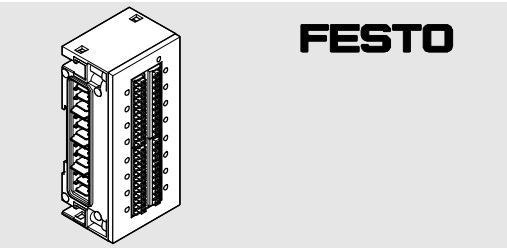


CPX-L-16DE-16-KL-3POL
CPX-L-8DE-8DA-16-KL-3POL



Brief description
Translation of the original instructions

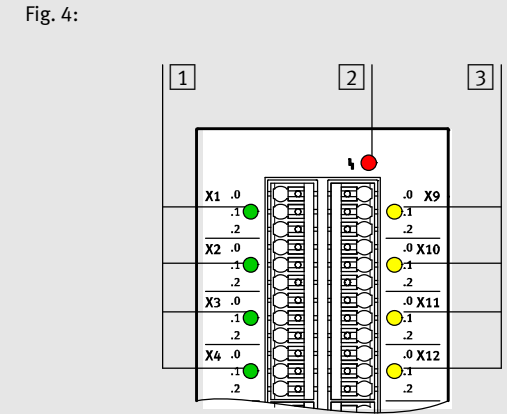
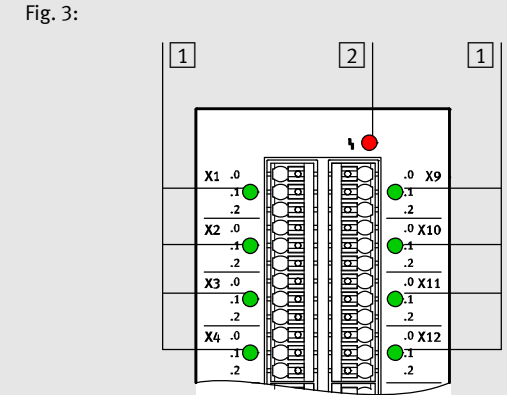
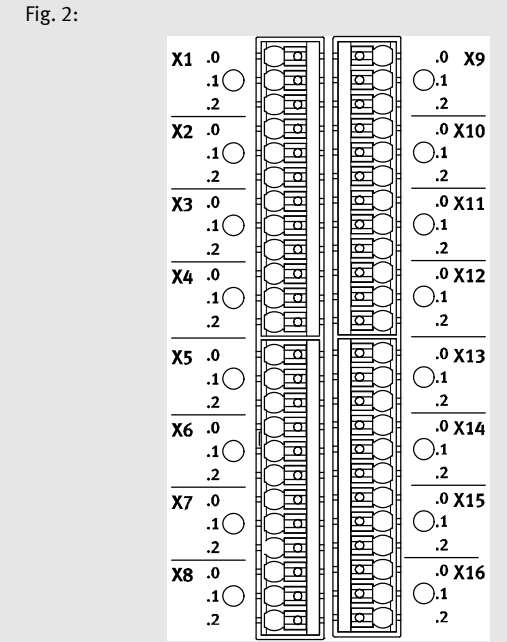
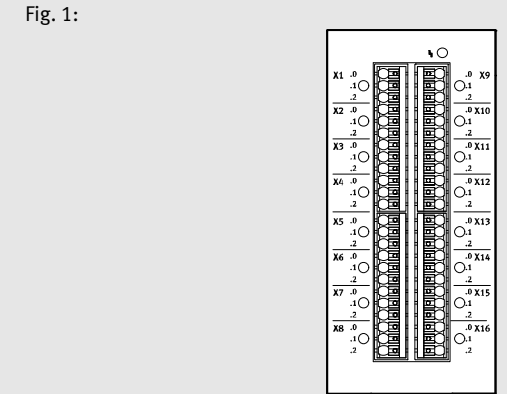
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For all available product documentation
➔ www.festo.com/pk

➔ **Note**

en Fitting and commissioning to be carried out only by qualified personnel in accordance with the operating instructions.



General information en

1 Function
The CPX I/O modules are only intended for use in CPX terminals.

2 Application
The maximum values specified in the section “Technical specifications” must be observed during operation. See the description for CPX I/O modules P.BE-CPX-EA-... and the CPX system description P.BE-CPX-SYS-... for further information.

➔ **Note**
Only commission a CPX terminal which has been mounted and wired completely.

3 Installation
Warning

- Before carrying out installation and maintenance work, switch off the following:
 - Compressed air supply
 - Operating and load voltage supply
- Connect an earth conductor of sufficient cable cross section to the connection on the CPX terminal marked with the earth symbol.
- The I/O modules contain electrostatically sensitive components. Therefore, do not touch any components. Observe the handling specifications for electrostatic sensitive devices.

In I/O modules of type CPX-L an interlinking block, input module and connection block form an inseparable unit.

➔ **Note**
When using 2-wire sensors the residual current at “log. 0” must be smaller than the standard value as per IEC61131-2 type 1. At V_{IX} , $I_{X+1}, \dots < 5\text{ V}$: $I_{\text{residual}} < 500\text{ }\mu\text{A}$.

CPX-L input module (CPX-L-16DE-16-KL...) en

1 Pin allocation
Fig. 2 shows the connections and input designations of the CPX-L input module. The following table shows the corresponding pin assignment.

Pin assignment X1 to X8	Pin assignment X9 to X16
X1.0: 24 V _{SEN} X1.1: Ex X1.2: 0 V _{SEN} X2.0: 24 V _{SEN} X2.1: Ix+1 X2.2: 0 V _{SEN} X3.0: 24 V _{SEN} X3.1: Ix+2 X3.2: 0 V _{SEN} X4.0: 24 V _{SEN} X4.1: Ix+3 X4.2: 0 V _{SEN} X5.0: 24 V _{SEN} X5.1: Ix+4 X5.2: 0 V _{SEN} X6.0: 24 V _{SEN} X6.1: Ix+5 X6.2: 0 V _{SEN} X7.0: 24 V _{SEN} X7.1: Ix+6 X7.2: 0 V _{SEN} X8.0: 24 V _{SEN} X8.1: Ix+7 X8.2: 0 V _{SEN}	X9.0: 24 V _{SEN} X9.1: Ix+8 X9.2: 0 V _{SEN} X10.0: 24 V _{SEN} X10.1: Ix+9 X10.2: 0 V _{SEN} X11.0: 24 V _{SEN} X11.1: Ix+10 X11.2: 0 V _{SEN} X12.0: 24 V _{SEN} X12.1: Ix+11 X12.2: 0 V _{SEN} X13.0: 24 V _{SEN} X13.1: Ix+12 X13.2: 0 V _{SEN} X14.0: 24 V _{SEN} X14.1: Ix+13 X14.2: 0 V _{SEN} X15.0: 24 V _{SEN} X15.1: Ix+14 X15.2: 0 V _{SEN} X16.0: 24 V _{SEN} X16.1: Ix+15 X16.2: 0 V _{SEN}
Ix = Input x	

2 Status LEDs
Fig. 3 shows the status LEDs of the inputs [1] and the error LED (module error) [2].

LED	Operating status and error display	
h (red)	Error LED	off: no error
	Module error	illuminated: Short circuit/overload in sensor supply V _{EL/SEN}
X1 ... X16 (green)	Status LEDs for the inputs	off: log. 0 (no signal)
		illuminated: log. 1 (signal is present)

Designation	CPX-L-16DE-16-KL...
General technical data	See CPX System Description
Operating voltage supply - Nominal voltage - Internal current consumption at 24 V (internal electronics)	V _{EL/SEN} (electronics/sensors) DC 24 V ± 25 % typ. 15 mA
Digital inputs as per IEC 61131-2 type 1, 24 V - Version - Logic level: log. 0 / log. 1 - Response delay at 24 V - Current consumption at 24 V (input current) - Sensor supply: Voltage drop to V_{EL/SEN} (reduction of sensor supply voltage) - Reverse polarity protection 24 V_{SEN} against 0 V_{SEN} - Short circuit protection in sensor supply - Response threshold - Characteristic - Discrete fusing of the inputs	16 inputs DC 0 ... 30 V positive logic (PNP) ≤ 5 V / ≥ 15 V can be parameterised, typ. 3 ms typ. 5.2 mA at “log. 1” max. 1.0 V Yes Electronic (for the complete module) 1.8 A ... 6.5 A slow-blowing None
Galvanic isolation	None
Potential difference between sensor supply connections and V _{EL/SEN}	0 V-connections: not permitted
Module code/Submodule code (CPX-specific)	20/2
Module identification (Handheld)	L-16DI

CPX-L multi I/O module (CPX-L-8DE-8DA-16-KL...) en

1 Pin allocation
Fig. 2 shows the connections and input/output designations of the CPX-L multi I/O module. The following table shows the corresponding pin assignment.

Pin assignment X1 to X8	Pin assignment X9 to X16
X1.0: 24 V _{SEN} X1.1: Ix X1.2: 0 V _{SEN} X2.0: 24 V _{SEN} X2.1: Ix+1 X2.2: 0 V _{SEN} X3.0: 24 V _{SEN} X3.1: Ix+2 X3.2: 0 V _{SEN} X4.0: 24 V _{SEN} X4.1: Ix+3 X4.2: 0 V _{SEN} X5.0: 24 V _{SEN} X5.1: Ix+4 X5.2: 0 V _{SEN} X6.0: 24 V _{SEN} X6.1: Ix+5 X6.2: 0 V _{SEN} X7.0: 24 V _{SEN} X7.1: Ix+6 X7.2: 0 V _{SEN} X8.0: 24 V _{SEN} X8.1: Ix+7 X8.2: 0 V _{SEN}	X9.0: 24 V _{SEN} X9.1: Ox X9.2: 0 V _{OUT} X10.0: 24 V _{SEN} X10.1: Ox+1 X10.2: 0 V _{OUT} X11.0: 24 V _{SEN} X11.1: Ox+2 X11.2: 0 V _{OUT} X12.0: 24 V _{SEN} X12.1: Ox+3 X12.2: 0 V _{OUT} X13.0: 24 V _{SEN} X13.1: Ox+4 X13.2: 0 V _{OUT} X14.0: 24 V _{SEN} X14.1: Ox+5 X14.2: 0 V _{OUT} X15.0: 24 V _{SEN} X15.1: Ox+6 X15.2: 0 V _{OUT} X16.0: 24 V _{SEN} X16.1: Ox+7 X16.2: 0 V _{OUT}
Ix = Input x	Ox = Output x 24 V _{SEN} is not required for the outputs

2 Status LEDs
Fig. 4 shows the status LEDs of the inputs [1], the outputs [3] and the error LED (module error) [2].

LED	Operating status and error display	
h (red)	Error LED	off: no error
	Module error	illuminated: - Short circuit/overload in sensor supply (V_{EL/SEN}) - Short circuit/overload at at least one output (V_{OUT}) - Load voltage for outputs (V_{OUT}) missing or too low.
X1 ... X8 (green)	Status LEDs for the inputs	off: log. 0 (no signal)
		illuminated: log. 1 (signal is present)
X9 ... X16 (yellow)	Status LEDs for the outputs	off: log. 0 (output 0-signal)
		illuminated: log. 1 (output 1-signal)

Designation	CPX-L-8DE-8DA-16-KL...
General technical data	See CPX System Description
Operating voltage supply - Nominal voltage - Internal current consumption at 24 V (internal electronics)	V _{EL/SEN} (electronics/sensors) DC 24 V ± 25 % typ. 15 mA (all outputs 0-signal)
Load voltage supply - Nominal voltage - Internal current consumption at 24 V (internal electronics) - Diagnostic message undervoltage V_{OUT}	V _{OUT} (outputs) DC 24 V ± 25 % typ. 62 mA ≤ 17.5 ... 12.5 V
Digital inputs as per IEC 61131-2 type 1, 24 V - Version - Logic level: log. 0 / log. 1 - Response delay at 24 V - Current consumption at 24 V (input current) - Sensor supply: Voltage drop to V_{EL/SEN} (reduction of sensor supply voltage) - Reverse polarity protection 24 V_{SEN} against 0 V_{SEN} - Short circuit protection in sensor supply - Response threshold - Characteristic - Discrete fusing of the inputs	8 inputs DC 0 ... 30 V positive logic (PNP) ≤ 5 V / ≥ 15 V can be parameterised, typ. 3 ms typ. 5.2 mA at “log. 1” max. 1.0 V Yes Electronic (for the complete module) 1.8 A ... 6.5 A slow-blowing None
Galvanic isolation	None
Potential difference between sensor supply connections and V _{EL/SEN}	0 V-connections: not permitted

Designation	CPX-L-8DE-8DA-16-KL...
Digital outputs as per IEC 61131-2, 24 V _{OUT} - Rated load voltage - Version - Protection against incorrect polarity - Output current per channel - Short circuit protection - Voltage drop at output - Output delay with ohmic load - signal change “0” to “1” - signal change “1” to “0” - Parallel switching of outputs for increased performance - Protection against reverse voltage - Limiting the inductive switch-off voltage of connected coils/solenoid valves	8 outputs V _{OUT} Positive logic (PNP) Yes max. 0.25 A (6 W bulb load) Yes (electronic), Response threshold > 0.25 A ≤ 1 V ≤ 200 μs ≤ 200 μs Yes, max. 4 outputs (O0 ... O3 or O4 ... O7) from the same module max. V _{OUT} typ. -18 V
Electrical isolation of the outputs - between the channels - between the operating voltage supply for the electronics/sensors (V_{EL/SEN}) and the load voltage for the outputs (V_{OUT})	None None, see note below this table
Potential difference between sensor supply connections and V _{EL/SEN}	0 V-connections: not permitted
Module code/Submodule code (CPX-specific)	22/2
Module identification (Handheld)	L-8DI8DO

➔ **Note**

The CPX-L multi I/O module internally connects the contact rails 0 V_{EL/SEN} and 0 V_{OUT} of the CPX terminal. This means that the operating voltage supply for the electronics/sensors (V_{EL/SEN}) and the load voltage supply for the outputs (V_{OUT}) are no longer electrically isolated.