

Description

The bus controller CPC10xx-Tx is the central communication sub-assembly of the intelligent power distribution systems type **ControlPlex®**. The CPC10 allows communication with up to ninety-six electronic circuit protectors ESX50D-S1xx. 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 CPC10 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 electronic circuit protectors type ESX50D-S. The number of ELBus® interfaces can be selected for two different versions. The bus controller CPC10xx-T1 can be used with one ELBus® interface, the bus controller CPC10xx-T4 can be used with four ELBus® interfaces. The selection of the corresponding bus controller depends on the required system expansion stage and offers the customer the choice between the connection of one to four power distribution boards and thus the possibility to communicate with up to 24 or even 96 electronic circuit protectors type ESX50D-S. The CPC10 enables the complete access to all requested parameters of the electronic circuit protector, its control and the visualisation of its status data. This is made available at the field bus interface for the superordinate control unit and also at the USB service interface for the operation on site.

The combination of the bus controller CPC10 with the power distribution board SVS201-PWR-xx and the plugged in electronic circuit protectors ESX50D-S1xx 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:

Distribution rails	SVS201-PWR-xx
Electronic circuit protector	ESX50D-S100 (completely parameterisable by means of the CPC10)
Electronic circuit protector	ESX50D-S110 (current rating adjustable by means of the rotary switch on the circuit protector, otherwise completely parameterisable via the CPC10)

Features and Benefits

- Integral DC 24 V power distribution system for power distribution and overcurrent protection
- Complete diagnosis and parameterising of the entire power distribution system
- For electronic circuit protectors ESX50D-S100 / -S110
- Variable configuration of the connection with up to 96 electronic circuit protectors
- Fully featured communication interfaces such as PROFIBUS-DP, PROFINET etc.
- 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



Technical data ($T_{amb} = 25\text{ °C}$, $U_B = DC\ 24\ V$)

Application:

Intelligent DC 24 V Power Distribution Systems

Line entry load module (X41)

Rated voltage	DC 24 V (18 ... 32 V)
Current rating	typically 60 mA
Terminals	4 x screw terminals, (+/+0V/0V) cable cross section max. 2.5 mm ² flexible with wire end ferrule (with plastic sleeve) 0.25 – 1.5 mm ² flexible with wire end ferrule (without plastic sleeve) 0.25 – 2.5 mm ² stripping length 7 mm tightening torque 0.5 to 0.6 Nm

ELBus® termination to connect the power distribution boards (-X51, -X52, -X53, -X54)

X51 COM-1:	connection for the first power distribution board SVS201-PWR-xx cable length max. 2m typically H07V-K 1.5 mm ² female connector 1: Data line ELBus® ELB female connector 2: ELBus® DC +24V female connector 3: ELBus® GND
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only with CPC10PN-T4

X52 COM-2:	connection for the second power distribution board SVS201-PWR-xx cable length max. 2m typically H07V-K 1.5 mm ² female connector 1: Data line ELBus® ELB female connector 2: ELBus® DC +24V female connector 3: ELBus® GND
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only with CPC10PN-T4

X53 COM-3:	connection for the third power distribution board SVS201-PWR-xx cable length max. 2m typically H07V-K 1.5 mm ² female connector 1: Data line ELBus® ELB female connector 2: ELBus® DC +24V female connector 3: ELBus® GND
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only with CPC10PN-T4

X54 COM-4:	connection for the fourth power distribution board SVS201-PWR-xx cable length max. 2m typically H07V-K 1.5 mm ² female connector 1: Data line ELBus® ELB female connector 2: ELBus® DC +24V female connector 3: ELBus® GND
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Technical data (T_{amb} = 25 °C, U_B = DC 24 V)

USB service and maintenance interface (-X61)

X61	connection to a PC for communication with the user software cable length max. 2.5 m Type: USB-2.0 Type B
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PROFINET interface (-X81, -X82) with integral switch

X81	Connection to bus system PROFINET 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.
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X82	Connection to bus system PROFINET 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.
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Status indication of the CPC10PN-Tx

LED "PWR"	LED lighted with supply voltage applied
LED "CE"	Status indication shows status of bus controller CPC10 LED colours: red, green, yellow, orange
LED "CM"	The LED shows the status of the communication between the communication unit and electronic circuit protector. LED colours: red, green, yellow, orange
LED "NS"	Indication of network status of the communication of the internal communication module status to the PROFINET master LED colours: red, green, yellow, orange
LED "MS"	Status indication of the internal communication module LED colours: red, green, yellow, orange

Operating mode	Indication of operating mode		
	LED CM	LED CE	LED PWR
SVS_SYSTEMINIT	yellow	yellow	green
SVS_ERROR_CRITICAL	yellow	red	green
SVS_ERROR_UNCRITICAL	yellow	flashing red	green
SVS_PARAMETERIZATION		(1)	
SVS_STANDALONE	yellow	OFF	green
SVS_NORMAL_MODE	green	OFF	green

Caution



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.

Technical data (T_{amb} = 25 °C, U_B = DC 24 V)

General data

Mounting method	rail mounting to EN 60715 - 35 x 7.5
Temperature range	0...50 °C (without condensation)
Storage temperature	-20...+70 °C
Housing material	plastic
Protection class	terminals IP20 EN60529
Dielectric strength	DC 32 V (load circuit)
Dimensions	see dimensional drawing (tolerances to DIN ISO 286 part 1 IT13)
Mass	CPC10PN-T1 approx. 125 g CPC10PN-T4 approx. 185 g
EMC	<ul style="list-style-type: none"> EN 61000-6-2 2005 Electromagnetic compatibility (EMC) part 6-2: Basic standards - noise immunity for industrial areas EN 61000-6-4 2007+A1:2011 Electromagnetic compatibility (EMC) – part 6-4: Basic standards – noise immunity for industrial areas
Vibration	3 g, test to IEC 60068-2-6 test Fc

Order numbering code

Type

CPC10 Bus controller for **ControlPlex® Board** for SVS201-PWR-xx with ESX50D-S100 / -S110

- Integral DC 24 V power distribution system
- For max. 96 psc electronic circuit protectors type ESX50D-S xxx
- Direct field bus connection
- Service and maintenance interface via USB
- with physical isolation of CPC10 and SVS201-PWR

Version: Bus system

PB PROFIBUS-DP (connection D-Sub, 9-pole, connector)

PN Profinet IO (connection: 2 x RJ45 female connector)

Version - number of power distribution boards to be connected

T1 one power distribution board SVS201-PWR can be connected

T4 up to four power distribution boards SVS201-PWR can be connected

Versions

001 Marking

CPC10 PN - T1 - 001 ordering example

Conformity and approvals

- CE
- PNO certification

Markings

CE Declaration of Conformity with the presently valid EMC Directive

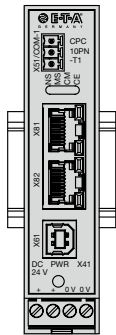
All dimensions without tolerances are for reference only. E-T-A reserves the right change specifications at any time in the interest of improved design, performance and cost effectiveness, the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

Notes for installation

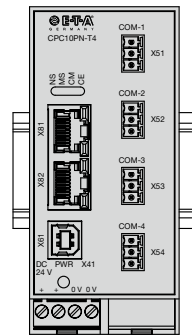
- The CPC10 is only intended for use with safety extra-low voltage (=24 V DC).
- Connection to a higher or not reliably disconnected voltage can cause hazardous conditions or damages.
- Only the intended power distribution boards must be used.
- The technical data of the used circuit protectors have 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 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.
- 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 from the E-T-A homepage.

Please observe the separate user manual for CPC10PN-Tx.

Terminal selection

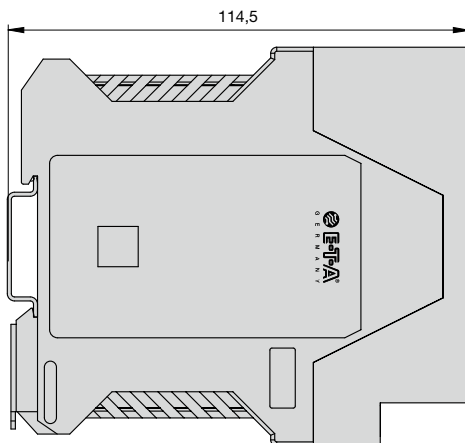


bus controller
CPC10PN-T1

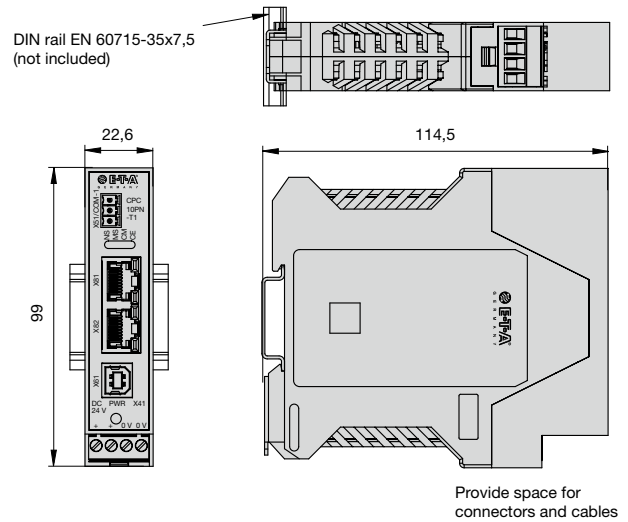


bus controller
CPC10PN-T4

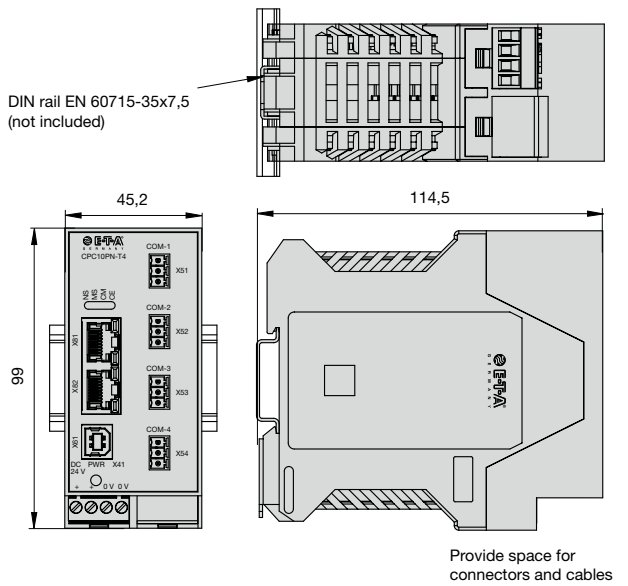
Mounting position



Dimensions CPC10PN-T1-xxx



Dimensions CPC10PN-4-xxx



Application example for PROFINET usage

CPC10PN-T1-xxx with SVS201-PWR-08-xxx fitted with ESX50D-S100



