

Description

The customers' demands for a constant quality of the produced goods while at the same time increasing the quantities, pose great challenges to the mechanical and plant engineering industry. At the same time, globalisation is creating worldwide value flows and production chains. Machines and plants that had still been regionally organised just a few years ago are now cross-linked worldwide. These developments extend the requirements of machine and plant control as well as of the installed components. An ever growing number of measuring data need to be recorded, analysed, evaluated and saved. This increases the transparency of the manufacturing process and thus system availability.

The DC 24 V power distribution is also affected by this development. The control voltage supplies all essential components of the machine or system. These include, besides programmable control units, actuators and sensors. Therefore, the control voltage has a special importance in the entire production process. Its availability and stability is crucial for system availability and quality of the produced goods. The REX system meets these requirements. It consists of electronic circuit protectors which are connected with each other via an integral connector sleeve without requiring additional components. Power supply is via the EM12 supply module which can supply the circuit protectors with max. 40 A. The new CPC12 bus controller additionally allows access to all system-relevant data of the superordinate control systems. This is done via the the Modbus TCP interface as well as via an additional Ethernet interface.

The CPC12 bus controller connects the circuit protectors with the superordinate control unit. Its internal **ELBus®** interface realises the connection with the electronic intelligent circuit protectors of the REX system. The CPC12 bus controller allows entire access on all required parameters of the intelligent circuit protectors, their control unit and the visualisation of the device data.

This is provided at the field bus interfaces for the superordinate control unit and also at the third RJ45 interface for further connection. Thus, the system offers a fully parametrisable protection of the DC 24 V circuits and ensures selective overcurrent protection of sensors and actuators, decentralised peripheral sub-assemblies etc. and their supply lines.



CPC12MB

Features

- Control, diagnosis and monitoring via Modbus TCP
- Fully fledged Modbus TCP communication interface
- Fully fledged Ethernet communication interface (web server)
- Updateable via web server
- Device combination supply modules, overcurrent protection and power distribution
- For the intelligent circuit protectors of the REX system
- Variable configuration of up to 32 channels with 16 devices
- No accessories required for connecting the components
- Connection via push-in terminals
- Profitability through extremely reduced wiring time
- Reduction of planning, design and installation time
- Simple maintenance, diagnosis and system expansion

Your benefits

- Increases machine uptime through clear failure detection and stable power supply
- Reduces downtimes through quick error resolution
- Simplifies planning through clear planning sizes
- Saves costs and time through fast and flexible mounting including integral power distribution solution

Approvals and certificates



(With regard to the devices of the REX system...)

Approval authority	Standard	File certificate no.	Rated voltage
UL	UL 2367	E306740	DC 24 V
UL	UL 508 Listed CSA C22.2 No. 14	E492388	DC 24 V

Approvals for EM- accessories: see technical data of accessories.

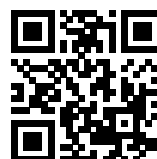
Conformity



Downloads

Data sheet/Certificates of conformity/Brochure/CAD data etc. are available on our web page.

Please observe the separate user manual/installation manual:



CPC12MB-T1
www.e-t-a.de/qr1046/

Technical data (T_{amb} = 25 °C, U_B = V)

Operating voltage U _B	DC 24 V (18 ... 30 V)
Reverse polarity protection	yes
Quiescent current I ₀	typically 75 mA

Supply via contact lever or additionally

XD1 terminal (push-in)	0.2 mm ² to 1.5 mm ² AWG24 – AWG14 str.
Wire stripping length	8 mm

Modbus TCP interface (XF1, XF2)

RJ45	Connection to Modbus TCP bus system When wiring and connecting to the Modbus TCP bus system the installation and wiring regulations of the Modbus TCP specification have to be observed.
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Ethernet interface (X1)

RJ45	Communication interface to web server.
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IP reset

Momentary switch	Reset IP address (interface X1) by pushing the momentary switch for min. 3 sec.
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Dimensions (H x W x D)	23 x 80 x 98.5 mm (tolerances to DIN ISO 286 part 1 IT13)
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Mass	approx. 70 g
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System components Types

EM12-T supply module	EM12-T00-000-DC24V-40A
Bus controller	CPC12xx-Tx-xxx
Circuit protectors can be mounted side-by-side	REX12D-T REX22D-T

Visual operation status indication by means of multicoloured LED

Operating mode	Indication of operating mode	
	LED US1	LED US2
Supply voltage OK	green	---
Firmware update	off	off
Actuator voltage OK	green	green
No actuator voltage	green	red
No device connected or bus error	green	orange blinking
Operating mode	Indication of operating mode	
	LED ERR (communication error)	
No error	off	
Communication errors	red	
Internal failure	red blinking	
Operating mode	Indication of operating mode	
	LED RUN (communication status)	
TCP connected	green	
Waiting for communication	green blinking	
Internal configuration	green blinking (1Hz)	
Not ready	red blinking	

Technical data (T_{amb} = 25 °C, U_B = V)

Visual signalling of RJ45 interfaces

Operating mode	Indication of operating mode
	LED LNK
Link available	green
No link available	off
Operating mode	Indication of operating mode
	LED ACT
Activity available	blinking yellow
No activity	off

General data

Housing material	Plastic material
Mounting method	Symmetrical rail to EN 60715 - 35 x 7.5
Ambient temperature (TAMB)	-30 °C ... + 60 °C (without condensation, cf. EN 60204-1)
Storage temperature	-40 °C ... +70 °C
Mounting temperature	+5 °C ... +60 °C
Damp heat	96 hrs / 95% RH RH/40 °C to IEC 60068-2-78-Cab climate class 3K3 to EN 60721
Altitude	2,000 m above sea level 3,000 m above sea level up to +55 °C 4,000 m above sea level up to +50 °C
Operation pressure	4 bar above atmospheric pressure
Vibration resistance	5 g, test to IEC 60068-2-6 test Fc
Degree of protection	IP20
EMC requirements (EMC Directive, CE Logo)	Emitted interference: EN 61000-6-3 Noise immunity: EN 61000-6-2
Insulation co-ordination (IEC 60664)	Overvoltage category II/ pollution degree 3
Instructions for installation	Mounting or actuation of the REX connector arm must only be effected at dead-voltage. For start-up the REX connector arm must be closed.

Modbus TCP-communication interface

Overview of commands:

Writing/reading of device configuration (parameters)

- Current limit value (50 % ... 100 %)
- Rated current (1 A – 10 A), writing of the rated current is only possible with device type REX12D-TE and-REX22D-TE.

Reading of static product information

- Product type
- Serial number
- Hardware version
- Software version

Reading of dynamic product information / measuring values

- Status CPC12
- Internal cycle time
- Error memory
- Trip counter
- Reason of last trip
- Device status/ event
- Load voltage: ACTUAL / MIN / MAX / MEDIUM VALUE
- Load current: ACTUAL / MIN / MAX / MEDIUM VALUE
- Supply voltage
- Total current

Control commands

- Switch on/off or reset load output
- Reset trip counter
- Set parameters to factory setting

Ordering information

Series

CPC12 ControlPlex® bus controller

Design: Field bus system

MB Modbus TCP (connection: 2 x RJ45 female connector)

Mounting method

T Rail mounting

ELBus connections

1 1 connection (right)

product versions

001 Marking

CPC12 MB - T 1 - 001 Ordering example

Notes

- The CPC12 bus controller is only intended for use with safety extra-low voltage (= 24 V DC).
- Connection to a higher or not reliably disconnected voltage can cause hazardous conditions or damages.
- Only the intended circuit protectors must be used.
- The technical data of the circuit protectors used have to be observed.
- The entire power distribution system must only be installed by qualified personnel.
- Only after expert installation must the device be supplied with power.
- After tripping of the circuit protector and before reset, the cause of the failure (short circuit or overload) must be remedied.
- The national standards (e.g. for Germany DIN VDE 0100) have to be observed for installation and selection of feed and return cables.
- For parametrisation and configuration by means of projecting software a user manual will be made available for downloading on the E-T-A homepage.
- The CPC12 bus controller is not suitable for controlling safety-critical or functionally safe applications.

Please observe the separate user instruction manual for the CPC12 bus controller.

Safety Note

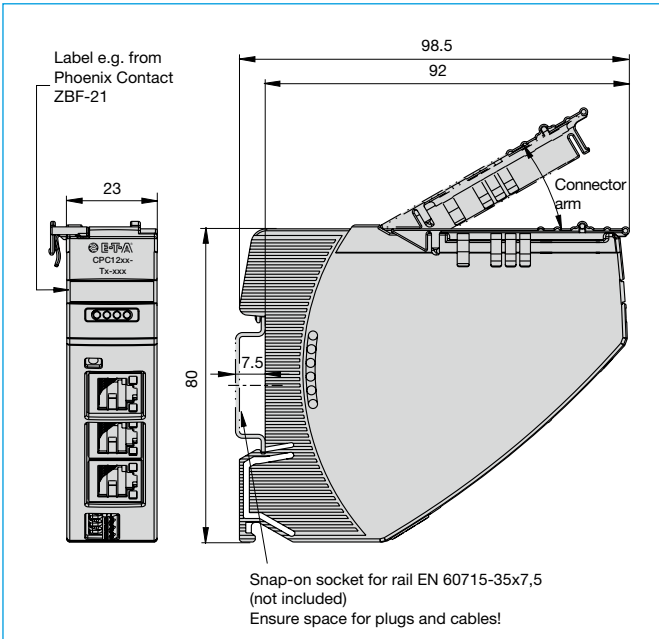


Caution:

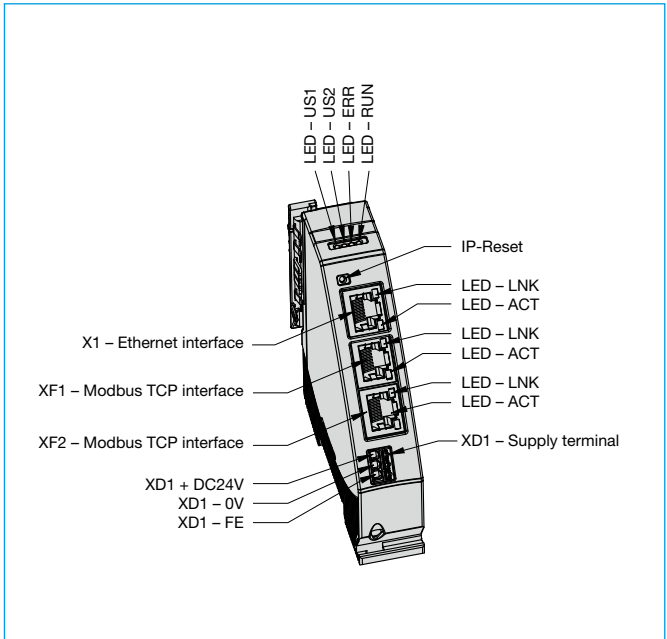
Electrostatically sensitive sub-assemblies can be destroyed by voltages far below the human perception threshold. These voltages already occur if you touch a component or electrical terminals of a sub-assembly without being electrostatically discharged. The damage of a sub-assembly caused by an overvoltage is often not immediately recognised, but will be noticed only after a longer operating time.

All information and data given on our products are accurate and reliable to the best of our knowledge, but E-T-A does not accept any responsibility for the use in applications which are not in accordance with the present specification. E-T-A reserves the right to change specifications at any time in the interest of improved design and performance. Dimensions are subject to change without notice. Please enquire for the latest dimensional drawing with tolerances if required. All dimensions, data, pictures and descriptions are for information only and are not binding. Amendments, errors and omissions excepted. Part numbers of the devices may differ from their marking.

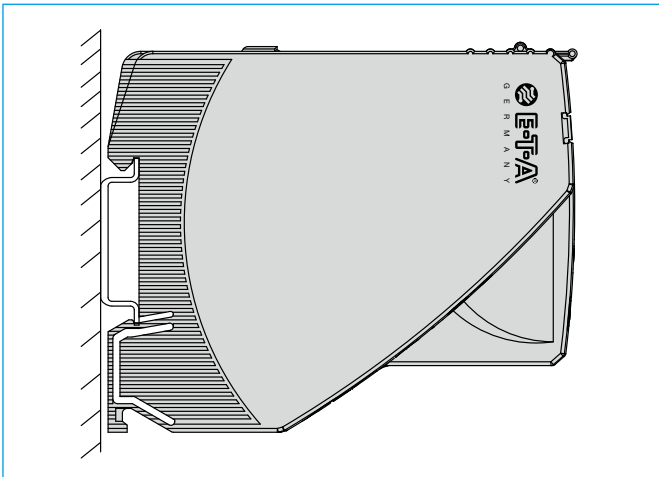
Dimensions



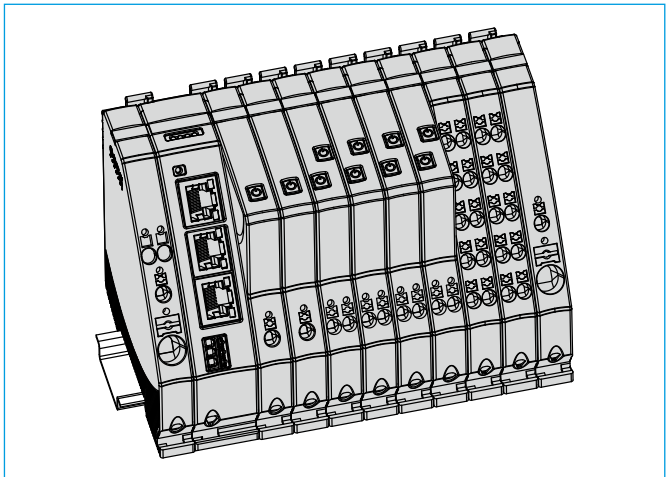
Terminal selection



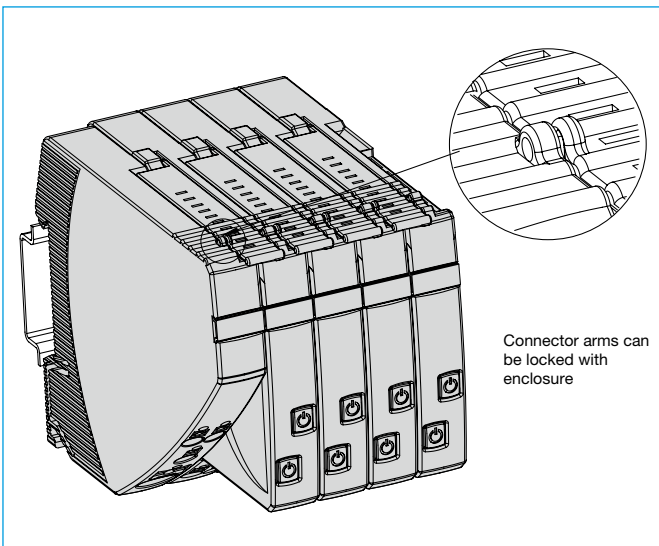
Mounting position



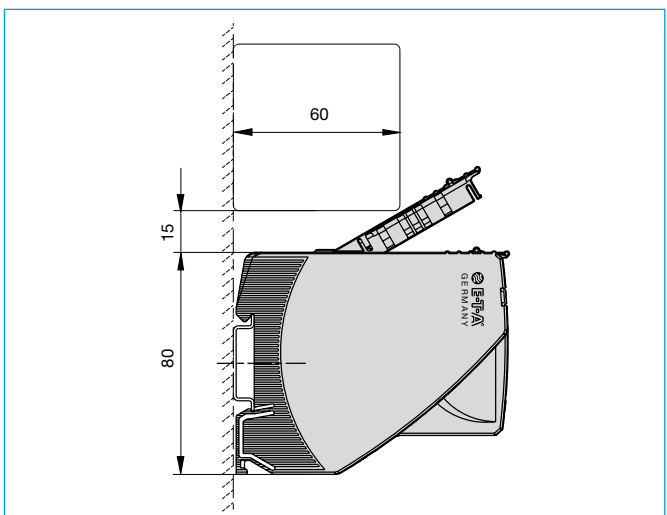
Application example



Application example: CPC12 sealing

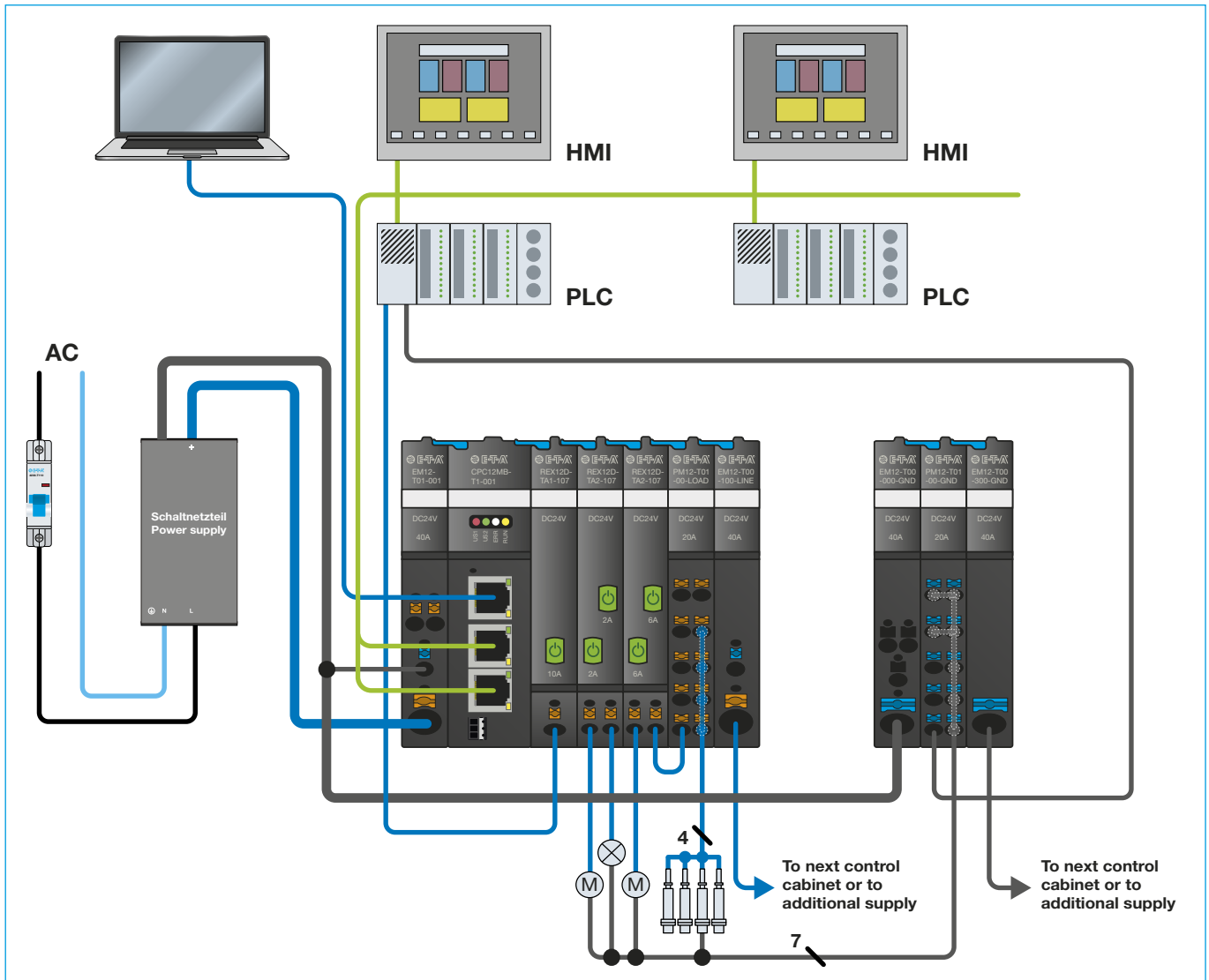


Application example: CPC12 distance between cable duct and connector arm

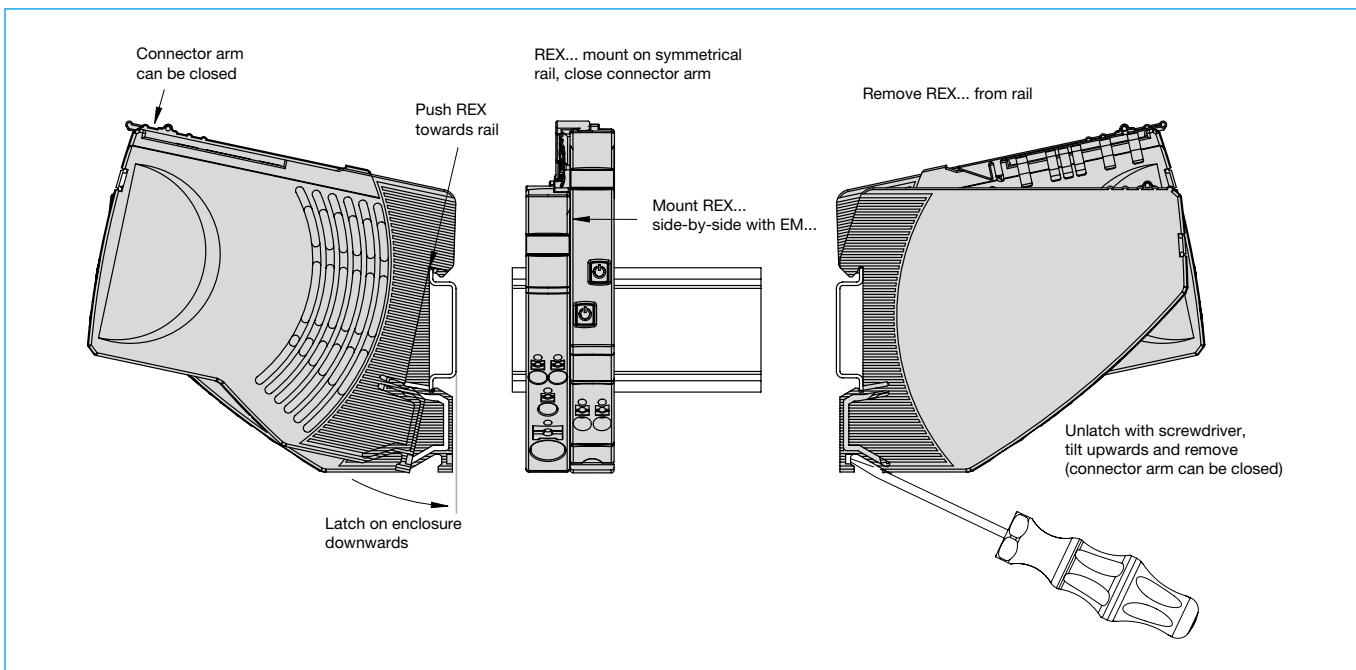


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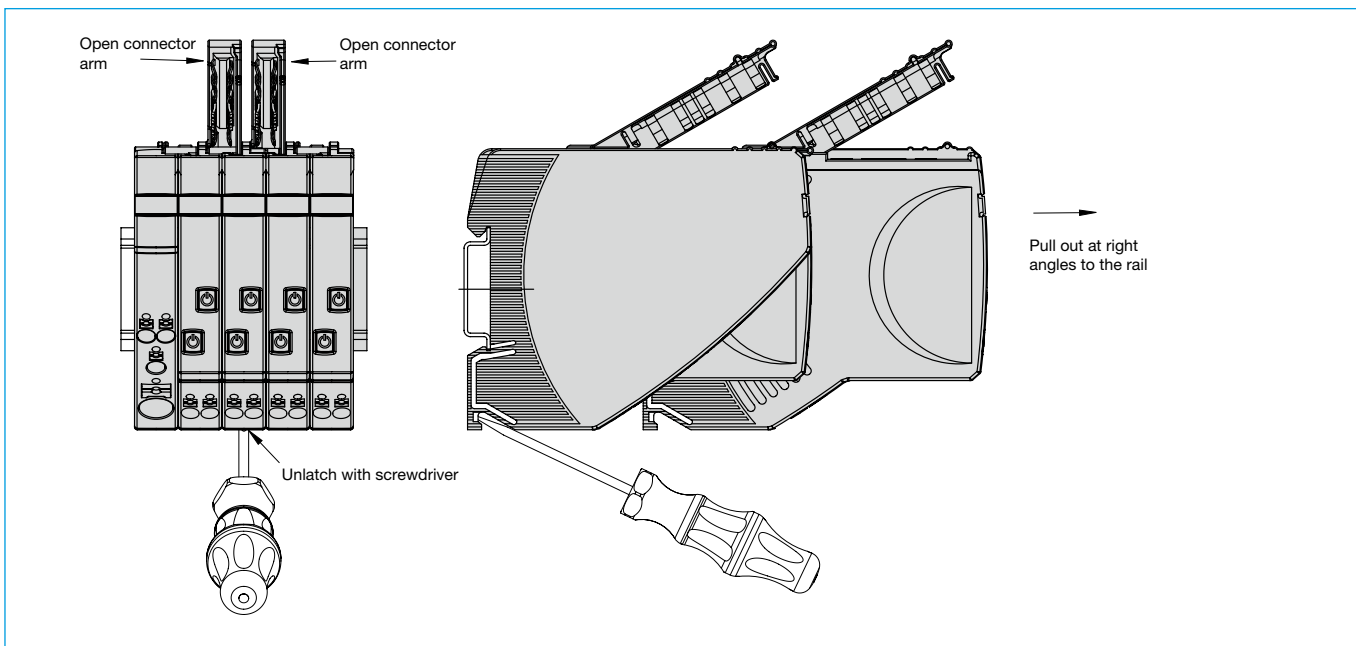
Application example



Application example: CPC12 mounting on or removing from symmetrical rail



CPC12 replacement or disassembly

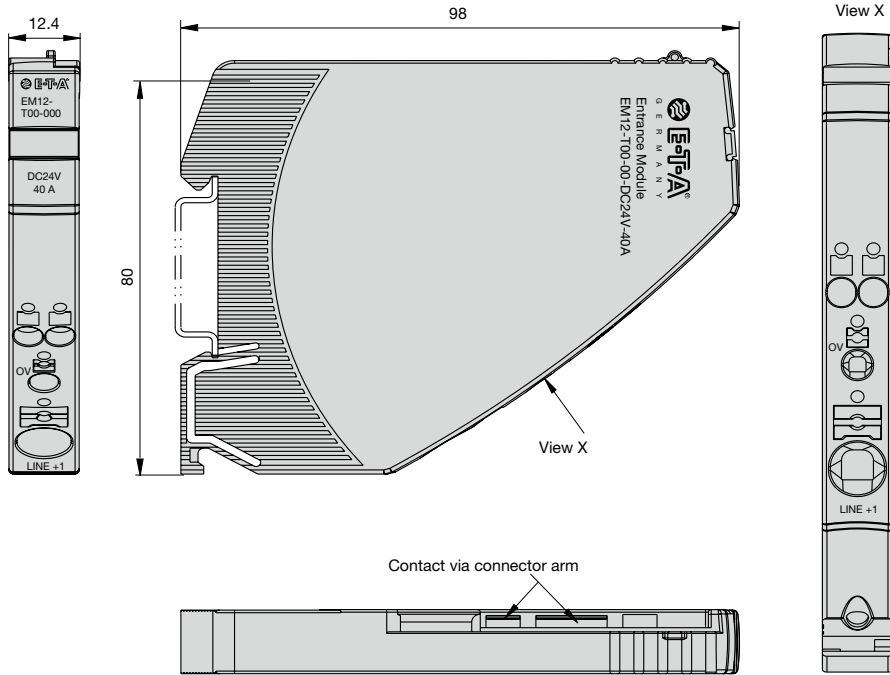


Instructions for installation

Mounting or actuation of the connector arm must only be effected at dead-voltage. For start-up, the connector arm must be closed.

7

Accessories: EM12-T00-000-DC24V-40A supply module



Technical data	
Please observe general data of REX / EM / PM	
Operating voltage U_B	DC 24 V (18 ... 30 V)
Operating current I_B	Max. 40 A
Insulation coordination	0.8 kV / pollution degree 2
Terminals	LINE+1
Push-in terminal PT 10	0.5 mm ² ... 10 mm ² , flexible AWG24 – AWG8 rigid
Wire stripping length	18 mm
Terminals	0 V
Push-in terminal PT 2.5	0.14 mm ² to 2.5 mm ² , flexible 0.14 mm ² to 4 mm ² , rigid
Wire stripping length	8 mm to 10 mm
Dimensions H x W x D)	12.4 x 80 x 98 mm
Mass	approx. 52 g
Approvals	UL 2367, File # E306740; cULus508listed, File # E492388

