

## Category 4, EN 954-1 PNOZ XV1P



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

### Features

- Dual-channel operation which detects shorts across the inout contacts
- Monitored manual or automatic reset
- 1 delay-off safety contact
- Supply voltage: 24 VDC
- Plug-in connection terminals

### Approvals

	PNOZ XV1P
	Pending
	●
	●

Technical Details	PNOZ XV1P
<b>Electrical data</b>	
Supply voltage	24 V DC
Tolerance	85 ... 110 %
Power consumption $U_B$	Approx. 3 W
Residual Ripple DC	20 %
Voltage and current at input reset circuit and feedback control loop	24 V DC, 50 mA
Switching capability in accordance with EN 60947-4-1, 02/01	AC1: 240 V/3 A/720 VA DC1: 24 V/3 A/72 W
EN 60947-5-1, 11/97 (DC13: 6 switching cycles/min)	AC15: 230 V/1,5 A; DC13: 24 V/2 A
Output contacts	1 delay-off safety contacts (N/O contact) 2 instantaneous safety contacts (N/O contact)
Contact fuse protection according to EN 60947-5-1, 08/00	Blow-out fuse: 4 A quick or 4 A slow Safety cut-out: 24 V DC: 4 A, 230 V AC: 2 A; Characteristic B/C
<b>Times</b>	
Delay time 37-38 and 47-48	adjustable: 0.1-3 s, 0-30 s
Switch-on delay	monitored manual reset: max. 100 ms automatic or manual reset: max. 0.5 s
Delay-on de-energisation	with emergency stop: max. 50 ms power failure: max. 0.5 s
Recovery time	approx. 1 s
Simultaneity channel 1/2	∞
Max. supply interruption before de-energisation	Approx. 25 ms
<b>Mechanical data</b>	
Max. cross-section of external conductor	
Single-core	flexible without crimp connector: 0.2 ... 2.5 mm <sup>2</sup> flexible with crimp connector: 0.25 ... 2.5 mm <sup>2</sup>
Multi-core (2 cores of equal cross-section)	flexible with crimp connector, without plastic sleeve: 0.25 ... 1 mm <sup>2</sup> flexible with TWIN crimp connector with plastic sleeve: 0.5 ... 1.5 mm <sup>2</sup>
Dimensions (H x W x D)	94 x 22,5 x 121 mm
Weight	220 g

### Description

- 22,5 mm P-99 housing, DIN -Rail mounting
- Positive-guided relay outputs:
  - 2 safety contacts instantaneous (N/O contact)
  - 1 safety contacts delay-off (N/O contact)
- Connections for
  - E-STOP button
  - safety gate limit switch
  - reset button

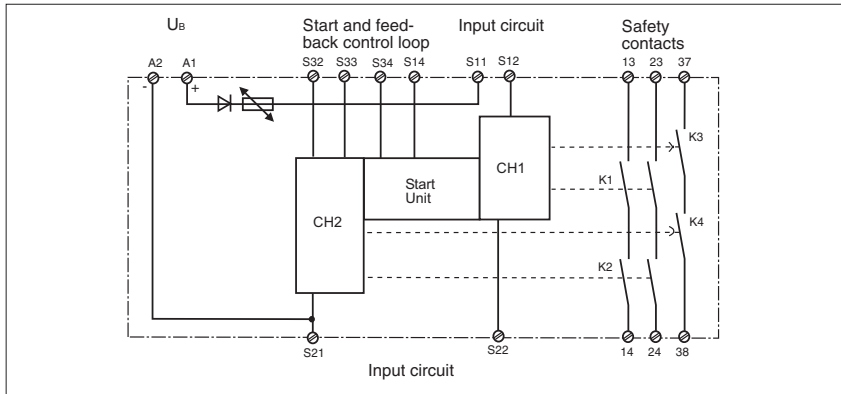
- LEDs for switching status channel 1 / 2 and supply voltage
- Increase in the number of contacts available by connecting expander modules

### Operating modes

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

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### Internal wiring diagram



### - Key

S1/S2: Emergency stop or safety gate switch

S3: Reset button

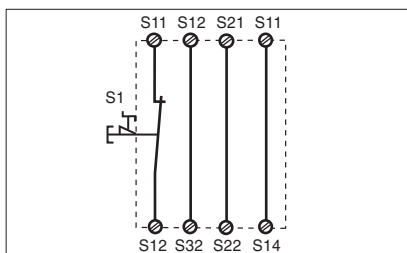
↑ Switch operated

🔒 Gate open

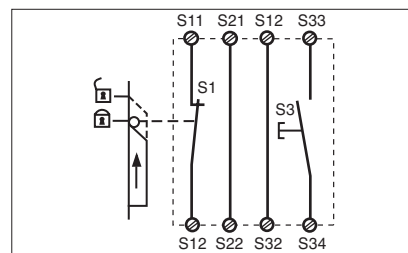
🔒 Gate closed

### External wiring

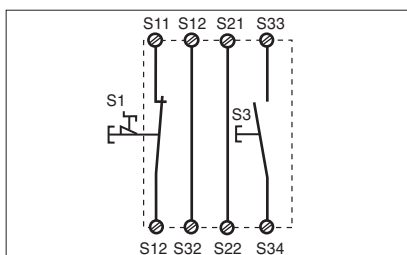
● Example 1  
Single-channel emergency stop wiring with automatic reset



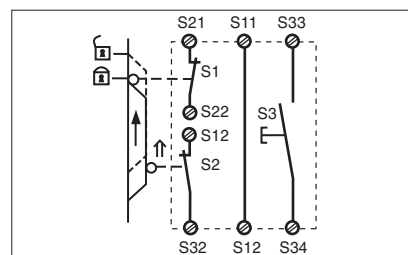
● Example 4  
Single-channel safety gate control with monitored manual reset



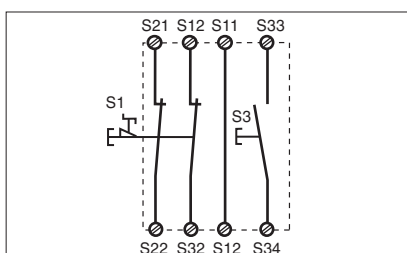
● Example 2  
Single-channel emergency stop wiring with monitored manual reset



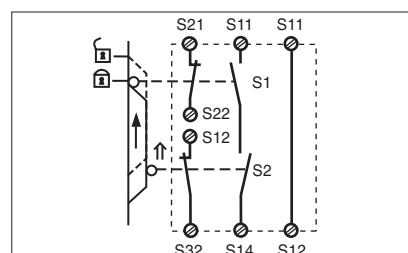
● Example 5  
Dual-channel safety gate control with monitored manual reset



● Example 3  
Dual-channel emergency stop wiring with monitored manual reset



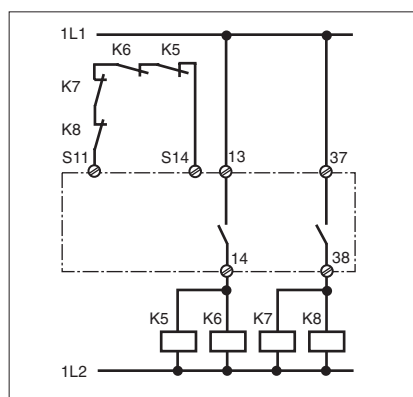
● Example 6  
Dual-channel safety gate control with automatic reset



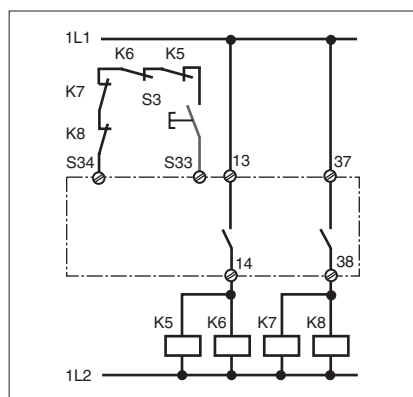
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- Increase in safety contacts  
The number of output contacts can be increased by using expander modules or contactors with positive-guide contacts.

– Operation with automatic reset



– 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, 01/92, EN 50082-2, 03/00
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	t	U <sub>B</sub>	Order No.
PNOZ XV1P	0,1 ... 3 s	24 V DC	777 601
PNOZ XV1P	1 ... 30 s	24 V DC	777 602