

Description

The CPC20 bus controller is the central communication sub-assembly of the **18plus-ControlPlex® ELBus®** intelligent power distribution system. The CPC20 allows communication with up to 32 double channel ESX60D electronic circuit protectors. It enables 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 parameterising 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®** interface allows realisation of the connection to the power distribution boards and the plugged-in ESX60D electronic circuit protectors. Up to two **ELBus®** interfaces are available. With an additional **ELBus®** interface, the bus Controller CPC20 can be used for a second power distribution system type 18plus ControlPlex. 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 power distribution system **18plus-ControlPlex®** and the plugged in ESX60D electronic circuit protectors offers a fully parameterisable 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®** reduces wiring time, increases system availability and enhances diagnostic functions.

Suitable for the following types:

Power distribution board	18plus-ControlPlex®
Electronic circuit protector	ESX60D (fully parameterisable by means of CPC20)

Approvals



(In connection with the 18plus, ESX60D modules)

Approvals

Authority	Standard	File-Certificate No.	Voltage ratings
UL	UL 2367	E306740	DC 24 V
UL	UL 508 listed CSA C22.2 No.14	E492388	DC 24 V



CPC20

Features

- Integral DC24 V power distribution system for power distribution and overcurrent protection
- Complete diagnosis and parameterising of the entire power distribution system
- For ESX60D electronic circuit protector
- 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 communication interface PROFINET
- Fully fledged communication interface Ethernet (web server)
- Service and maintenance interface via USB terminal
- Integral memory HISTOMEMO for overload and short-circuit diagnosis of the load circuits
- Profitability through considerably reduced wiring time
- Reduction of planning, design and installation time
- Ease of maintenance, diagnosis and system extension

Comliances



Certification

PNO certification: Profinet

Technical data (T_{amb} = 25 °C, U_B = DC24 V)

Typical applications

Intelligent DC 24 V Power Distribution System

Supply (XD1)

Voltage ratings	DC24 V (18 ... 30 V)
Current ratings	typically= 160 mA (with 1x Ethernet and 2x PROFINET)
Terminals	4 x push-in terminals (+/+0V/0V) max. cable cross section rigid 0.2 – 2.5 mm ² flexible with wire end ferrule (with plastic sleeve) 0.2 – 2.5 mm ² flexible with wire end ferrule (without plastic sleeve) 0.2 – 2.5 mm ² stripping length 10 mm

ELBus® terminal for connection with the Module 18plus-ControlPlex® (X2)

COM-1	Direct connection with 18plus-ControlPlex® (no wiring required)
X2 COM-2	Connection for the second power distribution board 18plus-ControlPlex® cable length max. 3 m typically H07V-K 1.5 mm ² female 16: addressing 15: data line ELBus® 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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PROFINET interface (-XF1, -XF2) with integral switch

XF1 (port 1)	connection to bus system PROFINET and to web server type: RJ45 When wiring and connecting to the bus system PROFINET the installation and wiring regulations of the PROFIBUS User Organisation (PNO) have to be observed.
XF2 (port 2)	connection to bus system PROFINET and to web server type: RJ45 When wiring and connecting to the bus system PROFINET the installation and wiring regulations of the PROFIBUS User Organisation (PNO) have to be observed.

ETHERNET interface (X1)

X1	communication interface to web server type: RJ45
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Technical data (T_{amb} = 25 °C, U_B = DC24 V)

Status indication of CPC20

LED »BF«	display of bus error (PROFINET) LED status indication options: red
LED »SF«	display of system error (PROFINET) LED status indication options: red
LED »US1«	LED lighted with supply voltage applied LED status indication options: red, green, orange

Operating mode	Indication of operating mode		
	LED BF	LED SF	LED US1
Start-up mode	orange	orange	orange
Bus error	red	OFF	green
System error	OFF	red	green
Firmware update	blinking red	blinking red	blinking red

LED »LNK«	Ethernet communication activity per port LED status indication options: green
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Operating mode	Indication of operating mode
	LED LNK
Link available	green
No link available	OFF
PROFINET device localisation	blinking green

LED »ACT«	Ethernet communication activity per port LED status indication options: yellow
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Operating mode	Indication of operating mode
	LED ACT
No activity	OFF
Activity available	blinking yellow

General data

Mounting method	rail mounting to EN 60715 - 35 x 7.5
Ambient temperature	0 °C ... +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	DC32 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

Order numbering code

Type	
CPC20	bus controller for 18plus-ControlPlex ® with ESX60D
Version: Bus system	
PN	PROFINET (connection: 2 x RJ45 female connector)
Version – number of power distribution boards to be connected	
T2	optional connection of two 18plus-ControlPlex ® power distribution systems
Product versions	
001	marking
CPC20 PN - T2 - 001	ordering example

Notes

- The CPC20 is only intended for use with safety extra-low voltage (=24V DC).
- Connection to a higher or not reliably disconnected voltage can cause hazardous conditions or damages
- The **18plus-ControlPlex**® power distribution system must exclusively be used.
- The technical data of the used circuit protectors 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/protector and 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.
- 0 V potential for load and control voltage is mandatory.
- 0 V potential load and control voltage connected
- For convenient adjustment and configuration by means of projecting software a master data file (GSDML 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

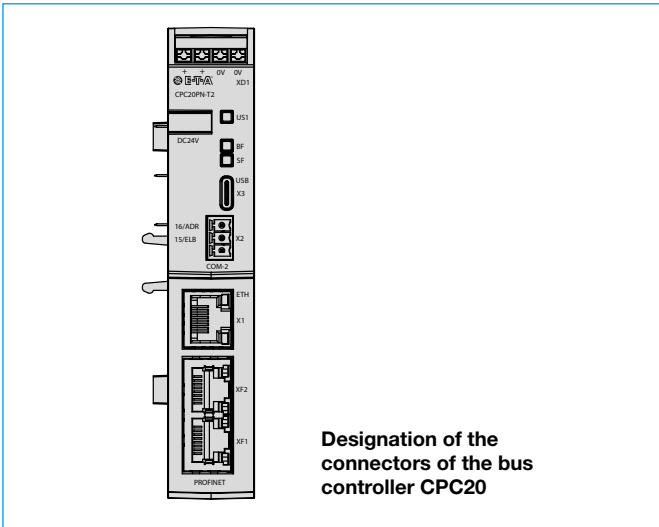


Caution:

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.

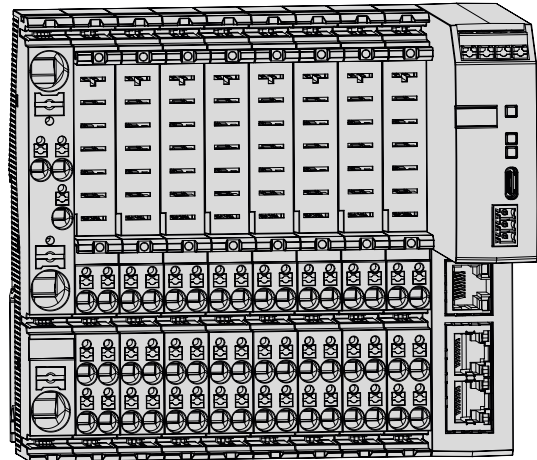
All information and data given on our products are accurate and reliable to the best of our knowledge, but E-T-A does not accept any responsibility for the use in applications which are not in accordance with the present specification. E-T-A reserves the right to change specifications at any time in the interest of improved design, performance and cost effectiveness, 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. Ordering codes of the products may differ from their marking.

Terminal selection

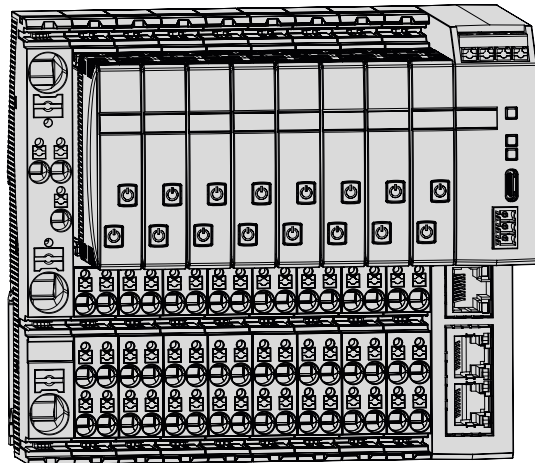


Wiring diagram

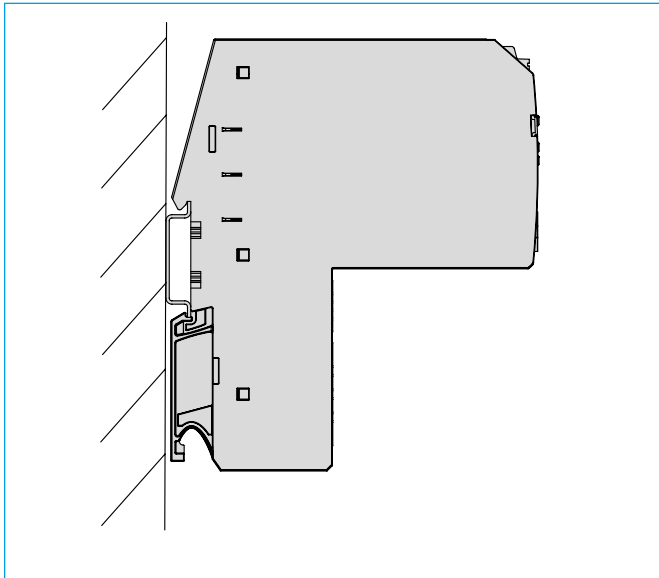
CPC20 bus controller and 18plus ControlPlex® unpopulated



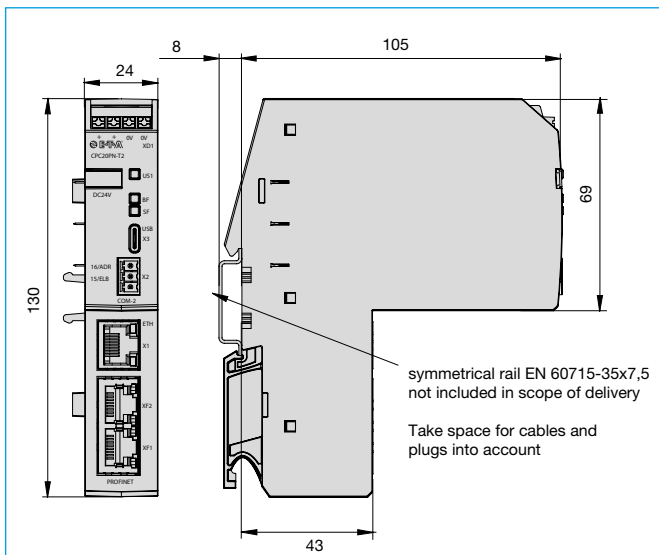
CPC20 bus controller and 18plus ControlPlex® populated with ESX60D



Mounting position

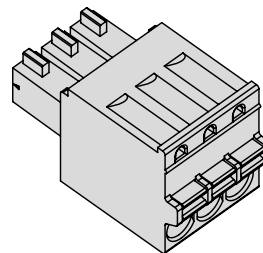


Dimensions of CPC20 bus controller



Accessories

3-pole terminal strip
FK-MCP 1.5/3-ST-3 (X52 COM2)
Y31154801



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