

CPX-Terminal

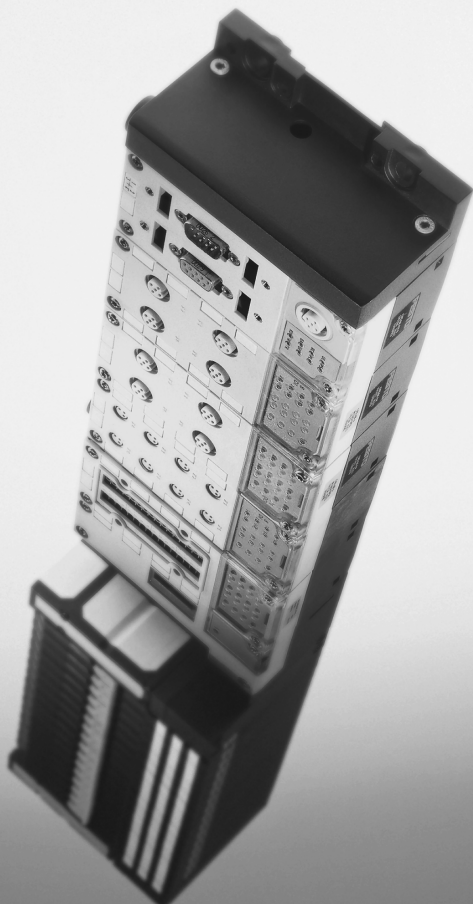
US patent no. 6,216,738

FESTO

Brief description

Electrical
interface
CPX-CP-4-FB

– English



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Translation of the original instructions

Documentation on the product



For all available product documentation
→ www.festo.com/pk

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English 3

1 User instructions

The CPX-CP interface type CPX-CP-4-FB is intended exclusively for installation in Festo CPX terminals. The designated Festo CPI/CP valve terminals and CPI-/CP-EA modules can be connected to the CPX-CP interface.

The specified limits for technical data must be adhered to. Detailed information can be found in the description for the CPX-CP interface P.BE-CPX-CP-... as well as in the CPX system description P.BE-CPX-SYS-... .



Warning

- For the electrical power supply, use only PELV circuits in accordance with IEC/EN 60204-1 (Protective Extra-Low Voltage, PELV).
- Observe the general requirements for PELV circuits in accordance with IEC/EN 60204-1.
- Use only voltage sources that guarantee a reliable electric separation of the operating and load voltage in accordance with IEC/EN 60204-1.
- Connect an earth conductor of sufficient cable cross section to the connection of the CPX terminal marked with the earth symbol.

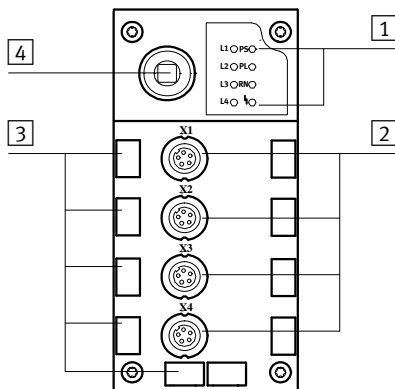


Note

- The CPX-CP interface contains electrostatically sensitive components. Therefore, do not touch any components. Observe the handling specifications for electrostatically sensitive devices.
- Only commission a CPX terminal which has been mounted and wired completely.

2 Connection and display components

- 1 CP system and CP string-specific status LEDs
- 2 CP string connections X1 ... X4
- 3 Inscription labels (accessories)
- 4 Save key

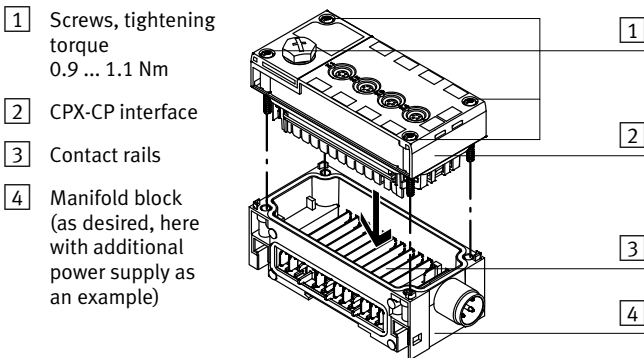


CP string-specific LEDs		CP system-specific LEDs	
L1	CP string error string L1 ... L4 Error or malfunction in the corresponding CP string	PS	Power sensors (green) Sensor supply for CP modules
L2		PL	Power Load (green) Load voltage for CP modules
L3		RN	Run (green) Data exchange CP system running
L4		⚡	CP system error (red) Error or malfunction in the CP system
In normal operating status all green LEDs light up; the red LEDs do not light up.			

3 Installation instructions

3.1 Assembly

The CPX-CP interface is mounted in a manifold sub-base of the CPX terminal.



Disassembly:

- Remove the screws and lift the CPX-CP interface up carefully.

Mounting

1. Check the seal and sealing surfaces and refit the CPX-CP interface.
2. Screws must be placed so that the self-cutting threads can be used. Tighten the screws in diagonally opposite sequence at first by hand (Torx T10). Tightening torque 0.9 ... 1.1 Nm.

3.2 Connecting the CPI/CP modules



Note

Operative malfunction due to impermissible cabling.

- When connecting the CPI/CP modules to the CP string, only use special CPI/CP cables from Festo (→ www.festo.com/catalogue).
- Please note that the total length of cable on a string must not exceed 10 m.

In this way, you can avoid:

- faults in data exchange between the CPX-CP interface and the connected modules.

CPI/CP modules can be connected to any CPI connection according to the rules specified in the description for the CPX-CP interface:

1. Check which address range is intended for the CPI/CP module.
2. Use the CPI/CP cables to connect the CPI/CP modules to the string which provides this address range.
3. Secure the plug and socket of the CPI/CP cable with the union nut. In this way the electrical contact is guaranteed.
4. Use the inscription labels (type IBS 6x10 or IBS 9x20) to indicate the string to which the module is connected.

**Note**

To comply with protection class IP65/IP67:

- Seal unused CPI/CP connections and the Save key with the appropriate protective caps.

3.3 Saving the string allocation

1. Switch on the power supply of the CPX terminal and, if necessary, of the CPI/CP modules with load voltage connection.
2. Use a small screwdriver or similar to press the Save key for at least 1 s.
Doing this will save the current string allocation as the nominal string allocation in the CPX-CP interface.
The corresponding I/O addresses are assigned to the CPI/CP modules.
3. Check to ensure the status LEDs on the modules are illuminated and the string LEDs (L1 ... L4) on the CPX-CP interface have gone out. If this is the case, it means all of the CPI/CP modules are ready for operation and that the saved string allocation is identical to the current string allocation.
4. Switch off the power supply for the CPX terminal, wait a short while and then switch it back on again.
5. The modified address range of the CPX-CP interface must be accepted, if necessary, depending on the CPX fieldbus node or FEC used:

CPX fieldbus node/CPX-FEC	Accepting the address range
CPX fieldbus node or CPX-FEC with Remote I/O operating mode: – “System start” system parameter ([System start]): “System start with default parameterisation and current CPX expansion” ([Default parameters]), factory setting	The modified address range of the CPX-CP interface is automatically accepted.
CPX fieldbus node or CPX-FEC with Remote I/O operating mode: – “System start” system parameter ([System start]): “System start with saved parameterisation and saved CPX expansion” ([Saved parameters])	1. Change system parameter “System start ...” to “ ... Default parameterisation ...” . 2. Switch off the power supply of the CPX terminal then switch it on again. The address range of the CPX-CP interface will then be accepted. 3. If necessary, you can restore the desired parameterization.
CPX-FEC with Stand Alone or Remote Controller operating mode	• To accept the address range of the CPX-CP interface, the actual configuration must be saved as the nominal configuration (nominal/actual comparison). Further information can be found in the manual for the CPX-FEC or the manual for the FST 4.1 software package.

4 Technical data

Type	CPX-CP-4-FB
General technical data	➔ CPX system description P.BE-CPX-SYS-...
Protection class to EN 60529 CPX-CP interface fitted completely, plugs in protection class IP65/IP67 inserted, unused connection fitted with protective cap	IP65/IP67
Protection against electric shock (Protection against direct and indirect contact as per EN 60204-1/IEC 204)	By means of a PELV power supply unit (Protected Extra-Low Voltage)
Load voltage supply of valves (U_{VAL}) Current consumption of CPX-CP interface (only CPX-CP interface, without CP modules) – From operating voltage supply for electronics/sensors ($U_{EL/SEN}$) – From load voltage supply for valves (U_{VAL}) Maximum current consumption per CP string – From operating voltage supply for electronics/sensors ($U_{EL/SEN}$) – From load voltage supply for valves (U_{VAL}) Galvanic isolation – between operating voltage supply for electronics/sensors ($U_{EL/SEN}$) and load voltage supply for valves (U_{VAL})	Tolerance 20.4 ... 26.4 V typ. 75 mA at 24 V typ. 5 mA at 24 V 1.6 A at 24 V 1.6 A at 24 V None

Type	CPX-CP-4-FB
CPI system design – Number of CP strings – Cable length per CP string – Number of CPI/CP modules per CP string – Number of inputs / outputs per CP string – Update time: – All CP strings assigned exclusively with modules with extended functions – Mixed string allocation – Support for extended functionality of the CPI system	4 max. 10 m max. 4 32 I / 32 O max. 2 ms max. 4 ms Yes
Voltage drop of CPX system or additional supply up to CP connection ... – From operating voltage supply for electronics/sensors ($U_{EL/SEN}$) – From load voltage supply for valves (U_{VAL})	max. 1 V max. 1 V
Short-circuit protection for CPX-CP interface – For CP sensor supply – For CP load voltage supply – Behaviour after short circuit – Remedy	> 1.8 A per string, slow-blow > 1.8 A per string, slow-blow Power remains switched off Power Off/On necessary (power does not return automatically)