

## Base unit PNOZ p1vp



Base unit for the PNOZpower modular safety system in accordance with EN 60204-1 (VDE 0113-1) and IEC 60204-1

### Features

- Dual-channel operation, with or without detection of shorts across contacts
- Monitored or automatic reset can be selected
- Instantaneous and delayed control of expander modules
- Delay time can be selected via rotary switch and potentiometer
- Designed to be driven via semiconductor outputs
- 2 semiconductor outputs: Fault (group fault signal), K1/K2
- Plug-in connection terminals

### Approvals

	PNOZ p1vp
	●
	●
	●

Technical details	PNOZ p1vp
<b>Electrical data</b>	
Supply voltage	DC: 24 V
Tolerance	-15 % ... +10 %
Power consumption	4 W + load from expander modules
Voltage and current at	
S11-S12, S11-S52, S21-S22	24 VDC, max. 40 mA
S33-S34	24 VDC, max. 340 mA
Semiconductor outputs	24 VDC/20 mA, short-circuit protected
External supply voltage	24 VDC ±20 %
Min. input resistance when switching on	70 Ohm
<b>Times</b>	
Selectable delay time	PNOZ p1vp 30s: 0, 5, 10, 15, 20, 25 s + 0.3 ... 5 s PNOZ p1vp 300s: 0, 50, 100, 150, 200, 250 s + 1.5 ... 50 s
Switch-on delay	Monitored reset: max. 210 ms Auto./manual reset: max. 250 ms
Delay-on de-energisation	With E-STOP: max. 30 ms With power failure: max. 70 ms
Recovery time	0.3 s
Simultaneity channel 1/2	Max. 210 ms
Supply interruption before de-energisation	ca. 25 ms
<b>Mechanical data</b>	
Cross section of external conductors	
1 core	Flexible: 0.2 ... 2.5 mm <sup>2</sup> , 24 - 12 AWG
2 core with the same cross section	Flexible with crimp connectors, no plastic sleeve: 0.25 ... 1.0 mm <sup>2</sup> , 24 - 16 AWG Flexible, without crimp connectors or with TWIN crimp connectors: 0.5 ... 1.5 mm <sup>2</sup> , 24 - 16 AWG
Mounting position	On a top hat rail installed horizontally
Dimensions (H x W x D)	94 x 45 x 135 mm
Weight	350 g

### Description

- 45 mm P-01 housing, DIN rail mounting
- Connection options for
  - E-STOP button
  - Safety gate limit switch
  - Reset button
- Output connected to PNOZpower-Bus
- Max. 8 expander modules can be connected
  - max. 4 expander modules that are controlled instantaneously
  - max. 4 expander modules that are controlled with a delay time

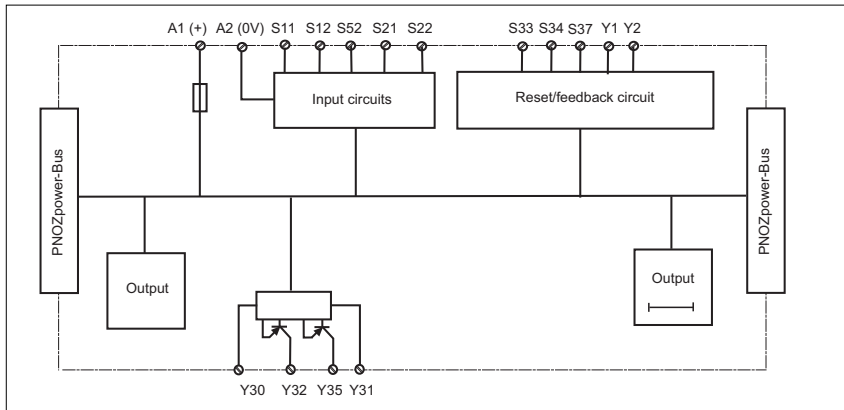
- Connection between PNOZ p1p and expander modules via PNOZpower bus, via jumpers on the back of the unit
- LEDs for status of input and output circuits, reset circuit, supply voltage and fault

### Operating modes

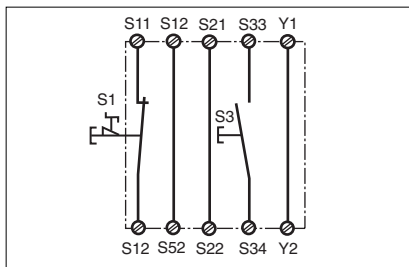
- Single-channel operation
- Dual-channel operation
- Automatic reset
- Manual reset
- Monitored manual reset

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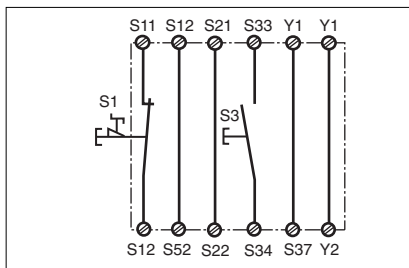
### Internal wiring diagram



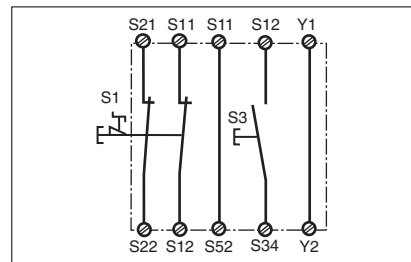
● Example 1  
Single-channel E-STOP wiring with manual reset



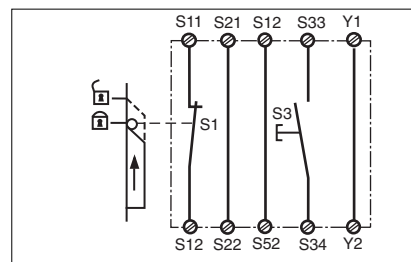
● Example 2  
Single-channel E-STOP wiring with monitored reset



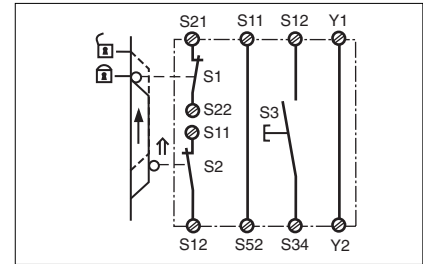
● Example 3  
Dual-channel E-STOP wiring with manual reset and detection of shorts across contacts



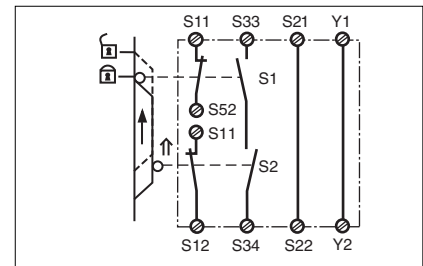
● Example 4  
Single-channel safety gate control with manual reset



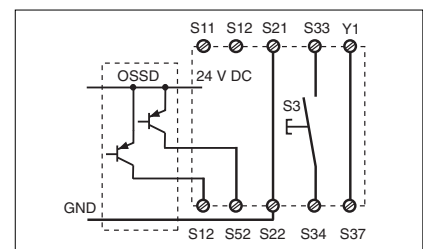
● Example 5  
Dual-channel safety gate control with manual reset and detection of shorts across contacts



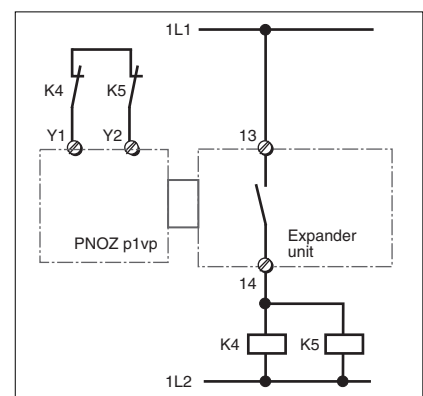
● Example 6  
Dual-channel safety gate control with automatic reset and detection of shorts across contacts



● Example 7  
Dual-channel control of light beam device, with monitored reset



● Output contacts for switching higher capacities



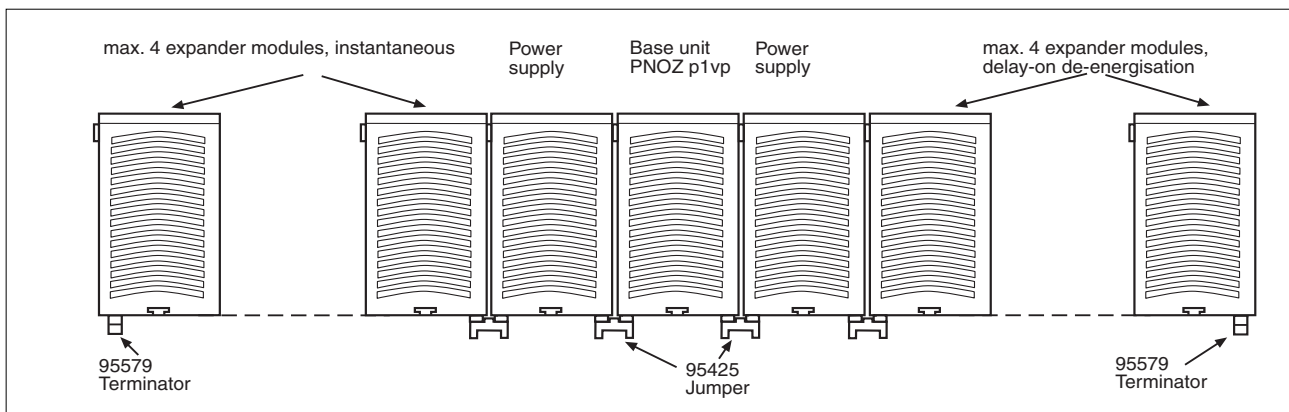
– Key

S1/S2:	E-STOP or safety gate switch
S3:	Reset button
↑↑	Switch operated
🔒	Gate open
🔒	Gate closed

## Base unit PNOZ p1vp

### External wiring

- PNOZpower-Bus: Base unit with 4 expander units and power supply (optional), connected via jumpers



## Base unit

### PNOZ p1vp

#### General details

Unless stated otherwise in the technical details for the specific unit.

#### Electrical data

Residual ripple DC	160 %
Contact material	AgSnO <sub>2</sub>
Continuous duty	100 %

#### Environmental data

EMC	EN 60947-5-1 EN 61000-6-2
Vibration to EN 60068-2-6	Frequency: 10 ... 55 Hz, Amplitude: 0.35 mm
Climatic suitability	EN 60068-2-78
Airgap creepage to EN 60947-1	
Pollution degree	2
Overvoltage category	III / II
Rated insulation voltage	60 V
Rated impulse withstand voltage	0,8 kV
Ambient temperature	-10 ... +55 °C
Storage temperature	-40 ... +85 °C

#### Mechanical data

Torque setting for connection terminals	0.6 Nm (screws)
Housing material	Front: ABS UL 94 V0 Housing: PPO UL 94 V0
Protection types	Mounting: IP54 Housing: IP30 Terminals: IP20

The standards current on 2009-12 apply.

#### Order reference

Type	t	U <sub>B</sub>	Order no.
PNOZ p1vp	0 ... 30 s	24 V DC	773 950
PNOZ p1vp	0 ... 300 s	24 V DC	773 951