

up to PL e of EN ISO 13849-1 PNOZ s9



Contact expander module for increasing the number of available contacts, Pulse-on timer relay for step-by-step control of movement sequences, Delay-on energisation timer for unlocking an interlock with delay, Shutdown of application with delay-on de-energisation, controlled stop

Approvals

	PNOZ s9
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Unit features

- ▶ Positive-guided relay outputs, either instantaneous, delay-on de-energisation (also retriggerable), pulsing or delay-on energisation:
 - 3 safety contacts
 - 1 auxiliary contact
- ▶ Safe separation of safety contacts 17-18, 27-28, 37-38 from all other circuits
- ▶ Switch-on time, pulse time or delay-on de-energisation selectable
- ▶ LED for:
 - Supply voltage
 - Input status, channel 1
 - Input status, channel 2
 - Switch status channel 1/2
 - Reset circuit
 - Errors
- ▶ Plug-in connection terminals (either spring-loaded terminals or screw terminals)

Unit description

The unit meets the requirements of EN 60947-5-1, EN 60204-1 and VDE0113-1. In conjunction with a base unit the unit is used as a

- ▶ Contact expansion module to increase the number of contacts available on a base unit. Base units are all safety relays with feedback loop monitoring.
- ▶ Pulse relay
 - In accordance with EN ISO 12100-1 and EN ISO 12100-2 (inching circuit for limited movement of hazardous machine components during installation, set up and positioning)
 - in safety circuits in accordance with VDE 0113 and EN 60204-1 (e.g. on movable guards)
- ▶ Safe timer relays
 - in accordance with EN 1088 (release with delay through timer)
 - in safety circuits in accordance with VDE 0113-1 and EN 60204-1 (e.g. on movable guards)

The category that can be achieved in accordance with EN 954-1 and EN ISO 13849-1 depends on the category of the base unit. The contact expansion module may not exceed this.

- ▶ The unit can also be used without a base unit as a pulse relay or safe timer.

The unit is designed for use with

- ▶ Safety relays from the PNOZ X, PNOZsigma, PNOZelog, PNOZmulti series
- ▶ Safety gate monitors from the PST series
- ▶ Two-hand relays from the PNOZsigma, P2HZ series

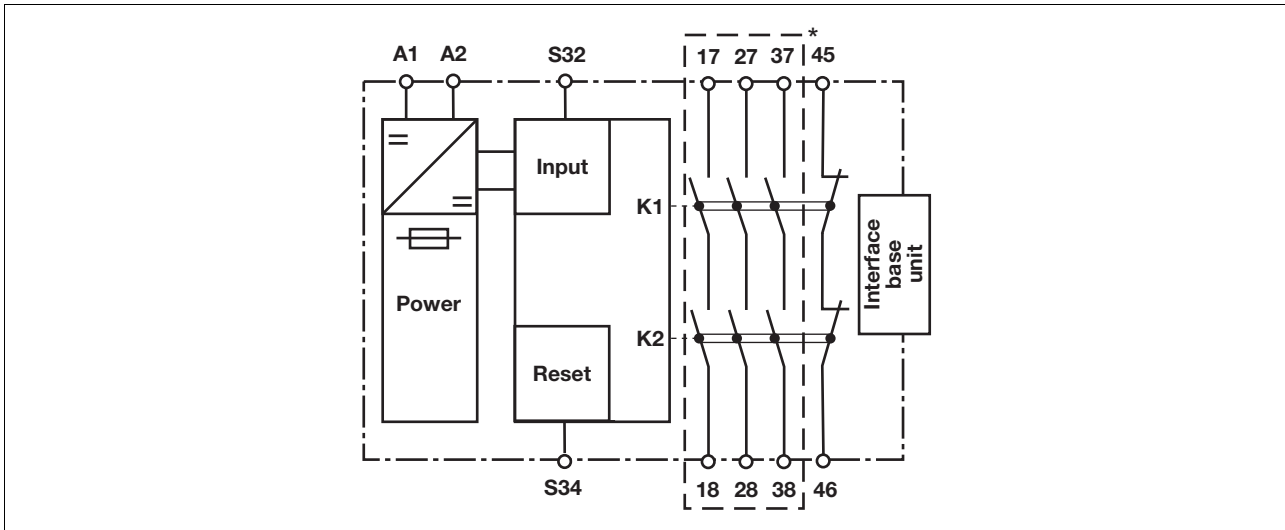
Safety features

The unit meets the following safety requirements:

- ▶ The unit monitors its own output contacts.
- ▶ The safety function remains effective in the case of a component failure.
- ▶ Earth fault in the feedback loop is detected.
- ▶ Earth fault in the input circuit: The output relays de-energise and the safety contacts open.
- ▶ The unit has an electronic fuse.

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Block diagram



*Safe separation in accordance with EN 60947-1, 6 kV

Function description

- ▶ Delay-on de-energisation, not re-triggerable
If the supply voltage at the input circuit is interrupted, the safety contacts will open once the set release time has elapsed, even if the safety function is cancelled during the delay time. The unit cannot be reactivated until the delay time has elapsed.
 - ▶ Delay-on de-energisation, retriggerable
(only possible as a standalone application or with the PNOZsigma base unit!)
If the supply voltage at the input circuit is interrupted, the safety contacts will open once the set release time has elapsed.
If the safety function is cancelled during the delay time (e.g. safety gate closed), the unit will remain active.
 - ▶ Pulse on switching on
The safety contacts close when supply voltage is applied, the feedback loop is closed and finally the input circuit is closed. The safety contacts are reopened once the pulse time has elapsed.
If the input circuit is opened for more than 10 ms during the pulse time, the safety contacts will open immediately and the auxiliary contact will be closed.
 - ▶ Delay-on energisation
The set delay time is started when supply voltage is applied, the feedback loop is closed and finally the input circuit is closed.
If the input circuit and feedback loop are closed once the delay time has elapsed, the safety contacts will close and the auxiliary contact will be opened.
If the input circuit is opened for more than 10 ms, the safety contacts will open immediately and the auxiliary contact will be closed.
- with PNOZsigma base unit:
- ▶ Dual-channel operation via PNOZsigma connector
 - with other base units or without base unit:
 - ▶ Single-channel operation: one input circuit affects the output relays