

Category 4, EN 954-1 PNOZ 16/PNOZ 16S



Emergency stop relay and safety gate monitor in accordance with VDE 0113-1, 11/98, EN 60204-1, 12/97 and IEC 204-1, 11/98.

Features

- Designed specifically for use with safety mats
- Each AC unit can be operated with 24 VDC
- PNOZ 16S: 2 semiconductor outputs (Fault, K1/K2)

Approvals

	PNOZ 16/16S
	●
	●
	●

Technical Details	PNOZ 16/PNOZ 16S
Electrical Data	
Supply Voltage	AC: 24, 42, 48, 110, 115, 120, 230, 240 V DC: 24 V
Tolerance	85 ... 110 %
Residual Ripple DC	20 %
Power Consumption	Approx. 2 W/3 VA
Voltage and Current at the Input and, Reset Circuits and Feedback Control Loop	24 VDC, 50 mA
Switching Capability in accordance with EN 60947-4-1, 10/91	AC1: 240 V/5 A/1200 VA, DC1: 24 V/4 A/100 W
EN 60947-5-1, 10/91 (DC13: 6 cycles/min.)	AC15: 230 V/2 A; DC13: 24 V/3A
Output Contacts	2 safety contacts (N/O)
Contact Fuse Protection (EN 60947-5-1, 10/91)	6 A quick or 4 A slow
Safety Mat Resistance	Per channel < 40 Ω
Semiconductor Outputs	24 VDC/20 mA, PNP short circuit protected
External Supply Voltage	24 VDC -15/+10 %
Times	
Delay-on Energisation	Approx. 300 ms
Delay-on De-energisation	Approx. 50 ms
Recovery Time	≥ 1 s
Switch-on Time	
with automatic reset	0.1 ... 1 s ± 20 %
with manual reset	0.1 ... 0.5 s ± 20 %
after a short across the input contacts	Approx. 100 ms
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 Single-core or multi-core with crimp connectors
Dimensions (H x W x D)	87 x 45 x 121 mm
Weight	330 g

Description

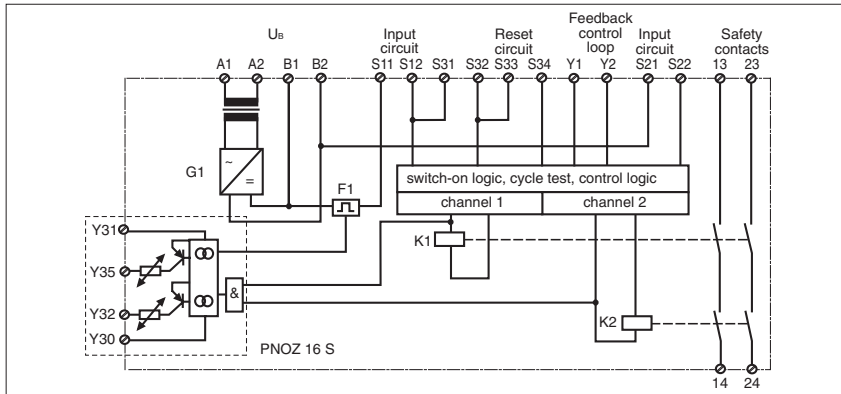
- 45 mm, P-97 housing, DIN Rail mounting
- Positive-guided relay outputs:
 - 2 safety contacts (N/O)
- Connections for
 - E-STOP button
 - safety gate limit switch
 - safety/pressure mat
 - safe edges
- LEDs for power, channel 1, channel 2 and external fault
- Increase in the number of safety contacts available by connecting expander modules.

Operating Modes

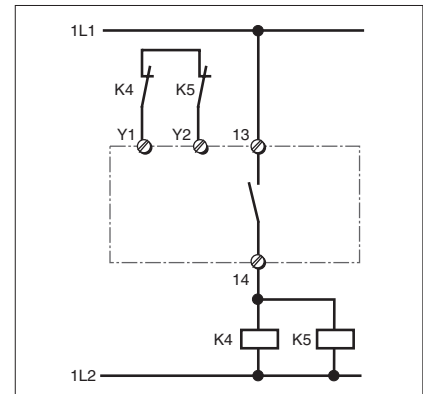
- Single-channel operation
- Dual-channel operation
- Automatic reset
- Manual reset

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Internal Wiring Diagram

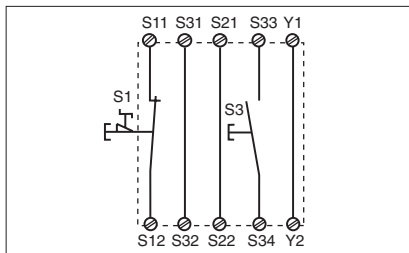


● Increase in safety contacts
The number of output contacts can be increased by using expander modules or relays/contactors with positive-guided contacts.

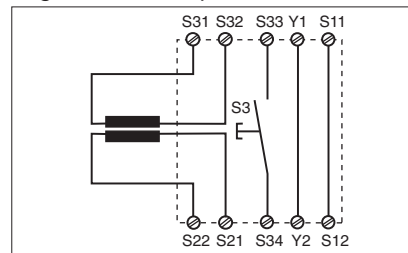


External Wiring

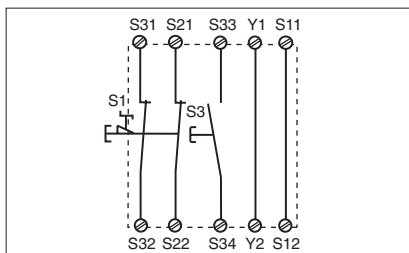
● Example 1
Single-channel E-STOP wiring with manual reset.



● Example 3
Safety mats / safe edges
Activating safety mats and safe edges < 40 Ohm per channel.



● Example 2
Dual-channel E-STOP wiring with manual reset.



- Key

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

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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 16	24 V AC/DC	774 060
PNOZ 16	42 V AC/24 V DC	774 061
PNOZ 16	48 V AC/24 V DC	774 062
PNOZ 16	110 V AC/24 V DC	774 063
PNOZ 16	115 V AC/24 V DC	774 064
PNOZ 16	120 V AC/24 V DC	774 065
PNOZ 16	230 V AC/24 V DC	774 066
PNOZ 16	240 V AC/24 V DC	774 067
PNOZ 16S	24 V AC/24 V DC	774 070
PNOZ 16S	42 V AC/24 V DC	774 071
PNOZ 16S	48 V AC/24 V DC	774 072
PNOZ 16S	110 V AC/24 V DC	774 073
PNOZ 16S	115 V AC/24 V DC	774 074
PNOZ 16S	120 V AC/24 V DC	774 075
PNOZ 16S	230 V AC /24 V DC	774 076
PNOZ 16S	240 V AC/24 V DC	774 077