

Historical overview of safety relays PNOZ

PNOZ: Growing with the state of the art

PNOZ safety relays have been on the market for over 30 years and in that time have proven themselves in millions of industrial applications worldwide. Safety relays from the various PNOZ ranges monitor safety functions such as E-STOP, safety gates, light barriers, light curtains, two-hand control devices, pressure-sensitive safety mats, speed, standstill and many more. PNOZ is regarded across the world as the epitome of safe, reliable evaluation devices. With numerous ongoing developments, those first PNOZ devices have become complete product ranges for countless applications.

[Historical overview of safety relays PNOZ: PNOZclassic]

PNOZclassic: One relay per function

In the eighties, the age of relays with mechanical wire coil drew to a close. 1987 saw the birth of the original PNOZ: As the first patented safety relay, PNOZclassic created a milestone in safety technology that many others were to follow. In those days PNOZclassic was still olive green, wide by comparison and could cover just one safety function. It was followed in 1996 by the PNOZ X range of safety relays: more robust, significantly smaller and equipped with plug-in terminals, even today this safety relay is still monitoring safety functions such as E-STOP, safety gates and light curtains. The technology is based on voltage-free, electromechanical contacts in 2 relay technology. One safety relay is used per function.

[Historical overview of safety relays PNOZ: PNOZ X]

PNOZ X: with plug-in terminals

PNOZ X safety relays in sizes of 22.5 mm to 90 mm and with two to eight switch contacts quickly developed into a product range.

Historical overview of safety relays PNOZ

They can be used to implement delayed and instantaneous contact expansion modules, safe timers, safe monitoring relays for standstill, speed and other functions. Thanks to plug-in terminals, for the first time users could benefit from a fast and simple exchange.

[Historical overview of safety relays PNOZ: PNOZelog]

PNOZelog: with safe semiconductor outputs

As technology develops, the demands on automation and safety technology increase. PNOZelog followed in 2000 – the first safety relay with safe semiconductor outputs. PNOZelog is used to monitor from one to two safety functions, combining the experience of electromechanical safety relays with the advantages of modern electronics. Advanced diagnostic options are new, as is the option to connect individual devices via logic AND/OR functions to form interlinked safety functions.

[Historical overview of safety relays: PNOZsigma]

PNOZsigma: versatile, including for “special assignments”

The PNOZsigma safety relay was added to the Pilz range of safety relays in 2006. The compact safety relays combine many years of experience with the very latest safety technology. The universal concept of PNOZsigma offers numerous benefits; PNOZsigma devices are in use across industry. With widths starting from 12.5 mm, PNOZsigma can also be used in places where space is scarce. PNOZsigma safety relays combine multiple functions in one device: start type, connected sensor type and time functions can be set via a rotary switch directly on the front of the device.

Devices such as PNOZs30 for speed monitoring or PNOZs50 – the “brake sigma” – stand for high availability and offer quick, simple diagnostics via an additional display, which supplements

Historical overview of safety relays PNOZ

the clearly legible LED display on the front of the device on both products in this range.

PNOZ s50 can provide safe, contact-free and therefore wear-free control of two powerful brakes simultaneously. So it ensures the required level of safety, particularly on vertical axes: on loading and unloading gantries, machine tools, lifting devices and in stage technology, for example, a suspended load's own weight may be enough to allow the axis to fall unintentionally. The safety relay PNOZ s50 with E-STOP function is designed to control holding brakes or safety brakes in the 24/48 Volt DC range on vertical axes up to PL e or SIL CL 3. The special feature about this market development was that, from this point, two brakes can be controlled simultaneously using one safety relay - including brakes from different manufacturers.

[Historical overview of safety relays: PNOZ s60]

PNOZ can also monitor voltage

PNOZ s60 acts as a safe voltage monitor: The safety relay is used to monitor the de-energised state of plant and machinery in accordance with US standard UL6420. PNOZ s60 is particularly suitable for use in applications that require a safety lockout system (SLS).

New, sophisticated devices and modules have continuously been added to the product ranges PNOZ X, PNOZelog and in particular PNOZsigma over the last few years; these ranges are still in use successfully today.

[Historical overview of safety relays: PNOZcompact]

Historical overview of safety relays PNOZ

PNOZcompact: slimline, ideal for light barriers

With a width of just 22.5 millimetres, PNOZcompact set a new benchmark in the control cabinet. This device has been available since 2012 and is used to monitor E-STOP, safety gates and light barriers. PNOZcompact provides maximum safety up to Performance Level (PL) e or SIL 3; these safety relays are optimised for functionality and are at home in all areas of engineering. PNOZ c2 is particularly suitable for safe monitoring of Type 4 light barriers such as the PSENopt from Pilz or sensors with OSSD outputs in accordance with EN 61496-1. PNOZcompact is equipped with fixed, integrated push-in spring terminals, which enable simple, quick installation without the use of tools. In terms of reaction time, the PNOZ c2 is the quickest among the PNOZ devices.

((5,593, incl. thematic references in square brackets))