

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 |
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| Technical Details | PNOZ 16/PNOZ 16S |
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| 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

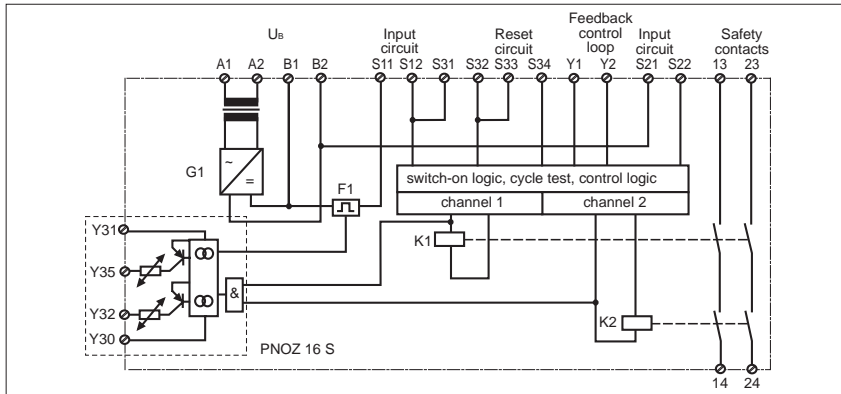
- 45 mm, P-93 housing, DIN Rail mounting
- Positive-guided relay outputs:
 - 2 safety contacts (N/O)
- Connections for
 - E-STOP button
 - safety gate limit switch
 - safety/pressure mat
 - safe edges
- LEDs for power, channel 1, channel 2 and external fault
- Increase in the number of safety contacts available by connecting expander modules.

Operating Modes

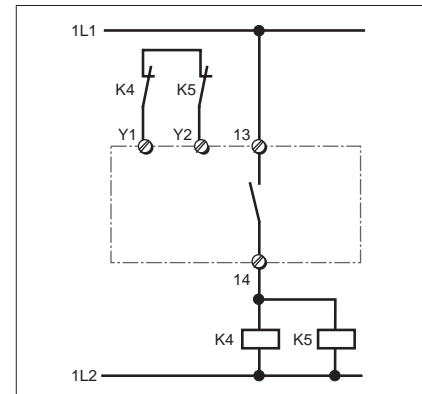
- Single-channel operation
- Dual-channel operation
- Automatic reset
- Manual reset

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Internal Wiring Diagram

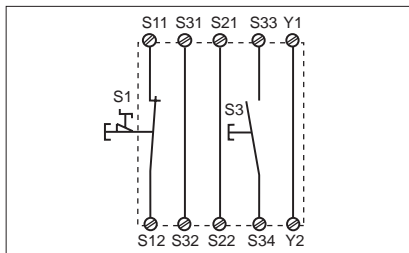


- Increase in safety contacts
The number of output contacts can be increased by using expander modules or relays/contactors with positive-guided contacts.

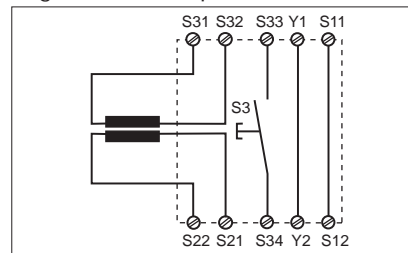


External Wiring

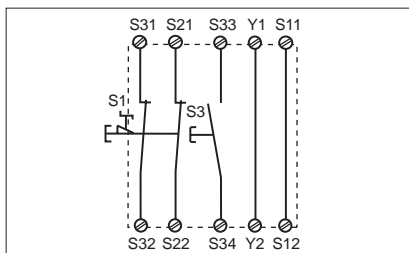
- Example 1
Single-channel E-STOP wiring with manual reset.



- 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

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| Frequency Range AC | 50 ... 60 Hz |
| Residual Ripple DC | 160 % |
| Contact Material | AgSnO ₂ |
| Continuous Duty | 100 % |

Environmental Data

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| 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

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| 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 |