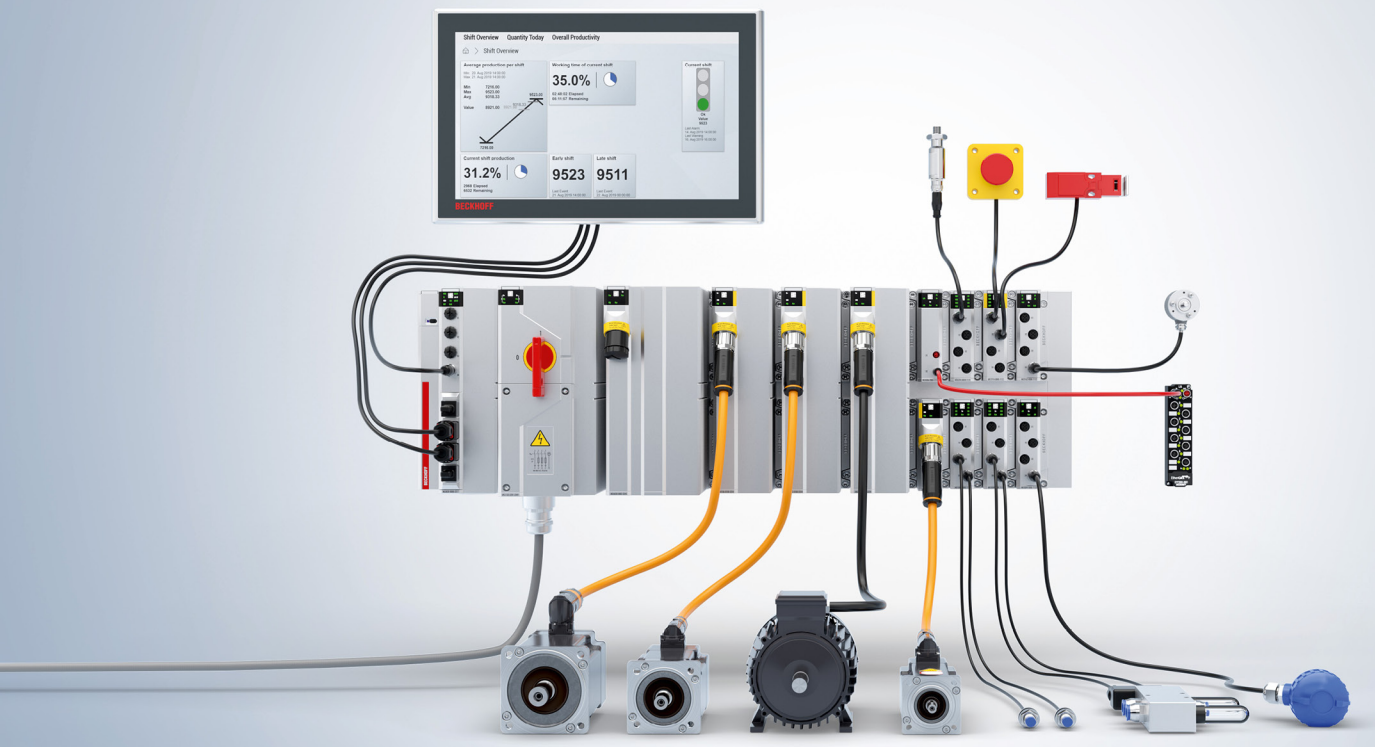
BECKHOFF New Automation Technology

Manual | EN

MS3025-1001-2245

Power output, replaceable fuses, 400/480 V AC/25 A, B23



2025-12-16 | Version: 1.0.0

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1 Foreword

1.1 Notes on the documentation

This description is intended exclusively for trained specialists in control and automation technology who are familiar with the applicable national standards.
The documentation and the following notes and explanations must be complied with when installing and commissioning the components.
The trained specialists must always use the current valid documentation.

The trained specialists must ensure that the application and use of the products described is in line with all safety requirements, including all relevant laws, regulations, guidelines, and standards.

Disclaimer

The documentation has been compiled with care. The products described are, however, constantly under development.
We reserve the right to revise and change the documentation at any time and without notice.
Claims to modify products that have already been supplied may not be made on the basis of the data, diagrams, and descriptions in this documentation.

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1.2 For your safety

Safety regulations

Read the following explanations for your safety.
Always observe and follow product-specific safety instructions, which you may find at the appropriate places in this document.

Exclusion of liability

All the components are supplied in particular hardware and software configurations which are appropriate for the application. Modifications to hardware or software configurations other than those described in the documentation are not permitted, and nullify the liability of Beckhoff Automation GmbH & Co. KG.

Personnel qualification

This description is only intended for trained specialists in control, automation, and drive technology who are familiar with the applicable national standards.

Signal words

The signal words used in the documentation are classified below. In order to prevent injury and damage to persons and property, read and follow the safety and warning notices.

Personal injury warnings

⚠ DANGER
Hazard with high risk of death or serious injury.

⚠ WARNING
Hazard with medium risk of death or serious injury.

⚠ CAUTION
There is a low-risk hazard that could result in medium or minor injury.

Warning of damage to property or environment

NOTICE
The environment, equipment, or data may be damaged.

Information on handling the product

This information includes, for example:
recommendations for action, assistance or further information on the product.

1.3 Intended use

Intended use of an MX-System

Application in machines and systems in industrial environments and exclusively inside buildings.

The electrical wiring must be permanent wiring.

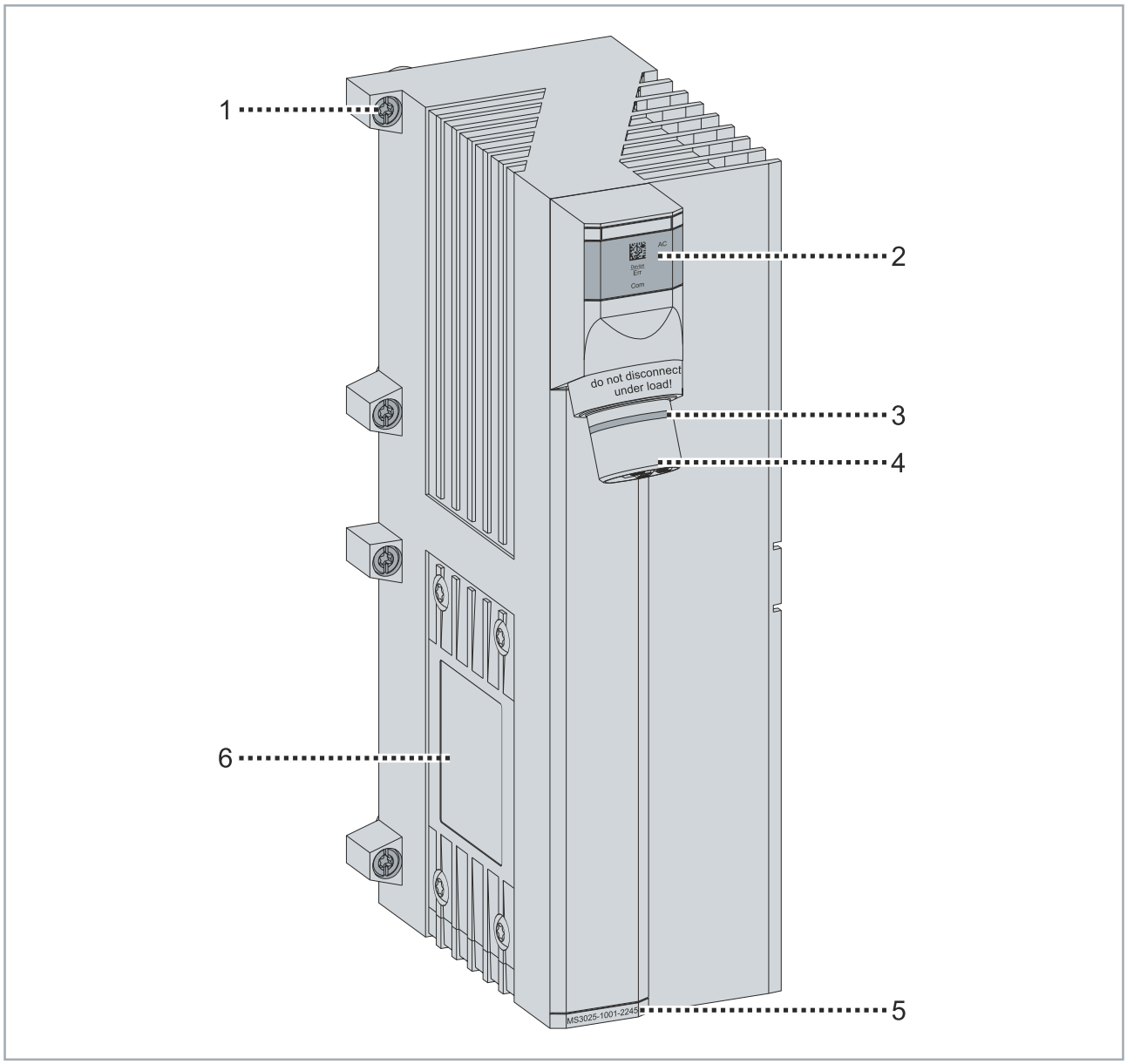
Improper use

Improper use is not permitted and will result in the exclusion of liability on the part of Beckhoff Automation GmbH & Co.

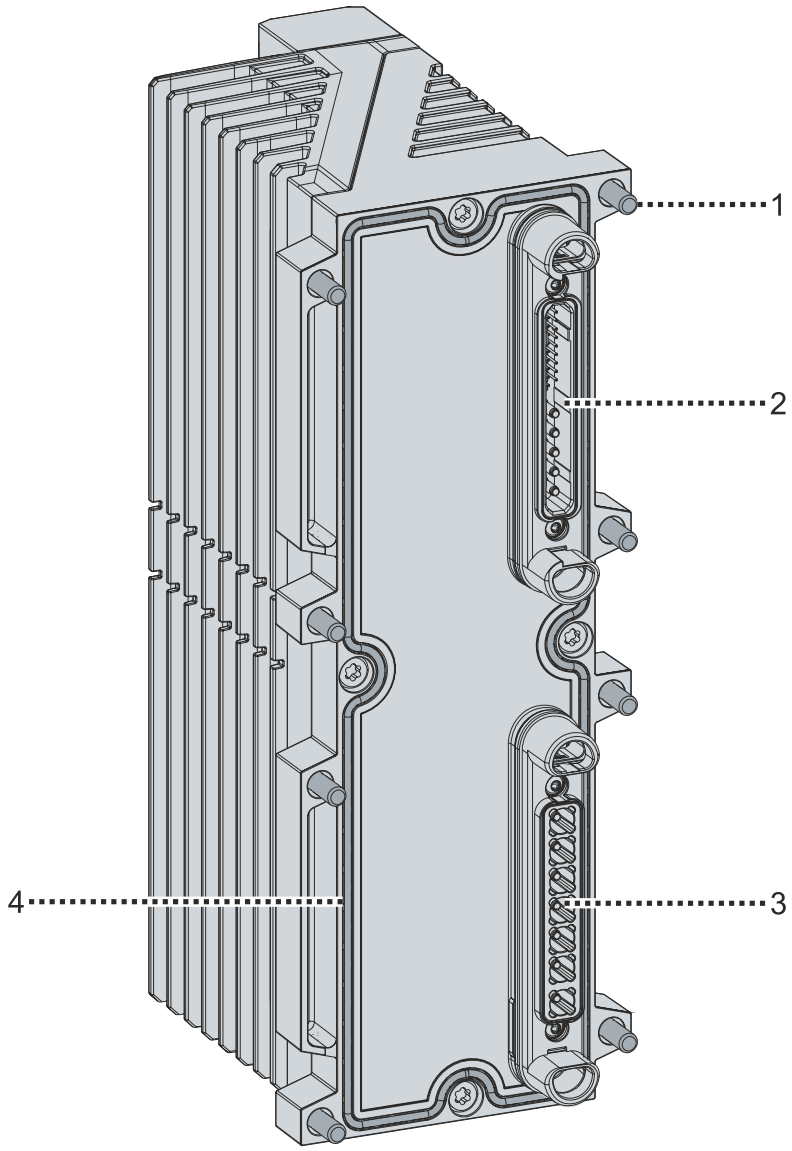
2 Product overview

The MS3025-1001-2245 power output module provides 400...480 V AC and up to 25 A for additional consumers.

The fuses for line protection are accessible and replaceable via a fuse flap on the side.



Position	Name
1	Fastening screw, captive, 8 x
2	Status display
3	Seal
4	Power output
5	Module name
6	Safety flap



Position	Name
1	Fastening screw, captive, 8 x
2	Data connector
3	Power connector
4	Seal

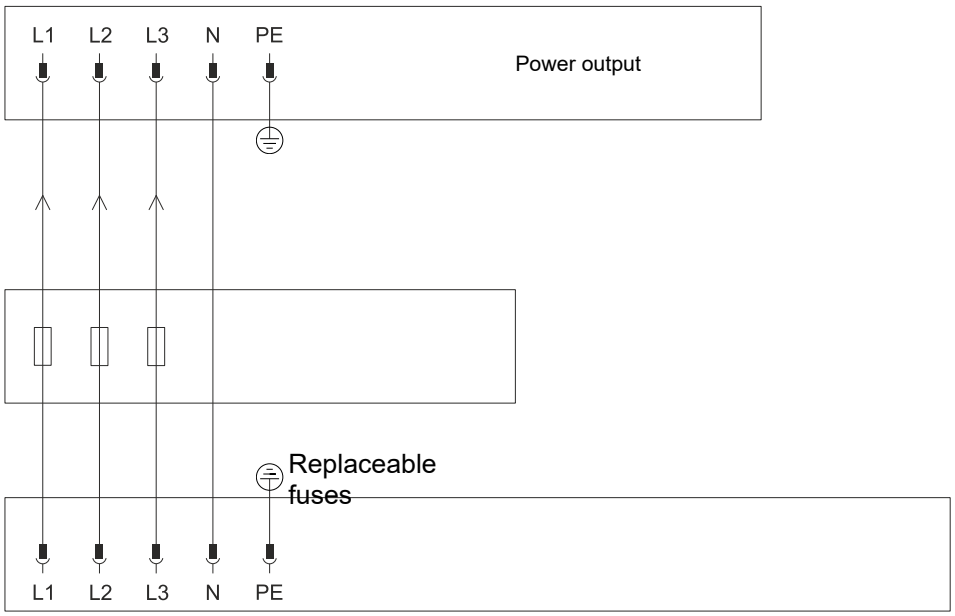
2.1 Product functions

2.1.1 Electrical fuses

The module has a fuse for each phase at the power input. The fuses can be replaced by the user. Further information can be found in chapter Replacing the fuses [▶ 21].

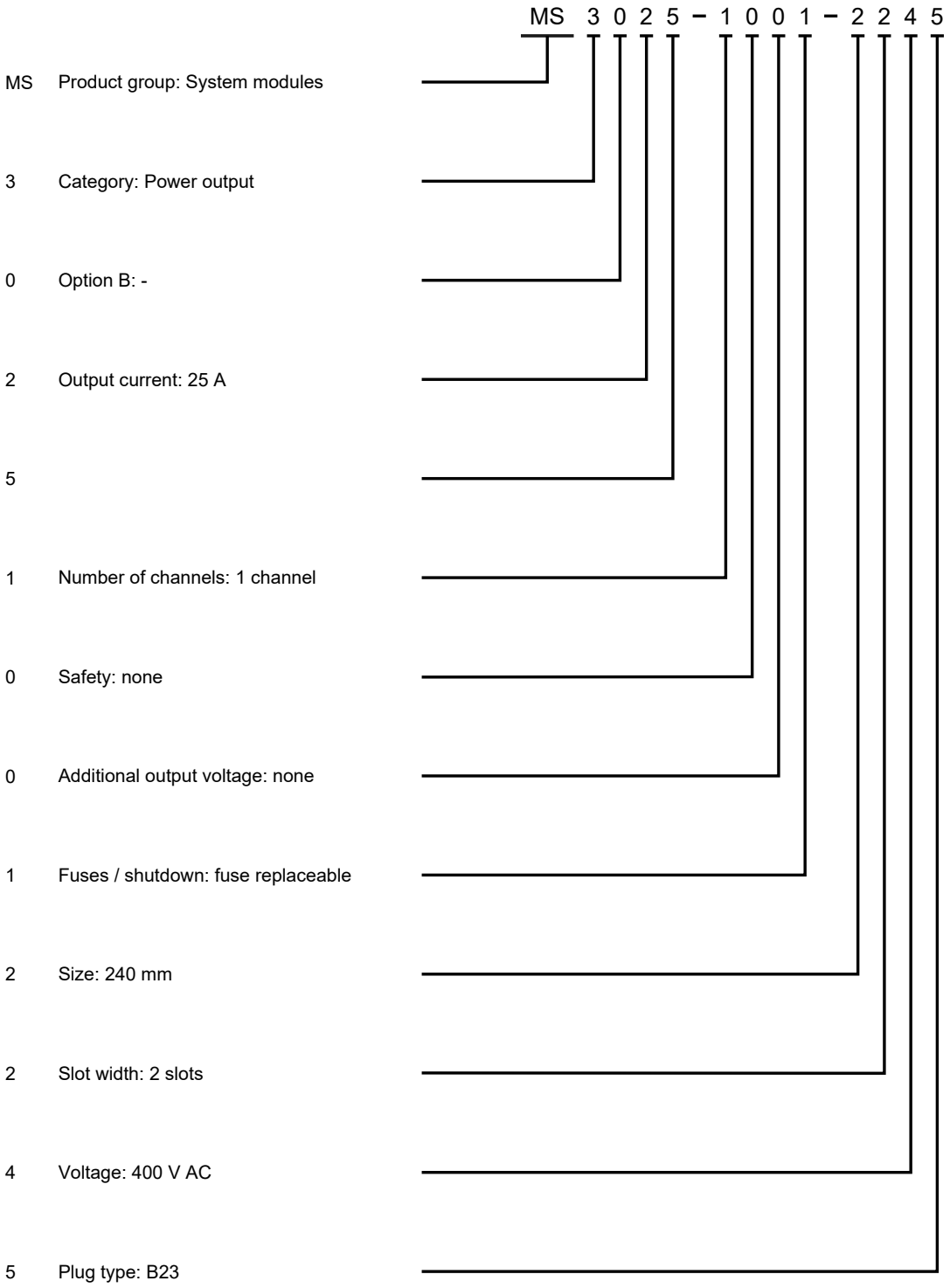
The fuses respond more slowly than the fuses in modules that are supplied from the power fed in, e.g. servo drive modules. This ensures that in the event of an overload at the output of such a module, only the respective output is shutdown. The fuses of the power infeed do not yet trigger and the MX-System continues to function.

2.2 Block diagram

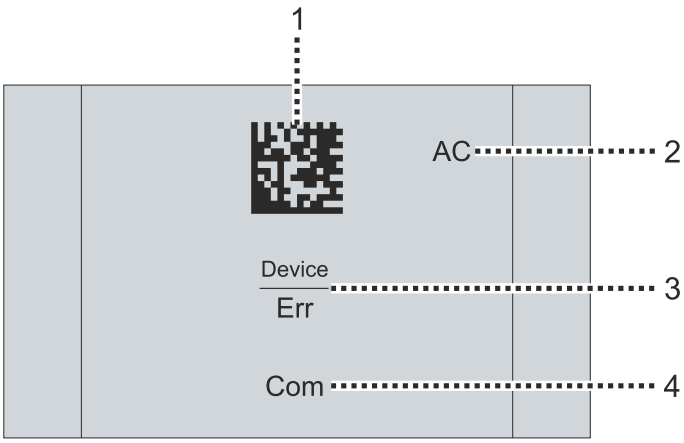


Baseplate interface

2.3 Type key


MS 3 0 2 5 – 1 0 0 1 – 2 2 4 5
MS Product group: System modules
3 Category: Power output
0 Option B: -
2 Output current: 25 A
5
1 Number of channels: 1 channel
0 Safety: none
0 Additional output voltage: none
1 Fuses / shutdown: fuse replaceable
2 Size: 240 mm
2 Slot width: 2 slots
4 Voltage: 400 V AC
5 Plug type: B23

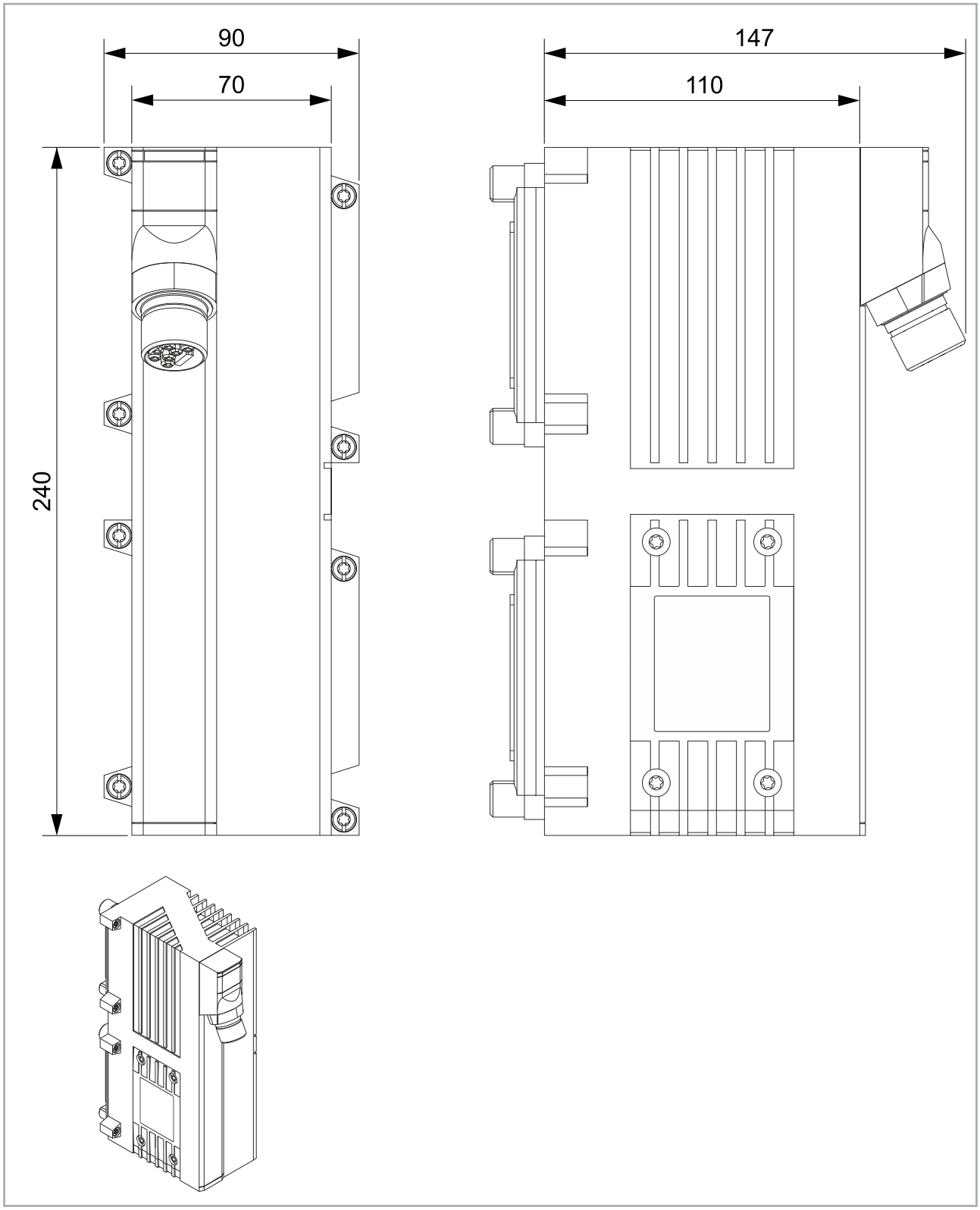
2.4 Status display



Position	Status display	Status	Explanation
1	-	-	Beckhoff Identification Code as DataMatrix code
2	AC	off	No mains voltage available
		green illuminated	Mains voltage available
3	Device | Error	off	No error exists
		red illuminated	Error collection LED
4	Com	off	The EtherCAT State Machine of the module is in the initialization state
		flashing green	The EtherCAT State Machine of the module is in the *Pre-Operational* state
		single flash green	The EtherCAT State Machine of the module is in the *Safe-Operational* state
		green illuminated	The EtherCAT State Machine of the module is in the *Operational* state
		flickers green	Firmware is being loaded

2.5 Dimensions

All dimensions in mm



3 Technical data

All values are typical values over the entire temperature range, unless stated otherwise.

Baseplate interface	
Connector	1 data connector 1 power connector
Hot Swap	No

Voltage output X1	
Connection	1 x B23 hybrid connector, 5-pin
Rated output voltage AC	400…480 V AC (-15 % … + 10 %)
Rated output frequency AC	50…60 Hz (± 10 %)
Rated output current AC	22.5 A to 40 °C Derating: 1%/K above 40 °C ambient temperature
Fuse protection AC	Fuse for each phase, replaceable
Fuse protection AC type	Fuse 25 A gRL 10.3x38 Fine 25A 600VAC gRL (IEC/UL) SIBA 60 034 34.25

Housing data	
Width (slots)	2
Height (rows)	2
Dimensions W × H × D	90 mm × 240 mm × 147 mm 90 mm × 240 mm × 112 mm (housing only)
Material	Zinc die-cast and aluminum die-cast
Cooling	Convection
Weight	-
Installation position	Vertical. See system manual, chapter "Installation conditions".

Standards, approvals	
Device safety	conforms to EN 61010-2-201
EMC immunity/emission	conforms to EN IEC 61000-6-2 / EN IEC 61000-6-4
Vibration/shock resistance	conforms to EN 60068-2-6 / EN 60068-2-27
Approvals	CE, UL in preparation

Environmental conditions	
Operating temperature	0 … 50 °C
Storage temperature	-25 … +60 °C
Air humidity	95%, no condensation
Protection rating	IP20 as a separate module IP65 / IP67 as part of a fully and correctly assembled MX-System
Pollution degree	2
Overvoltage category	III 300 V
Maximum installation altitude	2000 m

4 Mechanical installation

Required tools

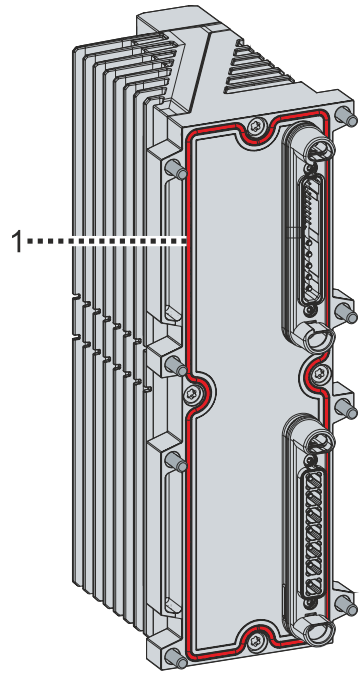
- Torx T25 screwdriver
- Torque wrench 5 Nm

4.1 Preparation

NOTICE

Check the module for damage

If the seal is worn or damaged, liquids and dirt can penetrate and damage the MX-System. The IP67 protection rating is not met if the seals are worn or damaged.

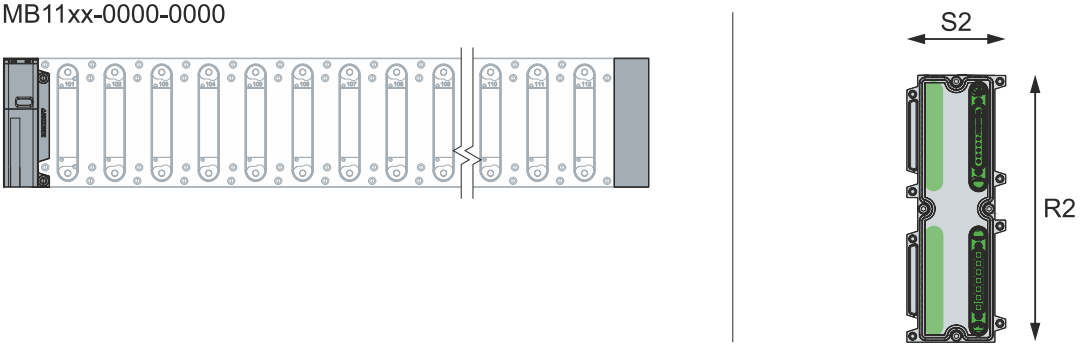


1. Check the seal [1] of the module for wear and damage
2. Replace worn and damaged seals

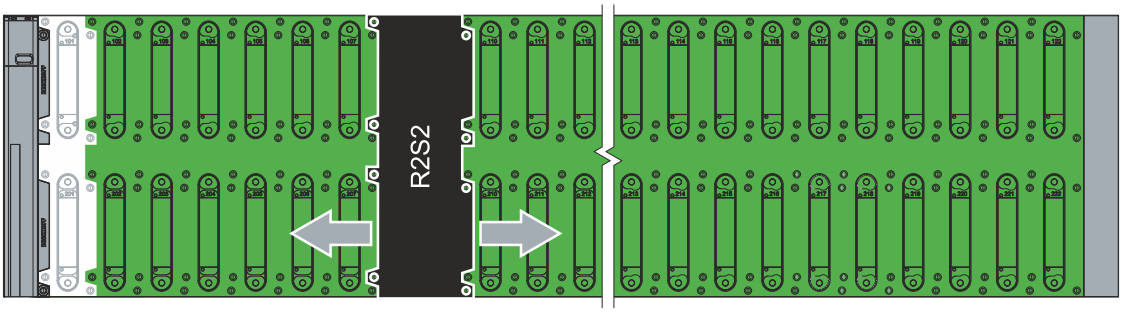
4.2 Placement of the module on the baseplate

The module can be plugged into the following areas marked in green:

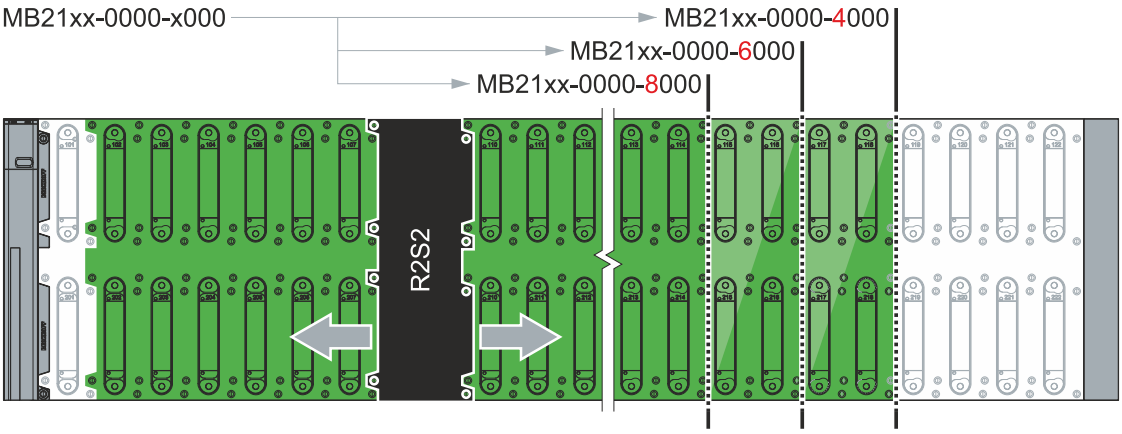
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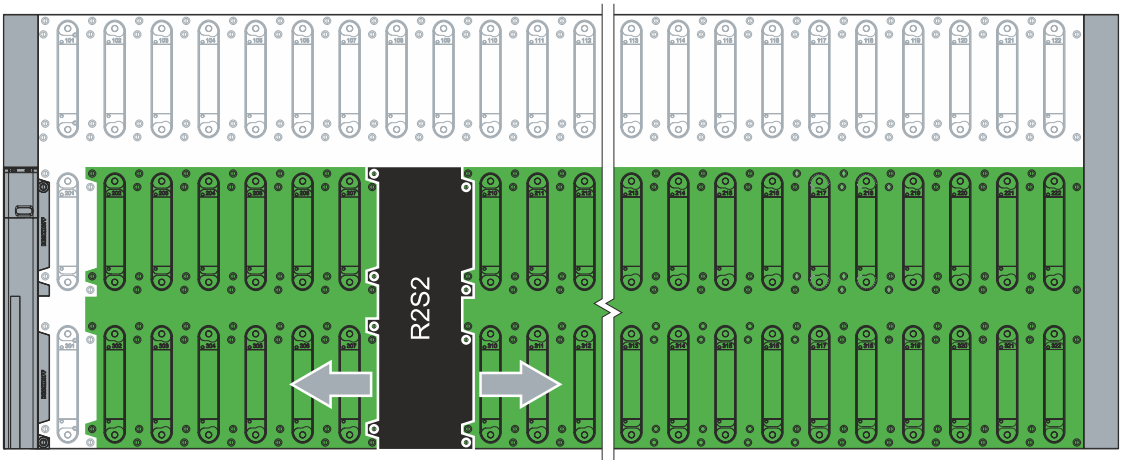
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4.3 Mounting the module

⚠ CAUTION

Danger due to the high weight of an equipped baseplate

First mount the baseplate and then the modules to the baseplate. If you mount the modules on the baseplate first, the total weight of the MX-System will increase. Another person is required to transport and assemble an equipped baseplate.

- Wear personal protective equipment.
- The equipped baseplate must be transported and mounted by two people.

NOTICE

Ensure correct installation

If the module is not installed correctly, liquids and dirt may enter and damage the MX-System. The IP67 protection rating is not met if the installation is incorrect.

NOTICE

Limited number of mating cycles

The module may be plugged in a maximum of 25 times to attach it to the baseplate. If the module is plugged into the baseplate more than 25 times, a secure connection between the module and the baseplate cannot be guaranteed.

- Observe the permissible number of mating cycles.
- Replace the module if the number of mating cycles is exceeded.
- Replace the baseplate if the number of mating cycles is exceeded.

The module can be plugged into any position on a data slot and an underlying power slot on a baseplate. Depending on the design, an additional free data slot and power slot are required. Slot *101* must not be used.

1. Plug the module on the baseplate
2. Tighten all screws
3. Observe tightening torques:

Components	Tightening torque [Nm]
Screws	5

Further information on installation can be found in the system manual in the "Mounting" chapter.

5 Connection

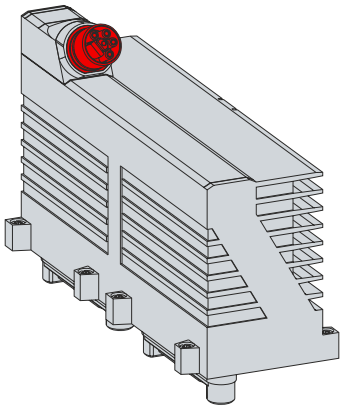
NOTICE

Defect caused by hot plug

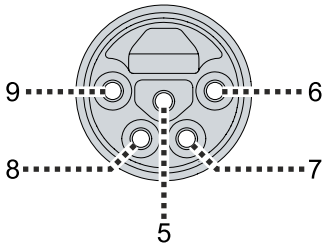
If cables are connected or disconnected during operation, damage to property is possible.

- Only connect or disconnect cables when all supply voltages have been shutdown.

Power output



The power output is a 5-pin B23 connector with coding 2 without data element.

B23 connector	Pin	Signal	Function
	5	PE	Protective earth
	6	N	N
	7	L1	L1
	8	L2	L2
	9	L3	L3

6 Commissioning and operation

NOTICE

Danger if operated in an unsuitable environment

Material damage is possible.

- Before commissioning, ensure that the environmental conditions at the place of commissioning and operation are complied with at all times. See environmental conditions in the chapter Technical data [▶ 15].

6.1 Requirements

- Components show no signs of damage
- Screw connections of the components are correctly tightened
- Wiring and cables are installed correctly

6.2 Commissioning

NOTICE

The supply voltage activates the power supply

As soon as the external supply voltage is applied, the power supply is automatically active and outputs UB = 24 V DC to the baseplate. This behavior cannot be set.

- Switch on the external supply voltage
- Parameterize the functions of the module if required

6.3 During operation

- Observe information for environment and operation
- Observe maintenance intervals
- Switch off the system if
  - unusual noise occurs
  - smoke develops
  - an atypical temperature development occurs

6.4 Replacing the fuses

⚠ WARNING

Danger to Life from Electric Shock

Death or serious injury can occur.

- Apply the five safety rules of electrical engineering before changing a fuse.

Required tools

- Torx T25 screwdriver
- Torque wrench 5 Nm
- Pliers

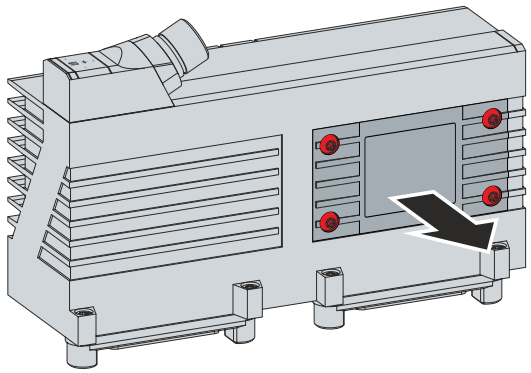
Required replacement fuses with the following specifications

- Nominal current: 25 A
- Nominal voltage: 600 V AC
- Characteristics: gRL
- Dimensions: 10.3 x 38 mm
- Type examples: SIBA 60 034 34.25

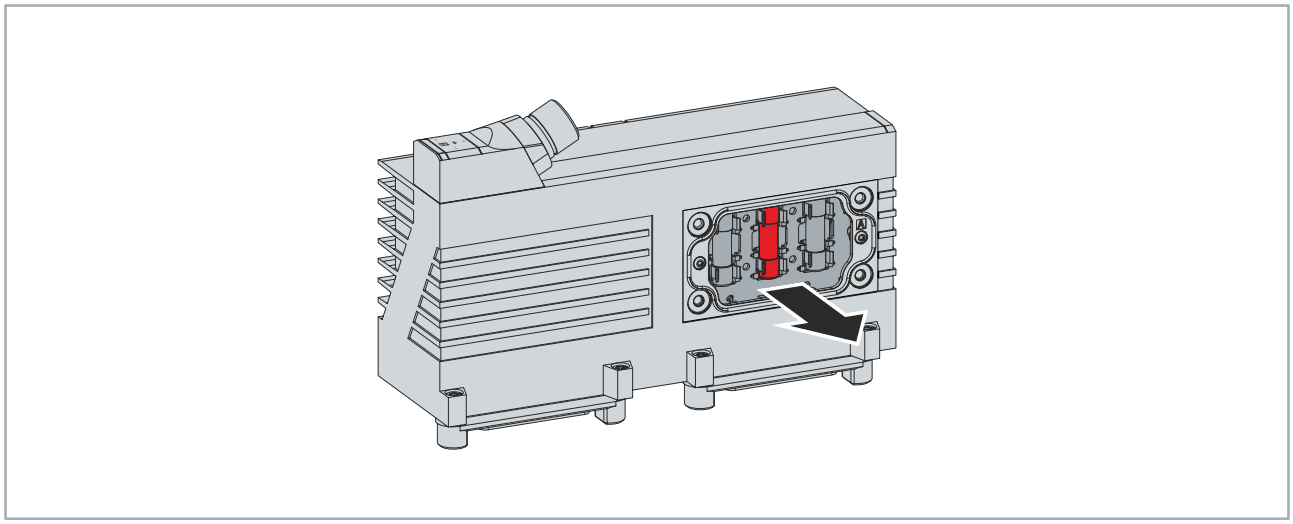
Replacing the fuses

1. Loosen all mounting screws of the module
2. Take the module off the baseplate

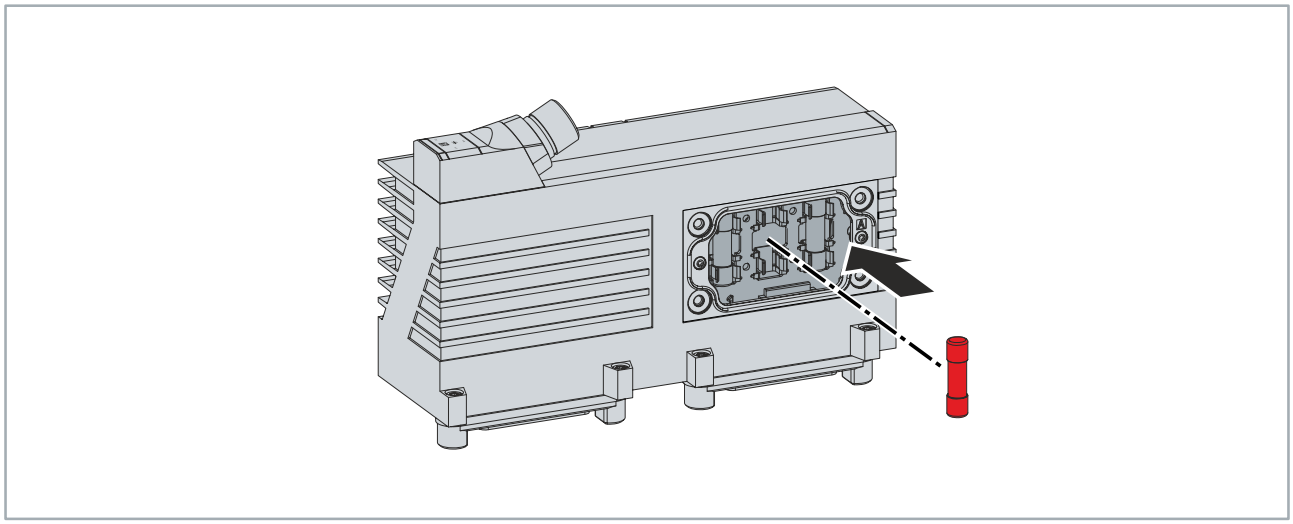
For more information, refer to the system manual in the chapter “Disassembly”.



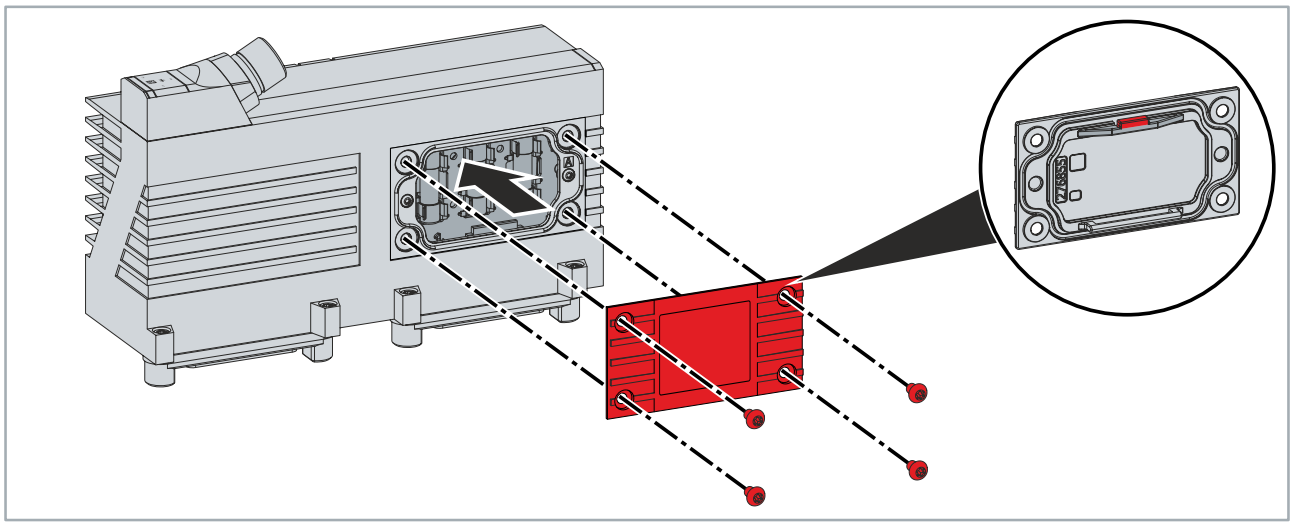
3. Remove the screws
4. Remove the safety flap



5. Remove old fuses with pliers



6. Insert new fuses by hand



7. Insert the safety flap with the latching lug facing upwards
8. Insert and tighten the screws
9. Observe tightening torques:

Components	Tightening torque [Nm]
Screws	5 Nm

7 Decommissioning

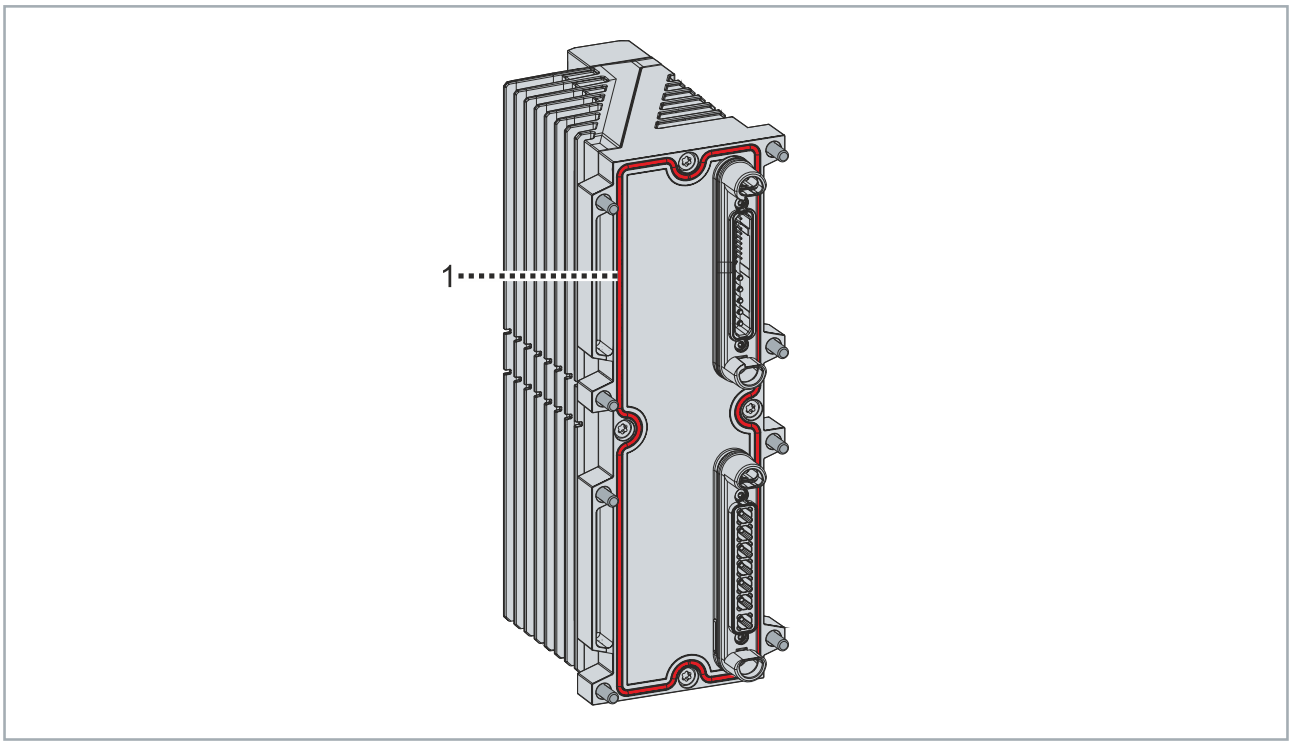
7.1 Disassembly

Disassembly may only be carried out by qualified and trained technical personnel.

Further information can be found in chapter Notes on the documentation [▶ 5].

1. Remove Cable
2. Loosen all mounting screws of the module
3. Take the module off the baseplate
4. Transport the module to the workplace or storage place

Further information can be found in the chapter Technical data [▶ 15] and in the system manual in the chapter "Disassembly".



1. Check the seal [1] of the module for wear and damage
2. Replace worn or damaged seals

Further information can be found in chapter Accessories [▶ 26].

7.2 Disposal



Products marked with a crossed-out wheeled bin shall not be discarded with the normal waste stream. The device is considered as waste electrical and electronic equipment. The national regulations for the disposal of waste electrical and electronic equipment must be observed.

8 Appendix

8.1 Manual version history

The following table shows the version history of this manual.

Version	Comment
1.0.0	• First release

8.2 Support and Service

Beckhoff and their partners around the world offer comprehensive support and service, making available fast and competent assistance with all questions related to Beckhoff products and system solutions.

Download finder

Our download finder contains all the files that we offer you for downloading. You will find application reports, technical documentation, technical drawings, configuration files and much more.

The downloads are available in various formats.

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You will also find further documentation for Beckhoff components there.

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- design, programming and commissioning of complex automation systems
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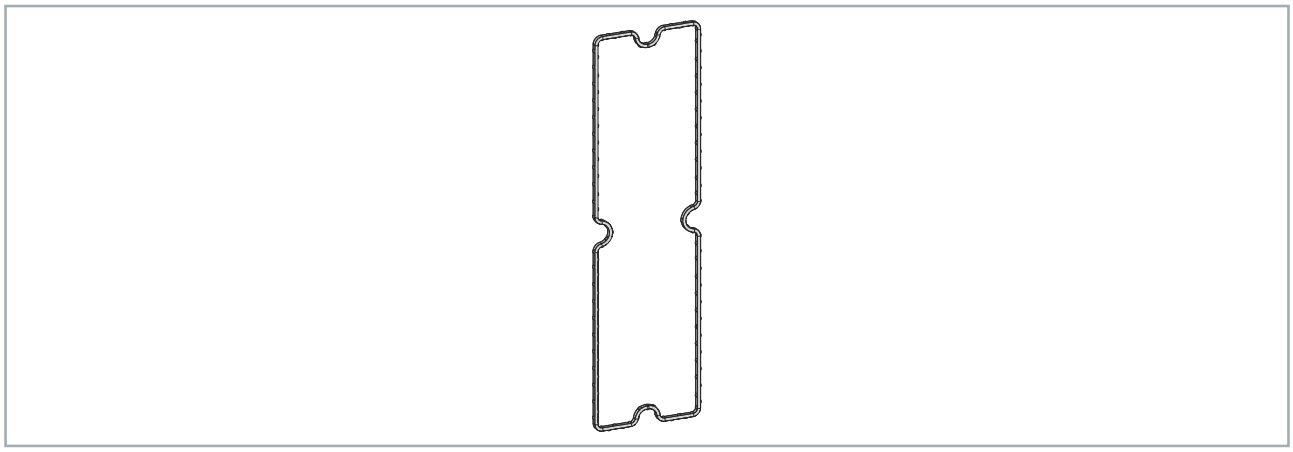
8.3 Accessories

Suitable accessories can be found on the product website:

www.beckhoff.com/ms3025-1001-2245

The following items are also available for replacing worn parts:

MX seal S2R2



The S2R2 seal is available to replace worn and damaged seals on a 2-row MX module with two slots.

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