

Up to Category 2, EN 954-1 PNOZ X7



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

- ▶ 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.

Safety relay for monitoring E-STOP pushbuttons.

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.

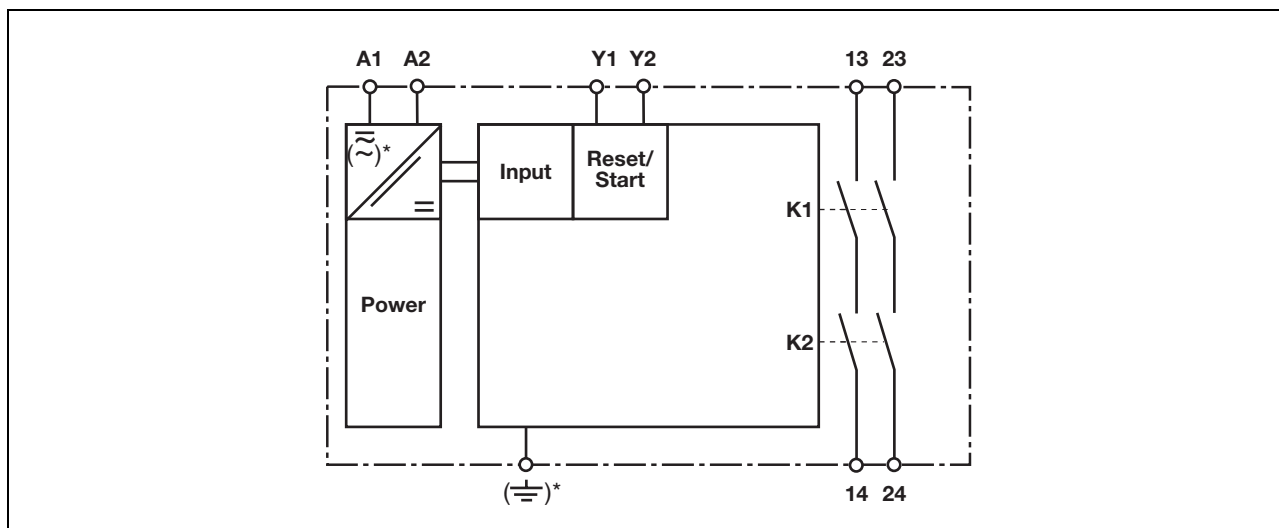
Approvals

	PNOZ X7
	◆
	◆
	◆

Safety features

The relay conforms to the following safety criteria:

Block diagram






*Only when $U_B = 42 - 240 \text{ VAC}$

Galvanic isolation only when $U_B = 42 - 240 \text{ VAC}$

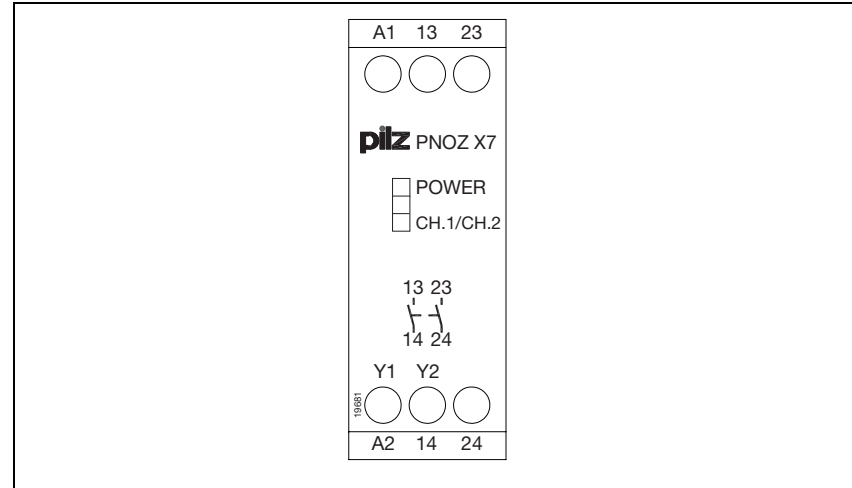
Up to Category 2, EN 954-1 PNOZ X7

▶ Key

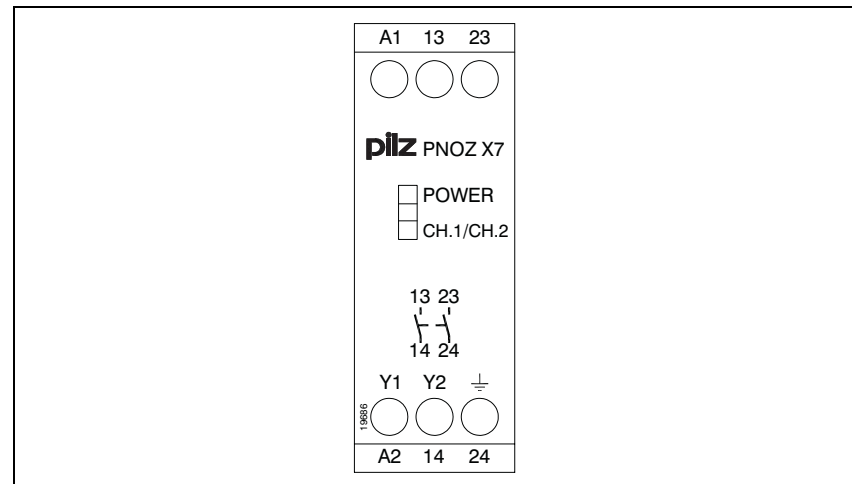
S1	E-STOP pushbutton
S3	Reset button
	Switch operated
	Gate open
	Gate closed

Terminal configuration

$U_B = 24 \text{ VAC/DC}$



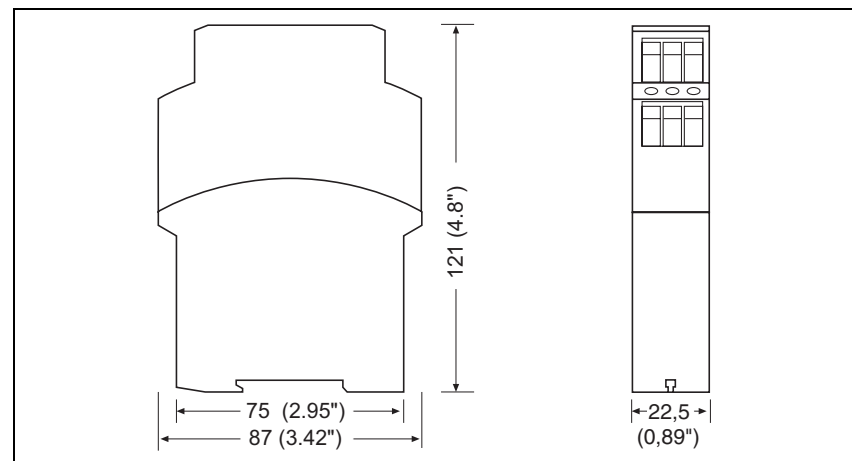
$U_B \text{ AC}$



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

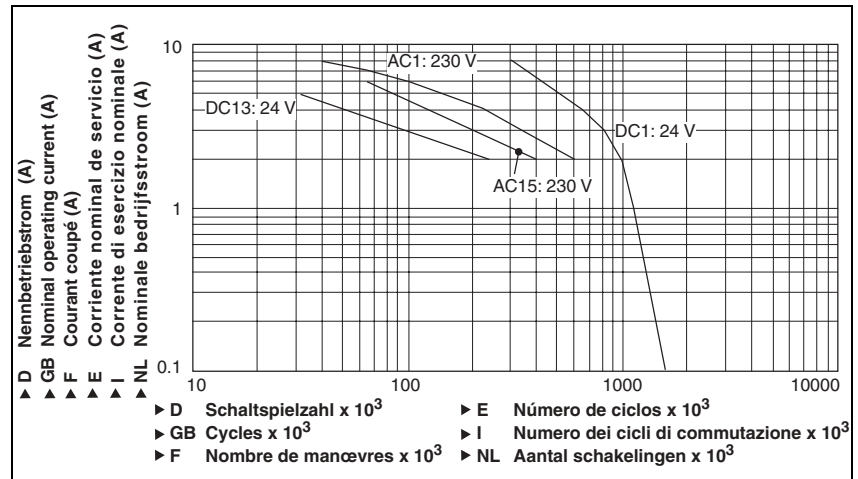


Up to Category 3, EN 954-1 PNOZ X5

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 AC	24 V
Supply voltage U_B DC	12 V, 24 V
Voltage tolerance	-15% / +10% Order No.: 774325 -20% / +20% Order No.: 774326
Power consumption at U_B AC	4.0 VA Order no.: 774325
Power consumption at U_B DC	2.0 W Order no.: 774325 2.5 W Order no.: 774326
Frequency range AC	10 - 55 Hz
Residual ripple DC	20 % Order no.: 774326 160 % Order no.: 774325
Voltage and current at input circuit: 24 VDC	55 mA Order no.: 774325 70 mA Order no.: 774326
reset circuit: 24 VDC	55 mA Order no.: 774325 90 mA Order no.: 774326
feedback loop: 24 VDC	55 mA Order no.: 774325 90 mA Order no.: 774326
Output contacts in accordance with EN 954-1, Category 3	Safety contacts (N/O): 2

Up to Category 3, EN 954-1 PNOZ X5

Electrical data

Utilisation category in accordance with **EN 60947-4-1**

AC1: **240 V**

I_{\min} : **0.01 A**, I_{\max} : **6 A**

P_{\max} : **1500 VA**

DC1: **24 V**

I_{\min} : **0.01 A**, I_{\max} : **4 A**

P_{\max} : **100 W**

Utilisation category in accordance with **EN 60947-5-1**

AC15: **230 V**

I_{\max} : **5 A**

DC13 (6 cycles/min): **24 V**

I_{\max} : **4 A**

Contact material

AgSnO₂ + 0.2 μ m Au

External contact fuse protection (**EN 60947-5-1**)

Blow-out fuse, quick

6 A

Blow-out fuse, slow

4 A

Circuit breaker

4 A, 24 VAC/DC, characteristic B/C

Max. overall cable resistance R_{lmax} input circuits, reset circuits

Single-channel at U_B DC

50 Ohm Order no.: 774325

20 Ohm Order no.: 774326

Single-channel at U_B AC

150 Ohm Order no.: 774325

Dual-channel without detect. of shorts across contacts at U_B DC

100 Ohm Order no.: 774325

35 Ohm Order no.: 774326

Dual-channel without detect. of shorts across contacts at U_B AC

250 Ohm Order no.: 774325

Times

Switch-on delay

with automatic reset typ.

115 ms Order no.: 774325

124 ms Order no.: 774326

with automatic reset max.

180 ms Order no.: 774325

230 ms Order no.: 774326

with automatic reset after power on typ.

120 ms Order no.: 774325

124 ms Order no.: 774326

with automatic reset after power on max.

190 ms Order no.: 774325

230 ms Order no.: 774326

with manual reset typ.

40 ms Order no.: 774325

80 ms Order no.: 774326

with manual reset max.

180 ms Order no.: 774325

230 ms Order no.: 774326

Delay-on de-energisation

with E-STOP typ.

12 ms Order no.: 774325

18 ms Order no.: 774326

with E-STOP max.

20 ms Order no.: 774325

30 ms Order no.: 774326

with power failure typ.

110 ms Order no.: 774325

20 ms Order no.: 774326

with power failure max.

160 ms Order no.: 774325

30 ms Order no.: 774326

Recovery time at max. switching frequency 1/s

after E-STOP

50 ms Order no.: 774325

40 ms Order no.: 774326

after power failure

200 ms Order no.: 774325

50 ms Order no.: 774326

Simultaneity, channel 1 and 2

←

Supply interruption before de-energisation

20 ms Order no.: 774325

10 ms Order no.: 774326

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

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Environmental data	
Airgap creepage	VDE 0110-1
Ambient temperature	-10 - 55 °C
Storage temperature	-40 - 85 °C
Protection type	
Mounting (e.g. cabinet)	IP54
Housing	IP 40
Terminals	IP 20
Mechanical data	
Housing material	
Housing	PPO UL 94 V0
Front	PPO 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	190 g

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

Order reference			
Type	Features	Terminals	Order no.
PNOZ X5	24 VAC/DC	Screw terminals	774 325
PNOZ X5	12 VDC	Screw terminals	774 326

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