




## Instantaneous PZE X4P



Contact expander module for increasing the number of available contacts

### Approvals

	PZE X4P
	◆
	◆
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### Unit features

- ▶ Positive-guided relay outputs:
  - 4 safety contacts (N/O), instantaneous
- ▶ LED indicator for:
  - Switch status channel 1/2
- ▶ Plug-in connection terminals (either cage clamp terminal or screw terminal)
- ▶ See order reference for unit types

### Unit description

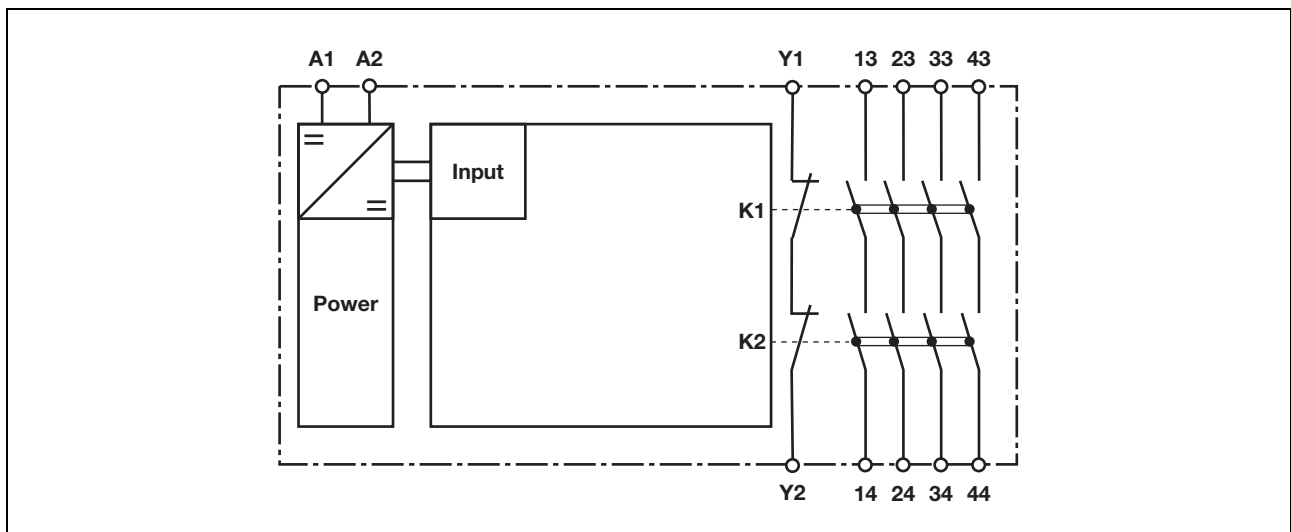
The unit meets the requirements of EN 60204-1 and IEC 60204-1. The contact expander module is used to increase the number of contacts available on a base unit. Base units are all safety relays with feedback loop. The category that can be achieved in accordance with EN 954-1 depends on the category of the base unit. The contact expander module may not exceed this.

### Safety features

The unit meets the following safety requirements:

- ▶ The contact expander module expands an existing circuit. As the output relays are monitored via the base unit's feedback loop, the safety functions on the existing circuit are transferred to the contact expander module.
- ▶ The safety function remains effective in the case of a component failure.
- ▶ Earth fault in the feedback loop: Detected, depending on the base unit that is used.
- ▶ Earth fault in the input circuit: The output relays de-energise and the safety contacts open.

### Block diagram

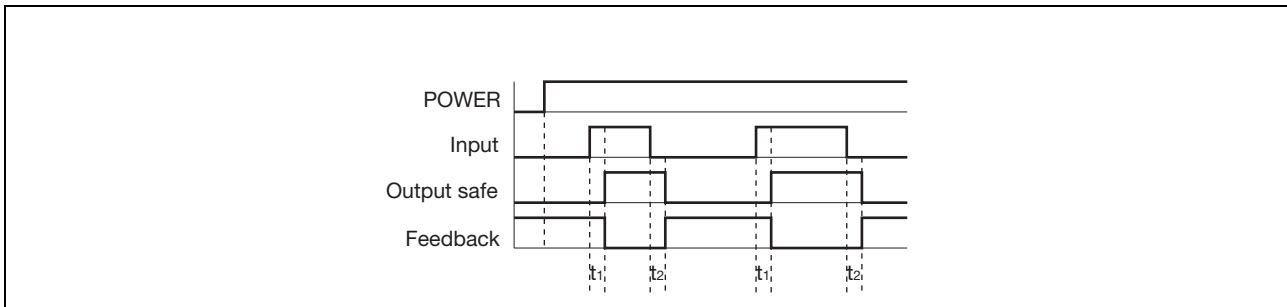


## Instantaneous PZE X4P

### Function description

- ▶ Single-channel operation: one input circuit affects both output relays

### Timing diagram



### Key

- ▶ Power: Supply voltage
- ▶ Input: Input circuits A1
- ▶ Output safe: Safety contacts 13-14, 23-24, 33-34, 43-44
- ▶ Feedback: Feedback loop Y1-Y2
- ▶  $t_1$ : Switch-on delay
- ▶  $t_2$ : Delay-on de-energisation

### Wiring

Please note:

- ▶ Information given in the “Technical details” must be followed.
- ▶ Outputs 13-14, 23-24, 33-34, 43-44 are safety contacts.
- ▶ To prevent contact welding, a fuse should be connected before the output contacts (see technical details).
- ▶ Calculation of the max. cable runs  $l_{max}$  in the input circuit:

$$l_{max} = \frac{R_{lmax}}{R_l / km}$$

$R_{lmax}$  = max. overall cable resistance (see technical details)

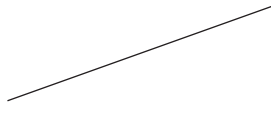
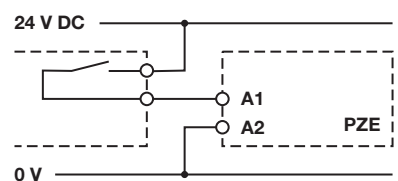
$R_l / km$  = cable resistance/km

- ▶ Use copper wire that can withstand 60/75 °C.
- ▶ Sufficient fuse protection must be provided on all output contacts with capacitive and inductive loads.

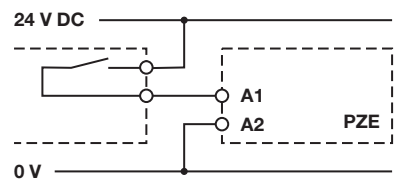
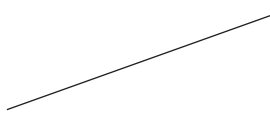
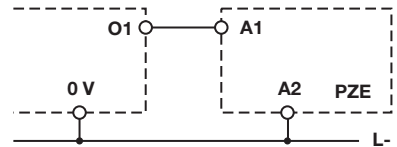
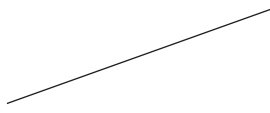
## Instantaneous PZE X4P

### Preparing for operation

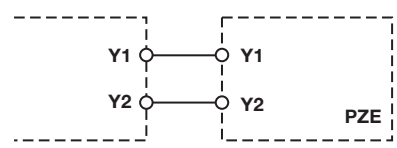
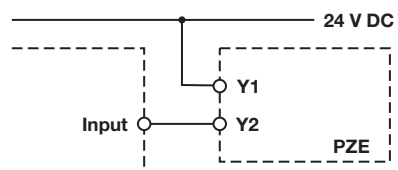
#### ► Supply voltage

Supply voltage	AC	DC
		

#### ► Input circuit

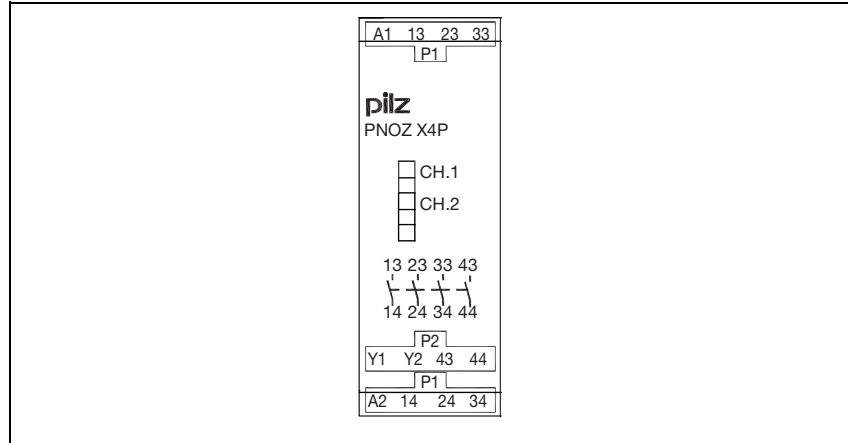
Input circuit	Single-channel	Dual-channel
Base unit: PNOZ X safety relay		
Base unit: PNOZelog safety relay Driven via semiconductor outputs (24 VDC)		

#### ► Feedback loop

Feedback loop	Base unit: PNOZ X safety relay	Base unit: PNOZelog safety relay
Y1, Y2 and Input are inputs on the base unit; they evaluate the feedback loop		

## Instantaneous PZE X4P

### Terminal configuration

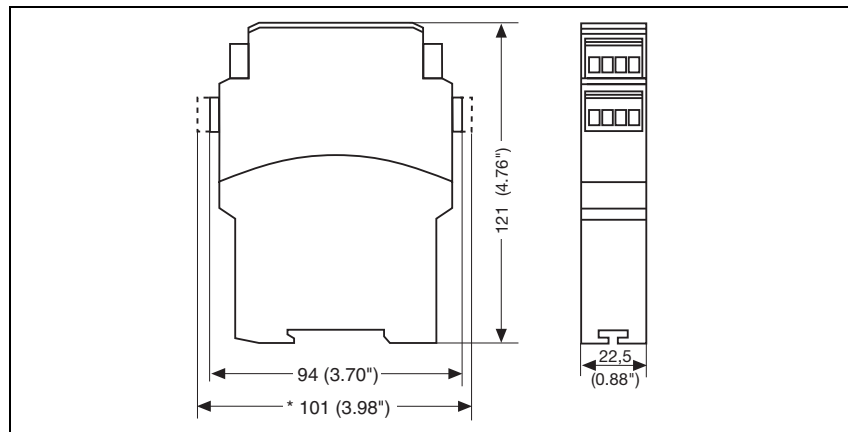


### Installation

- ▶ The safety relay should be installed in a control cabinet with a protection type of at least IP54.
- ▶ Use the notch on the rear of the unit to attach it to a DIN rail.
- ▶ Ensure the unit is mounted securely on a vertical DIN rail (35 mm) by using a fixing element (e.g. retaining bracket or an end angle).

### Dimensions

\* with cage clamp terminals

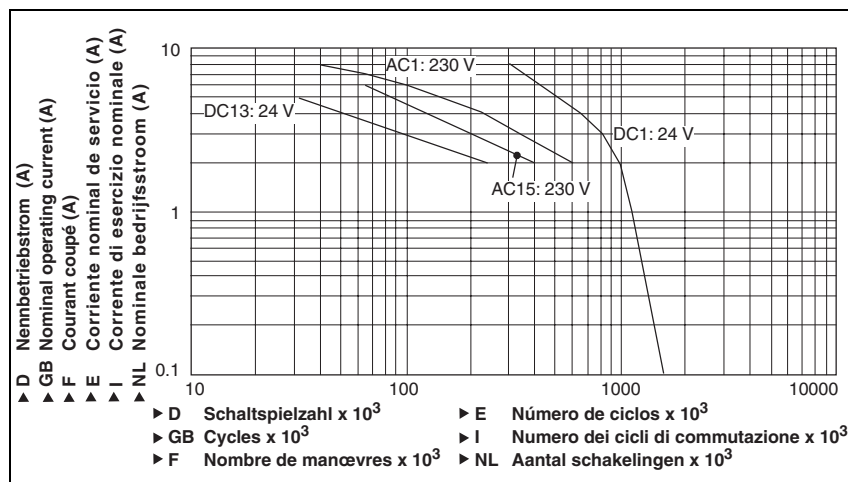


## Instantaneous PZE X4P

### 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.

### Service life graph



### Technical details

#### Electrical data

Supply voltage $U_B$ DC	<b>24 V</b>
Voltage tolerance	<b>-15 % /+ 10 %</b>
Power consumption at $U_B$ DC	<b>2.5 W</b>
Residual ripple DC	<b>20 %</b>
Voltage and current at input circuit: <b>24 VDC</b>	<b>85 mA</b>
Output contacts in accordance with <b>EN 954-1</b>	Safety contacts (N/O): <b>4</b>
Utilisation category in accordance with <b>EN 60947-4-1</b>	
AC1: <b>240 V</b>	$I_{min}: 0.01 \text{ A}, I_{max}: 5 \text{ A}$ $P_{max}: 1200 \text{ VA}$
DC1: <b>24 V</b>	$I_{min}: 0.01 \text{ A}, I_{max}: 5 \text{ A}$ $P_{max}: 120 \text{ W}$
Utilisation category in accordance with <b>EN 60947-5-1</b>	
AC15: <b>230 V</b>	$I_{max}: 3 \text{ A}$
DC13 (6 cycles/min): <b>24 V</b>	$I_{max}: 4 \text{ A}$
Contact material	<b>AgSnO<sub>2</sub> + 0.2 µm Au</b>
External contact fuse protection ( <b>EN 60947-5-1</b> )	
Blow-out fuse, quick	<b>6 A</b>
Blow-out fuse, slow	<b>4 A</b>
Circuit breaker	<b>4 A, 24 VAC/DC, characteristic B/C</b>
Max. overall cable resistance $R_{lmax}$ Input circuits, reset circuits	
Single-channel at $U_B$ DC	<b>30 Ohm</b>
<b>Times</b>	
Switch-on delay	
with automatic reset typ.	<b>23 ms</b>
with automatic reset max.	<b>40 ms</b>
Delay-on de-energisation	
with E-STOP typ.	<b>60 ms</b>
with E-STOP max.	<b>90 ms</b>
with power failure typ.	<b>60 ms</b>
with power failure max.	<b>90 ms</b>
Supply interruption before de-energisation	<b>20 ms</b>

## Instantaneous PZE X4P

Environmental data	
EMC	EN 60947-5-1, EN 61000-6-2
Vibration in accordance with EN 60068-2-6	
Frequency	10 - 55 Hz
Amplitude	0.35 mm
Climatic suitability	EN 60068-2-78
Airgap creepage	VDE 0110-1
Ambient temperature	-10 - 55 °C
Storage temperature	-40 - 85 °C
Protection type	
Mounting (e.g. cabinet)	IP54
Housing	IP40
Terminals	IP20
Mechanical data	
Housing material	
Housing	PPO UL 94 V0
Front	ABS UL 94 V0
Max. cross section of external conductors with screw terminals	
1 core flexible	0.25 – 2.50 mm <sup>2</sup>
2 core, same cross section, flexible:	
with crimp connectors, without insulating sleeve	0.25 – 1.00 mm <sup>2</sup>
without crimp connectors or with TWIN crimp connectors	0.20 – 1.50 mm <sup>2</sup>
Torque setting with screw terminals	0.5 Nm
Max. cross section of external conductors with cage clamp terminals: flexible without crimp connectors	
	0.20 – 1.50 mm <sup>2</sup>
Cage clamp terminals	
Terminal points per connection	2
Stripping length	8 mm
Dimensions (H x W x D)	
with screw terminals	94 mm x 45 mm x 121 mm
with cage clamp terminals	101 mm x 45 mm x 121 mm
Weight	
	190 g Order no.: 777585
	185 g Order no.: 787585

The standards current on **10/04** apply.

Max. continuous current	
Number of contacts	I <sub>max</sub> (A) at U <sub>B</sub> DC
1	5.00 A
2	5.00 A
3	4.50 A
4	4.00 A

Order reference			
Type	Features	Terminals	Order no.
PZE X4P C	24 VDC	Cage clamp terminals	787 585
PZE X4P	24 VDC	Screw terminals	777 585