




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

- ▶ 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.

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

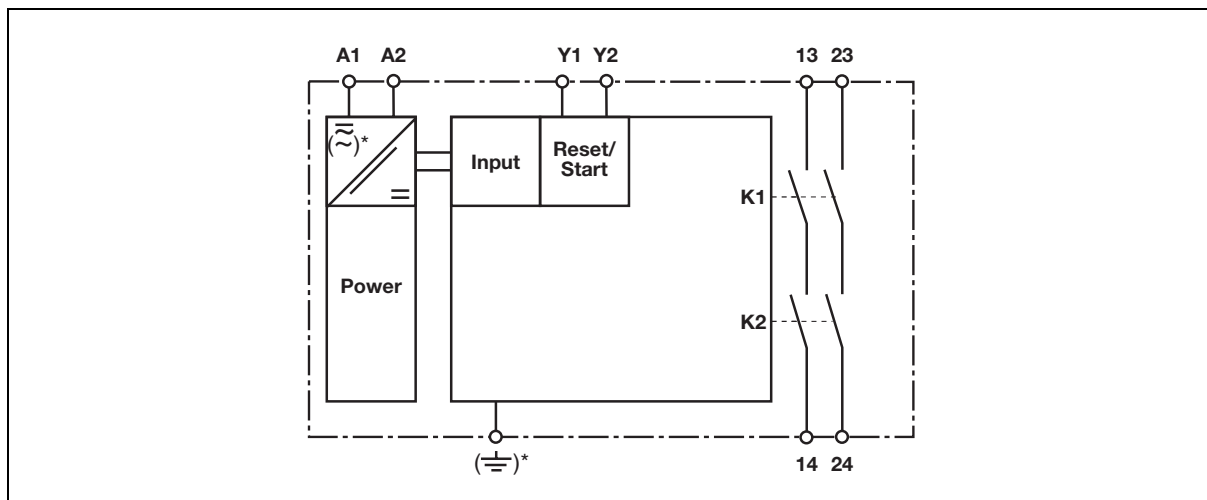
The safety relay is not suitable for non-contact barriers because

- ▶ 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:

Block diagram






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

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

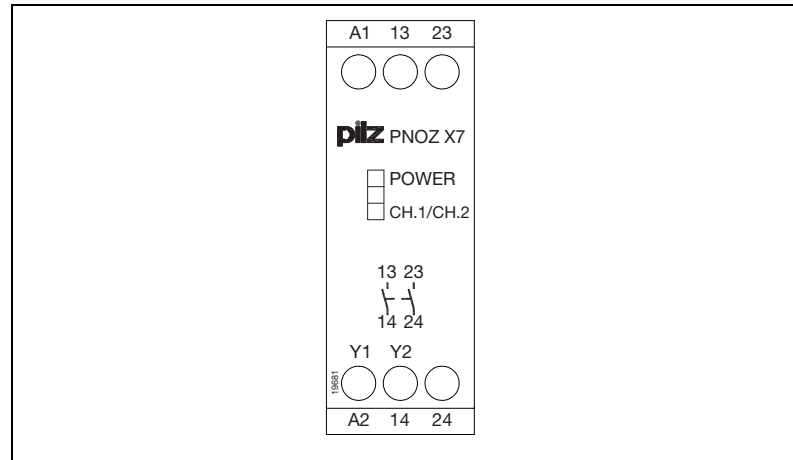
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▶ Key

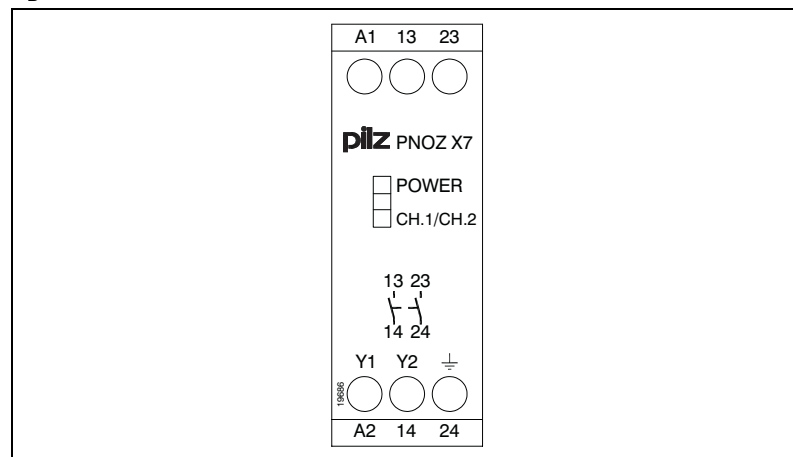
S1	E-STOP pushbutton
S3	Reset button
	Switch operated
	Gate open
	Gate closed

Terminal configuration

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



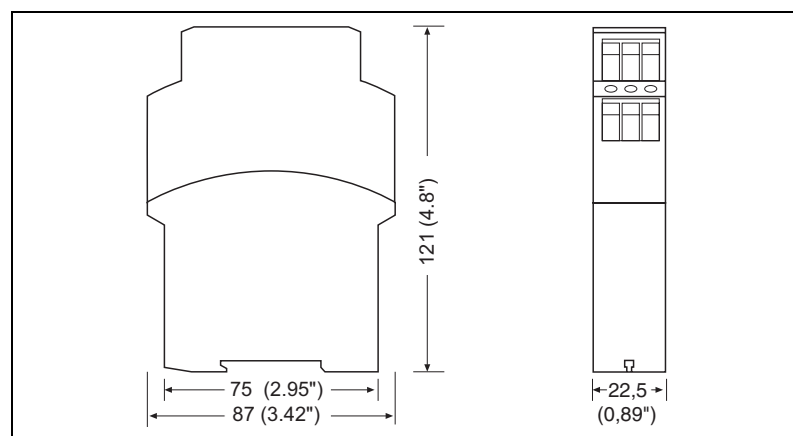
$U_B \text{ AC}$



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

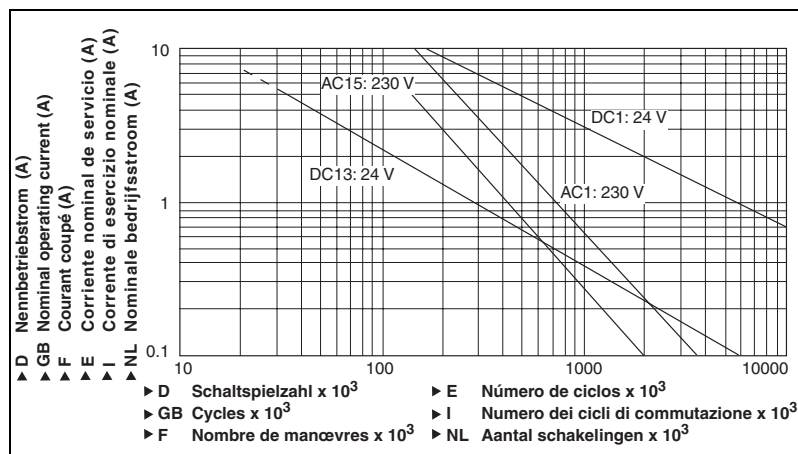


Requirement class IIIC, EN 574 P2HZ X1

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, 42 V, 48 V, 110 V, 115 V, 120 V, 230 V, 240 V
Supply voltage U_B DC	24 V, 26 V
Voltage tolerance	-15 % / +10 %
Power consumption at U_B AC	6.0 VA
Power consumption at U_B DC	2.5 W
Frequency range AC	50 - 60 Hz
Residual ripple DC	10 %
Voltage and current at input circuit: 24 VDC	
N/O contact	30 mA
N/C contact	20 mA
feedback loop: 24 VDC	45 mA
Output contacts in accordance with EN 954-1, Category 4	Safety contacts (N/O): 3 Auxiliary contacts (N/C): 1
Utilisation category of safety contacts in accordance with EN 60947-4-1	
AC1: 240 V	I_{min} : 0.01 A, I_{max} : 5.0 A P_{max} : 1250 VA
DC1: 24 V	I_{min} : 0.01 A, I_{max} : 5.0 A P_{max} : 125 W
Utilisation category of safety contacts in accordance with EN 60947-5-1	
AC15: 230 V	I_{max} : 2.5 A
DC13 (6 cycles/min): 24 V	I_{max} : 1.5 A

Requirement class IIIC, EN 574 P2HZ X1

Electrical data

Utilisation category of auxiliary contact in accordance with

EN 60947-4-1

 AC1: **240 V**
 I_{\min} : **0.01 A**, I_{\max} : **2.0 A**
 P_{\max} : **500 VA**

 DC1: **24 V**
 I_{\min} : **0.01 A**, I_{\max} : **2.0 A**
 P_{\max} : **50 W**

Utilisation category of auxiliary contact in accordance with

EN 60947-5-1

 AC15: **230 V**
 I_{\max} : **2.0 A**

 DC13 (6 cycles/min): **24 V**
 I_{\max} : **1.5 A**

Contact material

AgSnO₂ + 0.2 μ m Au

External contact fuse protection for safety contacts (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

External contact fuse protection for auxiliary contact (EN 60947-5-1)

Blow-out fuse, quick

4 A

Blow-out fuse, slow

2 A

Circuit breaker

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

Semiconductor outputs (short circuit proof)

24 V DC, 20 mA

External supply voltage

24 V DC

Voltage tolerance

-15 % / +10 %

 Max. overall cable resistance $R_{l\max}$ per input circuit

14 Ohm

Times

Delay-on de-energisation (reaction time in accordance with EN 574)

N/O contact

15 ms

N/C contact

30 ms

Recovery time

250 ms

Simultaneity, channel 1 and 2

 Max. **500 ms**

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

-25 - 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 mm²

2 core, same cross section, flexible:

with crimp connectors, without insulating sleeve

0.20 – 2.50 mm²

without crimp connectors or with TWIN crimp connectors

0.20 - 2.50 mm²

Torque setting with screw terminals

0.60 Nm

Dimensions (H x W x D)

with screw terminals

87.0 mm x 45.0 mm x 121.0 mm

Weight

380 g Order no.: 774330, 774331, 774332, 774434, 774435,
 774436, 774438, 774439

285 g Order no.: 774340, 774341

 The standards current on **08/03** apply.

Requirement class IIIC, EN 574 P2HZ X1

Order reference

Type	Features	Terminals	Order no.
P2HZ X1	24 VAC	Screw terminals	774 330
P2HZ X1	42 VAC	Screw terminals	774 331
P2HZ X1	48 VAC	Screw terminals	774 332
P2HZ X1	110 VAC	Screw terminals	774 434
P2HZ X1	115 VAC	Screw terminals	774 435
P2HZ X1	120 VAC	Screw terminals	774 436
P2HZ X1	230 VAC	Screw terminals	774 438
P2HZ X1	240 VAC	Screw terminals	774 439
P2HZ X1		24 VDC	774 340
P2HZ X1		26 VDC	774 341