

## Description

The CPC20 bus controller is the central communication sub-assembly of the **ControlPlex<sup>®</sup> CPC20 intelligent power distribution system**. The CPC20 allows communication with up to 32 double channel ESX60D electronic circuit protectors. It allows read-out of the electronic circuit protectors' status, their corresponding operation data such as the present load current and the load voltage and it enables control and parametrising of the devices.

In addition, the CPC20 ensures the connection between the circuit protectors and superordinate control level by means of the integral field bus interface. Its internal **ELBus<sup>®</sup>** interface allows realisation of the connection to the power distribution boards and the plugged-in ESX60D electronic circuit protectors. Up to two **ELBus<sup>®</sup>** interfaces are available. With an additional **ELBus<sup>®</sup>** interface, the CPC20 bus controller can be used for a second **ControlPlex<sup>®</sup> CPC20** power distribution system. The CPC20 allows entire access on all required parameters of the electronic circuit protectors, their control unit and the visualisation of the device data.

This is made available at the field bus interface for the superordinate control unit and also at the RJ45 interface for the operation on site. The USB interface was designed as a service and maintenance interface. The combination of the CPC20 bus controller with the 18plus-ControlPlex<sup>®</sup> power distribution system and its ESX60D electronic circuit protectors offers a fully parametrisable protection of the DC 24 V circuits and ensures the selective overcurrent protection of sensors and actuators, of decentralised peripheral sub-assemblies etc. and their supply cables.

It is therefore ideally suited to the use in machine construction and process control, in the chemical, pharmaceutical and foodstuffs industry, in building automation, steel production and car manufacturing. **ControlPlex<sup>®</sup>** reduces wiring time, increases system availability and enhances diagnostic functions.

### Suitable for the following types:

Power distribution system	<b>18plus-ControlPlex<sup>®</sup></b>
Electronic circuit protectors	<b>ESX60D</b> (fully parametrisable by means of CPC20)

## Approvals and certificates



(in connection with the 18plus, ESX60 D devices)

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



CPC20

## Features

- Integral DC 24 V power distribution system for power distribution and overcurrent protection
- Complete diagnosis and parametrising of the entire power distribution system
- For ESX60D electronic circuit protectors
- Variable configuration of up to 16 two-channel electronic circuit protectors extension
- Variable configuration of up to 32 two-channel electronic circuit protectors with extension
- Fully fledged EtherNet/IP communication interface
- Fully fledged Ethernet communication interface (web server)
- Service and maintenance interface via USB terminal
- Integral history memory »HISTOMEMO« for overload- and short-circuit diagnosis of the load circuit
- Profitability through extremely reduced wiring time
- Reduction of planning, design and installation time
- Ease of maintenance, diagnosis and system extension

## Your benefits

- Enhances system availability through comprehensive diagnostic functions
- Improves protection against voltage dips through selective protection of loads
- Increases the flexibility of system planning through a modular terminal block system

## Conformity



**Technical data (T<sub>U</sub> = 25 °C, U<sub>B</sub> = DC 24 V)**

**Typical applications**

Intelligent DC 24 V power distribution system

**Supply (XD1)**

Rated voltage	DC 24 V (18 ... 30 V)
Current rating	Typically = 160 mA (with 1x Ethernet and 2x EtherNet/IP)
Terminals	4 x push-in terminals (+/+0V/0V) Max. cable cross section rigid 0.2 – 2.5 mm <sup>2</sup> Flexible with wire end ferrule (with plastic sleeve) 0.2 – 2.5 mm <sup>2</sup> Flexible with wire end ferrule (without plastic sleeve) 0.2 – 2.5 mm <sup>2</sup> Stripping length 10 mm

**ELBus® terminal for connection with the 18plusControlPlex® module (X2)**

COM-1	Direct connection with 18plus <i>ControlPlex</i> ® (no wiring required)
X2 COM-2	Connection for the second <b>18plus-ControlPlex power distribution board</b> Cable length max. 3 m Typically H07V-K 1.5 mm <sup>2</sup> 16: Addressing 15: Data line <b>ELBus</b> ® ELB

Stripping length 9 mm

**USB service and maintenance interface (X3)**

X3	Service interface Type: USB 2.0 type C Cable length max. 2.5 m
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**EtherNet/IP interface (XF1, XF2) with integral switch**

XF1 (Port 1)	Connection to the EtherNet/IP bus system and the web server Type: RJ45 When wiring and connecting to the Ethernet IP bus system the installation and wiring regulations of the EtherNet/IP™ specification have to be observed.
XF2 (Port 2)	Connection to the EtherNet/IP bus system and the web server Type: RJ45 When wiring and connecting to the Ethernet IP bus system the installation and wiring regulations of the EtherNet/IP™ specification have to be observed.

**Ethernet interface (X1)**

X1	Communication interface to web server Type: RJ45
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**Technical data (T<sub>U</sub> = 25 °C, U<sub>B</sub> = DC 24 V)**

**Status indication of CPC20**

LED »NS«	Display of the network status (EtherNet/IP) LED status indication options: red, green, orange
LED »MS«	Display of the module status (EtherNet/IP) LED status indication options: red, green, orange
LED »US1«	LED lighted with supply voltage applied LED status indication options: red, green, orange

Operating mode	Indication of operating mode		
	LED MS	LED NS	LED US1
Start-up mode	orange	orange	orange
CIP connected	green	green	green
No IP address	green blinking	OFF	green
IP address not valid, no CIP connected	green	green blinking	green
System error	red	–	–
Firmware update	red blinking	red blinking	red blinking

LED »LNK/ACT« Ethernet communication activity per port  
LED status indication options: green

Operating mode	Indication of operating mode
	LED LNK/ACT
No link available	OFF
Link available	green
Activity available	green blinking

**General data**

Mounting method	Rail mounting to EN 60715 - 35 x 7.5
Ambient temperature	0 °C to +60 °C (without condensation)
Mounting temperature	+10 °C ... +30 °C
Storage temperature	-40 °C ... +70 °C
Damp heat	96 hrs/95 % RH 40 °C to IEC 60068-2-78-Cab climate class 3K3 to EN 60721
Housing material	Polyamide UL94V0
Degree of protection	Terminals IP20 EN60529
Dielectric strength	DC 32 V (load circuit)
Dimensions	See dimensional drawing (tolerances to DIN ISO 286 part 1 IT13)
Mass	approx. 150 g
EMC	Emitted interference: EN 61000-6-3 Noise immunity: EN 61000-6-2
Vibration resistance	3 g, test to IEC 60068-2-6 test Fc

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.

## Ordering information

### Series

**CPC20** Bus controller for **18plus ControlPlex®** with ESX60D

### Design: Bus system

**EN** EtherNet/IP (connection: 2 x RJ45 female connector)

**Version - number of power distribution systems to be connected**

**T2** Optional connection of two power distribution systems **18plus-ControlPlex®**

### Product versions

**001** Marking

**CPC20 EN - T2 - 001** Ordering example

## Notes

- The CPC20 is only intended for use with safety extra-low voltage (= 24 VDC).
- Incorrect connection to a higher and/or not reliably disconnected voltage can cause hazardous conditions or damage.
- Exclusively the power distribution system of type **18plus-ControlPlex®** is to be used.
- The technical data of the used circuit breakers 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 breaker and before resetting, 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 supply and discharge cables.
- 0 V potential for load and control voltage is mandatory.
- 0 V potential load and control voltage connected.
- For convenient parametrisation and configuration by means of projecting software a master data file (EDS file) will be made available for downloading on the E-T-A homepage.
- The CPC20 has a direct and fixed connection between the housing shield of the RJ45 connectors (XF1, XF2 and X1) and the 0 V of XD1.
- Please observe the separate user manual for CPC20.

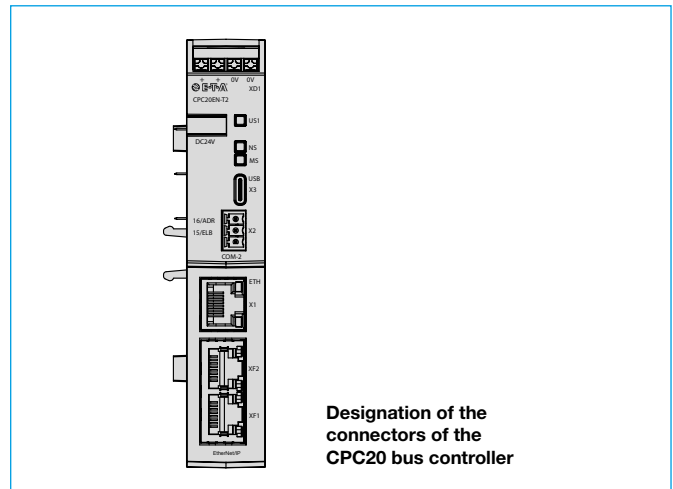
## Safety Note



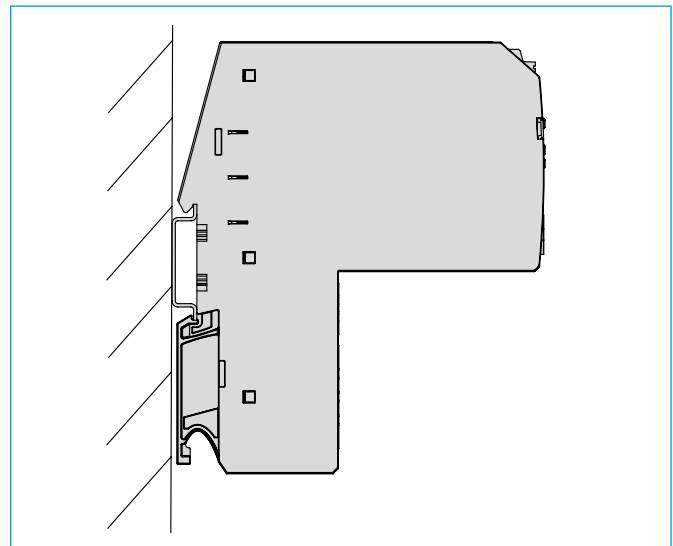
### Caution:

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.

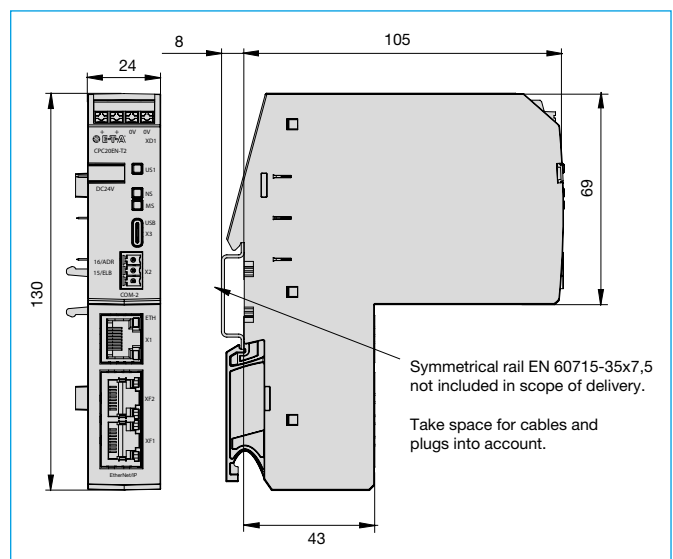
## Terminal selection



## Mounting position

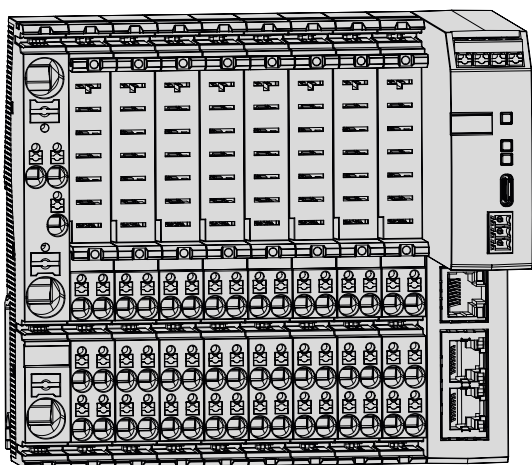


## Dimensions CPC20 bus controller

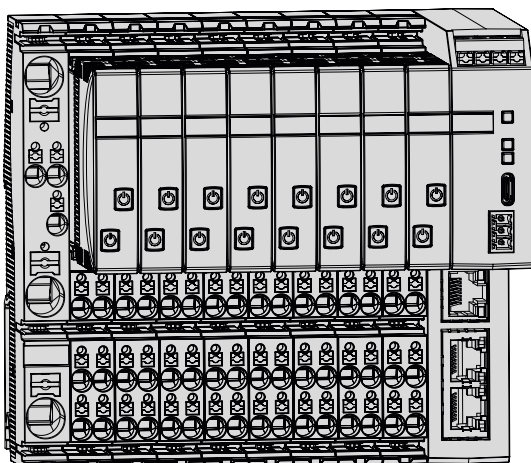


### Wiring diagram

**CPC20 bus controller and 18plus ControlPlex® unpopulated**



**CPC20 bus controller and 18plus ControlPlex® populated with ESX60D**



### Accessories

3-pole terminal strip  
FK-MCP 1.5/3-ST-3 (X2 COM2)  
Y31154801

