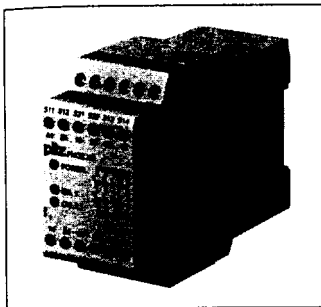


599-761

# PNOZ X3

## Standard Unit



**PICONTROL**  
**Emergency Stop Unit and Safety**  
**Gate Monitor** to VDE 0113 T1  
 (06.93) and EN 60204-1: 1992.

## Order Reference

Voltage	Part Number
24 VDC	774 310
24 VAC	774 310
110 VAC	774 314
230 VAC	774 318

## Special Features

- Circuit is redundant with built-in self-monitoring
- The safety function remains effective in the case of component failure
- The correct opening and closing of the safety function relay is tested automatically in each on-off cycle
- Each AC unit can also be operated with 24 VDC
- Semiconductor output signals ready for operation.

## Description

- 45 mm P-93 Housing, DIN-Rail Mounting
- Relay outputs, positive-guided:
  - 3 safety contacts (N/O)
  - 1 auxiliary contact (N/C), not suitable for safety circuits
- Connections
  - emergency stop button or safety gate limit switches
  - reset button
- Monitoring of reset button possible

- 1 semiconductor output
- Detects shorts across the contacts
- Increase in contacts available via connecting external contactors/relays
- LED status indicators for channels 1 and 2 and operating voltage.

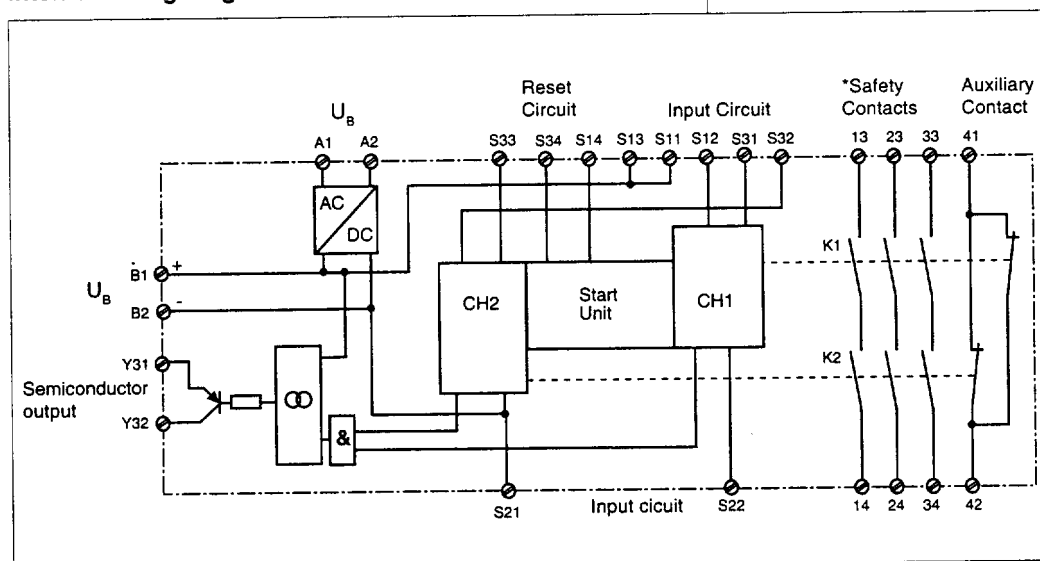
## Electronic Fuse

PNOZ X3 has a short-circuit-proof transformer. In the event of an

earth fault with AC operation the safety contacts open. In the event of an earth fault with DC operation, an electronic fuse causes the output relay to de-energise and protects the unit from damage. The safety release comes into effect with fault currents of  $\geq 1.2$  A.

\* To avoid contact welding, a fuse (6.3 A quick/ 4 A slow) must be connected externally.

## Internal Wiring Diagram



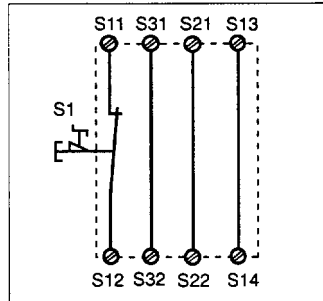
## Technical Details, PNOZ X3 (for general technical details see appendix)

Operating Voltage $U_B$	AC: 24, 42, 48, 110, 115, 120, 230, 240 V and DC: 24 V
Power Consumption at $U_B$	Approx. 1.5 W/4 VA
Relay Contacts	3 safety contacts (N/O); 1 auxiliary contact (N/C); AgSnO <sub>2</sub>
Switching Capability to	
DIN EN 60 947-4-1	AC1: 250 V/5 A/1250 VA, DC1: 24 V/4 A/100 W
DIN EN 60 947-5-1	AC15: 230 V/4 A; DC13: 24 V/1.5 A
Delay-on Energisation	Monitored reset: max. 100 ms, auto./manual. reset: max. 0.5 s
Delay-on De-energ. (E-STOP)	Max. 30 ms
Delay-on De-energ. (power failure)	Max. 1 s
Recovery Time	$\geq 1$ s
Voltage/Current at S11, S12, S13	24 V DC/20 mA
S14, S21, S22, S31, S32, S33, S34	
Max. Supply Interruption	
before De-energisation	Max. 10 ms
Semiconductor Outputs	24 V DC/20 mA, voltage supply, external: 24 V DC $\pm 20$ %
Operating Temperature	-25 to +55 °C
Airgap Creepage	DIN VDE 0110 part 2 para. 8, 4 kV/3
Contact Fuse Protection	6.3 A quick or 4 A slow (VDE 0660 Pt.200, DIN EN 60947)
Protection	Mounting IP 54, Housing IP 40, Terminals IP 20
Max. cross section of external	2 x 1.5 mm <sup>2</sup> or 1 x 2.5 mm <sup>2</sup>
conductors	Single-core or multi-core with crimp connectors
Dimensions (H x W x D)	87 x 45 x 121 mm
Weight	420 g

## External Wiring

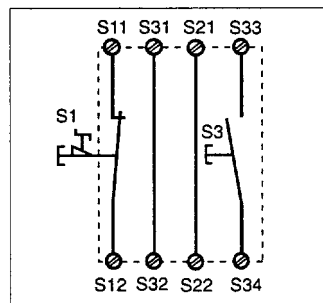
### Example 1

If the emergency stop is wired through 1 channel it meets the requirements of EN 60204, but does not have safe operation redundancy in the emergency stop circuit. Earth faults in the emergency stop unit are detected.



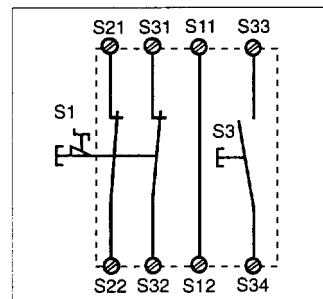
### Example 2

1 channel emergency stop circuit as in example 1, but with monitored reset button.



### Example 3

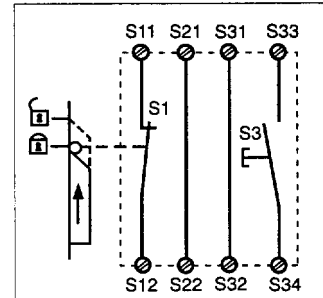
If the emergency stop is wired through 2 channels it will also monitor any faults in the emergency stop contacts. Earth faults in the emergency stop circuit and shorts between the input circuits will also be detected.



### Example 4

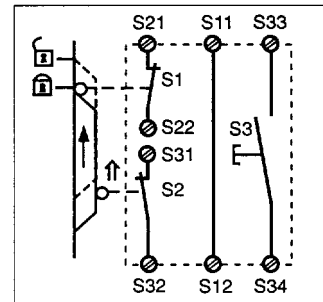
1 channel safety gate control through a forced-contact limit switch.

Possible application:  
For monitoring purposes during routine maintenance.



### Example 5

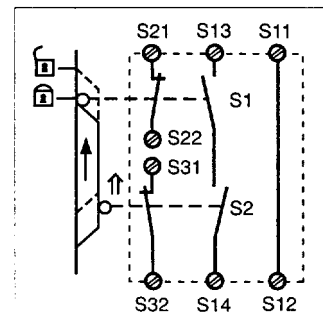
2 channel safety gate control through 2 forced-contact limit switches with position monitoring; Possible application:  
For safety purposes - a higher degree of safety when accessing machinery. Safety interlocking ensures no dangerous machine movement occurs.



### Example 6

2 channel safety gate control through 2 forced-contact limit switches combined in a circuit with function and start testing facilities.

Possible application:  
For monitoring purposes on automated manufacturing installations and on machines with operator contact.

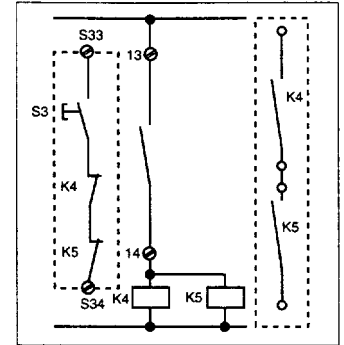


## Feedback Control Loop

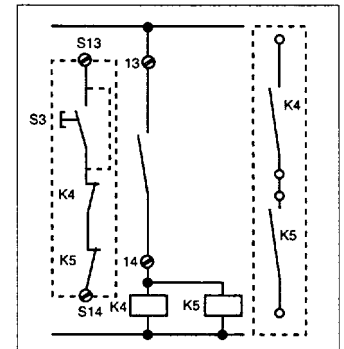
If required, the number of output contacts on the PNOZ X3 can be increased using external relays/contactors (>5 A).

The function of the external relays may be monitored by connecting N/C contacts in series to the reset circuit. The terminals are factory equipped with a link.

### Example 7 With monitored reset



### Example 8 Without monitored reset



## Example for Semiconductor Outputs

