Category 4, EN 954-1

PNOZ X2.8P



EMERGENCY STOP switchgear and safety gate monitor according to EN 60204-1 (VDE 0113-1), 11/98 and IEC 60204-1, 10/97

Features

- either manual start without monitoring or automatic start possible
- 1-channel or 2-channel wiring with or without shorts across contacts detection
- Plug-in connection terminals (Either screw terminals or cage clamp terminals)

Approvals

	PNOZ X2.8P
	●
	●
	●

Technical data	PNOZ X2.8P
Electrical data	
Power supply	AC: 24 V DC: 24 V
Tolerance	85 ... 110 %
Power consumption	AC: Approx. 2 VA, DC: Approx. 2 W
Voltage and current at input, start and feedback loop	24 V DC, 25 mA
Output contacts	3 safety contacts (NO) 1 auxiliary contact (NC)
Switching capability according to EN 60947-4-1, 02/01 EN 60947-5-1, 11/97 (DC13:6 cycles/min)	 AC1: 240 V/6 A/1500 VA DC1: 24 V/6 A/150 W AC15: 230 V/5 A; DC13: 24 V/4 A
Contact protection according to EN 60947-5-1, 11/97	Blow-out fuse: 6 A quick or 4 A slow Safety cut-out: 24 V DC: 4 A, Characteristic B/C
Times	
Pickup delay	monitored start: max. 100 ms auto./man. start: max. 0.35 s
Delay-on de-energisation	at EMERGENCY STOP: max. 30 ms at mains off: max. 150 ms
Recovery time	approx. 1 s
Simultaneity channel 1 and 2	∞
Power failure buffer	approx. 10 ms
Mechanical Data: with cage clamp terminals	
Terminal blocks per connection	2
Maximum cross section of ext. conductors	Flexible, without crimp connectors: 0.2 ... 1.5 mm^2
Stripping length	8 mm
Dimensions (H x W x D)	101 x 22.5 x 121 mm
Weight	200 g
Mechanical data: with screw terminals	
Maximum cross section of ext. conductors Single-core Multi-core (2 conductors with same cross-section)	 Flexible, without crimp connectors: 0.2 ... 2.5 mm^2 Flexible with crimp connectors: 0.25 ... 2.5 mm^2 Flexible, with crimp connectors but without plastic sheath: 0.25 ... 1 mm^2 Flexible, with TWIN-crimp connectors and plastic sheath: 0.5 ... 1.5 mm^2
Torque setting for screw terminals	0.5 ... 0.6 Nm
Dimensions (H x W x D)	94 x 22.5x 121 mm
Weight	200 g

Description

- 22,5 mm P-99 housing, on standard rail, snap-on
- Relay outputs, positive-guided:
  - 3 safety contacts (NO)
  - 1 auxiliary contact (NC)
- Connection possibilities for
  - EMERGENCY STOP switch
  - Safety gate limit switch
  - Light guard
  - Start switch
- LEDs for switching status Channel 1 and 2 and power supply
- Contact multiplication and Contact amplification possible by external contactors

Operating modes

- Single channel mode
- Dual channel mode without shorts across contacts detection
- Dual channel mode with shorts across contacts detection Automatic start
- Manual start without monitoring

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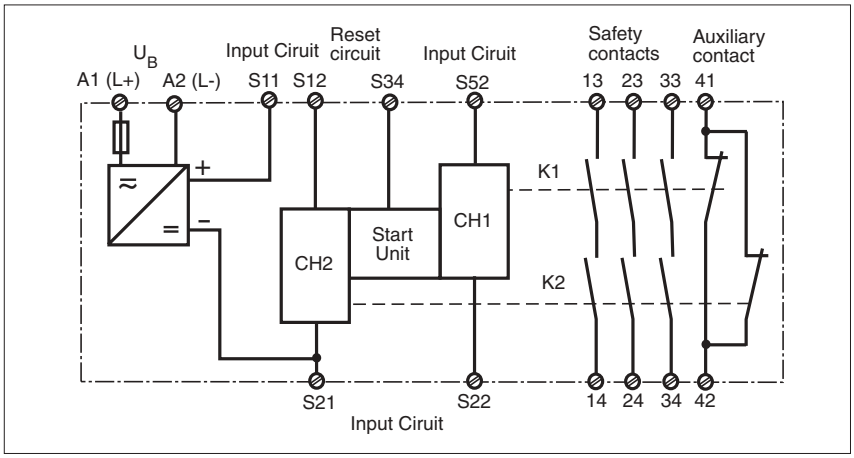
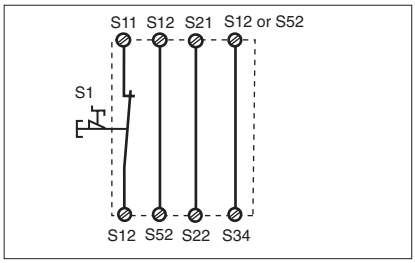
PNOZ X2.8P

Schematic interior diagram

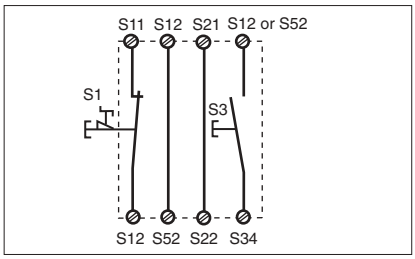


External wiring

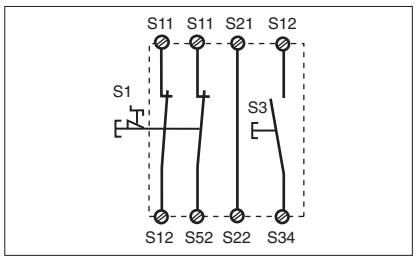
● Example 1
Single-channel EMERGENCY STOP wiring with automatic start



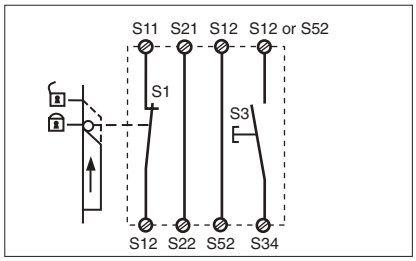
● Example 2
Single-channel EMERGENCY STOP wiring without monitored start



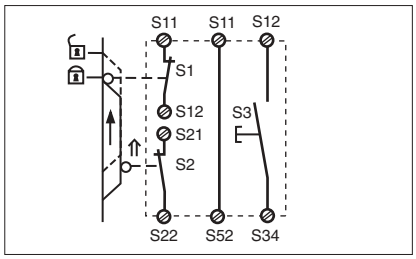
● Example 3
Dual-channel EMERGENCY STOP wiring without shorts across contacts detection without monitored start



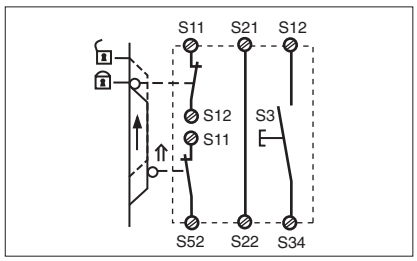
● Example 4
Single-channel safety gate control without monitored start



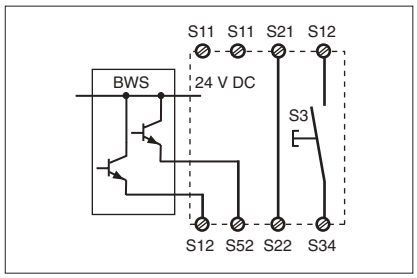
● Example 5
Dual-channel safety gate control with shorts across contacts detection,without monitored start



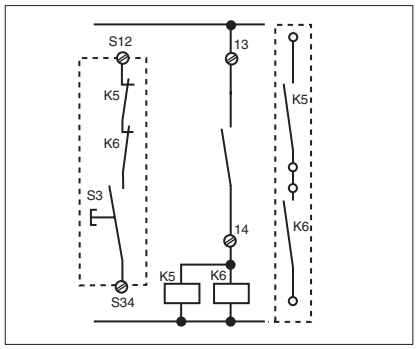
● Example 6
Dual-channel safety gate control without shorts across contacts detection, without monitored start



● Example 7
Dual channel light barrier control with shorts across contacts detection by BWS, without monitored start



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



– Legend

S1/S2:	EMERGENCY STOP or safety gate switch
S3:	Start switch
	actuated element
	gate not closed
	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 61000-6-3, 10/01 EN 61000-6-3, 10/01
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	Front: ABS UL 94 V0 Housing; PPO UL 94 V0
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 X2.8P with cage clamp terminals	24 V DC, 24 V AC	787 301
PNOZ X2.8P with screw terminals	24 V DC, 24 V AC	777 301

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