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Find the *Pilz PNOZ mi1p* at our website: *Click HERE*

Expansion modules
PNOZ mi1p



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

Approvals

	PNOZ mi1p
c UL us LISTED	◆
TÜV	◆
CCC	◆

Unit features

- 8 inputs for connecting:
  - E-STOP pushbutton
  - Two-hand button
  - Safety gate limit switch
  - Reset button
  - Light barrier
  - Scanner
  - Enable switch
  - PSEN
  - Operating mode selector switch
- Can be configured in the PNOZmulti Configurator
- LED indicator for:
  - Status of the PNOZmulti safety system
- Max. 8 PNOZ mi1p units can be connected to the base unit
- Test pulse outputs used to detect shorts across the inputs
- Plug-in connection terminals (either cage clamp terminal or screw terminal)

Unit description

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:

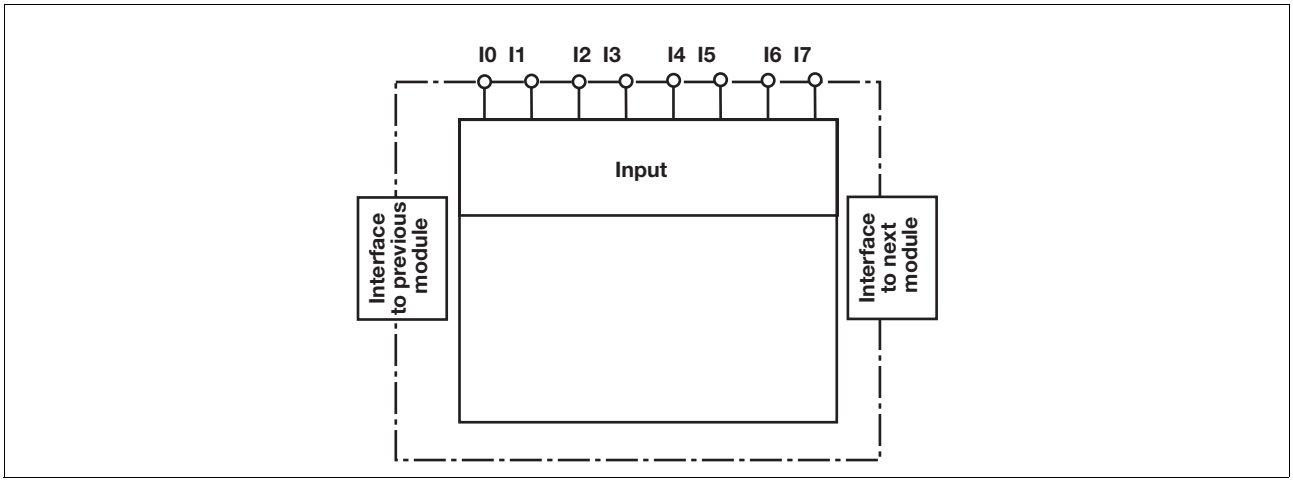
- Emergency stop equipment
- Safety circuits in accordance with VDE 0113 Part 1 and EN 60204-1

Safety features

The relay conforms to the following safety criteria:

- The circuit is redundant with built-in self-monitoring.
- The safety function remains effective in the case of a component failure.

Block diagram



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Expansion modules
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Function description

The expansion module provides additional inputs.
The function of the inputs 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 of the PNOZmulti Configurator.
Please note:

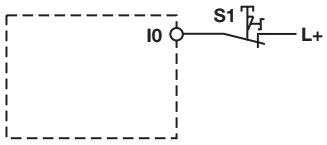
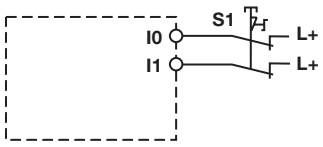
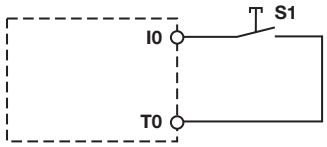
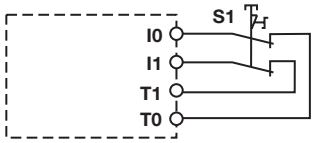
- Information given in the "Technical details" must be followed.
- Connection terminals I0 ... I7 are inputs
- Power for the safety system and input circuits must always be provided from a single power supply. The power supply must meet the regulations for extra low voltages with safe separation.
- The test pulse outputs on the base unit must be used to detect shorts across contacts.
- Use copper wire that can withstand 75 °C.

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Expansion modules
PNOZ mi1p

Preparing for operation

- Input circuit

Input circuit	Single-channel	Dual-channel
Example: E-STOP without detection of shorts across contacts		
Example: E-STOP with detection of shorts across contacts		

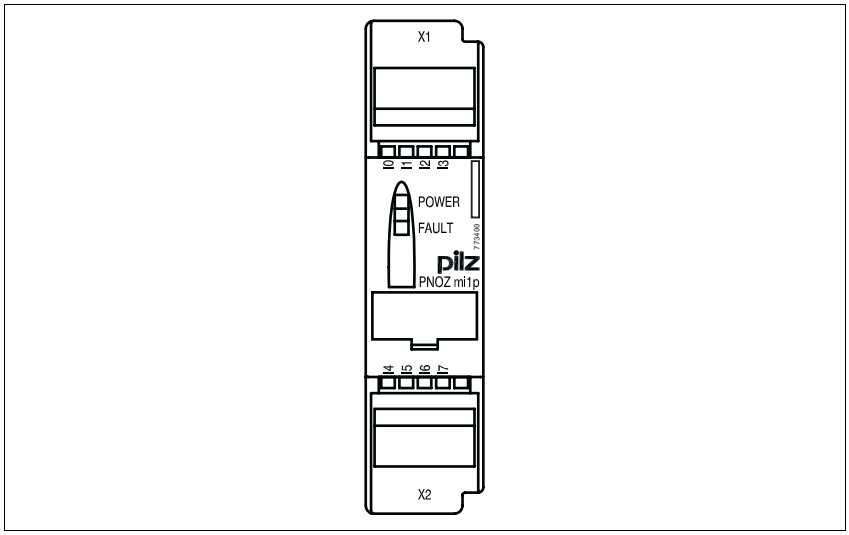
- Key

S1	E-STOP pushbutton

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Expansion modules
PNOZ mi1p

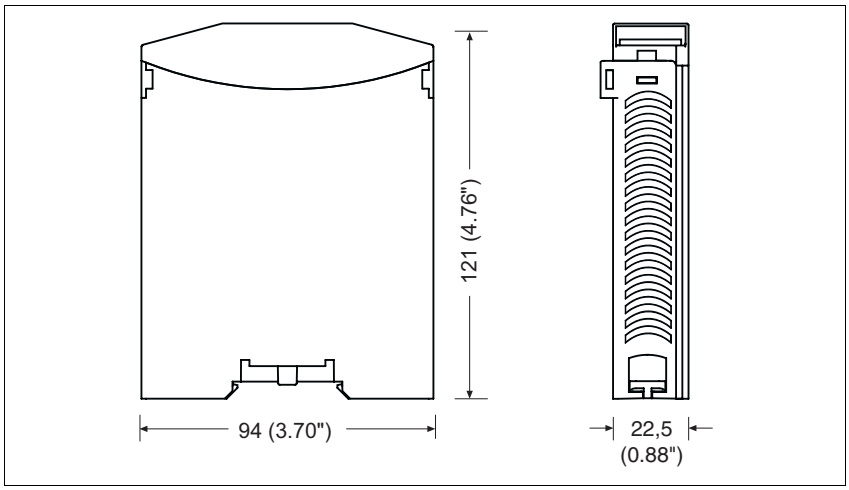
Terminal configuration



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



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Expansion modules
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Notice This data sheet is only intended for use during configuration. For installation and operation, please refer to the operating instructions supplied with the unit.

Technical details	
Electrical data	
Supply voltage (U_B)	**24 VDC**
Power consumption at U_B without load	**Max. 8.0 W + 2.5 W per expansion module**
Times	
Switch-on delay	**5 s (after U_B is applied)**
Simultaneity channel 1/2/3	**3 s, two-hand control relay: 0.5 s**
Supply interruption before de-energisation	**Min. 20 ms**
Inputs	
Number	**8**
Voltage and current	**24 VDC/8 mA**
Galvanic isolation	**No**
Signal level at “0”	**-3 ... +5 VDC**
Signal level at “1”	**15 ... 30 VDC**
Input delay	**0.6 ... 4 ms**
Status indicator	**LED**
Environmental data	
Airgap creepage	**DIN VDE 0110-1, 04/97**
Vibration in accordance with **EN 60068-2-6, 04/95** Frequency: Amplitude:	 **10 ... 55 Hz** **0.35 mm**
Climatic suitability	**EN 60068-2-78, 10/01**
EMC	**EN 60947-5-1, 11/97**
Ambient temperature	**0 ... + 55 °C**
Storage temperature	**-25 ... + 70 °C**
Mechanical data	
Protection type Mounting (e.g. cabinet) Housing Terminals	 **IP54** **IP20** **IP20**
DIN rail Top hat rail Inner width	 **35 x 7.5 EN 50022** **27 mm**
Cable cross section Rigid single-core, flexible multi-core or multi-core with crimp connector	 **0.5 ... 1.5 mm2**
Torque setting for connection terminals (screws)	**0.2 ... 0.25 Nm**
Housing material Housing Front	 **PPO UL 94 V0** **ABS UL 94 V0**
Dimensions (H x W x D)	**94 x 22.5 x 121 mm**
Weight with connector	**130 g**

Order reference

Type	Features		Order no.
PNOZ mi1p	Expansion module	8 inputs	773 400

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