

# Expansion modules

## PNOZ mc1p



### Unit features

- ▶ Can be configured in the PNOZmulti Configurator
- ▶ Semiconductor outputs:
  - 16 auxiliary outputs
- ▶ Status indicators
- ▶ Plug-in connection terminals (either cage clamp terminal or screw terminal)
- ▶ Max. 6 PNOZ mc1p units can be connected to the base unit

### Unit description




Expansion module for connection to a base unit from the PNOZmulti modular safety system

The expansion module may only be connected to a base unit from the PNOZmulti modular safety system. The PNOZmulti modular safety system is used for the safety-related interruption of safety circuits and is designed for use in:

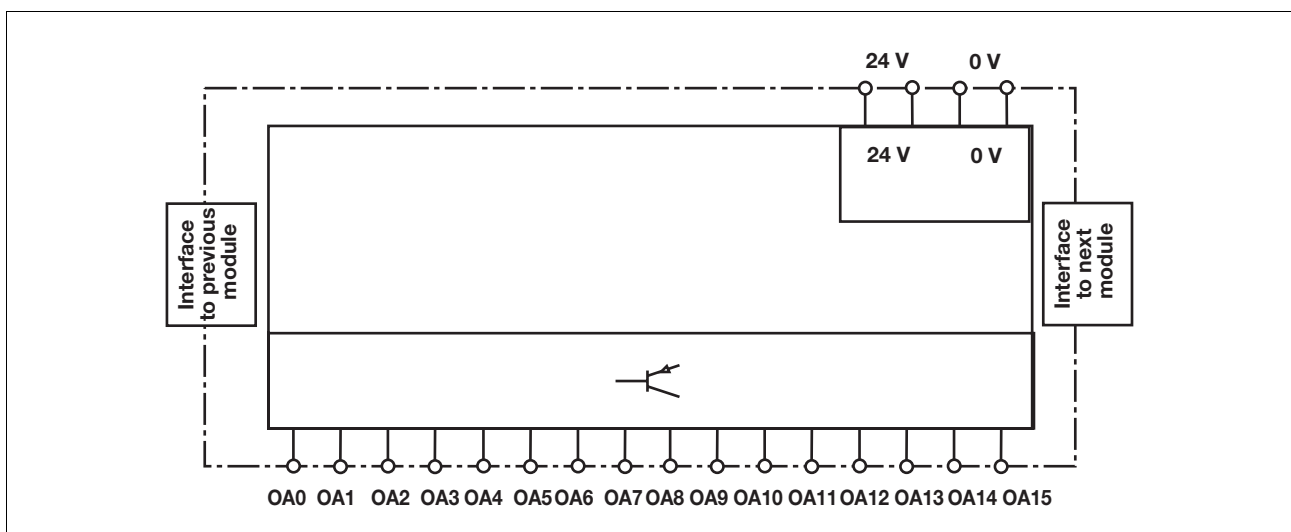
- ▶ Emergency stop equipment
- ▶ Safety circuits in accordance with VDE 0113 Part 1 and EN 60204-1

The expansion module may not be used for safety-related functions.

### Approvals

	PNOZ mc1p
	◆
	◆
	◆

### Block diagram



## Expansion modules

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#### Function description

The expansion module operates as a signal module with non-safety-related outputs.

The function of the outputs on the safety system depends on the safety circuit created using the PNOZmulti

Configurator. A chip card is used to download the safety circuit to the base unit. The base unit has 2 microcontrollers that monitor each other. They evaluate the input circuits on the base unit and expansion modules and switch the outputs on the base unit and expansion modules accordingly.

The online help on the PNOZmulti Configurator contains descriptions of the operating modes and all the functions of the PNOZmulti safety system, plus connection examples.

#### Wiring

The wiring is defined in the circuit diagram in the Configurator.

Please note:


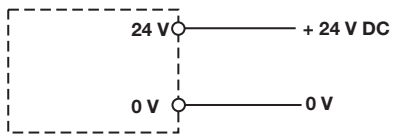
- ▶ Information given in the "Technical details" must be followed.
- ▶ Outputs OA0 to OA15 are auxiliary outputs using semiconductor technology.
- ▶ Use copper wire that can withstand 75 °C.

# Expansion modules

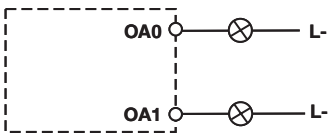

## PNOZ mc1p

### Preparing for operation

► Supply voltage

Supply voltage	AC	DC
		

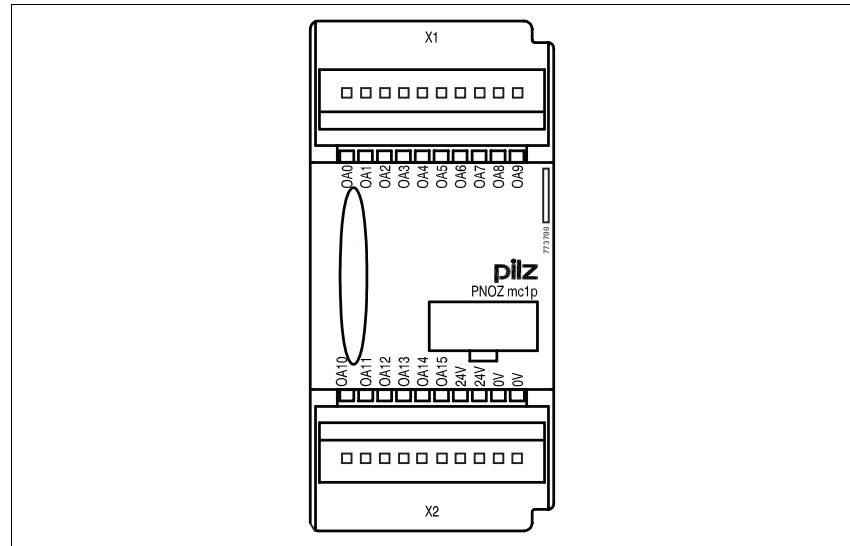
► Semiconductor outputs

		
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## Expansion modules

### PNOZ mc1p

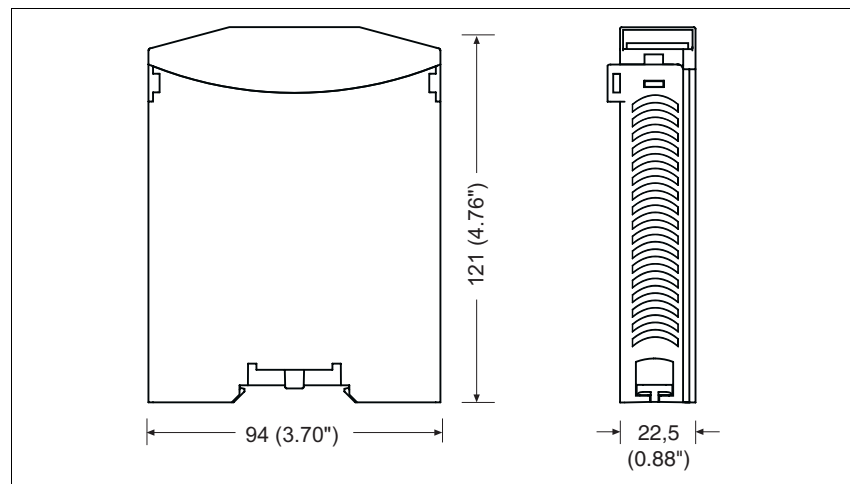
#### Terminal configuration



#### Installation

- ▶ The safety system should be installed in a control cabinet with a protection type of at least IP54. Fit the safety system to a horizontal DIN rail. The venting slots must face upward and downward. Other mounting positions could damage the safety system.
- ▶ Use the notches on the back of the unit to attach it to a DIN rail. Connect the safety system to the DIN rail in an upright position, so that the earthing springs on the safety system are pressed on to the DIN rail.
- ▶ To comply with EMC requirements, the DIN rail must have a low impedance connection to the control cabinet housing.

#### Dimensions



# Expansion modules

## PNOZ mc1p

**Notice**

This data sheet is only intended for use during configuration. For installation and operation, please refer to the op-

erating instructions supplied with the unit.

Technical details	
<b>Electrical data</b>	
Supply voltage (U <sub>B</sub> ) via base unit	<b>24 VDC</b>
Voltage tolerance	<b>-15% ... 10%</b>
Power consumption at U <sub>B</sub>	<b>&lt; 2.5 W</b>
Residual ripple U <sub>B</sub>	<b>+/- 5 %</b>
<b>Times</b>	
Switch-on delay	<b>5 s (after U<sub>B</sub> is applied)</b>
Supply interruption before de-energisation	<b>Min. 20 ms</b>
<b>Auxiliary outputs</b>	
Number	<b>16</b>
Max. capacitive load	<b>1 µF</b>
Voltage and current	<b>24 VDC / max. 0.5 A / max. 12 W</b>
External supply voltage (U <sub>B</sub> )	<b>24 VDC</b>
Voltage tolerance	<b>-15% ... +10%</b>
Galvanic isolation	<b>Yes</b>
Short circuit protection	<b>Yes</b>
Residual current at "0"	<b>&lt; 0.5 mA</b>
Signal level at "1"	<b>U<sub>B</sub> - 0.5 VDC at 0.5 A</b>
Status indicator	<b>LED</b>
<b>Environmental data</b>	
Vibration in accordance with <b>EN 60068-2-6, 01/00</b>	
Frequency:	<b>10 ... 55 Hz</b>
Amplitude:	<b>0.35 mm</b>
Climatic suitability	<b>EN 60068-2-78, 10/01</b>
EMC	<b>EN 60947-5-1, 11/97</b>
Ambient temperature	<b>0 ... + 55 °C</b>
Storage temperature	<b>-25 ... + 70 °C</b>
<b>Mechanical data</b>	
Protection type	
Mounting (e.g. cabinet)	<b>IP54</b>
Housing	<b>IP20</b>
Terminals	<b>IP20</b>
DIN rail	
Top hat rail	<b>35 x 7.5 EN 50022</b>
Inner width	<b>27 mm</b>
Cable cross section	
Rigid single-core, flexible multi-core or multi-core with crimp connector	<b>0.5 ... 1.5 mm<sup>2</sup></b>
Torque setting for connection terminals (screws)	<b>0.2 ... 0.25 Nm</b>
Housing material	
Housing	<b>PPO UL 94 V0</b>
Front	<b>ABS UL 94 V0</b>
Dimensions (H x W x D)	<b>94 x 45 x 121 mm</b>
Weight with connector	<b>185 g</b>

Order reference			
Type	Features		Order no.
PNOZ mc1p	Expansion module	2 semiconductor outputs, standard	773 700