Up to Category 2, EN 954-1
PNOZ X7

Safety relay for monitoring E-STOP pushbuttons.

Approvals

	PNOZ X7
	◆
	◆
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Unit features

- Positive-guided relay outputs:
  - 2 safety contacts (N/O), instantaneous
- Connection options for:
  - E-STOP pushbutton
  - Reset button
- LED indicator for:
  - Switch status channel 1/2
  - Supply voltage
- See order reference for unit types

Unit description

The safety relay meets the requirements of EN 60204-1 and IEC 60204-1 and may be used in applications with

- E-STOP pushbuttons

The safety relay is not suitable for non-contact barriers because

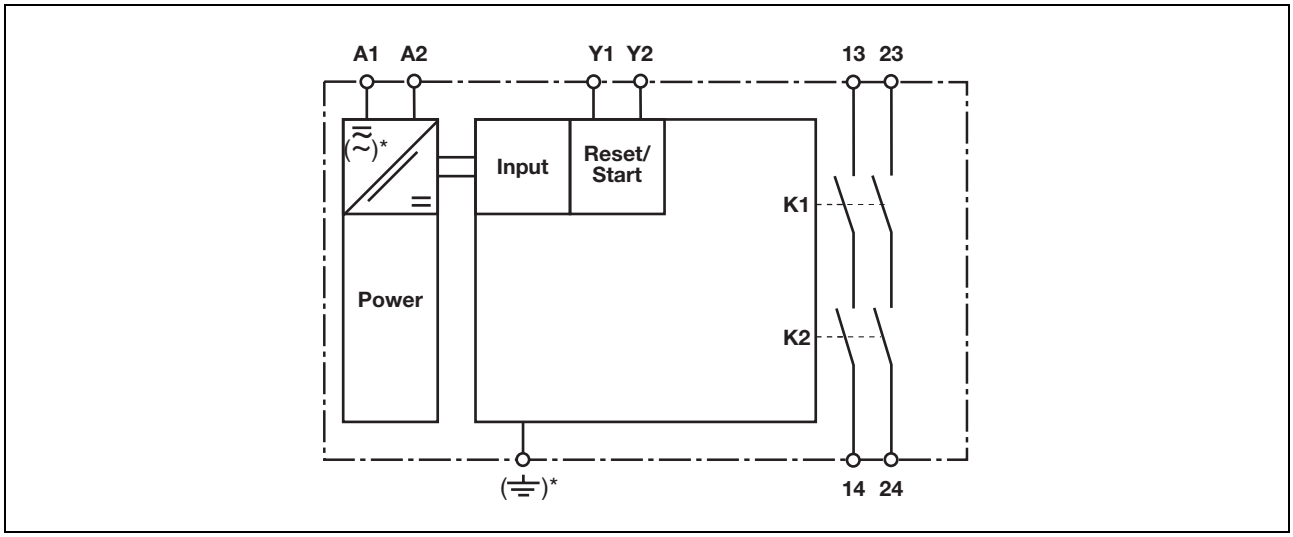
- a dynamic start is not possible
- the unit can be started during the delay-on de-energisation time.

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.
- The correct opening and closing of the safety function relays is tested automatically in each on-off cycle.

Block diagram



*Only when U_B = 42 - 240 VAC

Galvanic isolation only when U_B = 42 – 240 VAC

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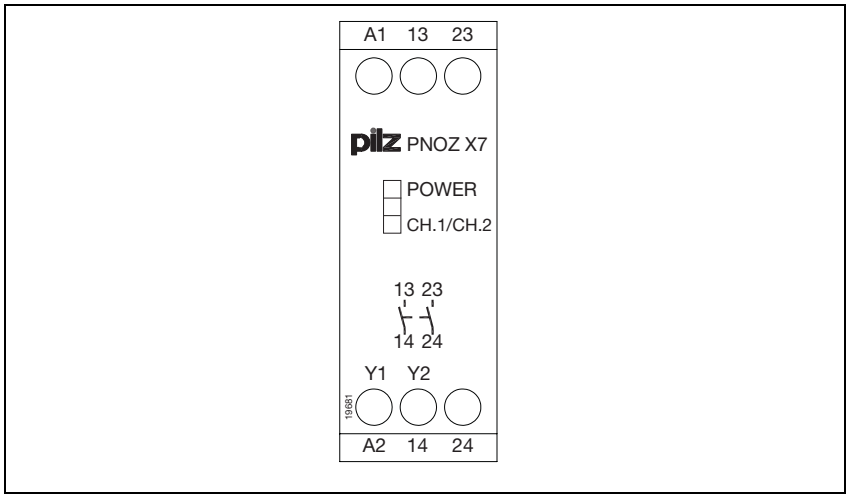
- Key

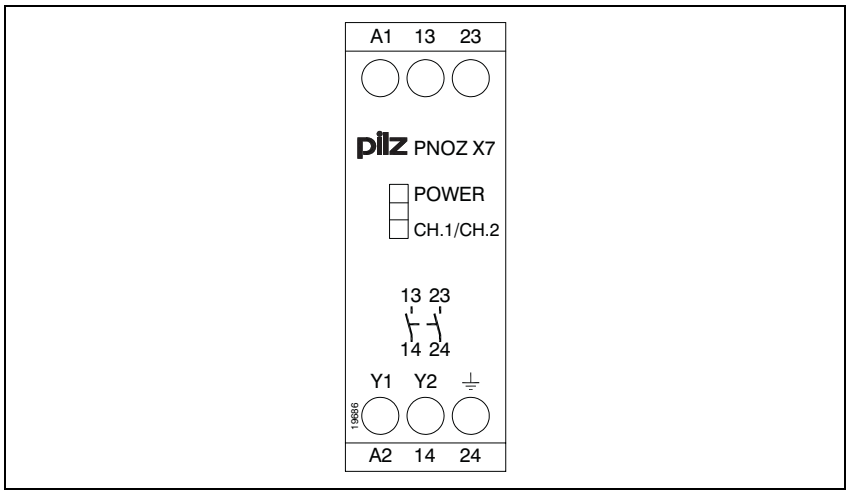
S1	E-STOP pushbutton
S3	Reset button
	Switch operated
	Gate open
	Gate closed

Terminal configuration

U_B = 24 VAC/DC



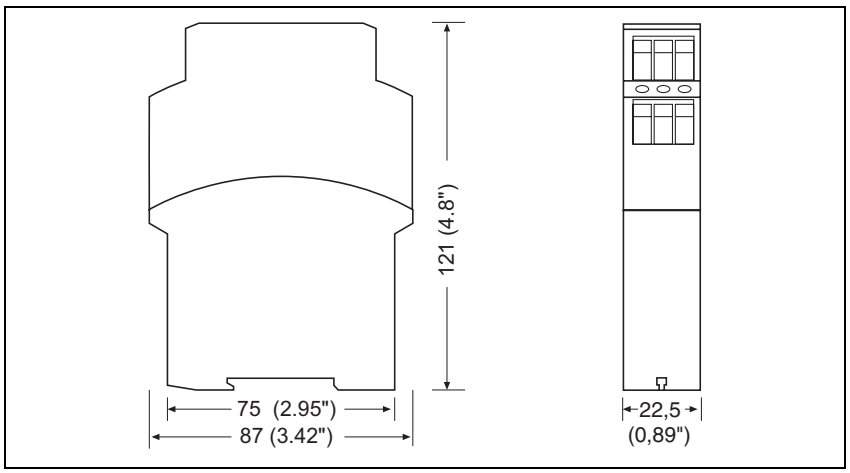
U_B AC



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

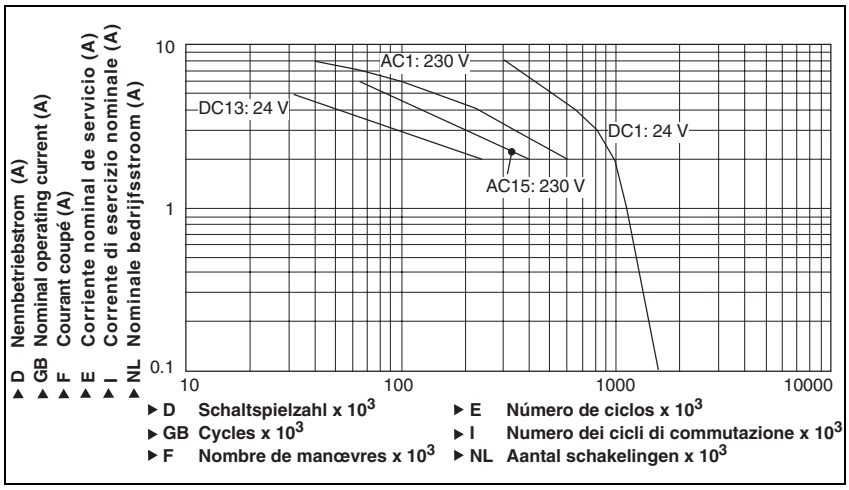


Instantaneous
PZE X4

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



2.3

Technical details	
Electrical data	
Supply voltage U_B DC	**24 V**
Voltage tolerance	**-15 % / 10 %**
Power consumption at U_B DC	**2.5 W**
Residual ripple DC	**20 %**
Voltage and current at Input circuit: **24 V**DC	 **85 mA**
Output contacts in accordance with EN 954-1, Category **4**	Safety contacts (N/O): **4**
Utilisation category in accordance with **EN 60947-4-1** AC1: **240 V** DC1: **24 V** Utilisation category in accordance with **EN 60947-5-1** AC15: **230 V** DC13 (6 cycles/min): **24 V**	 I_{min}: **0.01 A**, I_{max}: **5 A** P_{max}: **1200 VA** I_{min}: **0.01 A**, I_{max}: **5 A** P_{max}: **120 W** I_{max}: **3 A** I_{max}: **4 A**
Contact material	**$AgSnO_2$ + 0.2 σm Au**
External contact fuse protection (**EN 60947-5-1**) Blow-out fuse, quick Blow-out fuse, slow Circuit breaker	 **6 A** **4 A** **4 A**, 24 VAC/DC, characteristic B/C
Max. overall cable resistance R_{lmax} Input circuits Single-channel at U_B DC	 **30 Ohm**
Times	
Switch-on delay with automatic reset after power on typ. with automatic reset after power on max.	 **23 ms** **40 ms**
Delay-on de-energisation with E-STOP typ. with E-STOP max. with power failure typ. with power failure max.	 **40 ms** **60 ms** **40 ms** **60 ms**
Supply interruption before de-energisation	**20 ms**

Instantaneous
PZE X4

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	**0.20 – 4.00 mm**^{2}
2 core, same cross section, flexible:	
with crimp connectors, without insulating sleeve	**0.20 – 2.50 mm**^{2}
without crimp connectors or with TWIN crimp connectors	**0.20 – 2.50 mm**^{2}
Torque setting with screw terminals	**0.60 Nm**
Dimensions (H x W x D)	
with screw terminals	**87 mm** x **22.5 mm** x **121 mm**
Weight	**185 g**

The standards current on **09/04** apply.

Max. continuous current				
Number of contacts	1	2	3	4
I_{max} (A) at U_B DC	5 A	5 A	4.5 A	4 A

Order reference

Type	Features		Terminals	Order no.
PZE X4		24 VDC	Screw terminals	774 585

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