

## Overview

Unlike conventional PNOZ units, units in the PNOZelog product range are predominantly electronic in structure. The safety and auxiliary outputs use semiconductor technology, which means they require no maintenance and are wear-free. For this reason, the PNOZelog-range is also suitable for applications with frequent operations or cyclical functions.

The electronic structure makes the units flexible. Parameters on a unit can be set to suit a number of application areas. The parameters are set through the wiring (e.g. jumpers). With the correct circuitry it is possible to achieve categories 2, 3 and 4 in accordance with EN 954-1.

Units in the PNOZelog-range can be linked directly via the outputs and via special inputs, which enable both a logic AND and a logic OR connection between the units.

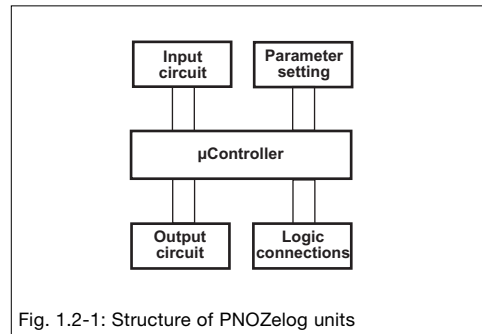


Fig. 1.2-1: Structure of PNOZelog units

## Description

### Safety features

The relay meets the following safety requirements:

- The circuit is redundant with built-in self-monitoring.
- The safety function remains effective in the case of a component failure.
- A disconnection test periodically checks the safety outputs, irrespective of the status of the outputs
- The unit has an electronic fuse.

### Operation

Each unit has one or more specific basic functions, such as E-STOP monitoring, safety gate monitoring. The units react the same, irrespective of these basic functions: If the start-up condition of the specific basic function is met, there will be a high signal at the internal output (see Fig. 1.4-1).

The internal output is AND/OR-linked, depending on the wiring of the logic inputs S35 and S36 (not on the PNOZ e1p). The result of the logic operation can be found at safety outputs 14 and 24.

On units which contain the letter “v” in their name (e.g. PNOZ e1vp), the safety outputs can have delay-on de-energisation. The auxiliary output Y32 is always instantaneous.

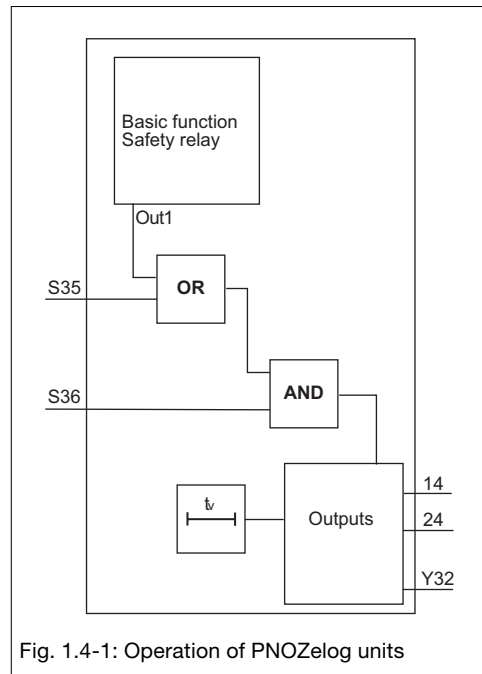


Fig. 1.4-1: Operation of PNOZelog units

### Functions

- If there is a high signal (+24 VDC) at input **Y5** for at least 250 ms, output **Y32** will switch to the **diagnostic function**. It is controlled via a driver that is available as an accessory or that you can create yourself. If input **Y5** is open or low for more than 300 ms, **Y32** will operate as an auxiliary output.

- An **AND and an OR input** (not PNOZ e1p) enable several units to form a logic connection. The inputs have switch delays, which are added together with each unit that is linked.

### Operating modes

The operating modes depend on the individual unit. Please refer to the unit-specific descriptions for details of which operating modes are available.

- **Single-channel operation:** Input wiring in accordance with EN 60204, no redundancy in the input circuit; earth faults in the input circuit are detected.
- **Dual-channel operation:** Redundant input circuit; earth faults in the input circuit are detected (exception: two-hand control devices), with or without detection of shorts between the input contacts.
- **Automatic reset:** Unit is active as soon as the input circuit and feedback loop are closed.
- **Monitored reset:** Unit is not active until the reset button has been operated and then released. This eliminates the possibility of the reset button being overridden, triggering automatic activation.
- **Detection of shorts between contacts** is enabled by pulsing the input circuits. This operating mode is automatically detected on start-up.

- **Start-up test** prevents an automatic restart when voltage is removed and reapplied. The unit checks whether safety gates that are closed are opened and then closed again when supply voltage is applied.
- **Increase in the number of safety contacts available** by connecting a contact block (e.g. PZE X4.1P) or external contactors.
- **Two-hand operation:** The two-hand control device must be activated by operating two buttons simultaneously. If one or both of the buttons are released, it interrupts the control command to close the press. The closing movement can only be restarted when both buttons have returned to their start position (released) and are operated again.