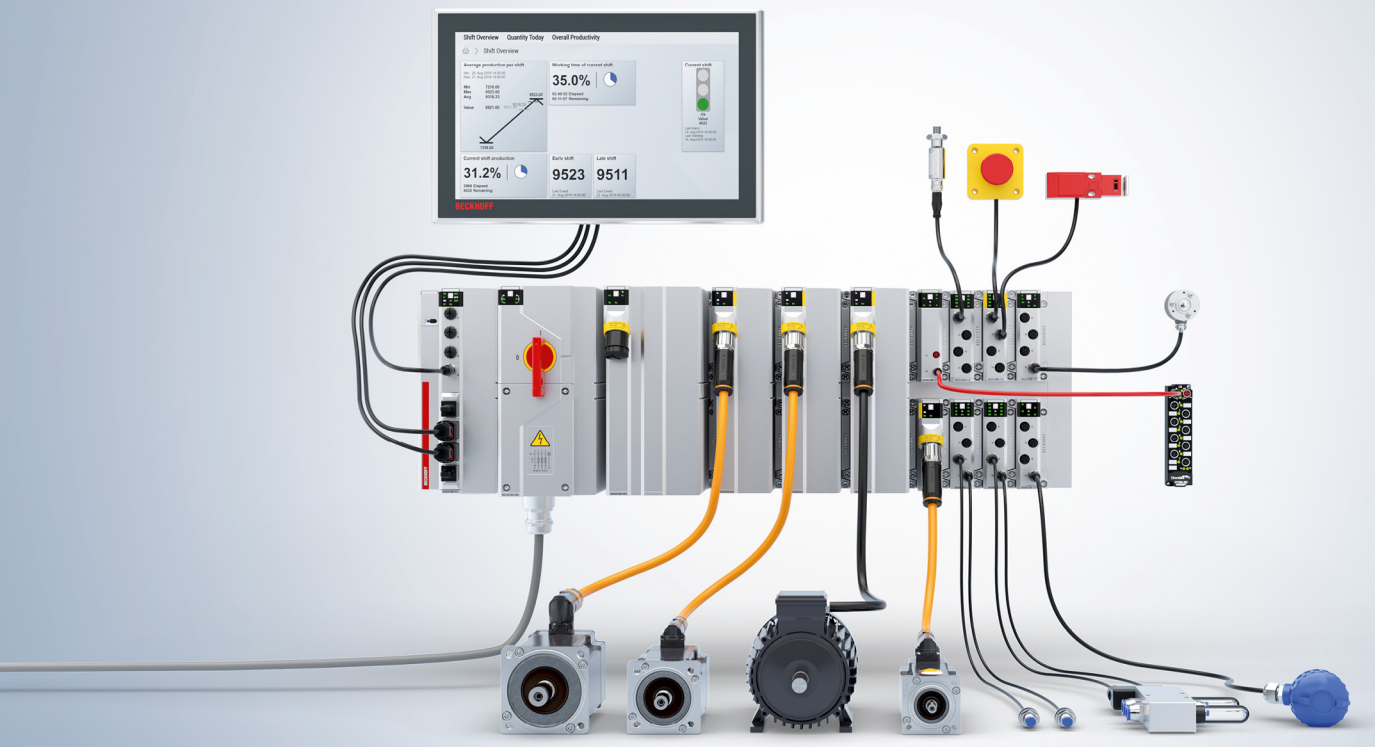
BECKHOFF New Automation Technology

Manual | EN

MS8132-0120-1212

2-channel PC UPS, 24 V DC, 0.12 kW, battery-backed, M12



2026-10-28 | Version: 1.0

Table of contents

1 Foreword 5
1.1 Notes on the documentation 5
1.2 For your safety 6
1.3 Intended use 7
1.4 Warning Signs and Symbols 7
2 Product overview 8
2.1 Product functions 10
2.2 Block diagram 11
2.3 Type key 12
2.4 Status display 13
2.5 Dimensions 14
3 Technical data 15
4 Software functions 16
5 Mechanical installation 18
5.1 Preparation 18
5.2 Placement of the module on the baseplate 19
5.3 Mounting the module 20
6 Connection 21
6.1 Secondary Interface X1 21
6.2 UPS output X2 22
6.3 Power supply 23
7 Commissioning and operation 24
8 Care and maintenance 25
8.1 Replacing the battery 25
9 Decommissioning 27
9.1 Disassembly 27
9.2 Disposal 27
10 Appendix 28
10.1 Manual version history 28
10.2 Accessories 28
10.3 Support and Service 29

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.

Trademarks

Beckhoff®, ATRO®, EtherCAT®, EtherCAT G®, EtherCAT G10®, EtherCAT P®, MX-System®, Safety over EtherCAT®, TC/BSD®, TwinCAT®, TwinCAT/BSD®, TwinSAFE®, XFC®, XPlanar® and XTS® are registered and licensed trademarks of Beckhoff Automation GmbH.
If third parties make use of the designations or trademarks contained in this publication for their own purposes, this could infringe upon the rights of the owners of the said designations.





EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

Copyright

© Beckhoff Automation GmbH & Co. KG, Germany.
The distribution and reproduction of this document, as well as the use and communication of its contents without express authorization, are prohibited.
Offenders will be held liable for the payment of damages. All rights reserved in the event that a patent, utility model, or design are registered.

Third-party trademarks

Trademarks of third parties may be used in this documentation. You can find the trademark notices here: https://www.beckhoff.com/trademarks.

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. KG.

1.4 Warning Signs and Symbols

Safety symbols, warning labels, and informational symbols are displayed on the product, the packaging, and in the technical documentation. The symbols used may vary depending on the device model and features.

The symbols are used:

- to protect people,
- to prevent damage to property and equipment,
- as well as for technical, safety-relevant, and environmental information.

Safety and information labels must not be removed, covered, or obscured. They must remain readable at all times.

The following section explains the symbols used on the device and in the documentation. These include both safety-relevant warning signs and general information and marking symbols, such as those for electrical labeling, disposal, or intended use.

When a symbol appears, follow the instructions provided in the technical documentation.



General warning sign

The relevant safety and warning instructions in the technical documentation must be followed. Improper operation or failure to follow the instructions may result in injury, property damage, or damage to the equipment.



Electronic Components/Disposal

Products marked with a crossed-out waste bin must not be disposed of with general waste. Electrical and electronic devices must be disposed of in accordance with applicable national regulations governing waste electrical and electronic equipment.

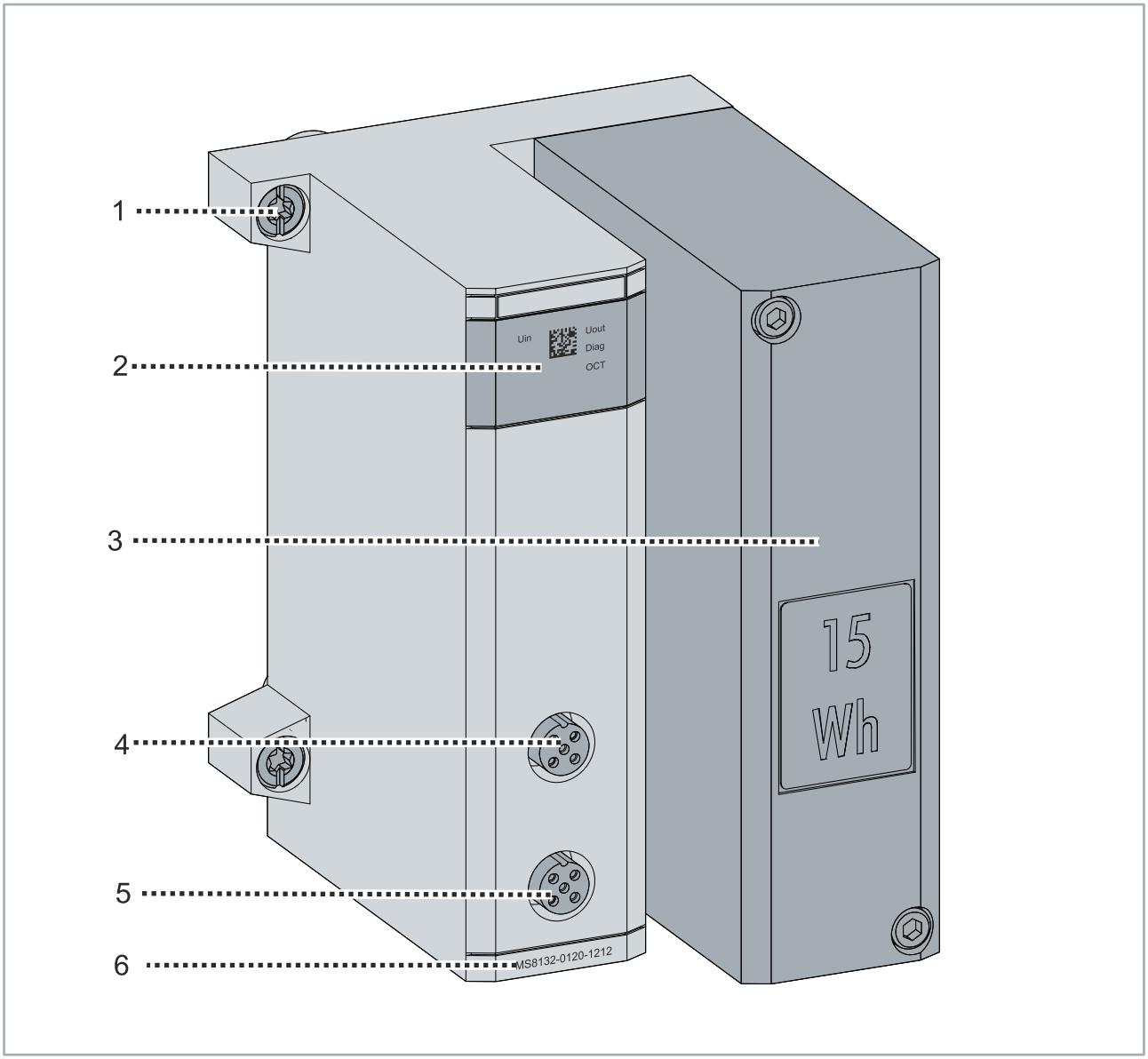


Read the original operating instructions

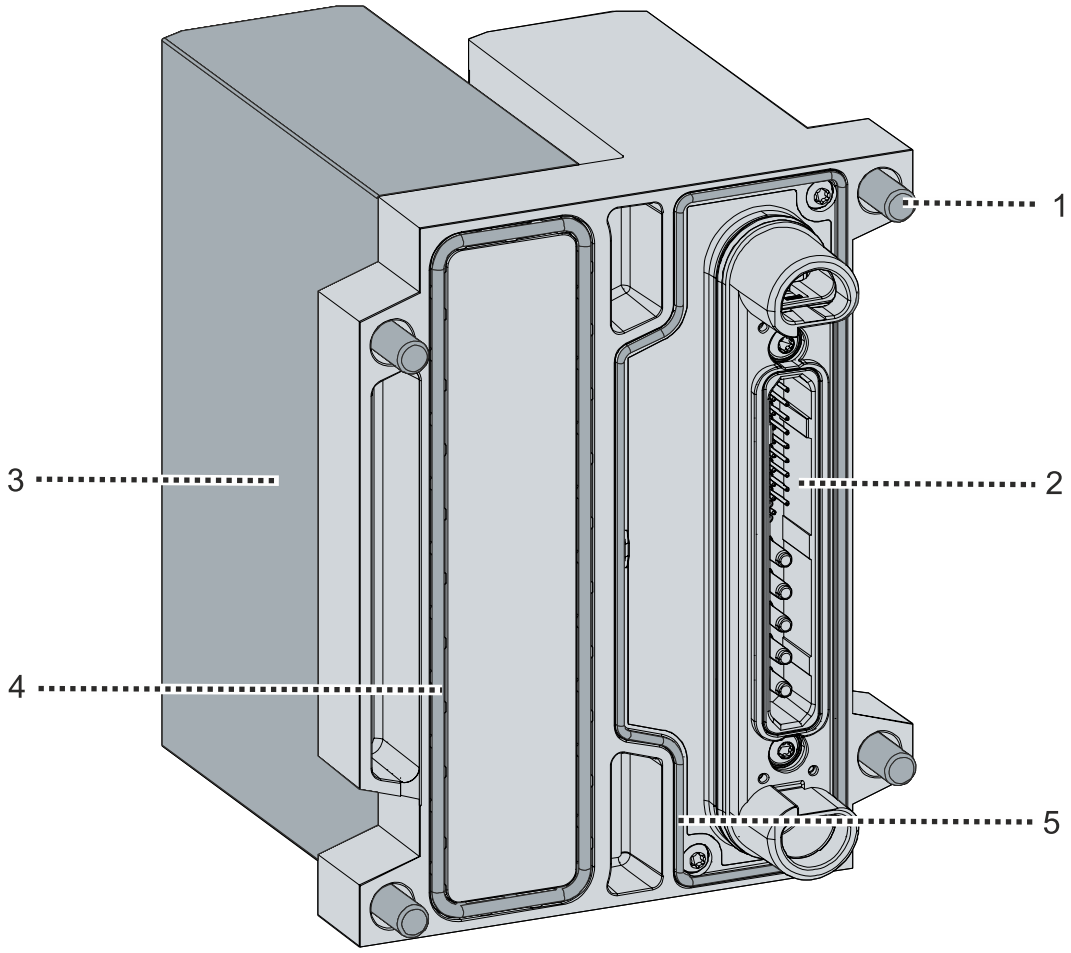
Be sure to read the entire operating instructions before commissioning the device. In particular, please observe the general safety instructions as well as the warnings in the individual chapters.

2 Product overview

The MS8132-0120-1212 UPS module monitors the 24 V control voltage and detects an undervoltage. In the event of undervoltage, the M12 connectors on the front are powered from the battery. This means that an IPC module and a secondary device such as an operating panel can be simultaneously supplied with 24 V. Port X2 has the Beckhoff OCT UPS interface and is able to communicate with a corresponding device via this interface.



Position	Name
1	Fastening screw, captive, 4 x
2	Status display
3	Battery module
4	Panel interface X1
5	UPS output to PC X2
6	Module ID

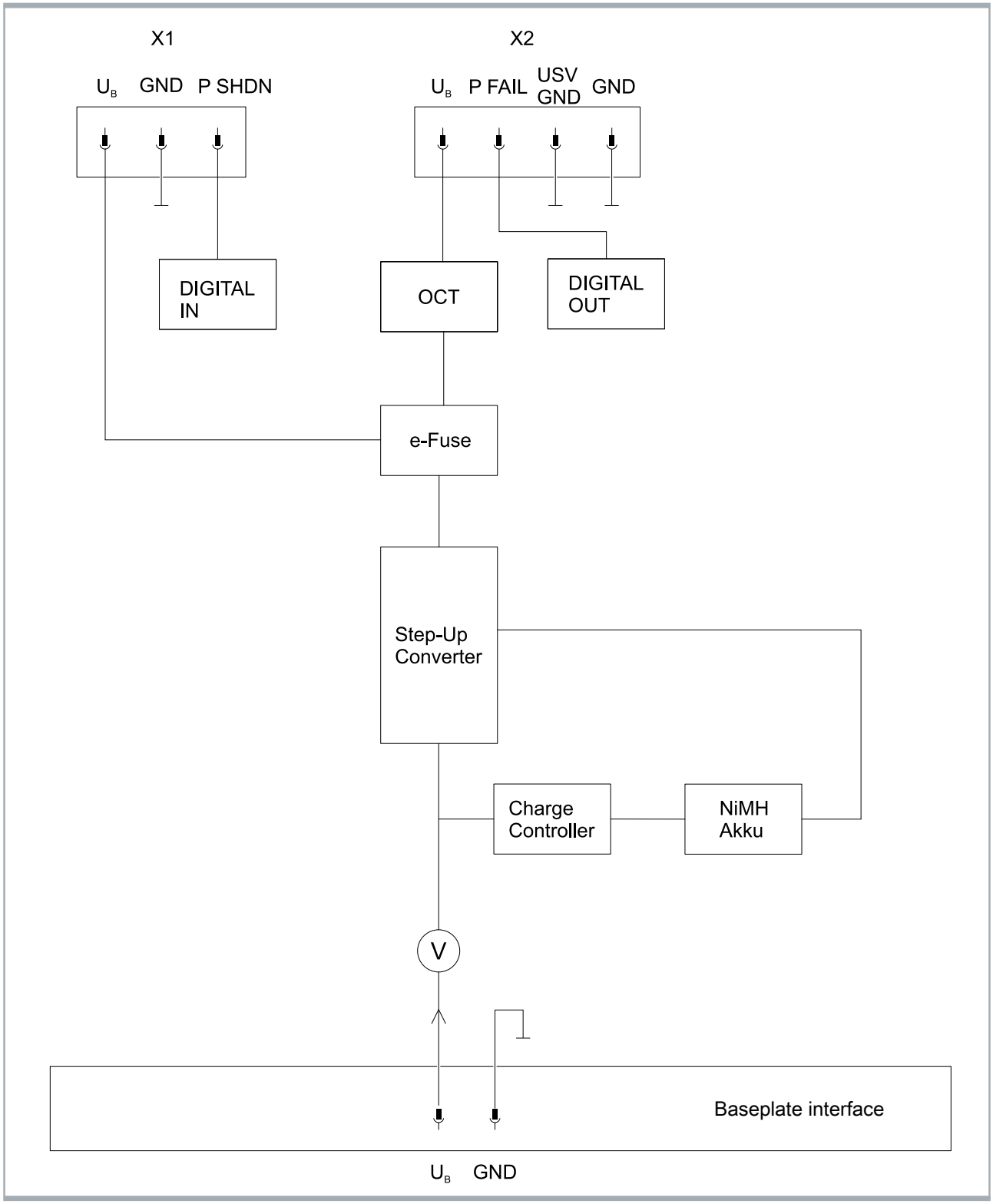


Position	Name
1	Fastening screw, captive, 4 x
2	Power connector
3	Battery module
4	Seal
5	Seal

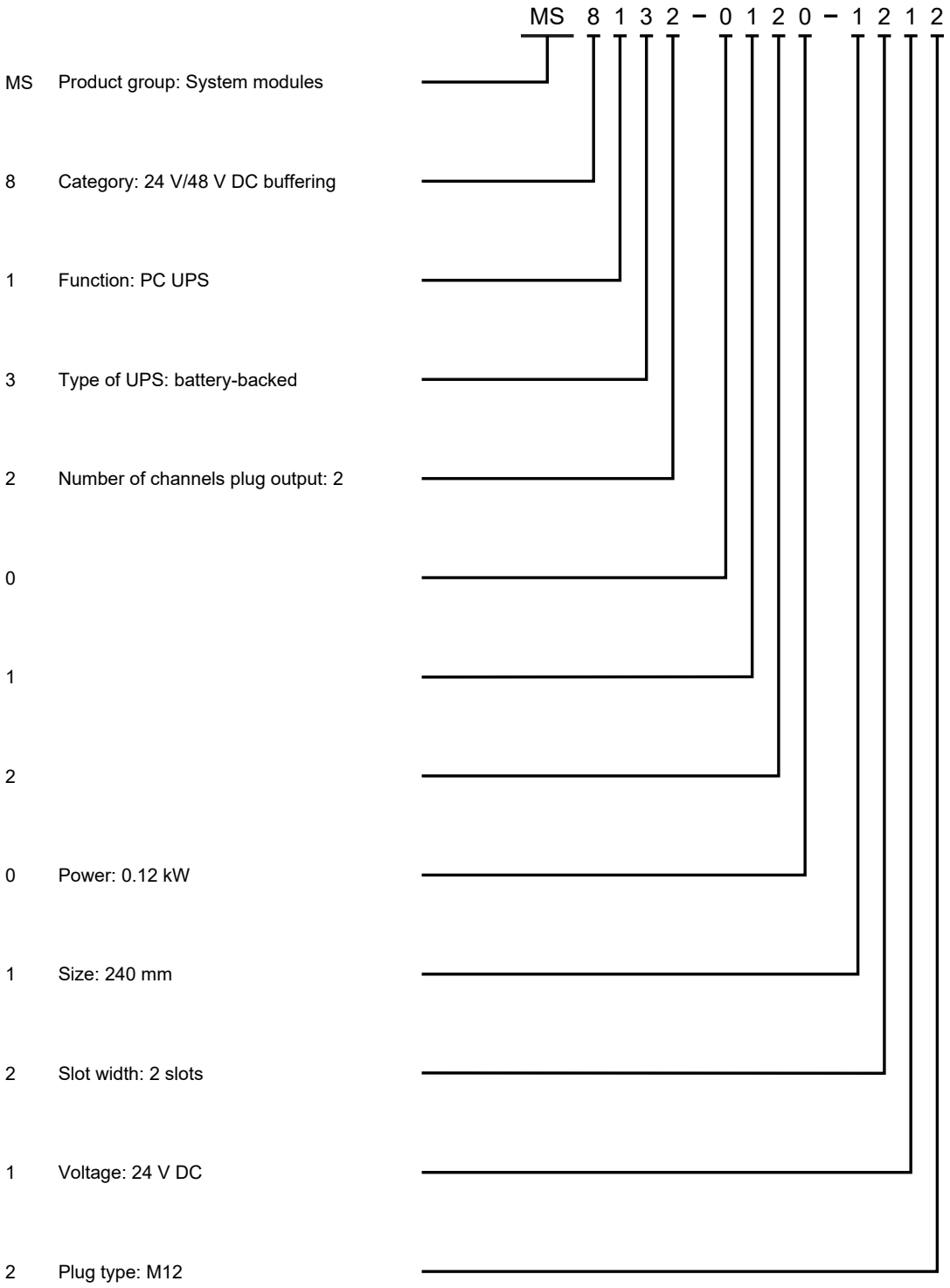
2.1 Product functions

The MS8132-0120-1212 UPS module monitors the 24 V control voltage and detects an undervoltage. In the event of undervoltage, the M12 connectors on the front are powered from the battery. This means that an IPC module as well as an operating panel can be simultaneously supplied with 24 V for a certain amount of time.

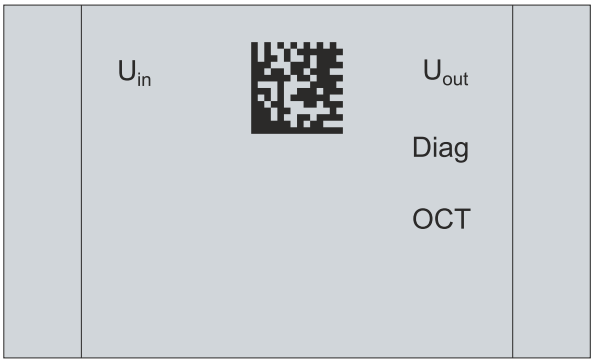
2.2 Block diagram



2.3 Type key


MS 8 1 3 2 – 0 1 2 0 – 1 2 1 2
MS Product group: System modules
8 Category: 24 V/48 V DC buffering
1 Function: PC UPS
3 Type of UPS: battery-backed
2 Number of channels plug output: 2
0
1
2
0 Power: 0.12 kW
1 Size: 240 mm
2 Slot width: 2 slots
1 Voltage: 24 V DC
2 Plug type: M12

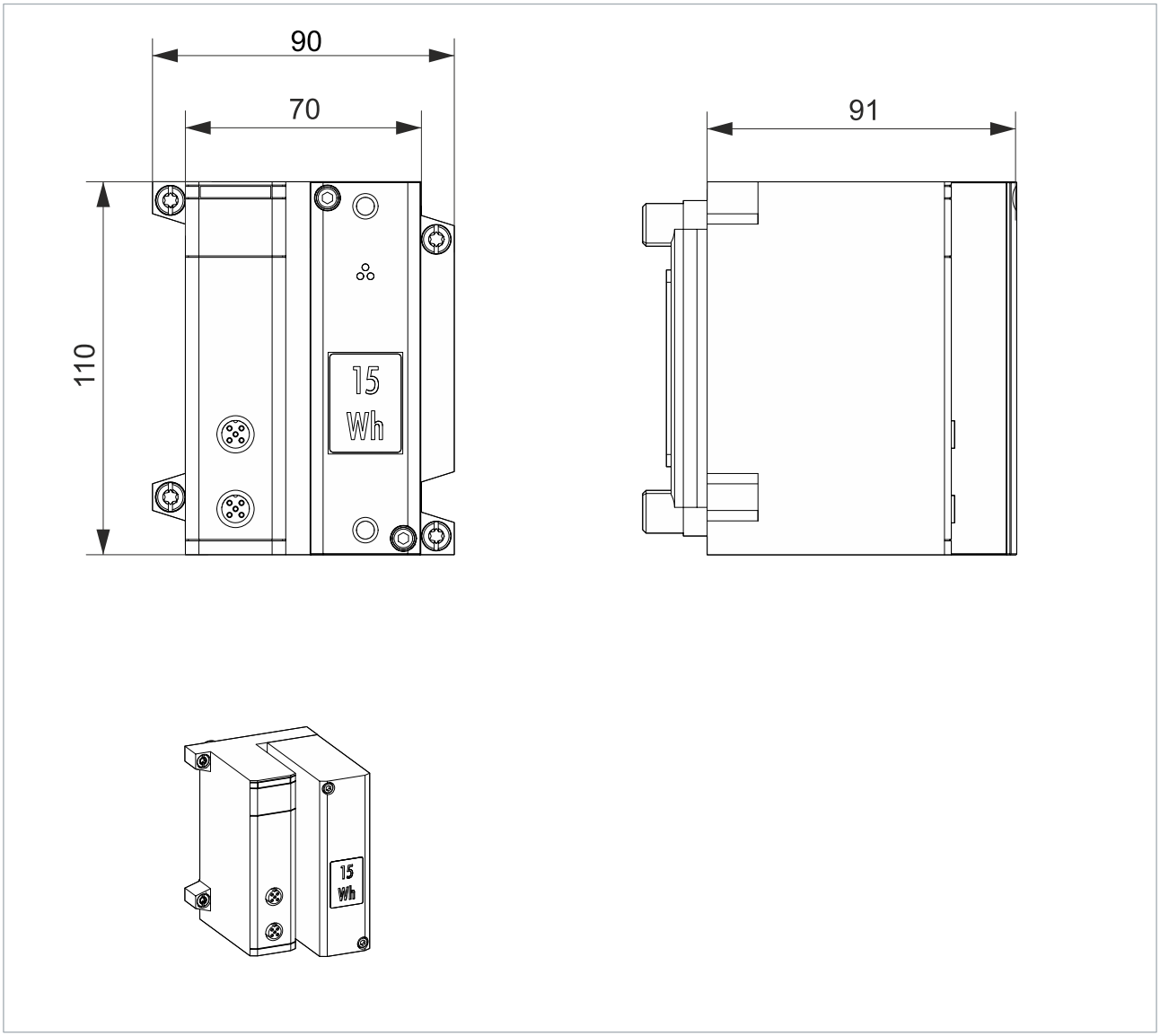
2.4 Status display



LED	State	Meaning
	-	Beckhoff Identification Code as Data Matrix code
U_{out}	off	No output voltage present.
	lights up green	The output voltage is present.
	lights up red	The output voltage is switched off.
	lights up yellow	The output voltage is present and exceeds 28.8 V.
Diag	off	No input voltage present. The UPS is not initialized.
	lights up green	The battery module is fully charged.
	flashes green	The battery module is currently charging.
	flashes red	The battery module is being discharged.
	flashes blue, red	There is a problem with the battery module.
OCT	off	There is no connection to the UPS.
	lights up green	The UPS is connected correctly.
U_{in}	off	No input voltage present.
	lights up green	The input voltage is present and is within the defined limits between 24.4 V and 28.8 V.
	lights up red	The input voltage is present and is below 20.4 V. The device is switched in the UPS mode (undervoltage protection).
	lights up yellow	The input voltage is present and is over 28.8 V. The device is switched in the UPS mode (overvoltage protection).

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
Hot Swap	No

Battery-backed uninterruptible power supply (UPS)	
Storage technology	NiMh (battery)
Channels	2
Capacitance	15 Wh
Total power output	max. 110 W
Interfaces	M12 connector

Housing data	
Width (slots)	2
Height (rows)	1
Dimensions W × H × D	110 mm × 80 mm × 91 mm
Material	Zinc die-cast and PC-ABS
Cooling	Convection
Weight	Approx. 950 g
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
Maximum installation altitude	2000 m

4 Software functions

Software functions are the functions of a module's firmware that a controller can access via EtherCAT.

Functionality

The following descriptions document the full range of software functions at the time of publication of this manual. The range of functions that can actually be used depends on the firmware version of a module.

Process data objects

Process data objects (PDOs) are used for the cyclic transmission of process data between the EtherCAT MainDevice and EtherCAT SubDevice. The data is exchanged at fixed intervals as part of the real-time cycle and serves as the basis for control and monitoring of field devices. PDOs typically contain input and output data required for the direct operation of a device. Cyclic transfer ensures a continuous and deterministic data exchange.

Inputs Profile UPS Inputs

Name	Type	Description
UPS Ok	BIT	0 = There are errors with the UPS. 1 = The UPS is operating without errors.
State of Charge Below 20%	BIT	0 = The charge level is not critical. 1 = The battery charge is below 20%.
State of Charge Above 80%	BIT	0 = The charge level is not critical. 1 = The battery charge is over 80%.

WcState

WcState indicates whether an EtherCAT SubDevice correctly participated in the cyclic process data exchange during the last bus cycle.

Variable	Type	Description
WcState	BIT	0 = data is valid 1 = data is invalid
InputToggle	BIT	A 1-bit counter that increments after each cycle

InfoData

InfoData indicates which diagnostic and status information an EtherCAT SubDevice provides.

Variable		Type	Description
State		UINT	0x___1 = EtherCAT SubDevice in INIT state 0x___2 = EtherCAT SubDevice in PREOP state 0x___3 = EtherCAT SubDevice in BOOT state 0x___4 = EtherCAT SubDevice in SAFEOP state 0x___8 = EtherCAT SubDevice in OP state 0x001_ = EtherCAT SubDevice reports an error 0x002_ = Invalid vendor ID, product code x read 0x004_ = Initialization error occurred 0x008_ = EtherCAT SubDevice disabled 0x010_ = EtherCAT SubDevice not present 0x020_ = EtherCAT SubDevice reports a connection error 0x040_ = EtherCAT SubDevice reports no connection 0x080_ = EtherCAT SubDevice reports an unexpected connection 0x100_ = Communication Port A 0x200_ = Communication Port B 0x400_ = Communication Port C 0x800_ = Communication Port D

5 Mechanical installation

Required tools

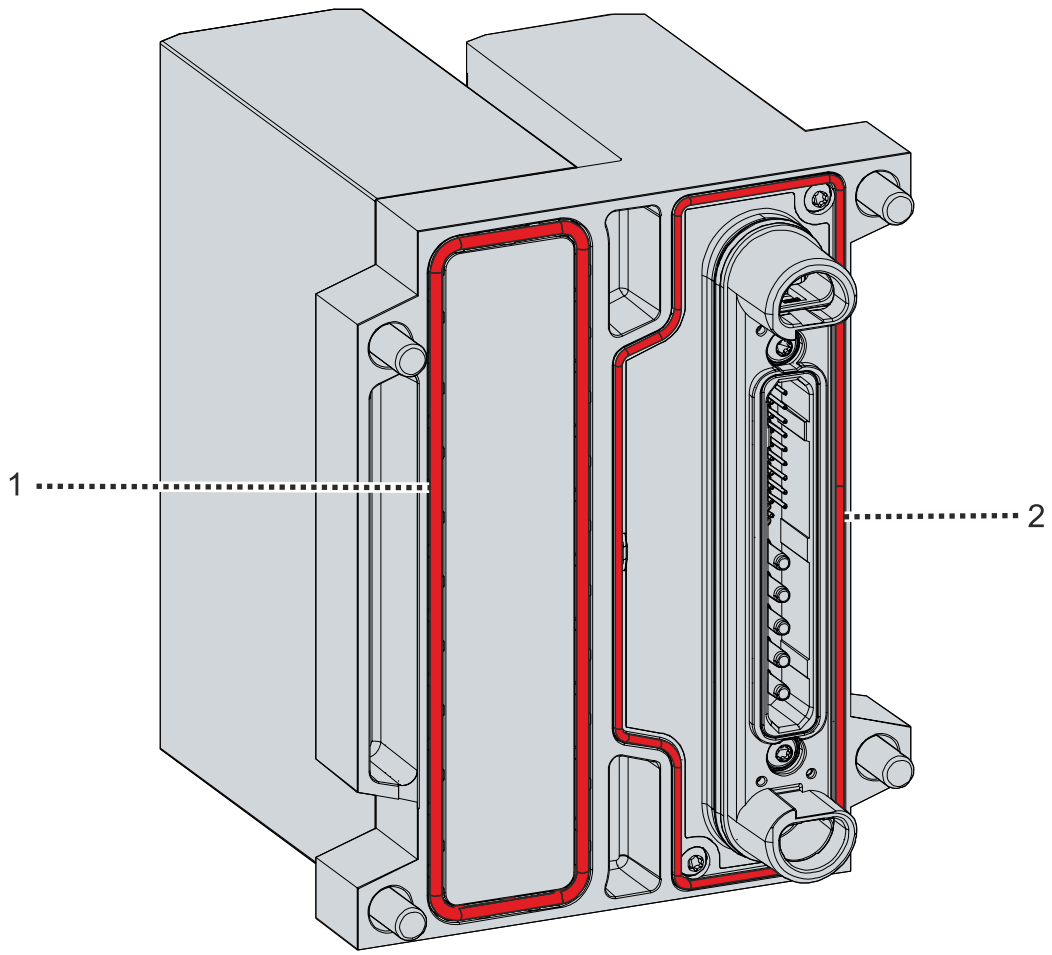
- Torx T25 screwdriver
- Torque wrench 5 Nm

5.1 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 IP65/IP67 protection rating is not met if the seals are worn or damaged.

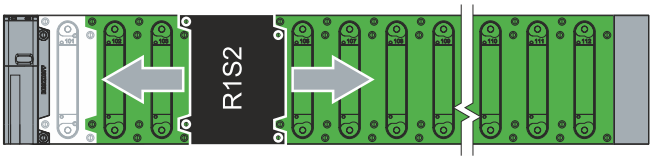


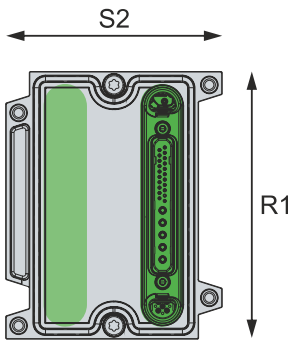
1. Check seals [1] and [2] for wear and damage
2. Replace worn and damaged seals

5.2 Placement of the module on the baseplate

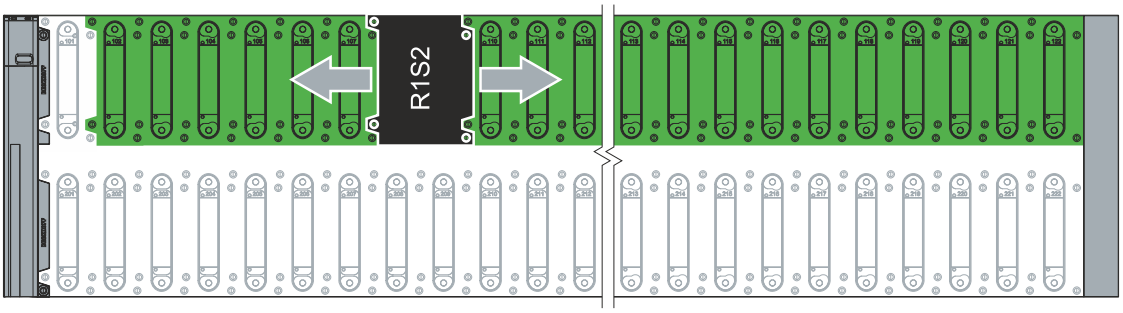
The module can be plugged into the following areas marked in green:

MB11xx-0000-0000

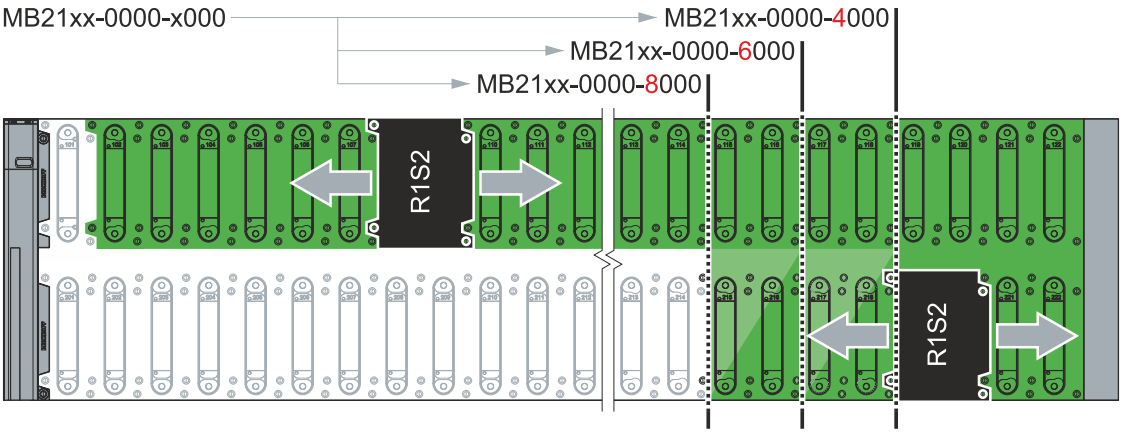




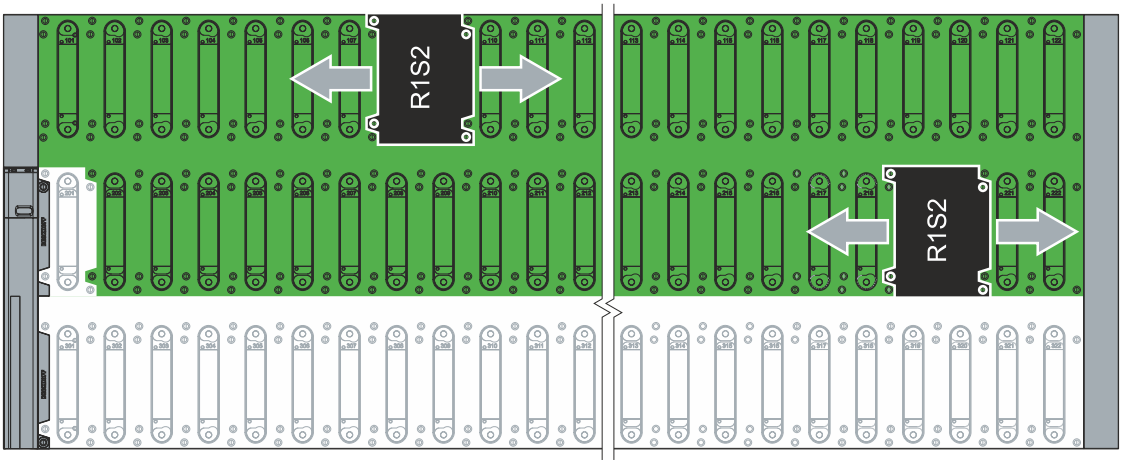
MB21xx-0000-0000



MB21xx-0000-x000



MB31xx-0000-0000



5.3 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 installation 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 IP65/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.

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.

6 Connection

NOTICE

PELV voltage source

The module must be powered by a PELV voltage source.

NOTICE

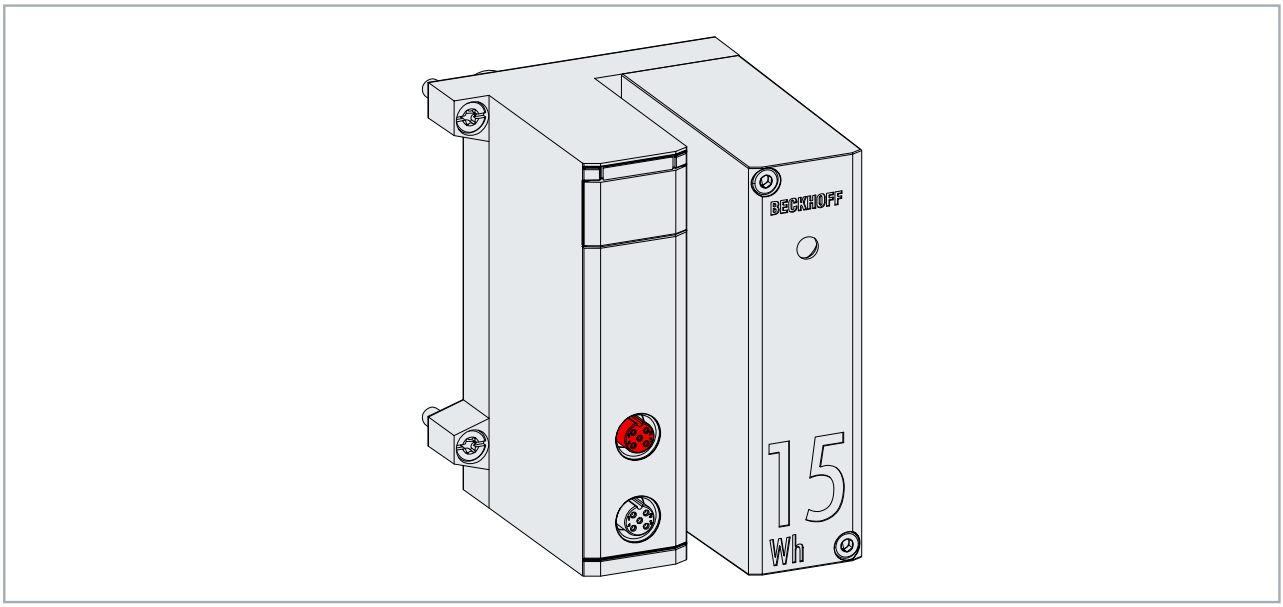
Cover unused sockets with protective caps

IP67 protection rating is only guaranteed if plugs are connected to all sockets and unused sockets are covered with protective caps.

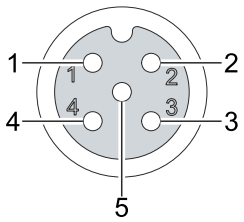
Tested with a UL-listed circuit breaker (without current limiting) rated at 20 A.

6.1 Secondary Interface X1

The panel interface is a 5-pin M12 socket, A-coded.

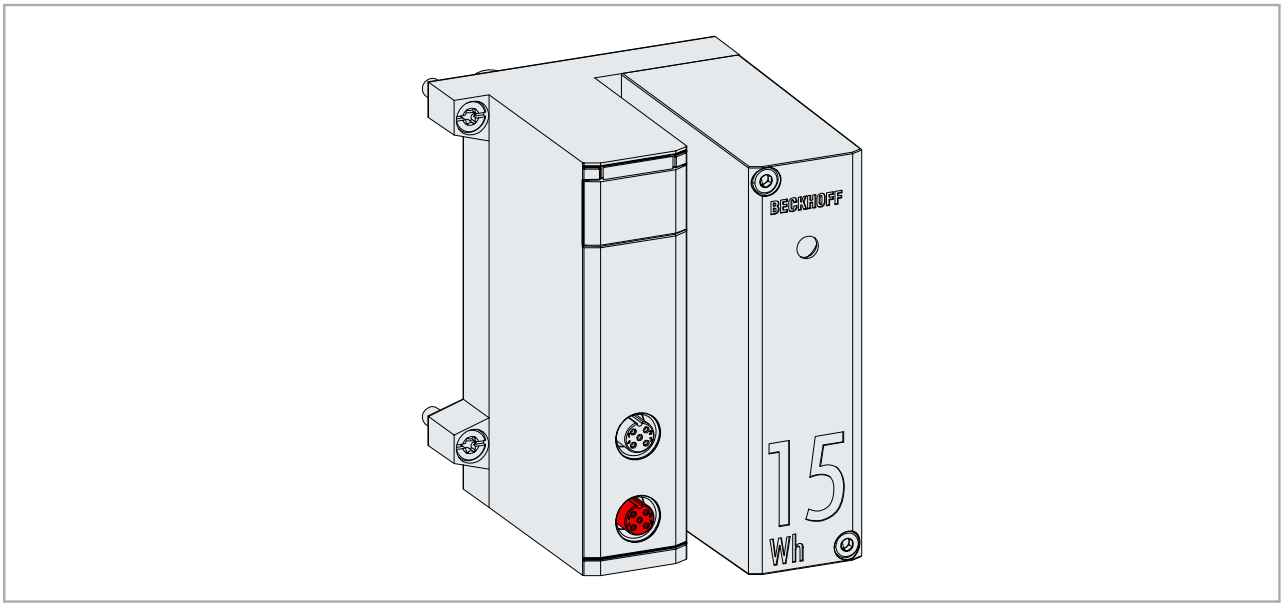


Tightening torque: 0.6 Nm

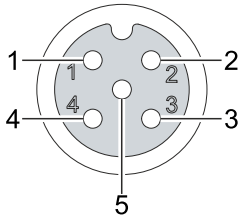
M12 socket, A-coded	Pin	Symbol	Function
	1	n. c.	not used
	2	n. c.	not used
	3	GND	Ground
	4	U_B	Supply voltage
	5	P SHDN	Digital output A rising edge is forwarded to the PC via the “P FAIL” (X2) pin and initiates the shutdown of the PC.

6.2 UPS output X2

The UPS output is a 5-pin M12 socket, A-coded.



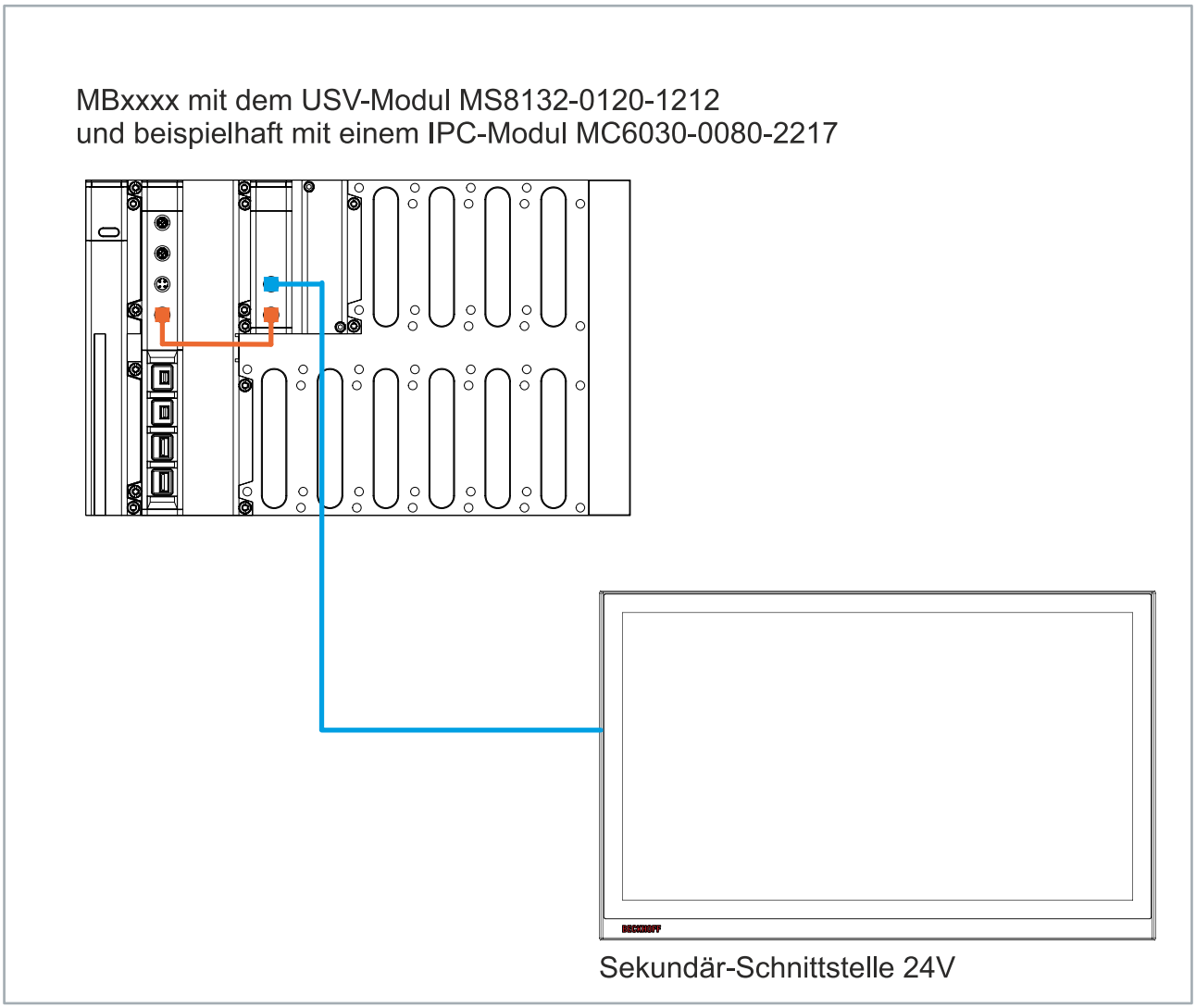
Tightening torque: 0.6 Nm

M12 socket, A-coded	Pin	Symbol	Function
	1	UPS V OUT / OCT+	Combined supply and data line: • Supply voltage output from the UPS battery in the event of a power failure • OCT signal
	2	UPS GND OUT / OCT-	Combined supply and data line: • Ground to pin 1 • OCT signal
	3	GND	Ground to pin 5
	4	n. c.	not used
	5	P FAIL	Digital output. Reports power failure and initiates shutdown of the PC. Intended for connection to the PC-ON pin of an IPC.

6.3 Power supply

The UPS is equipped with one input (U_B) and two outputs (X1 and X2). Together, these two outputs can provide a maximum total power of 110 W.

- The power supply (U_B) is provided via the baseplate.
- A secondary load, such as a control panel, can be connected via output X1. This output is not UPS OCT-capable
- A load, such as an industrial PC, is supplied via the output X2. This output is UPS OCT-capable. For the UPS to function fully, the industrial PC must support UPS OCT.



NOTICE

Connection X2

To prevent an immediate, controlled shutdown of the connected load, do not connect PIN 5 when using an UPS OCT-capable industrial PC.

7 Commissioning and operation

NOTICE

Damage to property due to operation in an unsuitable environment

Before commissioning, ensure that the environmental conditions at the place of commissioning and operation are complied with at all times.

1. Plug the module onto a baseplate.
2. Screw the module onto the baseplate.
3. Wire the module.
4. Switch on the external supply voltage.

8 Care and maintenance

8.1 Replacing the battery

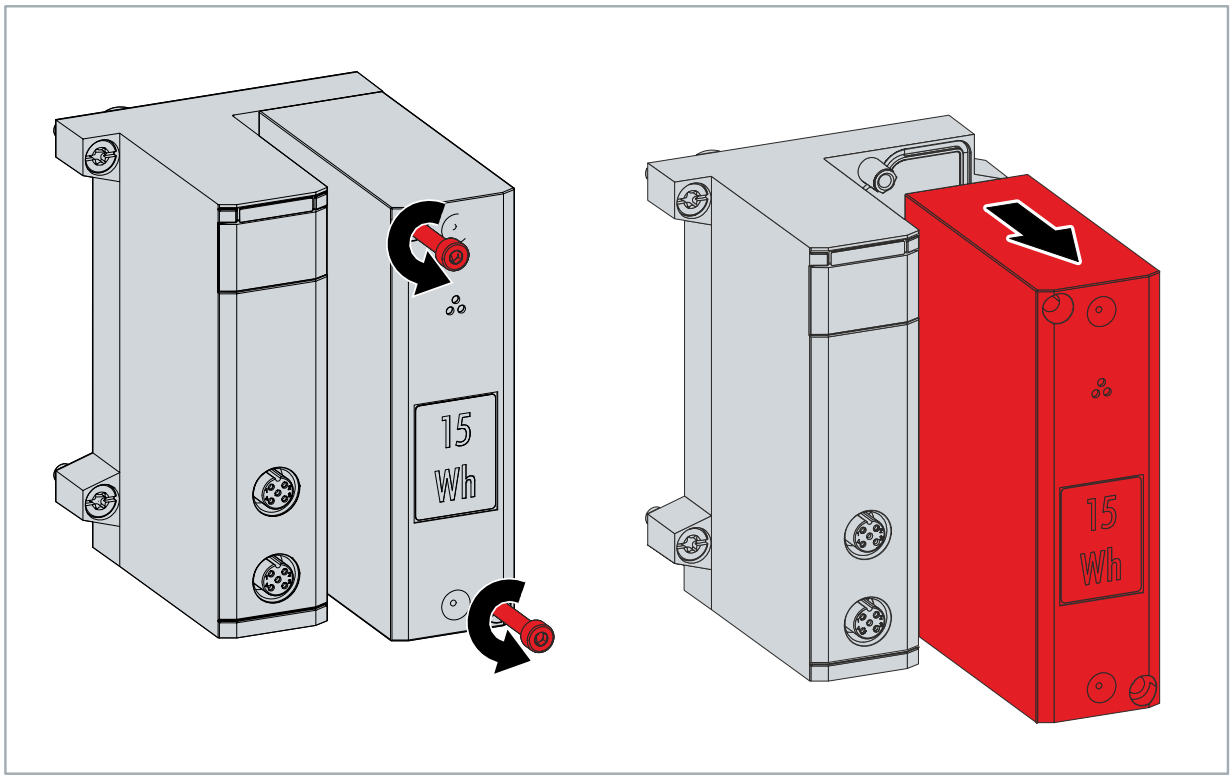
The battery module for the UPS must be replaced every five years. The battery module can be replaced while it is still in its mounted state on the baseplate.

Requirements:

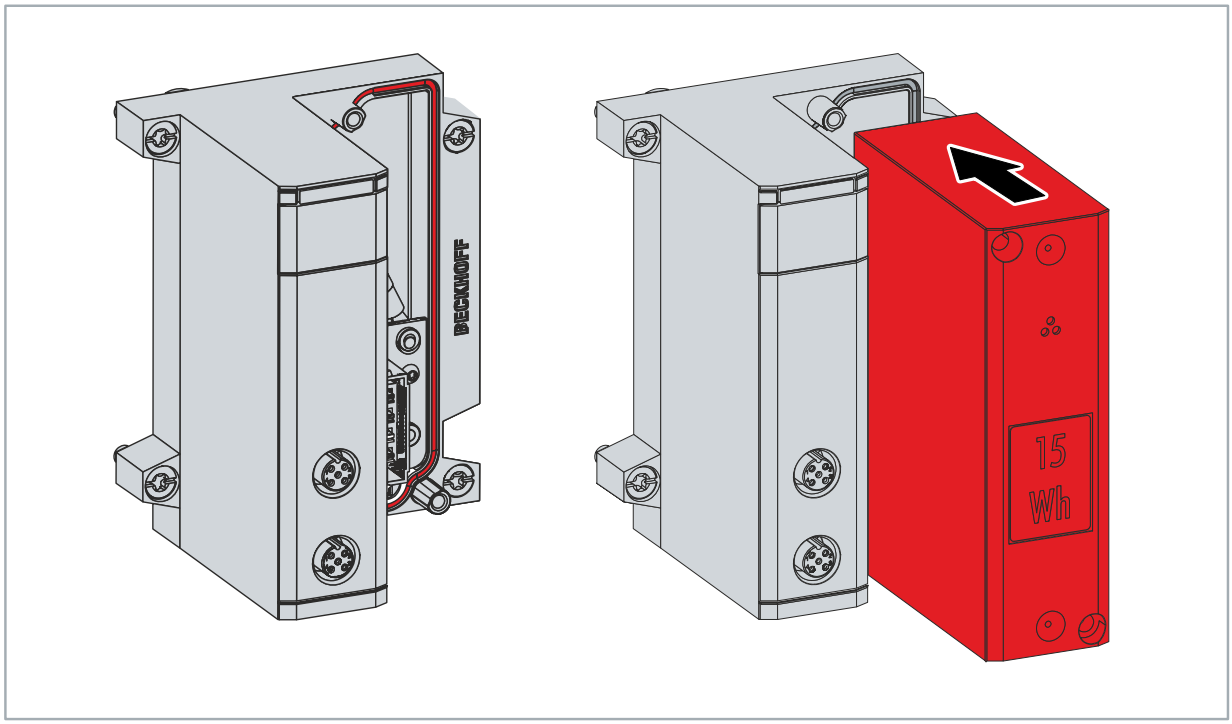
- Hex screwdriver SW3
- MA8130-0015-110 Replacement battery module with 15 Wh can be ordered from Beckhoff.
- ZMX3005-000 Replacement gasket – can be ordered from Beckhoff.

Replace the battery as described below:

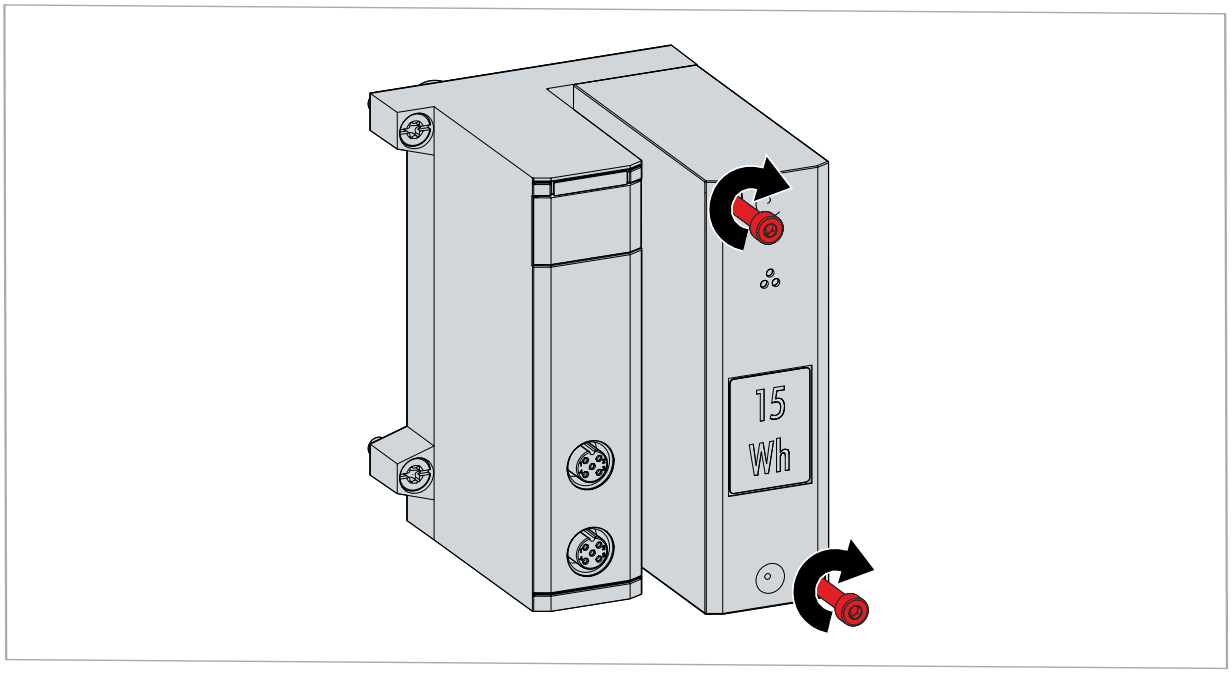
1. Shut down the power supply to the UPS.
2. Unscrew the two screws and pull the battery module out of the UPS.



3. Check the seal on the module, which is now visible, for damage, and if any damage is visible, replace it with a new ZMX3005-000 replacement seal.
4. Insert the replacement battery module into the UPS.



5. Secure the battery module using two ISO 4762 M4×70 cylindrical screws, tightening them to a torque of 1.5 Nm.



⇨ You have installed the battery module correctly if the DIAG LED lights up green at the start.

9 Decommissioning

9.1 Disassembly

NOTICE

Damage to property due to electrical voltage

Disassembling this module under voltage can lead to material damage.

- Switch off the supply voltage before disassembling.

✓ The supply voltage is shut down.

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

⇨ The module has been removed correctly.

9.2 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.

Replacement battery module

The replacement battery module for the MS8132-0120-1212 UPS module from Beckhoff Automation GmbH & Co. KG is sold exclusively to corporate customers. According to the German law on batteries (BattG), we take old batteries back and pass them on to a disposal company. The transport costs are borne by the sender.

Send the used battery, marked “for disposal,” to:

Beckhoff Automation GmbH & Co. KG

Building “Service”
Stahlstraße 31
D-33415 Verl

The packaging of the replacement battery can be used to return the old battery.

10 Appendix

10.1 Manual version history

The following table shows the version history of this manual.

Version	Comment
1.0	• First release

10.2 Accessories

Suitable accessories can be found on the product website:

www.beckhoff.com/MS8132-0120-1212

Product	Description
ZMX1000-0010	M5x17.5 combi-TX25 replacement screws for module fastening (PU = 10 pcs.)
ZMX4001-0002	Replacement cover for potential equalization for 2- and 3-row baseplate with Beckhoff logo
ZMX4001-0003	Replacement cover for MA6060 interface

10.3 Support and Service

Beckhoff Support and Service provides assistance with questions regarding Beckhoff products and system solutions, as well as with their planning, commissioning, and operation.

Beckhoff subsidiaries and representative offices

Please contact your Beckhoff subsidiary or your representative office for local support and service for Beckhoff products. You can find the addresses of Beckhoff subsidiaries and representative offices at: www.beckhoff.com/worldwide.

For Beckhoff products and technologies, we offer Training programs, tutorials, and webinars.

Beckhoff Support

Beckhoff Support provides assistance with technical questions regarding the use, planning, programming, and commissioning of Beckhoff products.

☎ Hotline:	+49 5246 963-157
✉ Email:	support@beckhoff.com, Support form
Web page:	www.beckhoff.com/support

Beckhoff Service

Our service specialists are here to assist you with any questions you may have regarding after-sales service processes, such as replacement parts, repairs, etc.

☎ Hotline:	+49 5246 963-460
✉ Email:	service@beckhoff.com, Service form
Web page:	www.beckhoff.com/service

Download finder

The Download finder serves as a central source for downloadable documents and files related to Beckhoff products, such as application reports, technical documentation, drawings, and configuration files.

Beckhoff Information System

The Beckhoff Information System is the central online documentation resource for Beckhoff products and contains documentation on products and automation topics, as well as sample code.

Beckhoff Headquarters

Beckhoff Automation GmbH & Co. KG
Hülshorstweg 20
33415 Verl, Germany

☎ Phone:	+49 5246 963-0
✉ Email:	info@beckhoff.com
Web page:	www.beckhoff.com

Trademark statements

Beckhoff®, ATRO®, EtherCAT®, EtherCAT G®, EtherCAT G10®, EtherCAT P®, MX-System®, Safety over EtherCAT®, TC/BSD®, TwinCAT®, TwinCAT/BSD®, TwinSAFE®, XFC®, XPlanar® and XTS® are registered and licensed trademarks of Beckhoff Automation GmbH.

More Information:
www.beckhoff.com/MS8132-0120-1212

Beckhoff Automation GmbH & Co. KG
Hülshorstweg 20
33415 Verl
Germany
Phone: +49 5246 9630
info@beckhoff.com
www.beckhoff.com