

## Category 4, EN 954-1 PNOZ X2P



Emergency switches and safety gate control switches in accordance with VDE 0113 part 1, 11/98 and EN 60204-1, 12/97

### Features

- Dual-channel operation which detects shorts across the input contacts
- Supply voltage: 24 V AC/DC, 48 ... 240 V AC/DC
- Supply voltage 48 ... 240 V AC/DC: Galvanic isolation from the input circuit
- Automatic or monitored manual reset can be selected
- Plug-in connection terminals

### Approvals

	PNOZ X2P
	●
	●
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Technical Details	PNOZ X2P
<b>Electrical Data</b>	
Supply voltage	24 V AC/DC 48 ... 240 V AC/DC
Tolerance	85 ... 110 %
Power consumption	24 V AC/DC: Approx. 2 W/2 VA 48 ... 240 V AC/DC: Approx. 1 W/2 VA
Voltage and current at the input, reset and feedback circuits	24 V DC/25 mA
Switching capability in accordance with EN 60947-4-1, 01/00	AC1: 240 V/6 A/1500 VA DC1: 24 V/4 A/100 W
EN 60947-5-1, 08/00 (DC13: 6 cycles/min)	AC15: 230 V/5 A; DC13: 24 V/4A
Output contacts	2 safety contacts (N/O)
Contact fuse protection according to EN 60947-5-1, 08/00	6 A quick or 4 A slow
<b>Times</b>	
Delay on energisation	Automatic reset: 24 V AC/DC: max. 150 ms 48 ... 240 V AC/DC: max. 250 ms Manual reset: max. 100 ms
Delay on de-energisation	Single-channel input circuit: 24 V AC/DC: max. 100 ms 48 ... 240 V AC/DC: max. 600 ms Dual-channel input circuit: max. 30 ms
Recovery time	Approx. 1 s
Simultaneity channels 1/2	∞
Max. supply interruption before de-energisation	Approx. 10 ms 48 ... 240 V AC/DC (Single-channel input circuit): max. 600 ms
<b>Mechanical Data</b>	
Maximum cross section of ext. conductors	Flexible, without crimp connectors: 0.2 ... 2.5 mm <sup>2</sup> Flexible with crimp connectors: 0.25 ... 2.5 mm <sup>2</sup>
Single-core	Flexible, with crimp connectors but without plastic sheath: 0.25 ... 1 mm <sup>2</sup> Flexible, with TWIN-crimp connectors and plastic sheath: 0.5 ... 1.5 mm <sup>2</sup>
Multi-core (2 conductors with same cross-section)	
Torque setting for connection terminals	0.5 ... 0.6 Nm (screws)
Dimensions (H x W x D)	94 x 22.5 x 121 mm
Weight	200 g

### Description

- 22.5 mm P-99 housing, DIN-Rail mounting
- Positive-guided relay outputs: 2 safety contacts (N/O)
- Connections for
  - E-STOP buttons or safety gate limit switches
  - reset button
- Detects shorts across the input contacts

- LEDs for channel 1, channel 2 and power supply
- Increase in the number of safety contacts available by connecting expander modules

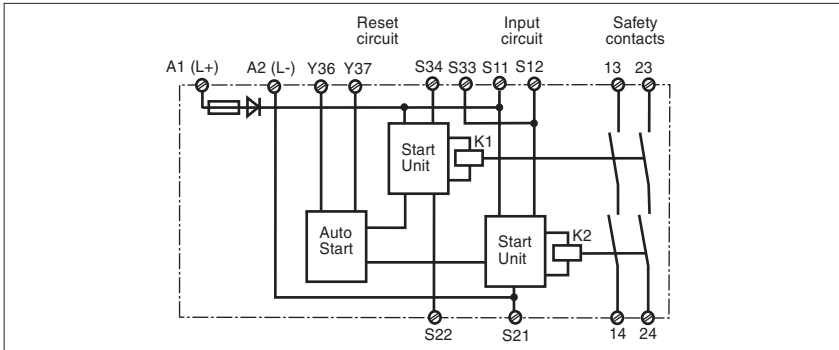
### Operating modes

- Single-channel operation
- Dual-channel operation
- Automatic reset
- Monitored manual reset

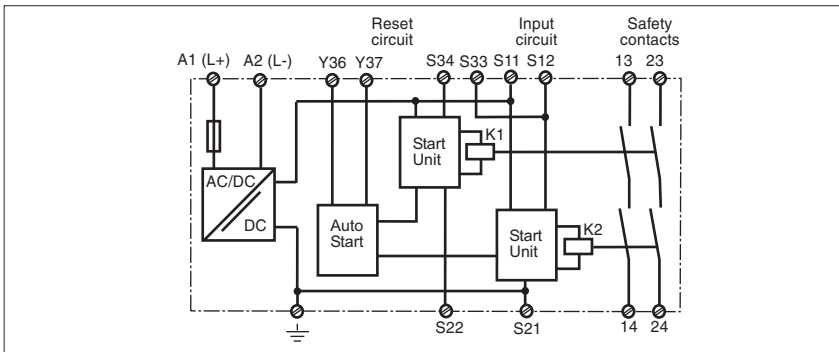
## Category 4, EN 954-1 PNOZ X2P

### Internal wiring diagram

- UB = 24 V AC/DC



- UB = 48 ... 240 V AC/DC



- Key

S1/S2: E-STOP or safety gate switch

S3: Reset button

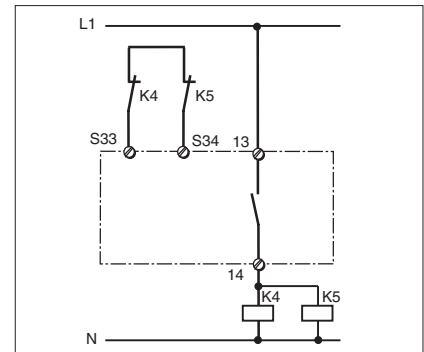
↑ Switch operated

🔒 Gate open

🔒 Gate closed

● Increase in the number of contacts

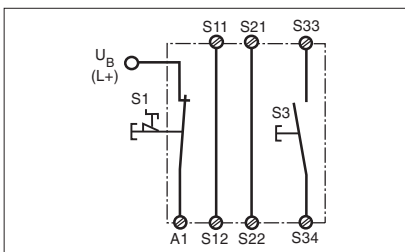
The number of output contacts can be increased by using expander modules or relays/contactors with positive-guided contacts.



### External wiring

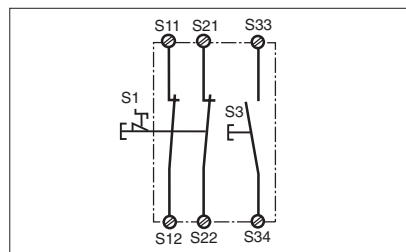
● Example 1

Single-channel E-STOP wiring with monitored manual reset.



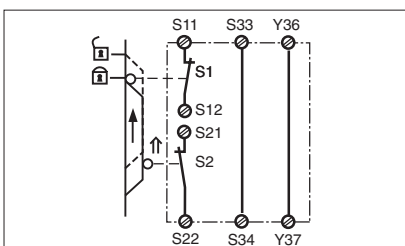
● Example 2

Dual-channel E-STOP wiring with monitored manual reset



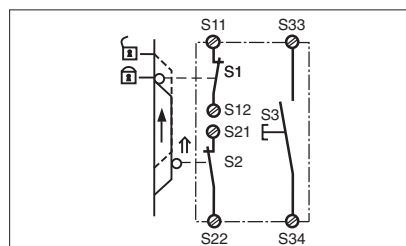
● Example 3

Dual-channel safety gate control with automatic reset.



● Example 4

Dual-channel safety gate control with monitored manual reset.



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### General Technical Data

Unless stated otherwise in the technical details for the specific unit

#### Electrical Data

Frequency Range AC	50 ... 60 Hz
Residual Ripple DC	160 %
Contact Material	AgSnO <sub>2</sub>
Continuous Duty	100 %

#### Environmental Data

EMC	EN 50081-1, 08/93, EN 61000-6-2, 03/00
Vibration in accordance with EN 60068-2-6, 01/00	Frequency: 10 ... 55 Hz, Amplitude: 0.35 mm
Climatic Suitability	DIN IEC 60068-2-3, 12/86
Airgap Creepage	DIN VDE 0110 part 1, 04/97
Ambient Temperature	-10 ... +55 °C
Storage Temperature	-40 ... +85 °C

#### Mechanical Data

Torque Setting on Connection Terminals	0.6 Nm (screws)
Mounting Position	Any
Housing Material	Thermoplast Noryl SE 100
Protection	Mounting: IP 54 Housing: IP 40 Terminal Range: IP 20

The units were tested in accordance with the relevant standards current at the time of development.

### Order References

Type	U <sub>B</sub>	Order No.
PNOZ X2P	24 AC/DC	777 303
PNOZ X2P	48 ... 240 V AC/DC	777 307