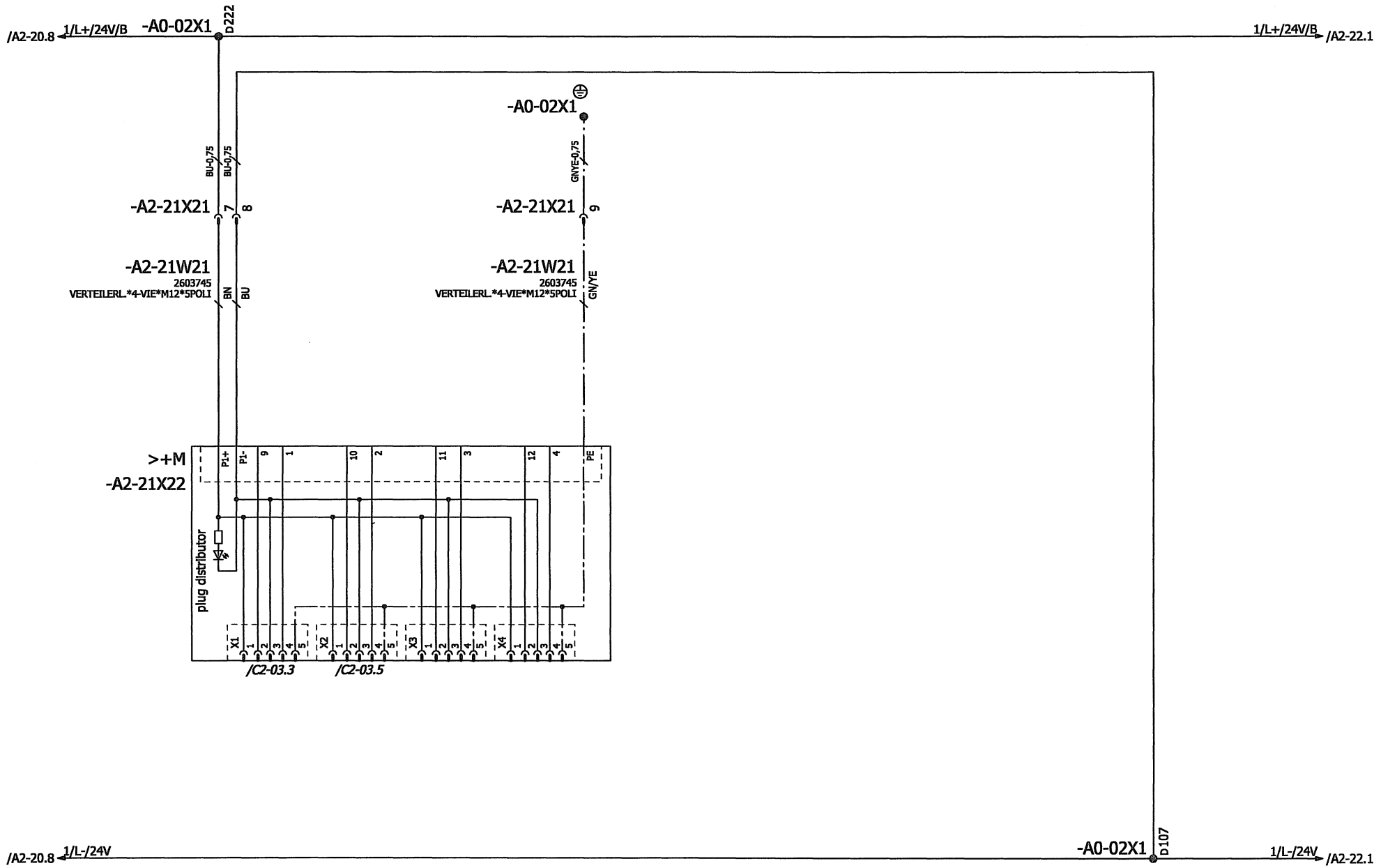
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	19



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
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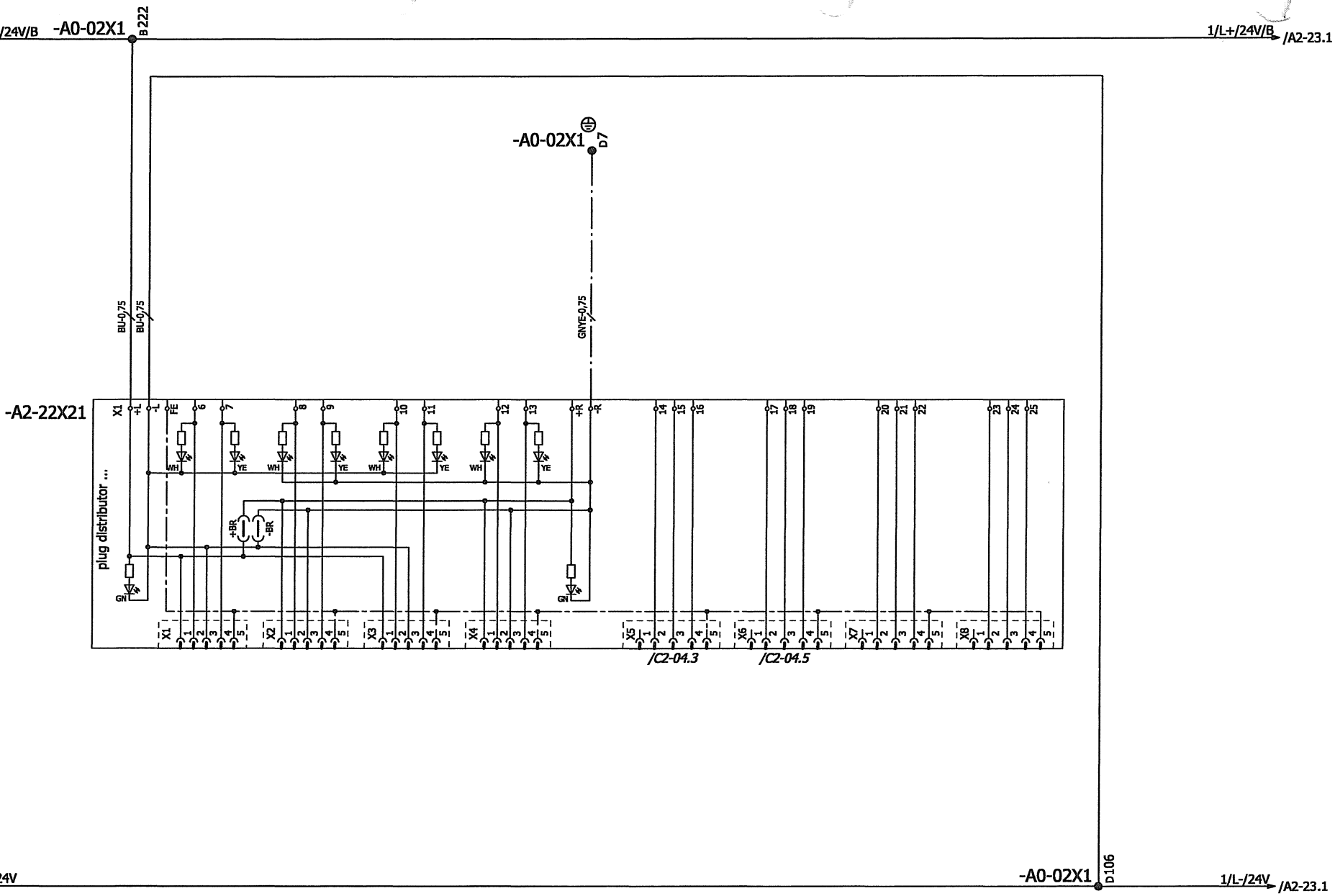
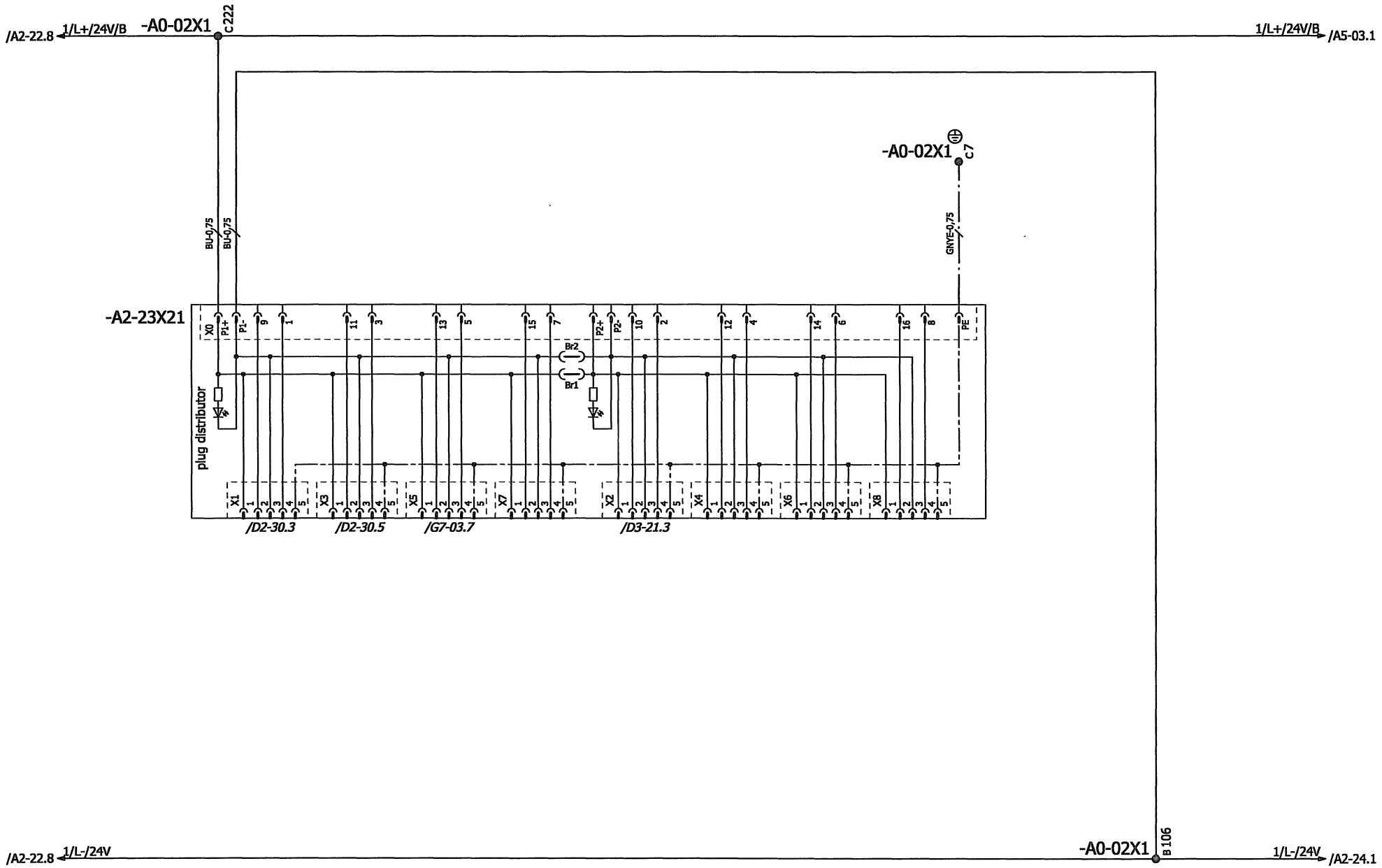
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	20



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object: DMU 50	DCC & EFS	Place +M+EC	⇦
			change	MEF	113022		supply voltage Distributor	series 4526	circuit diagram Nr.: 2652185	language EN	⇨
			chec.								sheet A2-22/001
revision	Date	Name	Created by		rep. by	rep. of	source				21



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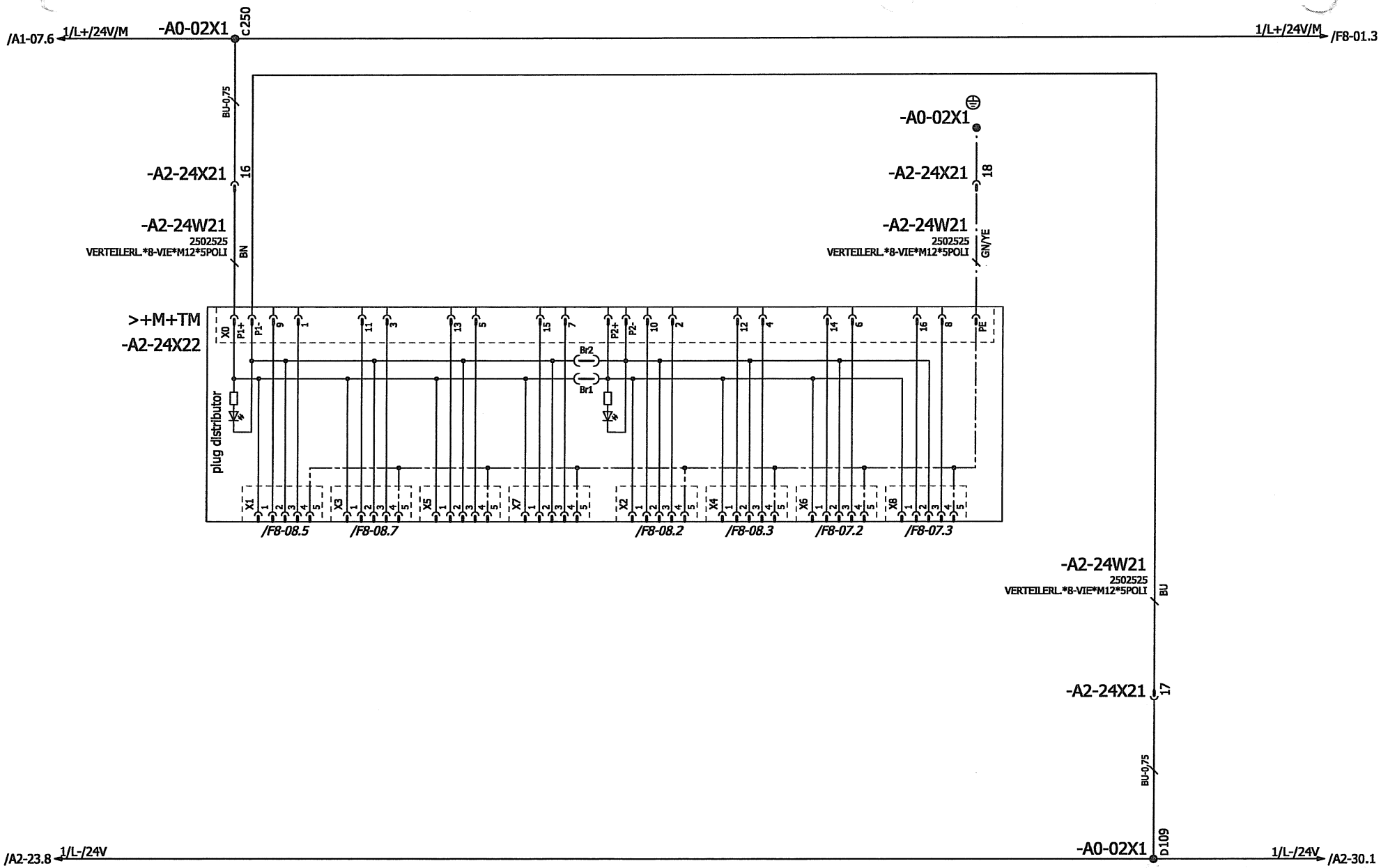
			chec.											sheet A2-23/001
revision		Name	Created by		rep. by	rep. of	source							22



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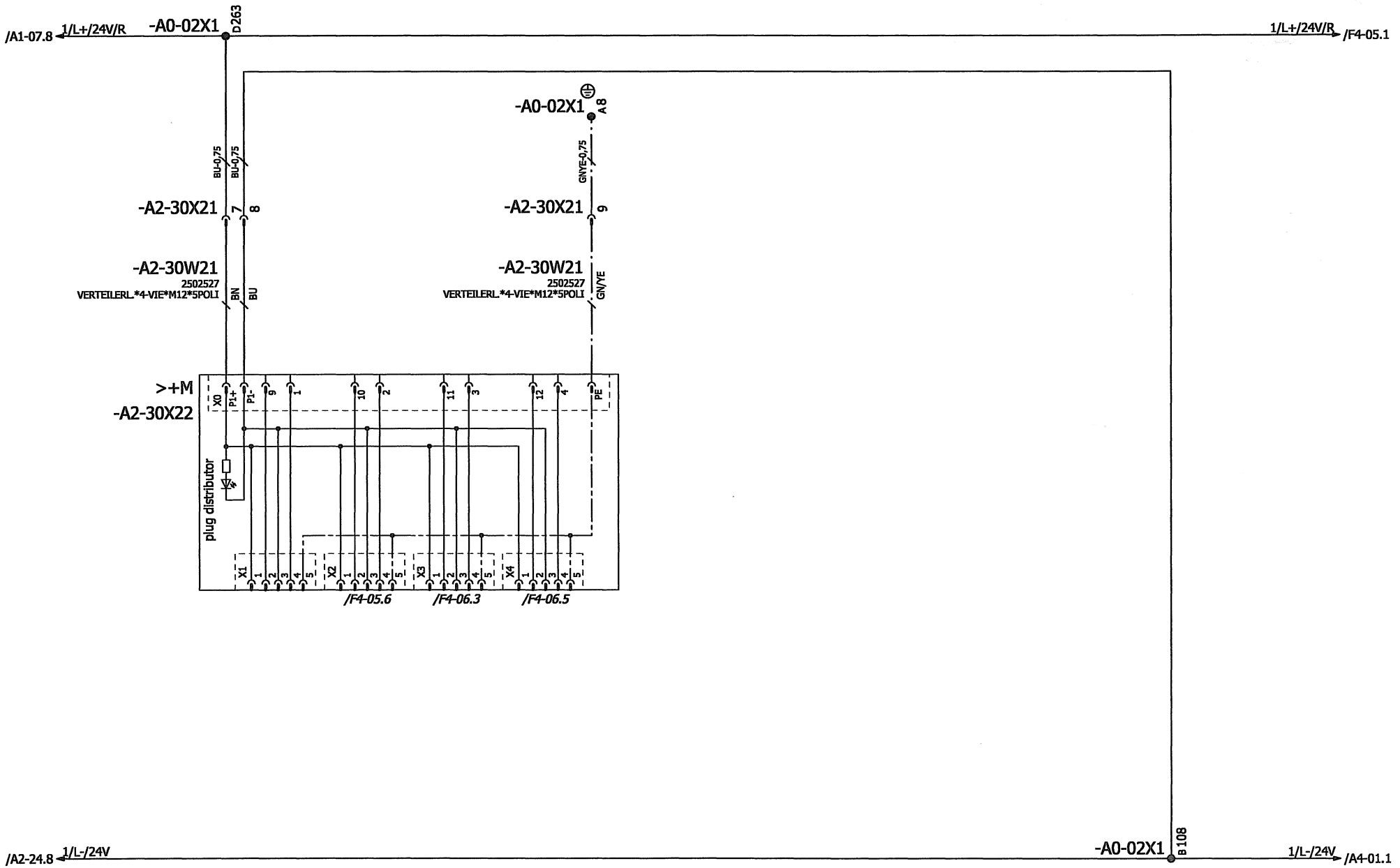
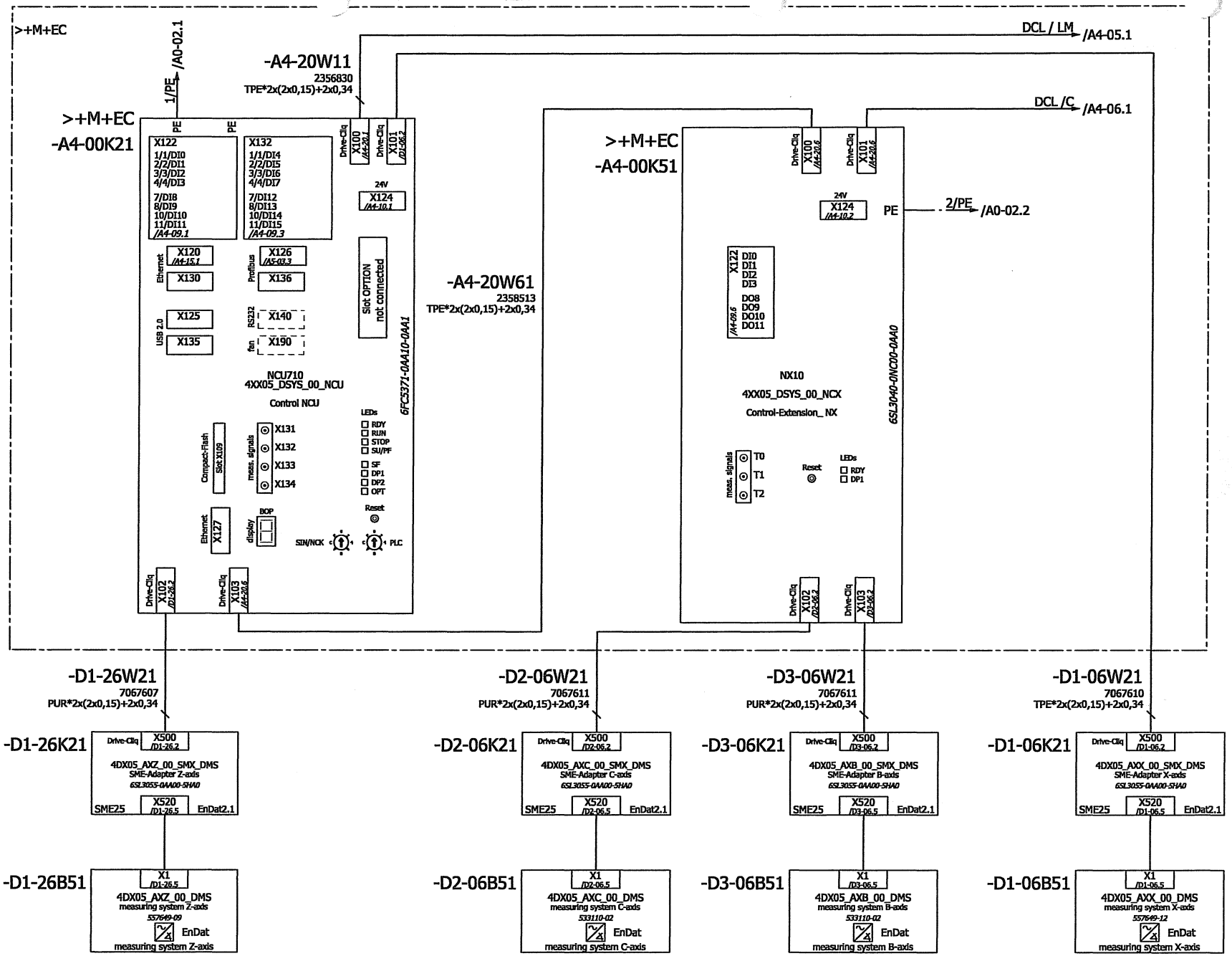
			chec.					series	circuit diagram Nr.:		language	sheet A2-24/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185		EN	23



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object: DMU 50	DCC & EFS	Place +M+EC	⇦
			change	MEF	113022		supply voltage Distributor				⇨
			chec.					series 4526	circuit diagram Nr.: 2652185	language EN	sheet A2-30/001
revision		Name	Created by		rep. by	rep. of	source				24



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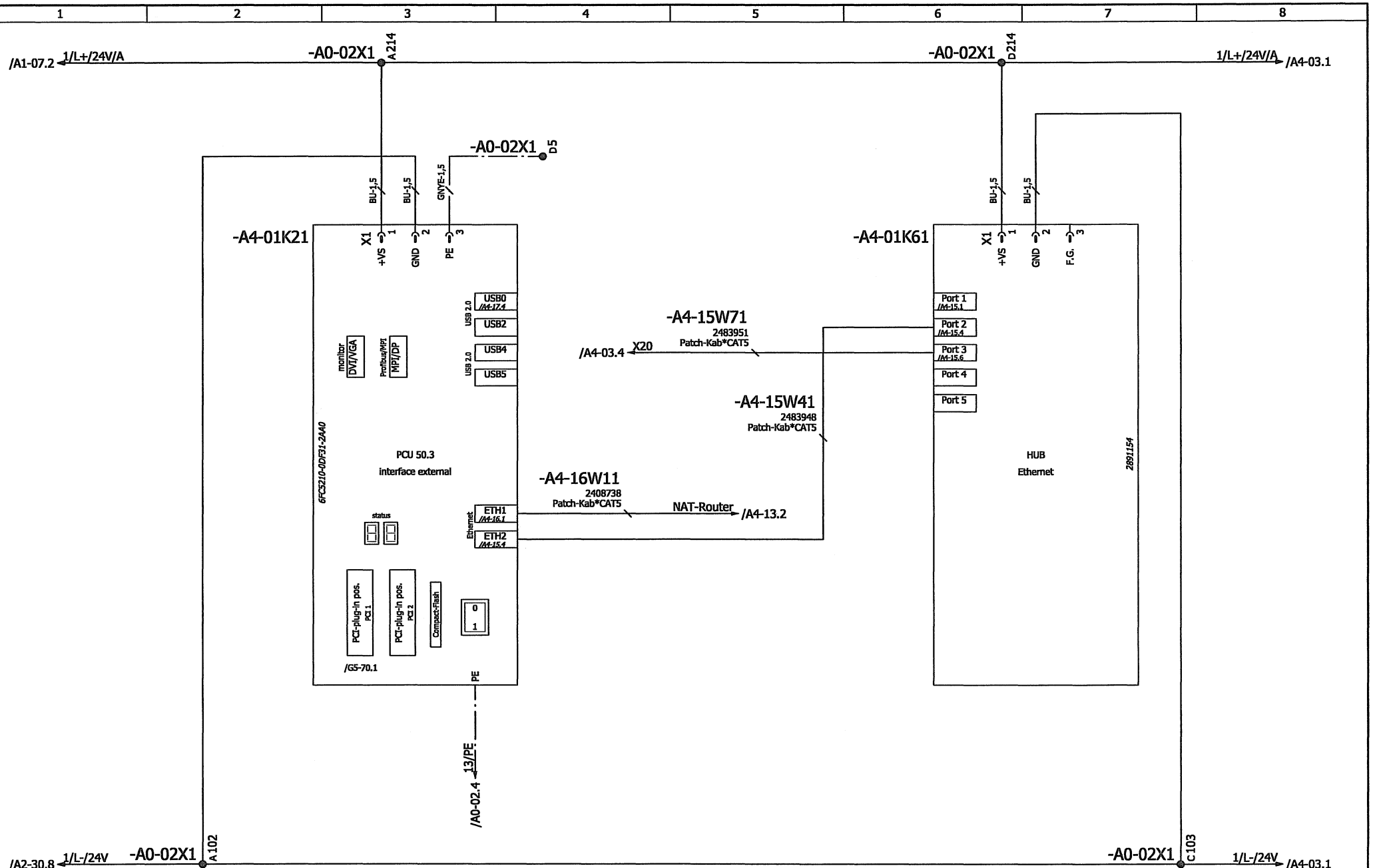
			change	MEF	113022		CNC unit 840D SL	DMU 50	& EFS	+M	
			chec.					series	circuit diagram Nr.:	language	sheet A4-00/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	25



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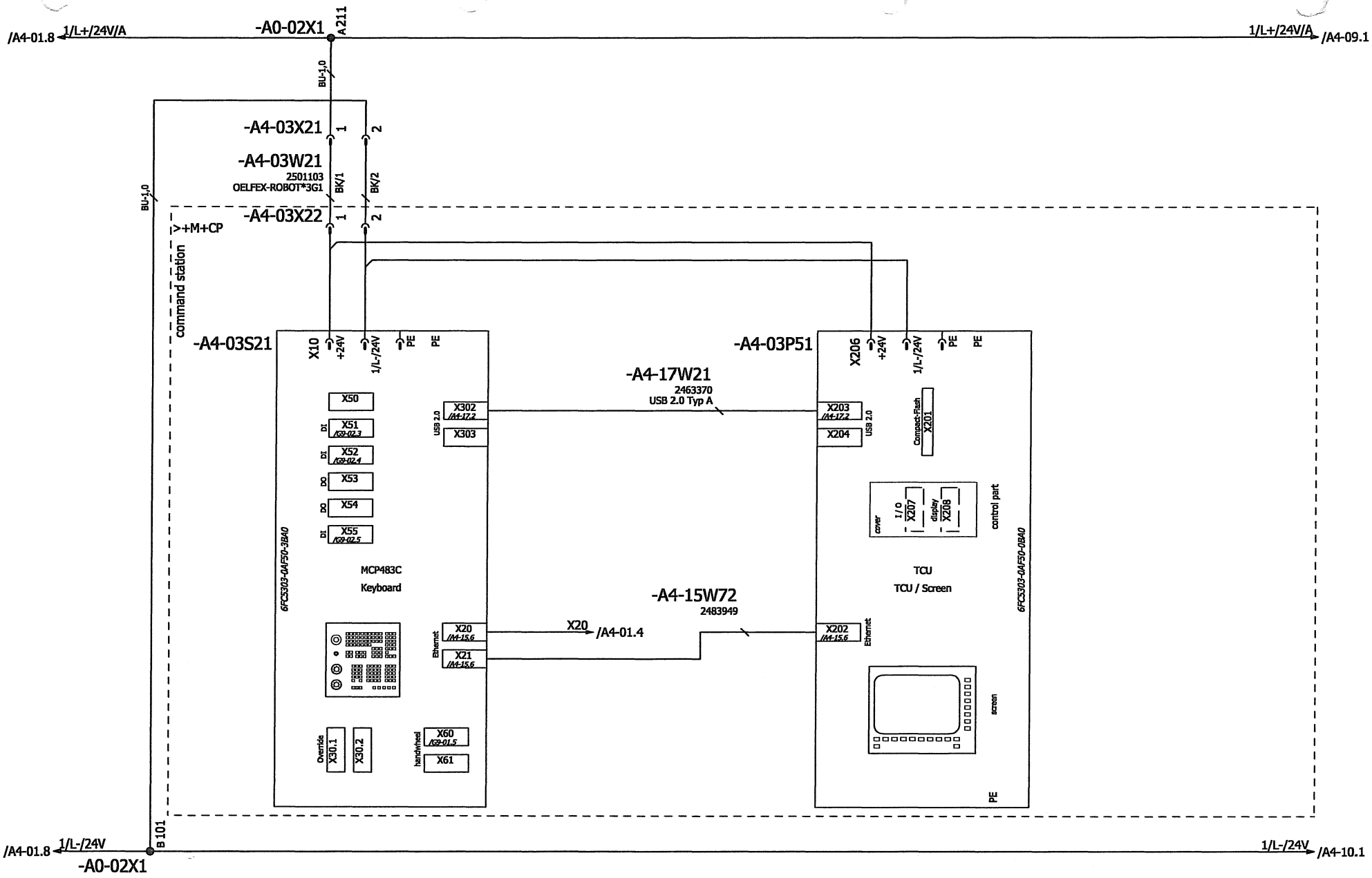
			change	MEF	113022		PCU	DMU 50	& EFS	+M+EC		
			chec.				Ethernet port	series	circuit diagram Nr.:	language	sheet A4-01/001	
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN		26



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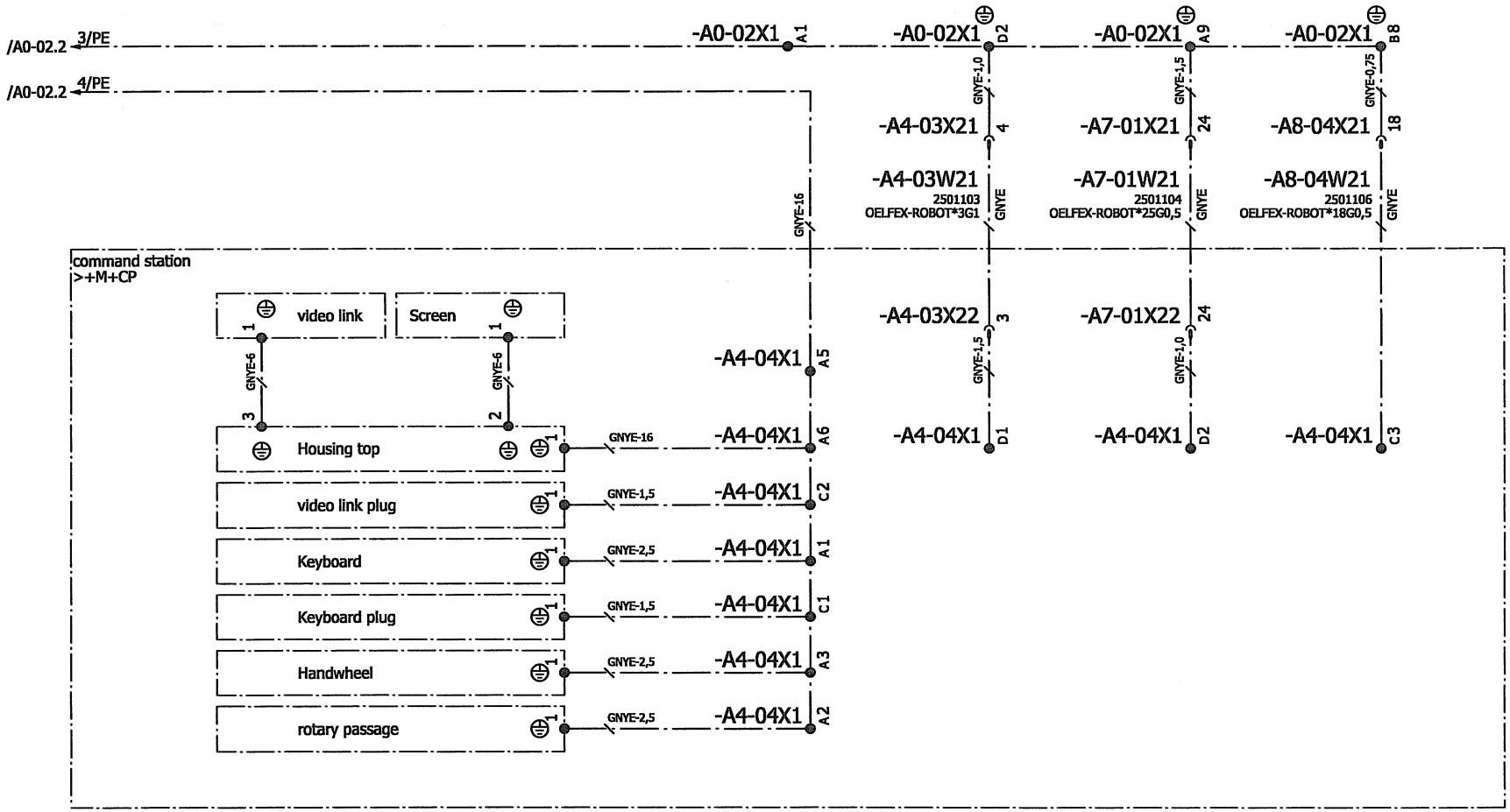
			change	MEF	113022		command station	DMU 50	& EFS	+M+EC	⇨
			chec.				Screen	series	circuit diagram Nr.:	language	sheet A4-03/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	27



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place		
			change	MEF	113022		command station	DMU 50	& EFS	+M+EC		
			chec.				Equipotential bonding	series	circuit diagram Nr.:	language	sheet A4-04/001	
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	28	

/A4-00.7 DCL / LM

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2360126
PUR*2x(2x0,15)+2x0,34

-A4-20W41
2358515
PUR*2x(2x0,15)+2x0,34

-A4-20W42
2360126
PUR*2x(2x0,15)+2x0,34

6SL3100-0BE21-6AB0 AIM -C0-01T11
Active Interface module

6SL3130-7TE21-6AA3 ALM -C0-01T21
4XX05_DSYS_00_XLM
Supply module

6SL3120-1TE23-0AA3 SMM -C1-01K21
4XX05_SPI10_01_SMM
drive controller S-axis

6SL3120-2TE21-0AA3 DMM -D1-01K21
4DX05_AXX_00_DMM
drive controller X-axis
4DX05_AXZ_00_DMM
drive controller Z-axis

6SL3120-1TE21-0AA3 SMM -D1-11K21
4DX05_AXY_00_SMM
drive controller Y-axis

-C1-03W21
2323444
PUR*2x(2x0,15)+2x0,34

-C1-03K21
6SL3055-0AA00-5BA1
SMC20
4XX05_SPI10_01_SMX_IMS
SME-Adapter SPI

-D1-02W21
2605839
PUR*2x(2x0,15)+2x0,34

-D1-12W21
2395105
PUR*2x(2x0,15)+2x0,34

-D1-22W21
2367801
PUR*2x(2x0,15)+2x0,34

-D1-16W21
7067607
TPE*2x(2x0,15)+2x0,34

>+M

DMS 100.46.4FGS Main drive -C1-02M21
Position sensor rack -C1-03B21
4XX05_SPI10_01_IMS Position sensor rack Spindle 000.625.524
SPI-axis

1FK7060-5AH71-1DG0 -D1-01M21
4DX05_AXX_00_SMX_IMS Motor X-axis
X-axis

1FK7060-5AH71-1DG0 -D1-11M21
4DX05_AXY_00_SMX_IMS Motor Y-axis
Y-axis

1FK7060-5AH71-1DH0 -D1-21M21
4DX05_AXZ_00_SMX_IMS Motor Z-axis
Z-axis

-D1-16K21
4DX05_AXY_00_SMX_DMS
SME-Adapter Y-axis
6SL3055-0AA00-5HA0
SME25 EnDat2.1

-D1-16B51
4DX05_AXY_00_DMS
measuring system Y-axis
557649-10
EnDat
measuring system Y-axis

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place
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			chec.				840D SL	series	circuit diagram Nr.:	language
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN

sheet A4-05/001
29

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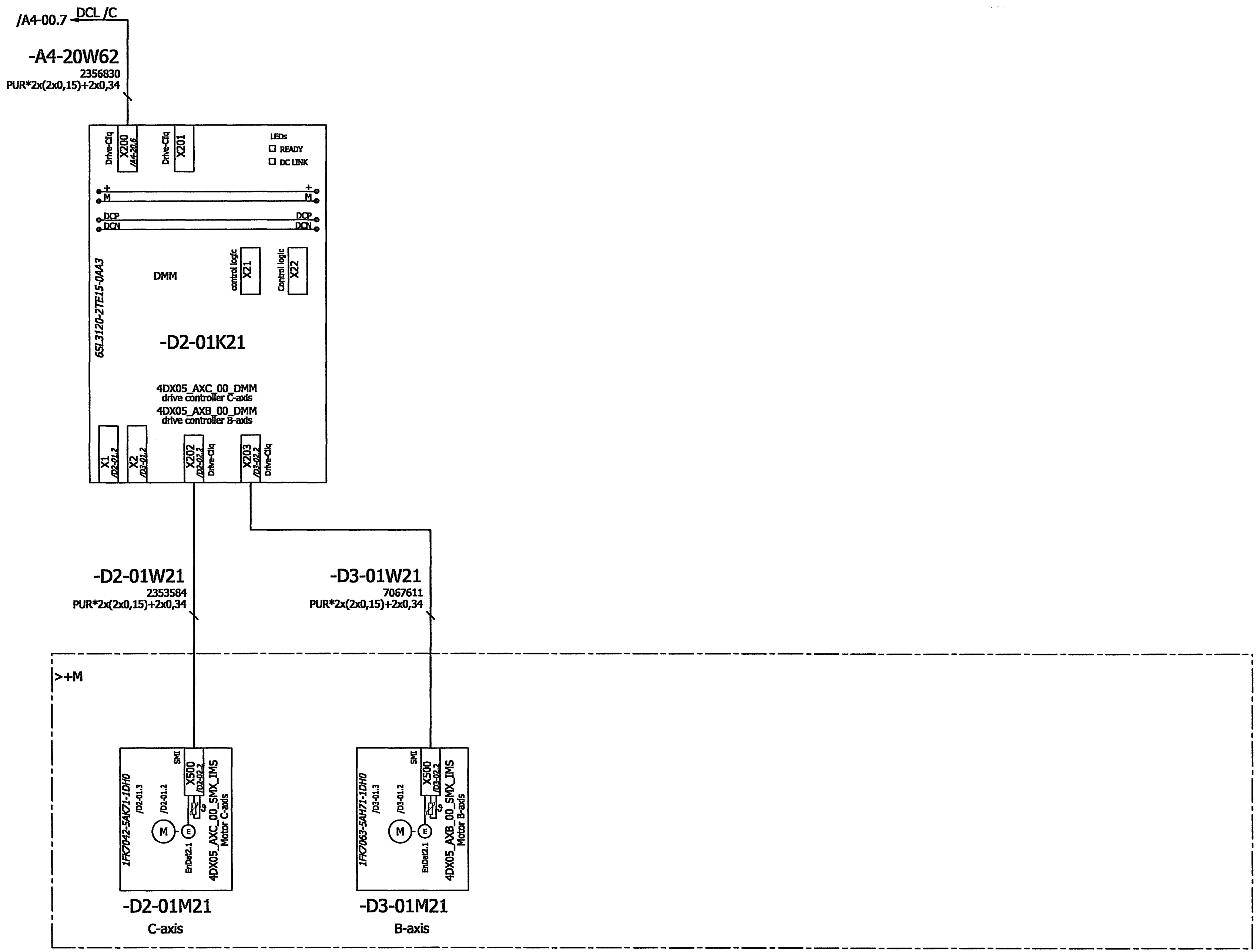

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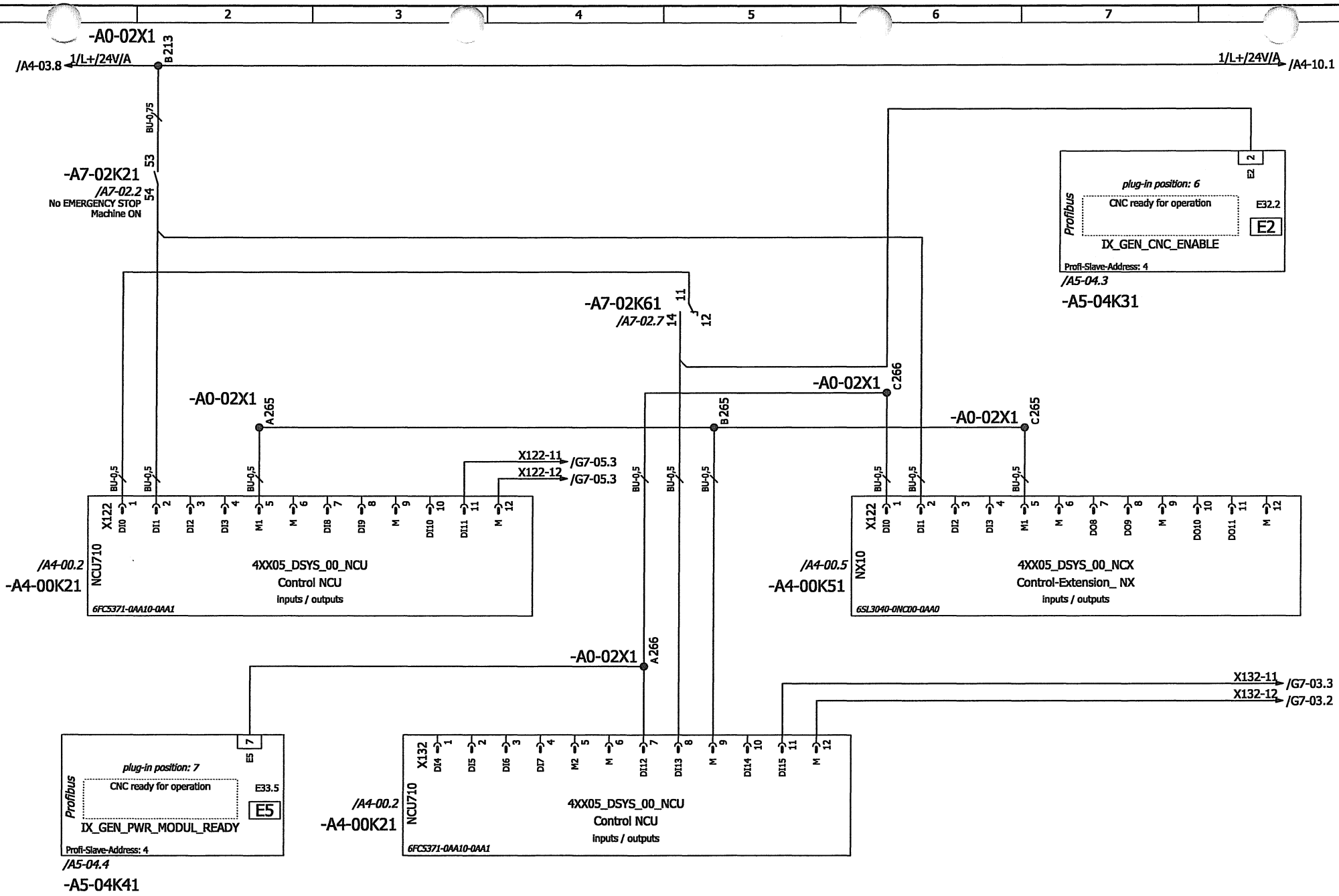
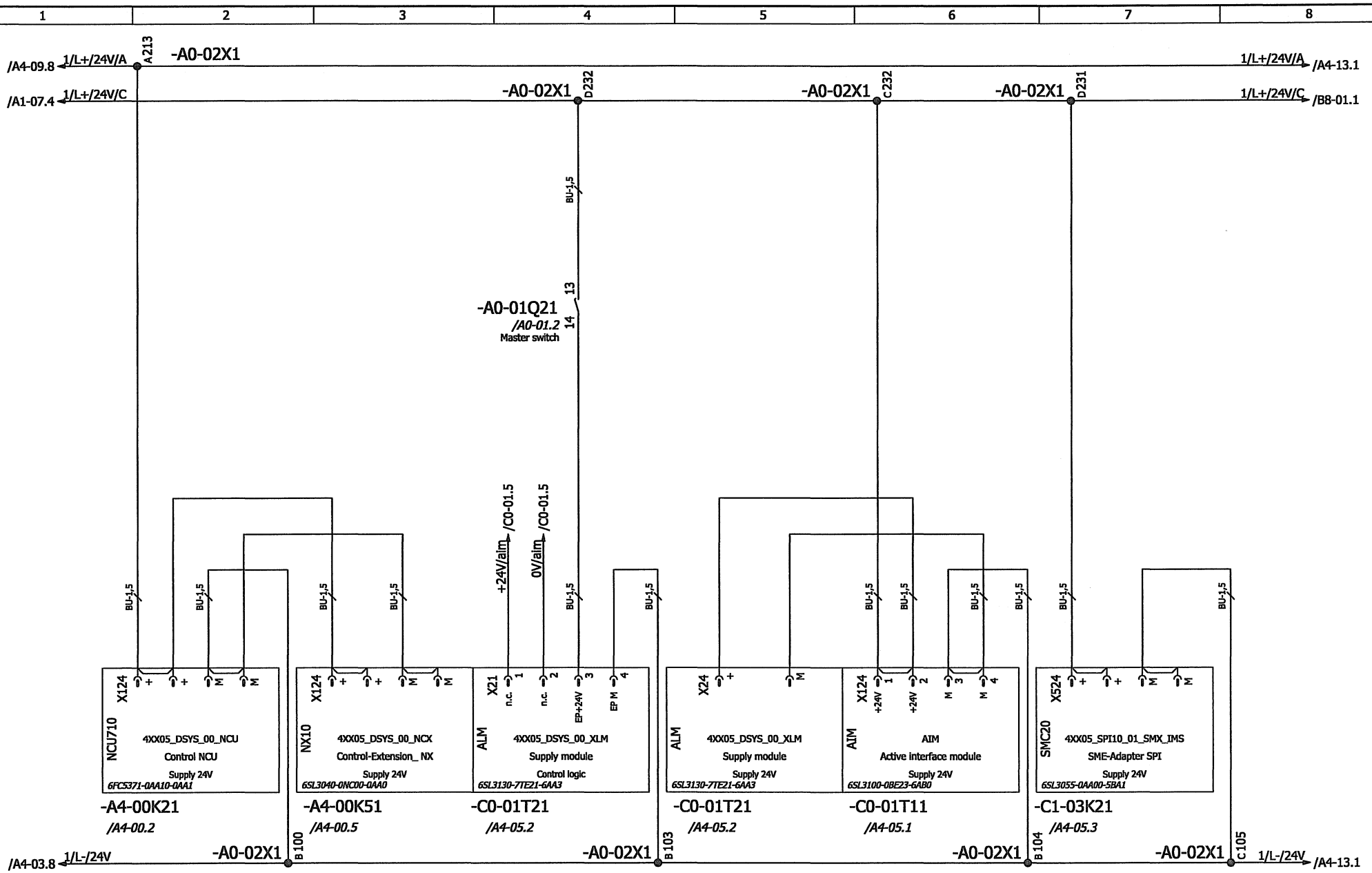
change	MEF			
chec.				
revision / Name	Created by	rep. by	rep. of	source

object: DMU 50	DCC: & EFS	Place: +M+EC	
series: 4526	circuit diagram Nr.: 2652185	language: EN	sheet A4-06/001
			30



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		CNC unit	DMU 50	& EFS	+M+EC	
			chec.				Check-back signal	series	circuit diagram Nr.:	language	sheet A4-09/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	31



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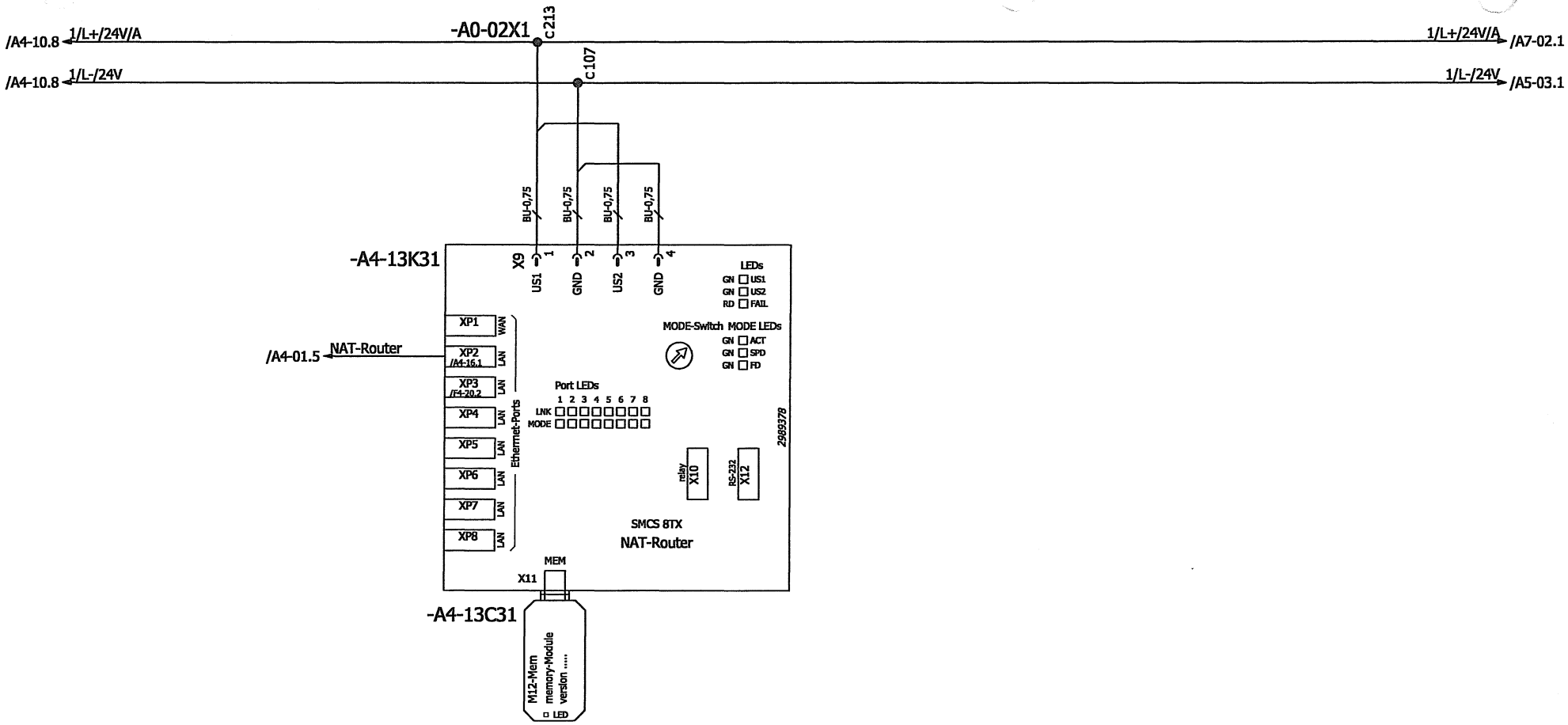
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	32



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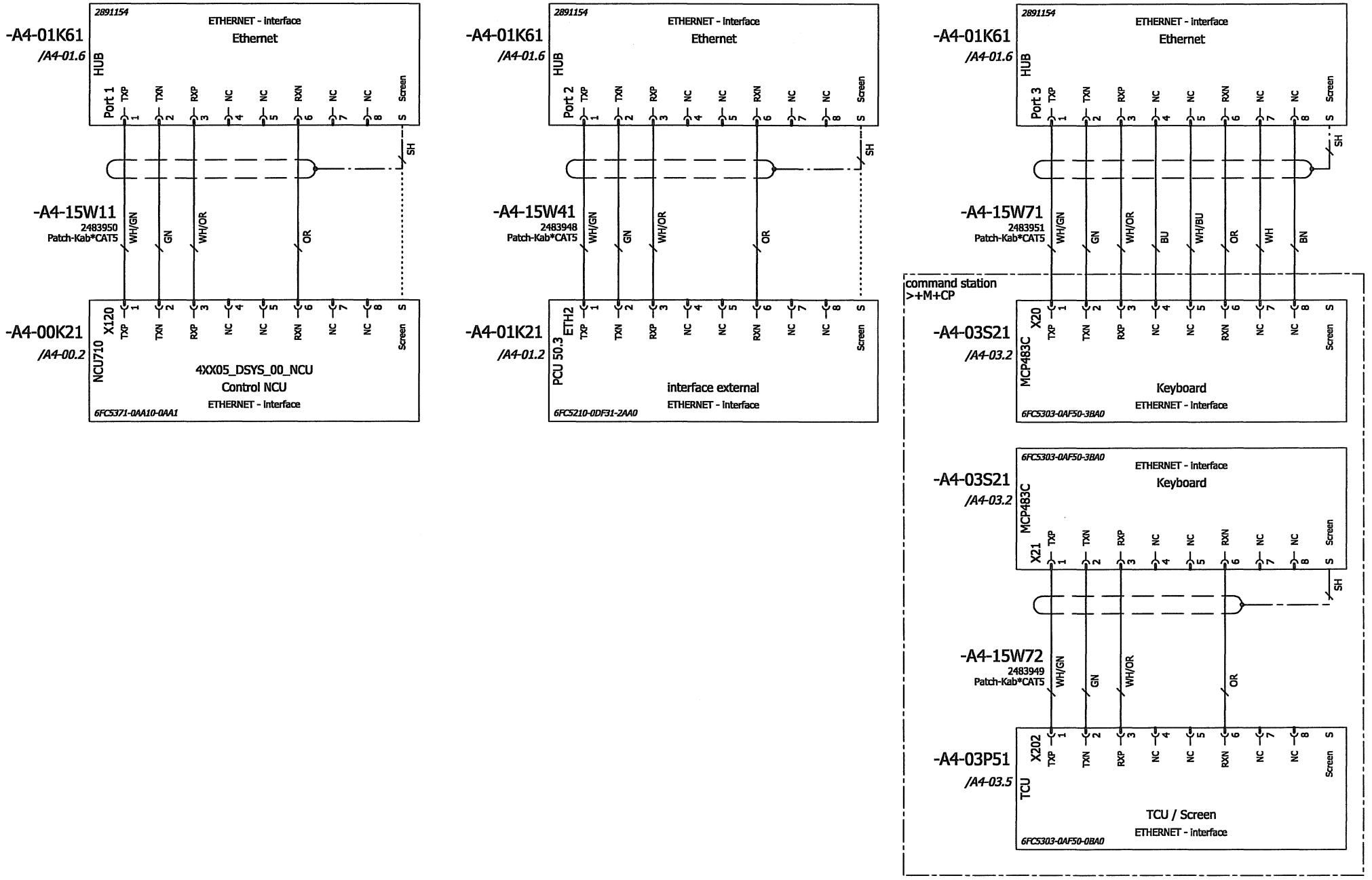
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	33



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Overview Ethernet port	DMU 50	& EFS	+M+EC	
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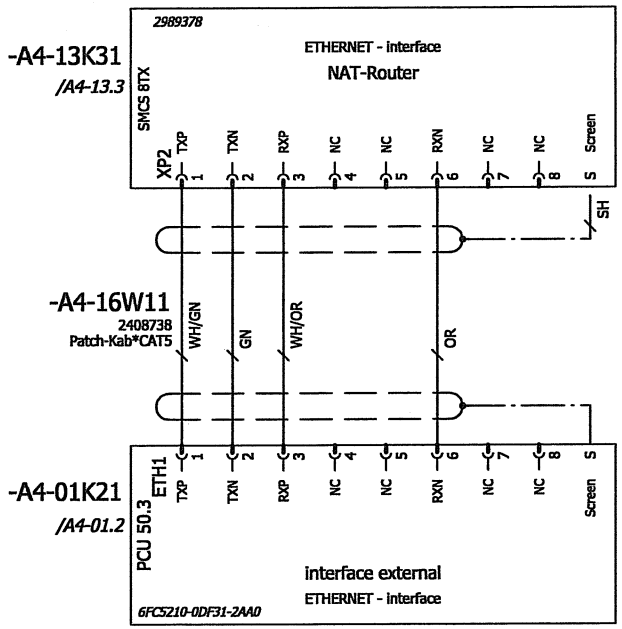
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	34



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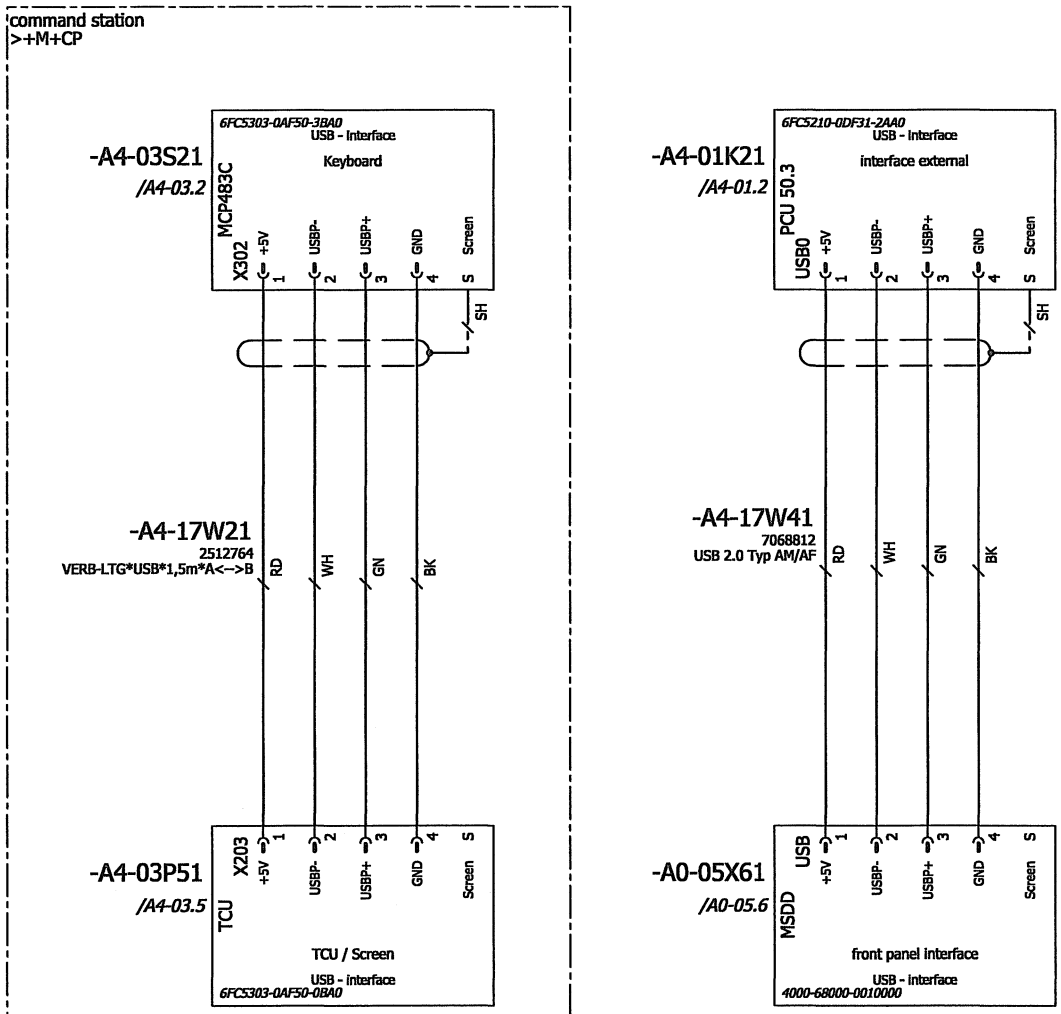

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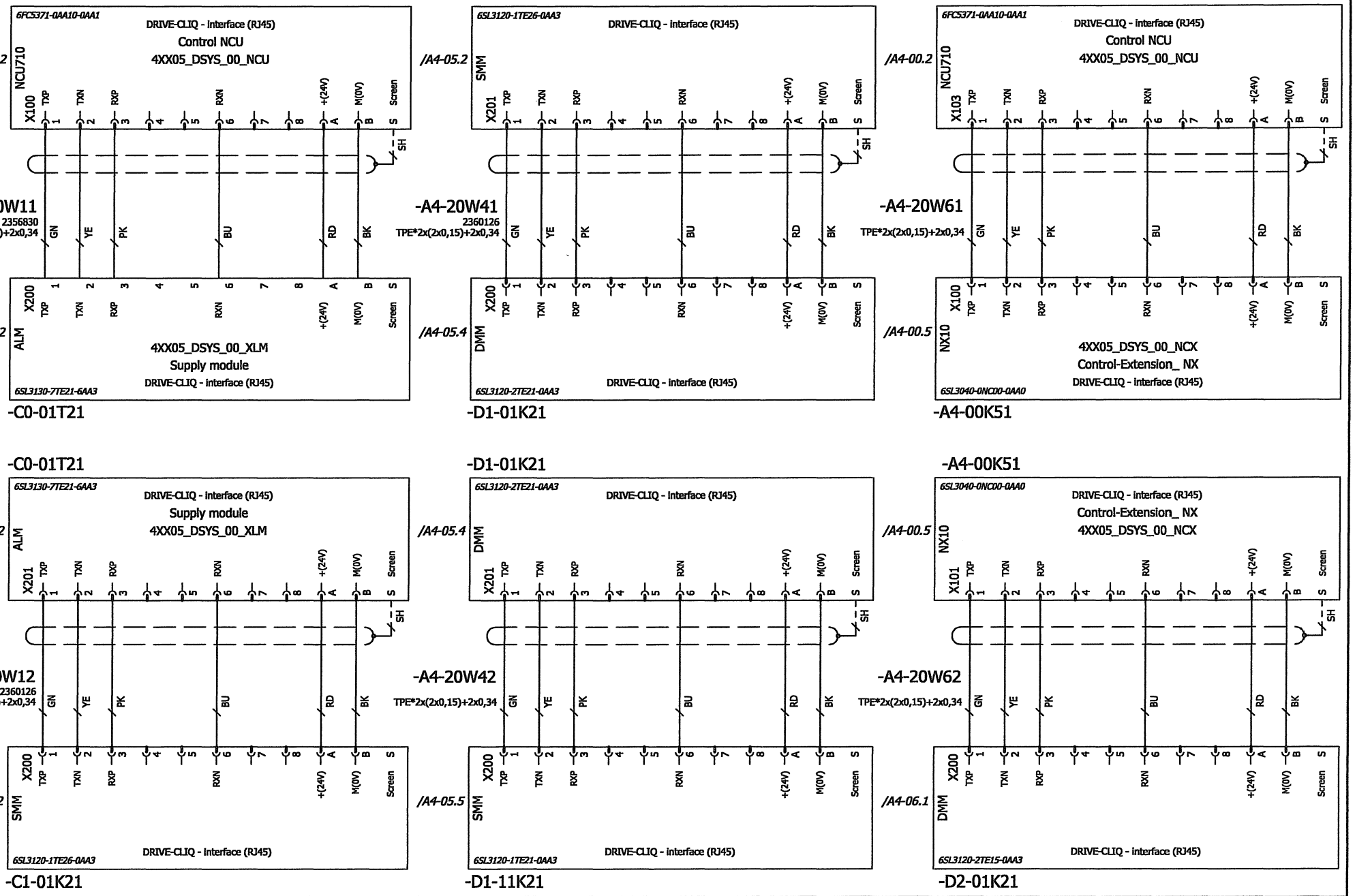

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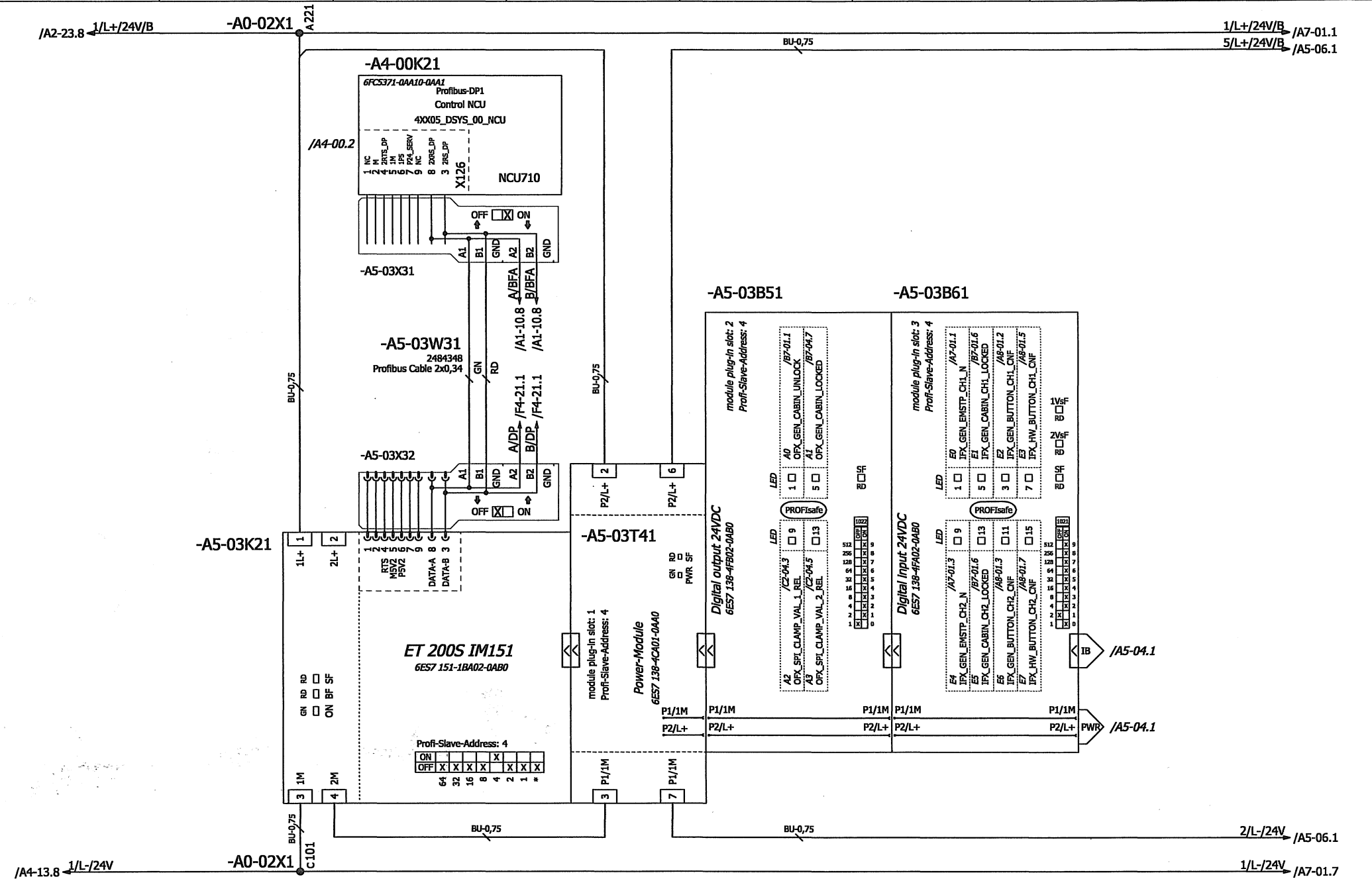
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	37



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
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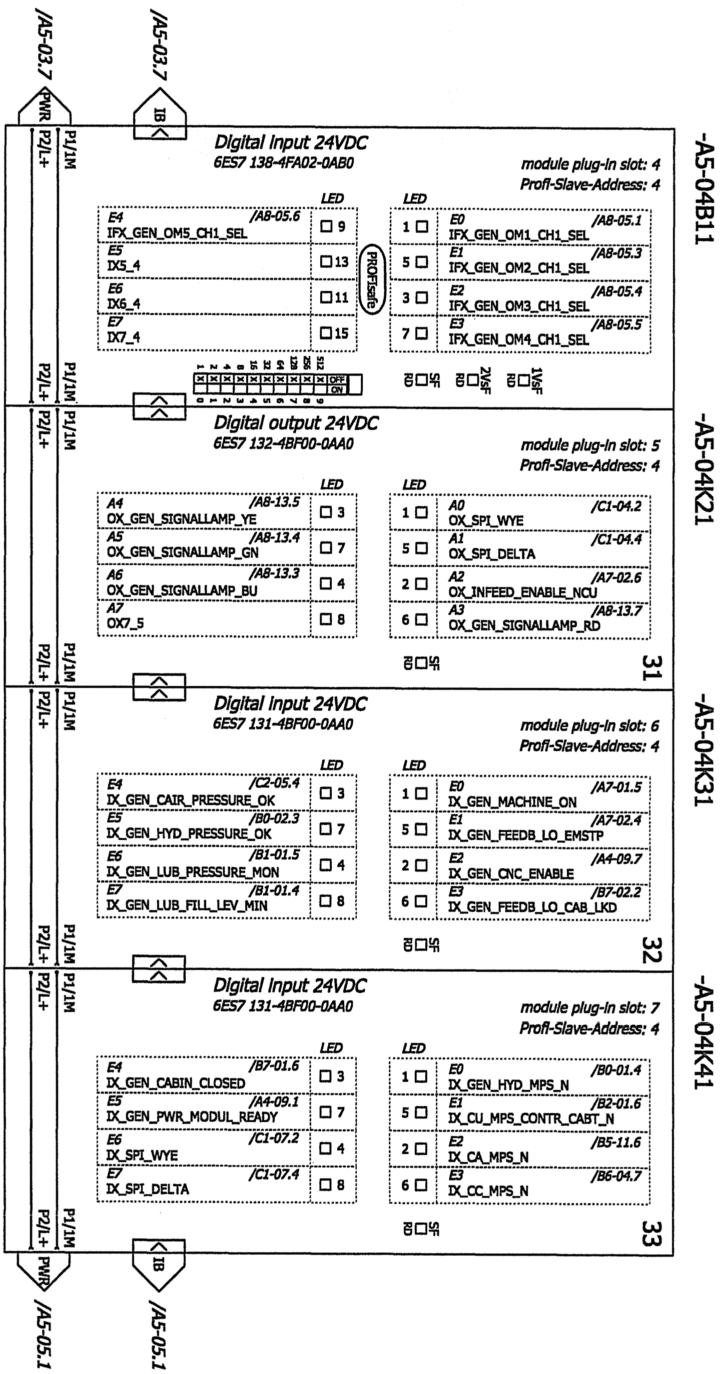
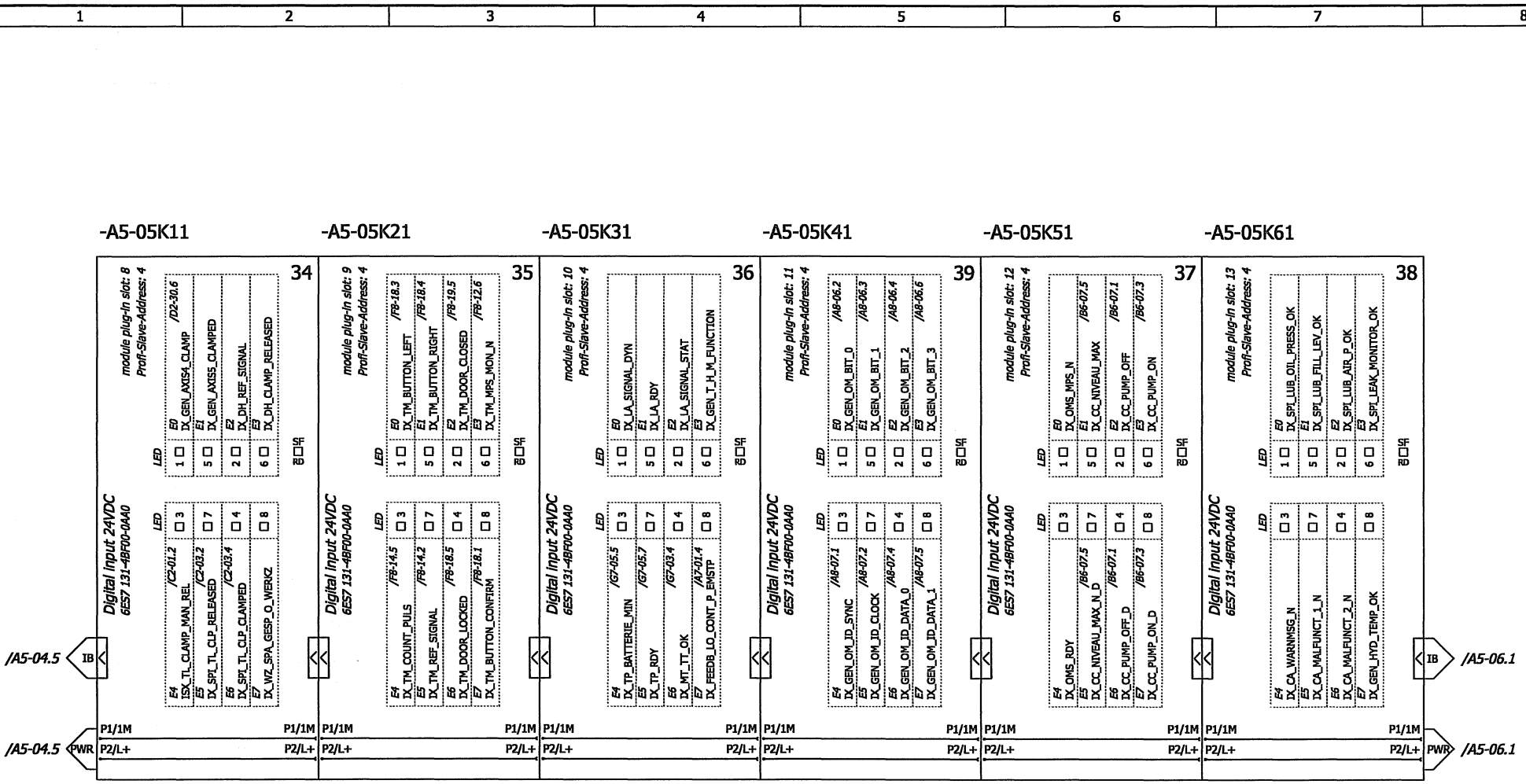
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	38



Date	02.02.2011
change	MEF
project number	113022
	DECKEL MAHO Seebach GmbH
	Schematic diagram Profibus inputs/outputs
object	DMU 50
series	4526
circuit diagram Nr.:	2652185
	DCC & EFS
Place	+M+EC
language	EN
sheet	A5-04/001
	39



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
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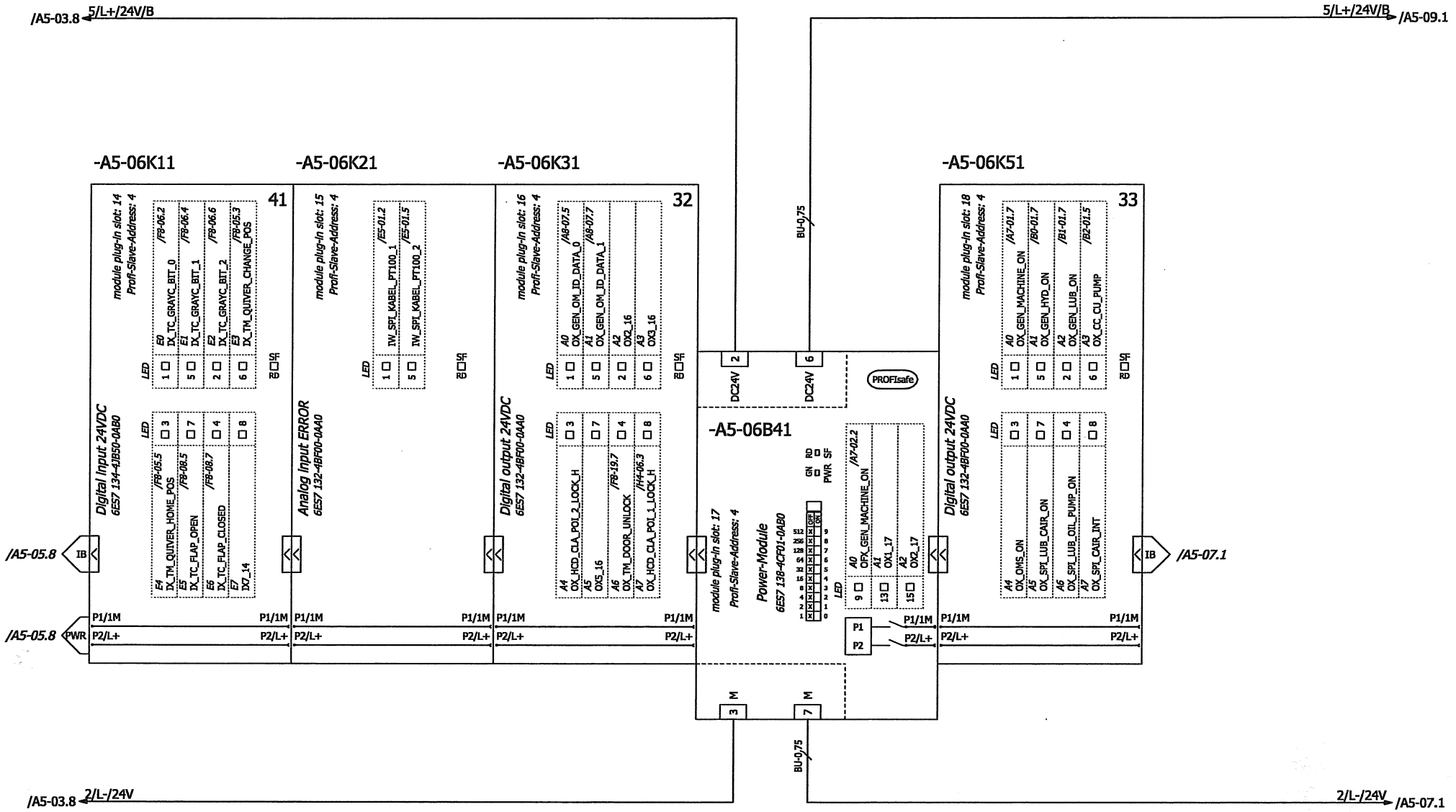

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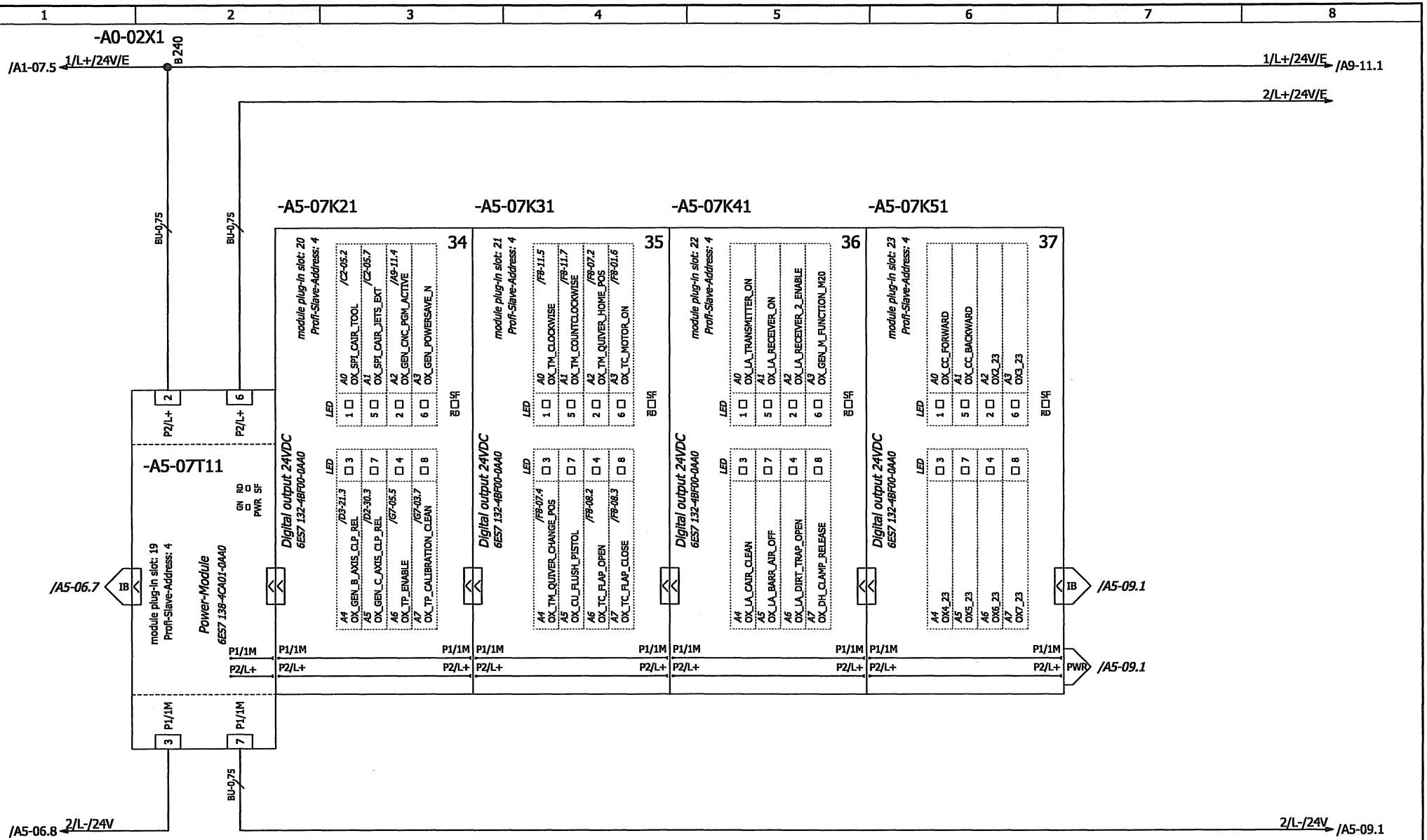

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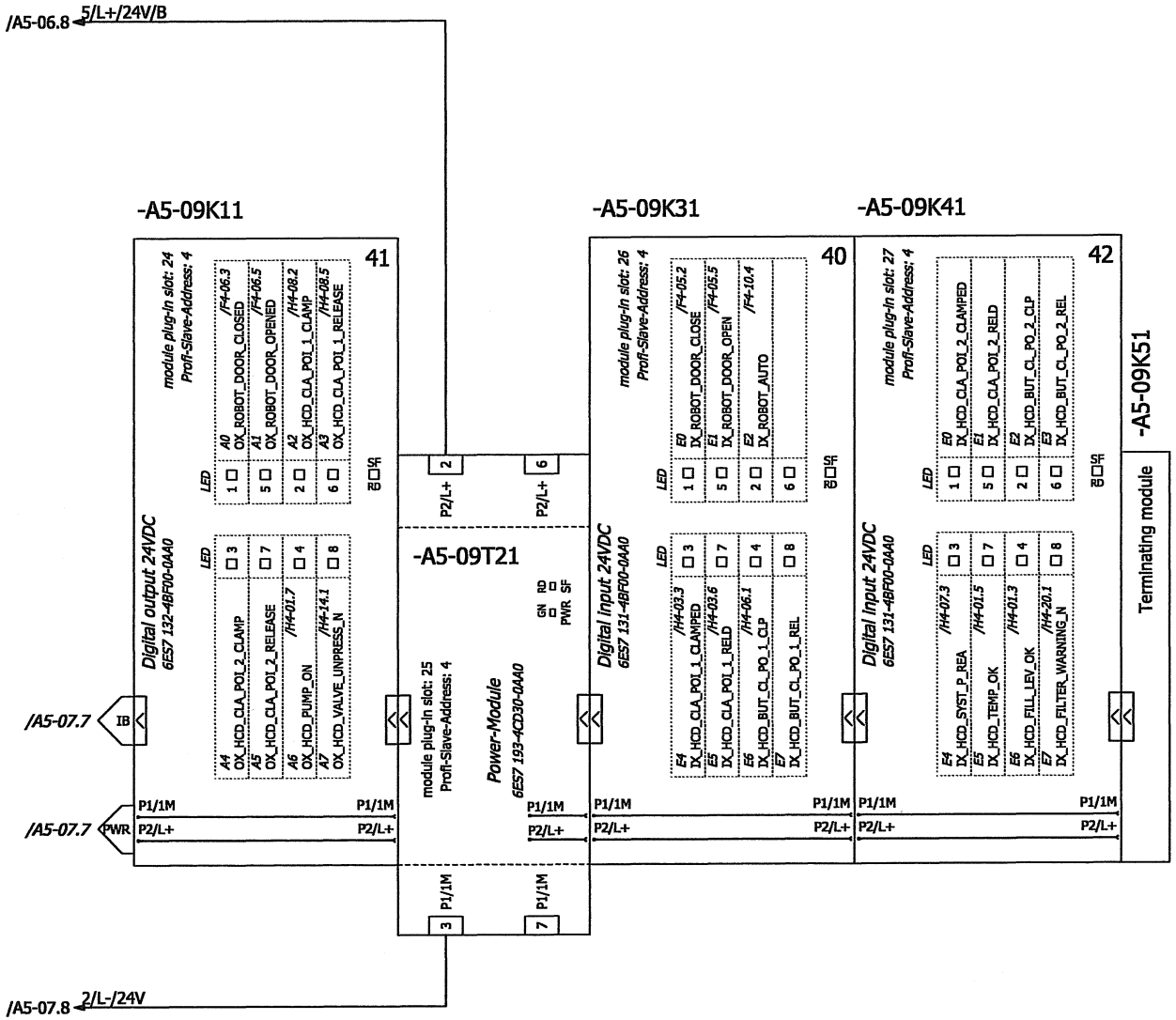
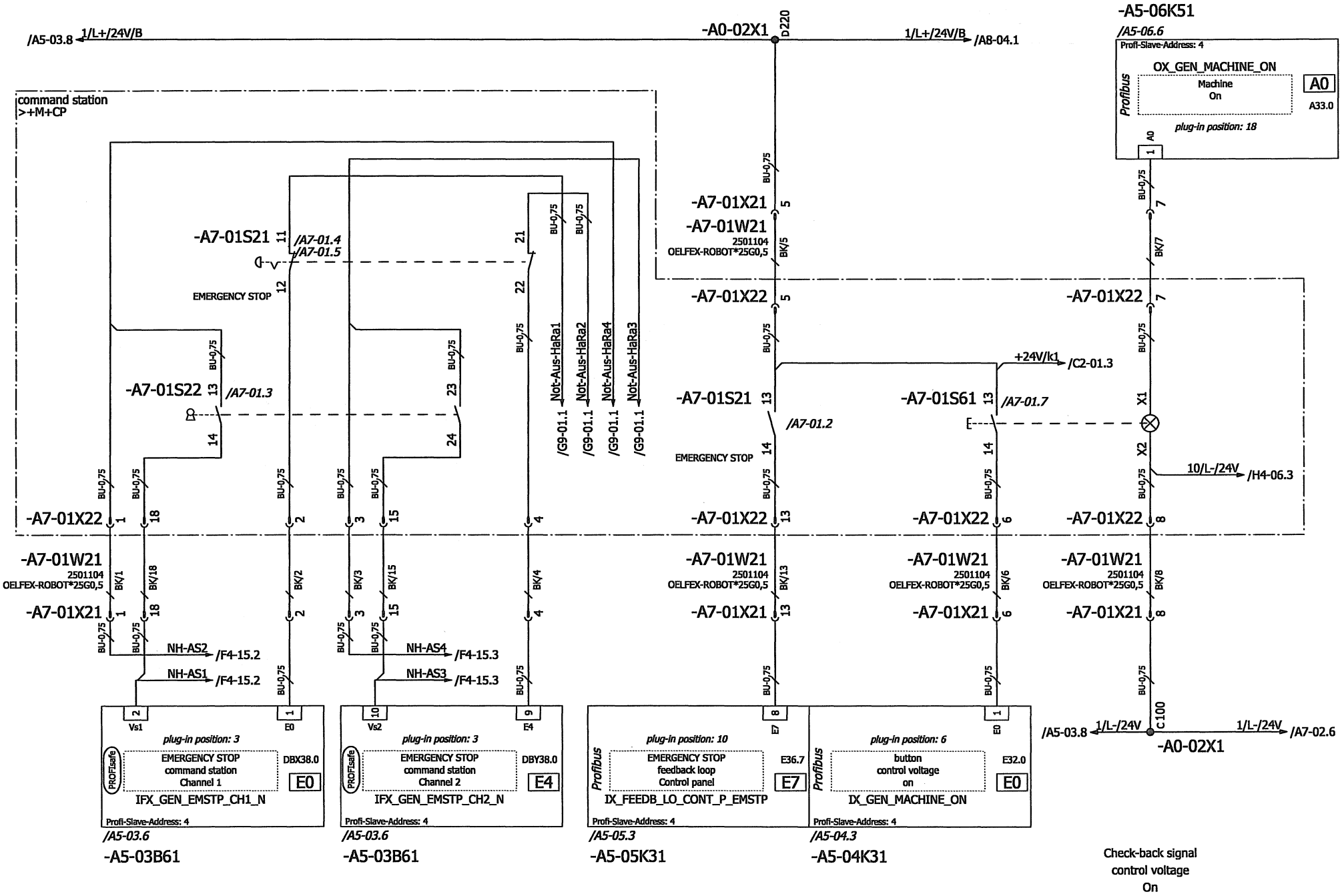
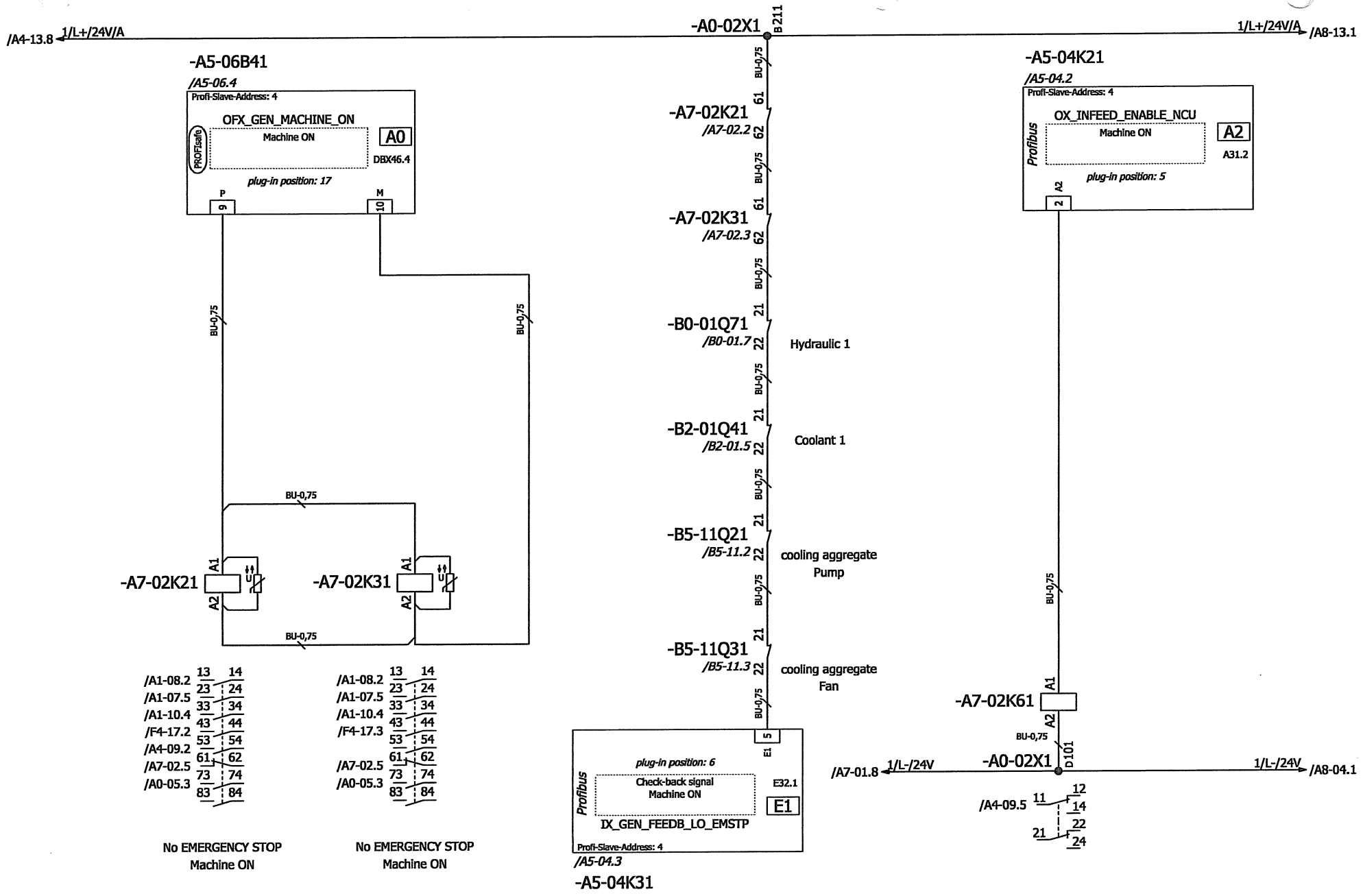
revision		Name	Created by	rep. by	rep. of	source	4526	2652185	EN	42	



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object: DMU 50	DCC & EFS	Place +M+EC	
			change	MEF	113022		Profibus outputs	series 4526	circuit diagram Nr.: 2652185	language EN	sheet A5-09/001
			chec.								43
revision	Date	Name	Created by		rep. by	rep. of	source				



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		control circuit	DMU 50	& EFS	+M+EC	
			chec.				Machine ON	series	circuit diagram Nr.:	language	sheet A7-01/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	44



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place
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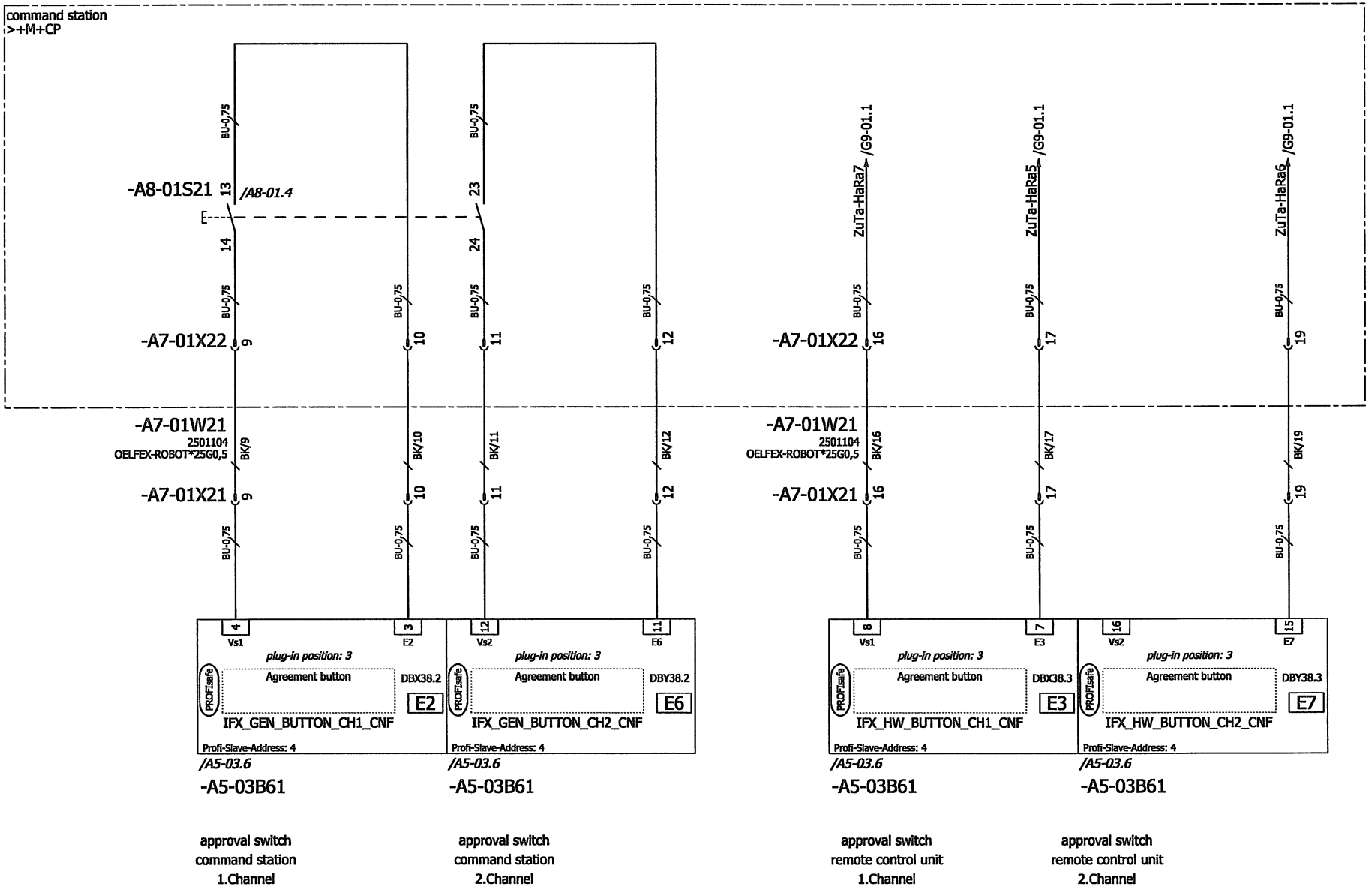
			chec.				EMERGENCY STOP	series	circuit diagram Nr.:	language
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN

sheet A7-02/001
45



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place		
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			chec.				Agreement button	series	circuit diagram Nr.:	language	sheet A8-01/001	
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN		46

2 3 4 5 6 7

/A7-01.6 1/L+/24V/B

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1/L+/24V/B /B0-01.4

BU-0,75

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BU-0,75

-A8-04W21
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BK/1 BK/2

command station
>+M+CP

-A4-04X1 D3

GNYE-2,5

PE

-A8-04S21

X1 /A8-04.4 /A8-05.4

PITmode V2.0 Control console

X2 /A8-06.4 /A8-07.4

switch 'op"ing modes'

I II III IIII

PE

Transponder

-A8-04S21
/A8-04.2

X1 1 2 3

A1 A2 NC

PITmode V2.0

Control console

Power supply 24V

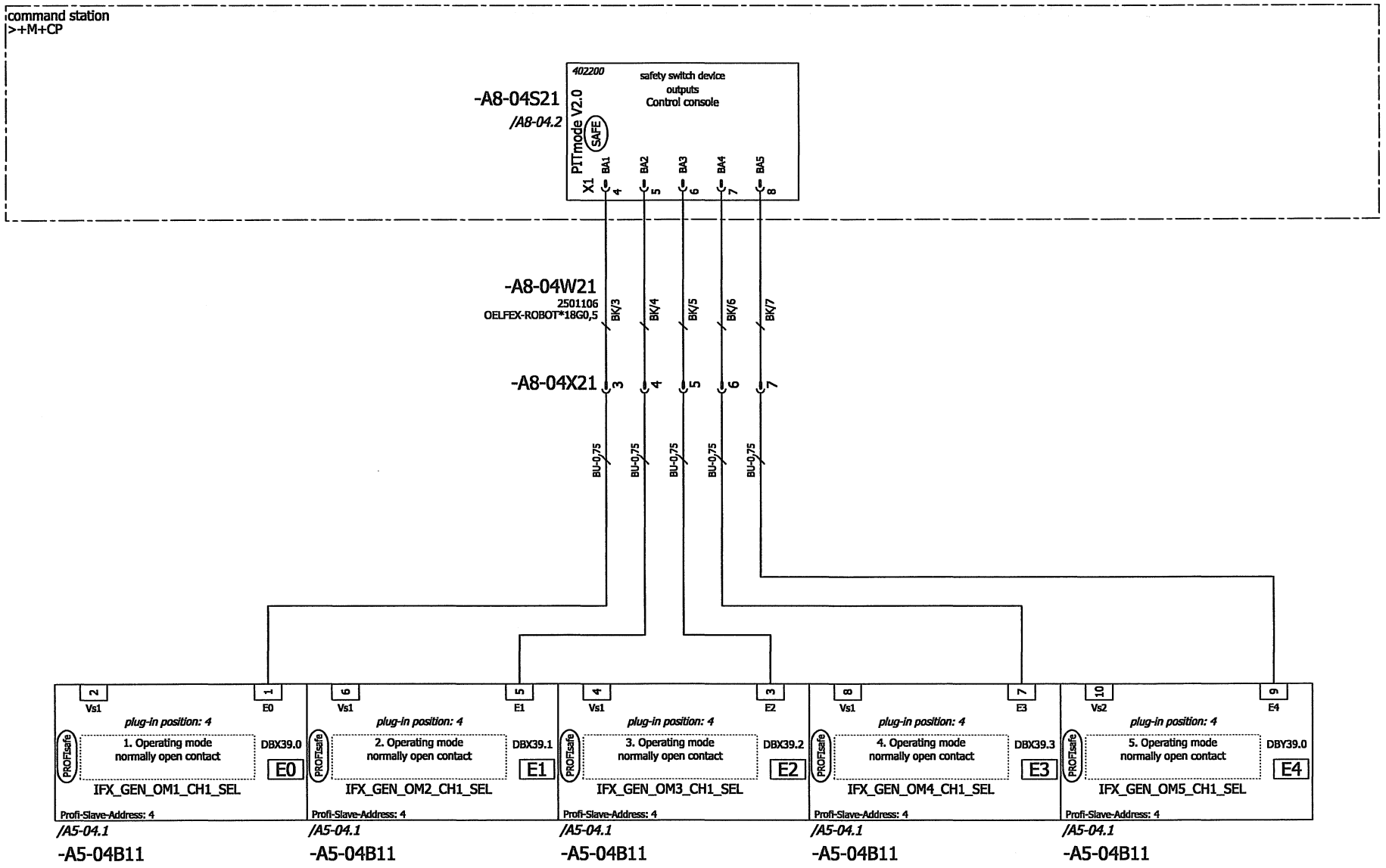
402200

/A7-02.8 1/L-/24V

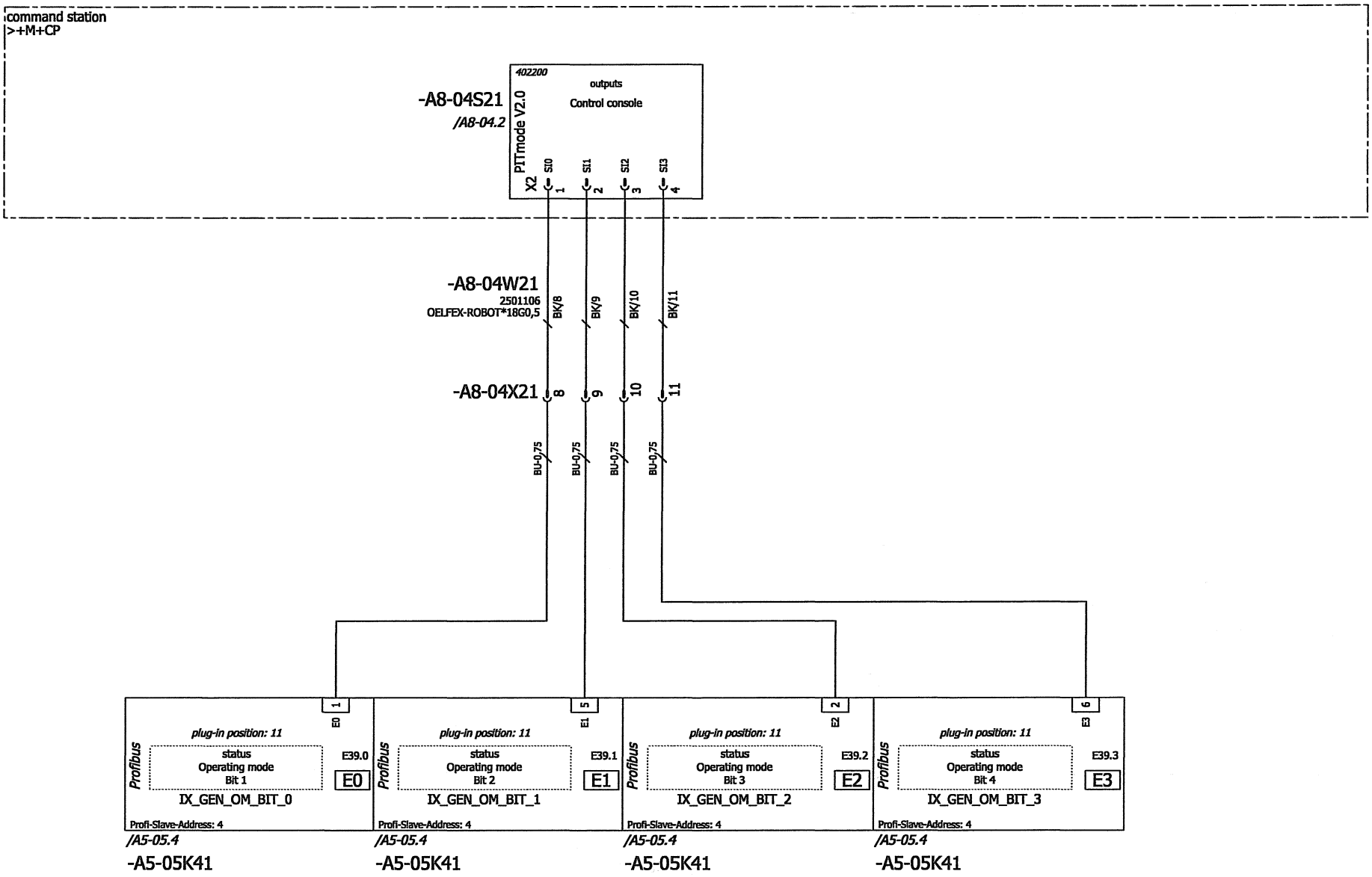
-A0-02X1 A 101

1/L-/24V /A8-13.1

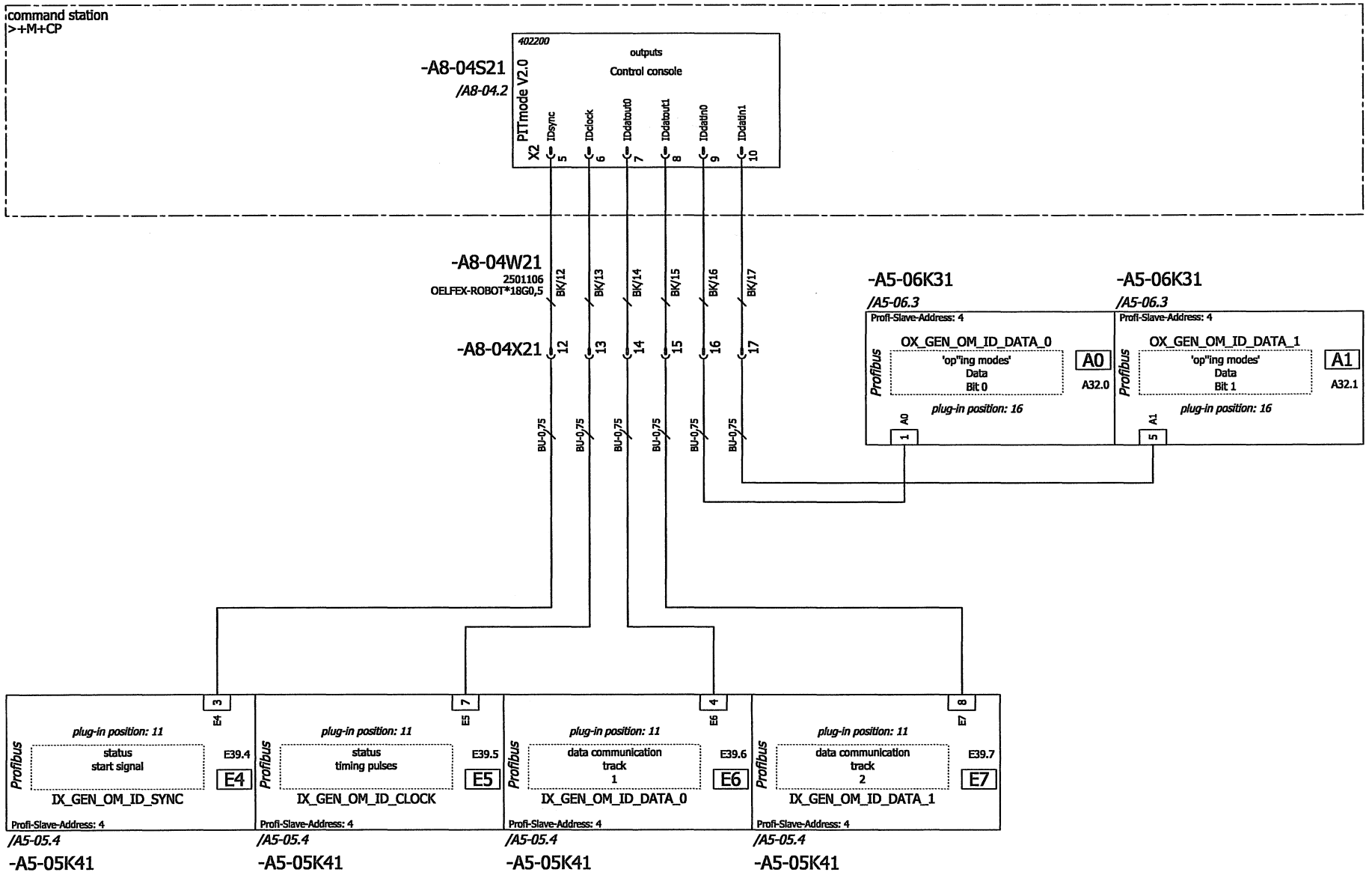
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		selection switch Voltage supply	DMU 50	& EFS	+M+EC	⇨
			chec.					series	circuit diagram Nr.:	language	sheet A8-04/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	47



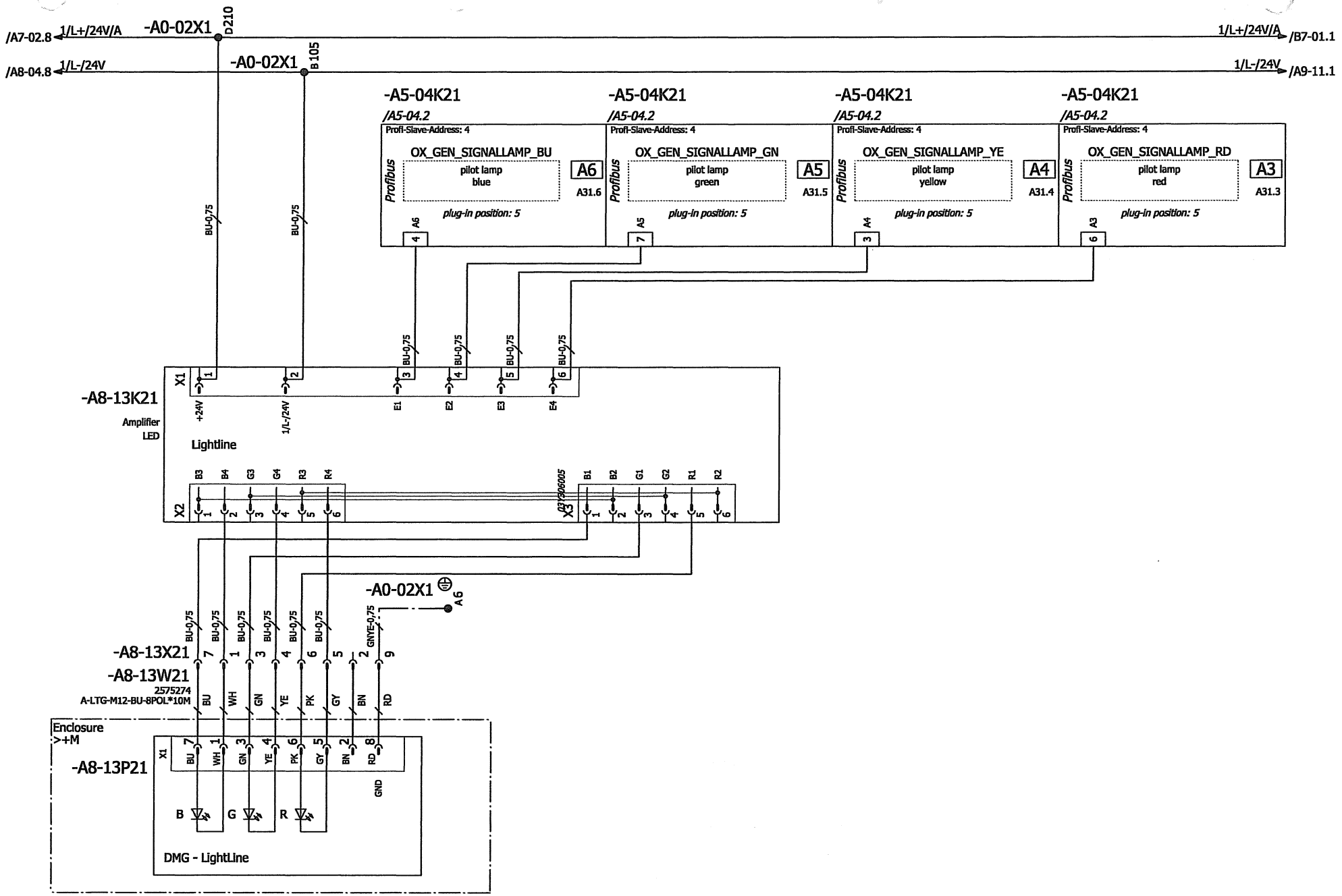
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place		
			change	MEF	113022		selection switch 'op"ing modes'	DMU 50	& EFS	+M+EC		
			chec.					series	circuit diagram Nr.:	language	sheet A8-05/001	
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN		48



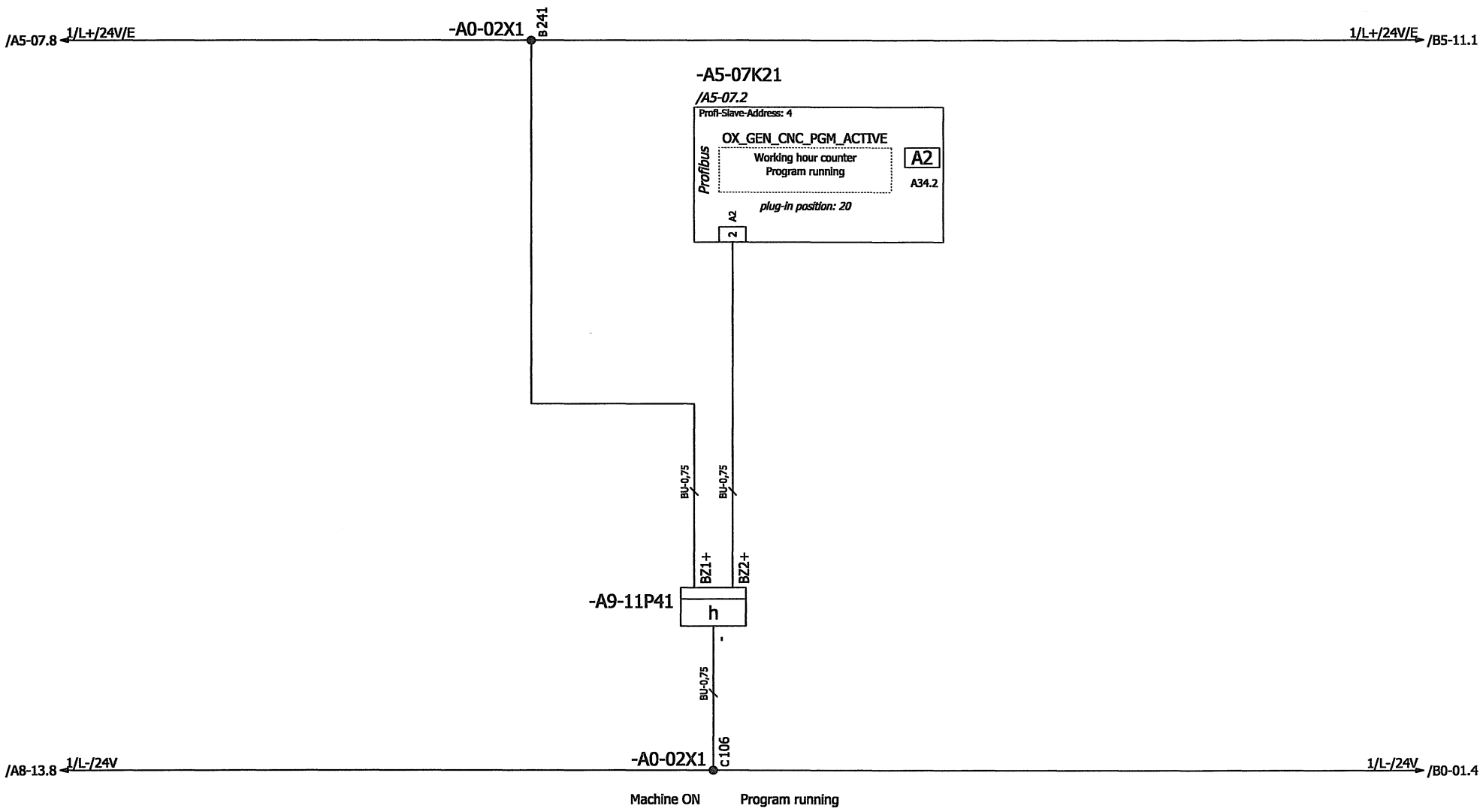
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		selection switch 'op"ing modes'	DMU 50	& EFS	+M+EC	⇨
			chec.					series	circuit diagram Nr.:	language	sheet A8-06/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	49



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		selection switch 'op"ing modes'	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet A8-07/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	50



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object: DMU 50	DCC & EFS	Place +M+EC	⇦	
			change	MEF	113022		Leuchtband				⇨	
			chec.					series 4526	circuit diagram Nr.: 2652185	language EN	sheet A8-13/001	
revision	Date	Name	Created by		rep. by	rep. of	source				51	



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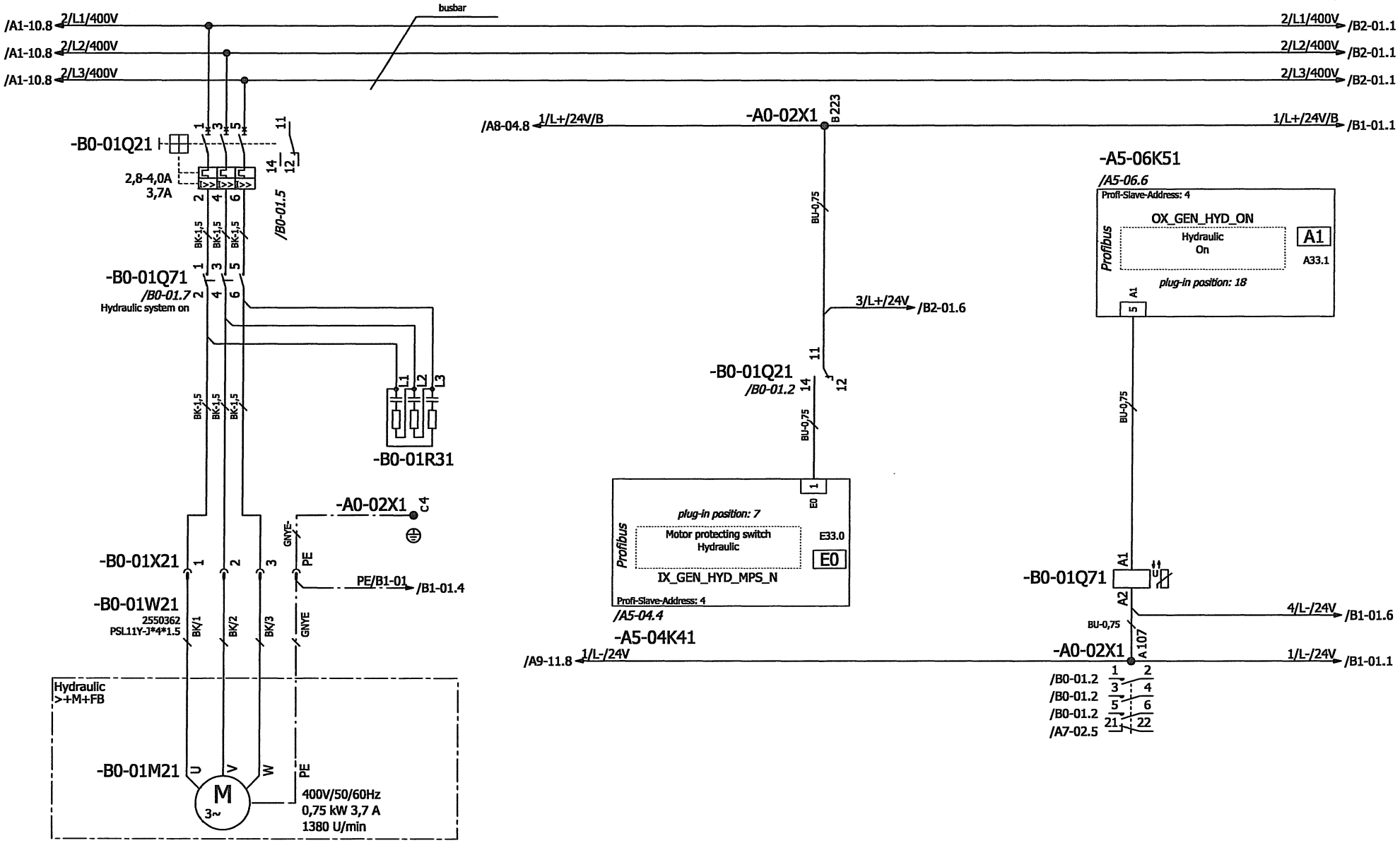
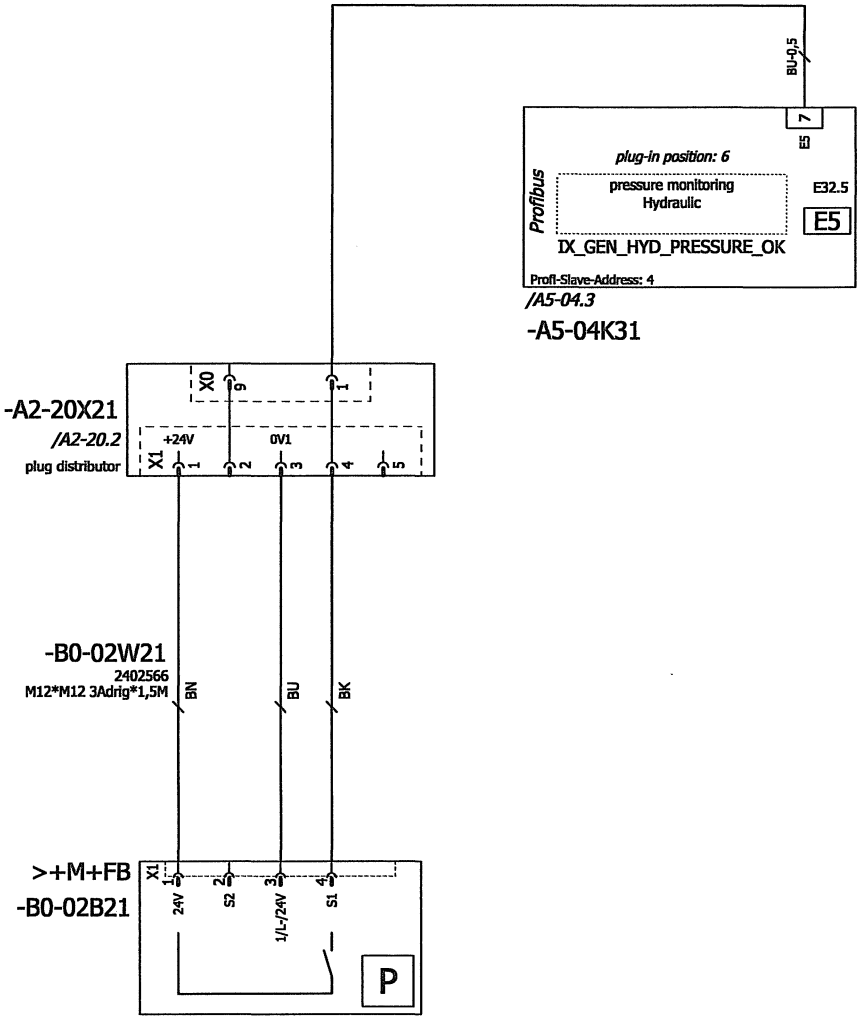
			change	MEF	113022		Working hour counter	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet A9-11/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	52

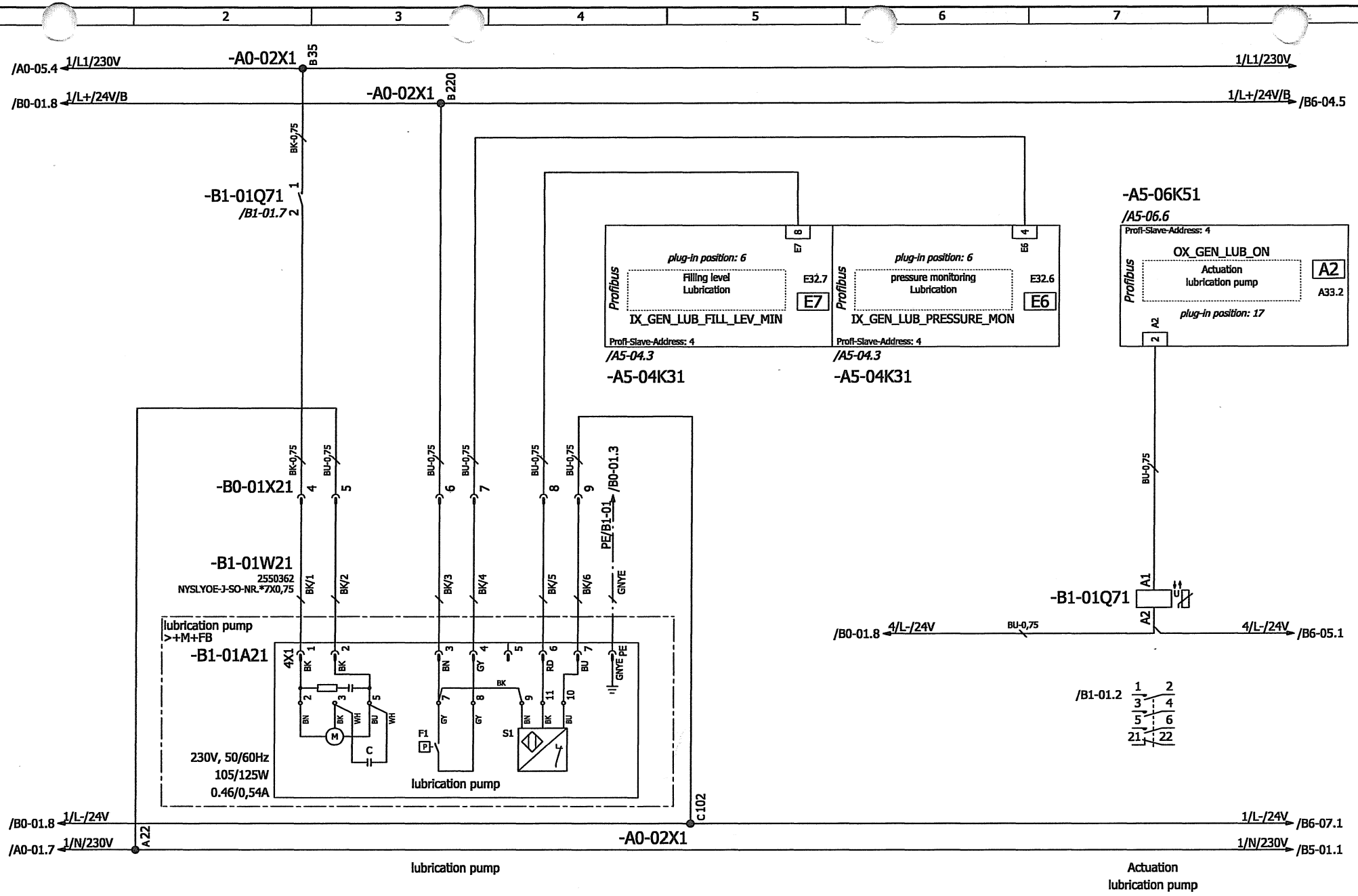


			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Hydraulic	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet B0-01/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	53

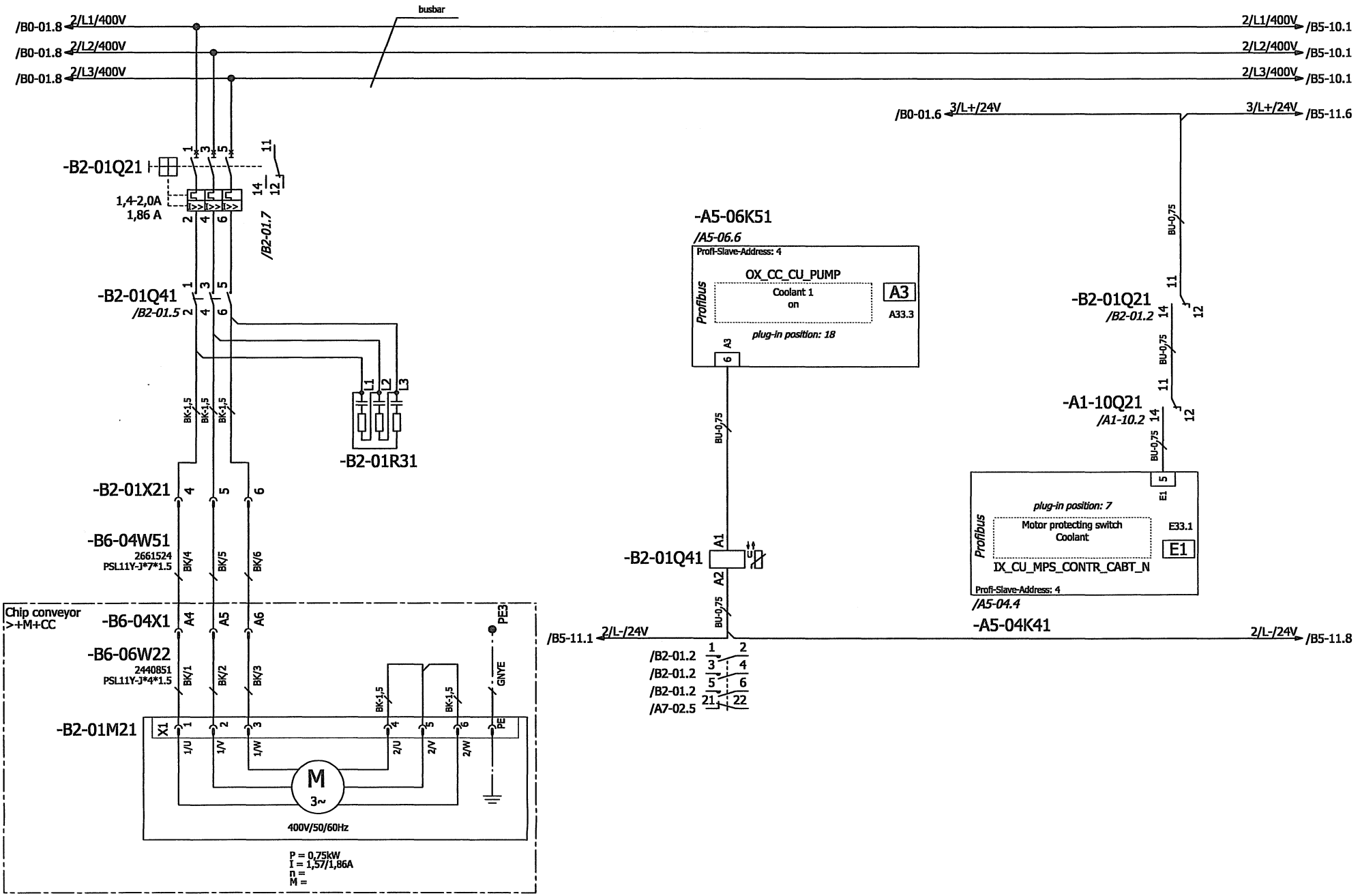


pressure monitoring
Hydraulic
Machine

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Hydraulic	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet B0-02/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	54



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object: DMU 50	DCC & EFS	Place +M+EC	⇦	
			change	MEF	113022		lubrication pump Machine	series 4526	circuit diagram Nr.: 2652185	language EN	⇨	sheet B1-01/001
			chec.									55
revision	Date	Name	Created by		rep. by	rep. of	source					



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			change	MEF	113022		Actuation return pump	DMU 50	& EFS	+M+EC	
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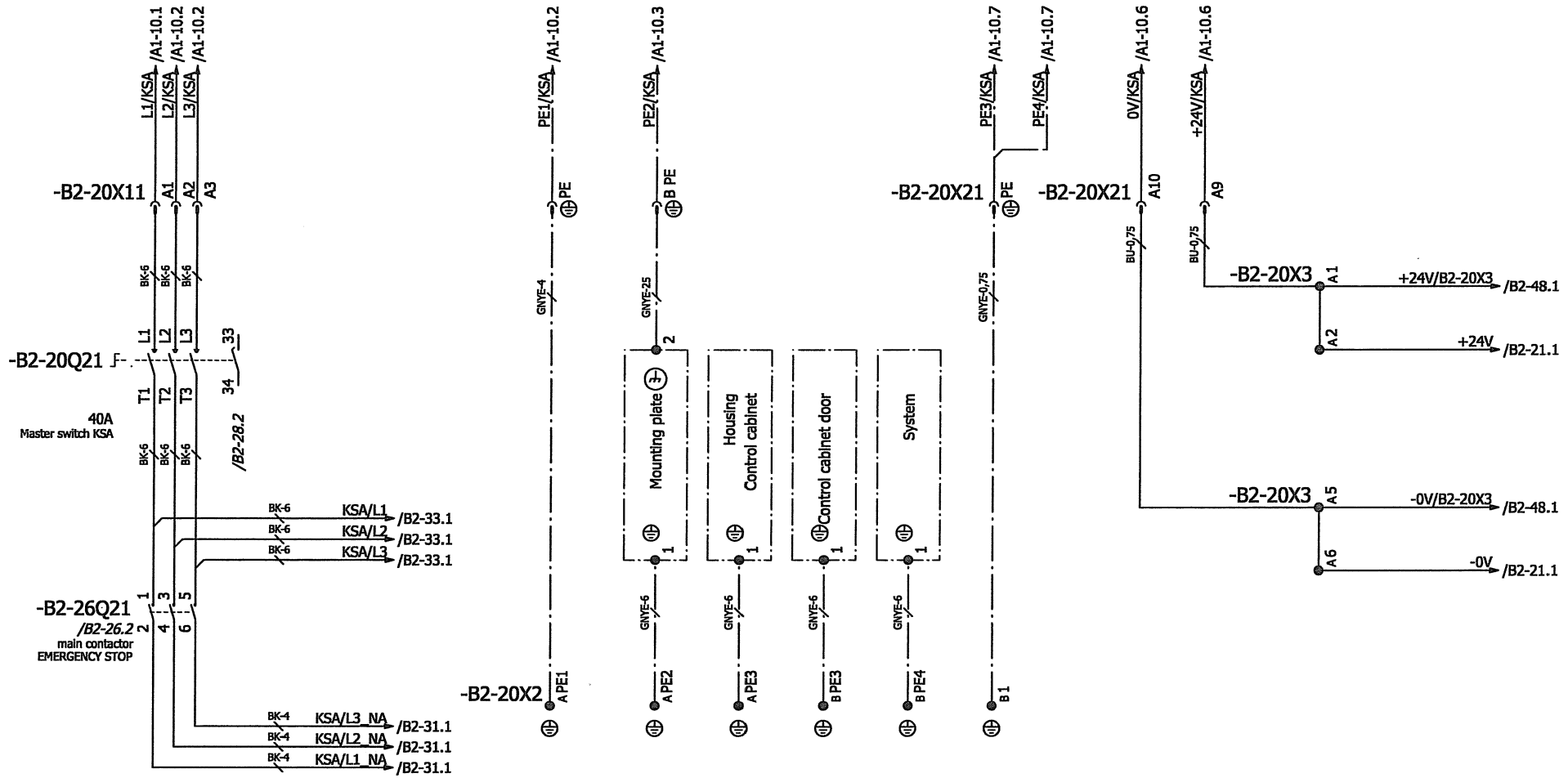
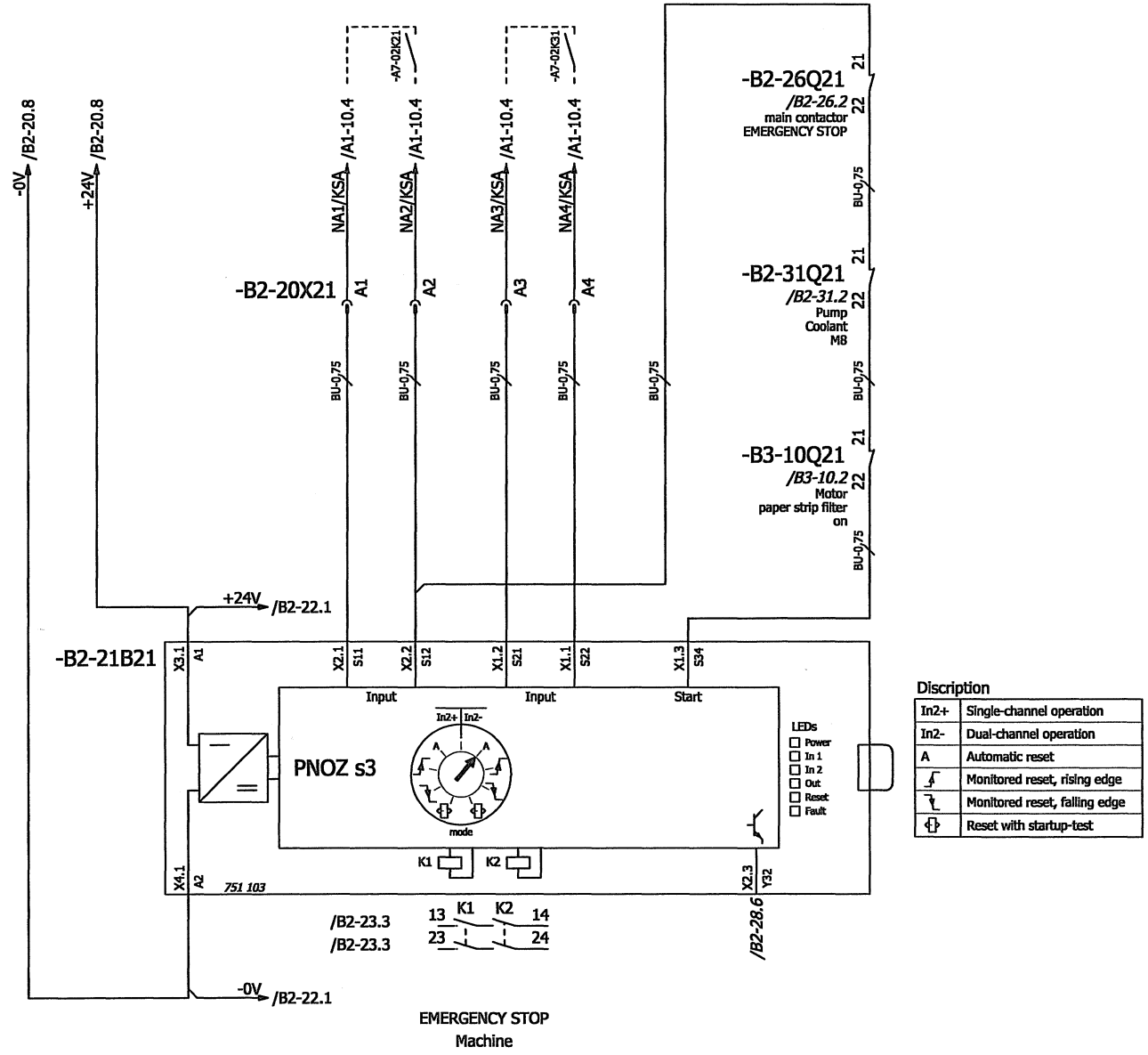
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	56



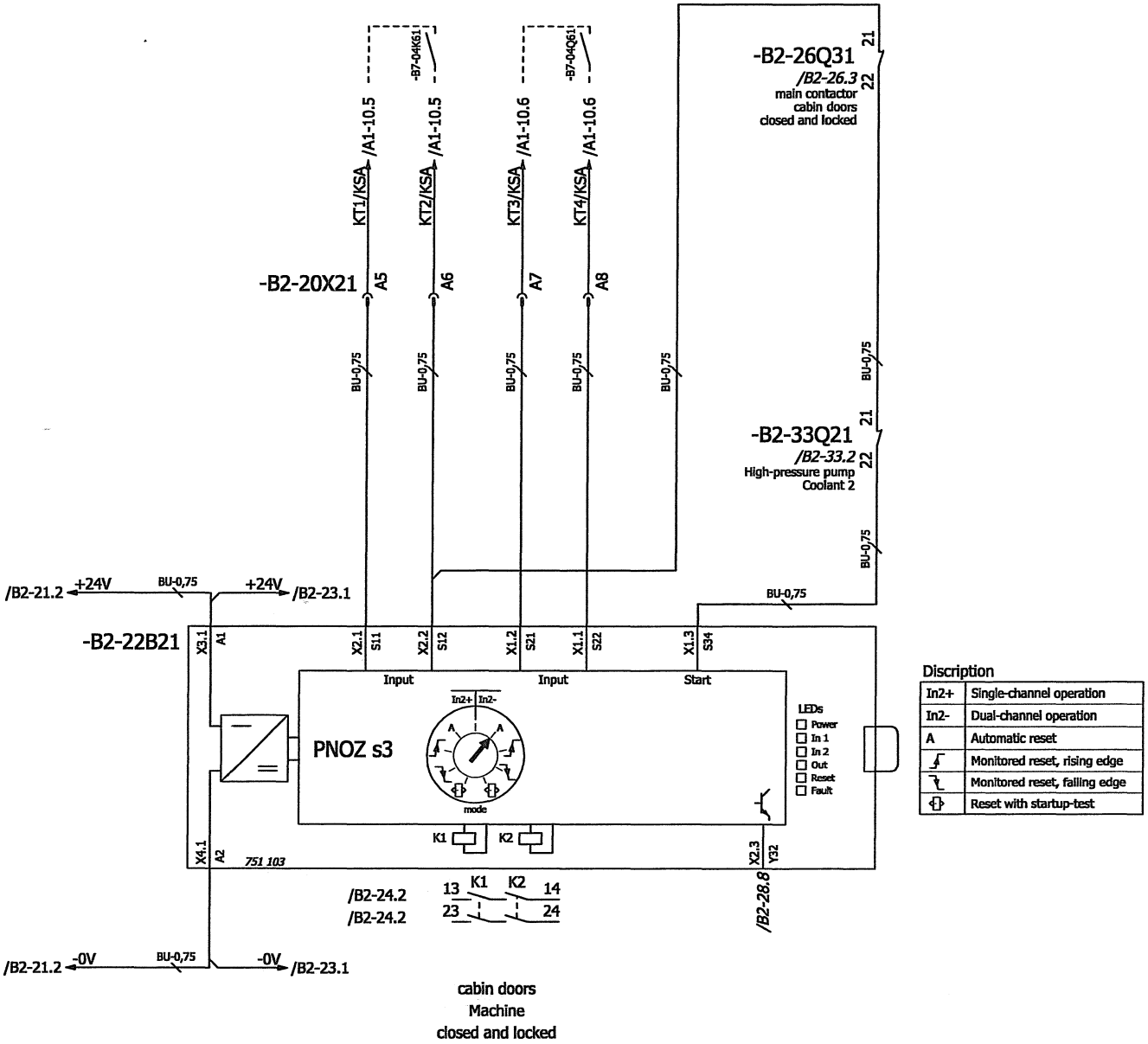
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object		DCC	Place	⇦
			change	MEF	113022		Coolant system power supply	DMU 50		& EFS	+M+CU+EC	⇨
			chec.					series	circuit diagram Nr.:		language	sheet B2-20/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185		EN	57



Discription

In2+	Single-channel operation
In2-	Dual-channel operation
A	Automatic reset
	Monitored reset, rising edge
	Monitored reset, falling edge
	Reset with startup-test

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Coolant system interface	DMU 50	& EFS	+M+CU+EC	
			chec.					series	circuit diagram Nr.:	language	sheet B2-21/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	58

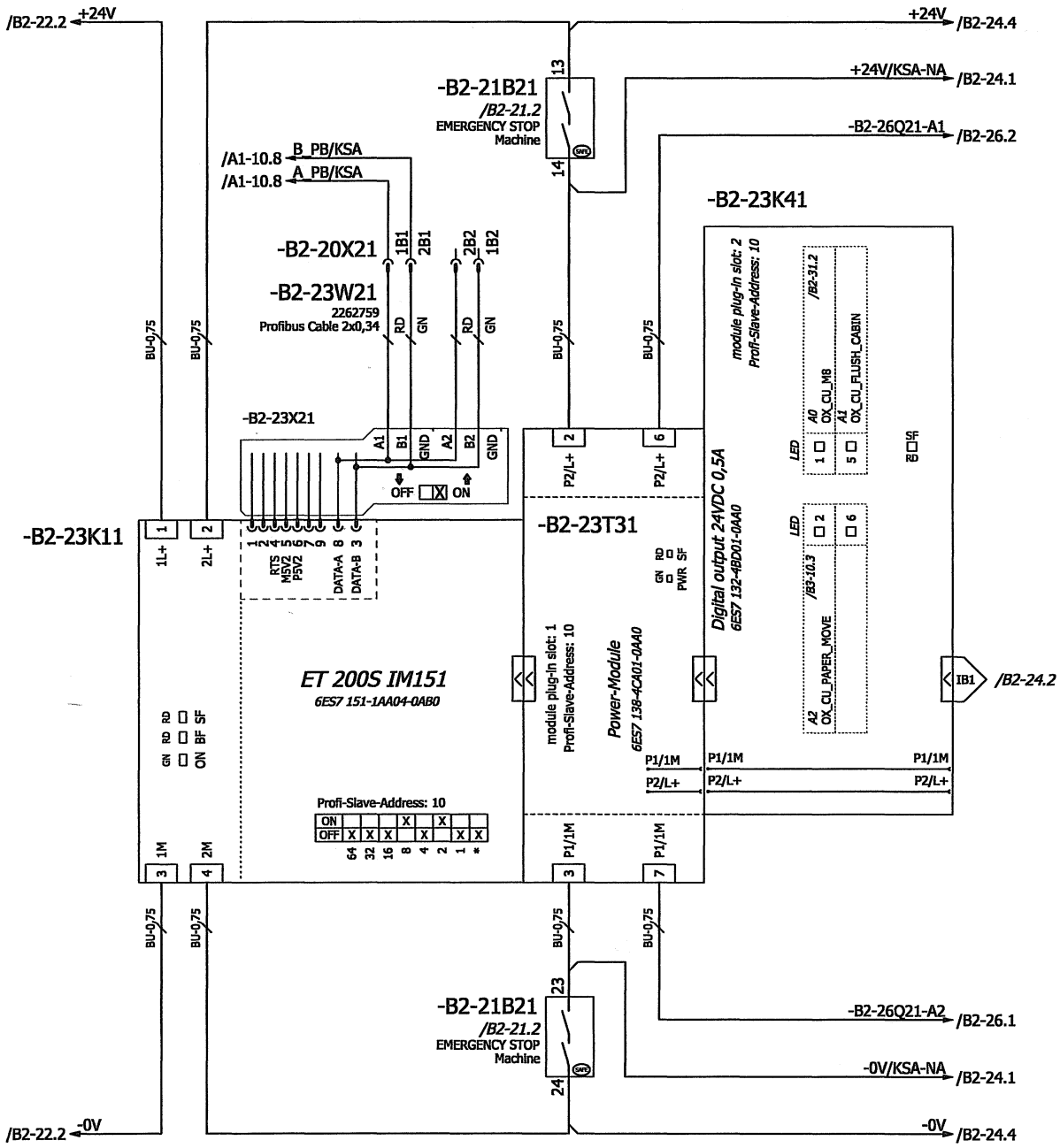


Discription

In2+	Single-channel operation
In2-	Dual-channel operation
A	Automatic reset
	Monitored reset, rising edge
	Monitored reset, falling edge
	Reset with startup-test

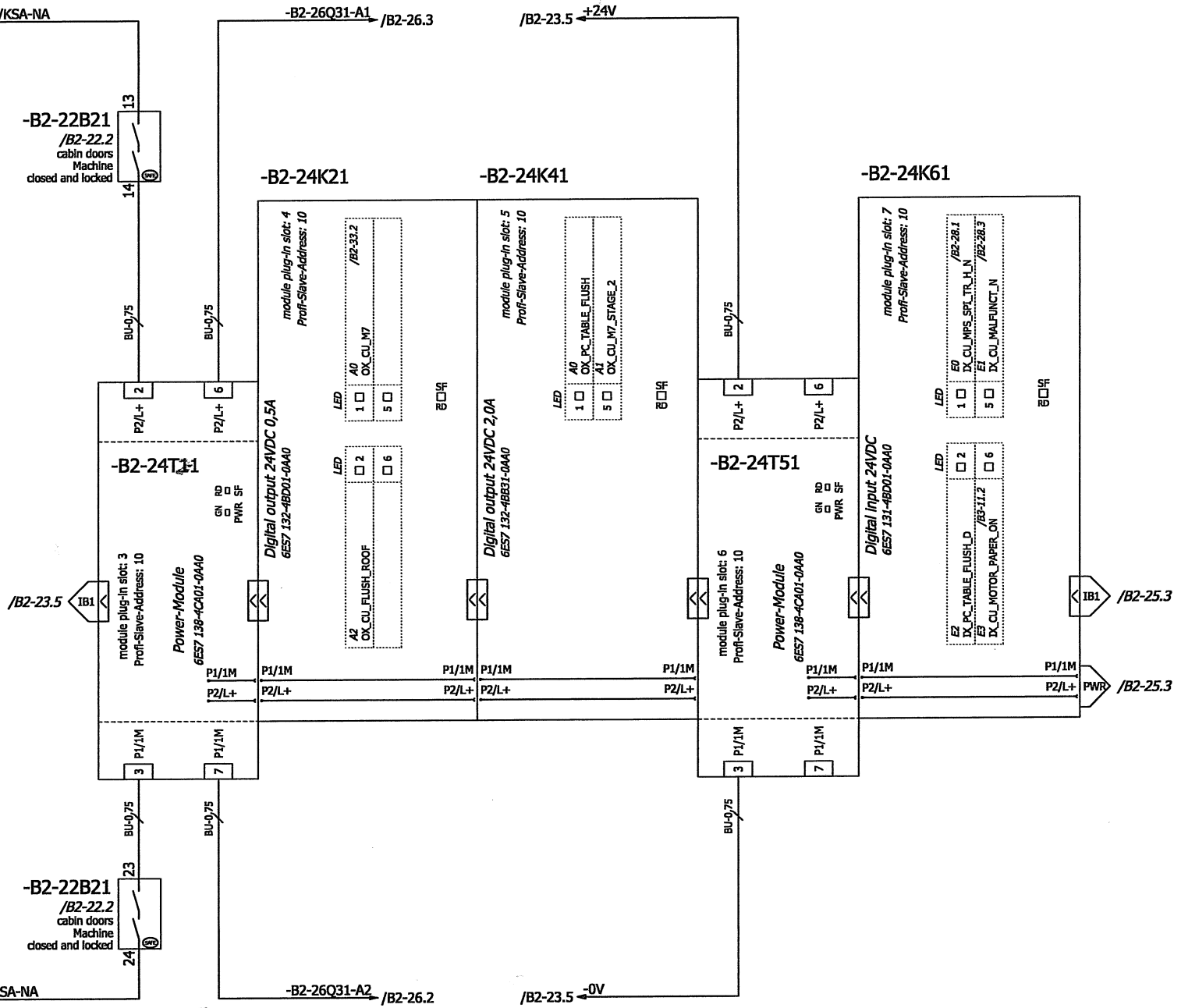
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC
			change	MEF	113022		Coolant system	DMU 50	& EFS
			chec.				Emergency stop	series	circuit diagram Nr.:
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185

Place	
+M+CU+EC	
language	sheet B2-22/001
EN	59

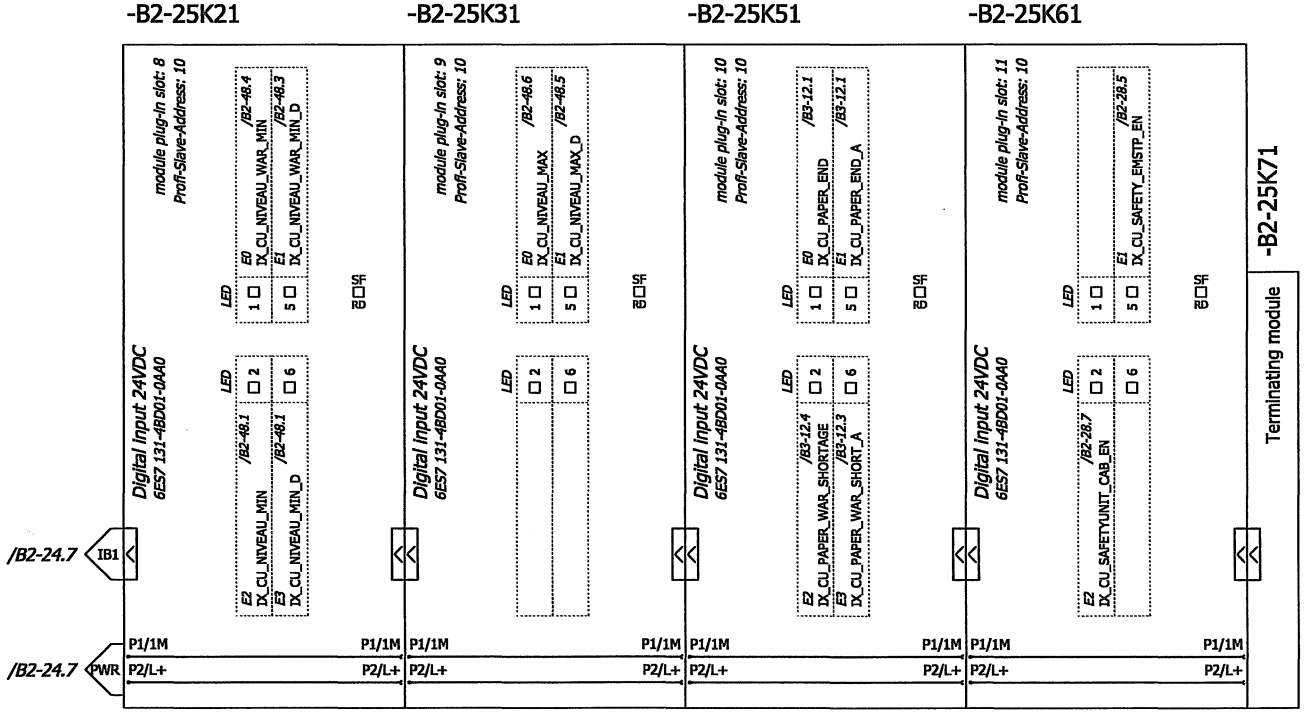


			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place
			change	MEF	113022		Profibus	DMU 50	& EFS	+M+CU+EC
			chec.				Coolant system	series	circuit diagram Nr.:	language
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN

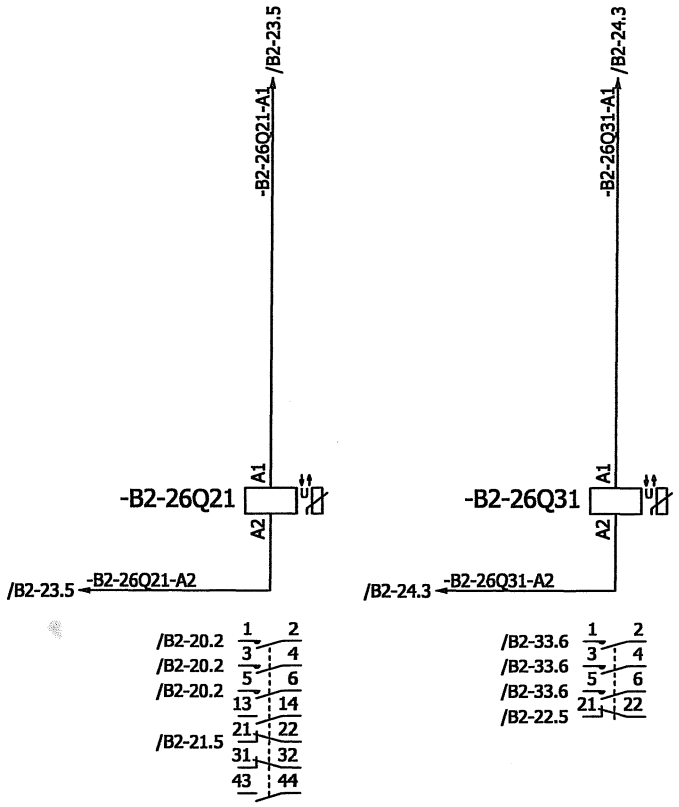
sheet B2-23/001
60



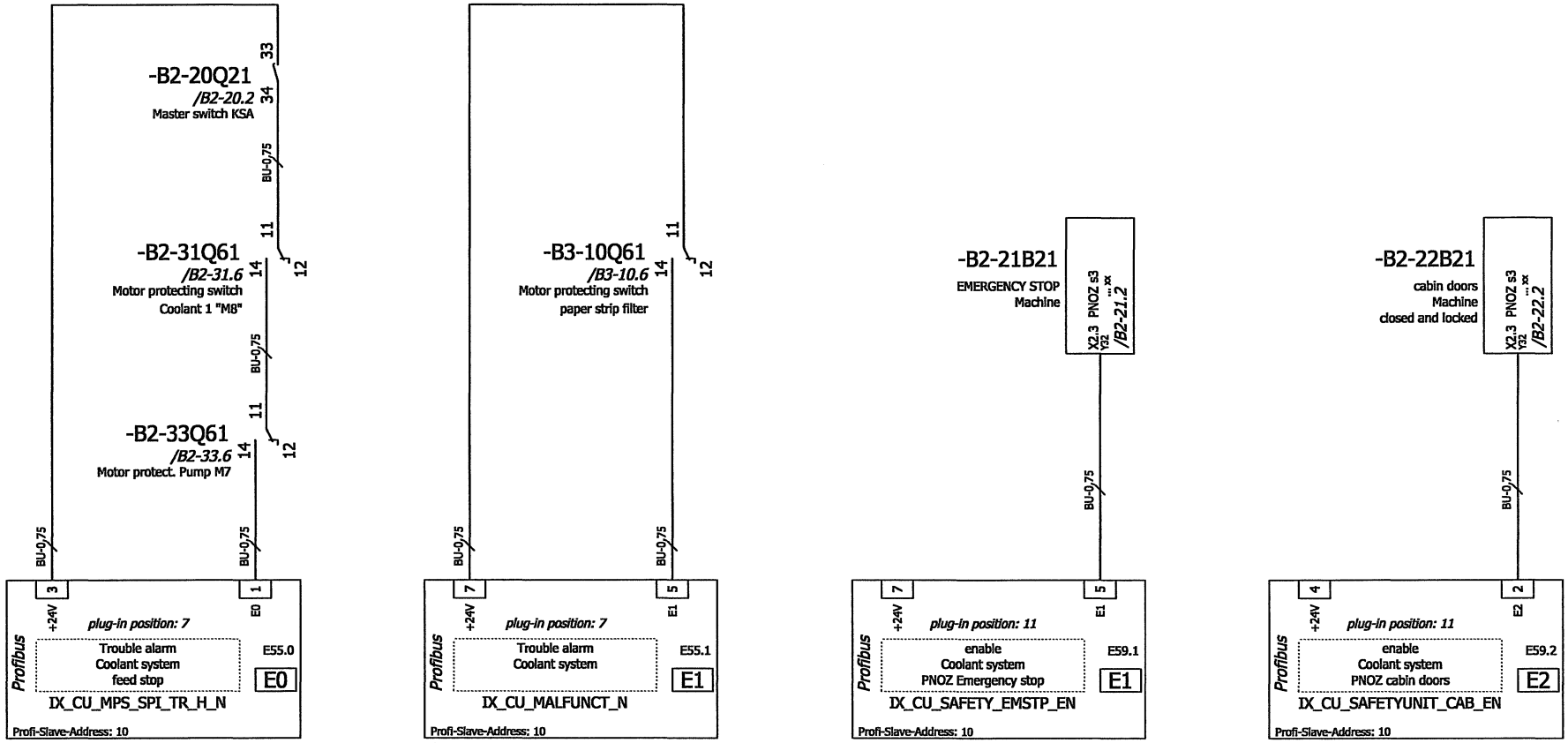
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object: DMU 50	DCC & EFS	Place +M+CU+EC
			change	MEF	113022		Profibus Coolant system	series 4526	circuit diagram Nr.: 2652185	language EN
			chec.							sheet B2-24/001
revision	Date	Name	Created by		rep. by	rep. of	source			61



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place		
			change	MEF	113022		Profibus	DMU 50	& EFS	+M+CU+EC		
			chec.				Coolant system	series	circuit diagram Nr.:	language	sheet B2-25/001	
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN		62



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object:	DCC	Place	⇦
			change	MEF	113022		Coolant system control circuit	DMU 50	& EFS	+M+CU+EC	⇨
			chec.					series	circuit diagram Nr.:	language	sheet B2-26/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	63



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Coolant system Diagnosis	DMU 50	& EFS	+M+CU+EC	
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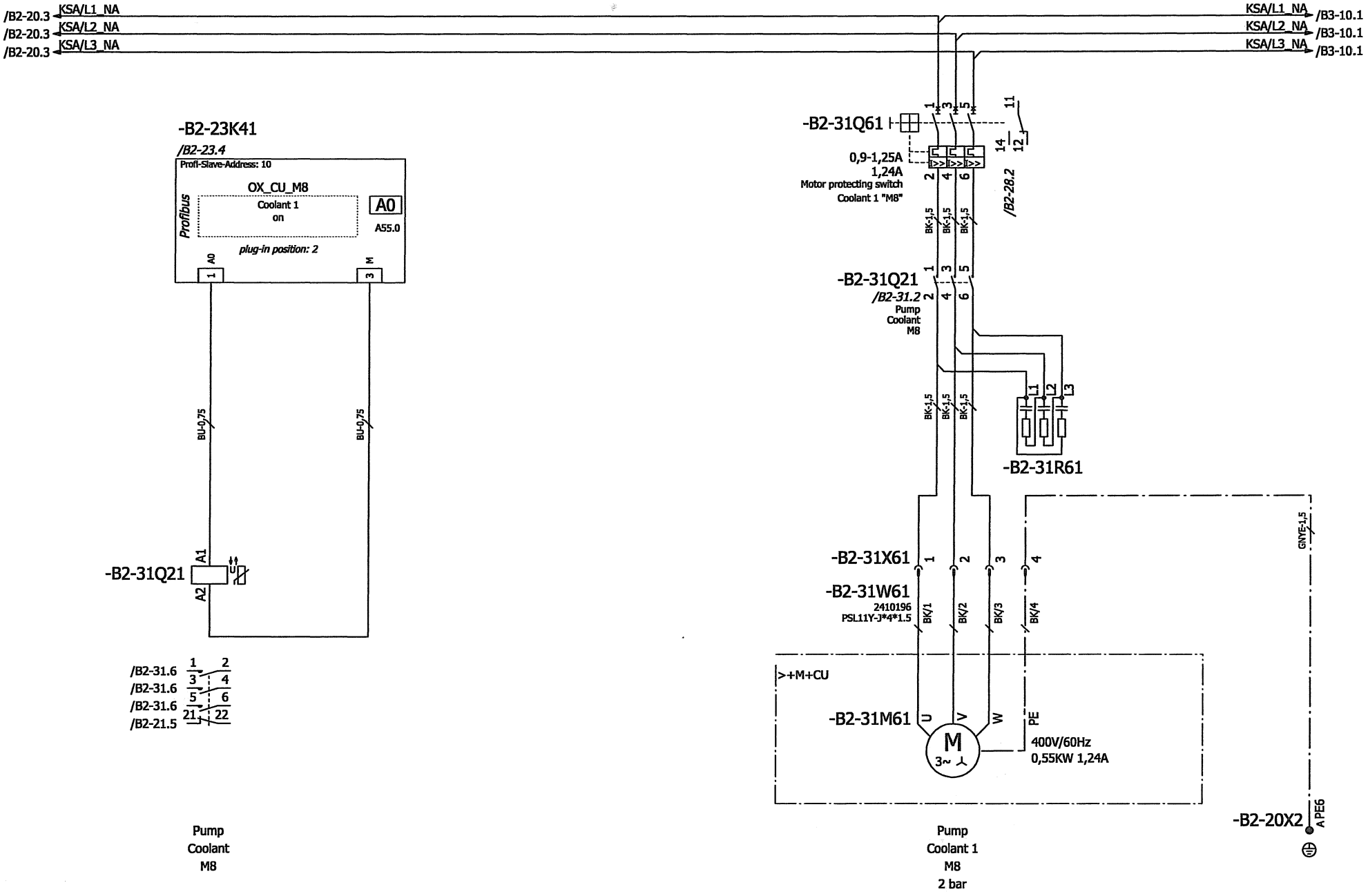
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	64



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Coolant 1	DMU 50	& EFS	+M+CU+EC	
			chec.					series	circuit diagram Nr.:	language	sheet B2-31/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	65

/B2-20.3 KSA/L1
/B2-20.3 KSA/L2
/B2-20.3 KSA/L3

-B2-24K21
/B2-24.3
Profi-Slave-Address: 10
OX_CU_M7
Profibus
High-pressure pump Coolant 2.1
A0
A56.0
plug-in position: 4
A0 1
M 3

BU-0,75
BU-0,75

-B2-33Q21 A1 A2

/B2-33.6 1 2
/B2-33.6 3 4
/B2-33.6 5 6
/B2-22.5 21 22

High-pressure pump
Coolant 2

-B2-33Q61
4,5-6,3A
5,85A
Motor protect. Pump M7
/B2-28.2

BK-1,5

-B2-26Q31
/B2-26.3
main contactor
cabin doors
closed and locked

-B2-33Q21
/B2-33.2
High-pressure pump
Coolant 2

-B2-33R61

-B2-33X61

-B2-33W61
2410196
OELFLEX-C.400P*4*1,5*BK
BK/1
BK/2
BK/3
GNYE

>+M+CU
-B2-33M61
U V W PE
M 3~
400V/50/60Hz
3,0KW 6,35/5,85A

GNYE-1,5
-B2-20X31 A7

Coolant 2
High-pressure pump
40 bar
M7

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		High-pressure pump Coolant 2.1 (40bar)	DMU 50	& EFS	+M+CU+EC	
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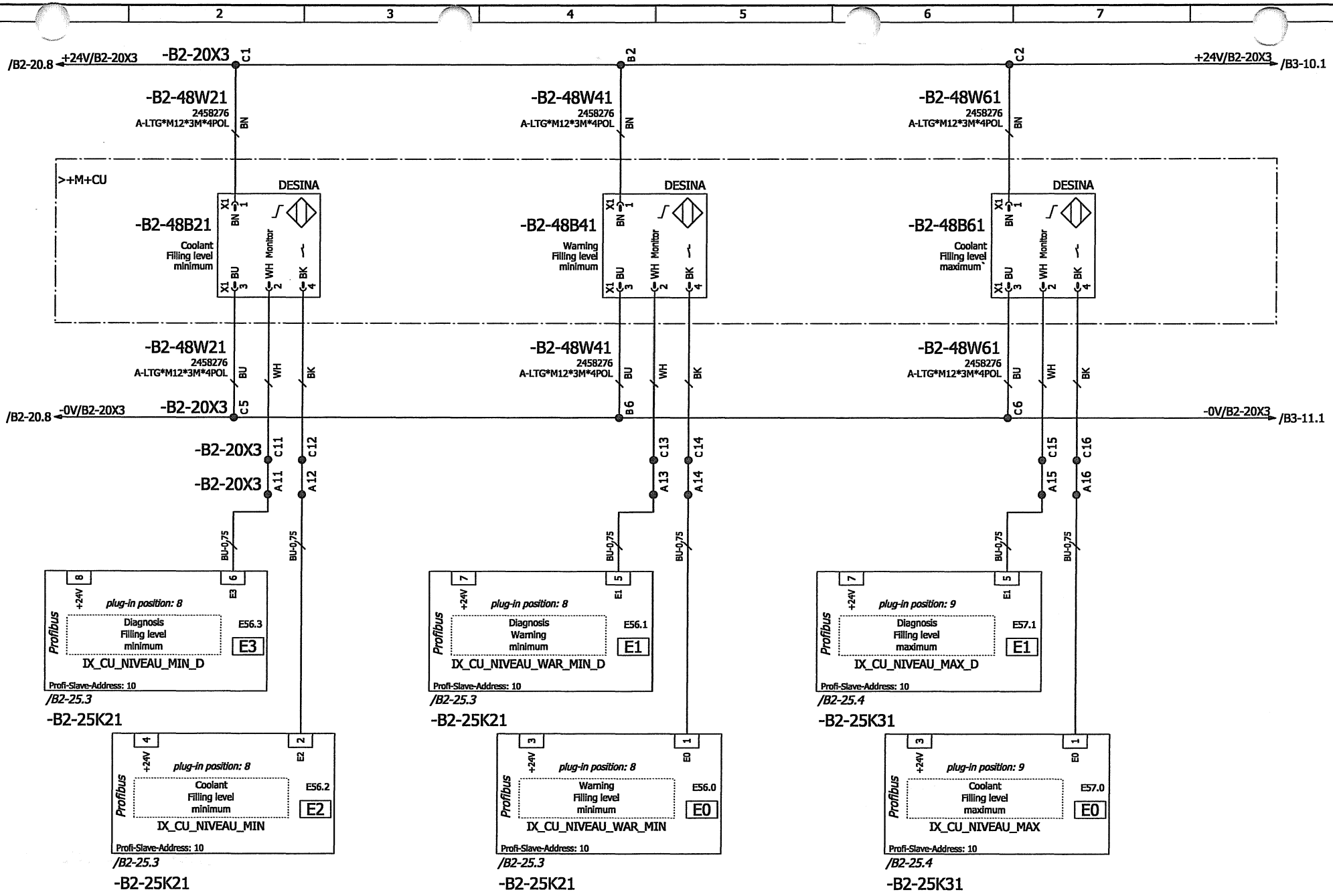
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	66



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		monitoring level control	DMU 50	& EFS	+M+CU+EC	
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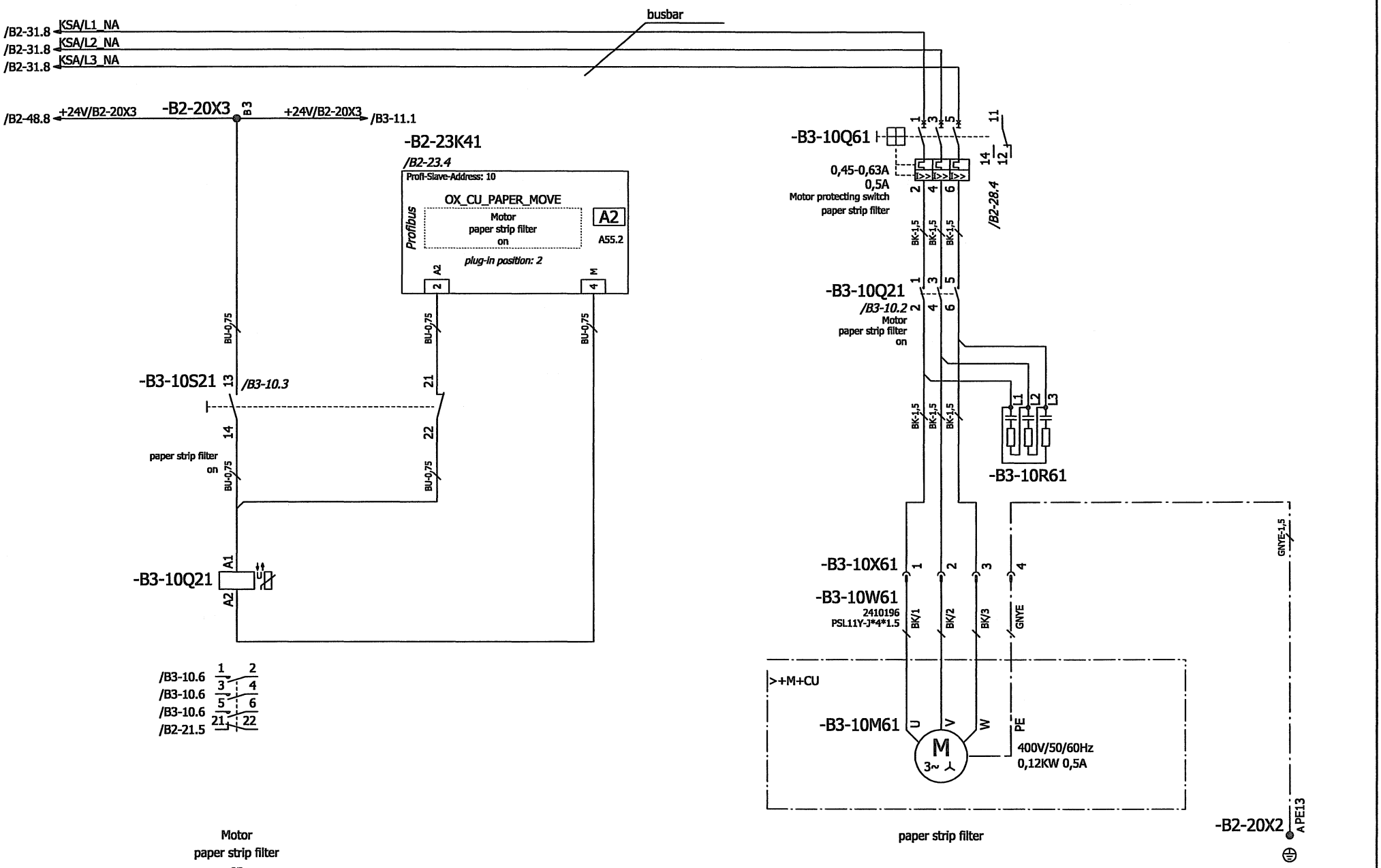
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	67



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		paper strip filter Motor	DMU 50	& EFS	+M+CU+EC	
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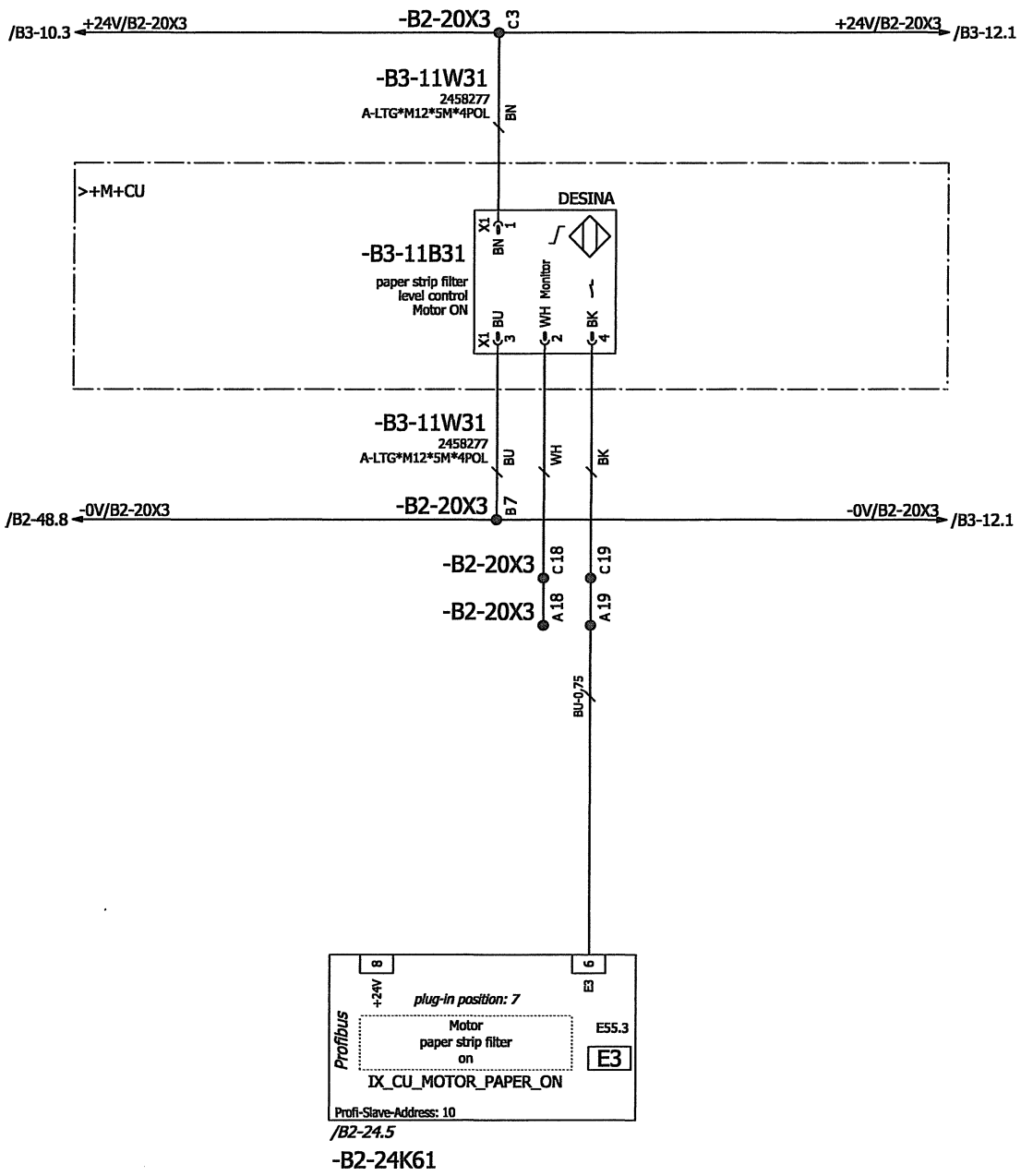
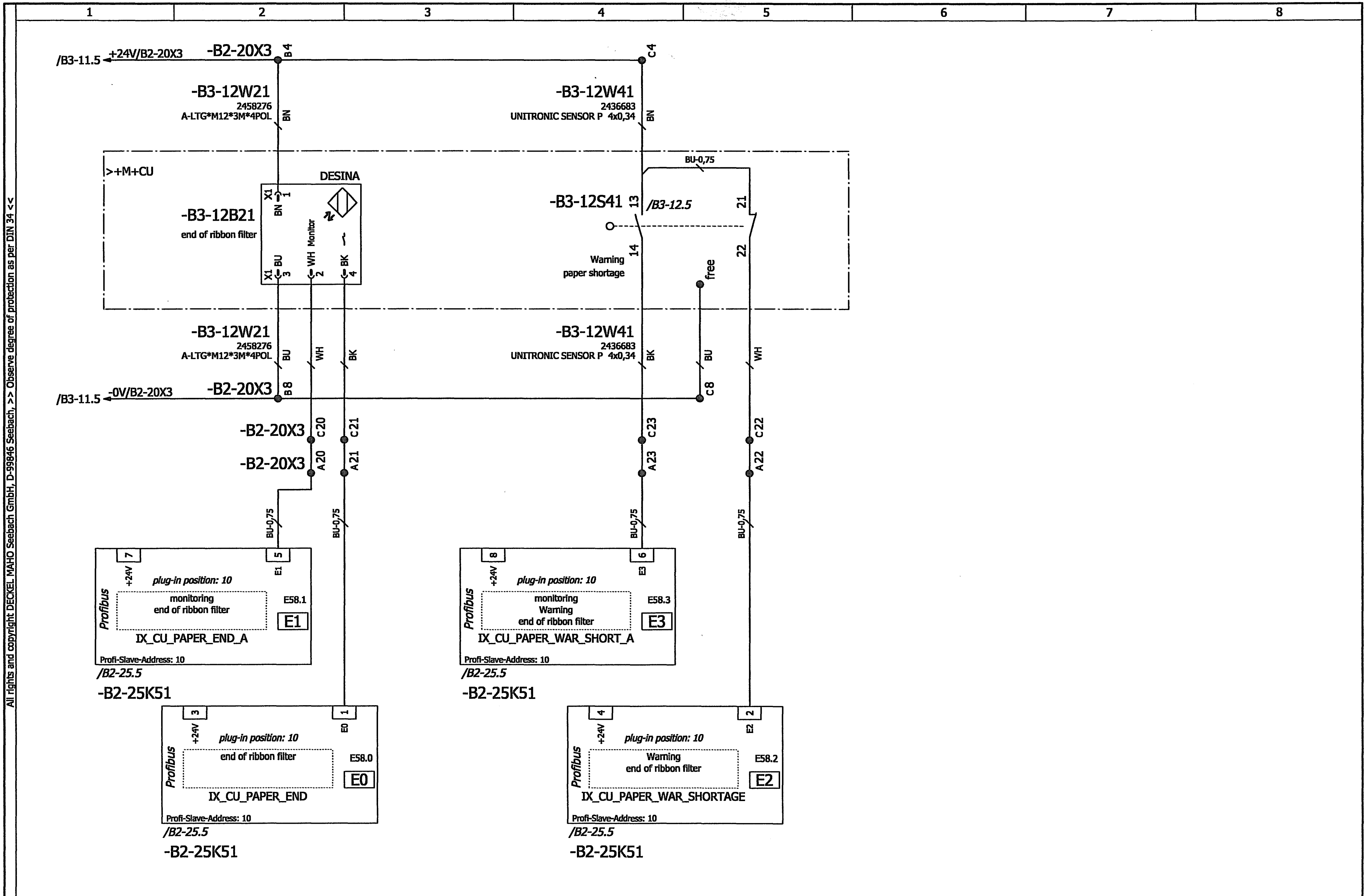
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	68



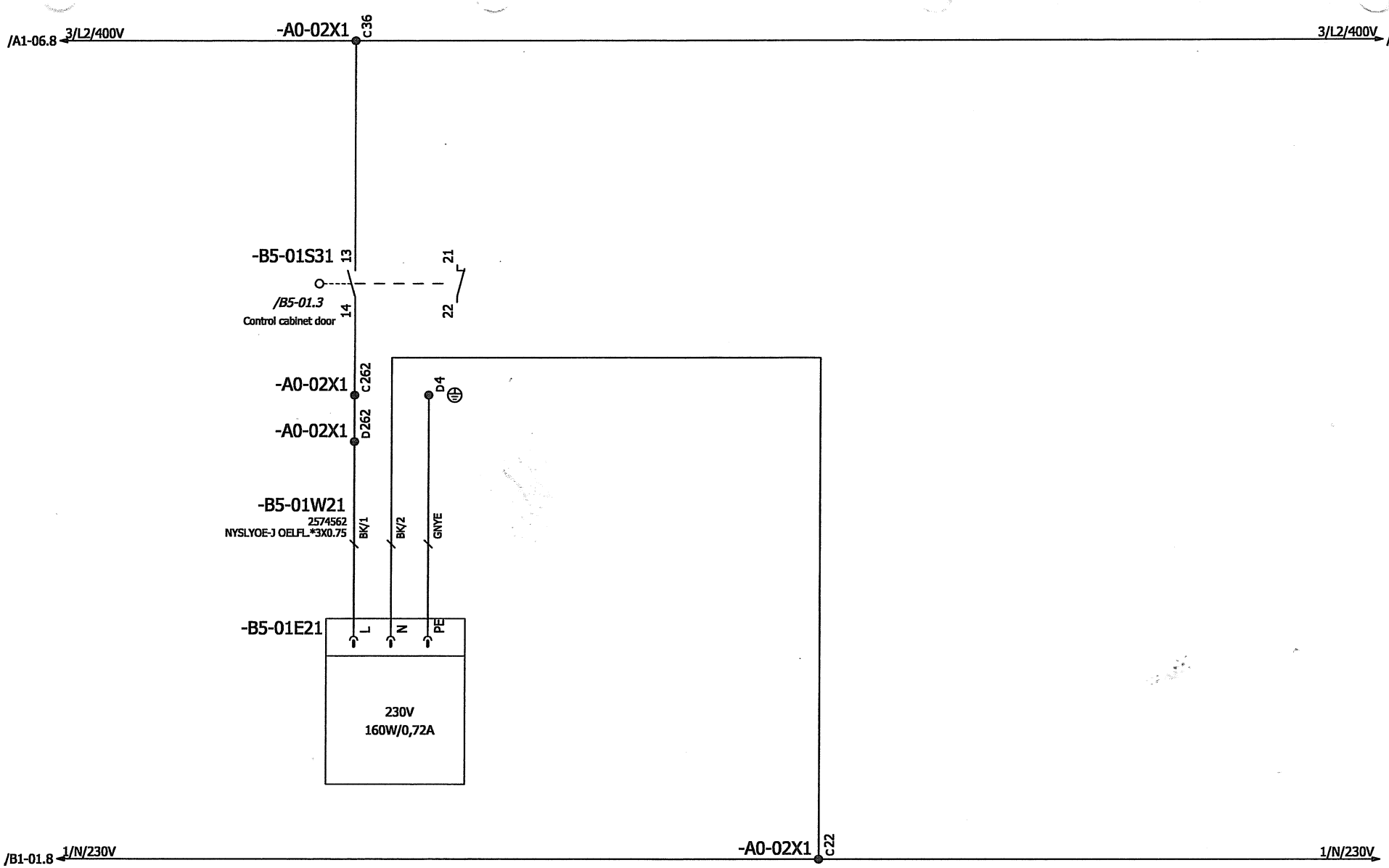
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		paper strip filter Control	DMU 50	& EFS	+M+CU+EC	⇨
			chec.					series	circuit diagram Nr.:	language	sheet B3-11/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	69



Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram
change	MEF	113022		paper strip filter
chec.				Control
revision / Name / Created by		rep. by	rep. of	source

object	DMU 50	DCC	& EFS
series	4526	circuit diagram Nr.:	2652185
Place	+M+CU+EC	language	EN

sheet B3-12/001



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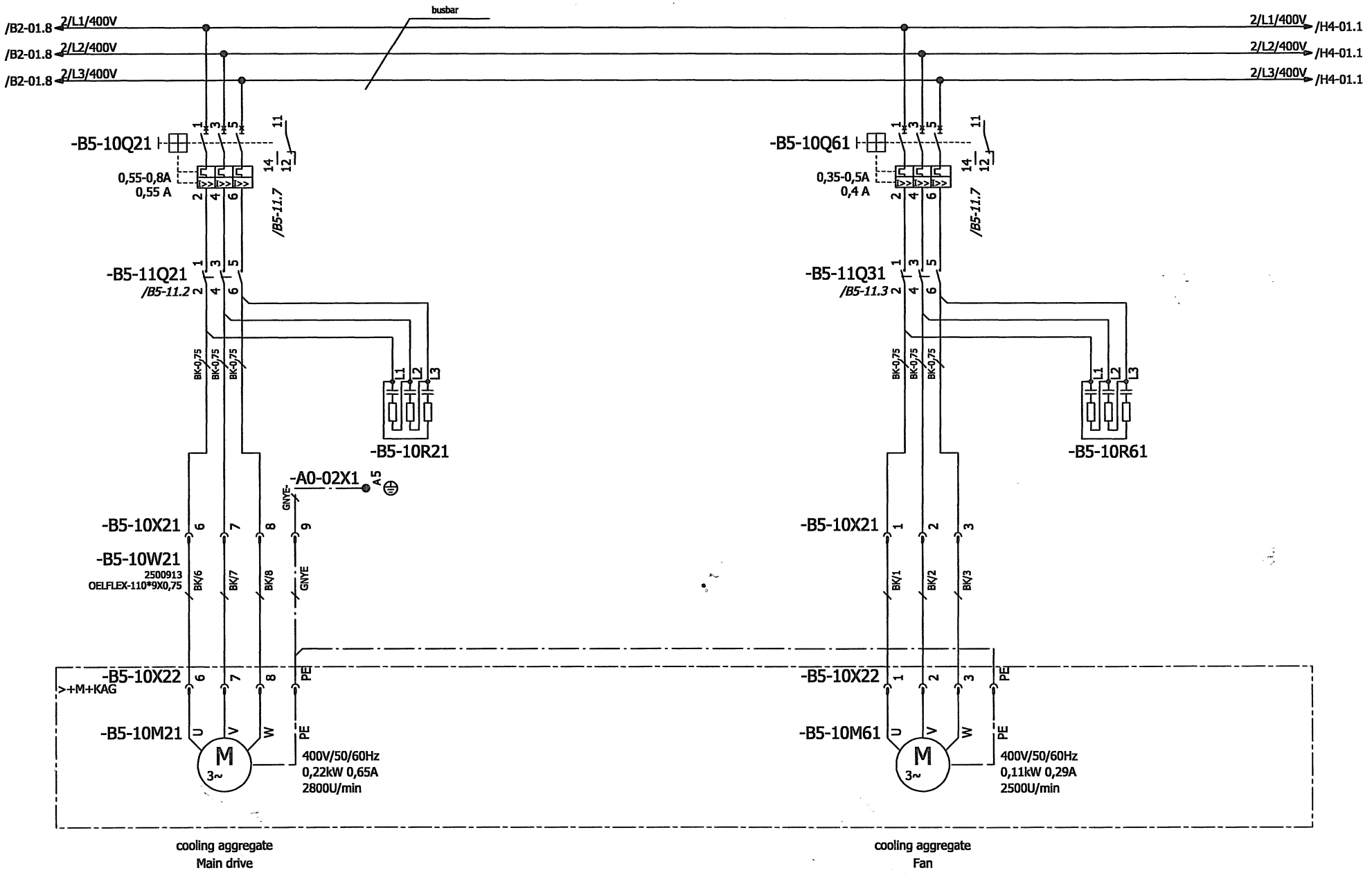
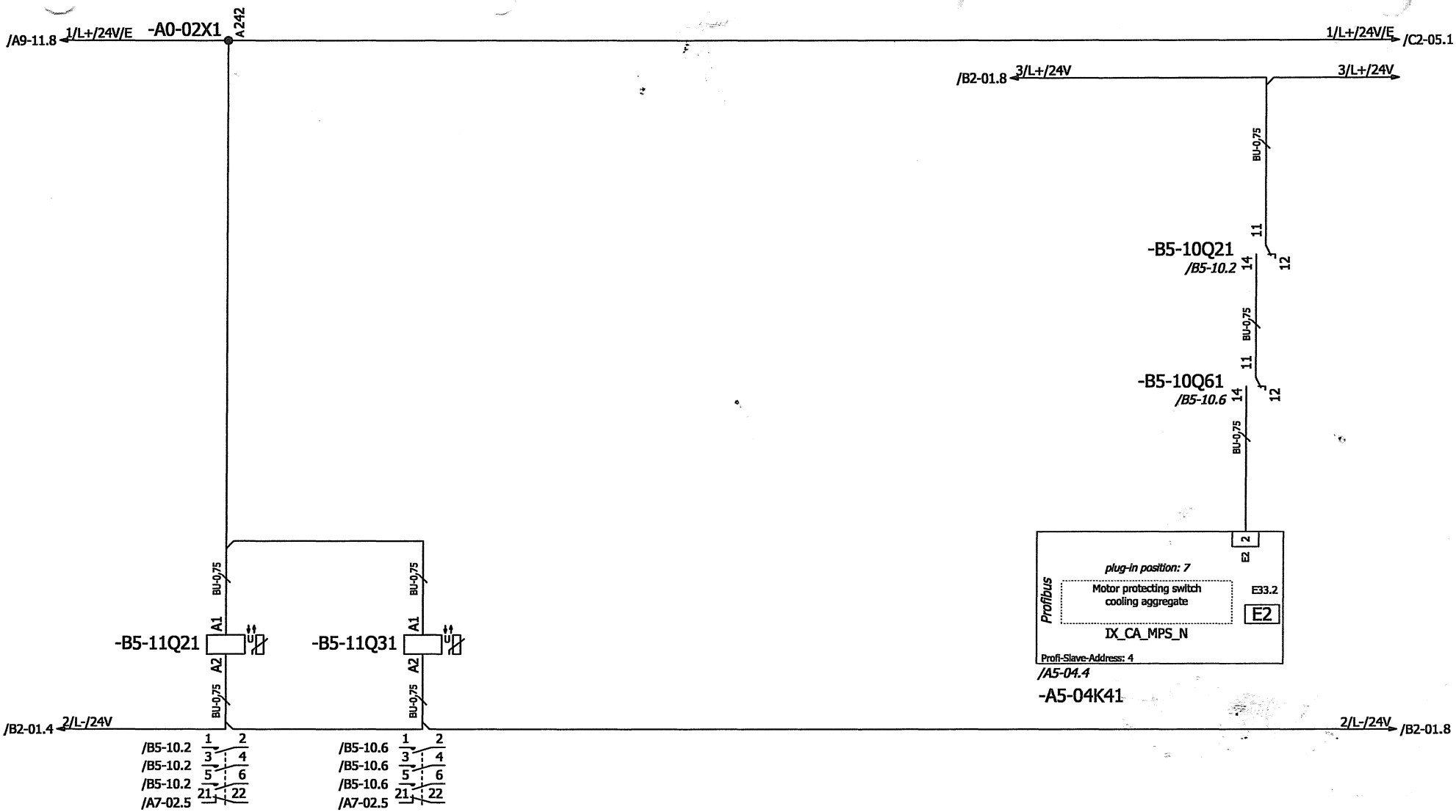
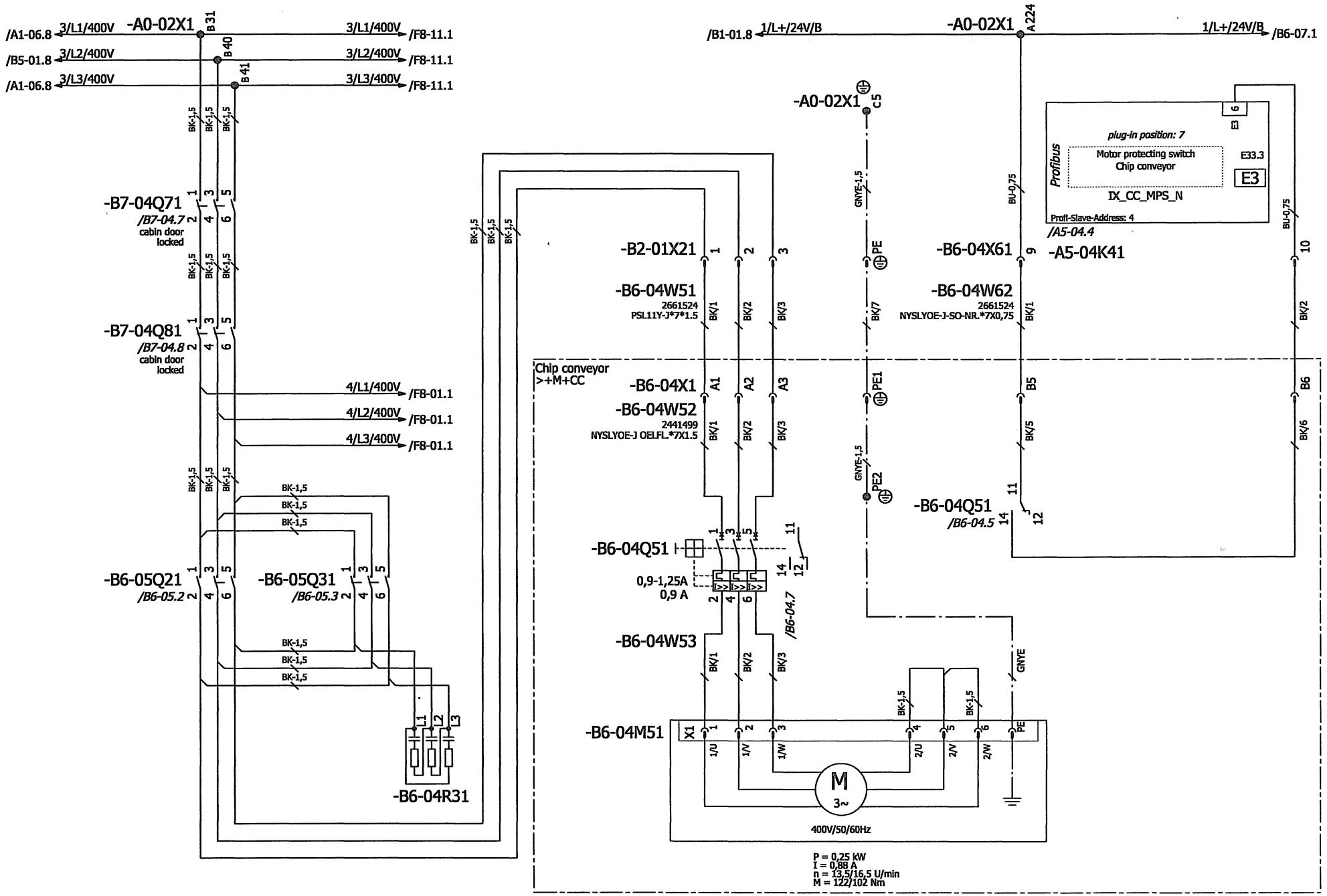
			change	MEF	113022		Heat exchanger	DMU 50	& EFS	+M+EC	⇨
			chec.				Control cabinet	series	circuit diagram Nr.:	language	sheet B5-01/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	71



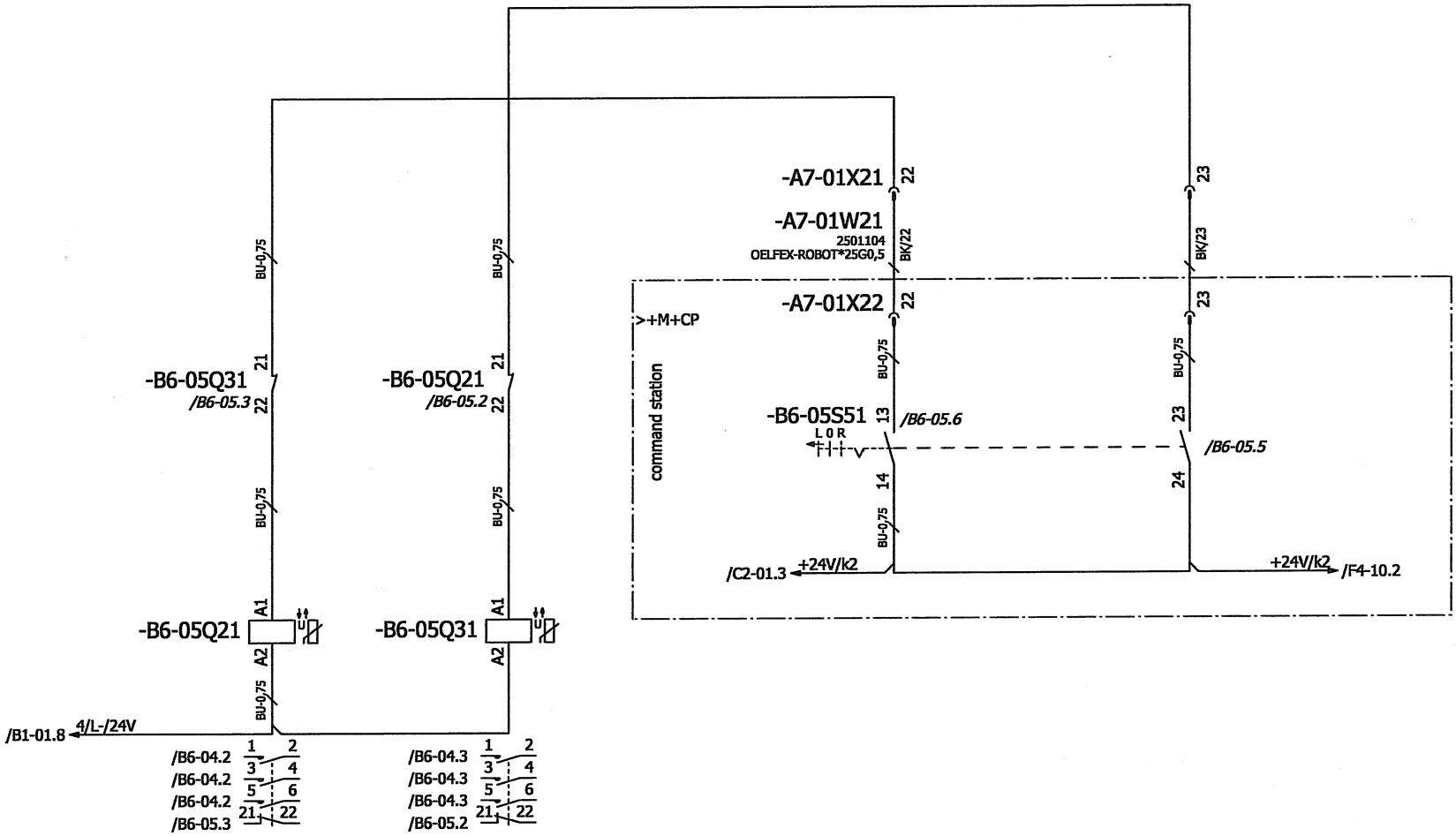
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place		
			change	MEF	113022		cooling aggregate pumps	DMU 50	& EFS	+M+EC		
			chec.					series	circuit diagram Nr.:	language	sheet B5-10/001	
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN		72



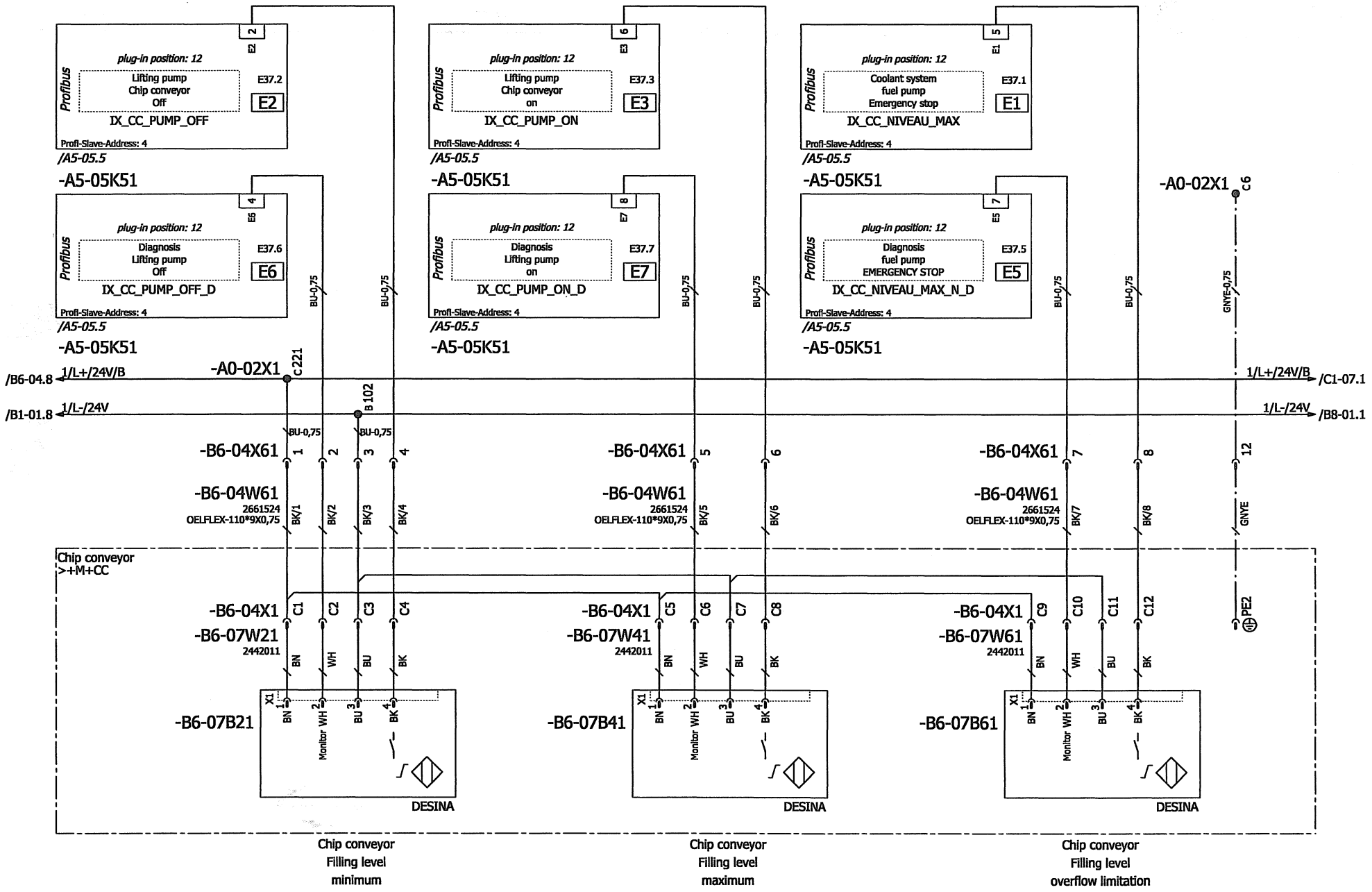
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		control circuit cooling aggregate	DMU 50	& EFS	+M+EC	⇨
			chec.					series	circuit diagram Nr.:	language	sheet B5-11/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	73



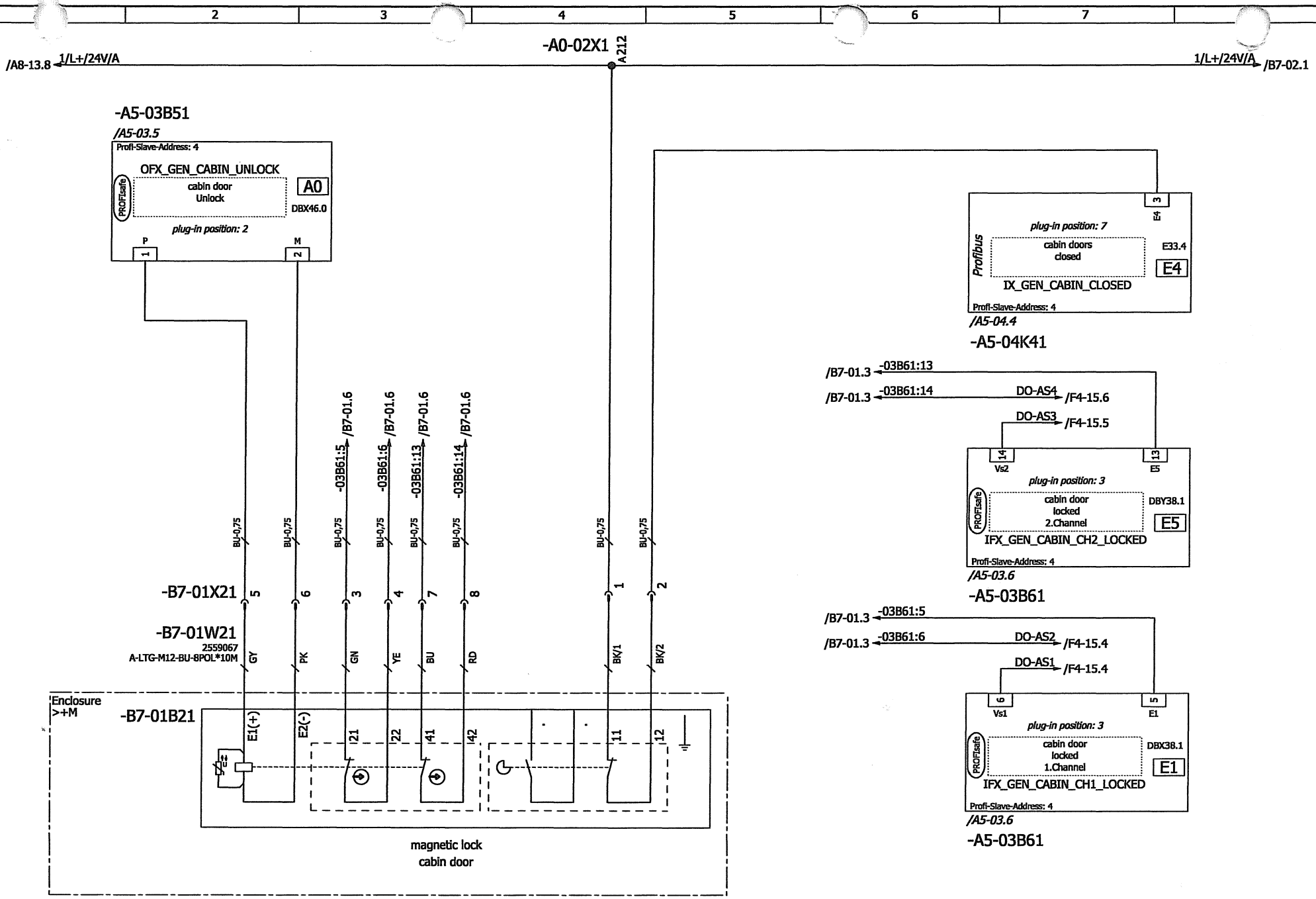
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Actuation	DMU 50	& EFS	+M+EC	
			chec.				Chip conveyor	series	circuit diagram Nr.:	language	sheet B6-04/004
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	74



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Actuation	DMU 50	& EFS	+M+EC	
			chec.				Chip conveyor	series	circuit diagram Nr.:	language	sheet B6-05/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	75



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place		
			change	MEF	113022		monitoring Filling level	DMU 50	& EFS	+M+EC		
			chec.					series	circuit diagram Nr.:	language	sheet B6-07/001	
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	76	



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		cabin door Safety switch	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet B7-01/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	77

1	2	3	4	5	6	7	8

/B7-01.8 1/L+/24V/A

-A0-02X1 C212

1/L+/24V/A /G7-03.1

BU-0,75

61

-B7-04Q71

/B7-04.7

cabin door locked

62

BU-0,75

61

-B7-04Q81

/B7-04.8

cabin door locked

62

BU-0,75

61

-B7-04K51

/B7-04.5

cabin door locked

62

BU-0,75

61

-B7-04K61

/B7-04.6

cabin door locked

62

BU-0,75

E3 6

plug-in position: 6

Profibus

feedback loop drives

E32.3

E3

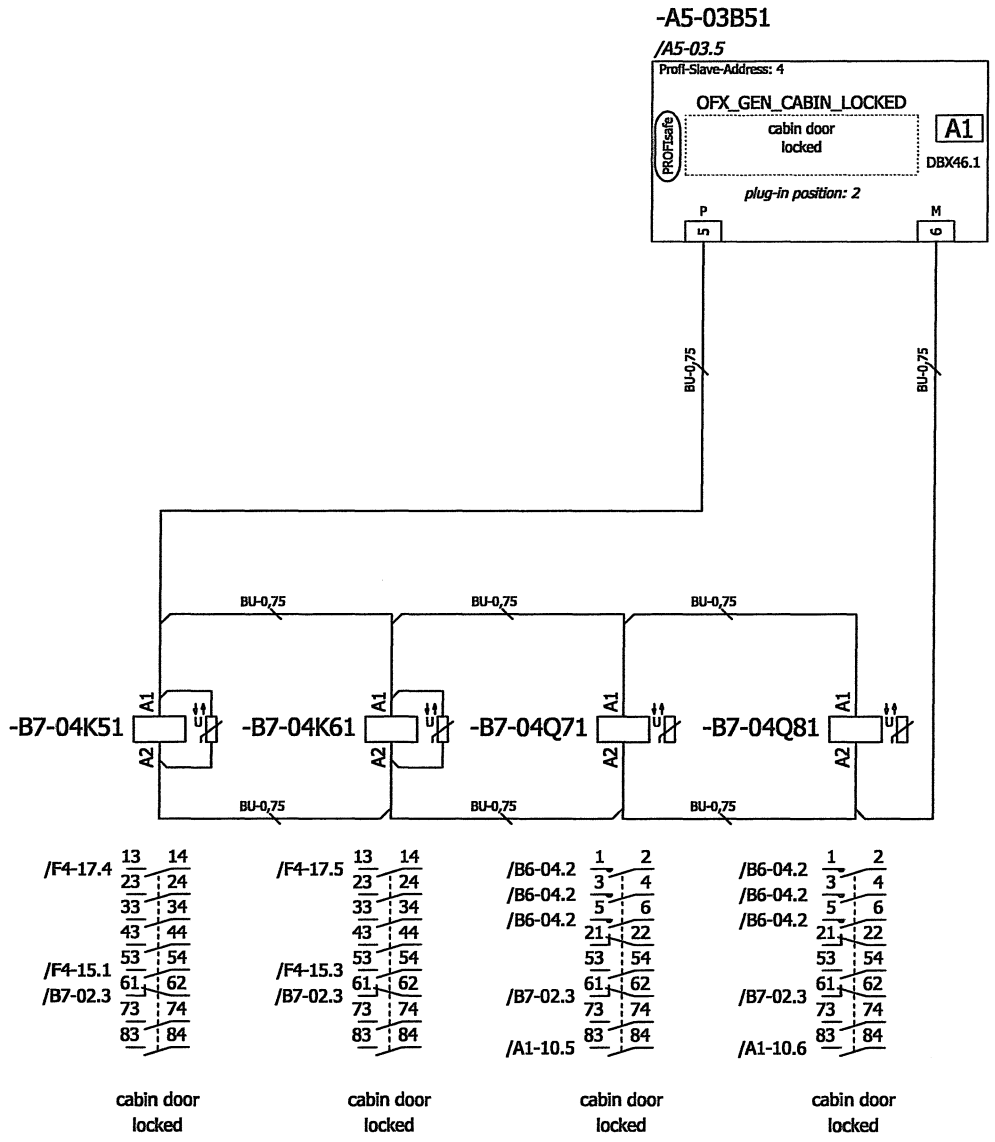
IX_GEN_FEEDB_LO_CAB_LKD

Profi-Slave-Address: 4

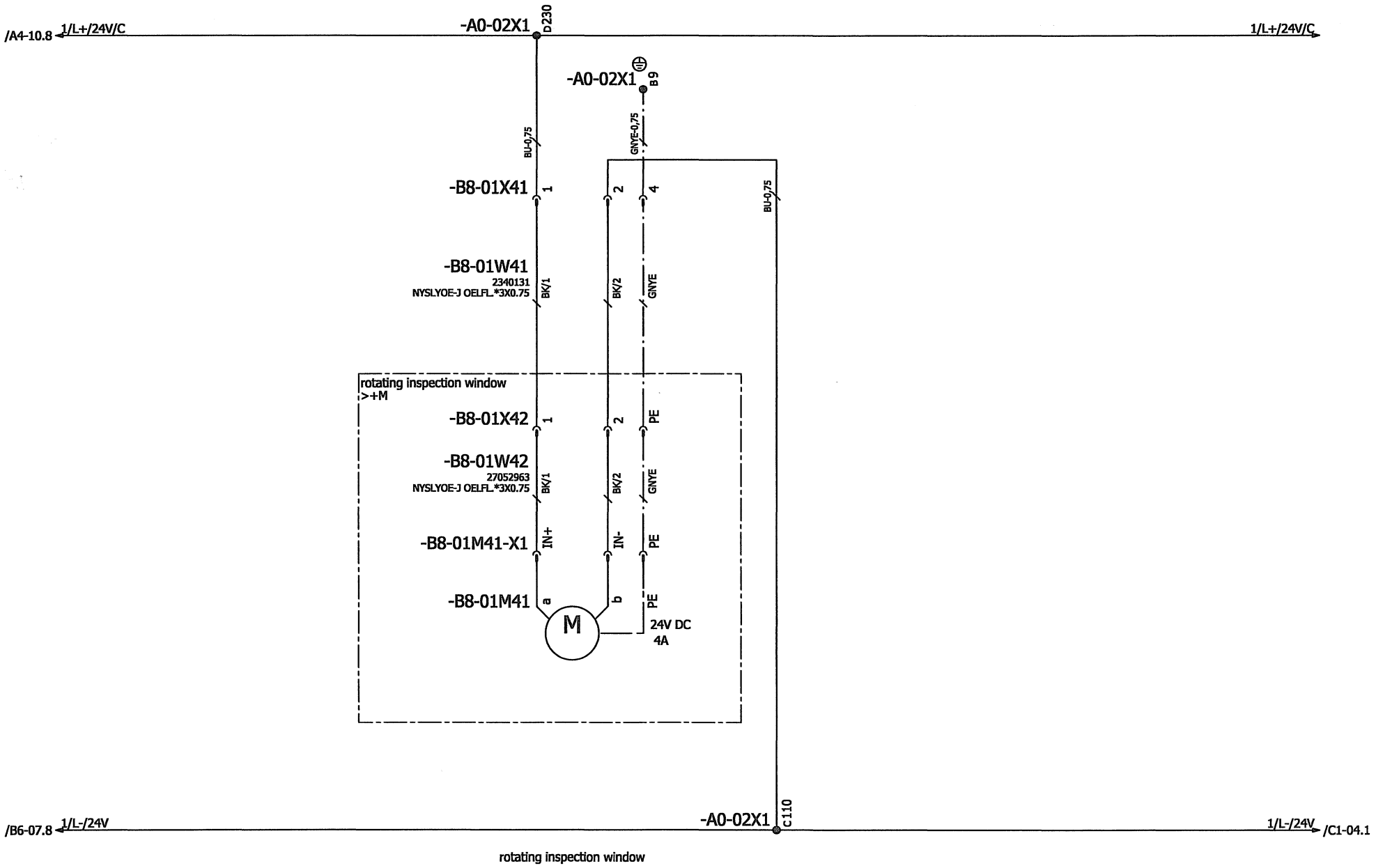
/A5-04.3

-A5-04K31

			Date	02.02.2011	project number		DECKEL MAHO Seebach GmbH	Schematic diagram	object		DCC	Place		
			change	MEF	113022			cabin door monitoring feedback loc	DMU 50		& EFS	+M+EC		
			chec.						series	circuit diagram Nr.:		language	sheet B7-02/001	
revision		Name	Created by		rep. by	rep. of	source		4526	2652185		EN		78

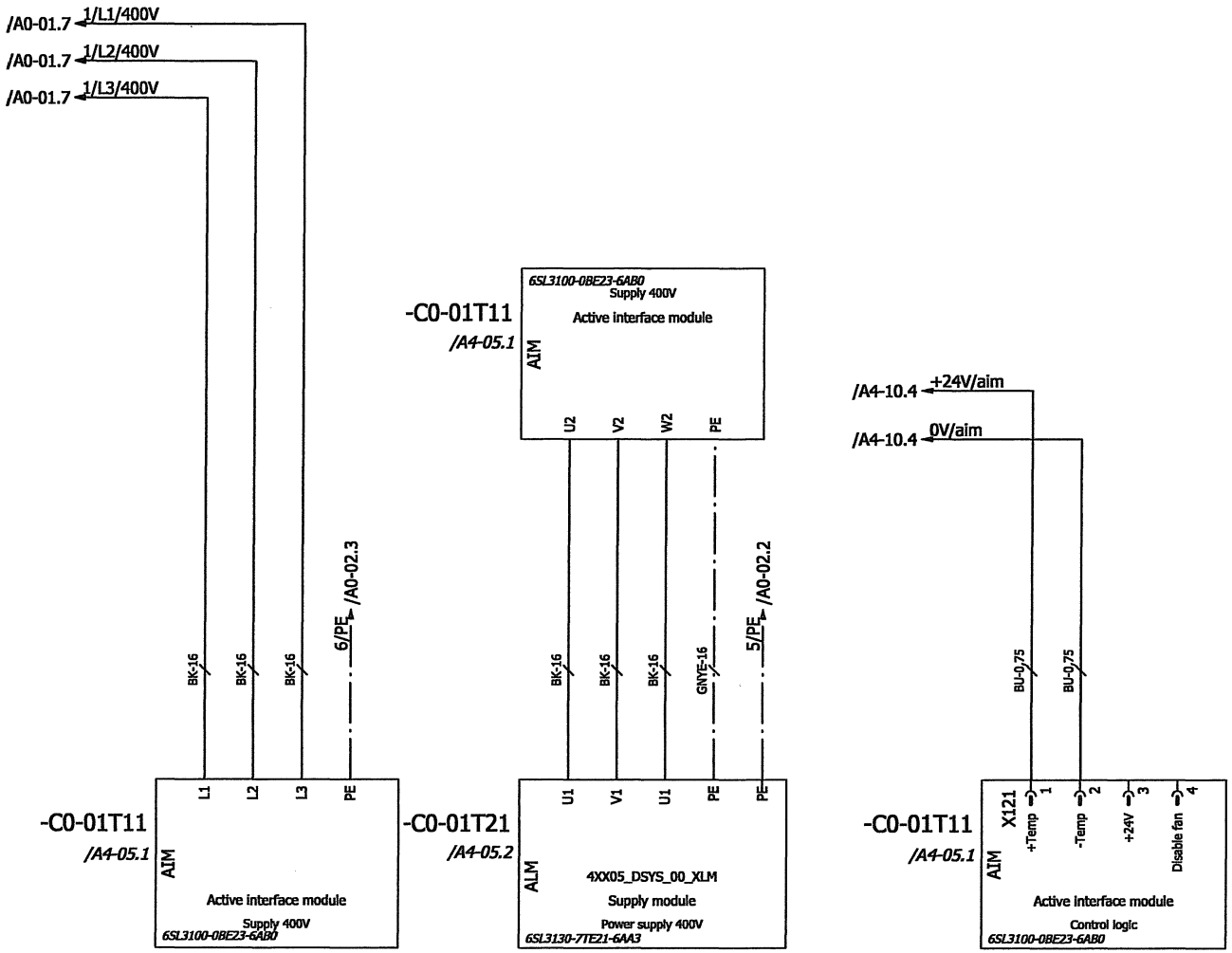


			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		cabin door locked	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet B7-04/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	79

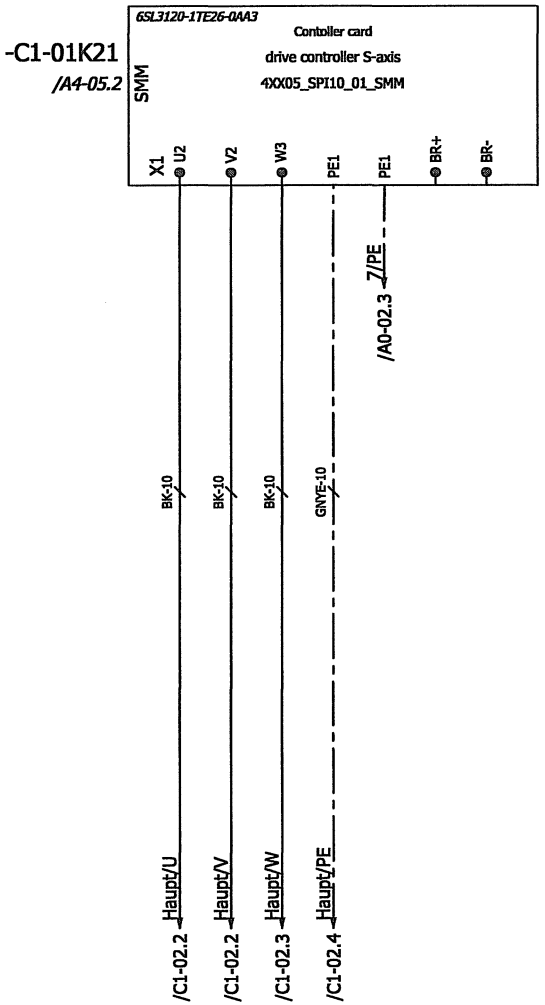


rotating inspection window

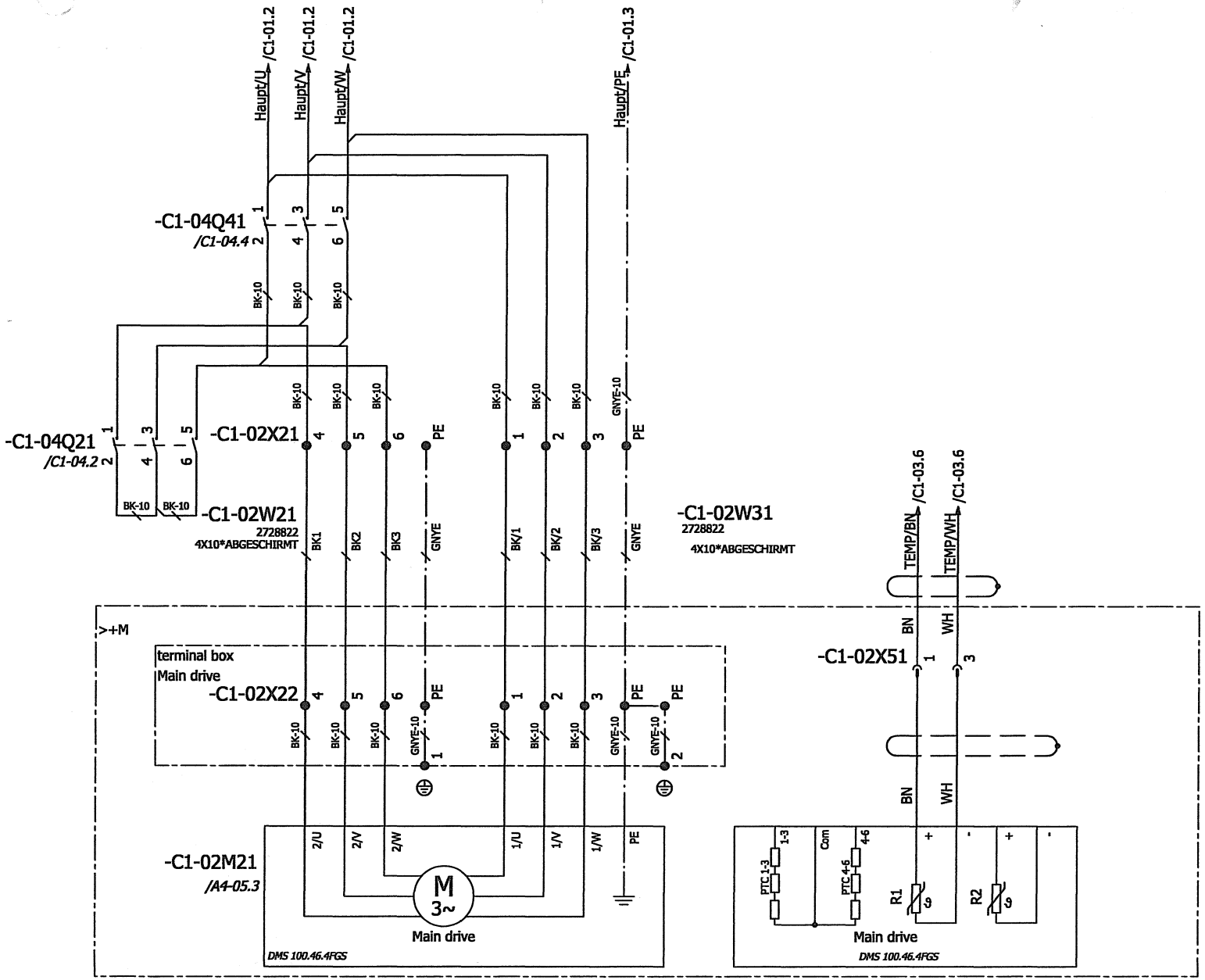
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		rotating inspection window	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet B8-01/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	80



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Main drive 10.000U/min	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet C0-01/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	81

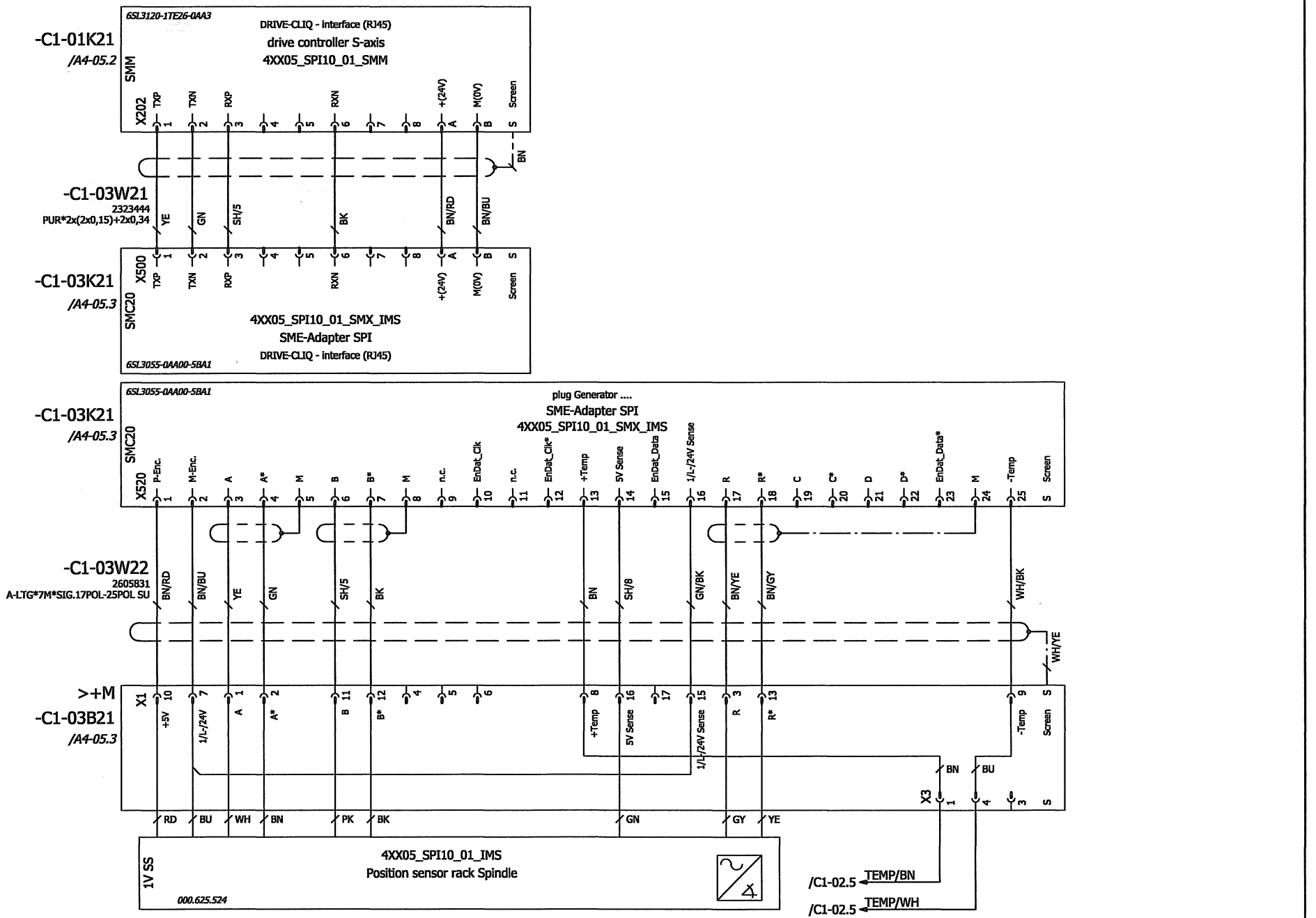


			Date	02.02.2011	project number		Schematic diagram	object		DCC	Place	⇦
			change	MEF	113022	DECKEL MAHO Seebach GmbH	Main drive 10.000U/min	DMU 50		& EFS	+M+EC	⇨
			chec.					series	circuit diagram Nr.:		language	sheet C1-01/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185		EN	82

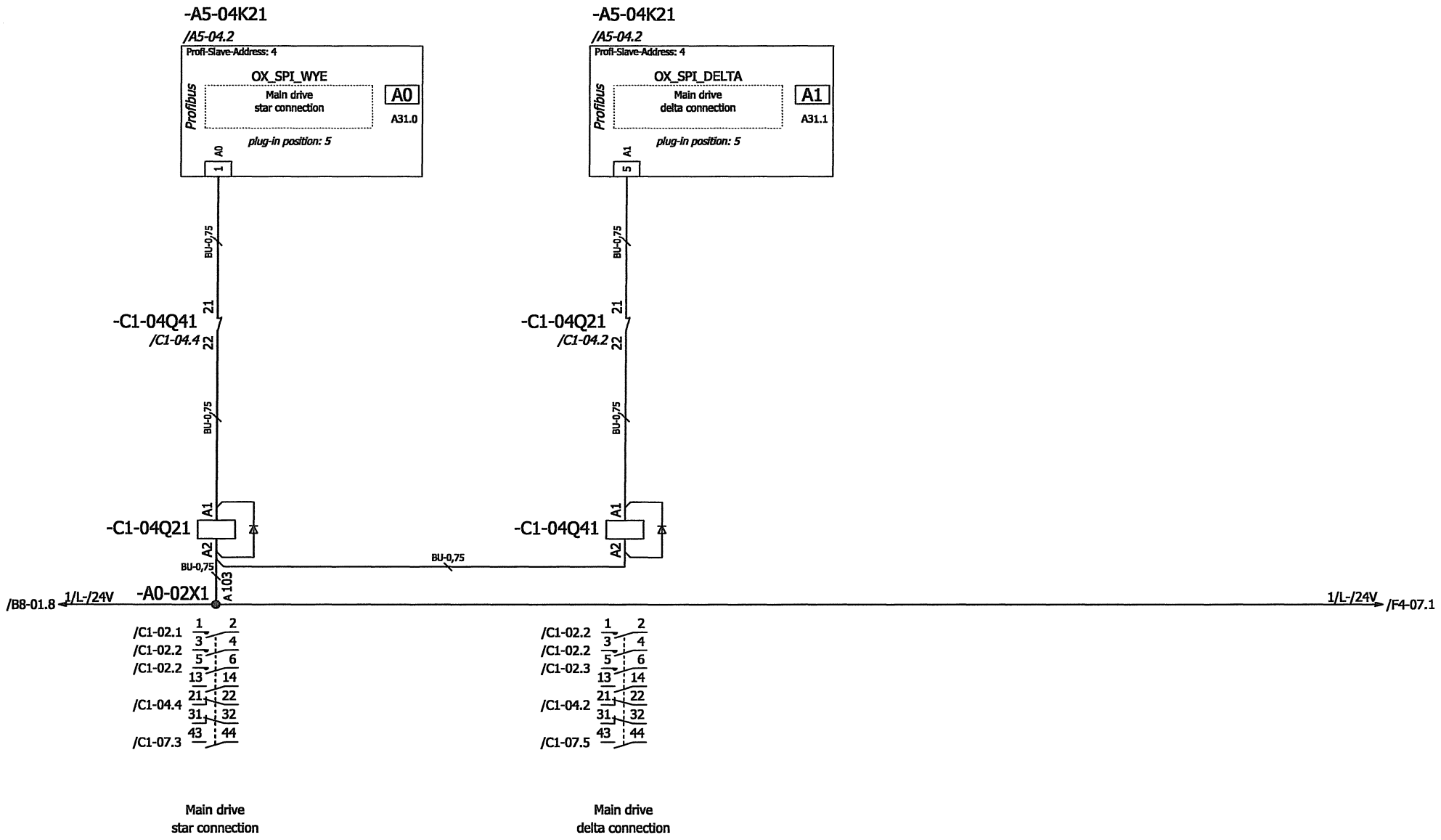


P = 14/19 kW
I = 30/40 A
n = 14.000 U/min
M = 100/74 Nm

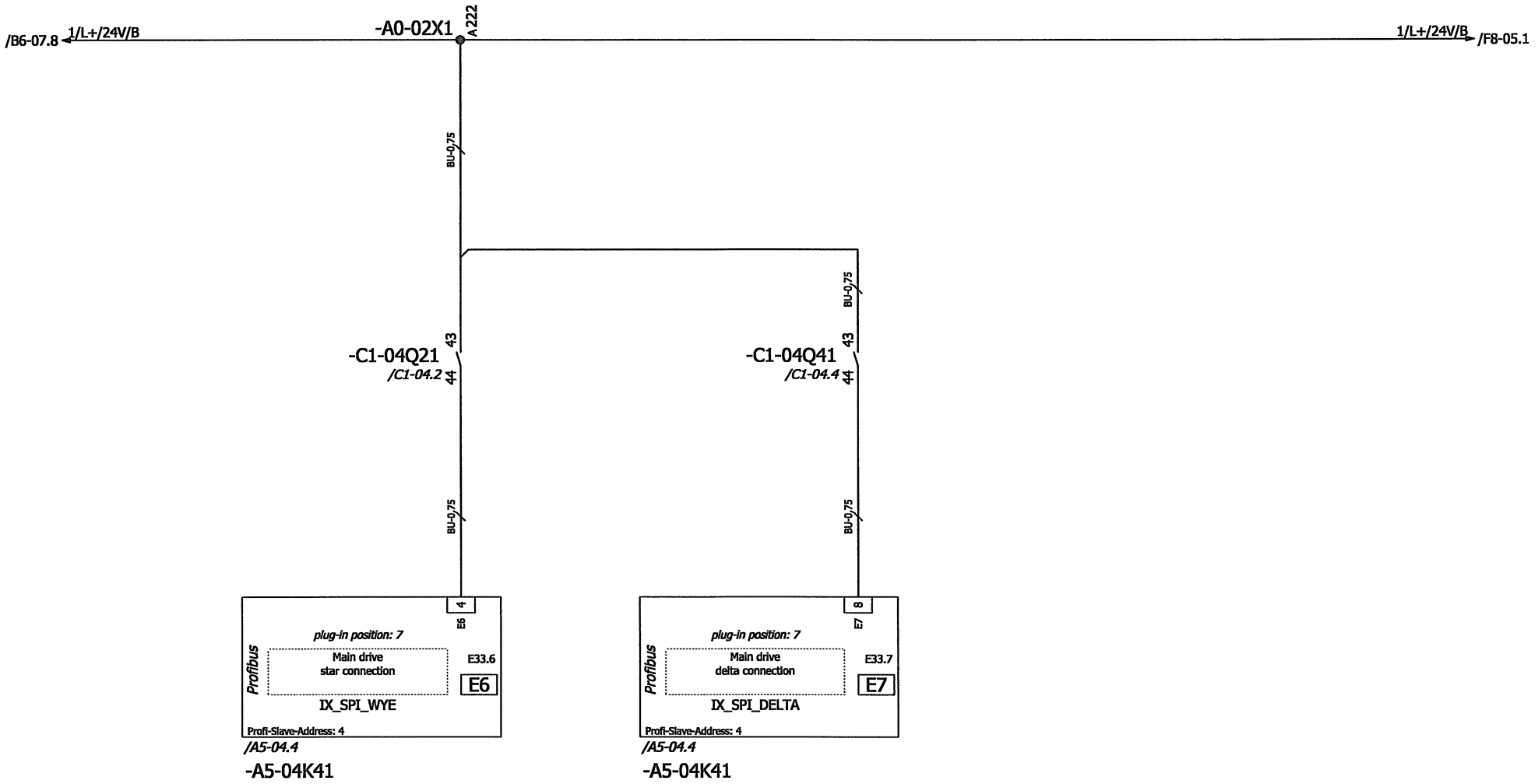
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		Main drive 10.000U/min	DMU 50	& EFS	+M+EC	⇨
			chec.					series	circuit diagram Nr.:	language	sheet C1-02/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	83



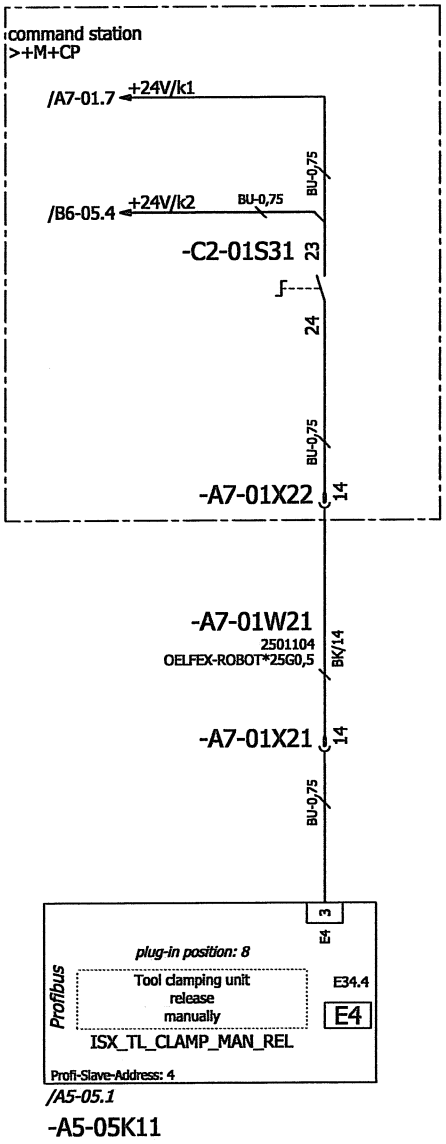
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object		DCC	Place	⇦
			change	MEF	113022		Main drive	DMU 50		& EFS	+M+EC	⇨
			chec.					series	circuit diagram Nr.:		language	sheet C1-03/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185		EN	84



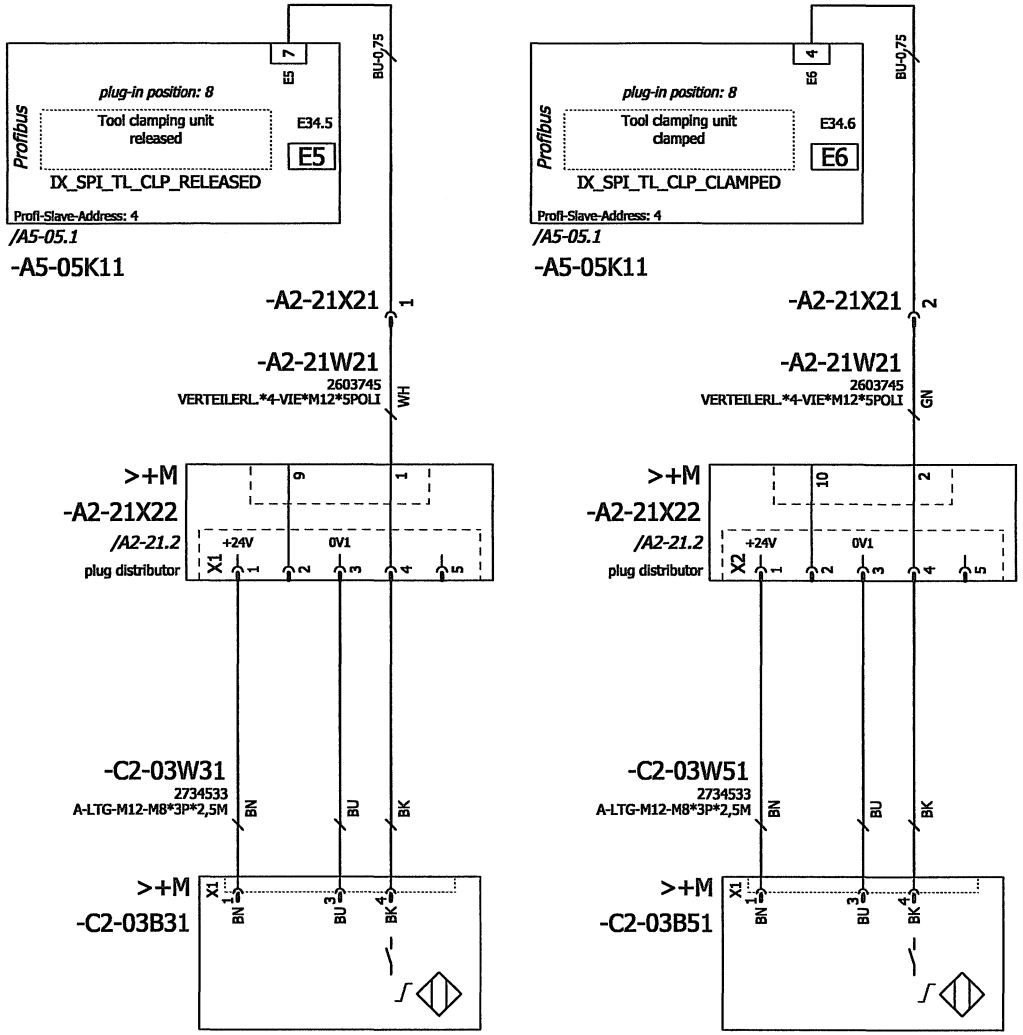
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		Actuation	DMU 50	& EFS	+M+EC	⇨
			chec.				star-delta Main drive	series	circuit diagram Nr.:	language	sheet C1-04/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	85



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place		
			change	MEF	113022		inputs	DMU 50	& EFS	+M+EC	⇦	
			chec.				star-delta Main drive	series	circuit diagram Nr.:	language	⇨	sheet C1-07/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN		86



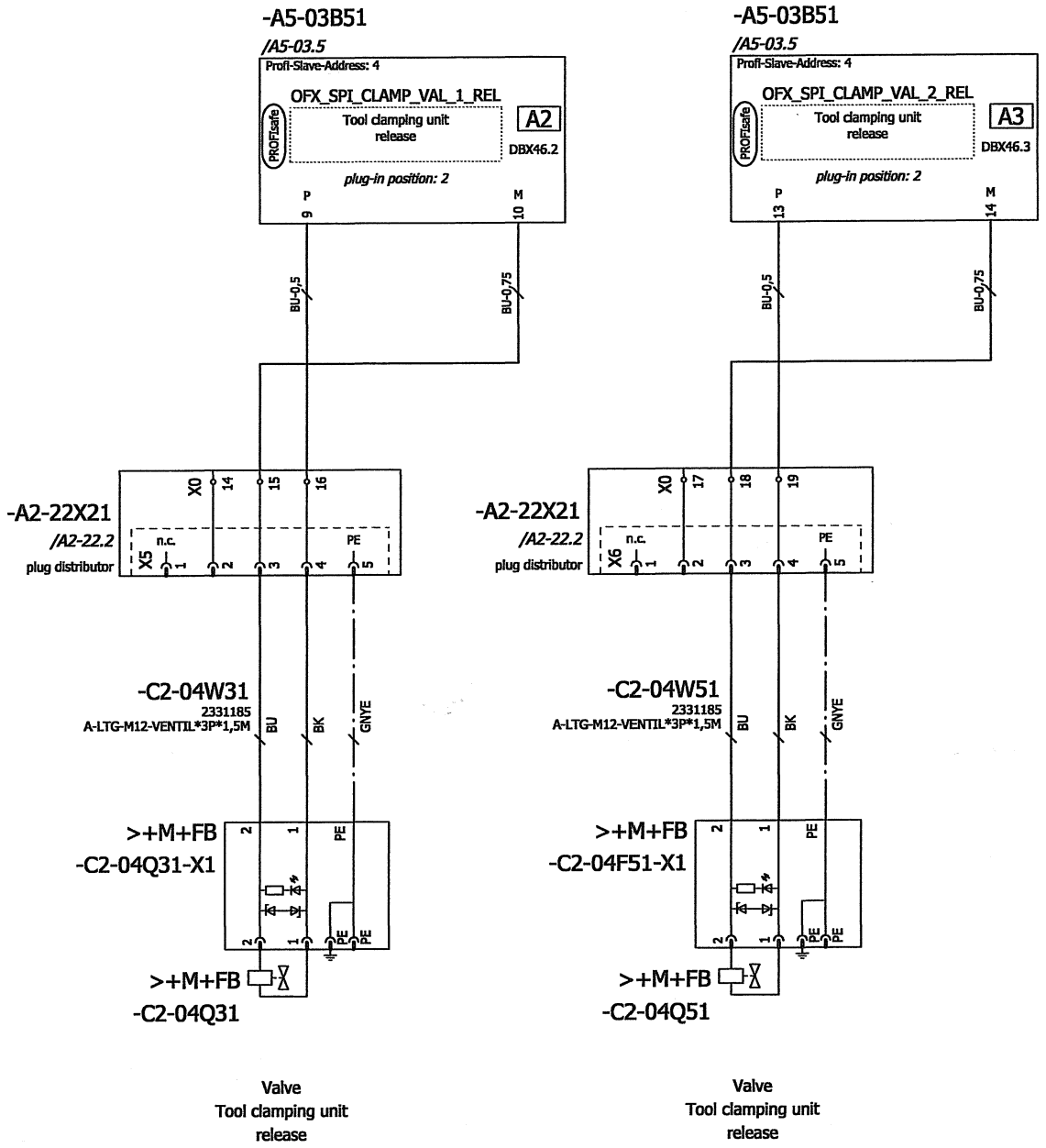
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object: DMU 50	DCC & EFS	Place +M+EC	⇦
			change	MEF	113022		control circuit				⇨
			chec.				Tool clamping unit	series 4526	circuit diagram Nr.: 2652185	language EN	sheet C2-01/001
revision	Date	Name	Created by		rep. by	rep. of	source				87



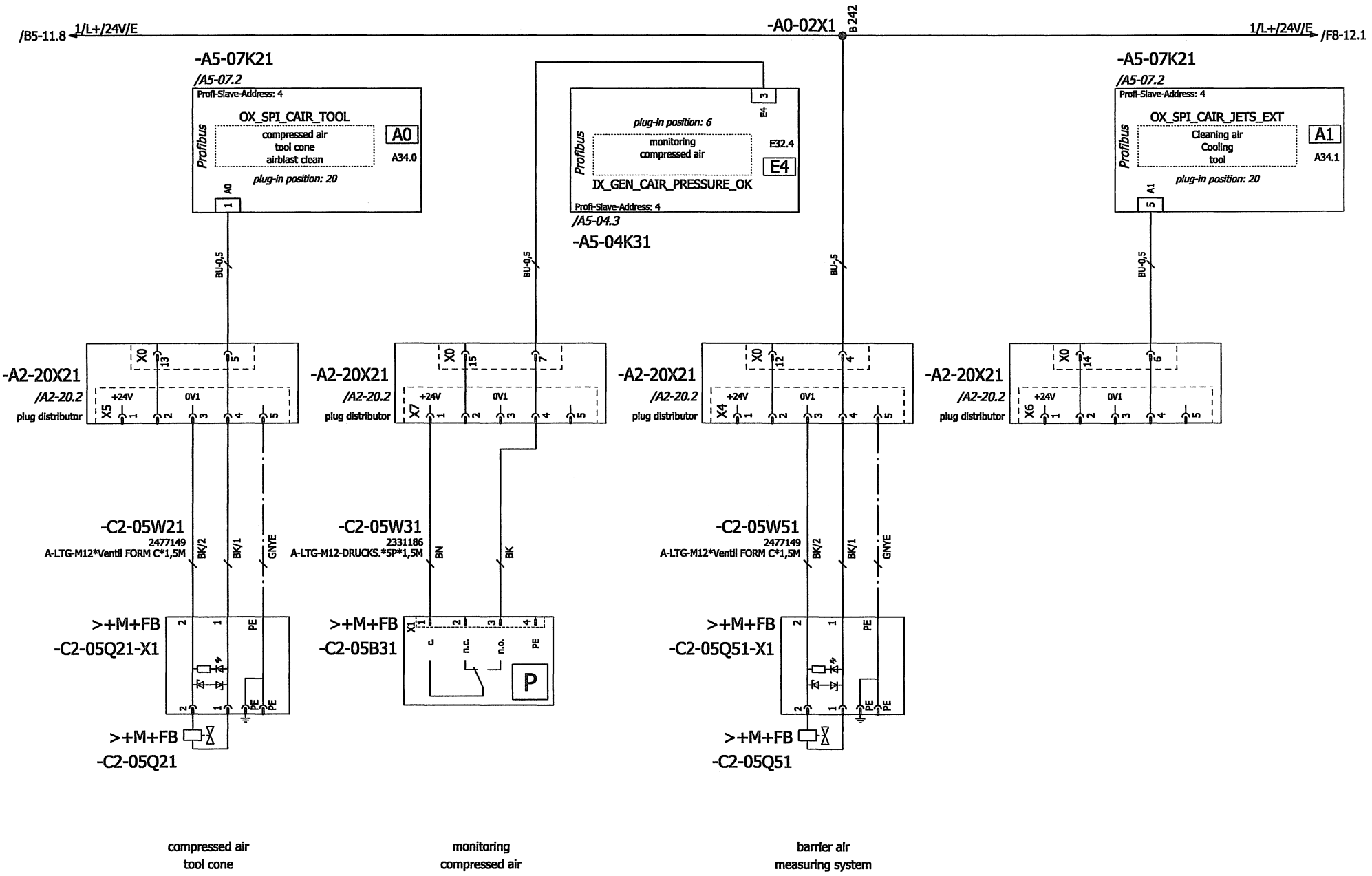
Tool clamping unit released

Tool clamping unit clamped

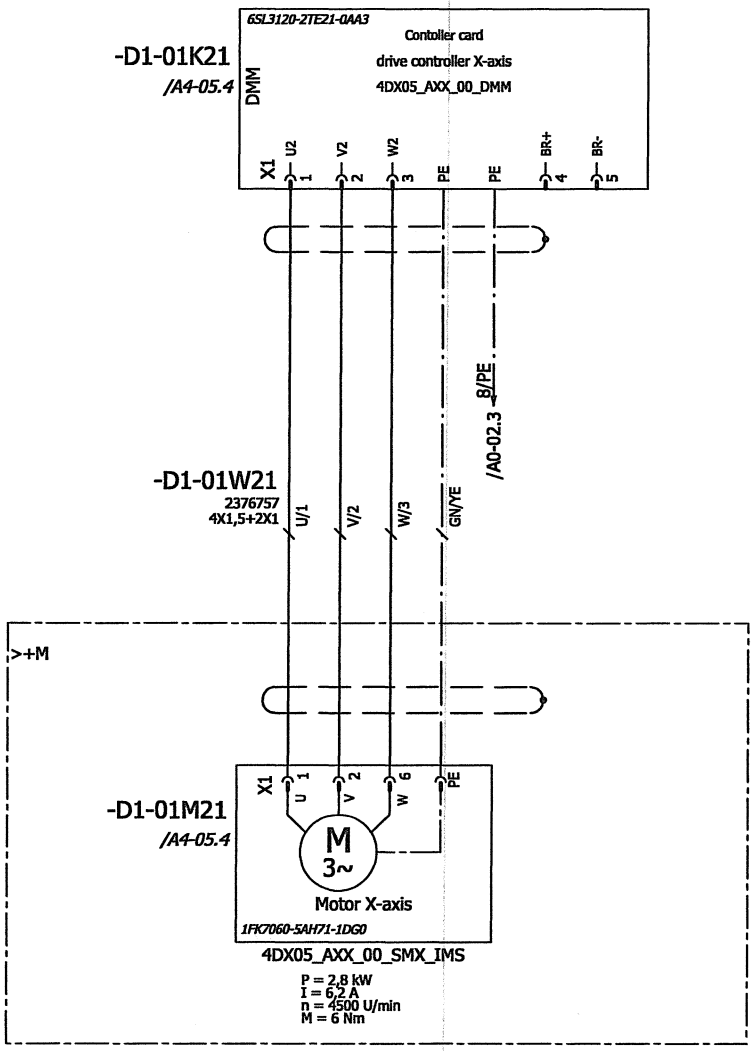
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place		
			change	MEF	113022		position switch Tool clamping unit	DMU 50	& EFS	+M+EC		
			chec.					series	circuit diagram Nr.:	language		sheet C2-03/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN		88



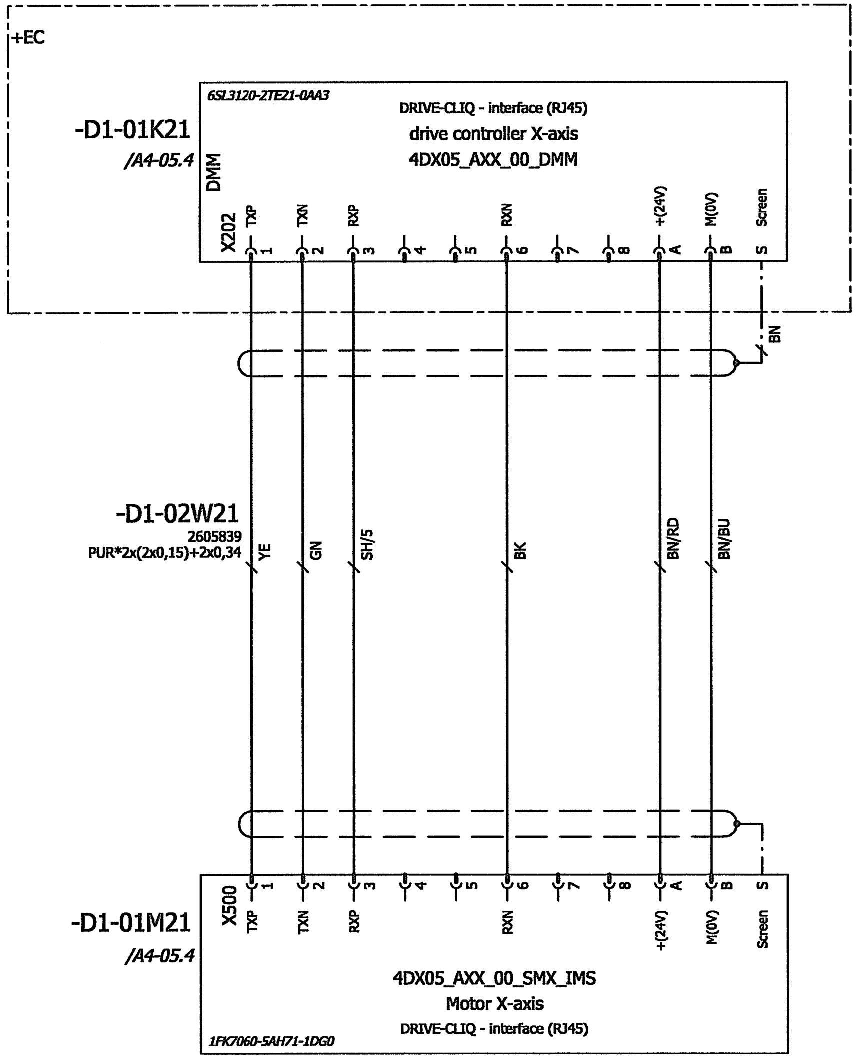
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Valves	DMU 50	& EFS	+M+EC	
			chec.				Tool clamping unit	series	circuit diagram Nr.:	language	sheet C2-04/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	89



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place		
			change	MEF	113022		Valves pneumatic system	DMU 50	& EFS	+M+EC		
			chec.					series	circuit diagram Nr.:	language		sheet C2-05/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN		90

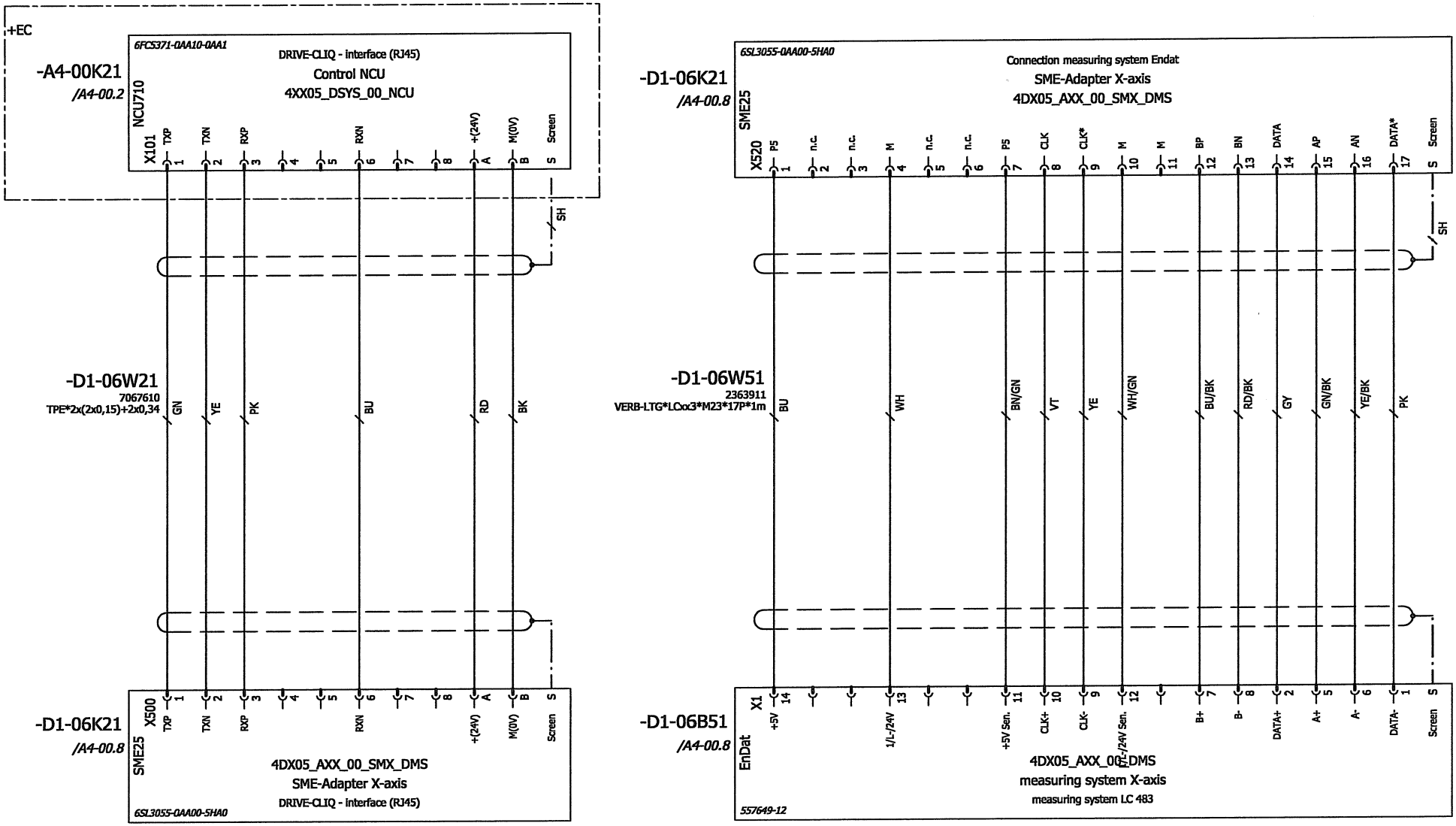


			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object: DMU 50	DCC & EFS	Place +M+EC	⇦
			change	MEF	113022		Feed drive X-axis	series 4526	circuit diagram Nr.: 2652185	language EN	⇨
			chec.								sheet D1-01/001
revision	Date	Name	Created by		rep. by	rep. of	source				91



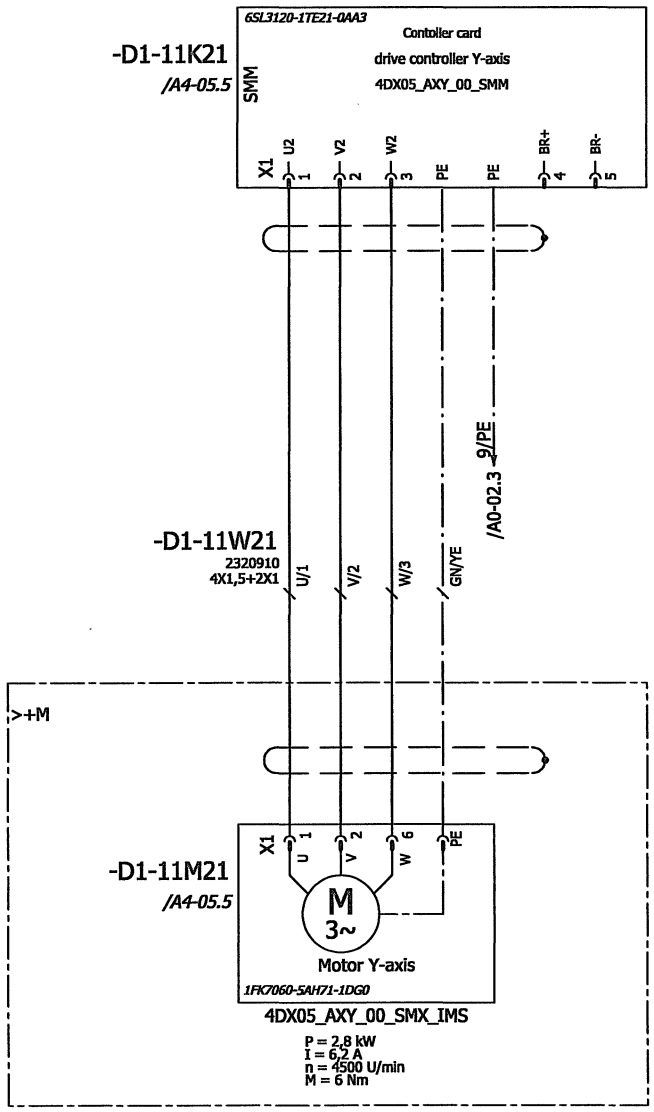
Date	02.02.2011	project number 113022	DECKEL MAHO Seebach GmbH	Schematic diagram shaft encoder interface X-axis
change	MEF			
chec.				
revision / Name	Created by	rep. by / rep. of	source	

object DMU 50	DCC & EFS	Place +M	
series 4526	circuit diagram Nr.: 2652185	language EN	sheet D1-02/001
			92

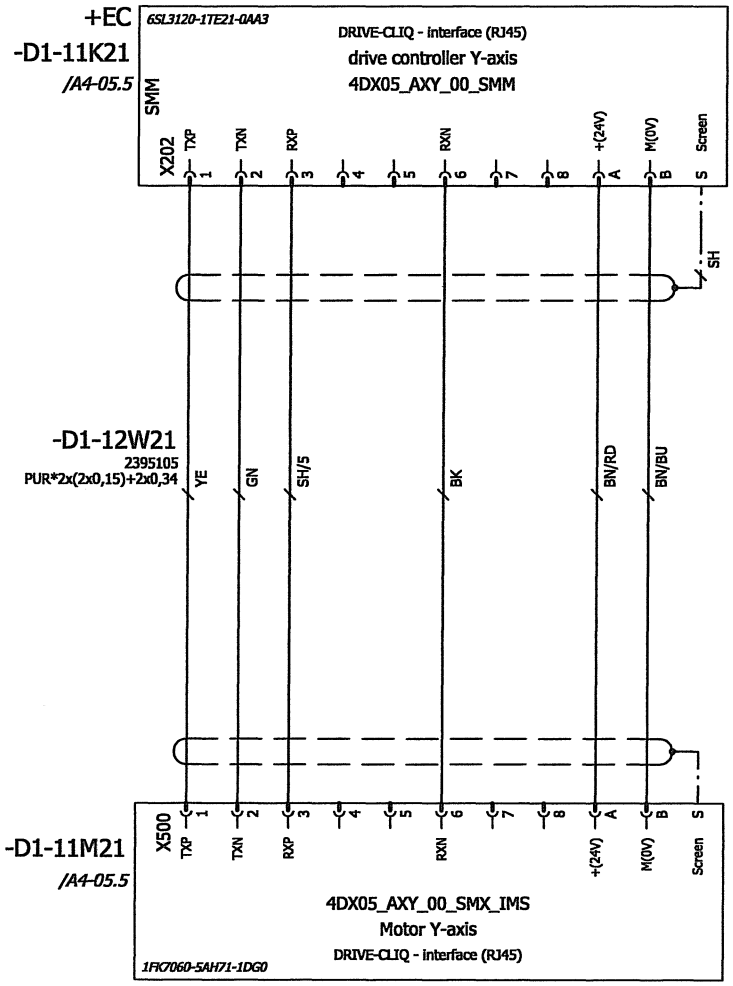


			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC
			change	MEF	113022		measuring system X-axis	DMU 50	& EFS
			chec.					series	circuit diagram Nr.:
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185

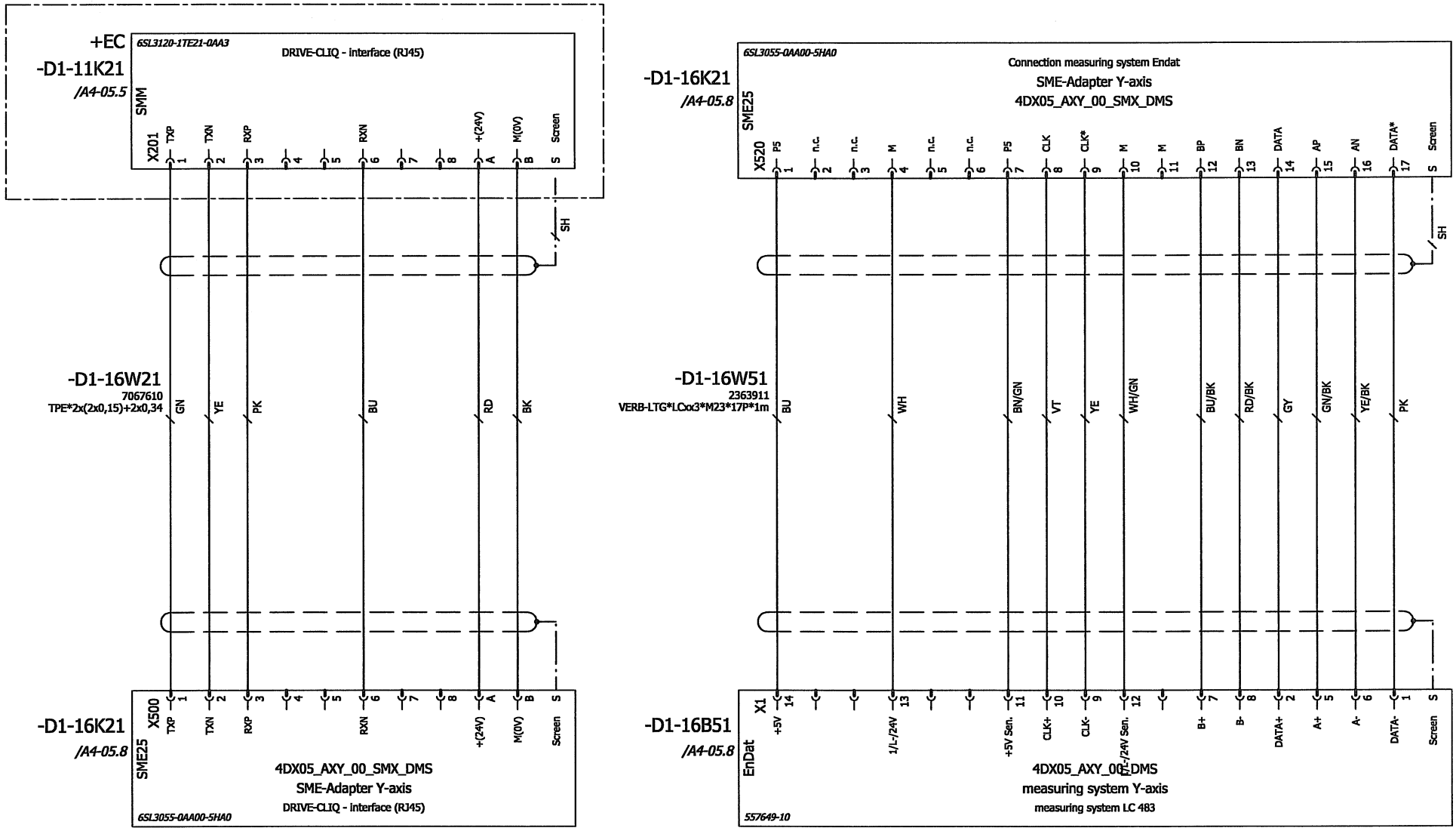
Place	
+M	
language	sheet D1-06/001
EN	93



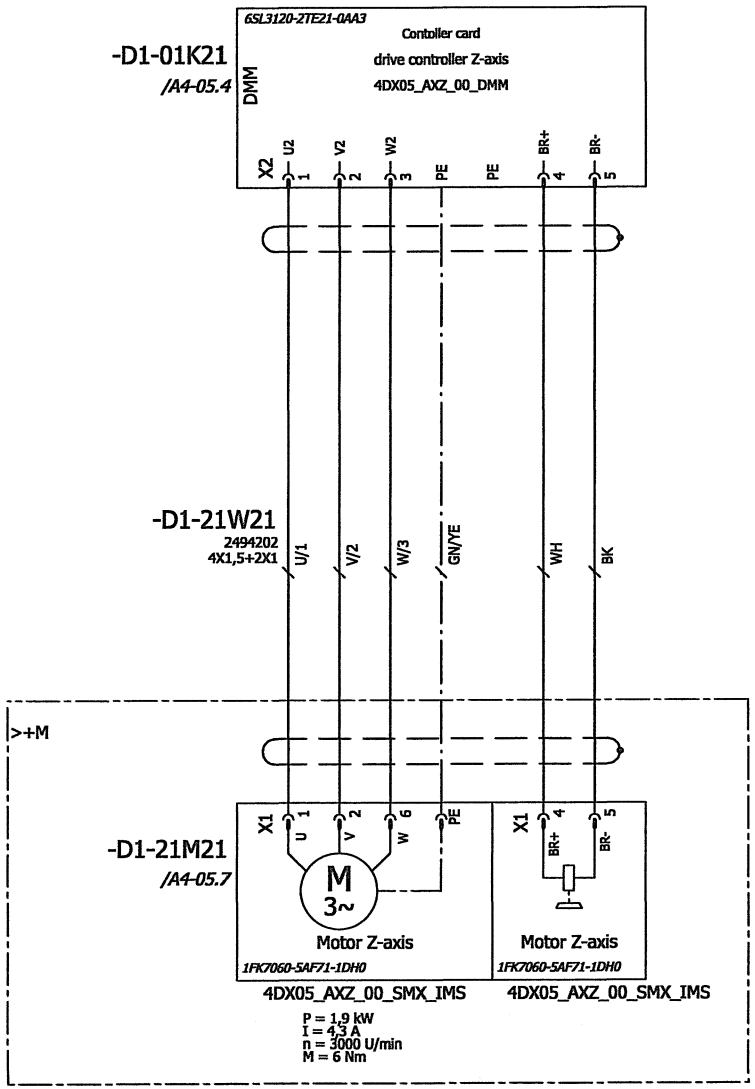
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		Feed drive	DMU 50	& EFS	+M+EC	⇨
			chec.				Y-axis	series	circuit diagram Nr.:	language	sheet D1-11/001
revision		Name	Created by		rep. by	rep. of source		4526	2652185	EN	94



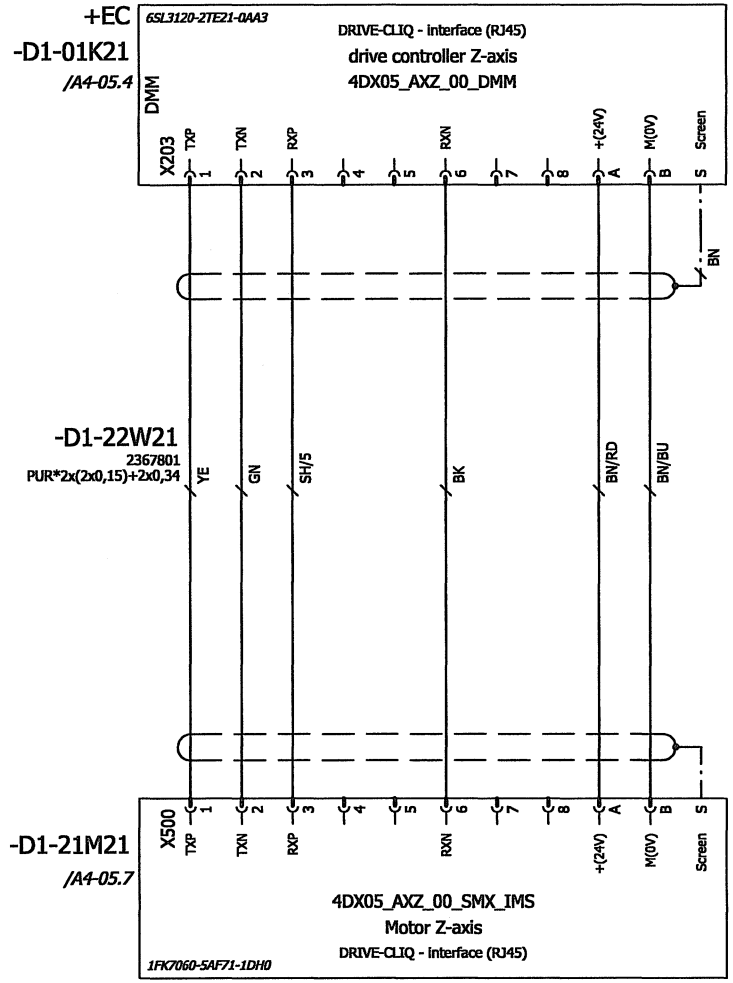
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		shaft encoder interface Y-axis	DMU 50	& EFS	+M	⇨
			chec.					series	circuit diagram Nr.:	language	sheet D1-12/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	95



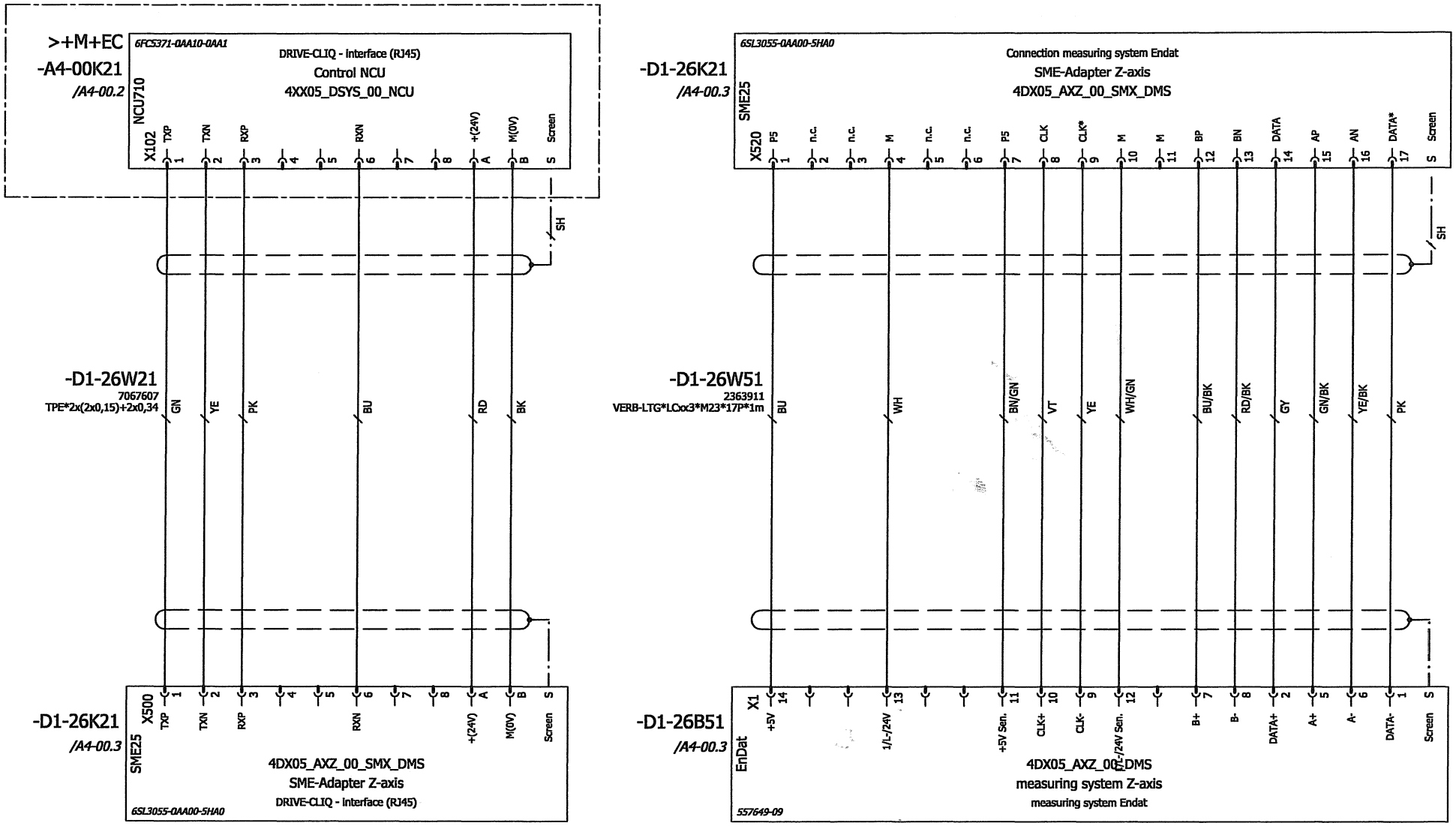
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		measuring system Y-axis	DMU 50	& EFS	+M	
			chec.					series	circuit diagram Nr.:	language	sheet D1-16/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	96



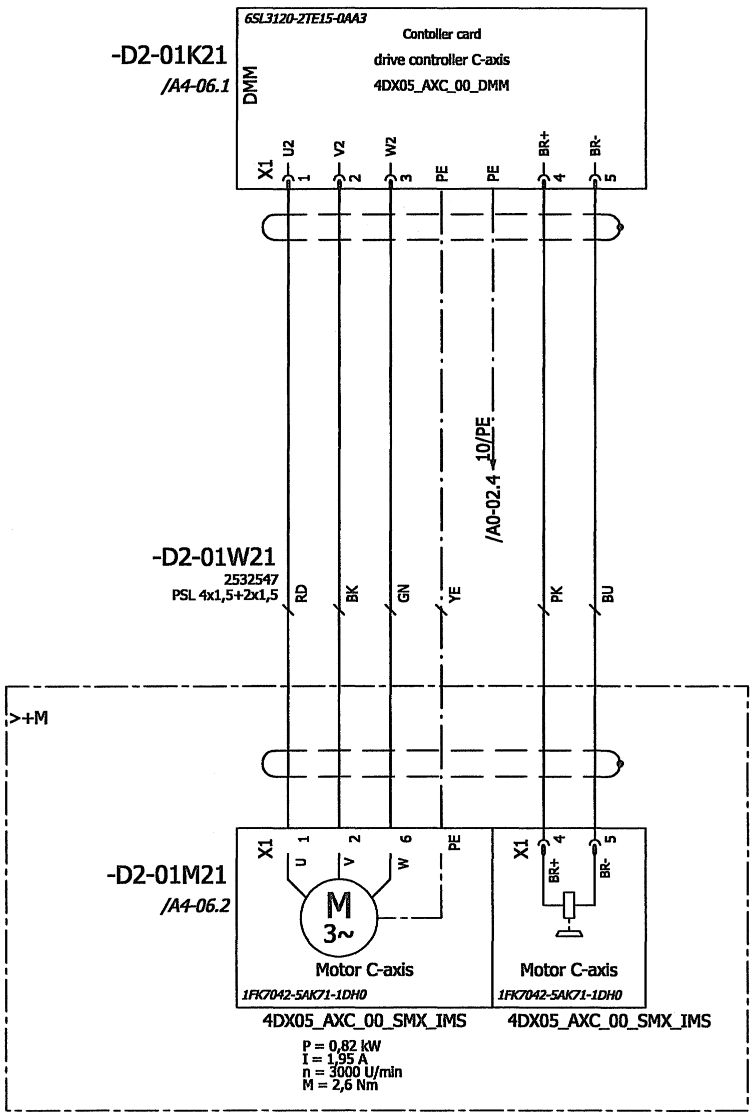
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place		
			change	MEF	113022		Feed drive Z-axis	DMU 50	& EFS	+M+EC		
			chec.					series	circuit diagram Nr.:	language	sheet D1-21/001	
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	97	



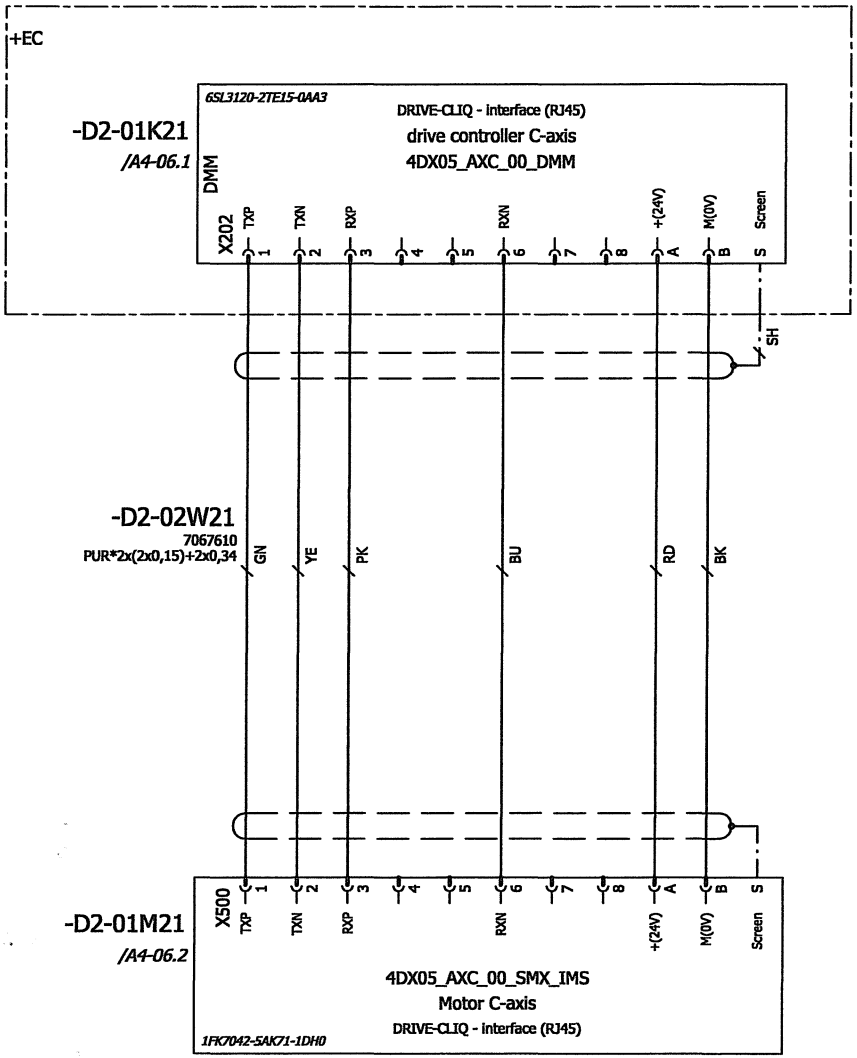
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		shaft encoder interface Z-axis	DMU 50	& EFS	+M	
			chec.					series	circuit diagram Nr.:	language	sheet D1-22/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	98



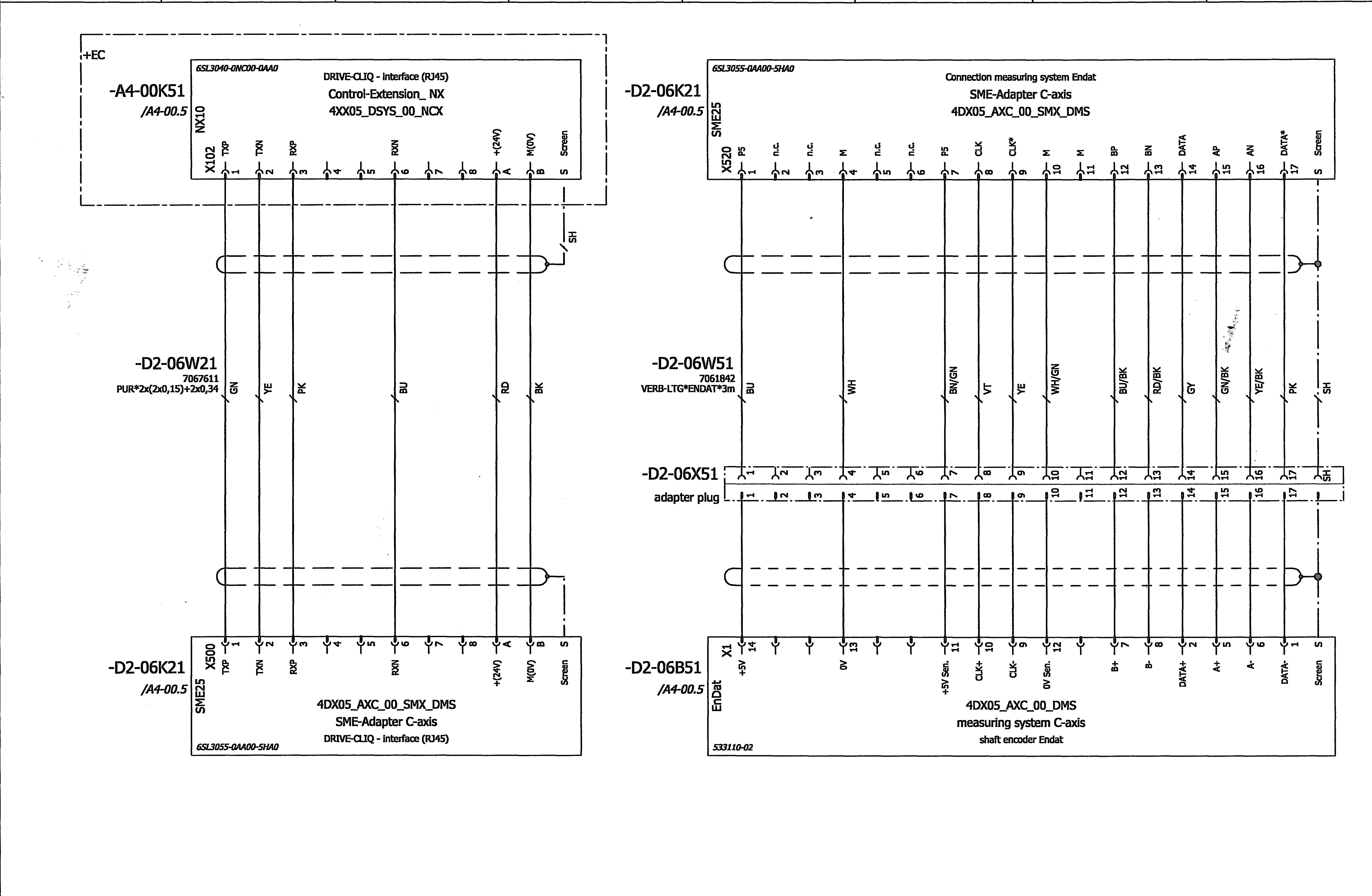
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object: DMU 50	DCC & EFS	Place +M	
			change	MEF	113022		measuring system Z-axis				
			chec.					series 4526	circuit diagram Nr.: 2652185	language EN	sheet D1-26/001
revision	Date	Name	Created by		rep. by	rep. of	source				99



Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object DMU 50
change	MEF	113022		C-axis	DCC & EFS
chec.				(axis of revolution)	Place +M+EC
revision / Name / Created by		rep. by	rep. of / source		series 4526 / circuit diagram Nr.: 2652185 / language EN / sheet D2-01/001 / 100

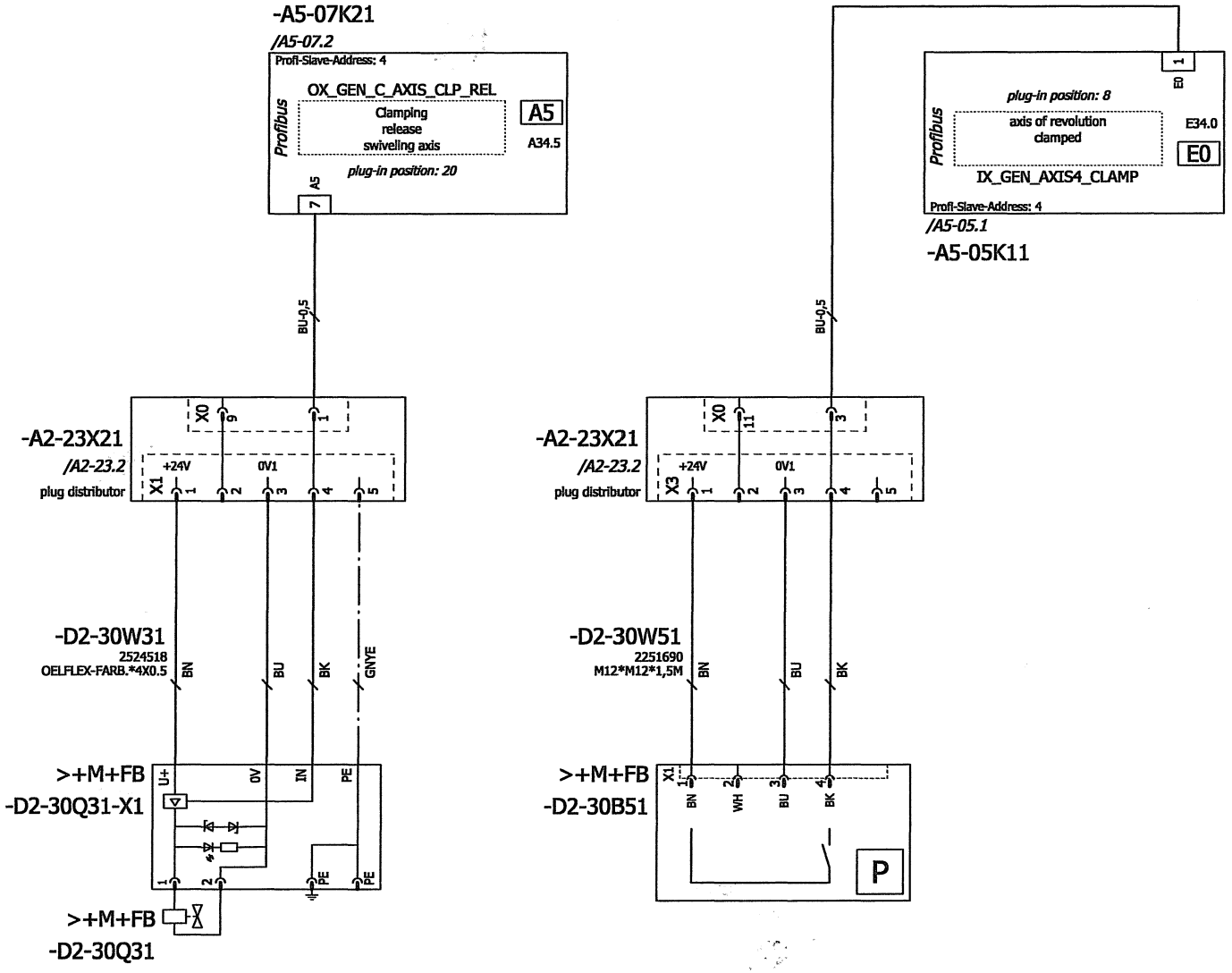


			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		shaft encoder	DMU 50	& EFS	+M	⇨
			chec.				C-axis (axis of revolution)	series	circuit diagram Nr.:	language	sheet D2-02/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	101



Date	02.02.2011	project number 113022	DECKEL MAHO Seebach GmbH	Schematic diagram measuring system C-axis (axis of revolutio
change	MEF			
chec.				
revision / Name	Created by	rep. by / rep. of	source	

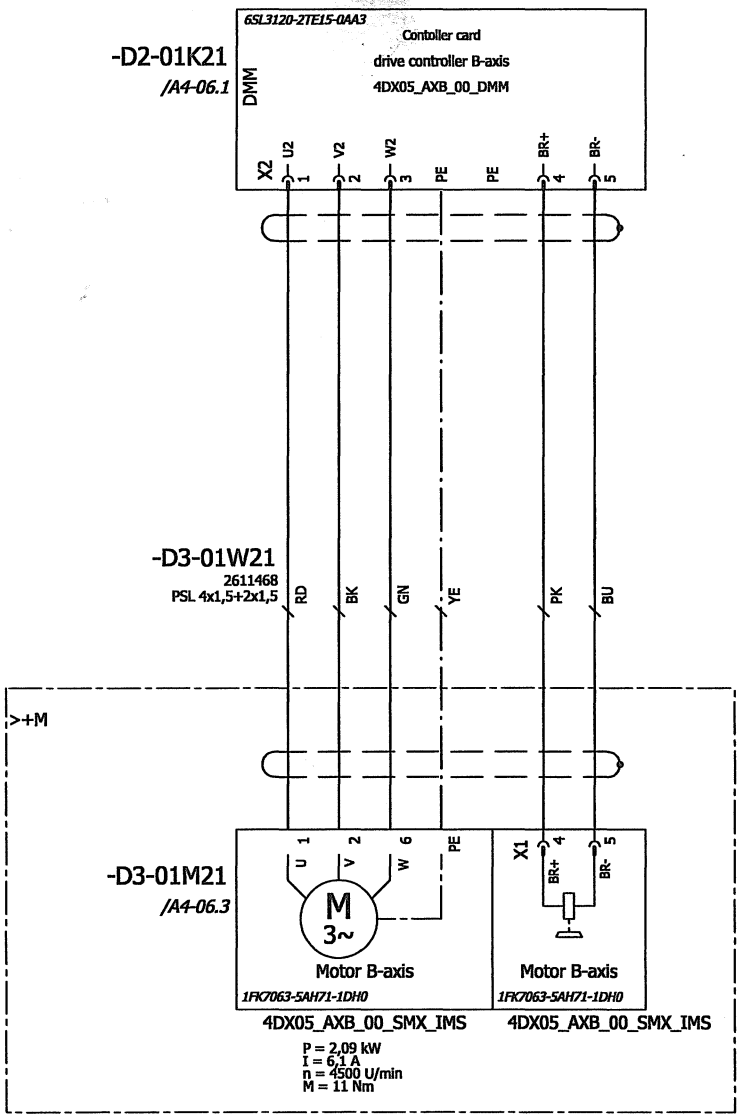
object DMU 50	DCC & EFS	Place +M	⇦ ⇨
series 4526	circuit diagram Nr.: 2652185	language EN	sheet D2-06/001 102



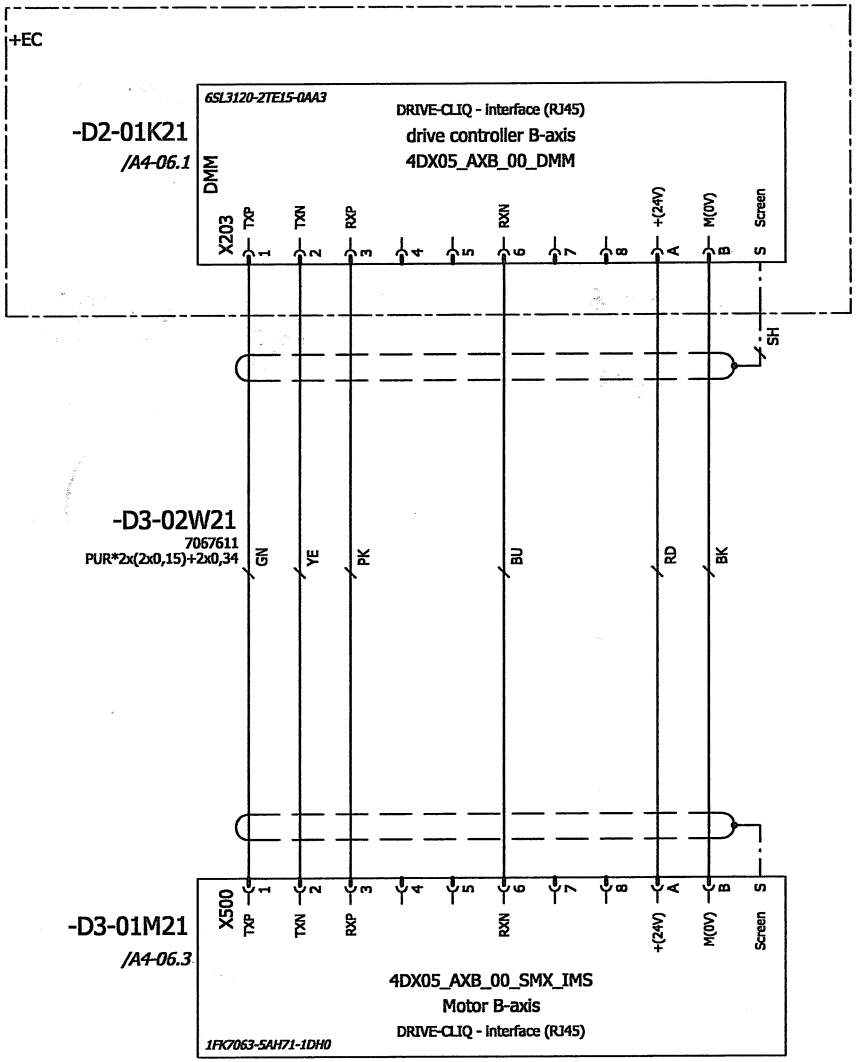
Valve
Clamping
release
axis of revolution

pressure monitoring
Clamping
axis of revolution

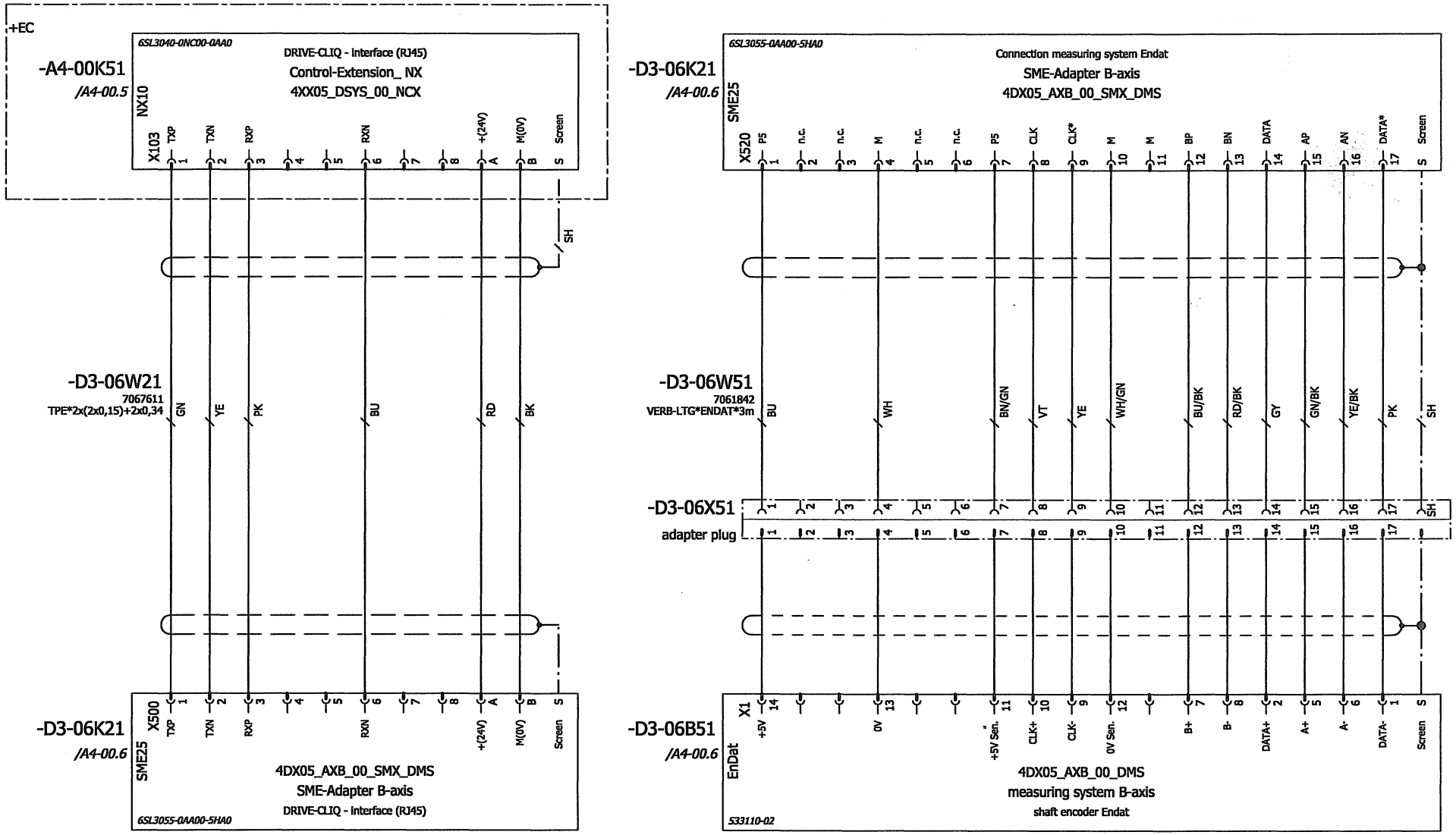
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Clamping C-axis (axis of revolution)	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet D2-30/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	103



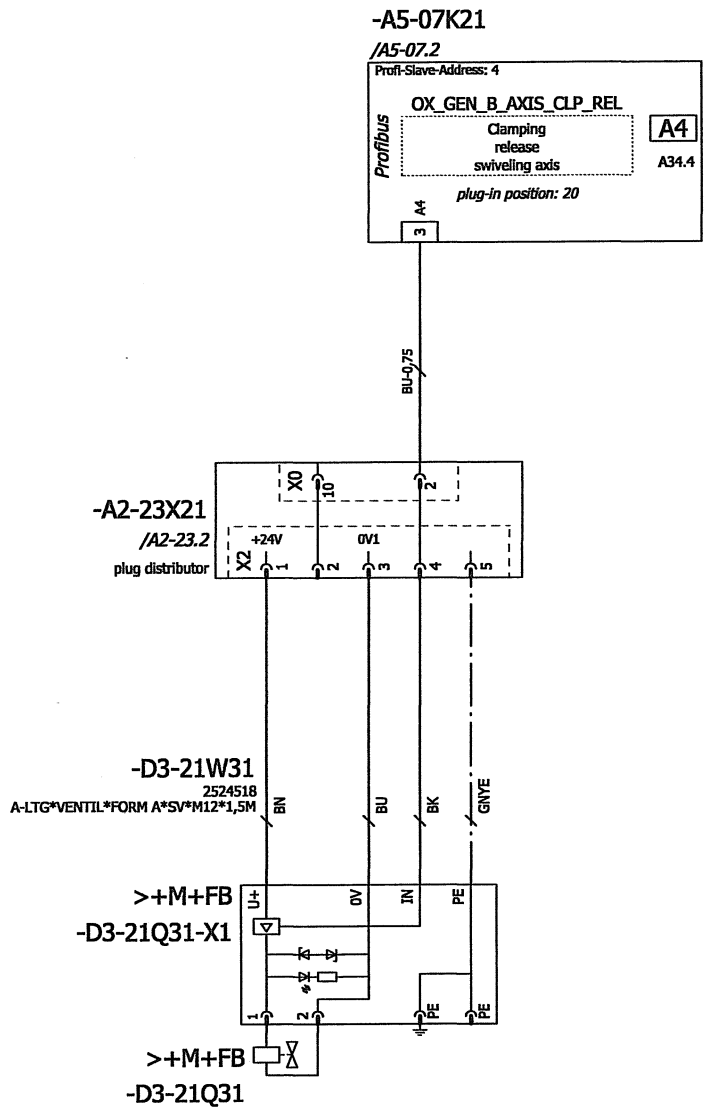
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		B-axis (swiveling axis)	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet D3-01/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	104



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		shaft encoder	DMU 50	& EFS	+M	⇨
			chec.				B-axis (swiveling axis)	series	circuit diagram Nr.:	language	sheet D3-02/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	105

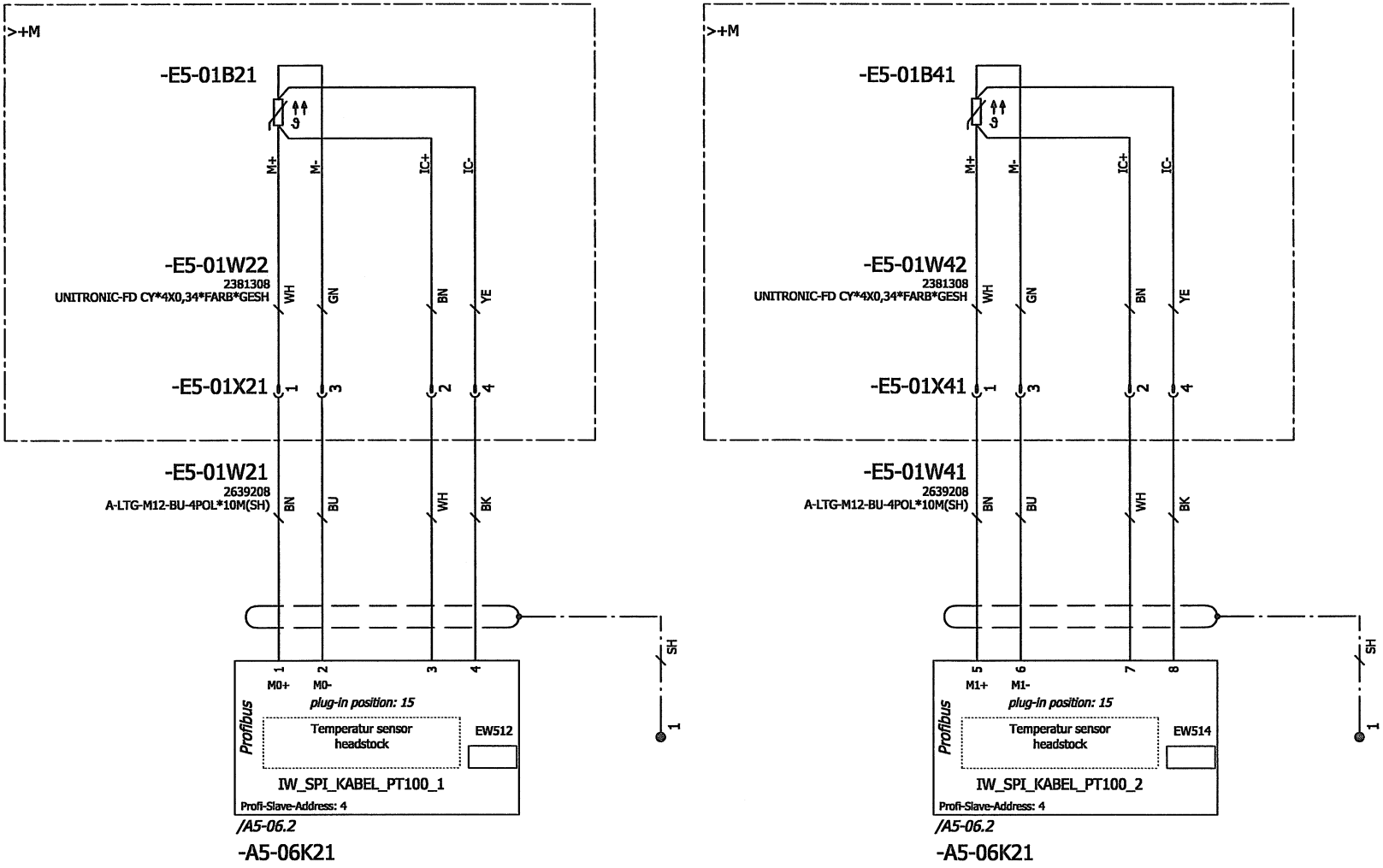


			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		measuring system B-axis (swiveling axis)	DMU 50	& EFS	+M	
			chec.					series	circuit diagram Nr.:	language	sheet D3-06/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	106

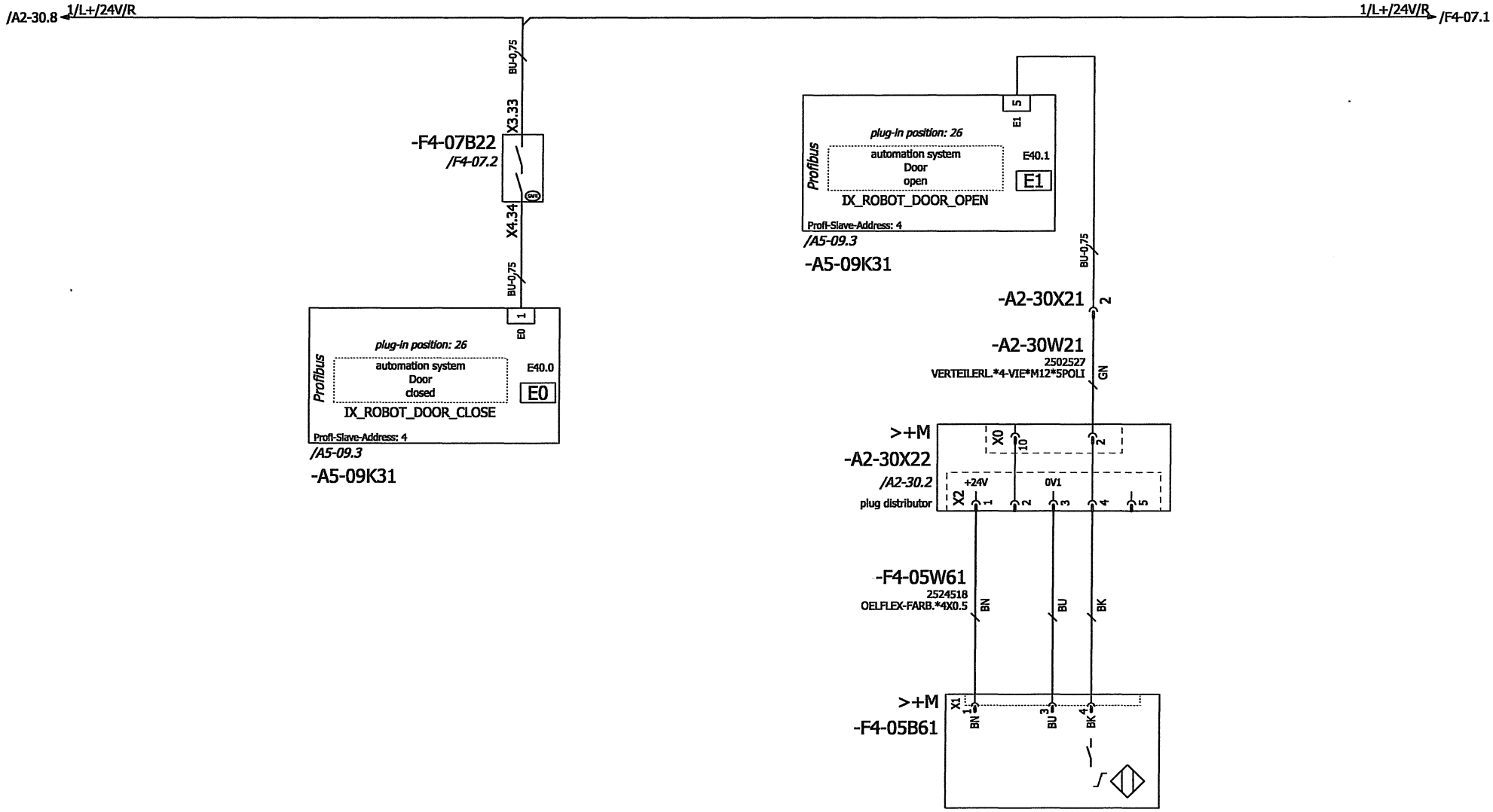


Valve
Clamping
release
swiveling axis

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Clamping B-axis (swiveling axis)	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet D3-21/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	107

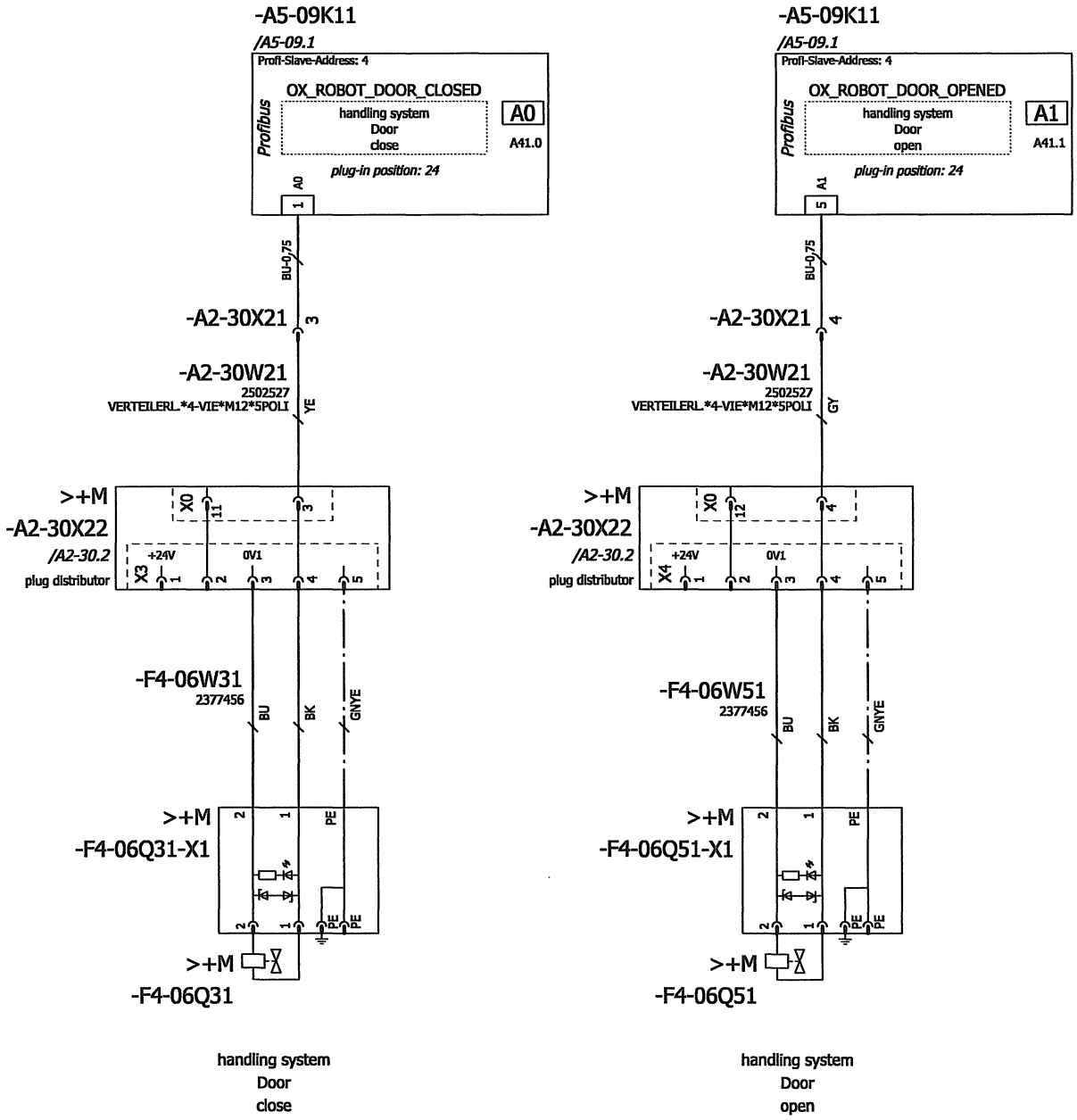


			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		Temperature monitor	DMU 50	& EFS	+M+EC	⇨
			chec.					series	circuit diagram Nr.:	language	sheet E5-01/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	108

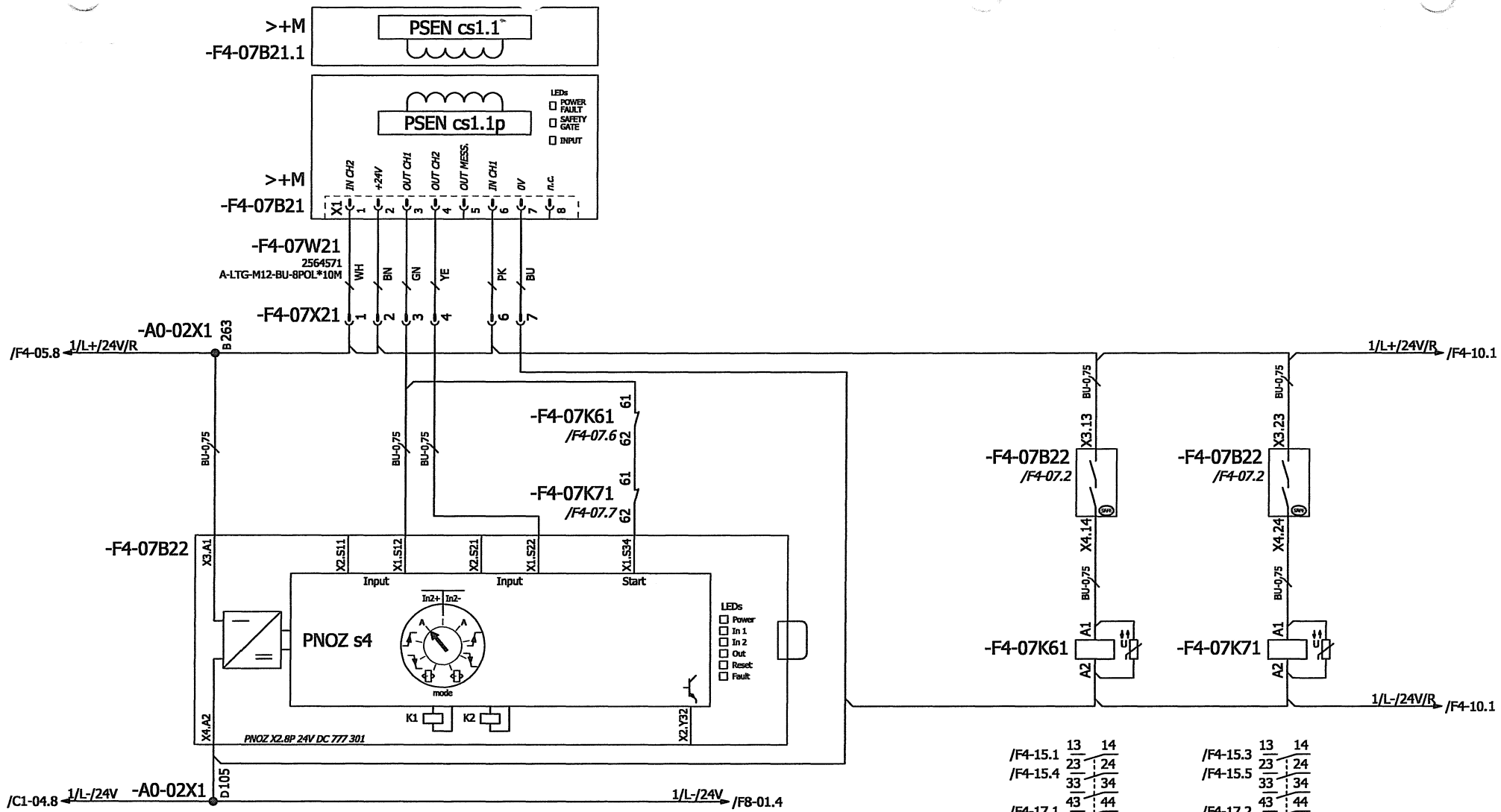


Door
open

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		Actuation	DMU 50	& EFS	+M+EC	⇨
			chec.				lateral door to working area	series	circuit diagram Nr.:	language	sheet F4-05/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	109



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object: DMU 50	DCC & EFS	Place +M+EC	⇦
			change	MEF	113022		Actuation lateral door to working				⇨
			chec.					series 4526	circuit diagram Nr.: 2652185	language EN	sheet F4-06/001
revision		Name	Created by		rep. by	rep. of	source				110



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object: DMU 50	DCC & EFS	Place +M+EC	⇦
			change	MEF	113022		Safety switch lateral door to working area	series 4526	circuit diagram Nr.: 2652185	language EN	⇨
			chec.								sheet F4-07/001
revision	Date	Name	Created by		rep. by	rep. of	source				111

1 2 3 4 5 6 7 8

/F4-07.8 1/L+/24V/R

-A0-02X1 C263

1/L+/24V/R /F4-15.1

command station
>+M+CP

/B6-05.7 +24V/k2

BU-0,75

-F4-10S21 13

14

BU-0,75

-A7-01X22 21

-A7-01W21
2501104
OELFEX-ROBOT*25G0,5 BK/21

-A7-01X21 21

BU-0,75

A1 -F4-10K21 A2

/F4-07.8 1/L-/24V/R

1/L-/24V/R /F4-15.1

/F4-15.3 13 14
/F4-15.5 23 24
33 34
/F4-10.5 43 44
53 54
/H4-06.2 61 62
73 74
83 84

Automatic mode
On

BU-0,75

-F4-10K21 43

/F4-10.2 44
Automatic mode
On

BU-0,75

2 E2

plug-in position: 26

Profibus

automation system
Automatic mode
On/Off

E40.2

E2

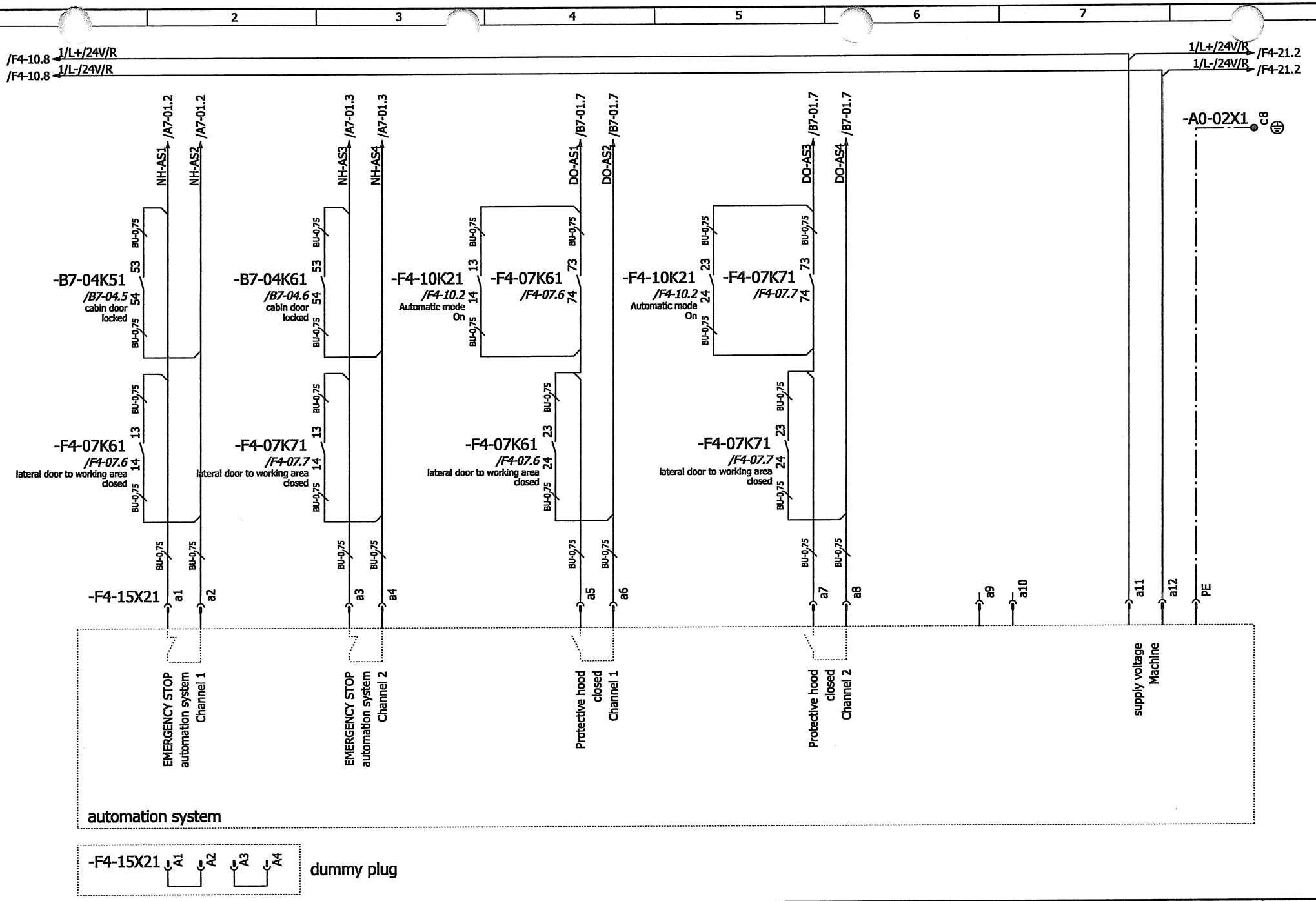
IX_ROBOT_AUTO

Profi-Slave-Address: 4

/A5-09.3

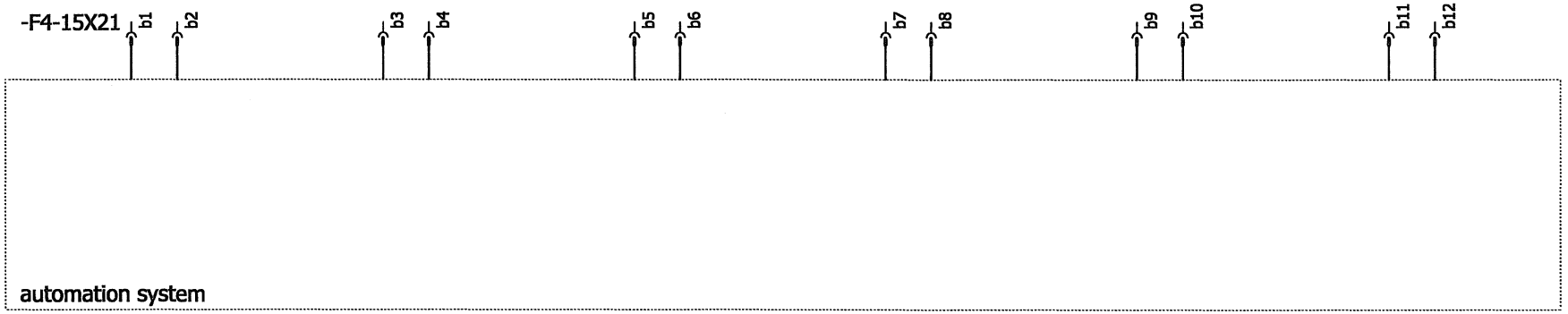
-A5-09K31

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Automatic mode On/Off	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet F4-10/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	112

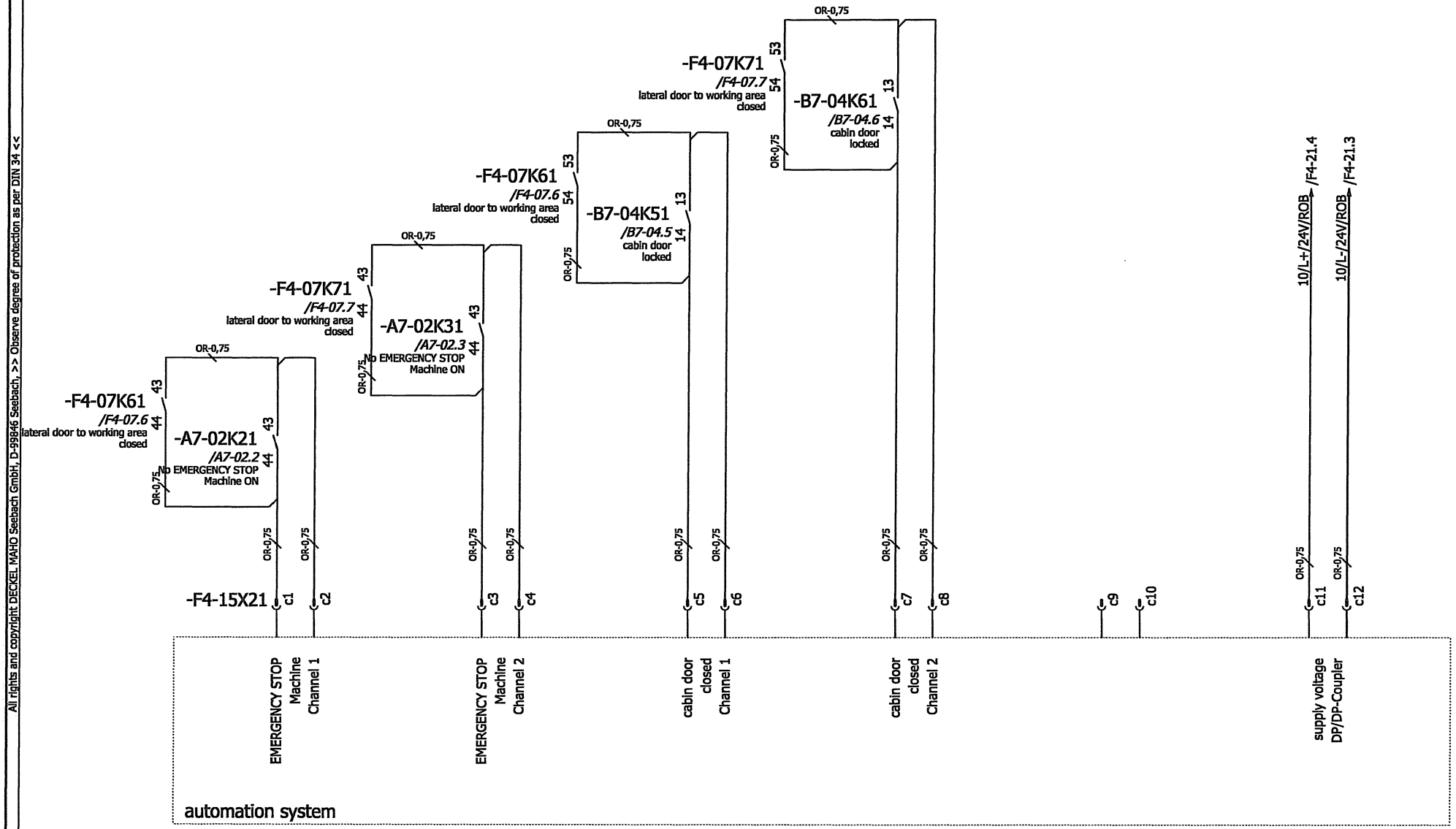


			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		automation system interface	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet F4-15/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	113

1	2	3	4	5	6	7	8

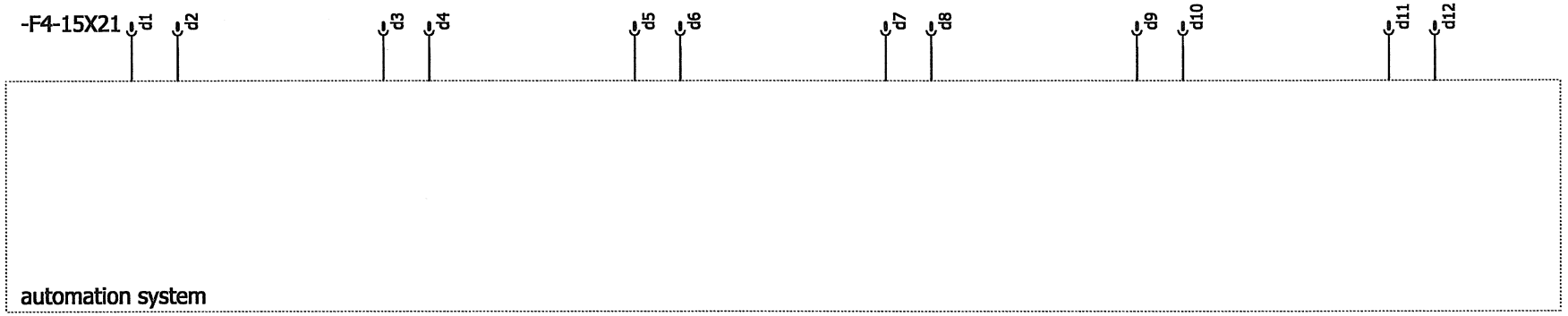


			Date	02.02.2011	project number		DECKEL MAHO	Schematic diagram	object		DCC	Place	⇦
			change	MEF	113022		Seebach GmbH	handling system interface	DMU 50		& EFS	+M+EC	⇨
			chec.						series	circuit diagram Nr.:		language	sheet F4-16/001
revision		Name	Created by		rep. by	rep. of	source		4526	2652185		EN	114

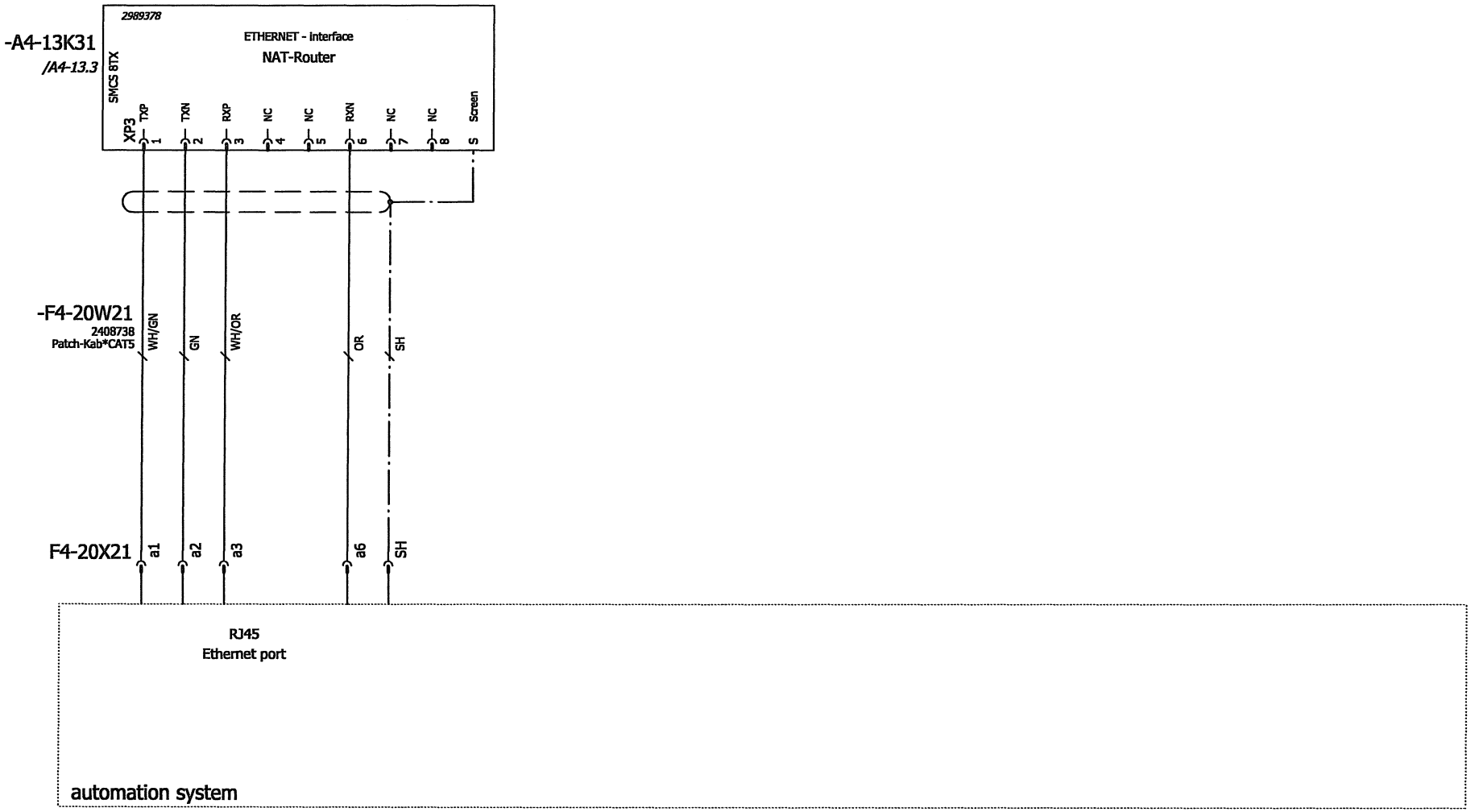


			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		handling system interface	DMU 50	& EFS	+M+EC	⇨
			chec.					series	circuit diagram Nr.:	language	sheet F4-17/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	115

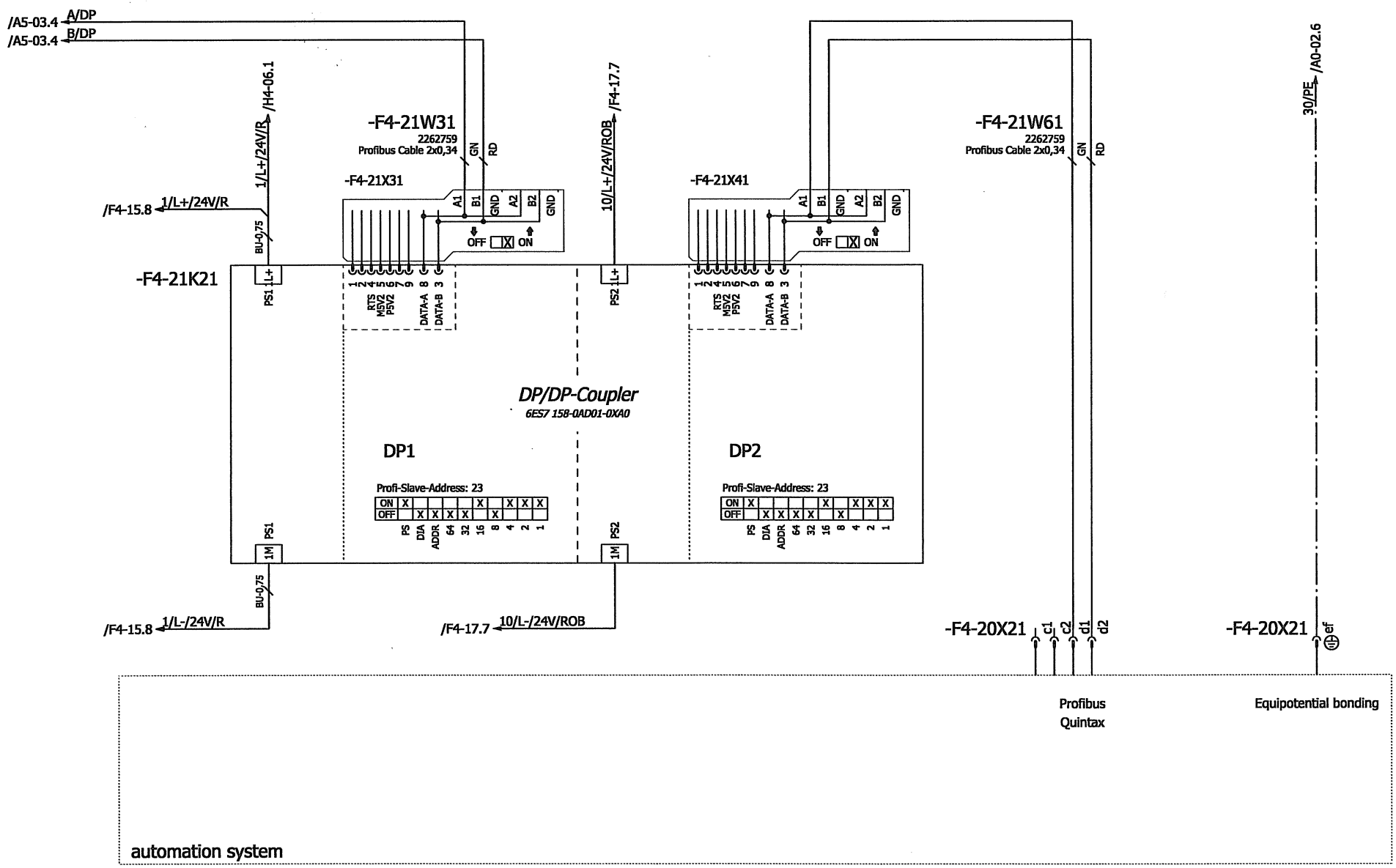
1	2	3	4	5	6	7	8



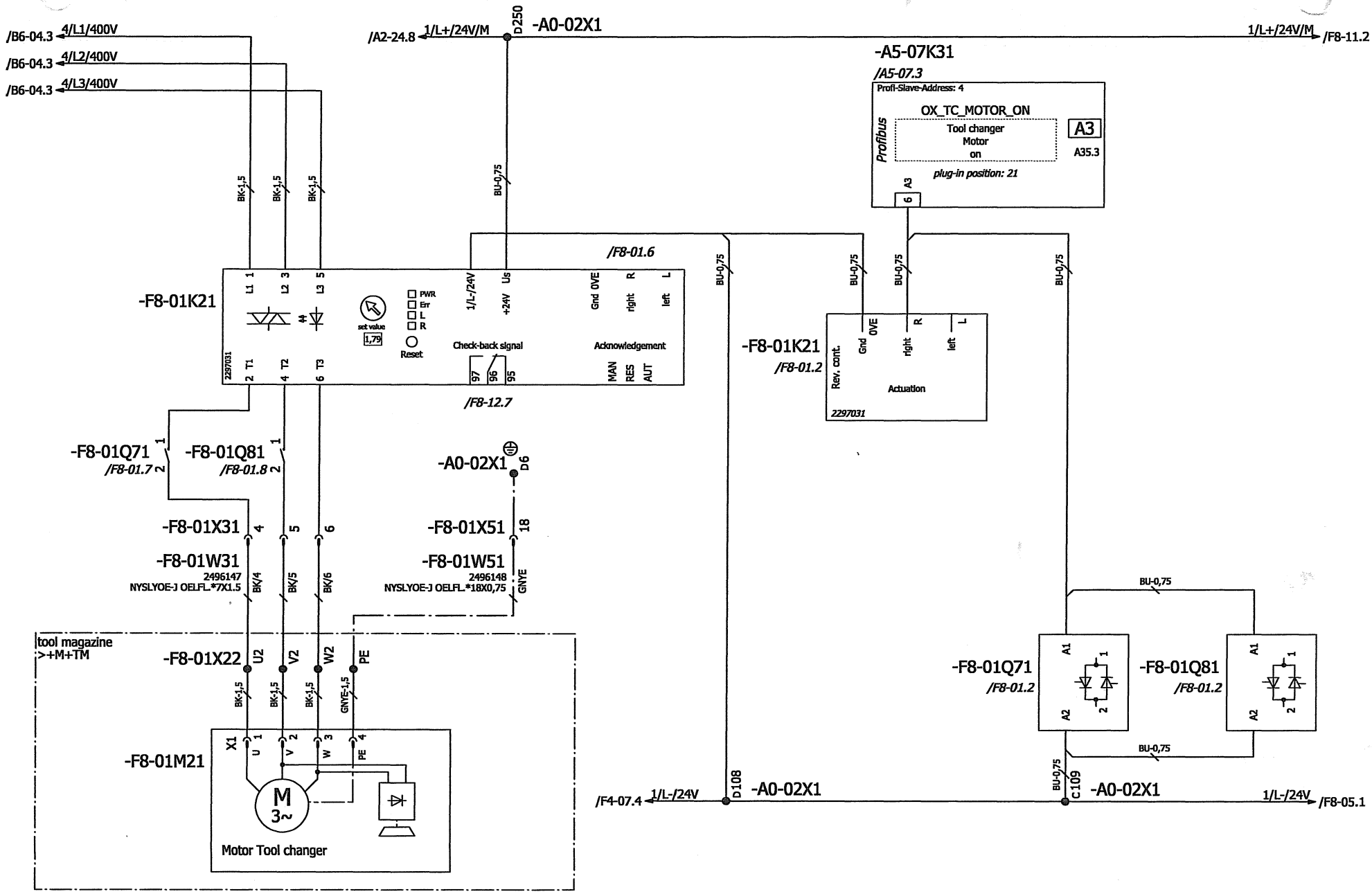
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object		DCC	Place	⇦
			change	MEF	113022		handling system interface	DMU 50		& EFS	+M+EC	⇨
			chec.					series	circuit diagram Nr.:		language	sheet F4-18/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185		EN	116



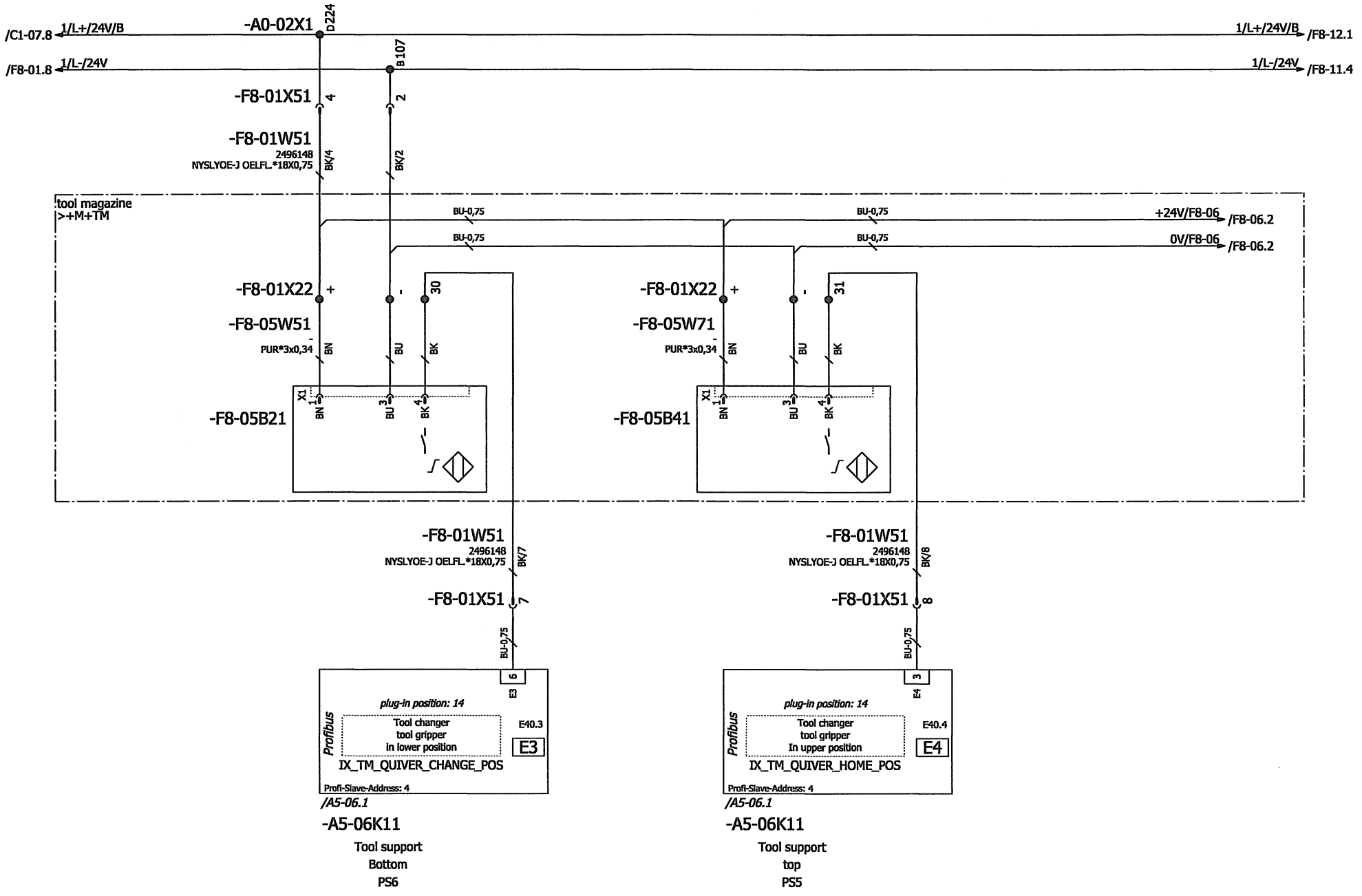
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		handling system interface	DMU 50	& EFS	+M+EC	⇨
			chec.					series	circuit diagram Nr.:	language	sheet F4-20/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	117



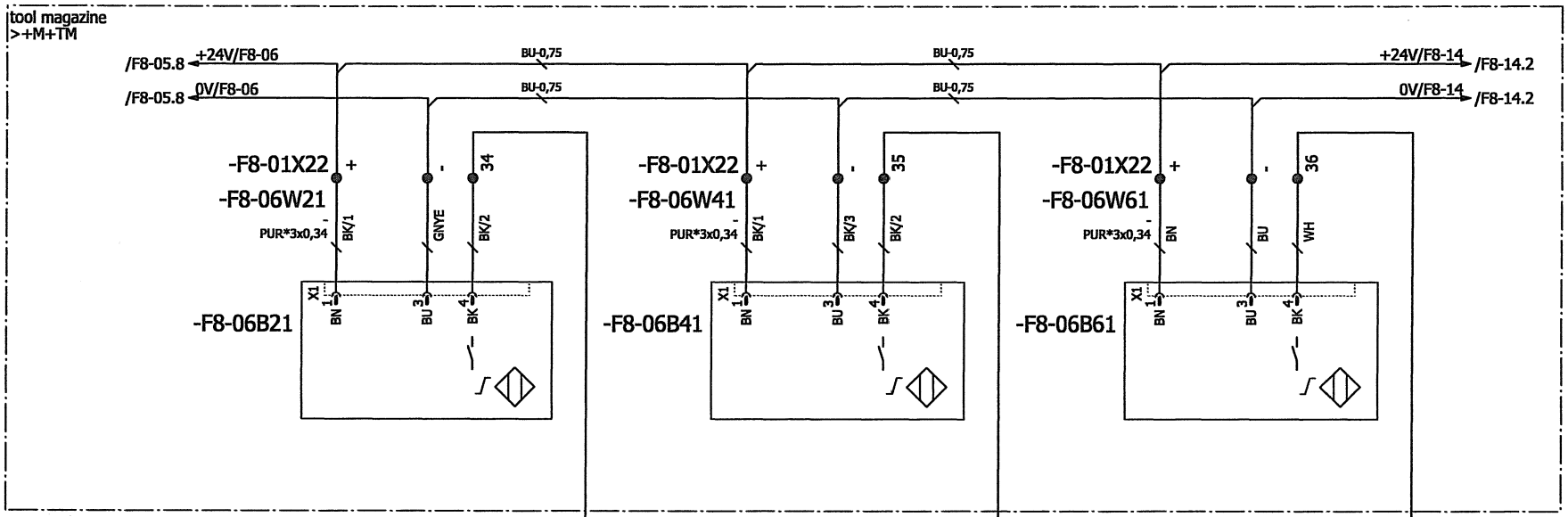
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place		
			change	MEF	113022		handling system interface	DMU 50	& EFS	+M+EC		
			chec.					series	circuit diagram Nr.:	language	sheet F4-21/001	
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN		118



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place		
			change	MEF	113022		Tool changer	DMU 50	& EFS	+M+EC		
			chec.					series	circuit diagram Nr.:	language	sheet F8-01/001	
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	119	



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		tool magazine	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet F8-05/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	120

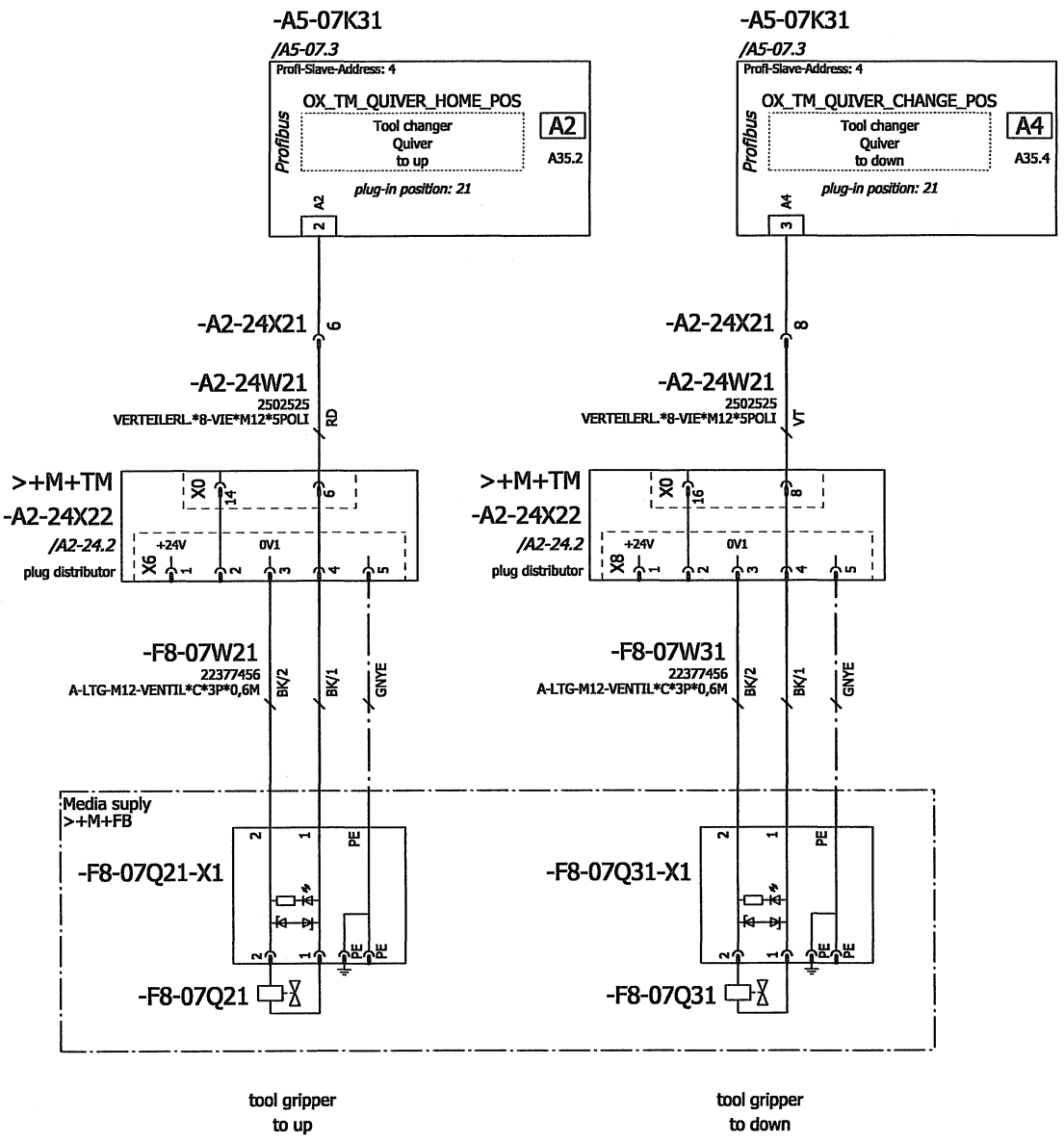


/A5-06.1
-A5-06K11
Tool in spindle
release
PS1

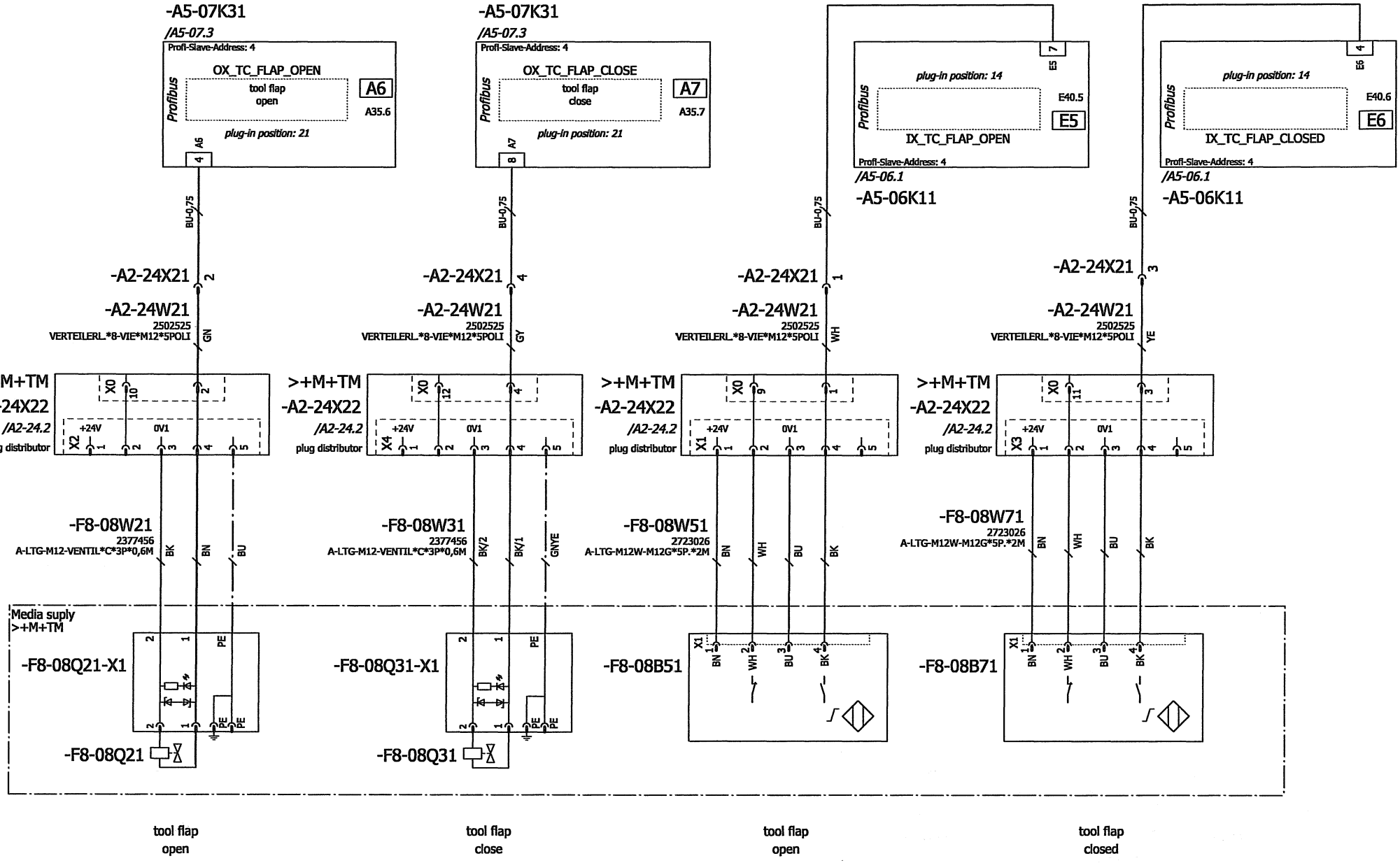
/A5-06.1
-A5-06K11
Tool in spindle
Tension
PS2

/A5-06.1
-A5-06K11
tool magazine
Position
PS3

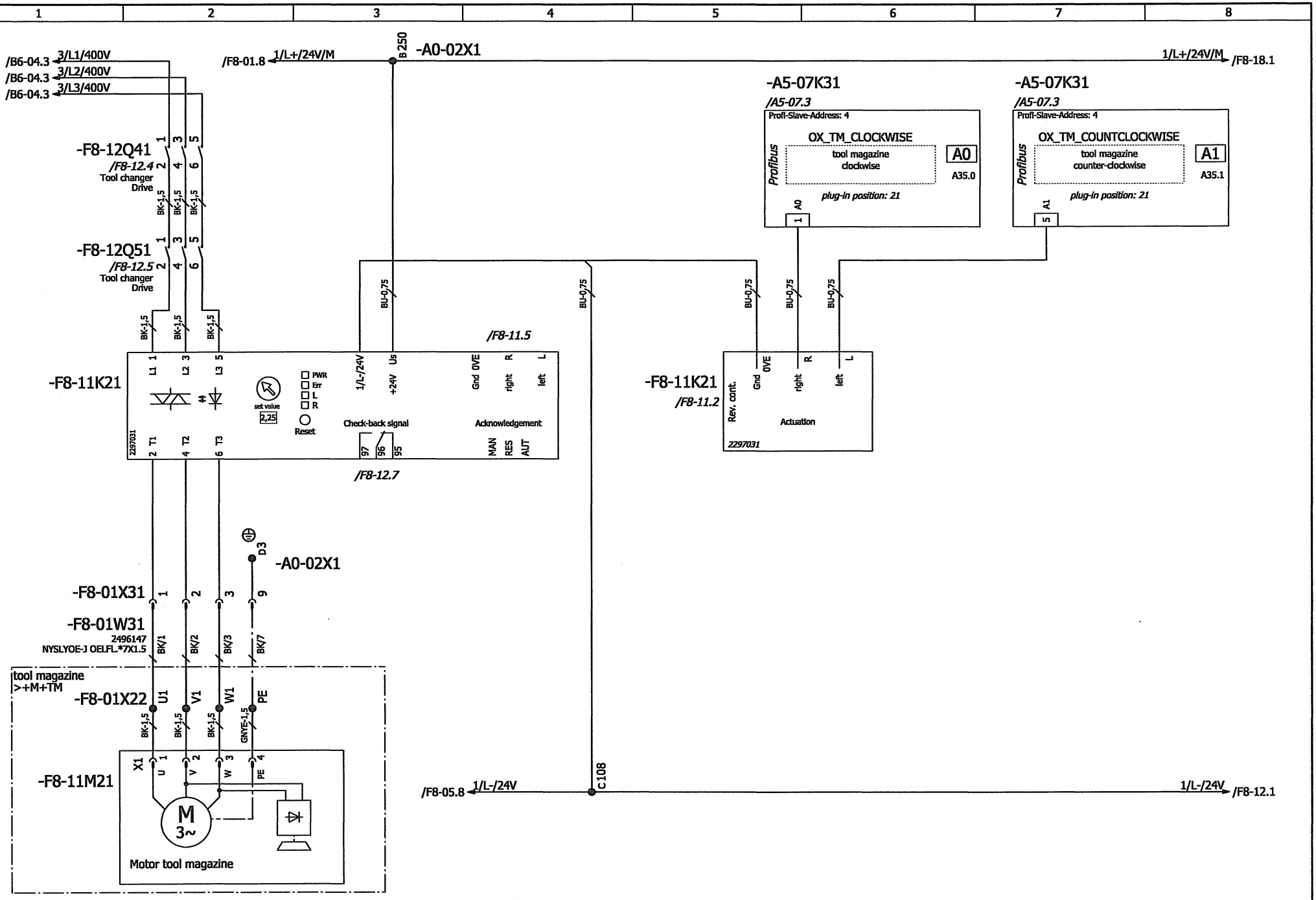
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Tool changer	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet F8-06/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	121



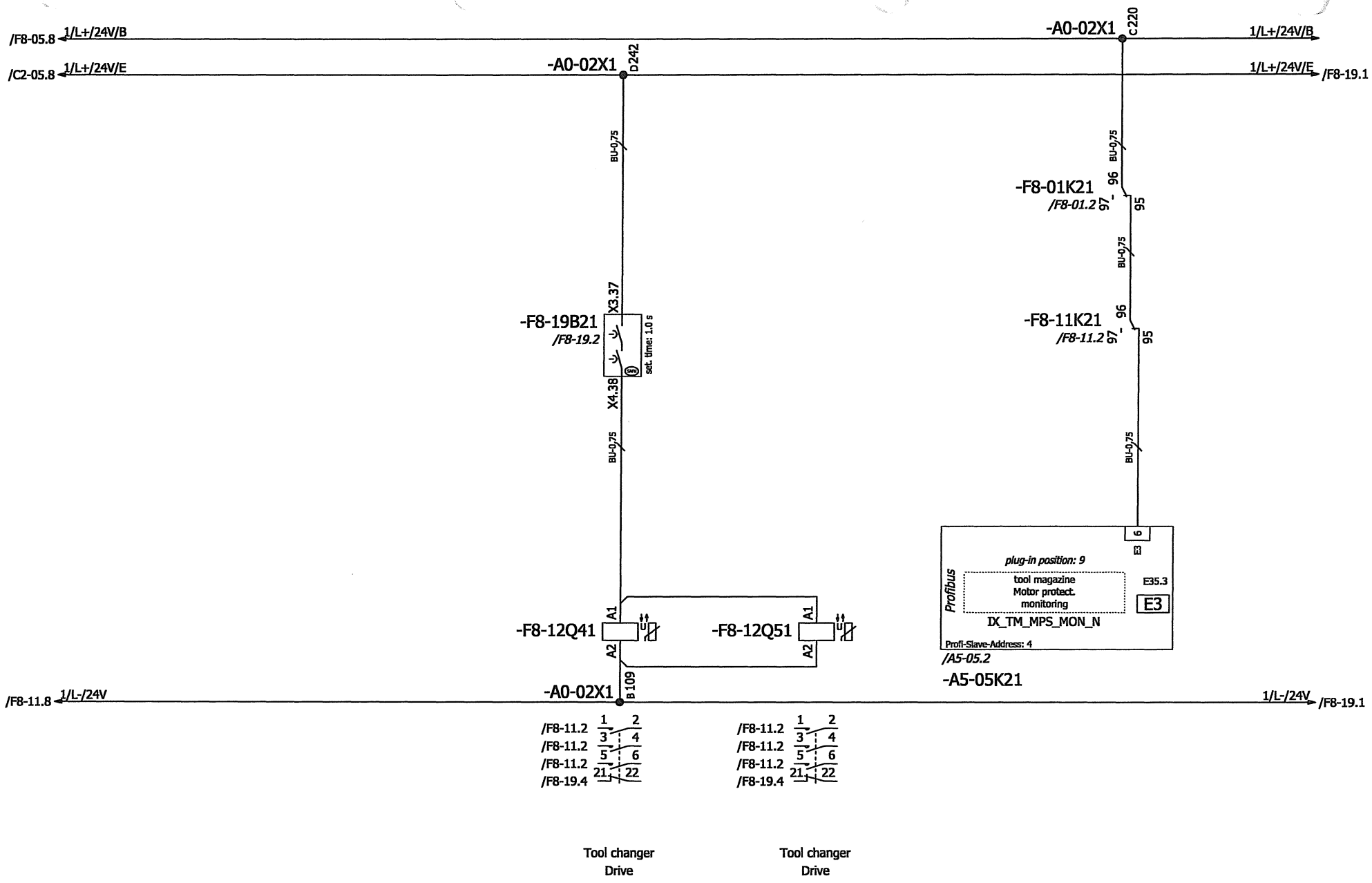
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place		
			change	MEF	113022		tool gripper	DMU 50	& EFS	+M+EC		
			chec.					series	circuit diagram Nr.:	language		sheet F8-07/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN		122



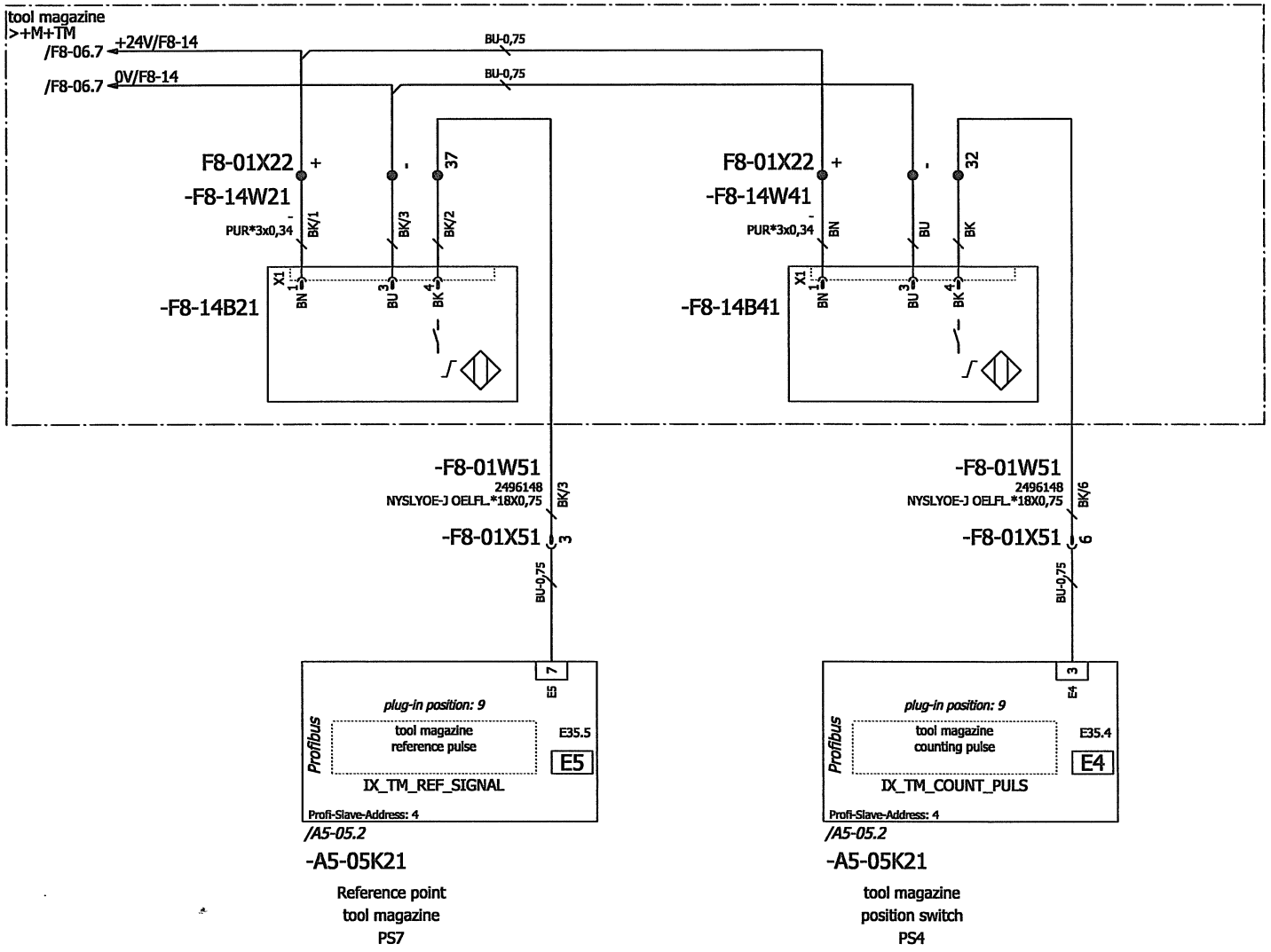
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Actuation tool flap	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet F8-08/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	123



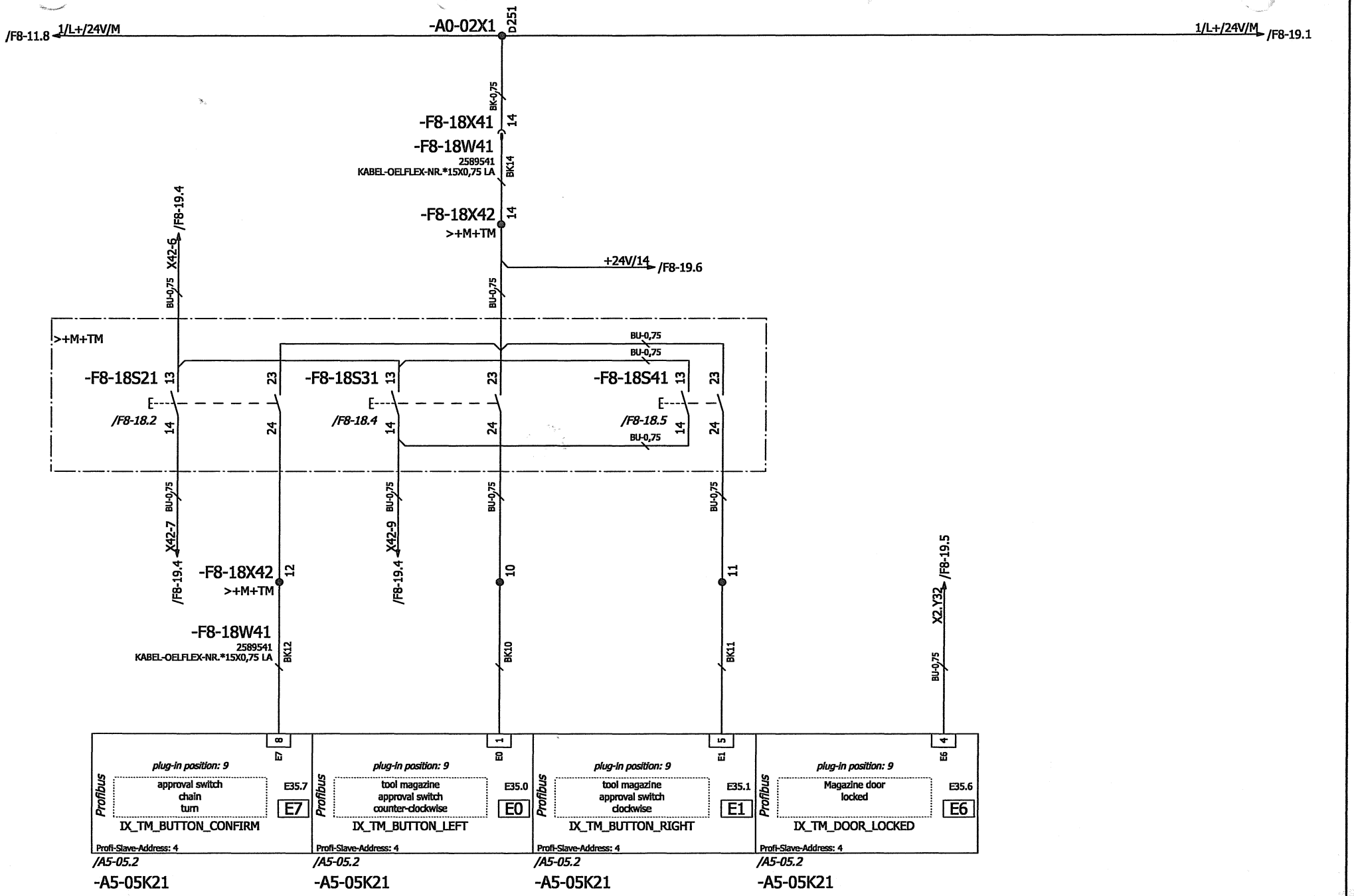
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		tool magazine	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet F8-11/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	124



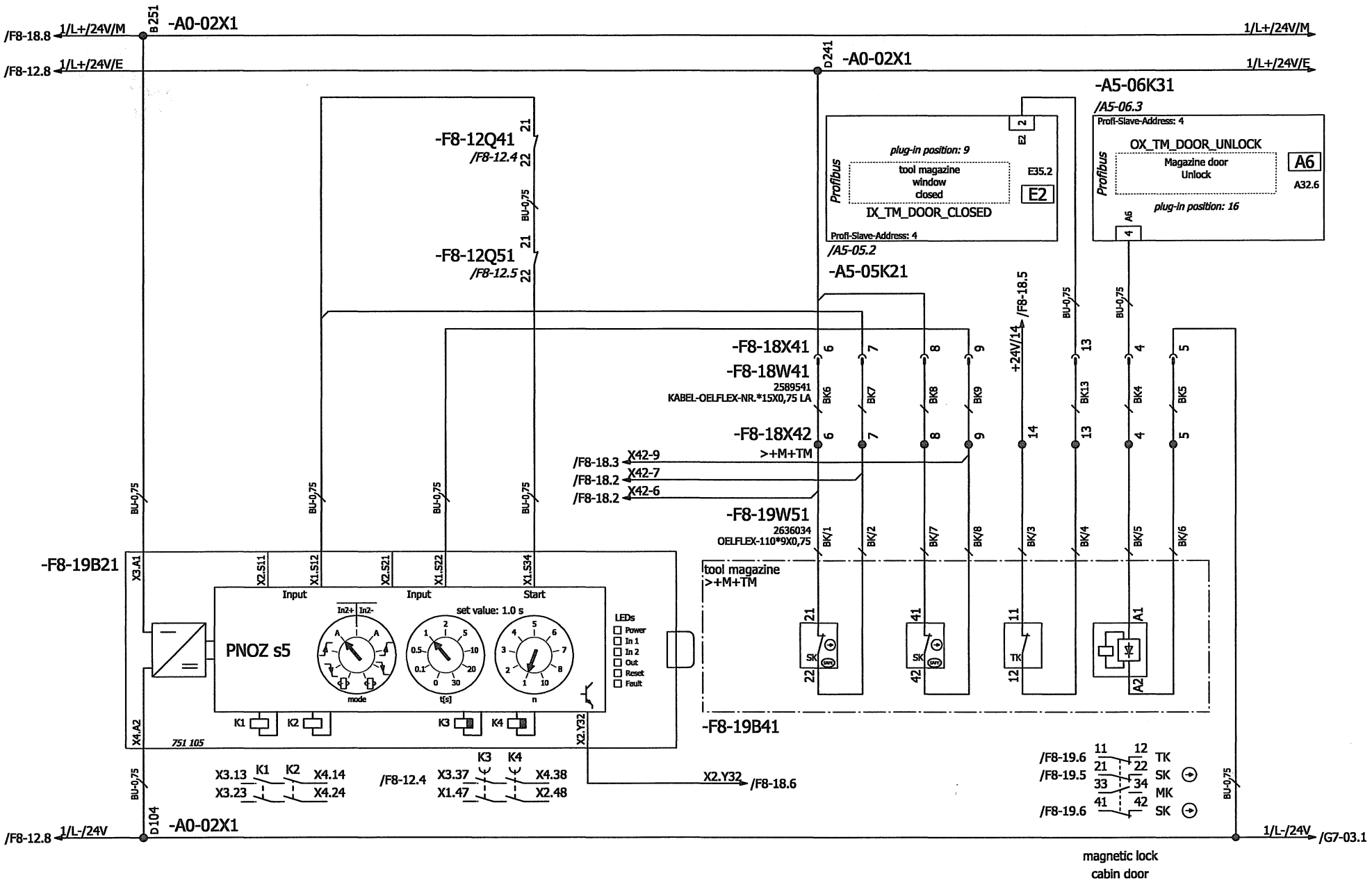
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		Tool changer	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet F8-12/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	125



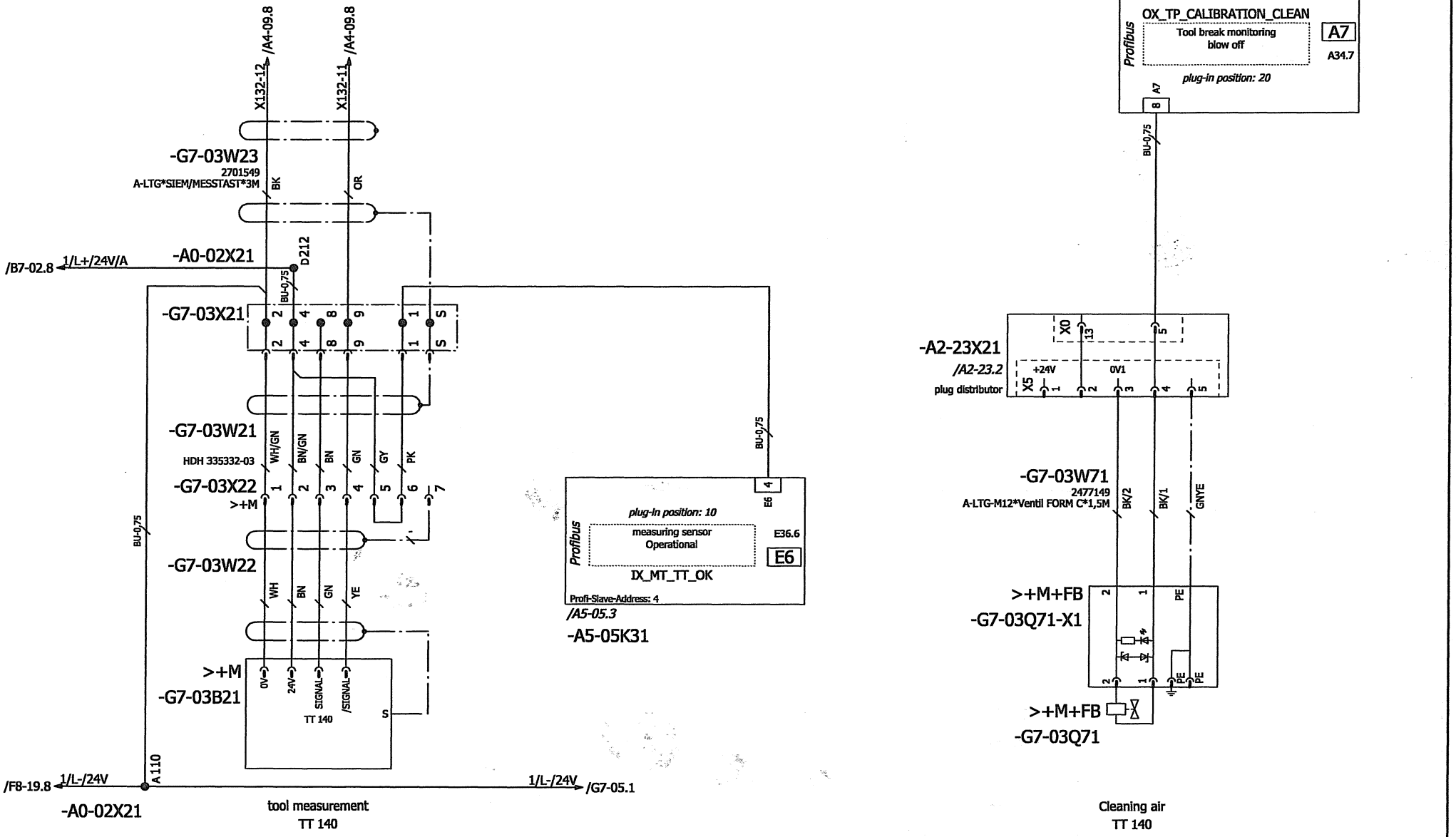
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		tool magazine	DMU 50	& EFS	+M+EC	⇨
			chec.					series	circuit diagram Nr.:	language	sheet F8-14/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	126



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		tool magazine	DMU 50	& EFS	+M+EC	⇨
			chec.					series	circuit diagram Nr.:	language	sheet F8-18/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	127



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		tool magazine	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet F8-19/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	128



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place		
			change	MEF	113022		tool breaking monitoring	DMU 50	& EFS	+M+EC		
			chec.				TT 140	series	circuit diagram Nr.:	language	sheet G7-03/001	
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	129	

1/L+/24V/A -A0-02X1 D211

1/L+/24V/A

-A5-07K21
/A5-07.2
Profi-Slave-Address: 4
OX_TP_ENABLE
measuring sensor start signal
A6
A34.6
plug-in position: 20
A6 4
Profibus

/A4-09.4 X122-12
/A4-09.4 X122-11

-G7-01W22
2701549
A-LTG*BHG/Handrad*3M
BK
OR
BU-0,75
BU-0,75

-G7-01X21
8 5 4 10 3 7
8 5 4 10 3 7 S

-G7-01W21
2308326
Verb.-Leitung*Messtaster*9M
WH BN YE GN GY BU SH

BU-0,75 3 E4
plug-in position: 10
measuring sensor battery Error
E36.4
E4
IX_TP_BATTERIE_MIN
Profi-Slave-Address: 4
/A5-05.3
-A5-05K31

BU-0,75 7 E5
plug-in position: 10
measuring sensor Operational
E36.5
E5
IX_TP_RDY
Profi-Slave-Address: 4
/A5-05.3
-A5-05K31

>+M
-G7-05B21
X1 1 2 3 4 5 6 7 8 SH
0V Ub Start Strobe ready battery low Screen NC
OMI-2C

>+M
-G7-05B71

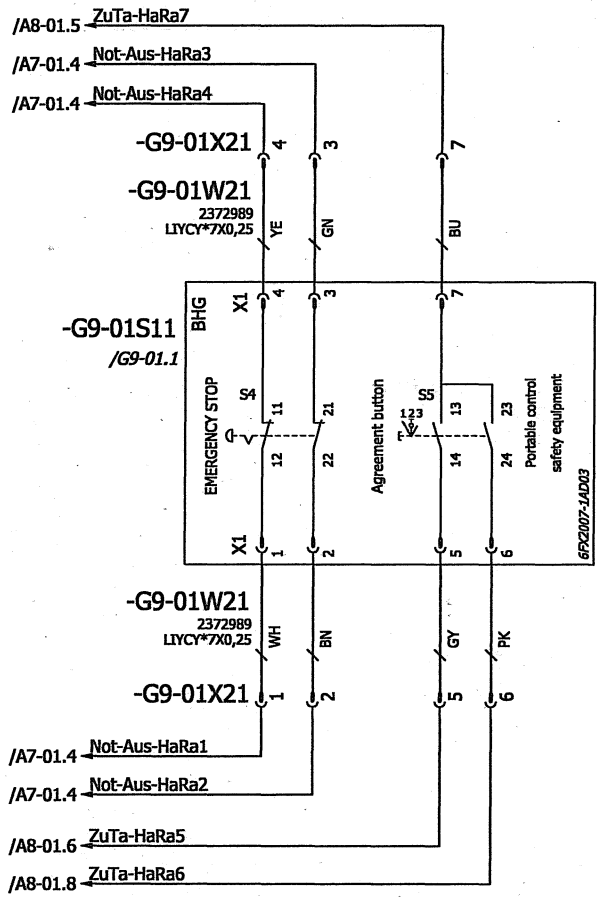
/G7-03.4 1/L-/24V -A0-02X1 C104

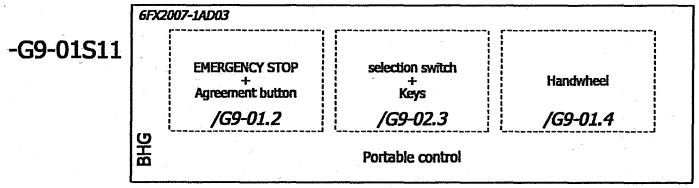
1/L-/24V /H4-01.7

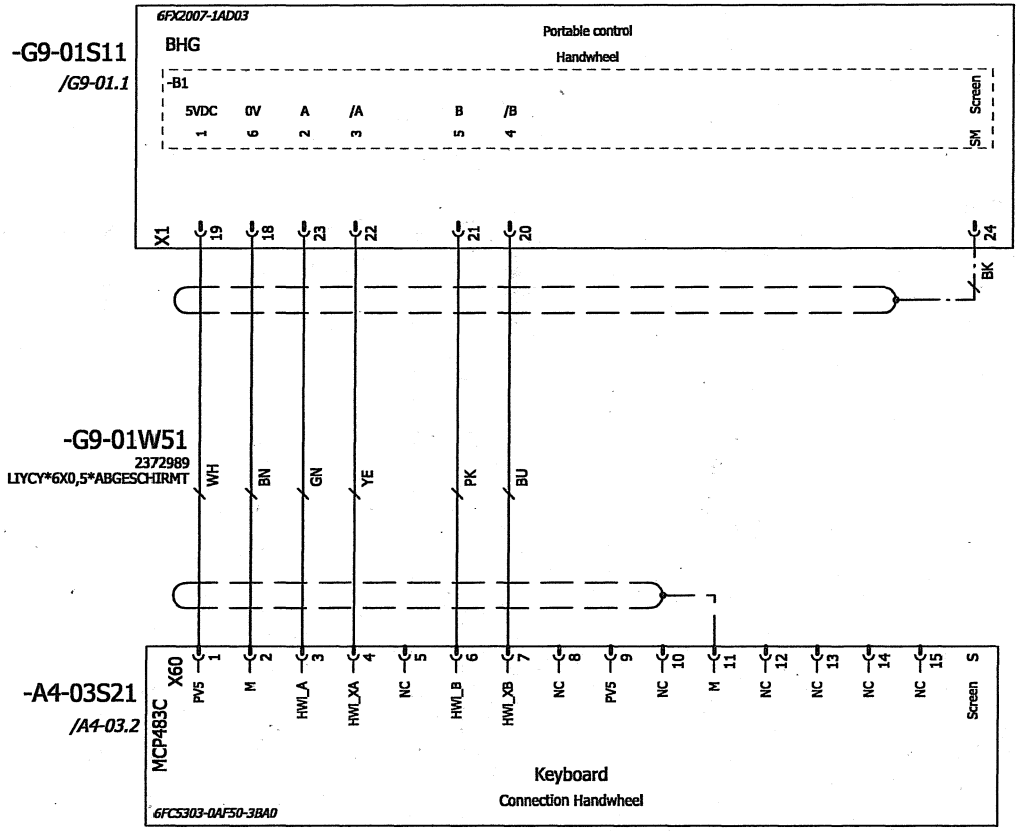
transmitt./receiver unit
OMI-2C

measuring sensor
PP 60

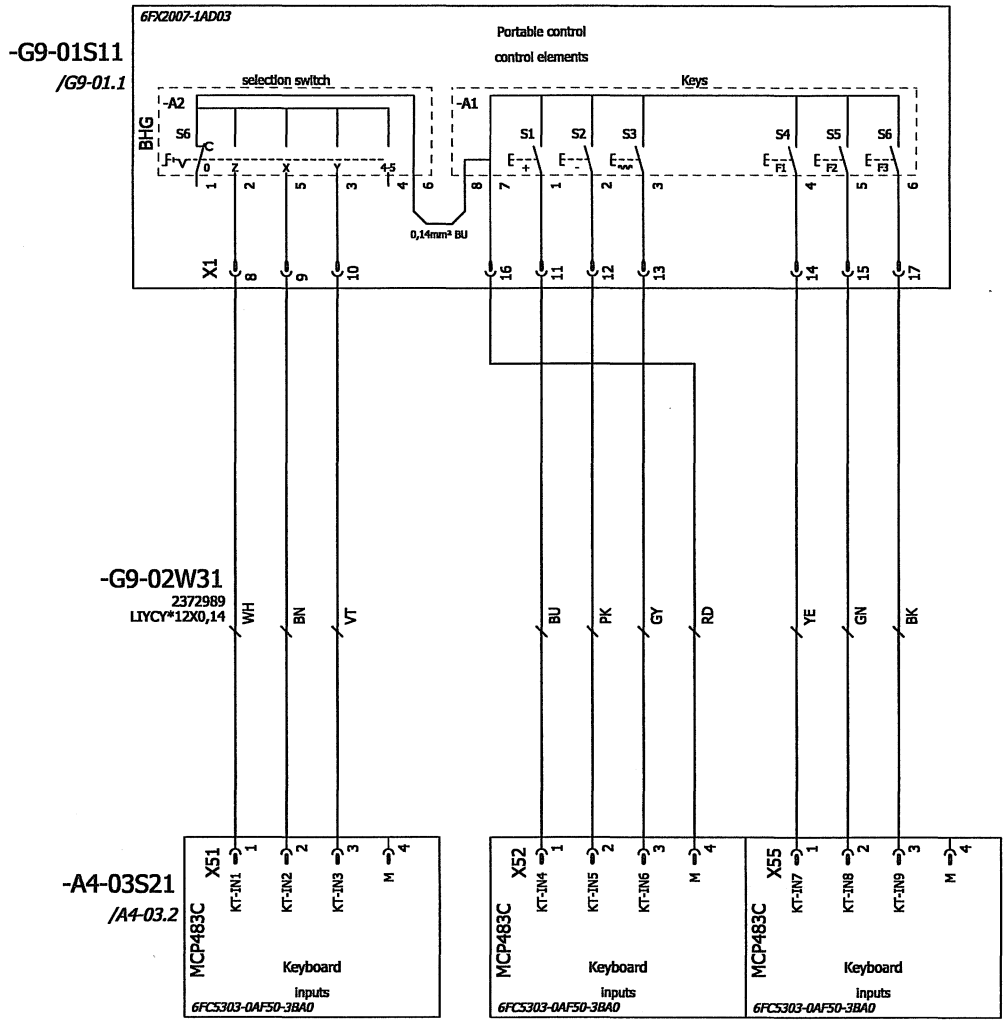
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		Actuation measuring sensor	DMU 50	& EFS	+M+EC	⇨
			chec.					series	circuit diagram Nr.:	language	sheet G7-05/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	130



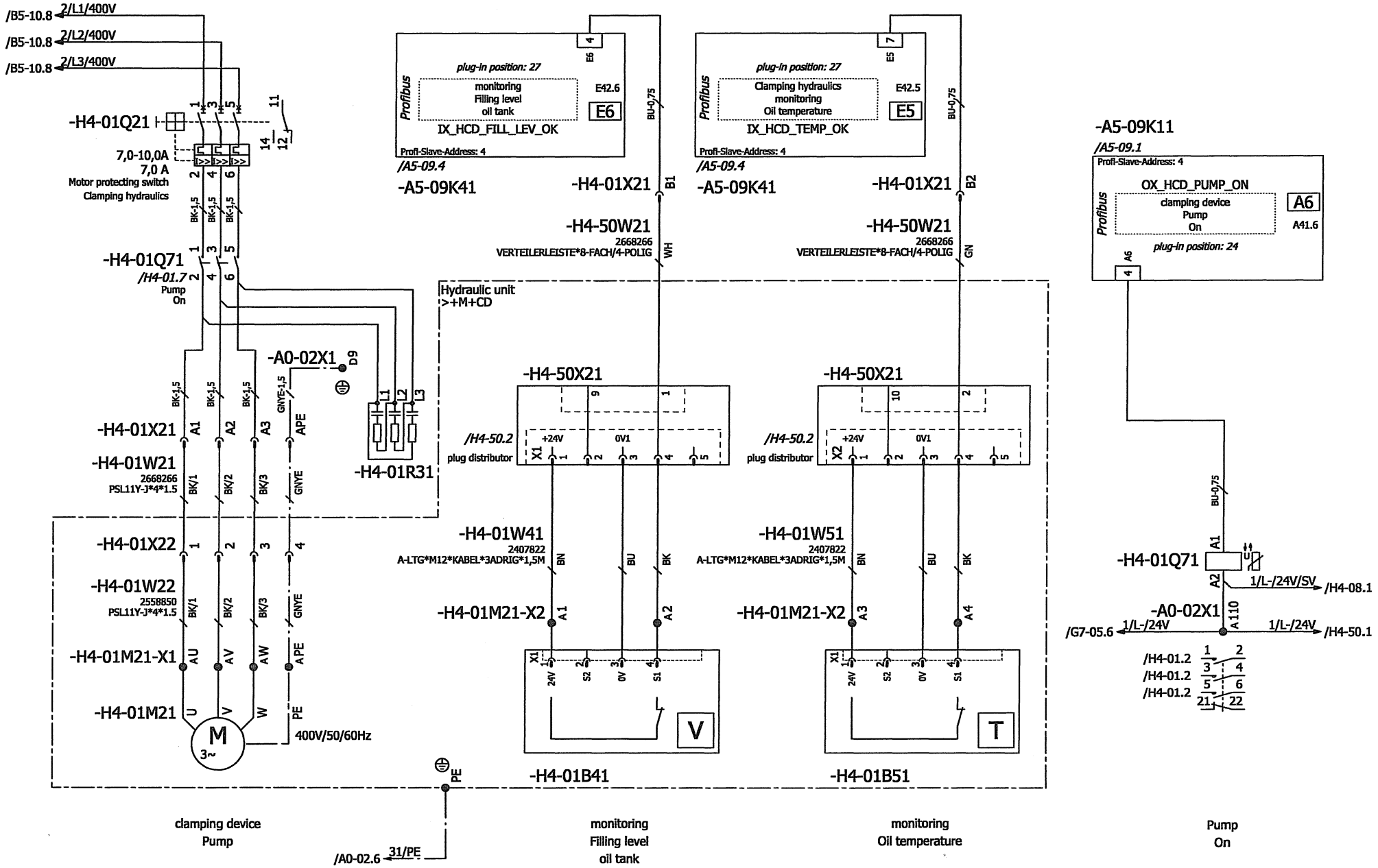




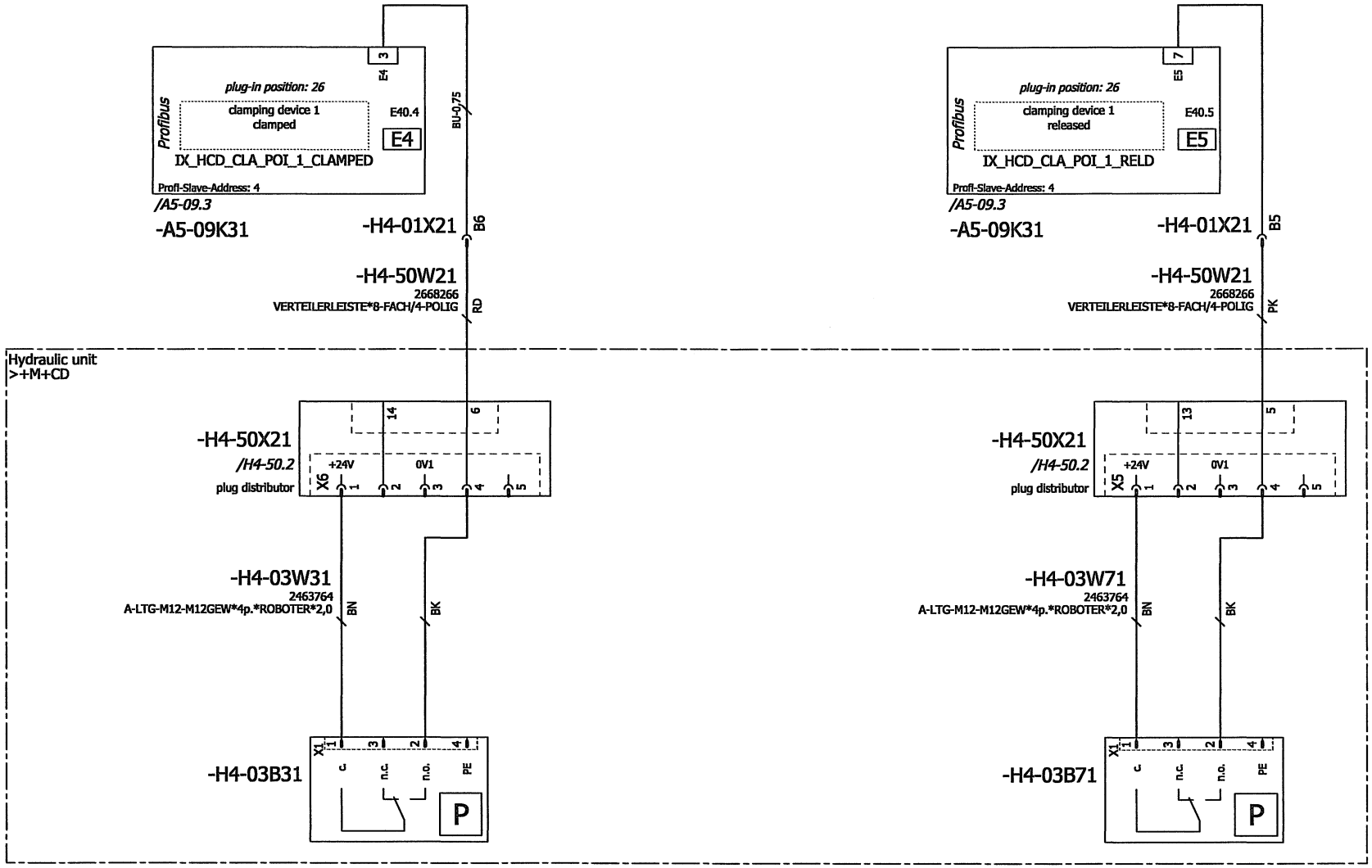
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object:	DCC	Place	⇦
			change	MEF	113022		Option Handwheel	DMU 50	& EFS	+M+CP	⇨
			chec.					series	circuit diagram Nr.:	language	sheet G9-01/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	131



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object: DMU 50	DCC & EFS	Place +M+CP	
			change	MEF	113022		Option Handwheel	series 4526	circuit diagram Nr.: 2652185	language EN	sheet G9-02/001
			chec.								132
revision		Name	Created by		rep. by	rep. of	source				



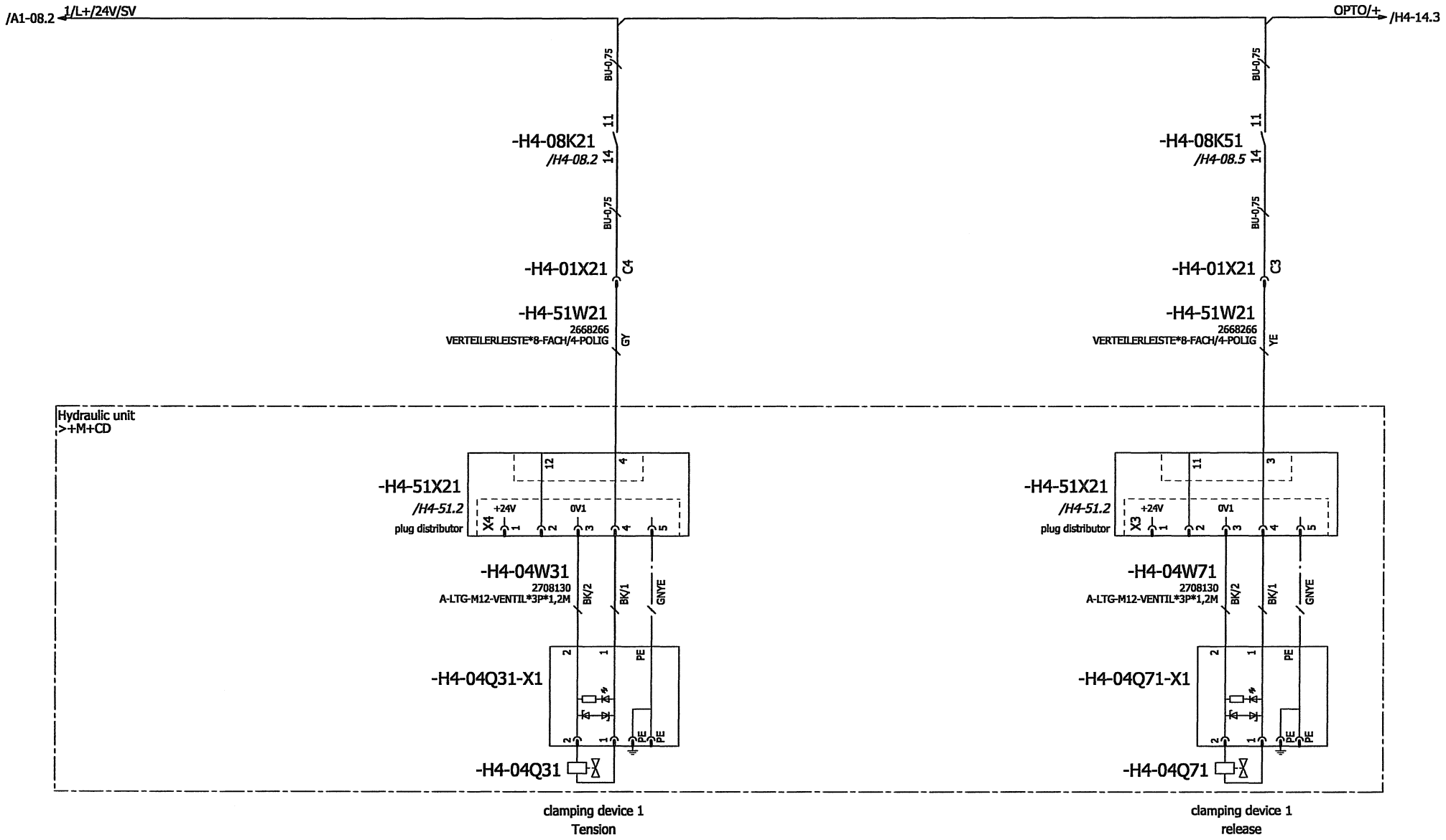
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		clamping device Pump	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet H4-01/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	133



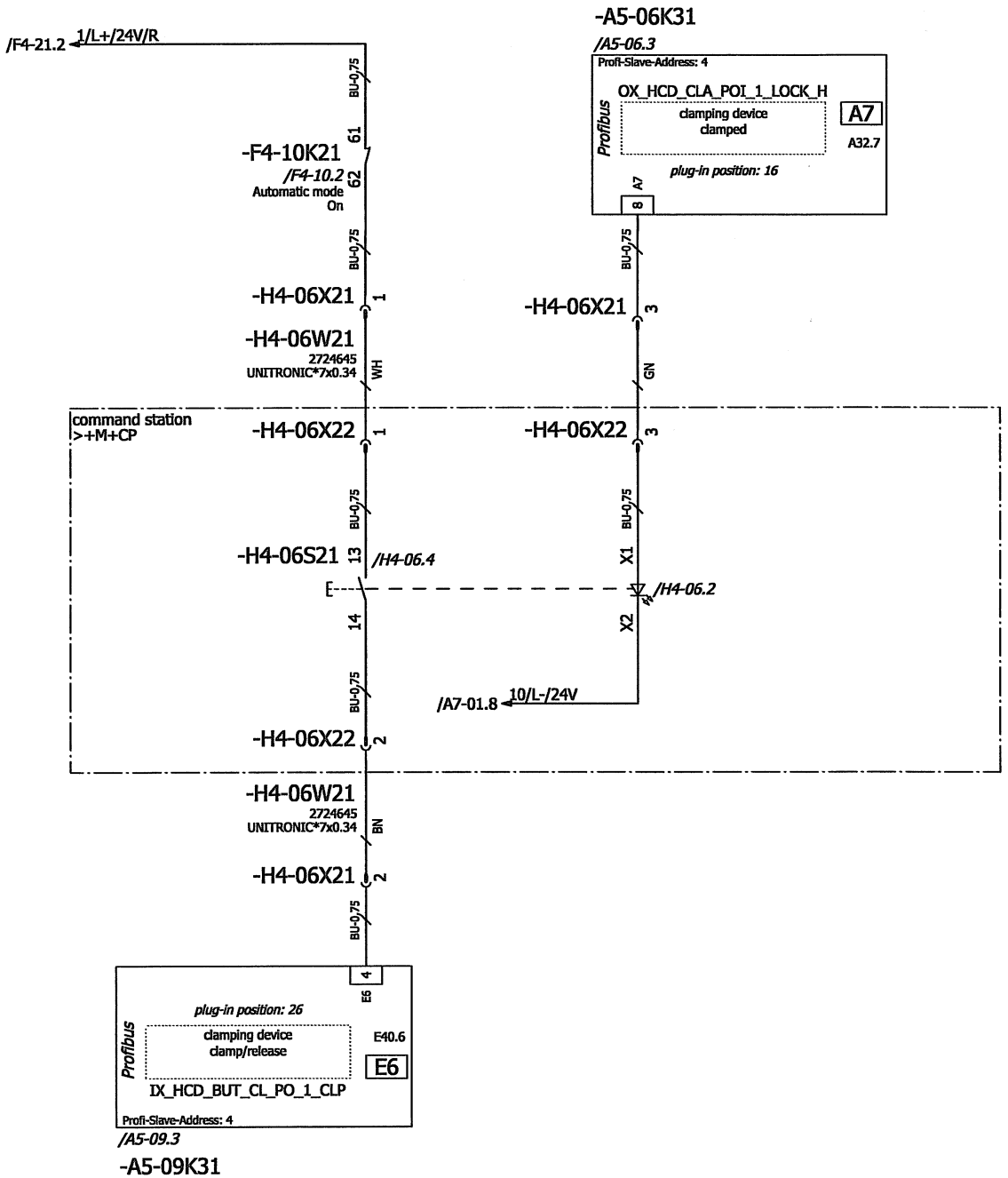
pressure monitoring
clamping device 1
clamped

pressure monitoring
clamping device 1
released

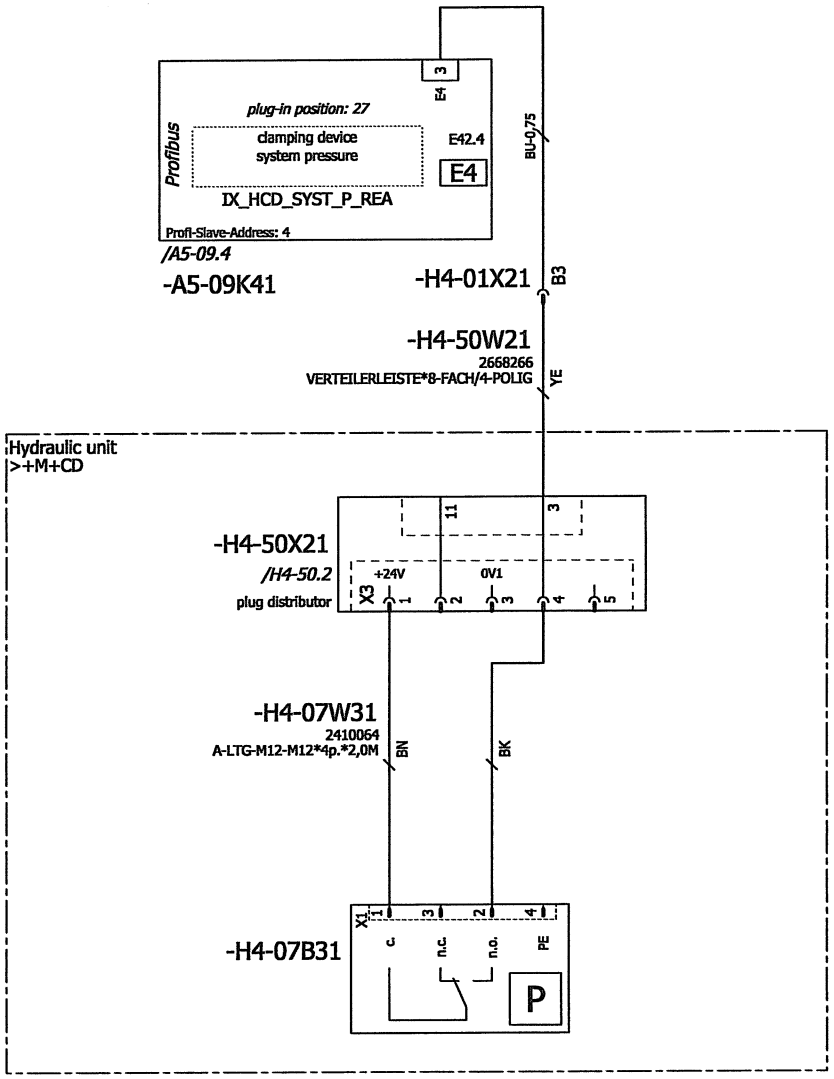
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		pressure monitoring clamped/released	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet H4-03/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	134



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		clamping device clamp/release	DMU 50	& EFS	+M+EC	⇨
			chec.					series	circuit diagram Nr.:	language	sheet H4-04/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	135

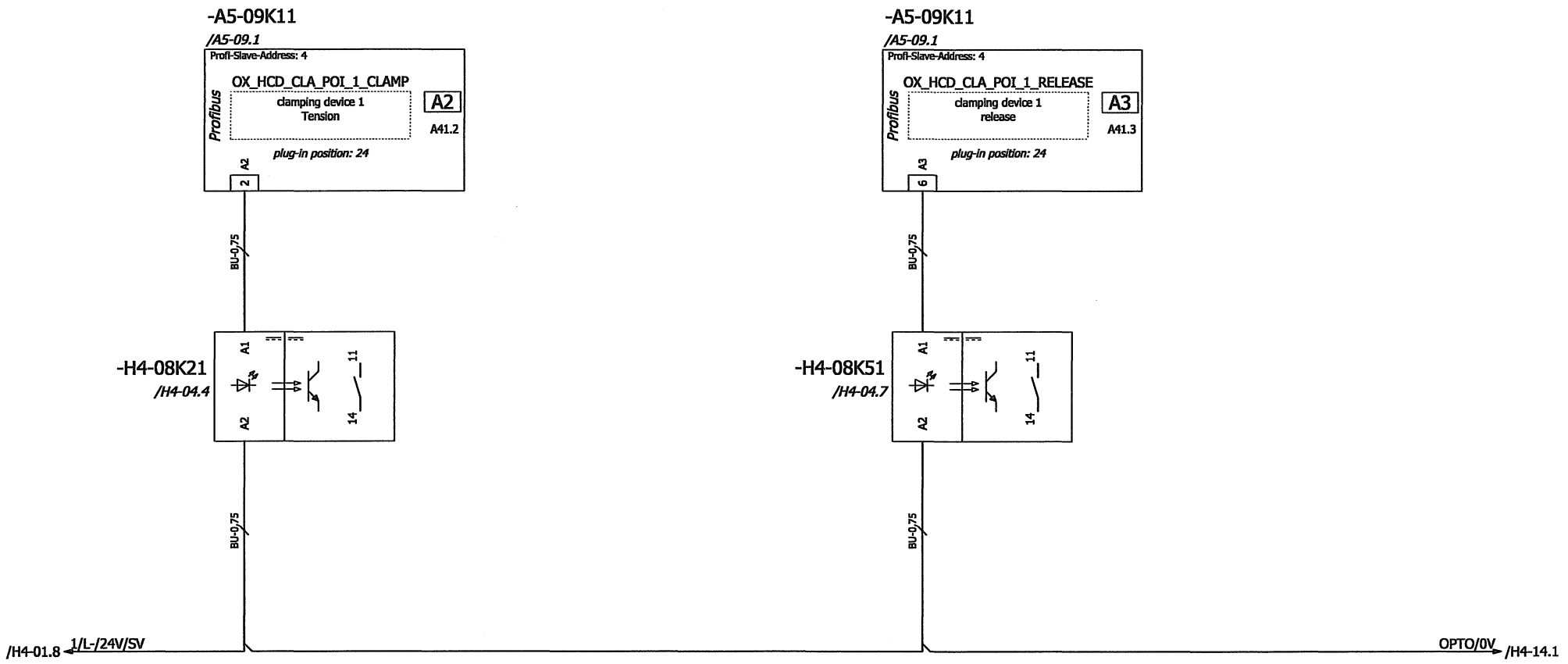


			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		clamping device clamp/release	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet H4-06/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	136

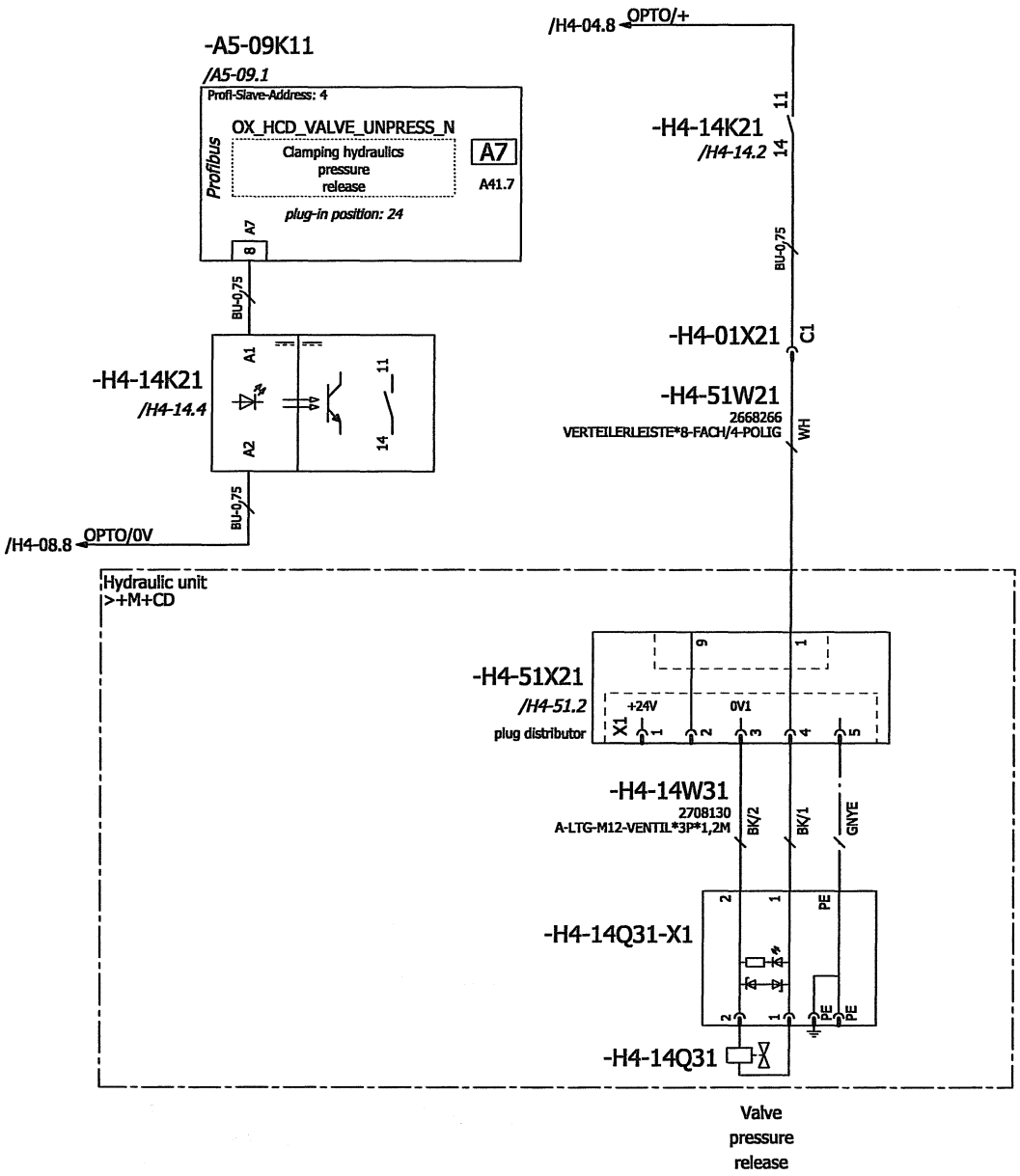


pressure monitoring
clamping device
system pressure

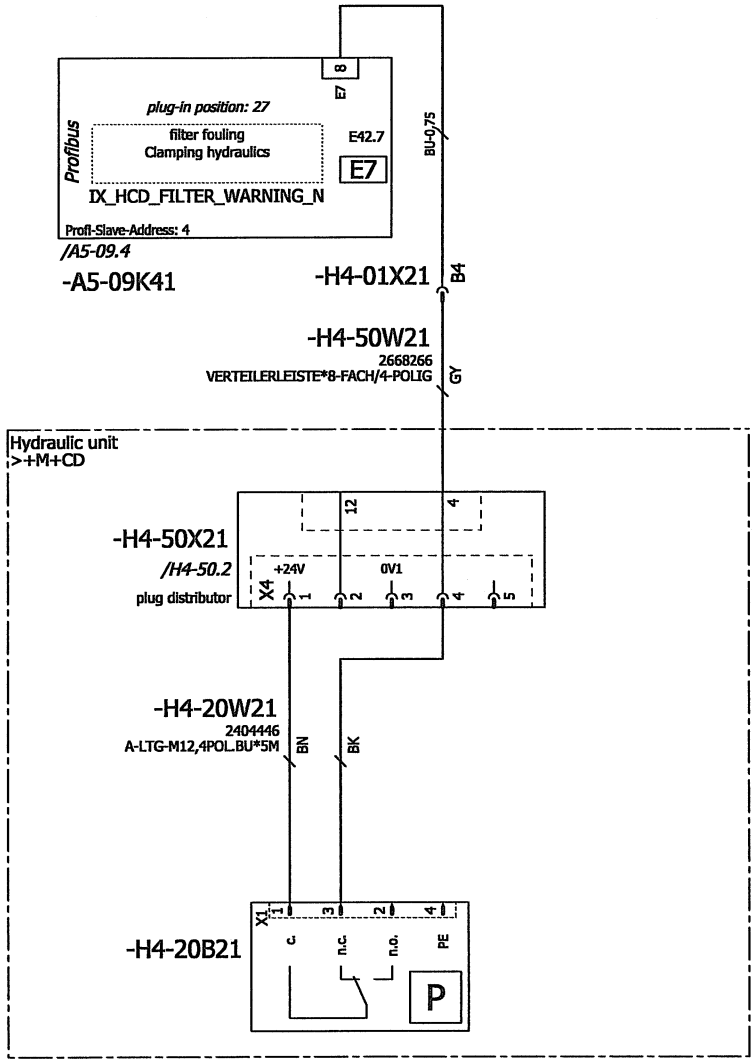
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object: DMU 50	DCC & EFS	Place +M+EC	⇦
			change	MEF	113022		clamping device system pressure	series 4526	circuit diagram Nr.: 2652185	language EN	⇨
			chec.								sheet H4-07/001
revision	Date	Name	Created by		rep. by	rep. of	source				137



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place		
			change	MEF	113022		clamping device clamp/release	DMU 50	& EFS	+M+EC		
			chec.					series	circuit diagram Nr.:	language	sheet H4-08/001	
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN		138

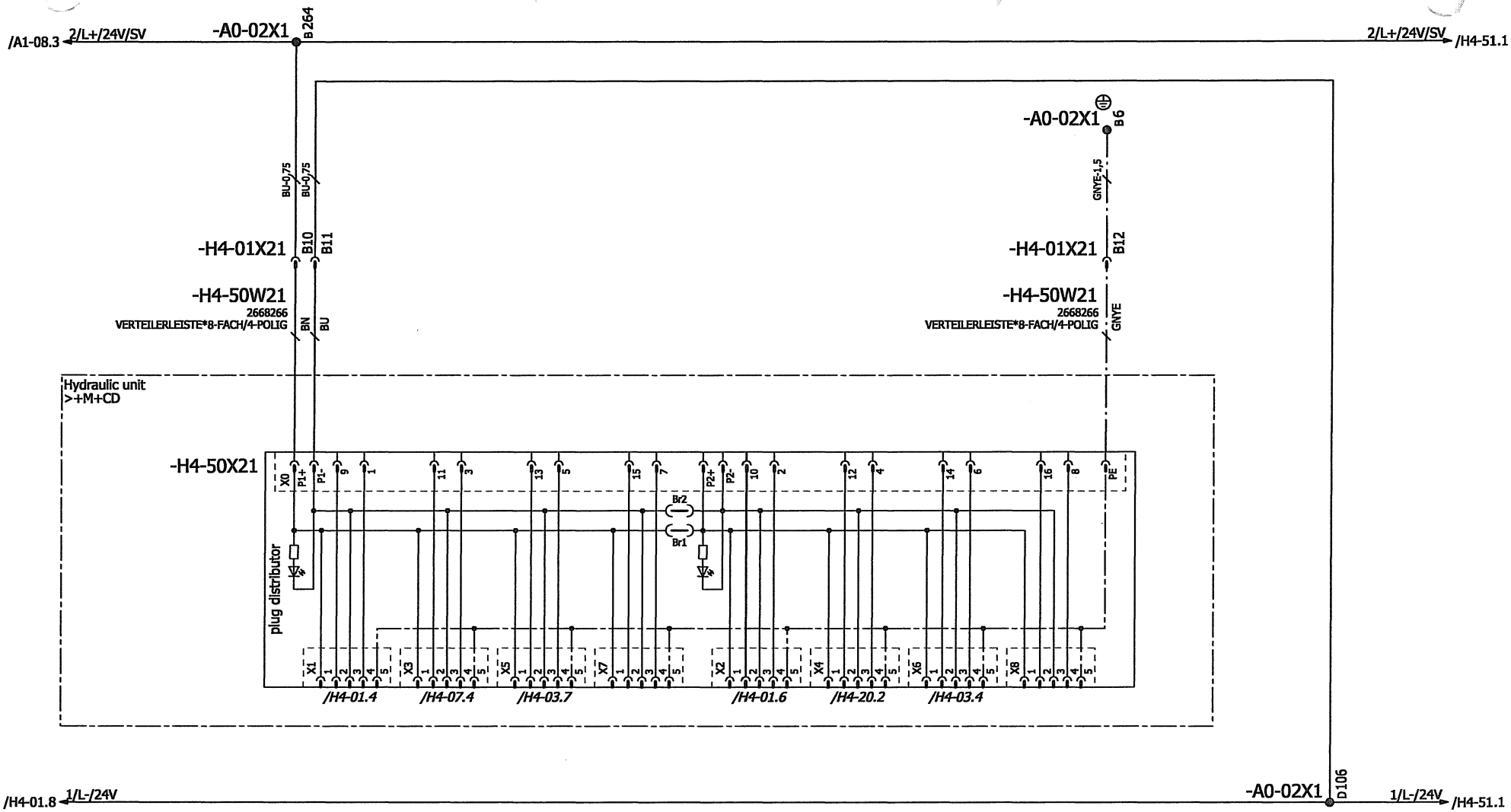


			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		clamping device release	DMU 50	& EFS	+M+EC	⇨
			chec.					series	circuit diagram Nr.:	language	sheet H4-14/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	139

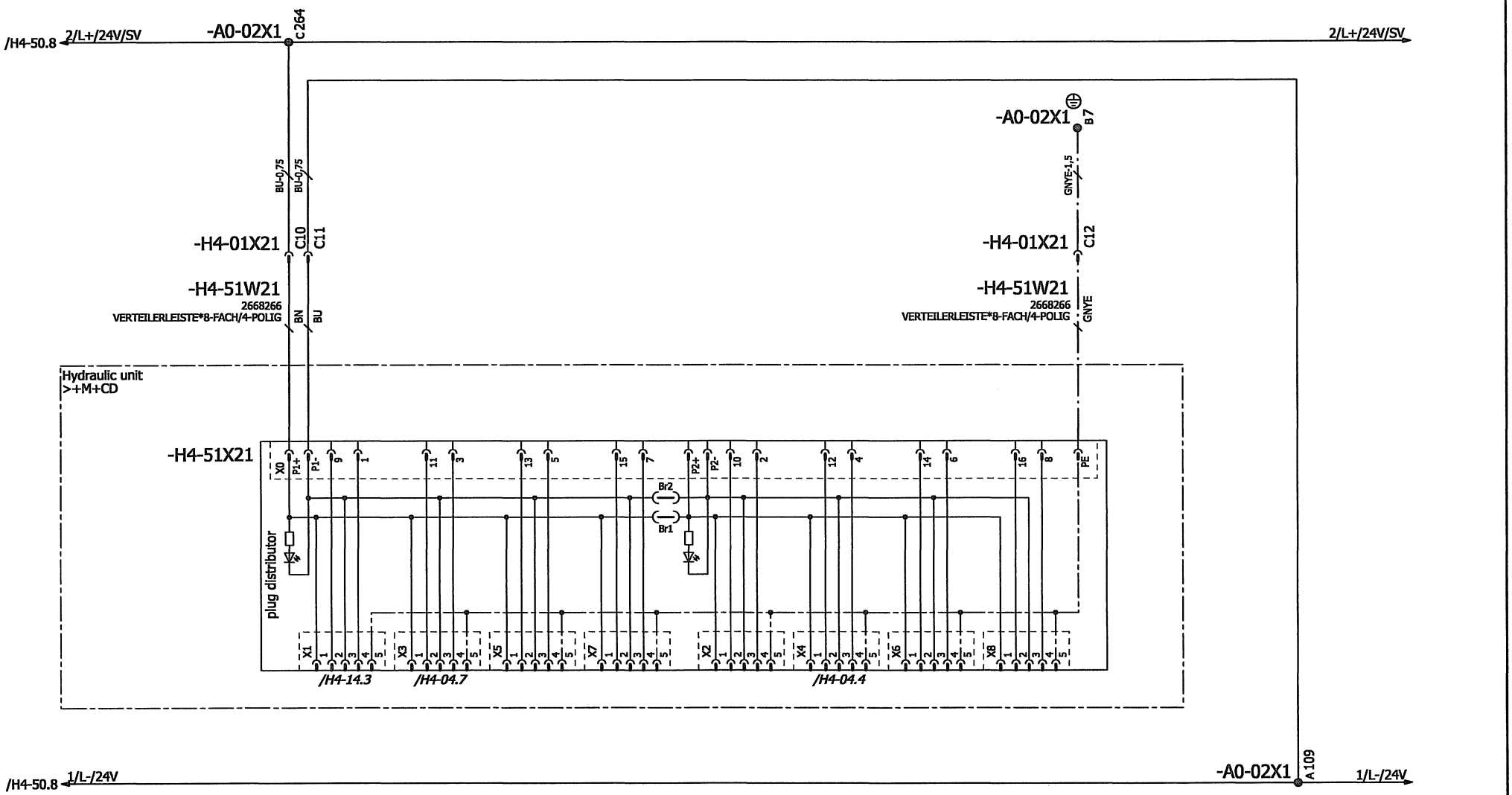


filter fouling
Clamping hydraulics

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		clamping device filter fouling	DMU 50	& EFS	+M+EC	
			chec.					series	circuit diagram Nr.:	language	sheet H4-20/001
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	140



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	⇦
			change	MEF	113022		clamping device	DMU 50	& EFS	+M+EC	⇨
			chec.				Distributor inputs	series	circuit diagram Nr.:	language	sheet H4-50/001
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	141



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Schematic diagram	object	DCC	Place	
			change	MEF	113022		clamping device	DMU 50	& EFS	+M+EC	
			chec.				Distributor outputs	series	circuit diagram Nr.:	language	sheet H4-51/001
revision		Name	Created by		rep. by	rep. of / source		4526	2652185	EN	142

No.	BMK	Place	sheet	Designation	Identification manufacturer	ident.no.	Type	Supplier
1	-A0-01F31	+M+EC	/A0-01.3	overvoltage limiter	ACE-Ableiterkombination 4-Leiter Netz TN-C	2329058	28 59 72 5	PHOENIX CONTACT
2	-A0-01Q21	+M+EC	/A0-01.2	Master switch	Hauptschalter 63A 440V	2327023	KG64B T104/D-A042E	KRAUS & NAIMER
3	-A0-01R21	+M+EC	/A0-01.2	Mains filter	Netzfilter 3 Phasen plus N 64A	2722297	FN 3280H-64-34	SCHAFFNER ELEKTRONIK
4	-A0-05F21	+M+EC	/A0-05.2	fuse holder	Sicherungshalter USCC 3-pol. ohne Anz.	2729460	USCC3	FERRAZ
5	-A0-05F21	+M+EC	/A0-05.2	fuse	Sicherung ATDR6	2428298	ATDR6	FERRAZ
6	-A0-05F51	+M+EC	/A0-05.5	fuse	Sicherung ATDR2	2722570	ATDR2	FERRAZ
7	-A0-05F51	+M+EC	/A0-05.5	fuse holder	Sicherungshalter USCC 2-pol. ohne Anz.	2729468	USCC2	FERRAZ
8	-A0-05F52	+M+EC	/A0-05.5	automatic cut-out	Leitungsschutzschalter 2A (B)	2566607	5SY6 102-6	SIEMENS
9	-A0-05T51	+M+EC	/A0-05.5	Transformer	Trenntrafo MET 500 VA	2410989	866139	MURR ELEKTRONIK
10	-A0-05X61	+M+EC	/A0-05.6	Receptacle	Frontplattensteckdose 3polig 230V D	7059079	4000-68000-0010000	MURR
11	-A0-09E21	+M	/A0-09.2	lamp	2476192	2476192	Planon Light 29 "	Hagn-Leone
12	-A0-09S21	+M+EC	/A0-09.2	Make/break unit	Knebelschalter schwarz 0-I, verrastend Metall	2382964	3SB35 00-2HA11-0PA0	SIEMENS
13	-A0-09S21	+M+EC	/A0-09.2	Make/break unit	Schaltelement	27082580	1S 3SB34 00-0B	SIEMENS
14	-A1-06T21	+M+EC	/A1-06.2	Power pack	Netzteil 400/24-20	2484378	PVSE 400/24-20	Block
15	-A1-07F21	+M+EC	/A1-07.2	Sicherungsautomat	Leitungsschutzschalter 6A (B)	2385017	5SY6 106-6	SIEMENS
16	-A1-07F31	+M+EC	/A1-07.3	Sicherungsautomat	Leitungsschutzschalter 6A (B)	2385017	5SY6 106-6	SIEMENS
17	-A1-07F41	+M+EC	/A1-07.4	automatic cut-out	Leitungsschutzschalter 230/400V,1Polig,B,10A	2529790	5SY6110-6	SIEMENS
18	-A1-07F51	+M+EC	/A1-07.5	Sicherungsautomat	Leitungsschutzschalter 6A (B)	2385017	5SY6 106-6	SIEMENS
19	-A1-07F61	+M+EC	/A1-07.6	automatic cut-out	Leitungsschutzschalter 230/400V, 1Polig, B,4A	2523681	5SY6104-6	SIEMENS
20	-A1-07F71	+M+EC	/A1-07.7	automatic cut-out	Leitungsschutzschalter 230/400V, 1Polig, B,4A	2523681	5SY6104-6	SIEMENS
21	-A1-07F81	+M+EC	/A1-07.8	automatic cut-out	Leitungsschutzschalter 2A (B)	2383673	5SY6 102-6	SIEMENS
22	-A1-08F21	+M+EC	/A1-08.2	Sicherungsautomat	Leitungsschutzschalter 6A (B)	2385017	5SY6 106-6	SIEMENS
23	-A1-10Q21	+M+EC	/A1-10.2	power circuit breaker	Leistungsschalter	27078560	3RV10 21-4AA10 11-16A	SIEMENS
24	-A1-10Q21	+M+EC	/A1-10.2	Auxiliary switch unit	Hilfschalter Leistungschalter	27077645	3RV19 01-1D	SIEMENS
25	-A2-20X21	+M+EC	/A2-20.2	plug distributor	MVE8-U-YH	2445784	27 122	MURR
26	-A2-22X21	+M+EC	/A2-22.2	plug distributor	MVP12K-ER8F DMG	2607124	277292	MURR
27	-A2-24X22	+M+TM	/A2-24.2	plug distributor	MVE8-U-YH	2445784	27 122	MURR
28	-A2-30X22	+M	/A2-30.2	plug distributor	Verteiler M12 4 VIE 5-POL	2359523	27952	MURR ELEKTRONIK
29	-A4-00K21	+M+EC	/A4-00.2	Control	CNC-Steuerung SINUMERIK 840D SL*NCU 710.2	2515071	6FC5371-0AA10-0AA1	SIEMENS
30	-A4-00K51	+M+EC	/A4-00.5	Control	Sinamics 840D SL*NX 10 *3Achsen	2323351	6SL3040-0NC00-0AA0	SIEMENS
31	-A4-01K21	+M+EC	/A4-01.2	Control	PCU50, 1,5GHz, 512MB Windows XP	2323372	6FC5210-0DF31-2AA0	SIEMENS
32	-A4-01K61	+M+EC	/A4-01.6	interface module	FL SWITCH SFN 5TX-DMG- Ind. Ethernet Switch	2520370	2891154	PHOENIX CONTACT
33	-A4-03P51	+M+CP	/A4-03.5	Screen	PANEL FRONT 19" 840D SL OP19-532C	2394540	6FC5303-0AF50-0BA0	SIEMENS
34	-A4-13C31	+M+EC	/A4-13.3	memory	Speicher FL*MEM*PLUG*DMG	2578057		PHOENIX CONTACT
35	-A4-13K31	+M+EC	/A4-13.3	interface module	FL NAT SMCS 8TX	2538817	2989378	PHOENIX CONTACT
36	-A5-03B51	+M+EC	/A5-03.5	output module	Fehlersichere Elektronikm. 4 F-DO DC24V/2 PROFsafe	2419186	6ES7 138-4FB02-0AB0	SIEMENS
37	-A5-03B51	+M+EC	/A5-03.5	input/output module	Terminalmodul für F-DI F-DO TM-E30C44-01 PROFsafe	2419218	6ES7 193-4CG30-0AA0	SIEMENS
38	-A5-03B61	+M+EC	/A5-03.6	input module	Fehlersichere Elektronikm. 4/8 F-DI DC24V PROFsafe	2419184	6ES7 138-4FA02-0AB0	SIEMENS
39	-A5-03B61	+M+EC	/A5-03.6	input/output module	Terminalmodul für F-DI F-DO TM-E30C44-01 PROFsafe	2419218	6ES7 193-4CG30-0AA0	SIEMENS
40	-A5-03K21	+M+EC	/A5-03.2	Profibus Head	Interfacemodul IM 151-1 High Feature	2419214	6ES7 151-1BA02-0AB0	SIEMENS
41	-A5-03T41	+M+EC	/A5-03.4	Supply module	Powermodul mit Diagnose	2279265	6ES7 138-4CA01-0AA0	SIEMENS
42	-A5-03T41	+M+EC	/A5-03.4	Terminal strip	Terminalmodul fuer Powermodul 2x3 Klemmen	2279267	6ES7 193-4CD30-0AA0	SIEMENS
43	-A5-03X31	+M+EC	/A5-03.3	plug	Busanschlussstecker ohne PG-Anschluss 35°Kabelabg.	6008259	6ES7 972-0BA41-0XA0	SIEMENS
44	-A5-03X32	+M+EC	/A5-03.3	plug	Busanschlussstecker mit PG-Anschluss (war-0BB12-)	2262762	6ES7 972-0BB50-0XA0	SIEMENS
45	-A5-04B11	+M+EC	/A5-04.1	input module	Fehlersichere Elektronikm. 4/8 F-DI DC24V PROFsafe	2419184	6ES7 138-4FA02-0AB0	SIEMENS
46	-A5-04B11	+M+EC	/A5-04.1	input/output module	Terminalmodul für F-DI F-DO TM-E30C44-01 PROFsafe	2419218	6ES7 193-4CG30-0AA0	SIEMENS
47	-A5-04K21	+M+EC	/A5-04.2	output module	Digitales Ausgangsmodul 8x24V/0,5A	2339077	6ES7 132-4BF00-0AA0	SIEMENS
48	-A5-04K21	+M+EC	/A5-04.2	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
49	-A5-04K31	+M+EC	/A5-04.3	input module	Digitales Eingangsmodul 8x24V	2339075	6ES7 131-4BF00-0AA0	SIEMENS
50	-A5-04K31	+M+EC	/A5-04.3	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
51	-A5-04K41	+M+EC	/A5-04.4	input module	Digitales Eingangsmodul 8x24V	2339075	6ES7 131-4BF00-0AA0	SIEMENS
52	-A5-04K41	+M+EC	/A5-04.4	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
53	-A5-05K11	+M+EC	/A5-05.1	input module	Digitales Eingangsmodul 8x24V	2339075	6ES7 131-4BF00-0AA0	SIEMENS
54	-A5-05K11	+M+EC	/A5-05.1	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
55	-A5-05K21	+M+EC	/A5-05.2	input module	Digitales Eingangsmodul 8x24V	2339075	6ES7 131-4BF00-0AA0	SIEMENS
56	-A5-05K21	+M+EC	/A5-05.2	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
57	-A5-05K31	+M+EC	/A5-05.3	input module	Digitales Eingangsmodul 8x24V	2339075	6ES7 131-4BF00-0AA0	SIEMENS
58	-A5-05K31	+M+EC	/A5-05.3	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
59	-A5-05K41	+M+EC	/A5-05.4	input module	Digitales Eingangsmodul 8x24V	2339075	6ES7 131-4BF00-0AA0	SIEMENS
60	-A5-05K41	+M+EC	/A5-05.4	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS

1	2	3	4	5	6	7	8

No.	BMK	Place	sheet	Designation	Identification manufacturer	ident.no.	Type	Supplier
61	-A5-05K51	+M+EC	/A5-05.5	input module	Digitales Eingangsmodul 8x24V	2339075	6ES7 131-4BF00-0AA0	SIEMENS
62	-A5-05K51	+M+EC	/A5-05.5	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
63	-A5-05K61	+M+EC	/A5-05.6	input module	Digitales Eingangsmodul 8x24V	2339075	6ES7 131-4BF00-0AA0	SIEMENS
64	-A5-05K61	+M+EC	/A5-05.6	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
65	-A5-06B41	+M+EC	/A5-06.4	Supply module	Fehlersicheres Powermodul PM-E F DC24V/2 PROFsafe	2419188	6ES7 138-4CF01-0AB0	SIEMENS
66	-A5-06B41	+M+EC	/A5-06.4	interface module	Terminalmodul PM-E F	2419219	6ES7 193-4CK30-0AA0	SIEMENS
67	-A5-06K11	+M+EC	/A5-06.1	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
68	-A5-06K21	+M+EC	/A5-06.2	output module	Digitales Ausgangsmodul 8x24V/0,5A	2339077	6ES7 132-4BF00-0AA0	SIEMENS
69	-A5-06K21	+M+EC	/A5-06.2	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
70	-A5-06K31	+M+EC	/A5-06.3	output module	Digitales Ausgangsmodul 8x24V/0,5A	2339077	6ES7 132-4BF00-0AA0	SIEMENS
71	-A5-06K31	+M+EC	/A5-06.3	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
72	-A5-06K51	+M+EC	/A5-06.6	output module	Digitales Ausgangsmodul 8x24V/0,5A	2339077	6ES7 132-4BF00-0AA0	SIEMENS
73	-A5-06K51	+M+EC	/A5-06.6	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
74	-A5-07K21	+M+EC	/A5-07.2	output module	Digitales Ausgangsmodul 8x24V/0,5A	2339077	6ES7 132-4BF00-0AA0	SIEMENS
75	-A5-07K21	+M+EC	/A5-07.2	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
76	-A5-07K31	+M+EC	/A5-07.3	output module	Digitales Ausgangsmodul 8x24V/0,5A	2339077	6ES7 132-4BF00-0AA0	SIEMENS
77	-A5-07K31	+M+EC	/A5-07.3	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
78	-A5-07K41	+M+EC	/A5-07.4	output module	Digitales Ausgangsmodul 8x24V/0,5A	2339077	6ES7 132-4BF00-0AA0	SIEMENS
79	-A5-07K41	+M+EC	/A5-07.4	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
80	-A5-07K51	+M+EC	/A5-07.5	output module	Digitales Ausgangsmodul 8x24V/0,5A	2339077	6ES7 132-4BF00-0AA0	SIEMENS
81	-A5-07K51	+M+EC	/A5-07.5	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
82	-A5-07T11	+M+EC	/A5-07.1	Supply module	Powermodul mit Diagnose	2279265	6ES7 138-4CA01-0AA0	SIEMENS
83	-A5-07T11	+M+EC	/A5-07.1	Terminal strip	Terminalmodul fuer Powermodul 2x3 Klemmen	2279267	6ES7 193-4CD30-0AA0	SIEMENS
84	-A5-09K11	+M+EC	/A5-09.1	output module	Digitales Ausgangsmodul 8x24V/0,5A	2339077	6ES7 132-4BF00-0AA0	SIEMENS
85	-A5-09K11	+M+EC	/A5-09.1	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
86	-A5-09K31	+M+EC	/A5-09.3	input module	Digitales Eingangsmodul 8x24V	2339075	6ES7 131-4BF00-0AA0	SIEMENS
87	-A5-09K31	+M+EC	/A5-09.3	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
88	-A5-09K41	+M+EC	/A5-09.4	input module	Digitales Eingangsmodul 8x24V	2339075	6ES7 131-4BF00-0AA0	SIEMENS
89	-A5-09K41	+M+EC	/A5-09.4	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
90	-A5-09K51	+M+EC	/A5-09.5	Terminating module	Abschlussmodul Modul - ET200S	2464846	6ES 193-4JA00-0AA0	SIEMENS
91	-A5-09T21	+M+EC	/A5-09.2	Terminal strip	Terminalmodul fuer Powermodul 2x3 Klemmen	2279267	6ES7 193-4CD30-0AA0	SIEMENS
92	-A7-01S21	+M+CP	/A7-01.2	Not-Aus Taster	Taster NOT-AUS	2395008	XB6 AS8349B	TELEMECANIQUE
93	-A7-01S22	+M+CP	/A7-01.2	selection switch	Schlüsselschalter 1*40	2598517	1.300.76.501	RAFI
94	-A7-01S22	+M+CP	/A7-01.2	Make/break unit	Schaltelement 2S	2271392	1.20122.022	RAFI
95	-A7-01S61	+M+CP	/A7-01.6	illuminated push button	Leuchtdrucktaster Metallring, klar	2363471	3SB35 01-0AA71-0PA0	SIEMENS
96	-A7-01S61	+M+CP	/A7-01.6	Make/break unit	Schaltelement	27082580	1S 3SB34 00-0B	SIEMENS
97	-A7-01S61	+M+CP	/A7-01.6	lamp socket	Lampenfassung mit LED	2443112	3SB34 00-1PE	SIEMENS
98	-A7-02K21	+M+EC	/A7-02.2	air break contactor	Luftschuetz	27078284	24V DC 3RH11 40-2BB40	SIEMENS
99	-A7-02K21	+M+EC	/A7-02.2	Auxiliary switch unit	Hilfsschaltblock	27078285	3RH19 11-2GA31	SIEMENS
100	-A7-02K21	+M+EC	/A7-02.2	varistor	Loeschglied	27077650	3RT19 16-1BB00	SIEMENS
101	-A7-02K31	+M+EC	/A7-02.3	air break contactor	Luftschuetz	27078284	24V DC 3RH11 40-2BB40	SIEMENS
102	-A7-02K31	+M+EC	/A7-02.3	Auxiliary switch unit	Hilfsschaltblock	27078285	3RH19 11-2GA31	SIEMENS
103	-A7-02K31	+M+EC	/A7-02.3	varistor	Loeschglied	27077650	3RT19 16-1BB00	SIEMENS
104	-A7-02K61	+M+EC	/A7-02.7	Relay	PLC-RPIT-24DC/21*6A	2643155	2900299	PHOENIX CONTACT
105	-A8-01S21	+M+CP	/A8-01.2	Make/break unit	Knebelschalter schwarz 0-I, tastend Metall	2383131	3SB35 00-2LA11-0PA0	SIEMENS
106	-A8-01S21	+M+CP	/A8-01.2	Make/break unit	Schaltelement	27082580	1S 3SB34 00-0B	SIEMENS
107	-A8-04S21	+M+CP	/A8-04.2	selection switch	elektronic mode switch PITm2pDMG	2508669	402200	PILZ
108	-A8-04S21	+M+CP	/A8-04.2	selection switch	PITm2pDMG Mode 3	2507282	402023	PILZ
109	-A8-04S21	+M+CP	/A8-04.2	plug	Steckersatz fuer PITm2pDMG	2508657	402300	PILZ
110	-A8-13K21	+M+EC	/A8-13.2	lamp	EINSPEISER*RGB*24VDC	2547966	03Y306005	PSE Elektronik
111	-A8-13P21	+M	/A8-13.2	lamp	EINSPEISER*RGB*24VDC	2547955	MX-E-RGB-G03	MAXLED
112	-A9-11P41	+M+EC	/A9-11.4	Working hour counter	Betriebsstundenzaehler 2x Stunden	2408955	nach Datenblatt 920/997	BAUSER
113	-B0-01M21	+M+FB	/B0-01.2	Motor	Motor mit Phoenixstecker 0,75KW-400V-50/60Hz-S0X	2368821	3287255	HYDAC
114	-B0-01Q21	+M+EC	/B0-01.2	power circuit breaker	Leistungsschalter	2429961	3RV1021-1EA10 2,8-4,0A	SIEMENS
115	-B0-01Q21	+M+EC	/B0-01.2	Auxiliary switch unit	Hilfschalter Leistungschalter	27077645	3RV19 01-1D	SIEMENS
116	-B0-01Q71	+M+EC	/B0-01.7	air break contactor	Luftschuetz	27079221	24V DC 3RT10 15-2KB42	SIEMENS
117	-B0-01R31	+M+EC	/B0-01.3	Resetting element	Entstoerbaustein fuer Motore 575V 4KW	2258875	236116	MURR ELEKTRONIK
118	-B0-02B21	+M+FB	/B0-02.2	Pressure switch	ELEKTRON. DRUCKSCH. EDS810-0250-2-006(120/105bar)	2374304	120/105*EDS810	HYDAC
119	-B1-01A21	+M+FB	/B1-01.2	geared pump unit	Zahnradpumpe-Aggr.	2715889	MKF*1kW 2-20036	VOGEL
120	-B1-01Q71	+M+EC	/B1-01.7	air break contactor	Luftschuetz	27079221	24V DC 3RT10 15-2KB42	SIEMENS

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Equipment list	object	DCC	Place	⇦ 1
			change	MEF	113022			DMU 50	& EPA		⇨ 3
			chec.					series	circuit diagram No.:	language	sheet 2/
			Created by		rep. by	rep. of	source	4526	2652185	EN	144

No.	BMK	Place	sheet	Designation	Identification manufacturer	ident.no.	Type	Supplier
121	-B2-01M21	+M+CC	/B2-01.2	Pump	Hebepumpe Eintauchpumpe 400V 50/60Hz 1,57/1,86A	2323467	PMS11C-200-A976+MIN	VOGEL
122	-B2-01Q21	+M+EC	/B2-01.2	power circuit breaker	Leistungsschalter	2429951	3RV1021-1BA10 1,4-2,0A	SIEMENS
123	-B2-01Q21	+M+EC	/B2-01.2	Auxiliary switch unit	Hilfschalter Leistungschalter	27077645	3RV19 01-1D	SIEMENS
124	-B2-01Q41	+M+EC	/B2-01.5	air break contactor	Luftschuetz	27079221	24V DC 3RT10 15-2KB42	SIEMENS
125	-B2-01R31	+M+EC	/B2-01.3	Resetting element	Entstoerbaustein fuer Motore 575V 4KW	2258875	236116	MURR ELEKTRONIK
126	-B2-20Q21	+M+CU+EC	/B2-20.2	Master switch	Hauptschalter	2456064	H233-41311-035M1	SÄLZER
127	-B2-21B21	+M+CU+EC	/B2-21.2	Sicherheits-Schaltgeraet	PNOZ sigma s3	2535257	751 103	PILZ
128	-B2-22B21	+M+CU+EC	/B2-22.2	Sicherheits-Schaltgeraet	PNOZ sigma s3	2535257	751 103	PILZ
129	-B2-23K11	+M+CU+EC	/B2-23.1	Profibus Head	Kopfbaugruppe IM 151	7039712	6ES7 151-1AA04-0AB0	SIEMENS
130	-B2-23K41	+M+CU+EC	/B2-23.4	output module	Digitales Ausgangsmodul 4x24V 0,5A	2279262	6ES7 132-4BD01-0AA0	SIEMENS
131	-B2-23K41	+M+CU+EC	/B2-23.4	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
132	-B2-23T31	+M+CU+EC	/B2-23.3	Supply module	Powermodul mit Diagnose	2279265	6ES7 138-4CA01-0AA0	SIEMENS
133	-B2-23T31	+M+CU+EC	/B2-23.3	Terminal strip	Terminalmodul fuer Powermodul 2x3 Klemmen	2279267	6ES7 193-4CD30-0AA0	SIEMENS
134	-B2-23X21	+M+CU+EC	/B2-23.2	plug	Busanschlussstecker ohne PG-Anschluss 35°Kabelabg.	6008259	6ES7 972-0BA41-0XA0	SIEMENS
135	-B2-24K21	+M+CU+EC	/B2-24.3	output module	Digitales Ausgangsmodul 4x24V 0,5A	2279262	6ES7 132-4BD01-0AA0	SIEMENS
136	-B2-24K21	+M+CU+EC	/B2-24.3	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
137	-B2-24K41	+M+CU+EC	/B2-24.4	output module	Digitales Ausgangsmodul 2x24V 2A	2279261	6ES7 132-4BB31-0AA0	SIEMENS
138	-B2-24K41	+M+CU+EC	/B2-24.4	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
139	-B2-24K61	+M+CU+EC	/B2-24.5	input module	Digitales Eingangsmodul 4x24V	2278840	6ES7 131-4BD01-0AA0	SIEMENS
140	-B2-24K61	+M+CU+EC	/B2-24.5	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
141	-B2-24T11	+M+CU+EC	/B2-24.2	Supply module	Powermodul mit Diagnose	2279265	6ES7 138-4CA01-0AA0	SIEMENS
142	-B2-24T11	+M+CU+EC	/B2-24.2	Terminal strip	Terminalmodul fuer Powermodul 2x3 Klemmen	2279267	6ES7 193-4CD30-0AA0	SIEMENS
143	-B2-24T51	+M+CU+EC	/B2-24.5	Supply module	Powermodul mit Diagnose	2279265	6ES7 138-4CA01-0AA0	SIEMENS
144	-B2-24T51	+M+CU+EC	/B2-24.5	Terminal strip	Terminalmodul fuer Powermodul 2x3 Klemmen	2279267	6ES7 193-4CD30-0AA0	SIEMENS
145	-B2-25K21	+M+CU+EC	/B2-25.3	input module	Digitales Eingangsmodul 4x24V	2278840	6ES7 131-4BD01-0AA0	SIEMENS
146	-B2-25K21	+M+CU+EC	/B2-25.3	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
147	-B2-25K31	+M+CU+EC	/B2-25.4	input module	Digitales Eingangsmodul 4x24V	2278840	6ES7 131-4BD01-0AA0	SIEMENS
148	-B2-25K31	+M+CU+EC	/B2-25.4	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
149	-B2-25K51	+M+CU+EC	/B2-25.5	input module	Digitales Eingangsmodul 4x24V	2278840	6ES7 131-4BD01-0AA0	SIEMENS
150	-B2-25K51	+M+CU+EC	/B2-25.5	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
151	-B2-25K61	+M+CU+EC	/B2-25.6	input module	Digitales Eingangsmodul 4x24V	2278840	6ES7 131-4BD01-0AA0	SIEMENS
152	-B2-25K61	+M+CU+EC	/B2-25.6	terminal holder	Terminalmodul fuer Elektronikmodule 2x4 Klemmen	2279266	6ES7 193-4CB30-0AA0	SIEMENS
153	-B2-25K71	+M+CU+EC	/B2-25.7	Terminating module	Abschlussmodul Modul - ET200S	2464846	6ES 193-4JA00-0AA0	SIEMENS
154	-B2-26Q21	+M+CU+EC	/B2-26.2	air break contactor	SCHUETZ	2458181	3RT1025-3KB40	SIEMENS
155	-B2-26Q21	+M+CU+EC	/B2-26.2	Auxiliary switch unit	AUFSCHN.HILFSSCHALTERBLOCK S0-S12 22E	6010718	3RH1921-2HA22	SIEMENS
156	-B2-26Q31	+M+CU+EC	/B2-26.3	air break contactor	Luftschuetz	2409973	24V DC 3RT10 17-2KB42	SIEMENS
157	-B2-31M61	+M+CU	/B2-31.6	Pump	Pumpe	7059318	CRK 2-260/2	GRUNDFOS
158	-B2-31Q21	+M+CU+EC	/B2-31.2	air break contactor	Luftschuetz	27079221	24V DC 3RT10 15-2KB42	SIEMENS
159	-B2-31Q61	+M+CU+EC	/B2-31.6	power circuit breaker	Leistungsschalter	2429949	3RV1021-0KA10 0,9-1,25A	SIEMENS
160	-B2-31Q61	+M+CU+EC	/B2-31.6	Auxiliary switch unit	Hilfschalter Leistungschalter	27077645	3RV19 01-1D	SIEMENS
161	-B2-31R61	+M+CU+EC	/B2-31.6	Resetting block	Löschblock 400V	27069631	HRC3/047-400 23002	MURR
162	-B2-33M61	+M+CU	/B2-33.6	Pump	Pumpe MTS 20-40 R 38 DQ	2496240	A-95009785-P9-0736	GRUNDFOS
163	-B2-33Q21	+M+CU+EC	/B2-33.2	air break contactor	Luftschuetz	2409973	24V DC 3RT10 17-2KB42	SIEMENS
164	-B2-33Q61	+M+CU+EC	/B2-33.6	power circuit breaker	Leistungsschalter	2250139	3RV1021-1GA10 4,5-6,3A	SIEMENS
165	-B2-33Q61	+M+CU+EC	/B2-33.6	Auxiliary switch unit	Hilfschalter Leistungschalter	27077645	3RV19 01-1D	SIEMENS
166	-B2-33R61	+M+CU+EC	/B2-33.7	Resetting block	Löschblock 400V	27069631	HRC3/047-400 23002	MURR
167	-B2-48B21	+M+CU	/B2-48.2	Proximity switch	Desina; 2-Draht; M12X1; PNP; Sn=4mm	2311523	BES M12 MI-PSC40B-S04G-M01	BALLUFF
168	-B2-48B41	+M+CU	/B2-48.4	Proximity switch	Desina; 2-Draht; M12X1; PNP; Sn=4mm	2311523	BES M12 MI-PSC40B-S04G-M01	BALLUFF
169	-B2-48B61	+M+CU	/B2-48.6	Proximity switch	Desina; 2-Draht; M12X1; PNP; Sn=4mm	2311523	BES M12 MI-PSC40B-S04G-M01	BALLUFF
170	-B3-10Q21	+M+CU+EC	/B3-10.2	air break contactor	Luftschuetz	27079221	24V DC 3RT10 15-2KB42	SIEMENS
171	-B3-10Q61	+M+CU+EC	/B3-10.6	power circuit breaker	Leistungsschalter	2714231	3RV10 21-0GA10 0,45-0,63A	SIEMENS
172	-B3-10Q61	+M+CU+EC	/B3-10.6	Auxiliary switch unit	Hilfschalter Leistungschalter	27077645	3RV19 01-1D	SIEMENS
173	-B3-10R61	+M+CU+EC	/B3-10.6	Resetting block	Löschblock 400V	27069631	HRC3/047-400 23002	MURR
174	-B3-10S21	+M+CU+EC	/B3-10.2	push-button	Drucktaster schwarz	27082574	3SB30 00-0AA11	SIEMENS
175	-B3-10S21	+M+CU+EC	/B3-10.2	Make/break unit	Schaltelement	27082580	1S 3SB34 00-0B	SIEMENS
176	-B3-10S21	+M+CU+EC	/B3-10.2	Make/break unit	Schaltelement	27082579	10E 3SB34-00-0C	SIEMENS
177	-B3-11B31	+M+CU	/B3-11.3	Proximity switch	Näherungsschalter BESM18X1 Desina	2431364	BES M18MI-PSC50A-S04G-WM01	BALLUFF
178	-B3-12B21	+M+CU	/B3-12.2	illuminated push button	Lichttaster	2456122	WT 9-2P 430	SICK AG
179	-B3-12S41	+M+CU	/B3-12.4	position switch	Positionsschalter	2456138	3SE2 230-1W	SIEMENS
180	-B5-01E21	+M+EC	/B5-01.3	Heat exchanger	Wärmetauscher W50/8	2521022	XVA5001320Z0007016	STULZ SpA

Date	02.02.2011	project number	113022
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DECKEL MAHO Seebach GmbH

Equipment list

object	DMU 50	DCC	& EPA
series	4526	circuit diagram No.:	2652185
Place		⇦	2
		⇨	4
language	EN	sheet	3/ 145

1	2	3	4	5	6	7	8

No.	BMK	Place	sheet	Designation	Identification manufacturer	ident.no.	Type	Supplier
181	-B5-01S31	+M+EC	/B5-01.3	position switch	Grenztaster	2543087	3SE5232-0HK21	SIEMENS
182	-B5-10M21	+M+KAG	/B5-10.2	Pump	Pumpe MTA 3-180 A-W-A 50/60Hz	2368303	96430485	GRUNDFOS
183	-B5-10M61	+M+KAG	/B5-10.6	Fan	Luefter Axial 400V 50/60Hz	2368395	3112799	HYDAC
184	-B5-10Q21	+M+EC	/B5-10.2	power circuit breaker	Leistungsschalter	2429947	3RV1021-0HA10 0,55-0,8A	SIEMENS
185	-B5-10Q21	+M+EC	/B5-10.2	Auxiliary switch unit	Hilfschalter Leistungschalter	27077645	3RV19 01-1D	SIEMENS
186	-B5-10Q61	+M+EC	/B5-10.6	power circuit breaker	Leistungsschalter	2429946	3RV1021-0FA10 0,35-0,5A	SIEMENS
187	-B5-10Q61	+M+EC	/B5-10.6	Auxiliary switch unit	Hilfschalter Leistungschalter	27077645	3RV19 01-1D	SIEMENS
188	-B5-10R21	+M+EC	/B5-10.3	Resetting element	Entstoerbaustein fuer Motore 575V 4KW	2258875	236116	MURR ELEKTRONIK
189	-B5-10R61	+M+EC	/B5-10.7	Resetting element	Entstoerbaustein fuer Motore 575V 4KW	2258875	236116	MURR ELEKTRONIK
190	-B5-11Q21	+M+EC	/B5-11.2	air break contactor	Luftschuetz	27079221	24V DC 3RT10 15-2KB42	SIEMENS
191	-B5-11Q31	+M+EC	/B5-11.3	air break contactor	Luftschuetz	27079221	24V DC 3RT10 15-2KB42	SIEMENS
192	-B6-04M51	+M+CC	/B6-04.5	Motor	Getriebemotor 400V 50Hz	2347345	BS06-36-A3-K13	DANFOSS
193	-B6-04Q51	+M+CC	/B6-04.5	power circuit breaker	Leistungsschalter	2429949	3RV1021-0KA10 0,9-1,25A	SIEMENS
194	-B6-04Q51	+M+CC	/B6-04.5	Auxiliary switch unit	Hilfschalter Leistungschalter	27077645	3RV19 01-1D	SIEMENS
195	-B6-04R31	+M+EC	/B6-04.3	Resetting element	Entstoerbaustein fuer Motore 575V 4KW	2258875	236116	MURR ELEKTRONIK
196	-B6-05Q21	+M+EC	/B6-05.2	air break contactor	Luftschuetz	27079221	24V DC 3RT10 15-2KB42	SIEMENS
197	-B6-05Q31	+M+EC	/B6-05.3	air break contactor	Luftschuetz	27079221	24V DC 3RT10 15-2KB42	SIEMENS
198	-B6-05S51	+M+CP	/B6-05.5	push-button	Knebeltaster 90/45/R/T	2341757	1.30073.750/0200	RAFI
199	-B6-05S51	+M+CP	/B6-05.5	Make/break unit	Schaltelement 2 S Universal	7033941	1.20123.025	RAFI
200	-B6-07B21	+M+CC	/B6-07.2	Proximity switch	Desina; 2-Draht; M12X1; PNP; Sn=4mm	2410061	BES M12EL-GSH40B-S04G-M01	BALLUFF
201	-B6-07B41	+M+CC	/B6-07.4	Proximity switch	Desina; 2-Draht; M12X1; PNP; Sn=4mm	2410061	BES M12EL-GSH40B-S04G-M01	BALLUFF
202	-B6-07B61	+M+CC	/B6-07.6	Proximity switch	Desina; 2-Draht; M12X1; PNP; Sn=4mm	2410061	BES M12EL-GSH40B-S04G-M01	BALLUFF
203	-B7-01B21	+M	/B7-01.2	Safety switch	Verriegelungsschalter STP3D-2131A24SM8C2260	2565263	105145	EUCHNER
204	-B7-04K51	+M+EC	/B7-04.5	air break contactor	Luftschuetz	27078284	24V DC 3RH11 40-2BB40	SIEMENS
205	-B7-04K51	+M+EC	/B7-04.5	Auxiliary switch unit	Hilfsschaltblock	27078285	3RH19 11-2GA31	SIEMENS
206	-B7-04K51	+M+EC	/B7-04.5	varistor	Loeschglied	27077650	3RT19 16-1BB00	SIEMENS
207	-B7-04K61	+M+EC	/B7-04.6	air break contactor	Luftschuetz	27078284	24V DC 3RH11 40-2BB40	SIEMENS
208	-B7-04K61	+M+EC	/B7-04.6	Auxiliary switch unit	Hilfsschaltblock	27078285	3RH19 11-2GA31	SIEMENS
209	-B7-04K61	+M+EC	/B7-04.6	varistor	Loeschglied	27077650	3RT19 16-1BB00	SIEMENS
210	-B7-04Q71	+M+EC	/B7-04.7	air break contactor	Motorschuetz CC	2264632	3RT1015-2BB42	SIEMENS
211	-B7-04Q71	+M+EC	/B7-04.7	Auxiliary switch unit	Hilfsschaltblock	27077647	3RH19 11-2FA31	SIEMENS
212	-B7-04Q71	+M+EC	/B7-04.7	varistor	Loeschglied	27077650	3RT19 16-1BB00	SIEMENS
213	-B7-04Q81	+M+EC	/B7-04.8	air break contactor	Motorschuetz CC	2264632	3RT1015-2BB42	SIEMENS
214	-B7-04Q81	+M+EC	/B7-04.8	Auxiliary switch unit	Hilfsschaltblock	27077647	3RH19 11-2FA31	SIEMENS
215	-B7-04Q81	+M+EC	/B7-04.8	varistor	Loeschglied	27077650	3RT19 16-1BB00	SIEMENS
216	-B8-01M41	+M	/B8-01.4	Motor	VISIPORT mit Schleuderring	2317524	37-0-99-9-3040	HEMA
217	-C0-01T11	+M+EC	/A4-05.1	Choke	Smart Line Module Drossel 16kW	2577742	6SL3100-0BE21-6AB0	SIEMENS
218	-C0-01T21	+M+EC	/A4-05.2	E/R-Module	Active Line Modul 16/21 kW	7067512	6SL3130-7TE21-6AA3	SIEMENS
219	-C1-01K21	+M+EC	/A4-05.2	power pack	Leistungsteil 30/40/56A	7067493	6SL3120-1TE23-0AA3	SIEMENS
220	-C1-02M21	+M	/A4-05.3	Main drive	DMS 14000 U/min SK40	2622687	DMS 100.46.4FGS	KESSLER
221	-C1-03B21	+M	/A4-05.3	shaft encoder	ANSCHLUSSSATZ F. SIMAG H2	2372141	000.625.524	KESSLER
222	-C1-03K21	+M+EC	/A4-05.3	Adapter	Sensor Module SMC20 Drive-CLiQ	7067772	6SL3055-0AA00-5BA1	SIEMENS
223	-C1-04Q21	+M+EC	/C1-04.2	air break contactor	Schütz zum Schalten von Motoren	2705850	3RT1034-1BB44	SIEMENS
224	-C1-04Q21	+M+EC	/C1-04.2	varistor	VDR 24V AC/DC VG-SOIN/24	27080197	VDR 24V AC/DC VG-SOIN/24	MURR ELEKTRONIK
225	-C1-04Q41	+M+EC	/C1-04.4	air break contactor	Schütz zum Schalten von Motoren	2705850	3RT1034-1BB44	SIEMENS
226	-C1-04Q41	+M+EC	/C1-04.4	varistor	VDR 24V AC/DC VG-SOIN/24	27080197	VDR 24V AC/DC VG-SOIN/24	MURR ELEKTRONIK
227	-C2-01S31	+M+CP	/C2-01.3	illuminated push button	Leuchtdrucktaster Metallring, klar	2363471	3SB35 01-0AA71-0PA0	SIEMENS
228	-C2-01S31	+M+CP	/C2-01.3	Make/break unit	Schaltelement	27082580	1S 3SB34 00-0B	SIEMENS
229	-C2-03B31	+M	/C2-03.3	Proximity switch	Induktiver Sensor M8X1	2724676	BES516-324-G-E5-C-S49	BALLUFF
230	-C2-03B51	+M	/C2-03.5	Proximity switch	Induktiver Sensor M8X1	2724676	BES516-324-G-E5-C-S49	BALLUFF
231	-C2-04Q31	+M+FB	/C2-04.3	Directional valve	WSM08130D-01M-C-N-24DG	2566623	3229161	HYDAC
232	-C2-04Q51	+M+FB	/C2-04.5	Directional valve	WSM08130C-01-C-N-24DG	2566635	3374097	HYDAC
233	-C2-05B31	+M+FB	/C2-05.3	Pressure switch	DRUCKSCHALTER G1/4, 0,5-16bar	6011878	0 821 100 023	BOSCH REXROTH
234	-C2-05Q21	+M+FB	/C2-05.2	Valve	3/2 Magnetventil TYP 579 8xl, 24V DC (NC)	6003868		Mannesmann Rexroth
235	-C2-05Q51	+M+FB	/C2-05.5	Valve	3/2 MAGNETVENTIL TYP 579 8x1, 24V DC (NC)	6001781	579 260 022 0	MANNESMANN REXROTH
236	-D1-01K21	+M+EC	/A4-05.4	power pack	Leistungsteil 2x 9/10/18A	7067509	6SL3120-2TE21-0AA3	SIEMENS
237	-D1-01M21	+M	/A4-05.4	Servo motor	DREHSTROM-SERVOMOTOR	2502518	1FK7060-5AH71-1DG0	SIEMENS
238	-D1-06B51	+M	/A4-00.8	measuring system	LC183 Längsmessystem 620	2366626	557649-12	HEIDENHAIN
239	-D1-06K21	+M	/A4-00.8	Adapter	Sensor Module SME25 Drive-CLiQ	2322229	6SL3055-0AA00-5HA0	SIEMENS
240	-D1-11K21	+M+EC	/A4-05.5	power pack	Leistungsteil 9/10/18A	7067490	6SL3120-1TE21-0AA3	SIEMENS

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Equipment list	object	DCC	Place	⇦ 3
			change	MEF	113022			DMU 50	& EPA		⇨ 5
			chec.					series	circuit diagram No.:	language	sheet 4/
			Created by		rep. by	rep. of	source	4526	2652185	EN	146

No.	BMK	Place	sheet	Designation	Identification manufacturer	ident.no.	Type	Supplier
241	-D1-11M21	+M	/A4-05.5	Servo motor	DREHSTROM-SERVOMOTOR	2502518	1FK7060-5AH71-1DG0	SIEMENS
242	-D1-16B51	+M	/A4-05.8	measuring system	LC183 Längsmessystem 520	2366628	557649-10	HEIDENHAIN
243	-D1-16K21	+M	/A4-05.8	Adapter	Sensor Module SME25 Drive-CLiQ	2322229	6SL3055-0AA00-5HA0	SIEMENS
244	-D1-21M21	+M	/A4-05.7	Servo motor	DREHSTROM-SERVOMOTOR	2502517	1FK7060-5AF71-1DH0	SIEMENS
245	-D1-26B51	+M	/A4-00.3	measuring system	LC183 Längsmessystem 470	2366634	557649-09	HEIDENHAIN
246	-D1-26K21	+M	/A4-00.3	Adapter	Sensor Module SME25 Drive-CLiQ	2322229	6SL3055-0AA00-5HA0	SIEMENS
247	-D2-01K21	+M+EC	/A4-06.1	power pack	Leistungsteil 2x 4/6/10A	7067507	6SL3120-2TE15-0AA3	SIEMENS
248	-D2-01M21	+M	/A4-06.2	Servo motor	Drehstrom Servomotor 1FK6	2601924	1FK7042-5AK71-1DH0	SIEMENS
249	-D2-06B51	+M	/A4-00.5	shaft encoder	Winkelgeber absolut RCN226, 5"	2358946	533110-02	HEIDENHAIN
250	-D2-06K21	+M	/A4-00.5	Adapter	Sensor Module SME25 Drive-CLiQ	2322229	6SL3055-0AA00-5HA0	SIEMENS
251	-D2-30B51	+M+FB	/D2-30.5	Pressure switch	Elektron. Drucksch. EDS810-0250-2-006(85/70bar)	2361662	EDS810-0250-2-006(85/70bar)	HYDAC
252	-D2-30Q31	+M+FB	/D2-30.3	Directional valve	WSM08130D-01M-C-N-24DG	2566623	3229161	HYDAC
253	-D3-01M21	+M	/A4-06.3	Servo motor	Drehstrom Servomotor 1FK7	2323534	1FK7063-5AH71-1DH0	SIEMENS
254	-D3-06B51	+M	/A4-00.6	shaft encoder	Winkelgeber absolut RCN226, 5"	2358946	533110-02	HEIDENHAIN
255	-D3-06K21	+M	/A4-00.6	Adapter	Sensor Module SME25 Drive-CLiQ	2322229	6SL3055-0AA00-5HA0	SIEMENS
256	-D3-21Q31	+M+FB	/D3-21.3	Directional valve	WSM08130C-01-C-N-24DG	2566635	3374097	HYDAC
257	-E5-01B21	+M	/E5-01.2	temperature sensor	Kabelführer 1xPT100 DIN TEC 751 Klasse A	2707326	0625 0032-11	B+B THERMOTECHNIK
258	-E5-01B41	+M	/E5-01.5	temperature sensor	Temperaturfühler PT 100 mit 1m Kab u. Stecker M12	2320406	PT100 1m Kabel	ELECTRONIC PRODUCT GM
259	-F4-05B61	+M	/F4-05.6	Proximity switch	Näherungsschalter 25X50X10	2432194	BES 516 133 M0-C-S-4-00,2	BALLUFF
260	-F4-06Q31	+M	/F4-06.3	Valve	3/2 Magnetventil TYP 579 8xl, 24V DC (NC)	6003868		Mannesmann Rexroth
261	-F4-06Q51	+M	/F4-06.5	Valve	3/2 Magnetventil TYP 579 8xl, 24V DC (NC)	6003868		Mannesmann Rexroth
262	-F4-07B21	+M	/F4-07.2	security switch	Sicherheitsschalter PSEN	2469547	540050	PILZ
263	-F4-07B21	+M	/F4-07.2	security switch	Betätiger PSEN cs1.1	2469549	540080	PILZ
264	-F4-07B22	+M+EC	/F4-07.2	security switch	Sicherheitsschaltgerät	2720700	PNOZ X2.8P 24V DC 777 301	PILZ
265	-F4-07K61	+M+EC	/F4-07.6	air break contactor	Luftschuetz	27078284	24V DC 3RH11 40-2BB40	SIEMENS
266	-F4-07K61	+M+EC	/F4-07.6	Auxiliary switch unit	Hilfsschaltblock	27078285	3RH19 11-2GA31	SIEMENS
267	-F4-07K61	+M+EC	/F4-07.6	varistor	Loeschglied	27077650	3RT19 16-1BB00	SIEMENS
268	-F4-07K71	+M+EC	/F4-07.7	air break contactor	Luftschuetz	27078284	24V DC 3RH11 40-2BB40	SIEMENS
269	-F4-07K71	+M+EC	/F4-07.7	Auxiliary switch unit	Hilfsschaltblock	27078285	3RH19 11-2GA31	SIEMENS
270	-F4-07K71	+M+EC	/F4-07.7	varistor	Loeschglied	27077650	3RT19 16-1BB00	SIEMENS
271	-F4-10K21	+M+EC	/F4-10.2	air break contactor	Luftschuetz	27078284	24V DC 3RH11 40-2BB40	SIEMENS
272	-F4-10K21	+M+EC	/F4-10.2	Auxiliary switch unit	Hilfsschaltblock	27078285	3RH19 11-2GA31	SIEMENS
273	-F4-10K21	+M+EC	/F4-10.2	varistor	Loeschglied	27077650	3RT19 16-1BB00	SIEMENS
274	-F4-10S21	+M+CP	/F4-10.2	selection switch	Schlüsselschalter 1*90	7033947	1.300.76.151	RAFI
275	-F4-10S21	+M+CP	/F4-10.2	Make/break unit	Schaltelement 1S+1Ö Universal	2347683	1.20123.021	RAFI
276	-F4-21K21	+M+EC	/F4-21.2	Coupler	DP/DP-Koppler	6019963	6ES7 158-0AD01-0XA0	SIEMENS
277	-F4-21X31	+M+EC	/F4-21.3	plug	Busanschlusssstecker ohne PG-Anschluss	2279860	6ES7 972-0BA50-0XA0	SIEMENS
278	-F4-21X41	+M+EC	/F4-21.4	plug	Busanschlusssstecker ohne PG-Anschluss	2279860	6ES7 972-0BA50-0XA0	SIEMENS
279	-F8-01K21	+M+EC	/F8-01.2	Relay	ELR W3-24DC/500AC-21	2629018	2297031	PHOENIX CONTACT
280	-F8-01Q71	+M+EC	/F8-01.7	control device	Halbleiterrelais	6022106	3RF2320-1BA04	SIEMENS
281	-F8-01Q81	+M+EC	/F8-01.8	control device	Halbleiterrelais	6022106	3RF2320-1BA04	SIEMENS
282	-F8-07Q21	+M+FB	/F8-07.2	Directional valve	3/2 Wegeventil	27082846	0 821 300 934	BOSCH REXROTH
283	-F8-07Q21	+M+FB	/F8-07.2	magnet coil	Magnetspule	27082845	1824 210 223	BOSCH REXROTH
284	-F8-08B51	+M+TM	/F8-08.5	sensing element	INDUKTIVER SENSOR PNP	2570485	BESM12ME-PSC40B-S04G-003	BALLUFF
285	-F8-08B71	+M+TM	/F8-08.6	Proximity switch	Näherungsschalter BES	27072549	BES 516-113-S4-C	BALLUFF
286	-F8-08Q21	+M+TM	/F8-08.2	Directional valve	3/2 Wegeventil	27082846	0 821 300 934	BOSCH REXROTH
287	-F8-08Q21	+M+TM	/F8-08.2	magnet coil	Magnetspule	27082845	1824 210 223	BOSCH REXROTH
288	-F8-11K21	+M+EC	/F8-11.2	Relay	ELR W3-24DC/500AC-21	2629018	2297031	PHOENIX CONTACT
289	-F8-12Q41	+M+EC	/F8-12.4	air break contactor	Motorschuetz SC	2256839	3RT1015-1BB41	SIEMENS
290	-F8-12Q51	+M+EC	/F8-12.5	air break contactor	Motorschuetz SC	2256839	3RT1015-1BB41	SIEMENS
291	-F8-18S21	+M+TM	/F8-18.2	push-button	Drucktaster schwarz	27082574	3SB30 00-0AA11	SIEMENS
292	-F8-18S21	+M+TM	/F8-18.2	Make/break unit	Schaltelement	27082580	1S 3SB34 00-0B	SIEMENS
293	-F8-18S31	+M+TM	/F8-18.3	push-button	Drucktaster schwarz	27082574	3SB30 00-0AA11	SIEMENS
294	-F8-18S31	+M+TM	/F8-18.3	Make/break unit	Schaltelement	27082580	1S 3SB34 00-0B	SIEMENS
295	-F8-18S41	+M+TM	/F8-18.5	push-button	Drucktaster schwarz	27082574	3SB30 00-0AA11	SIEMENS
296	-F8-18S41	+M+TM	/F8-18.5	Make/break unit	Schaltelement	27082580	1S 3SB34 00-0B	SIEMENS
297	-F8-19B21	+M+EC	/F8-19.2	Sicherheits-Schaltgeraet	PNOZ sigma s5	2533528	751 105	PILZ
298	-F8-19B41	+M+TM	/F8-19.7	Safety switch	Verriegelungsschalter	2433887	STP3D-2131A024MC 1743	EUCHNER
299	-G7-01X21	+M+EC	/G7-05.3	Module	VARIOFACE-Modul UM 45-D 15SUB/B/ZFKDS	2364417	22 93 67 9	PHOENIX CONTACT
300	-G7-03B21	+M	/G7-03.2			2283830		

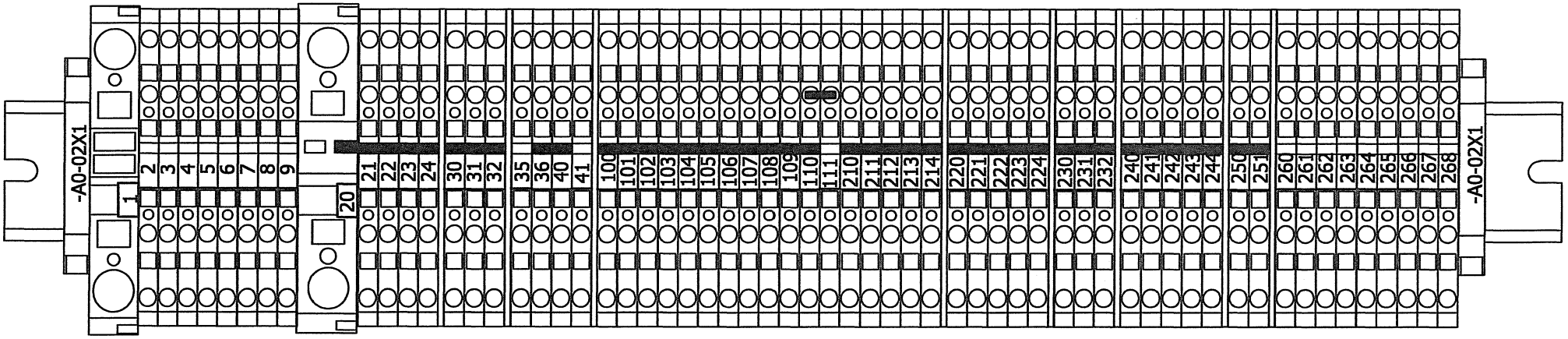
Date	02.02.2011	project number	113022
change	MEF	DECKEL MAHO Seebach GmbH	
chec.			
Created by		rep. by / rep. of / source	

Equipment list

object: DMU 50	DCC: & EPA	Place	⇦ 4 / ⇨ 6
series: 4526	circuit diagram No.: 2652185	language: EN	sheet: 5/147

No.	BMK	Place	sheet	Designation	Identification manufacturer	ident.no.	Type	Supplier
301	-G7-03Q71	+M+FB	/G7-03.7	Valve	3/2 MAGENETVENTIL NW4, 24V DC (NC)	6001697	579 160 022 0	MANNESMANN REXROTH
302	-G7-03X21	+M+EC	/G7-03.2	Module	VARIOFACE-Modul UM 45-D 15SUB/B/ZFKDS	2364417	22 93 67 9	PHOENIX CONTACT
303	-G7-05B21	+M	/G7-05.3	transmitt./receiver unit	Sende-Empfangseinheit OMI-2C-F	2485021	A-5314-0005	RENISHAW
304	-G7-05B71	+M	/G7-05.8	measuring sensor	Messtaster PP60	2583026	PP60*DMG	RENISHAW
305	-G9-01S11	+M+CP	/G9-01.1	remote control unit	Mini-Bedienhandgerät	2569489	6FX2007-1AD03	SIEMENS
306	-H4-01M21	+M+CD	/H4-01.2	Hydraulic unit	HKF489*3KW*6,6A	2600088	6960 8266-00	HAWE
307	-H4-01Q21	+M+EC	/H4-01.2	power circuit breaker	Leistungsschalter	2429963	3RV1021-1JA10 7,0-10,0A	SIEMENS
308	-H4-01Q21	+M+EC	/H4-01.2	Auxiliary switch unit	Hilfschalter Leistungschalter	27077645	3RV19 01-1D	SIEMENS
309	-H4-01Q71	+M+EC	/H4-01.7	air break contactor	Luftschuetz	2409973	24V DC 3RT10 17-2KB42	SIEMENS
310	-H4-01R31	+M+EC	/H4-01.3	Resetting element	Motorentstoerglied RC 3S	27078180	236082	MURR ELEKTRONIK
311	-H4-03B31	+M+CD	/H4-03.3	Pressure switch	Druckschalter	27083198	DS 302-240	MEWESTA
312	-H4-03B71	+M+CD	/H4-03.7	Pressure switch	Druckschalter	27083198	DS 302-240	MEWESTA
313	-H4-04Q31	+M+CD	/H4-04.4	Valve	4/3 WEGE-SITZVENTIL	2720767	83 202 00 (24DC)	MEWESTA
314	-H4-04Q71	+M+CD	/H4-04.7	Valve	4/3 WEGE-SITZVENTIL	2720767	83 202 00 (24DC)	MEWESTA
315	-H4-06S21	+M+CP	/H4-06.2	illuminated push button	Leuchttaster gruen	2316068	1.30070.001/1505	RAFI
316	-H4-06S21	+M+CP	/H4-06.2	Make/break unit	Schaltelement 1S 1OE mit Lampe	2271390	1.20122.001	RAFI
317	-H4-06S21	+M+CP	/H4-06.2	light emitting diode	W2x4,6d Single LED weiß	7022257	1.90690.365	RAFI
318	-H4-07B31	+M+CD	/H4-07.3	Pressure switch	Druckschalter	27077661	DS 112-240	MEWESTA
319	-H4-08K21	+M+EC	/H4-08.2	optical coupler	PLC-OPIT-24DC/24DC/2	2643154	2900364	PHOENIX CONTACT
320	-H4-08K51	+M+EC	/H4-08.5	optical coupler	PLC-OPIT-24DC/24DC/2	2643154	2900364	PHOENIX CONTACT
321	-H4-14K21	+M+EC	/H4-14.2	optical coupler	Optokoppler MOZ*2A	2512268	8607370000	WEIDMUELLER
322	-H4-14Q31	+M+CD	/H4-14.4	Valve	WEGESITZVENTIL EM21S	2461758	7749 0057-00	HAWE
323	-H4-20B21	+M+CD	/H4-20.2	indication	ELEKTRISCHE VERSCHMUTZUNGSANZEIGE -V	2600377	6905 199	HAWE
324	-H4-50X21	+M+CD	/H4-50.2	plug distributor	8-fach*M12*4pol*5m	2564145	8000-88410-3620500	MURR
325	-H4-51X21	+M+CD	/H4-51.2	plug distributor	8-fach*M12*4pol*5m	2564145	8000-88410-3620500	MURR

Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Equipment list	object	DCC	Place	⇦ 5
change	MEF	113022			DMU 50	& EPA		⇨
chec.					series	circuit diagram No.:	language	sheet 6/
Created by		rep. by	rep. of	source	4526	2652185	EN	148



Massstab: 1:5

Einheit: mm

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	schematic diagram	object	DCC	Place	⇦
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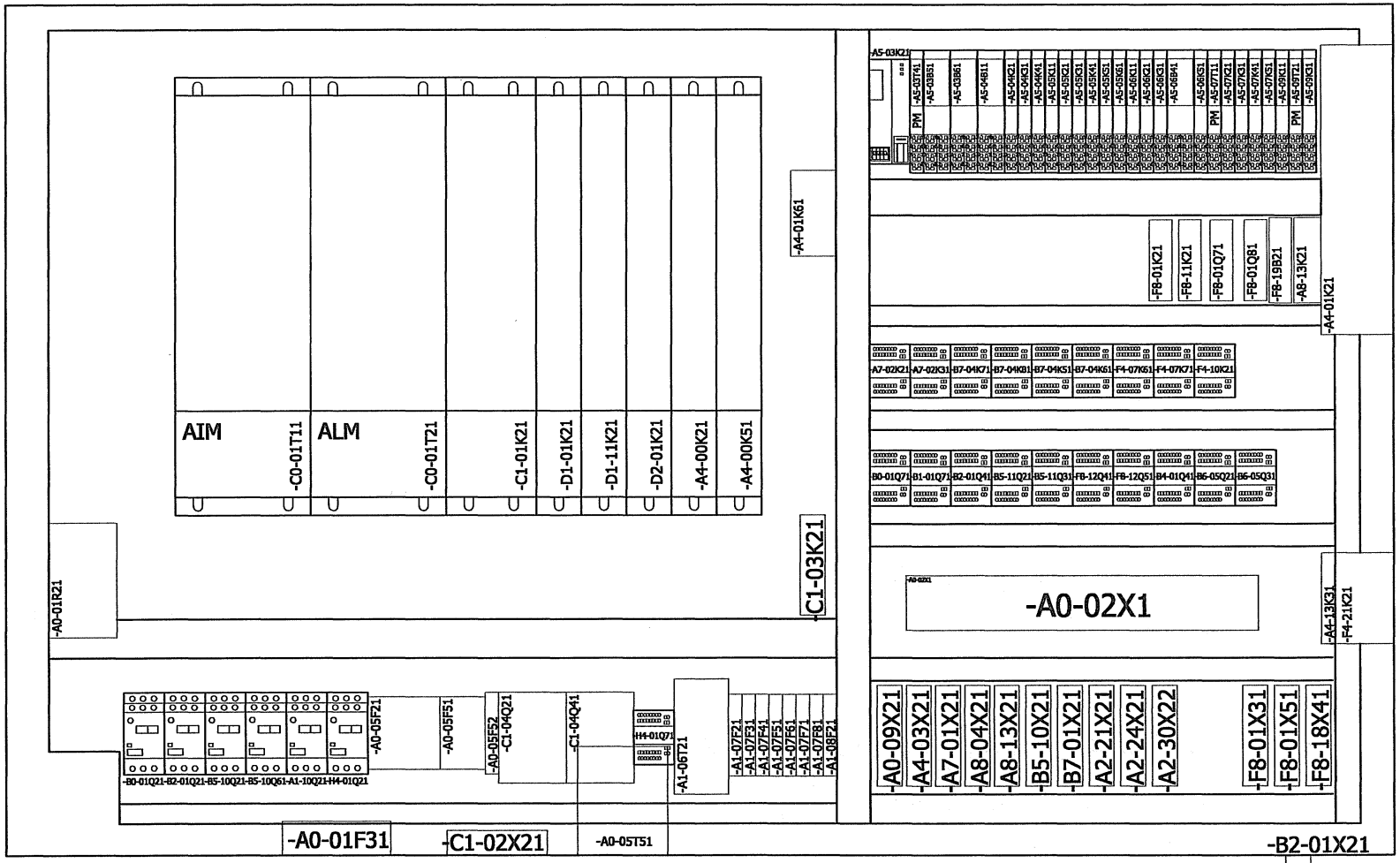
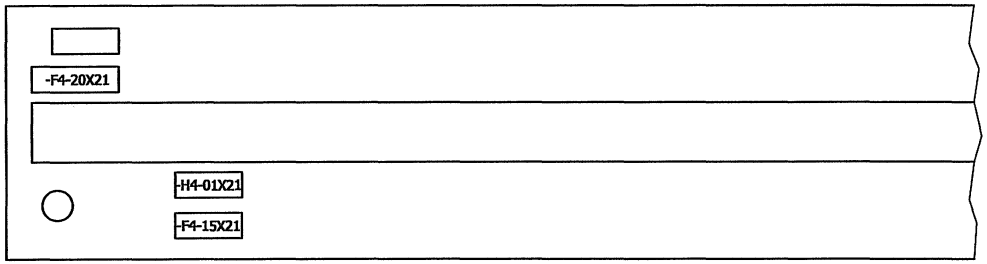
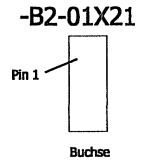
			chec.					series	circuit diagram No.:	13	sheet 1/
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185		149





Internal view
Control cabinet
Floor



Massstab: 1:10
Einheit: mm

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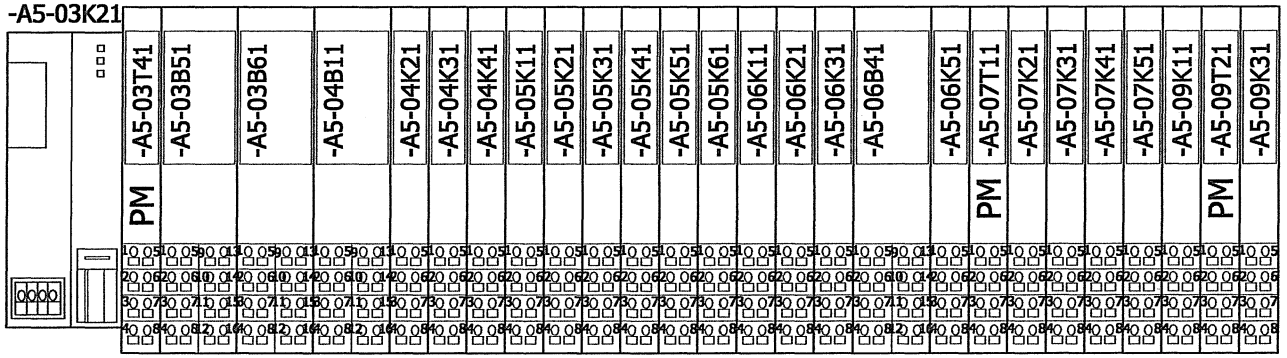
			change	MEF	113022		Control cabinet	DMU 50	& ELU	+M+EC	3
			chec.					series	circuit diagram No.:	language	sheet
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	2/ 150

-A5-03K21



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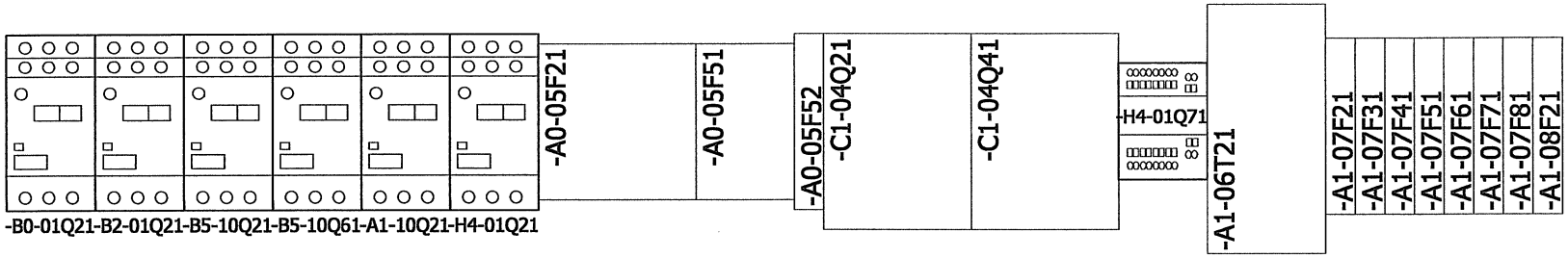
			change	MEF	113022		Seebach GmbH	Control cabinet	DMU 50	& ELU	+M+EC	⇨ 4
			chec.					Mounting plate	series	circuit diagram No.:	language	sheet 3/
revision	Date	Name	Created by		rep. by	rep. of	source		4526	2652185	EN	151



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	schematic diagram	object	DCC	Place	⇦ 3
			change	MEF	113022		Control cabinet Mounting plate	DMU 50	& ELU	+M+EC	⇨ 5
			chec.					series	circuit diagram No.:	language	sheet 4/
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	152

-A5-03K21

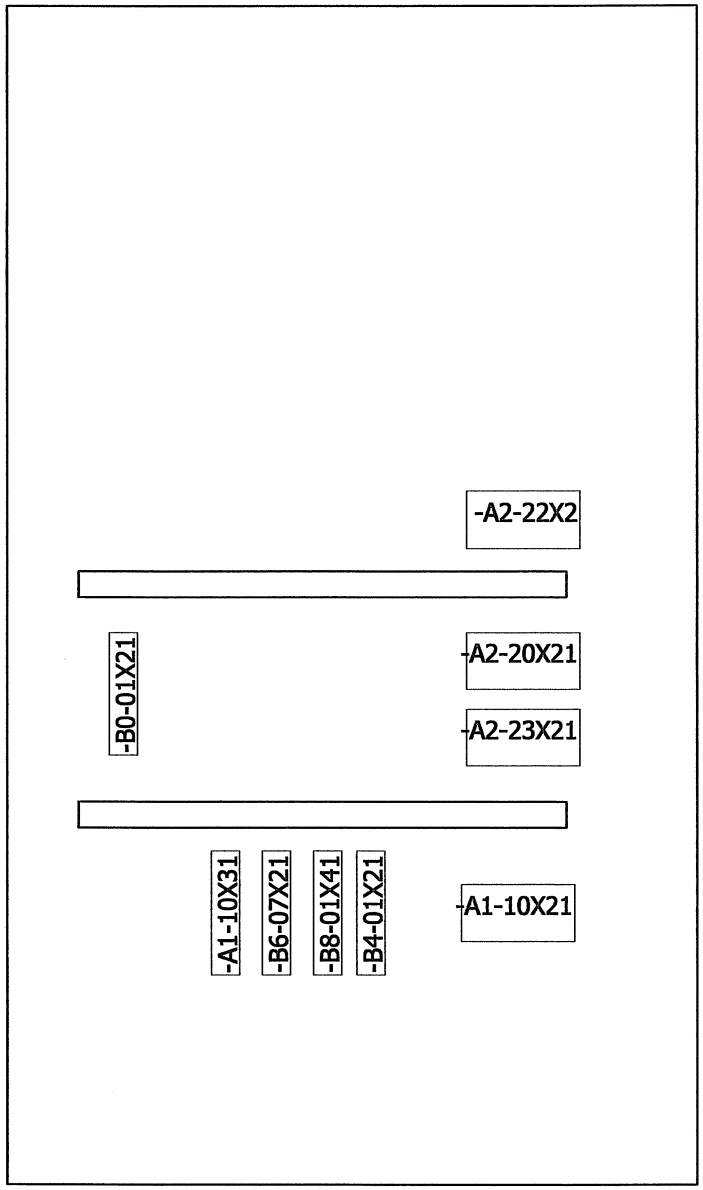
PM	-A5-03T41	-A5-03B51	-A5-03B61	-A5-04B11	-A5-04K21	-A5-04K31	-A5-04K41	-A5-05K11	-A5-05K21	-A5-05K31	-A5-05K41	-A5-05K51	-A5-05K61	-A5-06K11	-A5-06K21	-A5-06K31	-A5-06B41	-A5-06K51	PM	-A5-07T11	-A5-07K21	-A5-07K31	-A5-07K41	-A5-07K51	-A5-09K11	PM	-A5-09T21	-A5-09K31

-F8-01K21	-F8-11K21	-F8-01Q71	-F8-01Q81	-F8-19B21	-A8-13K21

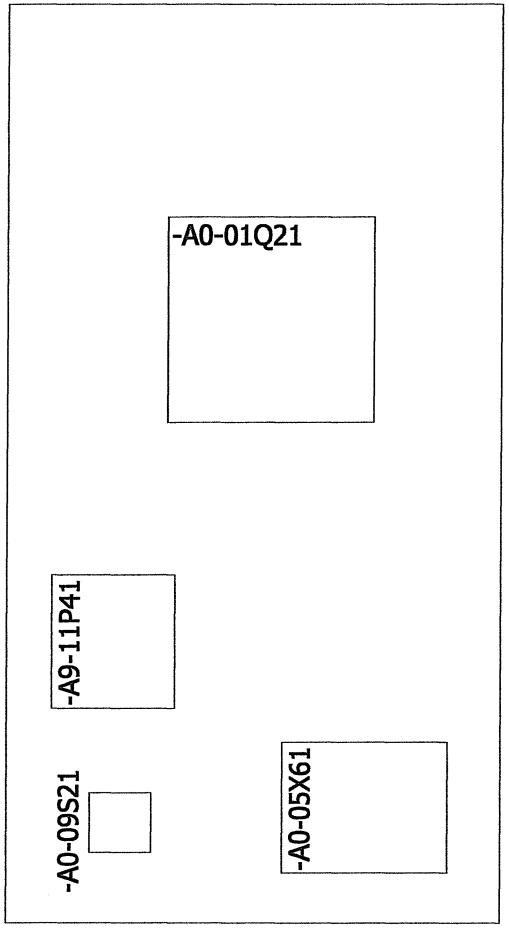
-A7-02K21	-A7-02K31	-B7-04K71	-B7-04K81	-B7-04K51	-B7-04K61	-F4-07K61	-F4-07K71	-F4-10K21

-B0-01Q71	-B1-01Q71	-B2-01Q41	-B5-11Q21	-B5-11Q31	-F8-12Q41	-F8-12Q51	-B4-01Q41	-B6-05Q21	-B6-05Q31

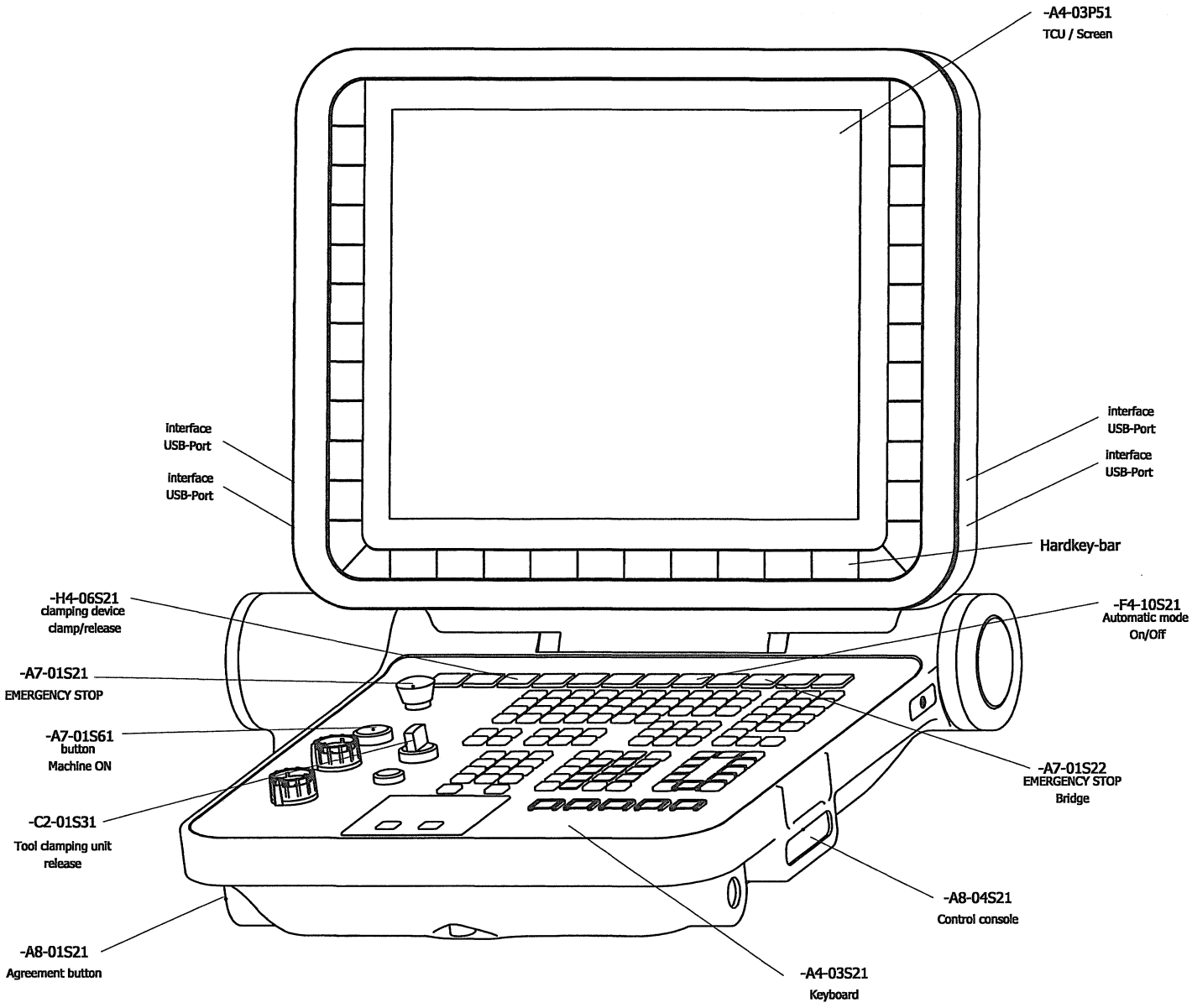
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	schematic diagram	object: DMU 50	DCC & ELU	Place +M+EC	⇦ 4
			change	MEF	113022		Control cabinet Mounting plate	series 4526	circuit diagram No.: 2652185	language EN	⇨ 6
			chec.								sheet 5/ 153
revision	Date	Name	Created by		rep. by	rep. of	source				



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	schematic diagram	object	DCC	Place	⇦ 5
			change	MEF	113022		Control cabinet side view	DMU 50	& ELU	+M+EC	⇨ 7
			chec.					series	circuit diagram No.:	language	sheet 6/
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	154



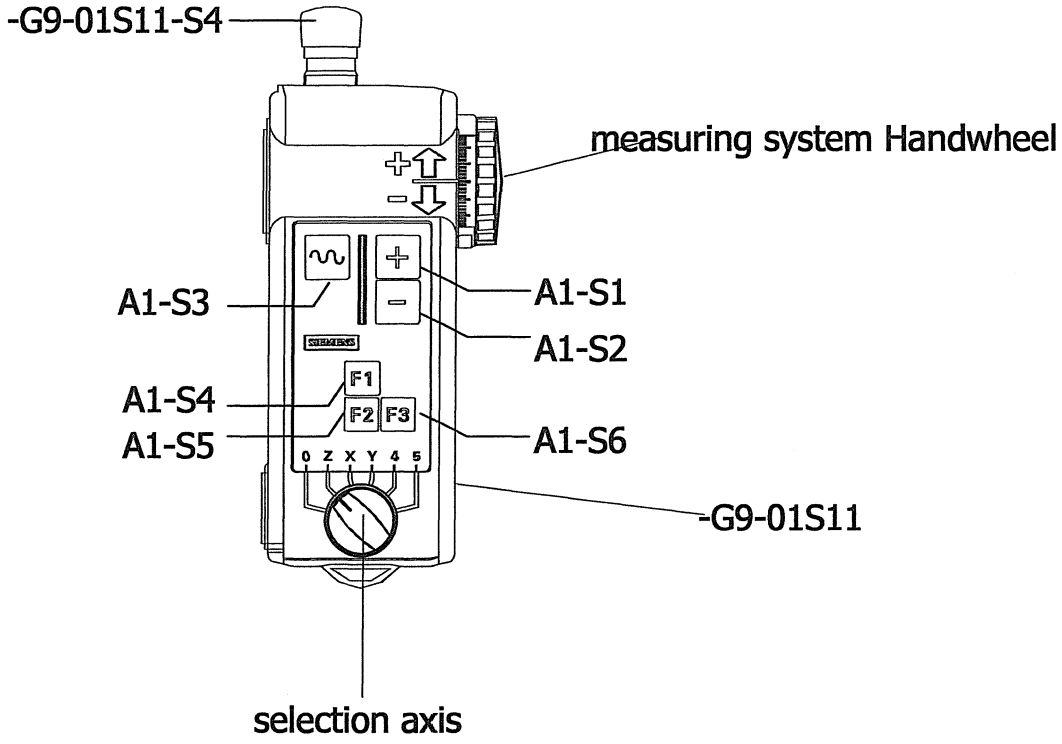
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	schematic diagram	object	DCC	Place	⇦ 6
			change	MEF	113022		Control cabinet front indicating plate	DMU 50	& ELU	+M+EC	⇨ 8
			chec.					series	circuit diagram No.:	language	sheet 7/
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	155



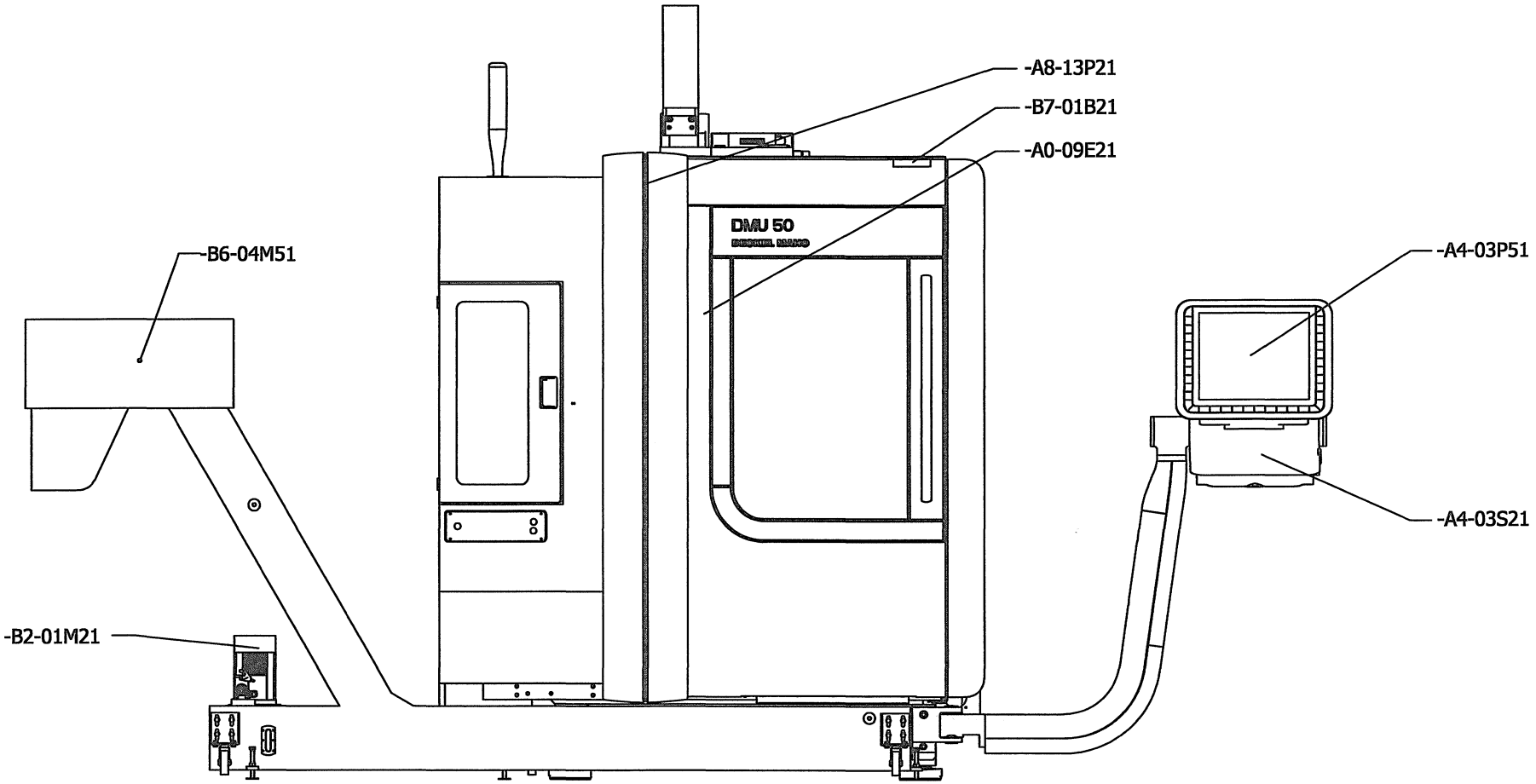
Massstab: 1:10

Einheit: mm

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	schematic diagram	object	DCC	Place	⇦ 7
			change	MEF	113022		command station	DMU 50	& ELU	+M+CP	⇨ 9
			chec.					series	circuit diagram No.:	language	sheet 8/
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	156

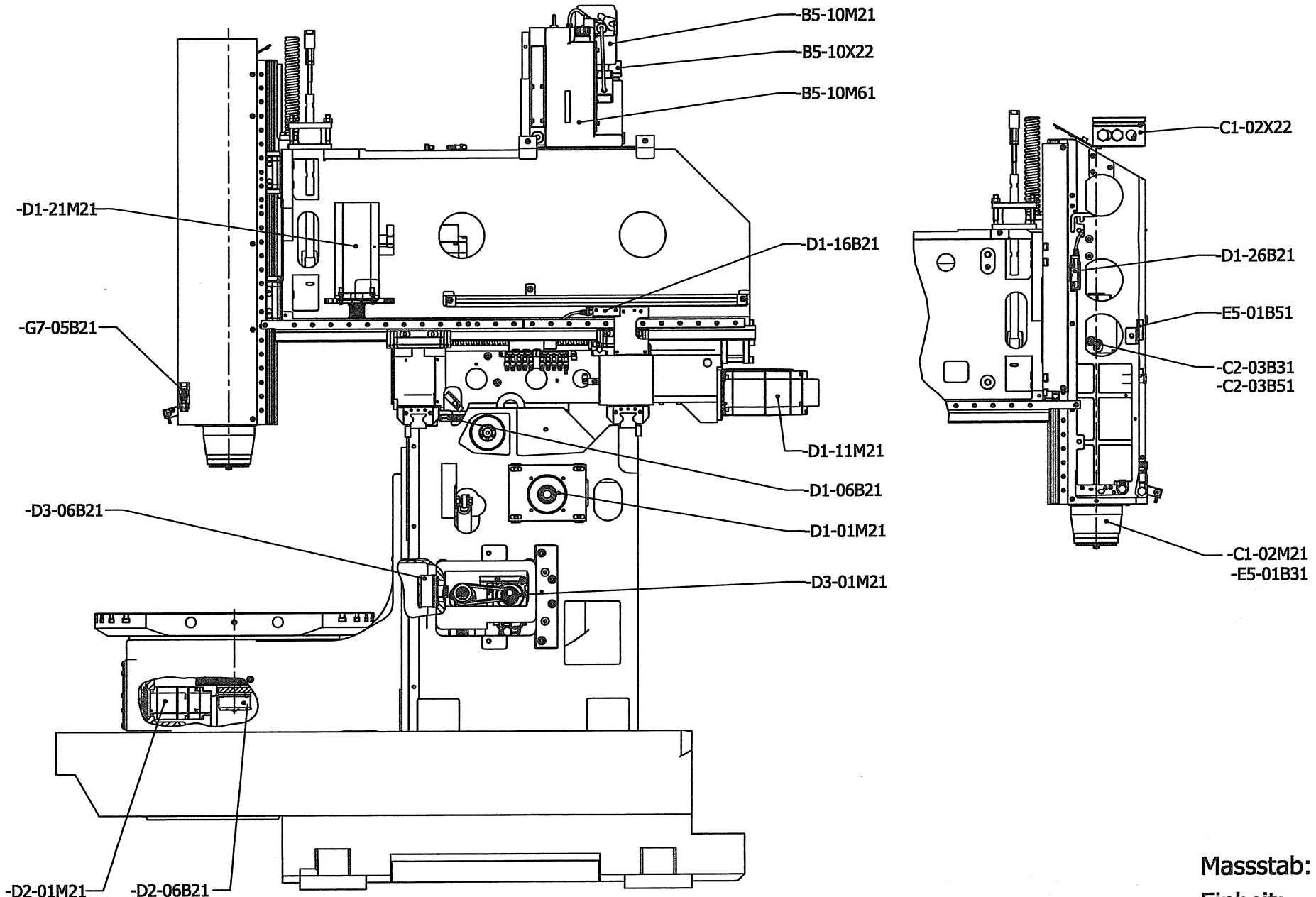


			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	schematic diagram	object	DCC	Place	⇦	8
			change	MEF	113022		Option Handwheel	DMU 50	& ELU	+M+CP	⇨	11
			chec.					series	circuit diagram No.:	language	sheet	9/
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN		157



Massstab: 1:10
Einheit: mm

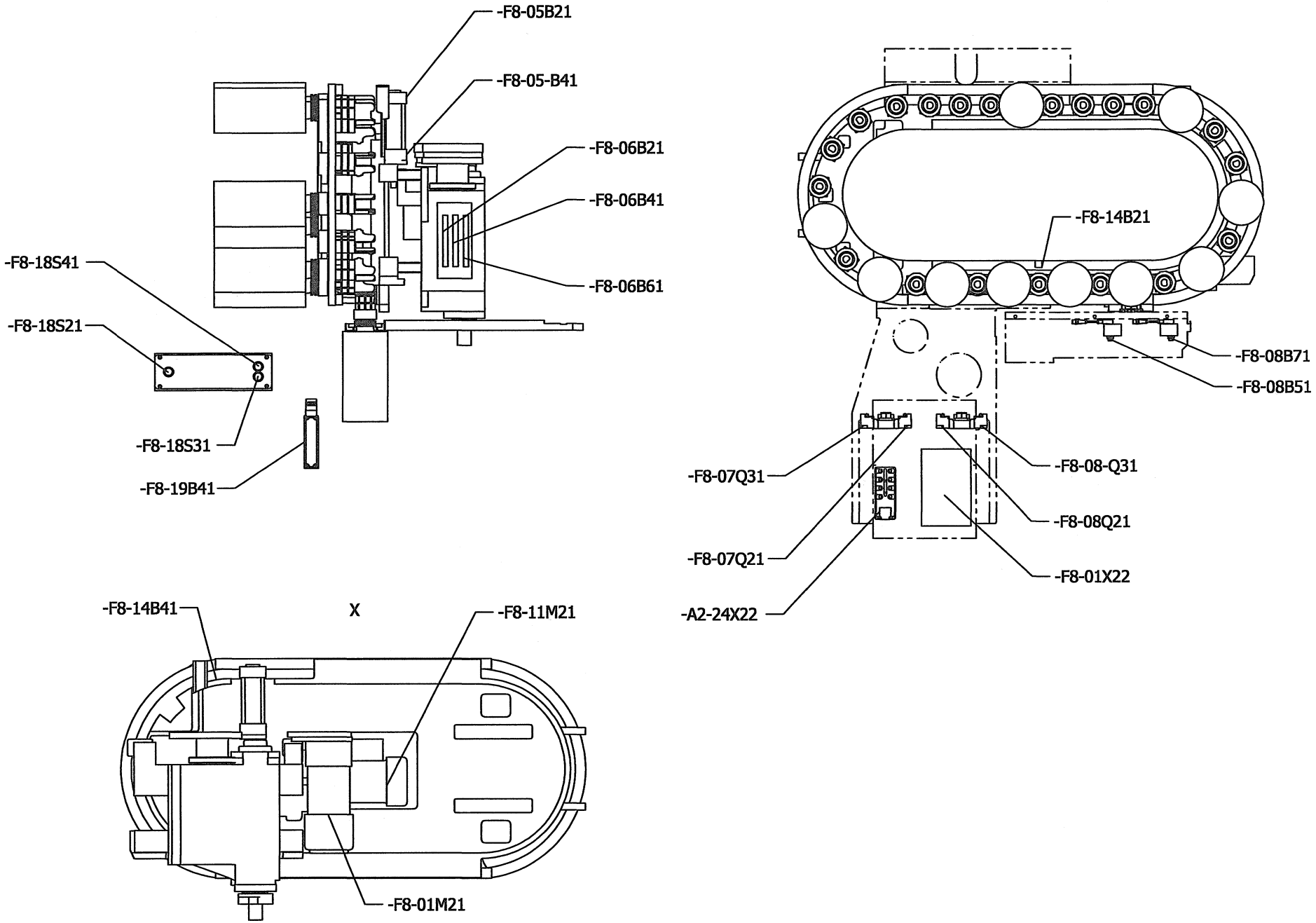
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	schematic diagram	object	DCC	Place	⇦ 9
			change	MEF	113022		Machine	DMU 50	& ELU	+M	⇨ 12
			chec.				Front view	series	circuit diagram No.:	language	sheet 11/
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	158



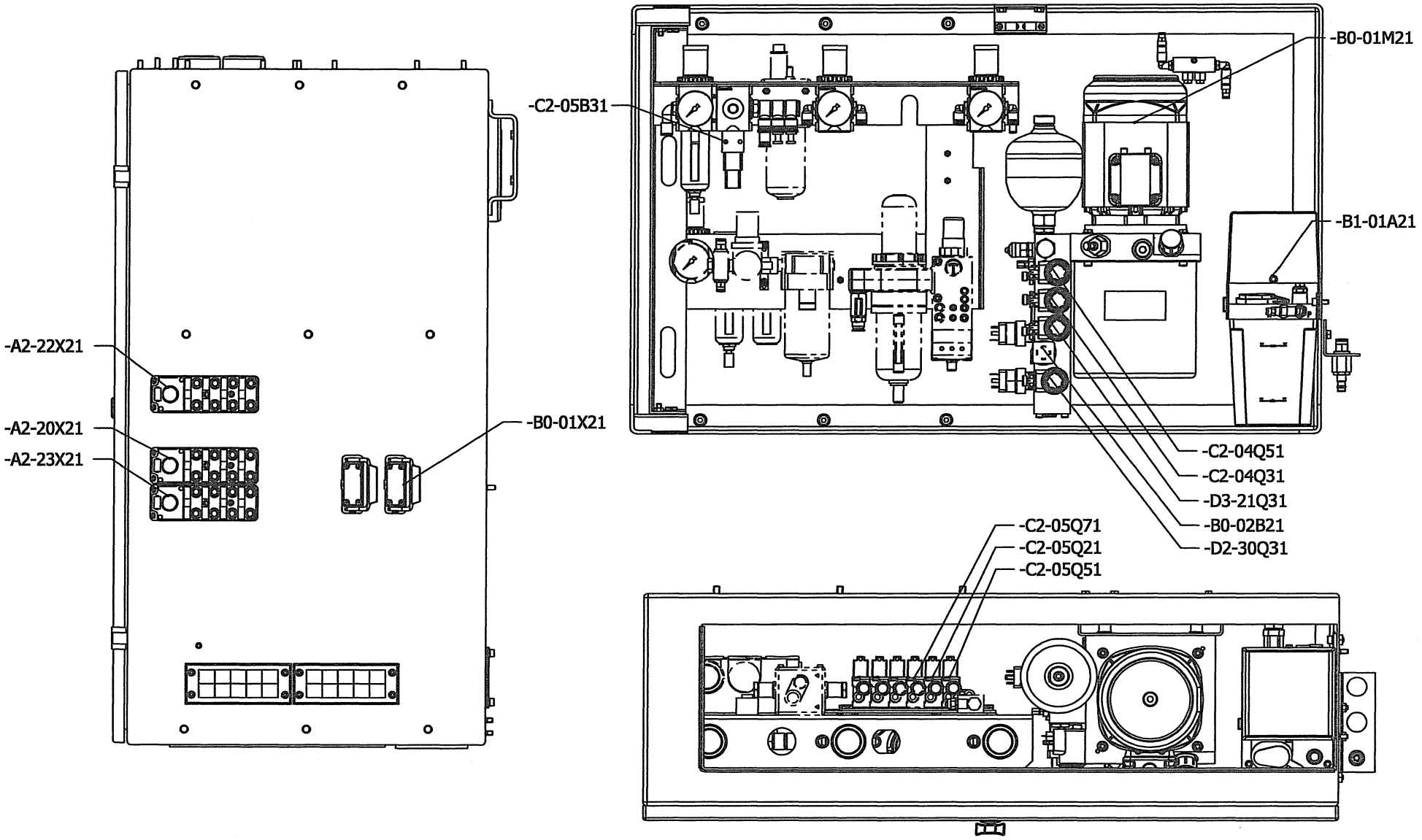
Massstab: 1:10

Einheit: mm

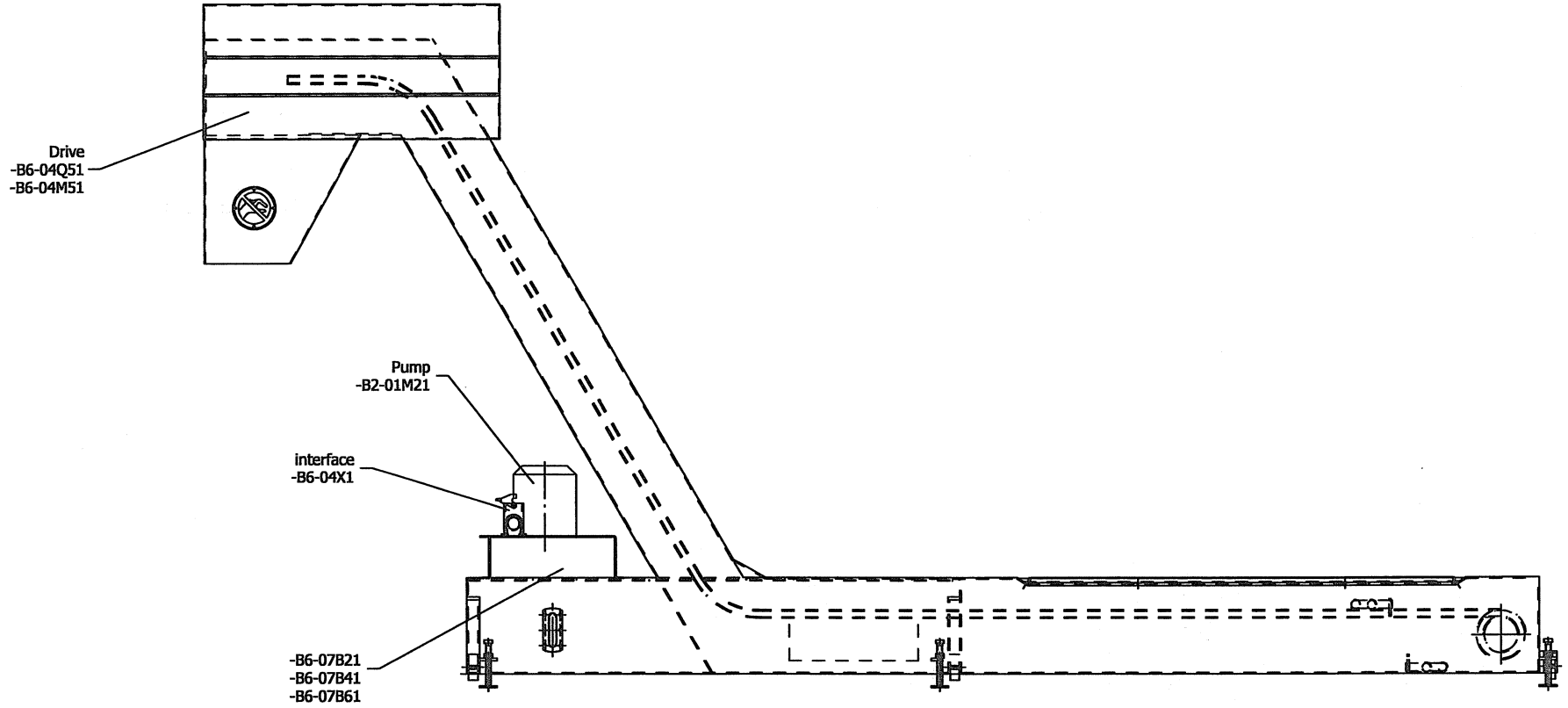
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	schematic diagram	object	DCC	Place	⇦ 11
			change	MEF	113022		Machine side view	DMU 50	& ELU	+M	⇨ 17
			chec.					series	circuit diagram No.:	language	sheet 12/
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	159



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	schematic diagram	object	DCC	Place	⇦	12
			change	MEF	113022		Machine tool magazine	DMU 50	& ELU	+M+TM	⇨	18
			chec.					series	circuit diagram No.:	language	sheet	17/
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN		160



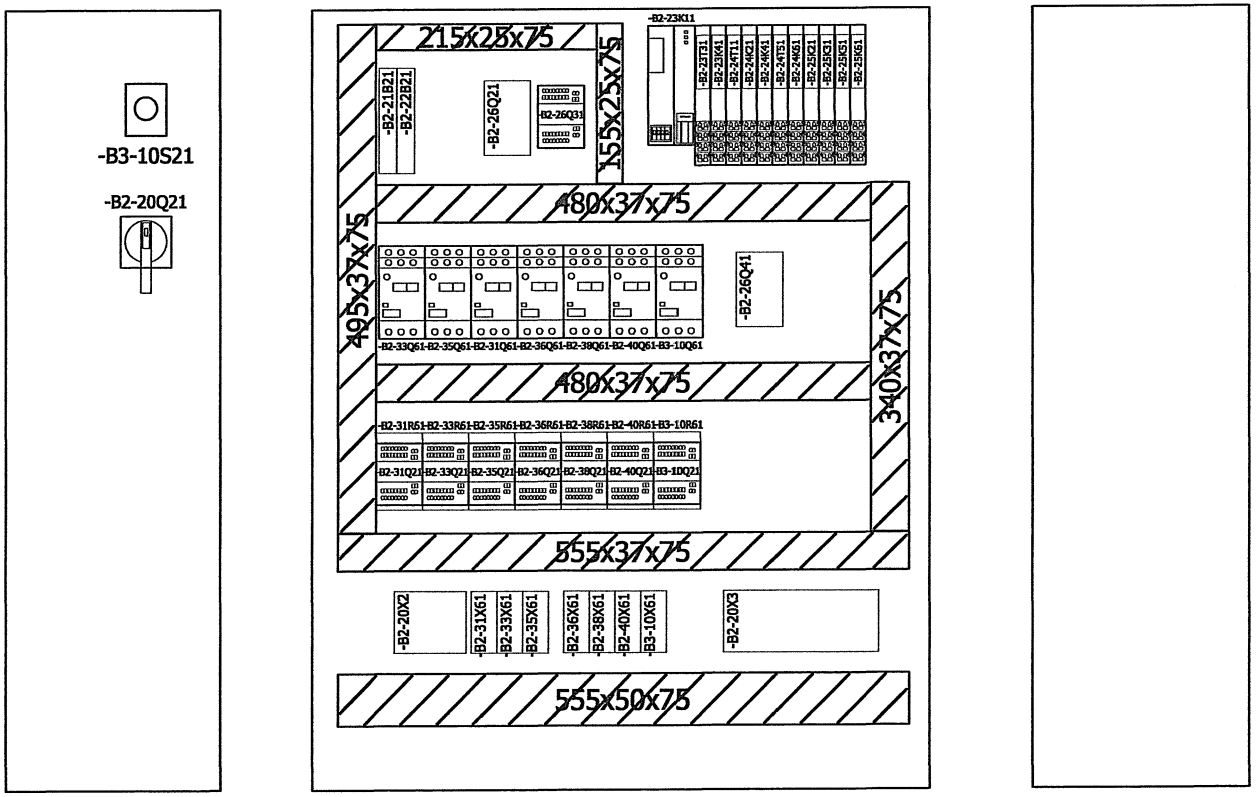
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	schematic diagram	object:	DCC	Place	⇦ 17
			change	MEF	113022		Machine	DMU 50	& ELU	+M+FB	⇨ 19
			chec.				Media suply	series	circuit diagram No.:	language	sheet 18/
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	161



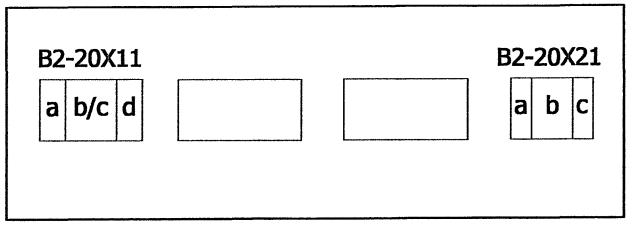
Massstab: 1:5

Einheit: mm

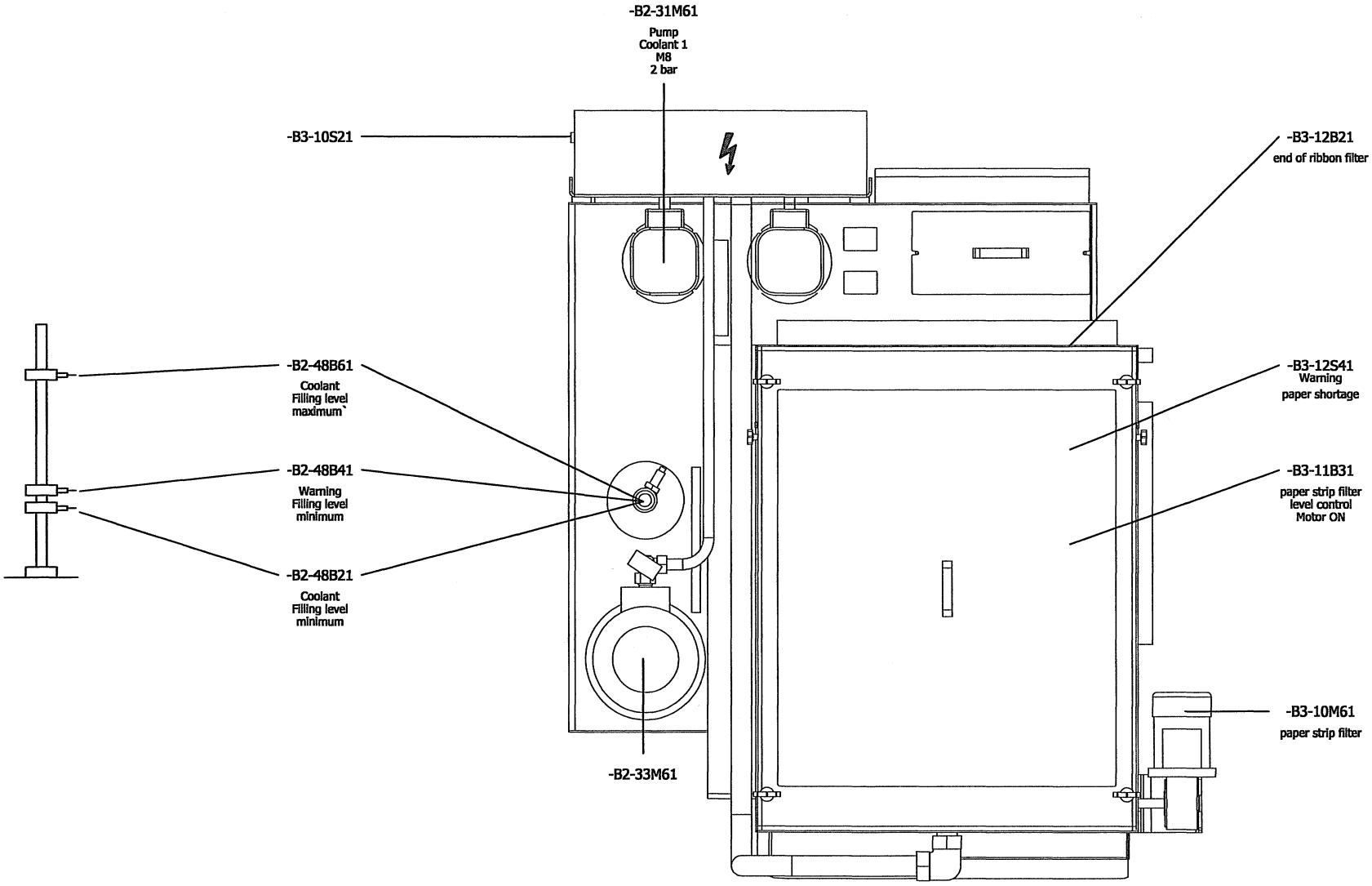
			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	schematic diagram	object	DCC	Place	⇦ 18
			change	MEF	113022		Chip conveyor	DMU 50	& ELU	+M+CC	⇨ 30
			chec.					series	circuit diagram No.:	language	sheet 19/
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	162



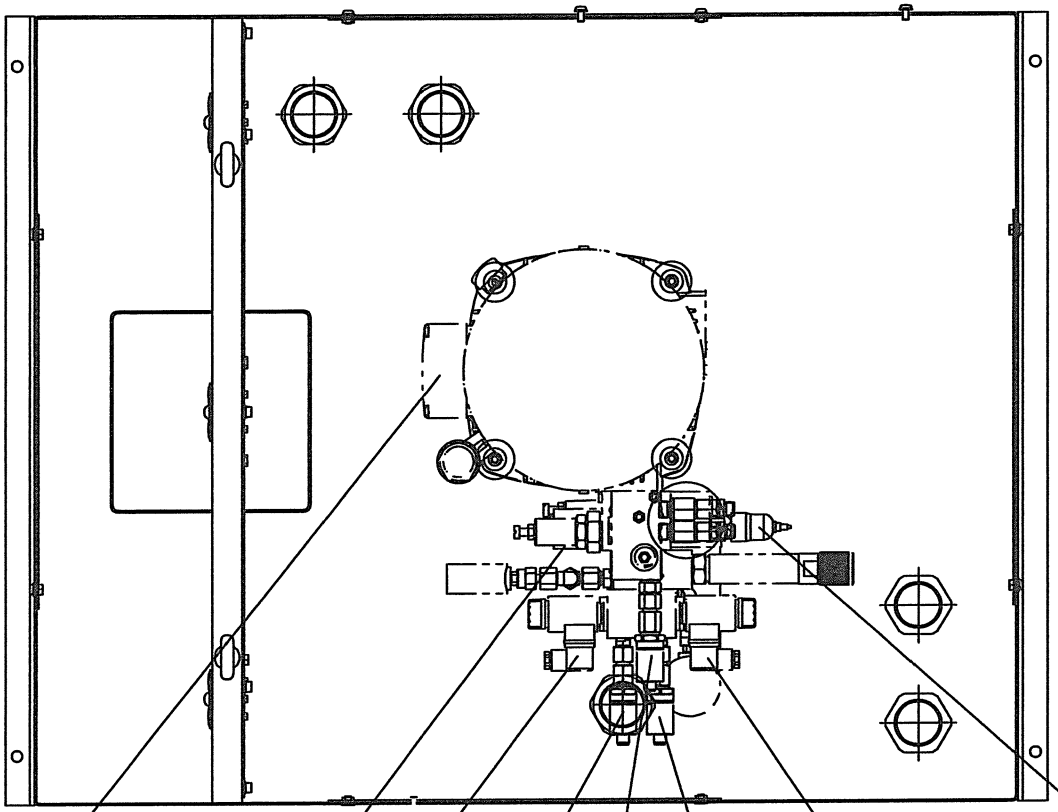
SKALIERUNG 2:1

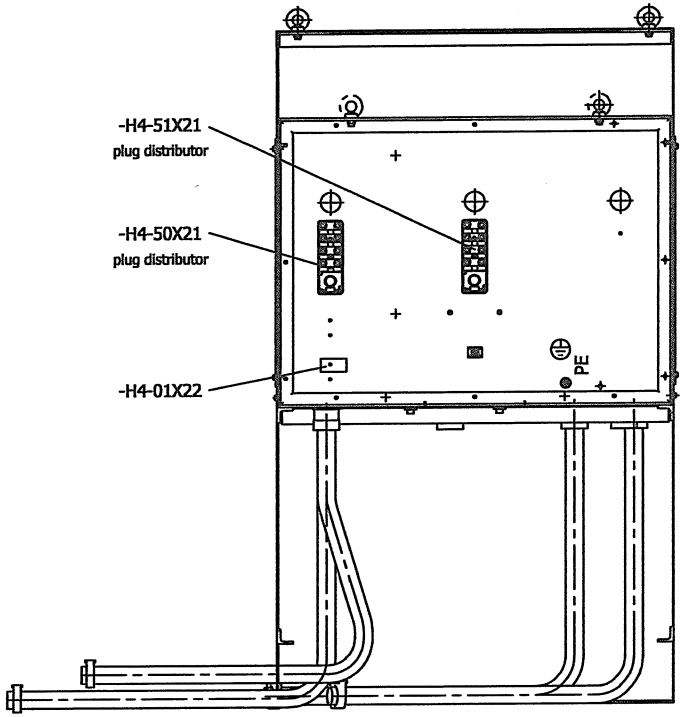


			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	schematic diagram	object: DMU 50	DCC & ELU	Place +M+CU+EC	⇦ 19
			change	MEF	113022		Coolant system Control cabinet	series 4526	circuit diagram No.: 2652185	language EN	⇨ 31
			chec.								sheet 30/163
revision	Date	Name	Created by		rep. by	rep. of	source				



			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	schematic diagram	object	DCC	Place	⇦ 30
			change	MEF	113022		Coolant system	DMU 50	& ELU	+M+KSA	⇨ 50
			chec.				Plan view	series	circuit diagram No.:	language	sheet 31/
revision		Name	Created by		rep. by	rep. of	source	4526	2652185	EN	164





-H4-51X21
plug distributor

-H4-50X21
plug distributor

-H4-01X22

-H4-01M21
clamping device
Pump

-H4-01B41
monitoring
Filling level
oil tank

-H4-01B51
monitoring
Oil temperature

-H4-14Q31
Valve
pressure
release

-H4-04Q31
clamping device 1
Tension

-H4-03B71
pressure monitoring
clamping device 1
released

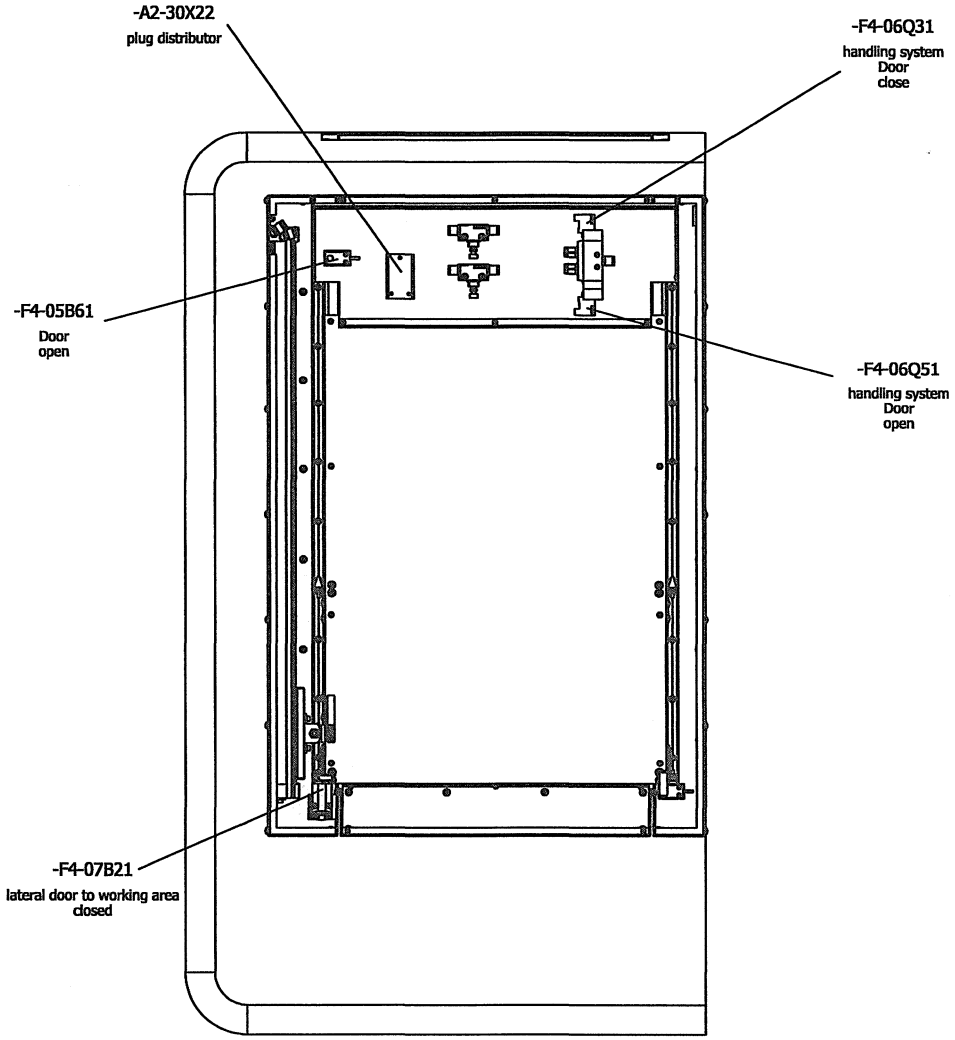
-H4-07B31
pressure monitoring
clamping device
system pressure

-H4-03B31
pressure monitoring
clamping device 1
clamped

-H4-04Q71
clamping device 1
release

-H4-20B21
filter fouling
Clamping hydraulics

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	schematic diagram	object	DCC	Place	⇦ 31
			change	MEF	113022		Clamping hydraulics	DMU 50	& ELU	+M+CD	⇨ 60
			chec.					series	circuit diagram No.:	language	sheet 50/
revision	Date	Name	Created by		rep. by	rep. of	source	4526	2652185	EN	165



			Date	02.02.2011	project number		DECKEL MAHO Seebach GmbH	schematic diagram	object		DCC	Place	⇦ 50
			change	MEF	113022			lateral door to working area	DMU 50		& ELU	+M	⇨
			chec.						series	circuit diagram No.:		language	sheet 60/
revision		Name	Created by		rep. by	rep. of	source		4526	2652185		EN	166

Allocation list

symb. Operand	Abs_ operator	comments	Profibus Address	plug-in position	Asi Address	EA	BMK	Cross-ref.
BT_ET200S_IM151_4		ET 200S IM151	4				-A5-03K21	
BT_ET200S_PM_4_1		Power-Module ET 200S	4	1			-A5-03T41	
OFX_GEN_CABIN_UNLOCK	DBX46.0	cabin door Unlock	4	2		A0	-A5-03B51	/B7-01.1
OFX_GEN_CABIN_LOCKED	DBX46.1	cabin door locked	4	2		A1	-A5-03B51	/B7-04.7
OFX_SPI_CLAMP_VAL_1_REL	DBX46.2	Tool clamping unit release	4	2		A2	-A5-03B51	/C2-04.3
OFX_SPI_CLAMP_VAL_2_REL	DBX46.3	Tool clamping unit release	4	2		A3	-A5-03B51	/C2-04.5
IFX_GEN_EMSTP_CH1_N	DBX38.0	EMERGENCY STOP command station Channel 1	4	3		E0	-A5-03B61	/A7-01.1
IFX_GEN_CABIN_CH1_LOCKED	DBX38.1	cabin door locked 1.Channel	4	3		E1	-A5-03B61	/B7-01.6
IFX_GEN_BUTTON_CH1_CNF	DBX38.2	Agreement button	4	3		E2	-A5-03B61	/A8-01.2
IFX_HW_BUTTON_CH1_CNF	DBX38.3	Agreement button	4	3		E3	-A5-03B61	/A8-01.5
IFX_GEN_EMSTP_CH2_N	DBY38.0	EMERGENCY STOP command station Channel 2	4	3		E4	-A5-03B61	/A7-01.3
IFX_GEN_CABIN_CH2_LOCKED	DBY38.1	cabin door locked 2.Channel	4	3		E5	-A5-03B61	/B7-01.6
IFX_GEN_BUTTON_CH2_CNF	DBY38.2	Agreement button	4	3		E6	-A5-03B61	/A8-01.3
IFX_HW_BUTTON_CH2_CNF	DBY38.3	Agreement button	4	3		E7	-A5-03B61	/A8-01.7
IFX_GEN_OM1_CH1_SEL	DBX39.0	1. Operating mode normally open contact	4	4		E0	-A5-04B11	/A8-05.1
IFX_GEN_OM2_CH1_SEL	DBX39.1	2. Operating mode normally open contact	4	4		E1	-A5-04B11	/A8-05.3
IFX_GEN_OM3_CH1_SEL	DBX39.2	3. Operating mode normally open contact	4	4		E2	-A5-04B11	/A8-05.4
IFX_GEN_OM4_CH1_SEL	DBX39.3	4. Operating mode normally open contact	4	4		E3	-A5-04B11	/A8-05.5
IFX_GEN_OM5_CH1_SEL	DBY39.0	5. Operating mode normally open contact	4	4		E4	-A5-04B11	/A8-05.6
IX5_4	DBY39.1		4	4		E5	-A5-04B11	
IX6_4	DBY39.2		4	4		E6	-A5-04B11	
IX7_4	DBY39.3		4	4		E7	-A5-04B11	
OX_SPI_WYE	A31.0	Main drive star connection	4	5		A0	-A5-04K21	/C1-04.2
OX_SPI_DELTA	A31.1	Main drive delta connection	4	5		A1	-A5-04K21	/C1-04.4
OX_INFEED_ENABLE_NCU	A31.2	Machine ON	4	5		A2	-A5-04K21	/A7-02.6
OX_GEN_SIGNALLAMP_RD	A31.3	pilot lamp red	4	5		A3	-A5-04K21	/A8-13.7
OX_GEN_SIGNALLAMP_YE	A31.4	pilot lamp yellow	4	5		A4	-A5-04K21	/A8-13.5
OX_GEN_SIGNALLAMP_GN	A31.5	pilot lamp green	4	5		A5	-A5-04K21	/A8-13.4
OX_GEN_SIGNALLAMP_BU	A31.6	pilot lamp blue	4	5		A6	-A5-04K21	/A8-13.3
OX7_5	A31.7		4	5		A7	-A5-04K21	
IX_GEN_MACHINE_ON	E32.0	button control voltage on	4	6		E0	-A5-04K31	/A7-01.5
IX_GEN_FEEDB_LO_EMSTP	E32.1	Check-back signal Machine ON	4	6		E1	-A5-04K31	/A7-02.4
IX_GEN_CNC_ENABLE	E32.2	CNC ready for operation	4	6		E2	-A5-04K31	/A4-09.7
IX_GEN_FEEDB_LO_CAB_LKD	E32.3	feedback loop drives	4	6		E3	-A5-04K31	/B7-02.2
IX_GEN_CAIR_PRESSURE_OK	E32.4	monitoring compressed air	4	6		E4	-A5-04K31	/C2-05.4
IX_GEN_HYD_PRESSURE_OK	E32.5	pressure monitoring Hydraulic	4	6		E5	-A5-04K31	/B0-02.3
IX_GEN_LUB_PRESSURE_MON	E32.6	pressure monitoring Lubrication	4	6		E6	-A5-04K31	/B1-01.5
IX_GEN_LUB_FILL_LEV_MIN	E32.7	Filling level Lubrication	4	6		E7	-A5-04K31	/B1-01.4

Allocation list

symb. Operand	Abs_ operator	comments	Profibus Address	plug-in position	Asi Address	EA	BMK	Cross-ref.
IX_GEN_HYD_MPS_N	E33.0	Motor protecting switch Hydraulic	4	7		E0	-A5-04K41	/B0-01.4
IX_CU_MPS_CONTR_CABT_N	E33.1	Motor protecting switch Coolant	4	7		E1	-A5-04K41	
IX_CA_MPS_N	E33.2	Motor protecting switch cooling aggregate	4	7		E2	-A5-04K41	/B5-11.6
IX_CC_MPS_N	E33.3	Motor protecting switch Chip conveyor	4	7		E3	-A5-04K41	/B6-04.7
IX_GEN_CABIN_CLOSED	E33.4	cabin doors closed	4	7		E4	-A5-04K41	/B7-01.6
IX_GEN_PWR_MODUL_READY	E33.5	CNC ready for operation	4	7		E5	-A5-04K41	/A4-09.1
IX_SPI_WYE	E33.6	Main drive star connection	4	7		E6	-A5-04K41	/C1-07.2
IX_SPI_DELTA	E33.7	Main drive delta connection	4	7		E7	-A5-04K41	/C1-07.4
IX_GEN_AXIS4_CLAMP	E34.0	axis of revolution clamped	4	8		E0	-A5-05K11	/D2-30.6
IX_GEN_AXIS5_CLAMPED	E34.1	swiveling axis clamped	4	8		E1	-A5-05K11	
IX_DH_REF_SIGNAL	E34.2	index head reference signal	4	8		E2	-A5-05K11	
IX_DH_CLAMP_RELEASED	E34.3	index head Clamping released	4	8		E3	-A5-05K11	
ISX_TL_CLAMP_MAN_REL	E34.4	Tool clamping unit release manually	4	8		E4	-A5-05K11	/C2-01.2
IX_SPI_TL_CLP_RELEASED	E34.5	Tool clamping unit released	4	8		E5	-A5-05K11	/C2-03.2
IX_SPI_TL_CLP_CLAMPED	E34.6	Tool clamping unit clamped	4	8		E6	-A5-05K11	/C2-03.4
IX_WZ_SPA_GESP_O_WERKZ	E34.7		4	8		E7	-A5-05K11	
IX_TM_BUTTON_LEFT	E35.0	tool magazine approval switch counter-clockwise	4	9		E0	-A5-05K21	/F8-18.3
IX_TM_BUTTON_RIGHT	E35.1	tool magazine approval switch clockwise	4	9		E1	-A5-05K21	/F8-18.4
IX_TM_DOOR_CLOSED	E35.2	tool magazine window closed	4	9		E2	-A5-05K21	/F8-19.5
IX_TM_MPS_MON_N	E35.3	tool magazine Motor protect. monitoring	4	9		E3	-A5-05K21	/F8-12.6
IX_TM_COUNT_PULS	E35.4	tool magazine counting pulse	4	9		E4	-A5-05K21	/F8-14.5
IX_TM_REF_SIGNAL	E35.5	tool magazine reference pulse	4	9		E5	-A5-05K21	/F8-14.2
IX_TM_DOOR_LOCKED	E35.6	Magazine door locked	4	9		E6	-A5-05K21	/F8-18.5
IX_TM_BUTTON_CONFIRM	E35.7	approval switch chain turn	4	9		E7	-A5-05K21	/F8-18.1
IX_LA_SIGNAL_DYN	E36.0	Measuring signale tool measurement	4	10		E0	-A5-05K31	
IX_LA_RDY	E36.1	laser Operational	4	10		E1	-A5-05K31	
IX_LA_SIGNAL_STAT	E36.2	Measuring signal tool measurement	4	10		E2	-A5-05K31	
IX_GEN_T_H_M_FUNCTION	E36.3	Check-back signal M functions	4	10		E3	-A5-05K31	
IX_TP_BATTERIE_MIN	E36.4	measuring sensor battery Error	4	10		E4	-A5-05K31	/G7-05.5
IX_TP_RDY	E36.5	measuring sensor Operational	4	10		E5	-A5-05K31	/G7-05.7
IX_MT_TT_OK	E36.6	measuring sensor Operational	4	10		E6	-A5-05K31	/G7-03.4
IX_FEEDB_LO_CONT_P_EMSTP	E36.7	EMERGENCY STOP feedback loop Control panel	4	10		E7	-A5-05K31	/A7-01.4
IX_GEN_OM_BIT_0	E39.0	status Operating mode Bit 1	4	11		E0	-A5-05K41	/A8-06.2
IX_GEN_OM_BIT_1	E39.1	status Operating mode Bit 2	4	11		E1	-A5-05K41	/A8-06.3
IX_GEN_OM_BIT_2	E39.2	status Operating mode Bit 3	4	11		E2	-A5-05K41	/A8-06.4
IX_GEN_OM_BIT_3	E39.3	status Operating mode Bit 4	4	11		E3	-A5-05K41	/A8-06.6
IX_GEN_OM_ID_SYNC	E39.4	status start signal	4	11		E4	-A5-05K41	/A8-07.1
IX_GEN_OM_ID_CLOCK	E39.5	status timing pulses	4	11		E5	-A5-05K41	/A8-07.2

Allocation list

symb. Operand	Abs_ operator	comments	Profibus Address	plug-in position	Asi Address	EA	BMK	Cross-ref.
IX_GEN_OM_ID_DATA_0	E39.6	data communication track 1	4	11		E6	-A5-05K41	/A8-07.4
IX_GEN_OM_ID_DATA_1	E39.7	data communication track 2	4	11		E7	-A5-05K41	/A8-07.5
IX_OMS_MPS_N	E37.0	Motor protecting switch mist and smoke separator	4	12		E0	-A5-05K51	
IX_CC_NIVEAU_MAX	E37.1	Coolant system fuel pump Emergency stop	4	12		E1	-A5-05K51	/B6-07.5
IX_CC_PUMP_OFF	E37.2	Lifting pump Chip conveyor Off	4	12		E2	-A5-05K51	/B6-07.1
IX_CC_PUMP_ON	E37.3	Lifting pump Chip conveyor on	4	12		E3	-A5-05K51	/B6-07.3
IX_OMS_RDY	E37.4	different. press. switch Filter mist and smoke sep	4	12		E4	-A5-05K51	
IX_CC_NIVEAU_MAX_N_D	E37.5	Diagnosis fuel pump EMERGENCY STOP	4	12		E5	-A5-05K51	/B6-07.5
IX_CC_PUMP_OFF_D	E37.6	Diagnosis Lifting pump Off	4	12		E6	-A5-05K51	/B6-07.1
IX_CC_PUMP_ON_D	E37.7	Diagnosis Lifting pump on	4	12		E7	-A5-05K51	/B6-07.3
IX_SPI_LUB_OIL_PRESS_OK	E38.0		4	13		E0	-A5-05K61	
IX_SPI_LUB_FILL_LEV_OK	E38.1		4	13		E1	-A5-05K61	
IX_SPI_LUB_AIR_P_OK	E38.2		4	13		E2	-A5-05K61	
IX_SPI_LEAK_MONITOR_OK	E38.3		4	13		E3	-A5-05K61	
IX_CA_WARNMSG_N	E38.4	cooling aggregate Warning	4	13		E4	-A5-05K61	
IX_CA_MALFUNCT_1_N	E38.5	cooling aggregate collect. fault message 1	4	13		E5	-A5-05K61	
IX_CA_MALFUNCT_2_N	E38.6	cooling aggregate collect. fault message 2	4	13		E6	-A5-05K61	
IX_GEN_HYD_TEMP_OK	E38.7	Temperature monitor Hydraulic	4	13		E7	-A5-05K61	
IX_TC_GRAYC_BIT_0	E40.0	Tool changer Position PS1	4	14		E0	-A5-06K11	/F8-06.2
IX_TC_GRAYC_BIT_1	E40.1	Tool changer Position PS2	4	14		E1	-A5-06K11	/F8-06.4
IX_TC_GRAYC_BIT_2	E40.2	Tool changer Position PS3	4	14		E2	-A5-06K11	/F8-06.6
IX_TM_QUIVER_CHANGE_POS	E40.3	Tool changer tool gripper in lower position	4	14		E3	-A5-06K11	/F8-05.3
IX_TM_QUIVER_HOME_POS	E40.4	Tool changer tool gripper In upper position	4	14		E4	-A5-06K11	/F8-05.5
IX_TC_FLAP_OPEN	E40.5		4	14		E5	-A5-06K11	/F8-08.5
IX_TC_FLAP_CLOSED	E40.6		4	14		E6	-A5-06K11	/F8-08.7
IX7_14	E40.7		4	14		E7	-A5-06K11	
IW_SPI_KABEL_PT100_1	EW512	Temperatur sensor headstock	4	15			-A5-06K21	/E5-01.2
IW_SPI_KABEL_PT100_2	EW514	Temperatur sensor headstock	4	15			-A5-06K21	/E5-01.5
OX_GEN_OM_ID_DATA_0	A32.0	'op"ing modes' Data Bit 0	4	16		A0	-A5-06K31	/A8-07.5
OX_GEN_OM_ID_DATA_1	A32.1	'op"ing modes' Data Bit 1	4	16		A1	-A5-06K31	/A8-07.7
OX2_16	A32.2		4	16		A2	-A5-06K31	
OX3_16	A32.3		4	16		A3	-A5-06K31	
OX_HCD_CLA_POI_2_LOCK_H	A32.4	clamping device 2 clamped	4	16		A4	-A5-06K31	
OX5_16	A32.5		4	16		A5	-A5-06K31	
OX_TM_DOOR_UNLOCK	A32.6	Magazine door Unlock	4	16		A6	-A5-06K31	/F8-19.7
OX_HCD_CLA_POI_1_LOCK_H	A32.7	clamping device clamped	4	16		A7	-A5-06K31	/H4-06.3
OFX_GEN_MACHINE_ON	DBX46.4	Machine ON	4	17		A0	-A5-06B41	/A7-02.2
OX1_17	DBX46.5		4	17		A1	-A5-06B41	

Allocation list

symb. Operand	Abs_ operator	comments	Profibus Address	plug-in position	Asi Address	EA	BMK	Cross-ref.
OX2_17	DBX46.6		4	17		A2	-A5-06B41	
OX_GEN_MACHINE_ON	A33.0	Machine On	4	18		A0	-A5-06K51	/A7-01.7
OX_GEN_HYD_ON	A33.1	Hydraulic On	4	18		A1	-A5-06K51	/B0-01.7
OX_GEN_LUB_ON	A33.2	Actuation lubrication pump	4	18		A2	-A5-06K51	/B1-01.7
OX_CC_CU_PUMP	A33.3	Coolant 1 on	4	18		A3	-A5-06K51	
OX_OMS_ON	A33.4	Motor mist and smoke separator On	4	18		A4	-A5-06K51	
OX_SPI_LUB_CAIR_ON	A33.5	compressed air Spindle	4	18		A5	-A5-06K51	
OX_SPI_LUB_OIL_PUMP_ON	A33.6		4	18		A6	-A5-06K51	
OX_SPI_CAIR_INT	A33.7	internal Cleaning air	4	18		A7	-A5-06K51	
BT_ET200S_PM_4_19		Power-Module ET 200S	4	19			-A5-07T11	
OX_SPI_CAIR_TOOL	A34.0	compressed air tool cone airblast clean	4	20		A0	-A5-07K21	/C2-05.2
OX_SPI_CAIR_JETS_EXT	A34.1	Cleaning air Cooling tool	4	20		A1	-A5-07K21	/C2-05.7
OX_GEN_CNC_PGM_ACTIVE	A34.2	Working hour counter Program running	4	20		A2	-A5-07K21	/A9-11.4
OX_GEN_POWERSAVE_N	A34.3	machine switch-off	4	20		A3	-A5-07K21	
OX_GEN_B_AXIS_CLP_REL	A34.4	Clamping release swiveling axis	4	20		A4	-A5-07K21	/D3-21.3
OX_GEN_C_AXIS_CLP_REL	A34.5	Clamping release swiveling axis	4	20		A5	-A5-07K21	/D2-30.3
OX_TP_ENABLE	A34.6	measuring sensor start signal	4	20		A6	-A5-07K21	/G7-05.5
OX_TP_CALIBRATION_CLEAN	A34.7	Tool break monitoring blow off	4	20		A7	-A5-07K21	/G7-03.7
OX_TM_CLOCKWISE	A35.0	tool magazine clockwise	4	21		A0	-A5-07K31	/F8-11.5
OX_TM_COUNTCLOCKWISE	A35.1	tool magazine counter-clockwise	4	21		A1	-A5-07K31	/F8-11.7
OX_TM_QUIVER_HOME_POS	A35.2	Tool changer Quiver to up	4	21		A2	-A5-07K31	/F8-07.2
OX_TC_MOTOR_ON	A35.3	Tool changer Motor on	4	21		A3	-A5-07K31	/F8-01.6
OX_TM_QUIVER_CHANGE_POS	A35.4	Tool changer Quiver to down	4	21		A4	-A5-07K31	/F8-07.4
OX_CU_FLUSH_PISTOL	A35.5	flush gun on	4	21		A5	-A5-07K31	
OX_TC_FLAP_OPEN	A35.6	tool flap open	4	21		A6	-A5-07K31	/F8-08.2
OX_TC_FLAP_CLOSE	A35.7	tool flap close	4	21		A7	-A5-07K31	/F8-08.3
OX_LA_TRANSMITTER_ON	A36.0	enable laser	4	22		A0	-A5-07K41	
OX_LA_RECEIVER_ON	A36.1	enable laser received data	4	22		A1	-A5-07K41	
OX_LA_RECEIVER_2_ENABLE	A36.2	enable laser enable 2	4	22		A2	-A5-07K41	
OX_GEN_M_FUNCTION_M20	A36.3	machine-spec. function M functions	4	22		A3	-A5-07K41	
OX_LA_CAIR_CLEAN	A36.4	tool measurement blow off	4	22		A4	-A5-07K41	
OX_LA_BARR_AIR_OFF	A36.5	barrier air off laser	4	22		A5	-A5-07K41	
OX_LA_DIRT_TRAP_OPEN	A36.6	dirt mask open laser	4	22		A6	-A5-07K41	
OX_DH_CLAMP_RELEASE	A36.7	index head Clamping release	4	22		A7	-A5-07K41	
OX_CC_FORWARD	A37.0		4	23		A0	-A5-07K51	
OX_CC_BACKWARD	A37.1		4	23		A1	-A5-07K51	
OX2_23	A37.2		4	23		A2	-A5-07K51	
OX3_23	A37.3		4	23		A3	-A5-07K51	

Allocation list

symb. Operand	Abs_ operator	comments	Profibus Address	plug-in position	Asi Address	EA	BMK	Cross-ref.
OX4_23	A37.4		4	23		A4	-A5-07K51	
OX5_23	A37.5		4	23		A5	-A5-07K51	
OX6_23	A37.6		4	23		A6	-A5-07K51	
OX7_23	A37.7		4	23		A7	-A5-07K51	
OX_ROBOT_DOOR_CLOSED	A41.0	handling system Door close	4	24		A0	-A5-09K11	/F4-06.3
OX_ROBOT_DOOR_OPENED	A41.1	handling system Door open	4	24		A1	-A5-09K11	/F4-06.5
OX_HCD_CLA_POI_1_CLAMP	A41.2	clamping device 1 Tension	4	24		A2	-A5-09K11	/H4-08.2
OX_HCD_CLA_POI_1_RELEASE	A41.3	clamping device 1 release	4	24		A3	-A5-09K11	/H4-08.5
OX_HCD_CLA_POI_2_CLAMP	A41.4	clamping device 2 Tension	4	24		A4	-A5-09K11	
OX_HCD_CLA_POI_2_RELEASE	A41.5	clamping device 2 release	4	24		A5	-A5-09K11	
OX_HCD_PUMP_ON	A41.6	clamping device Pump On	4	24		A6	-A5-09K11	/H4-01.7
OX_HCD_VALVE_UNPRESS_N	A41.7	Clamping hydraulics pressure release	4	24		A7	-A5-09K11	/H4-14.1
BT_ET200S_PM_4_25		Power-Module ET 200S	4	25			-A5-09T21	
IX_ROBOT_DOOR_CLOSE	E40.0	automation system Door closed	4	26		E0	-A5-09K31	/F4-05.2
IX_ROBOT_DOOR_OPEN	E40.1	automation system Door open	4	26		E1	-A5-09K31	/F4-05.5
IX_ROBOT_AUTO	E40.2	automation system Automatic mode On/Off	4	26		E2	-A5-09K31	/F4-10.4
IX_HCD_CLA_POI_1_CLAMPED	E40.4	clamping device 1 clamped	4	26		E4	-A5-09K31	/H4-03.3
IX_HCD_CLA_POI_1_RELD	E40.5	clamping device 1 released	4	26		E5	-A5-09K31	/H4-03.6
IX_HCD_BUT_CL_PO_1_CLP	E40.6	clamping device clamp/release	4	26		E6	-A5-09K31	/H4-06.1
IX_HCD_BUT_CL_PO_1_REL	E40.7	clamping device 1 release	4	26		E7	-A5-09K31	
IX_HCD_CLA_POI_2_CLAMPED	E42.0	clamping device 2 clamped	4	27		E0	-A5-09K41	
IX_HCD_CLA_POI_2_RELD	E42.1	clamping device 2 released	4	27		E1	-A5-09K41	
IX_HCD_BUT_CL_PO_2_CLP	E42.2	clamping device 2 Tension	4	27		E2	-A5-09K41	
IX_HCD_BUT_CL_PO_2_REL	E42.3	clamping device 2 release	4	27		E3	-A5-09K41	
IX_HCD_SYST_P_REA	E42.4	clamping device system pressure	4	27		E4	-A5-09K41	/H4-07.3
IX_HCD_TEMP_OK	E42.5	Clamping hydraulics monitoring Oil temperature	4	27		E5	-A5-09K41	/H4-01.5
IX_HCD_FILL_LEV_OK	E42.6	monitoring Filling level oil tank	4	27		E6	-A5-09K41	/H4-01.3
IX_HCD_FILTER_WARNING_N	E42.7	filter fouling Clamping hydraulics	4	27		E7	-A5-09K41	/H4-20.1
BT_ET200S_IM151_10		ET 200S IM151	10				-B2-23K11	
BT_ET200S_PM_10_1		Power-Module ET 200S	10	1			-B2-23T31	
OX_CU_M8	A55.0	Coolant 1 on	10	2		A0	-B2-23K41	/B2-31.2
OX_CU_FLUSH_CABIN	A55.1	Flush cleaning Enclosure on	10	2		A1	-B2-23K41	
OX_CU_PAPER_MOVE	A55.2	Motor paper strip filter on	10	2		A2	-B2-23K41	/B3-10.3
BT_ET200S_PM_10_3		Power-Module ET 200S	10	3			-B2-24T11	
OX_CU_M7	A56.0	High-pressure pump Coolant 2.1	10	4		A0	-B2-24K21	/B2-33.2
OX_CU_FLUSH_ROOF	A56.2	Flush cleaning top	10	4		A2	-B2-24K21	
OX_PC_TABLE_FLUSH	A57.0	Flush cleaning Pallet changer	10	5		A0	-B2-24K41	
OX_CU_M7_STAGE_2	A57.1	High-pressure pump Coolant 2.2 80 bar	10	5		A1	-B2-24K41	

Allocation list

symb. Operand	Abs_ operator	comments	Profibus Address	plug-in position	Asi Address	EA	BMK	Cross-ref.
BT_ET200S_PM_10_6		Power-Module ET 200S	10	6			-B2-24T51	
IX_CU_MPS_SPI_TR_H_N	E55.0	Trouble alarm Coolant system feed stop	10	7		E0	-B2-24K61	/B2-28.1
IX_CU_MALFUNCT_N	E55.1	Trouble alarm Coolant system	10	7		E1	-B2-24K61	/B2-28.3
IX_PC_TABLE_FLUSH_D	E55.2	Diagnosis Flush cleaning Pallet changer	10	7		E2	-B2-24K61	
IX_CU_MOTOR_PAPER_ON	E55.3	Motor paper strip filter on	10	7		E3	-B2-24K61	/B3-11.2
IX_CU_NIVEAU_WAR_MIN	E56.0	Warning Filling level minimum	10	8		E0	-B2-25K21	/B2-48.4
IX_CU_NIVEAU_WAR_MIN_D	E56.1	Diagnosis Warning minimum	10	8		E1	-B2-25K21	/B2-48.3
IX_CU_NIVEAU_MIN	E56.2	Coolant Filling level minimum	10	8		E2	-B2-25K21	/B2-48.1
IX_CU_NIVEAU_MIN_D	E56.3	Diagnosis Filling level minimum	10	8		E3	-B2-25K21	/B2-48.1
IX_CU_NIVEAU_MAX	E57.0	Coolant Filling level maximum	10	9		E0	-B2-25K31	/B2-48.6
IX_CU_NIVEAU_MAX_D	E57.1	Diagnosis Filling level maximum	10	9		E1	-B2-25K31	/B2-48.5
IX_CU_PAPER_END	E58.0	end of ribbon filter	10	10		E0	-B2-25K51	/B3-12.1
IX_CU_PAPER_END_A	E58.1	monitoring end of ribbon filter	10	10		E1	-B2-25K51	/B3-12.1
IX_CU_PAPER_WAR_SHORTAGE	E58.2	Warning end of ribbon filter	10	10		E2	-B2-25K51	/B3-12.4
IX_CU_PAPER_WAR_SHORT_A	E58.3	monitoring Warning end of ribbon filter	10	10		E3	-B2-25K51	/B3-12.3
IX_CU_SAFETY_EMSTP_EN	E59.1	enable Coolant system PNOZ Emergency stop	10	11		E1	-B2-25K61	/B2-28.5
IX_CU_SAFETYUNIT_CAB_EN	E59.2	enable Coolant system PNOZ cabin doors	10	11		E2	-B2-25K61	/B2-28.7

Allocation list

symb. Operand	Abs_ operator	comments	Profibus Address	plug-in position	Asi Address	EA	BMK	Cross-ref.
4XX05_DSYS_00_NCU	ID5697	Control NCU					-A4-00K21	
4XX05_DSYS_00_NCX	ID5696	Control-Extension_ NX					-A4-00K51	
4XX05_DSYS_00_XLM	ID5695	Supply module					-C0-01T21	
4XX05_SPI10_01_SMM	ID5693	drive controller S-axis					-C1-01K21	
4XX05_SPI10_01_IMS	ID5694	Position sensor rack Spindle					-C1-03B22	
4XX05_SPI10_01_SMX_IMS	ID5692	SME-Adapter SPI					-C1-03K21	
4DX05_AXX_00_DMM	ID5709	drive controller X-axis					-D1-01K21	
4DX05_AXZ_00_DMM	ID5805	drive controller Z-axis					-D1-01K21	
4DX05_AXX_00_SMX_IMS	ID5707	Motor X-axis					-D1-01M21	
4DX05_AXX_00_DMS	ID5708	measuring system X-axis					-D1-06B51	
4DX05_AXX_00_SMX_DMS	ID5700	SME-Adapter X-axis					-D1-06K21	
4DX05_AXY_00_SMM	ID5705	drive controller Y-axis					-D1-11K21	
4DX05_AXY_00_SMX_IMS	ID5703	Motor Y-axis					-D1-11M21	
4DX05_AXY_00_DMS	ID5706	measuring system Y-axis					-D1-16B51	
4DX05_AXY_00_SMX_DMS	ID5704	SME-Adapter Y-axis					-D1-16K21	
4DX05_AXZ_00_SMX_IMS	ID5698	Motor Z-axis					-D1-21M21	
4DX05_AXZ_00_DMS	ID5702	measuring system Z-axis					-D1-26B51	
4DX05_AXZ_00_SMX_DMS	ID5699	SME-Adapter Z-axis					-D1-26K21	
4DX05_AXB_00_DMM	ID5715	drive controller B-axis					-D2-01K21	
4DX05_AXC_00_DMM	ID5804	drive controller C-axis					-D2-01K21	
4DX05_AXC_00_SMX_IMS	ID5710	Motor C-axis					-D2-01M21	
4DX05_AXC_00_DMS	ID5712	measuring system C-axis					-D2-06B51	
4DX05_AXC_00_SMX_DMS	ID5711	SME-Adapter C-axis					-D2-06K21	
4DX05_AXB_00_SMX_IMS	ID5713	Motor B-axis					-D3-01M21	
4DX05_AXB_00_DMS	ID5701	measuring system B-axis					-D3-06B51	
4DX05_AXB_00_SMX_DMS	ID5714	SME-Adapter B-axis					-D3-06K21	

			Date	02.02.2011	project number	DECKEL MAHO Seebach GmbH	Allocation list	object	DCC	Place	⇦
			change	MEF	113022			DMU 50	& EFP		⇨
			chec.					series	circuit diagram No.:	language	sheet 1
			Created by		rep. by	rep. of	source	4526	2652185	EN	173

5

5 Unit plan / Wear part list

See chapter 4.

6

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8

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10 Cable plans

See chapter 4.

11

12

HISTORY Version DMU 50-Si-BA-V 4526-EN-V1

The language acquisition of the manufacturer (German) prevails for the technical content.

Issue:

Ident no.: 4526-V1