

Category 4, EN 954-1

PNOZ X2, PNOZ X2.1, PNOZ X2.2



Emergency stop relay and safety gate monitor in accordance with VDE 0113-1 Part 1, 11/98 and EN 60204-1, 12/97.

Features

- Dual-channel operation which detects shorts across the input contacts
- Supply voltage: 24 VAC/DC
- PNOZ X2: monitored manual reset only
- PNOZ X2.2: several units may be started in parallel using one reset button

Approvals

	PNOZ X2/X2.1/X2.2
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Technical Details	PNOZ X2, PNOZ X2.1, PNOZ X2.2
Electrical Data	
Supply Voltage	AC: 24 V DC: 24 V
Tolerance	85 ... 110 %
Power Consumption	Approx. 2 W/2 VA
Voltage and Current at the Input and Reset Circuits and Feedback Control Loop	24 VDC/25 mA
Switching Capability in accordance with EN 60947-4-1, 10/91	AC1: 240 V/6 A/1500 VA DC1: 24 V/4 A/100 W
EN 60947-5-1, 10/91 (DC13: 6 cycles/min.)	AC15: 230 V/5 A; DC13: 24 V/4A
Output Contacts	2 safety contacts (N/O)
EN 954-1, 07/96, category 4	
Contact Fuse Protection (EN 60947-5-1, 10/91)	6 A quick or 4 A slow
Times	
Delay-on Energisation	Automatic reset: max. 150 ms Manual reset: max. 100 ms
Delay-on De-energisation	Single-channel input circuit: max. 100 ms Dual-channel input circuit: max. 30 ms
Recovery Time	Approx. 1 s
Simultaneity channel 1/2	∞
Max. Supply Interruption before De-energisation	Approx. 10 ms
Mechanical Data	
Maximum Cross Section of External Conductors	2 x 1.5 mm ² or 1 x 2.5 mm ² Single-core or multi-core with crimp connectors
Dimensions (H x W x D)	87 x 22.5 x 122 mm
Weight	220 g

Description

- 22.5 mm, S-95 housing, DIN-Rail mounting
- Positive-guided relay outputs: 2 safety contacts (N/O)
- Connections for
 - E-STOP button or safety gate limit switch
 - reset button
- Detects shorts across the input contacts
- LEDs for channel 1, channel 2 and power
- Increase in the number of safety contacts available by connecting expander modules.

- PNOZ X2.1 only: automatic reset
- PNOZ X2.2 only: as the PNOZ X2 but any number of units can be connected in parallel to one or more reset buttons

Operating Modes

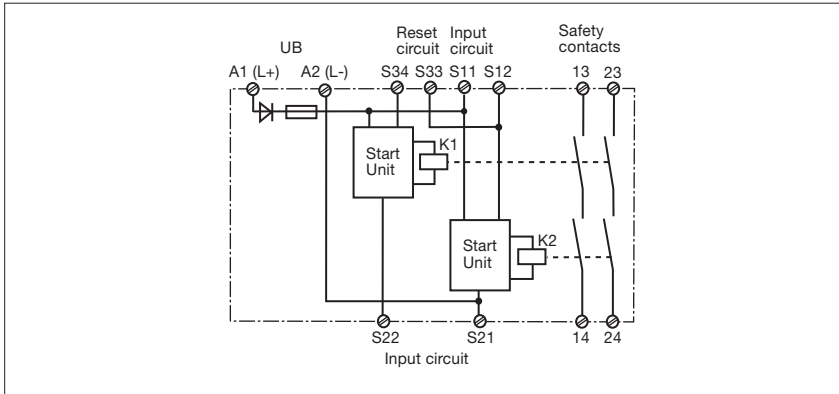
- Single-channel operation
- Dual-channel operation
- Manual reset
- PNOZ X2 only: monitored manual reset

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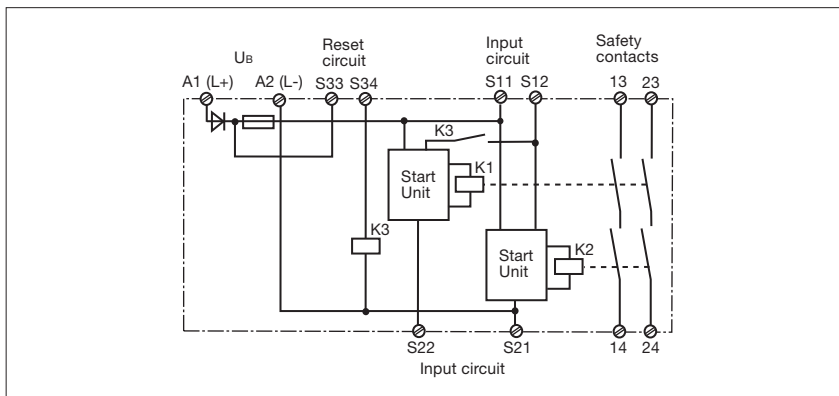
PNOZ X2, PNOZ X2.1, PNOZ X2.2

Internal Wiring Diagram

- PNOZ X2, PNOZ X2.1



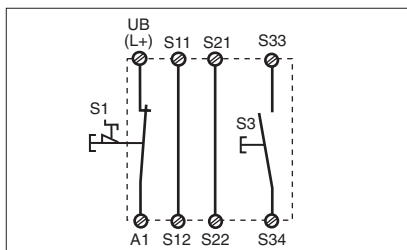
- PNOZ X2.2



External Wiring

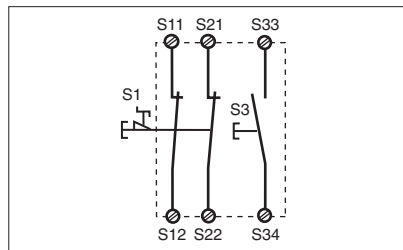
● Example 1

Single-channel E-STOP wiring with monitored manual reset, delay-on de-energisation: max. 100 ms



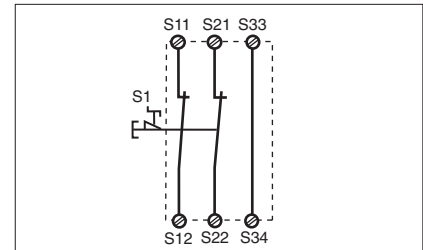
● Example 2

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



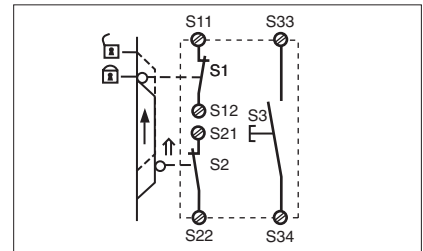
● Example 3

PNOZ X2.1 only: dual-channel E-STOP wiring with automatic reset.



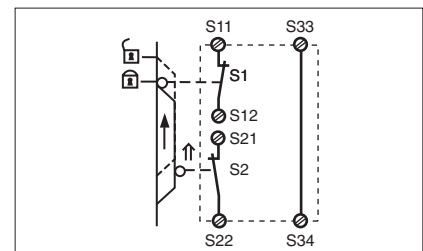
● Example 4

Dual-channel safety gate control through forced-contact limit switches with position monitoring.



● Example 5

PNOZ X2.1 only: dual-channel safety gate control with automatic reset.



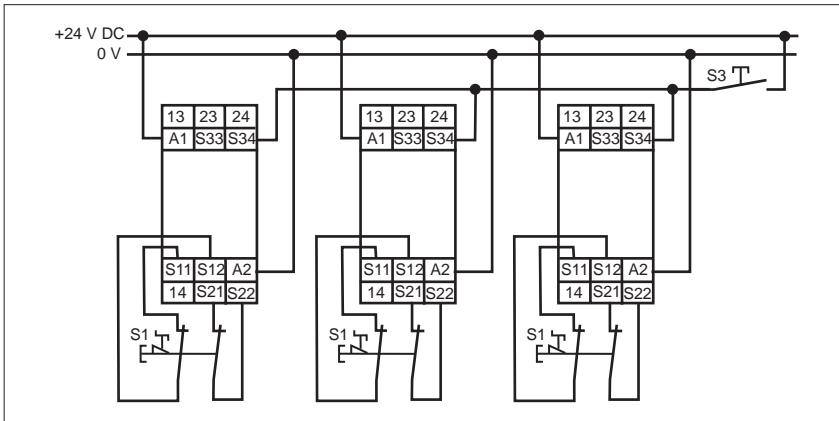
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- Example 6

PNOZ X2.2 only: dual-channel

E-STOP wiring where units can be started in parallel using one reset button.

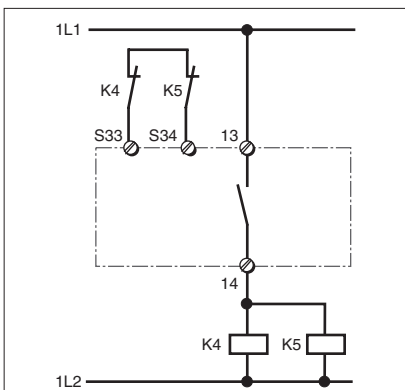


– Key

S1/2:	E-STOP or safety gate switch
S3:	Reset button
	Switch operated
	Gate open
	Gate closed

- Increase in safety contacts

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



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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 ₂
Continuous Duty	100 %

Environmental Data

EMC	EN 50081-1, 01/92, EN 50082-2, 03/95
Vibration in accordance with EN 60068-2-6, 04/95	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 _B	Order No.
PNOZ X2	24 V AC/DC	774 303
PNOZ X2.1	24 V AC/DC	774 306
PNOZ X2.2	24 V AC/DC	774 607