



CPC20EN-T2-001

The intelligent **ControlPlex®** system CPC20 is the perfect solution for the machine building and process industry. The system combines the well-proven quality of a DC 24 V overcurrent protection with an EtherNet/IP communication function. It features permanent measuring data recording, analysing and processing. This provides the required transparency to detect changes in the production process at an early stage and initiate corrective actions in time. The integral web server of the CPC20 bus controller allows direct access to the data of the DC 24 V power distribution. All measuring data and status information can be accessed even without using the field bus interface.



TYPICAL FEATURES

- Control, diagnosis and monitoring via EtherNet/IP
- Devices including supply module, overcurrent protection, power distribution module and bus controller
- Fully-fledged EtherNet communication interface (web server)
- Service and maintenance interface via USB terminal
- Adjustable configuration of up to 32 channels with 16 devices without expansion or up to 64 channels with 32 devices incl. expansion
- Integrated memory for overload and short circuit diagnosis in the load circuits

TYP. APPLICATIONS

Automation; car production; mechanical engineering; chemical industry; steel industry; machine building industry; pharmaceuticals and foodstuffs

WEB LINKS

[Further information](#), [Operating instructions](#), [International approvals](#), [Technical basics](#), [REACH](#), [RoHS](#), [Contact](#)

YOUR BENEFITS

- Increased system availability through comprehensive diagnostic functions
- Improves protection against voltage dips through selective protection of loads
- Reduces downtimes through quick trouble-shooting
- Increased flexibility of system planning through a modular terminal block system

APPROVALS / CERTIFICATIONS



COMPLIANCE



GENERAL INFORMATION

SAFETY AND INSTALLATION INSTRUCTIONS



Installation must be done by a qualified electrician.



- The CPC20 bus controller is only intended for use with safety extra-low voltage (≈ 24 V DC).
 - Connection to higher or not selectively protected voltages can cause harmful conditions or damage.
 - The **18plus-ControlPlex®** power distribution system is exclusively to be used.
 - The device must only be supplied with power after proper installation.
 - When a circuit protector has tripped and before the reset, the cause of the failure (short circuit or overload) must be remedied.
 - The national standards (e.g. in Germany DIN VDE 0100) for installation and selection of the feed and return cables must be observed.
- For convenient adjustment and configuration by means of projecting software an electronic data sheet file (EDS file) is made available for downloading on the E-T-A homepage.
- Please observe separate CPC20 instruction manual.
 - 0 V potential for load and control voltage is compulsory and connected.
 - The CPC20 has a direct and permanent connection between the enclosure screen of the RJ45 sockets (XF1, XF2 and X1) and the 0 V of the XD1.



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 component 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.



Note:
When wiring and connecting to the EtherNet/IP bus system, the installation and wiring regulations of the EtherNet/IP User Organisation must be observed.™ Specifications must be adhered to.

FURTHER INFORMATION



CPC20 CONTROLPLEX® SYSTEM
<https://global.e-t-a.com/c17673/>

TECHNICAL DATA ($T_u = +25$ °C, $U_b =$ DC 24 V)

ELECTRICAL DATA

Rated voltage U_n	DC 24 V
Operating voltage U_b	18...30 V
Dielectric strength	DC 32 V (load circuit)
Quiescent current I_0	Typ. 160 mA
Insulation co-ordination (EN IEC 60664)	0.5 kV Overvoltage category: II Pollution degree: 2 Reinforced insulation in the actuating area

OVERVIEW OF COMMANDS IN THE COM MODE

Writing/reading the device configuration (parameters)	• Current limit value 50 ... 100 % • Rated current 1...10 A • Overload disconnection 105...135 % • Trip time in the event of overload 0.05...10 s • Short circuit current 180 % • Hysteresis limit value 5...20 % • Switch-on behaviour (latest state, OFF, ON) • Switch-on delay 0.05... 2.5 s
Reading static device information	• CPC20 device type & circuit protectors • CPC20 serial number & circuit protectors • CPC20 hardware version & circuit protectors • CPC20 software version & circuit protectors
Reading dynamic device information / measuring values	• CPC20 enclosure status • Device temperature of the circuit protectors • Error memory

- Trip counter
- Reason of last tripping
- Device status / event of the circuit breakers
- Load voltage ACTUAL / MIN / MAX / MEDIUM VALUE
- Load current: ACTUAL / MIN / MAX / MEDIUM VALUE
- Supply voltage
- Total current
- Histogramm: Load current and load voltage curve in the 4 s before the circuit protector trips

Control commands	• Switch on/off or reset load output • Reset trip counter • Set parameters to factory settings • Delete histogramm memory
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MECHANICAL DATA

Mounting dimensions (WxHxD) 24 x 130 x 113 mm (tolerances according to DIN ISO 286 part 1 IT13)

Mass Approx. 150 g

Flammability class acc. to UL 94 V-0

Mounting data DIN rail according to EN 60715-35x7.5

XD1 terminal	Cable cross section [mm²]	Cable cross section [AWG]	Stripping length [mm]
rigid	0.2...2.5	24...14	10
flexible	0.2...2.5	24...14	10
flexible with wire end ferrule with plastic sleeve	0.25...2.5	23...14	10
flexible with wire end ferrule without plastic sleeve	0.25...2.5	23...14	10
X2 COM-2 terminal Bar, spring 3-pole FK-MCP 1.5/3-ST-3.5BK	Cable cross section [mm²]	Cable cross section [AWG]	Stripping length [mm]
rigid	0.14...1.5	26...16	9
flexible	0.14...1.5	26...16	9
flexible with wire end ferrule with plastic sleeve	0.25...0.5	24...21	9
flexible with wire end ferrule without plastic sleeve	0.25...1.5	24...16	9

Interfaces

EtherNet/IP interface (XF1, XF2)

RJ45; connection to the EtherNet/IP bus system via integral switch

ETHERNET interface (X1)

RJ45; communication interface to the web server

Service and maintenance interface (X3)

USB 2.0 Type C

Cable length max. 2.5 m

ELBus® interface (COM-1)

Direct connection to the 18plus terminal module
(no wiring required)

ELBus® interface (X2 COM-2)

Terminal for a 2. 18plus power distribution module for expansion by a maximum of 16 additional circuit breakers

Cable length max. 3 m

Terminal 16/ ADR: Addressing

Terminal 15/ ELB: Data line ELBus®

AMBIENT CONDITIONS

Ambient temperature -0...+60 °C (without condensation)

Storage temperature -40...+70 °C

Mounting temperature +10...+30 °C

Damp heat **Test according to IEC 60068-2-78, test cab. climate class 3K3 to EN60721**
96 h at 95 % rel. humidity/40 °C

Vibration **Test according to IEC 60068-2-6, test Fc**
3 g

IP code (standard) IP20 according to EN60529

EMC requirements - emitted interference (EMC directive) EN 61000-6-3

EMC requirements - resistance to disturbances (EMC directive) EN 61000-6-2

FURTHER INFORMATION

CPC20EN - VISUAL INDICATION OF THE RJ45 INTERFACES X1, XF1 AND XF2

RJ45 interface X1

Operating mode	LED LNK
Link available	Green
No link available	OFF
Operating mode	LED ACT
Activity available	blinking orange
No activity available	OFF

RJ45 interfaces XF1 and XF2

Operating mode	LED LNK
Link available	Green
No link available	OFF
Operating mode	LED ACT
Activity available	green blinking
No activity available	OFF

CPC20EN - VISUAL INDICATION OF THE OPERATING CONDITIONS

Operating mode	LED US1	LED NS	LED MS
Start-up mode	Orange	Orange	Orange
Connect CIP	Green	Green	Green
No IP address	Green	OFF	Green flashing
IP address valid, no CIP connected	Green	Green flashing	Green
System error	n.a.	n.a.	Red
Firmware Update	Red flashing	Red flashing	Red flashing
LED US1	Applied supply voltage indication		
LED NS	Network status indication		
LED MS	Module status indication		

n.a. not applicable

ORDERING NUMBER CODE

C	P	C	2	0	E	N	-	T	2	-	0	0	1
1						2		3			4		

1 TYPE NUMBER

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

2 VERSION: BUS SYSTEM

PN PROFINET (terminal: 2x RJ45 socket)
 EN EtherNet/IP (connection: 2x RJ45 socket)

3 VARYING NUMBER OF POWER DISTRIBUTORS TO BE CONNECTED

T2 Connection option for two 18plus **ControlPlex®** power distribution modules

4 PRODUCT VERSIONS

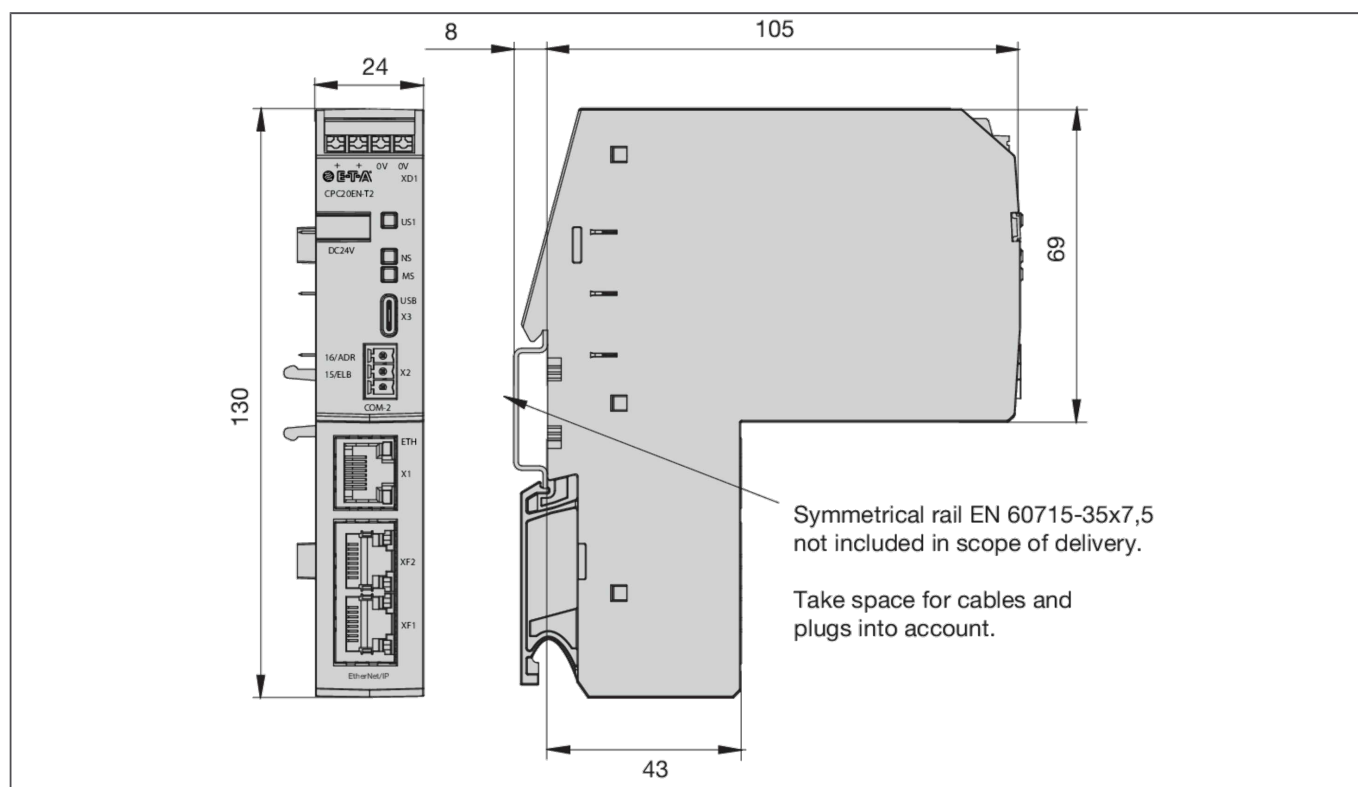
001 Marking version

APPROVALS

APPROVALS			
Approval authority	Test standard	File Certificate No.	Rated voltage [V]
UL	UL 2367	E306740	DC 24
UL	UL 508 listed CSA C22.2 No. 14	E492388	DC 24

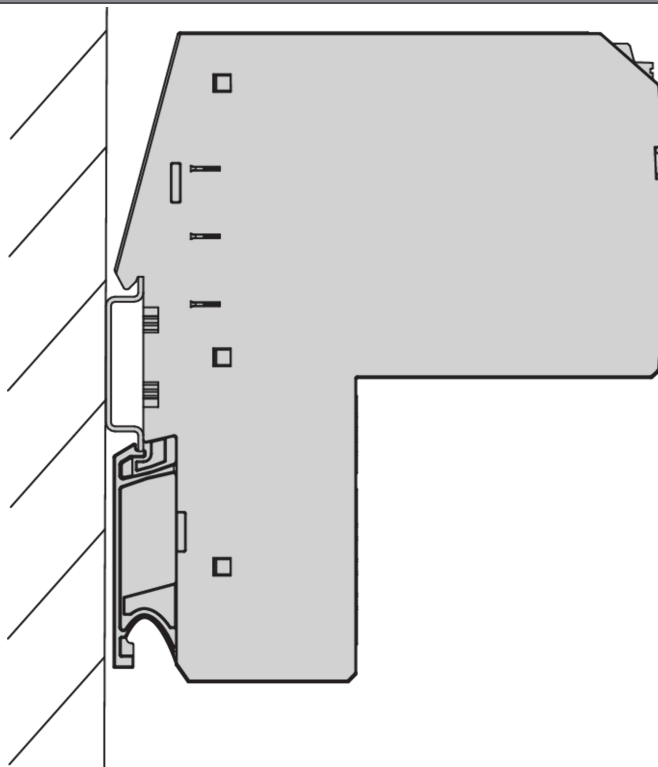
Find further information about approvals here: https://www.e-t-a.de/approvals_en

DIMENSIONS

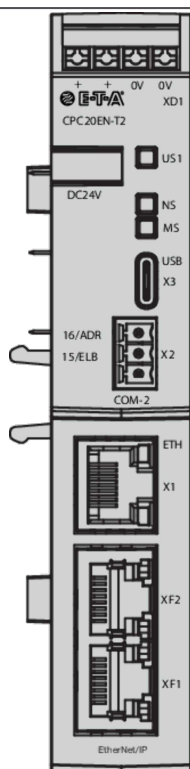


INSTALLATION INSTRUCTIONS

MOUNTING POSITION



SCHEMATIC DIAGRAMS

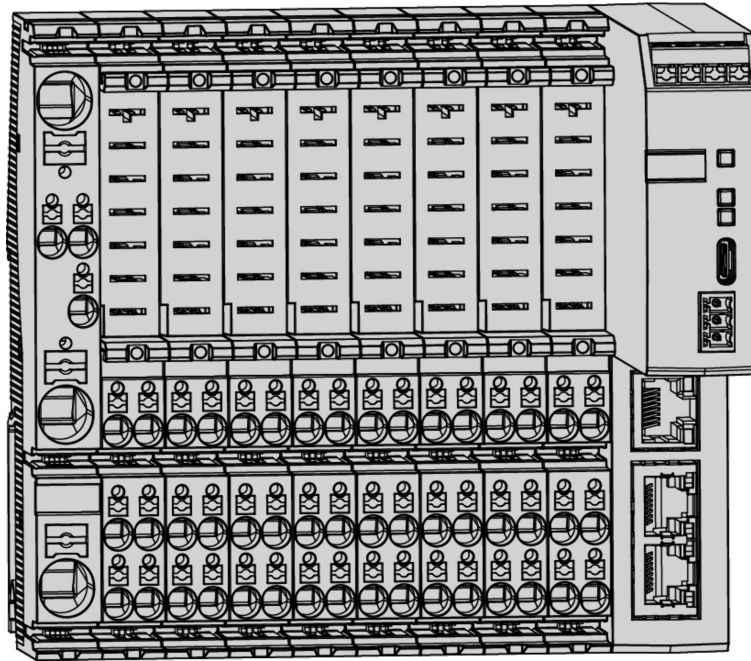


**Designation of the
connectors of the
CPC20 bus controller**

APPLICATION EXAMPLES

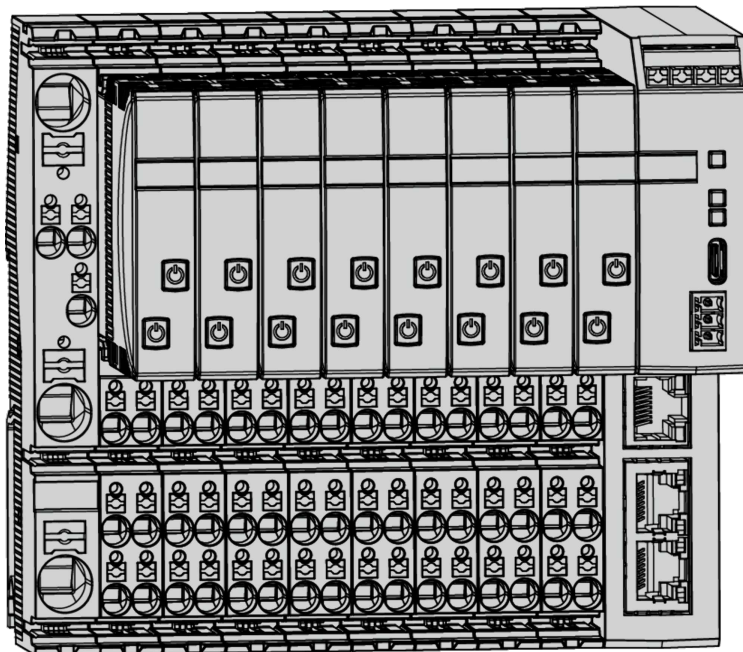
WIRING DIAGRAM

CPC20 bus controller and 18plus ControlPlex®
unpopulated



WIRING DIAGRAM

CPC20 bus controller and 18plus ControlPlex®
populated with ESX60D



ACCESSORIES

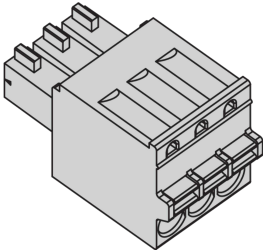
REQUIRED ACCESSORIES		
X22261102	Busbar for LINE, 0 V, FE, grey insulation, 500 mm	
<u>18PLUS010 I</u>	18PLUS-AM03-00-PT01-01 18plus connection module ControlPlex [®] for circuit breaker type ESX60D	
↳ X22261102	Busbar for LINE, 0 V, FE, grey insulation, 500 mm	
↳ X22357102	Supply busbar L=284 mm 18PLUS	
↳ X22357101	FTG busbar for LINE, 0 V, FE, grey insulation, 500 mm	
↳ Y31197801	Retaining clips	
<u>18PLUS011 I</u>	18PLUS-EM03-00-PT01-01 18PLUS supply module, ELBus [®] Version ControlPlex [®]	
↳ X22261102	Busbar for LINE, 0 V, FE, grey insulation, 500 mm	
↳ X22357102	Supply busbar L=284 mm 18PLUS	
↳ X22357101	FTG busbar for LINE, 0 V, FE, grey insulation, 500 mm	
↳ Y31197801	Retaining clips	
REQUIRED ACCESSORIES FROM		
<u>ESX60D-S</u>	You get an intelligent power distribution system by combining the electronic ESX60D is a double channel, communication-capable circuit protector with the CPC20 bus controller and the 18plus ControlPlex [®] module.	
OPTIONAL ACCESSORIES		
X22357102	Supply busbar L=284 mm 18PLUS	
X22357101	FTG busbar for LINE, 0 V, FE, grey insulation, 500 mm	
<u>18PLUS012 I</u>	18PLUS-TM03-00-PT01-01 18PLUS transfer module ControlPlex [®] extension for CPC20 controller	

↳ X22261102	Busbar for LINE, 0 V, FE, grey insulation, 500 mm	
↳ X22357102	Supply busbar L=284 mm 18PLUS	
↳ X22357101	FTG busbar for LINE, 0 V, FE, grey insulation, 500 mm	
↳ Y31197801	Retaining clips	
<u>Y31154801</u>	Terminal strip 3-pole FK-MCP 1.5/3-ST-3 (X2 COM2)	

FURTHER INFORMATION ABOUT ACCESSORIES (DRAWINGS)

ACCESSORIES

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



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 technical improvement. 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 part numbers may differ from the device marking.