





▶ Continued from page 1

The base unit is then attached to the top hat rail and simply wired up. In this way you can save more than 40 % of your time and costs in all engineering phases, from planning through to maintenance.

#### As simple as a PNOZ ...

Many applications can be implemented with just the base unit. Both safety and standard control functions are simple to configure using 20 configurable

inputs, four semiconductor outputs and two relay outputs.

#### ... as flexible as a controller

If you wish to extend the modular system, various expansion modules are available, which can be used in any combination to suit your requirements. Also available are input and output modules for safety and standard control functions, fieldbus modules for connection to all common fieldbus systems, plus speed and standstill monitors. Approved

press blocks, muting functionalities and many other features make the PNOZmulti as simple to use as a PNOZ and as flexible as a controller.

#### PNOZmulti – Certified worldwide

PNOZmulti conforms to many standards and has numerous approvals, such as TÜV approval to EN/IEC 61508/SIL 3. The requirements of the new FDIS 62061 are met as well as those of EN 954-1. This is confirmed through BG approval up to and

including Category 4. UL/cUL, NFPA79, CCC and GOST make the system easy to apply internationally.

#### PNOZmulti Safe and economical in all industries

PNOZmulti is used in numerous applications across the widest range of industries. The intelligent dovetailing of safety-related and standard control functions, a modular concept and simple configuration mean the system can control from the simplest

machine to distributed plants. PNOZmulti is so flexible that it can also be adapted to suit your application – guaranteed. The following pages describe applications implemented using PNOZmulti. In keeping with the motto: many functions – one solution!

#### In a nutshell

The modular safety system PNOZmulti combines high flexibility with ease of operation. The most economical solution for applications of average complexity, PNOZmulti is ideal for covering areas requiring four safety functions and above. Standard control functions can also be resolved simply. PNOZmulti is the ideal solution for many areas of mechanical engineering. It is suitable for use on series machines, machining centres, tool, packaging and print machinery, robot cells and production lines.



Illustration: Pilz GmbH & Co. KG

Example for a packaging machine: Safety and standard control functions are configured on the PC and stored on a chip card, which is inserted into the base unit

# With X-ray vision

## X-ray scanning system for containers at airports operates safely with PNOZmulti

When passengers at airports walk through metal detectors and luggage passes through gate locks, the chances are that the systems in use are made by Smiths Heimann of Wiesbaden. The company belongs to the Smiths Group and has built up a worldwide reputation with its X-ray security systems.

Planes carry cargo as well as luggage, and any security risk in this area must also be eliminated. The massive containers require the use of larger X-ray scanning systems, which also support customs inspections.

To inspect cargo containers at airports, Smiths Heimann developed a new X-ray scanning system, which is designed to be integrated into automatic cargo

feeder lanes. The complex plant had stringent safety requirements. An optimum solution was found with the PNOZmulti. The

modular safety system offered the necessary flexibility, the opportunity to link safety functions simply through logic, plus

comprehensive diagnostics. And it helped to save space too. PNOZmulti passes information on all the plant's safety switches to

the master controller. In conjunction with Pilz non-contact, magnetic safety switches PSENmag it monitors all the entry and exit doors, as well as access and maintenance gates.



Photo: Airport Berlin-Schönefeld GmbH



# Making sure there's no fire

## PNOZmulti monitors a UV lamp for standstill on an inkjet printer

We come into contact with these products every day: at home, at work, out shopping, in the evening at the cinema. Refrigerators, posters, flags, office equipment, textiles, even fire doors – these can all be printed. It all becomes possible with the high-performance flat-bed inkjet printer Rho 160 from Durst Phototechnik, based in South Tyrol.



Photo: Durst Phototechnik AG

This amazing feat is possible due in part to a UV-curing ink, which is dried using a UV lamp. To ensure the ink dries quickly, the lamp travels continually across the printed material. If the lamp stops, there is a risk that the

printed material, and as a result the printer, could catch fire. To avoid this, the modular safety system PNOZmulti is used to monitor the movement of the lamp for standstill. If this is detected, the PNOZmulti switches off the

lamp after a period defined by the user.

PNOZmulti enables a safe, cost-

effective and flexible solution. The expensive special solution that had been used previously was no longer required. There was no need to change the existing application. Once configured, the created configuration can be copied as often as necessary. A huge cost benefit for series applications. So the printers from Durst can continue printing lots of beautiful colourful images, without risk.

## What's new

### Base unit PNOZ m0p – The compact solution ...

... for machinery on which three to six safety functions are monitored.



PNOZmulti is economical from just three functions. Your costs are even further reduced through simple diagnostics, for example via fieldbus modules for all common fieldbus systems. Particularly suitable for use on small machines, the PNOZ m0p manages without any expansion modules. You can enjoy all the benefits of the safety system, including the complete functionality of the PNOZmulti Configurator, for an excellent price/performance ratio.

# Showing a profile

## PNOZmulti takes care of safety on a tyre building machine

Whatever the road conditions, each requirement has an optimum tyre to ensure the correct grip. The first pneumatic tyre was designed for a tricycle. John Boyd Dunlop assembled a rubber tube on to a round wooden wheel, wrapped in canvas and with a teat as a valve, and pumped it up with a football pump.

Since those days, technology in tyre production has continually developed. As the leading German tyre manufacturer, Dunlop has

shaped the history of tyre technology for more than 100 years. Every day more than 40 000 newly manufactured tyres roll out from the Dunlop factories in Hanau and Wittlich, as well as the factories in Fürstenwalde and Riesa in eastern Germany. From summer, winter or all-season tyres for cars, through to tyres for commercial vehicles and motorcycles. The production process includes the use of tyre building machines to manufacture carcasses – a tyre's supporting base. Manufacturing takes place in a

clock-controlled sequence, which is composed of automatic and manually operated stages. The plant is both pneumatic and power driven, depending on the function. PNOZmulti guarantees that all potentially hazardous movements on the tyre building machine are monitored safely. The safety system monitors emergency stops, access gates and safety light barriers as access protection, and also monitors a laser scanner in front of the building



drum. All the safety functions were easily configured via software. And PNOZmulti is flexible enough to accommodate subsequent extensions to the plant.

### Overall solutions ...

... that combine safety with standard control-functions reduce your costs.

In the PNOZmulti Configurator, you can use this symbiosis simply and flexibly with just a few clicks of the mouse. Our hardware range now includes a new input module with eight inputs for monitoring standard control functions. Cost benefits guaranteed.



# That's the right way round

## PNOZmulti makes sure all runs smoothly on universal milling machines

Deckel Maho Seebach in Thüringen manufactures small and medium-sized CNC uni-

versal milling machines and machining centres.

On the machine tools, safe monitoring of the spindle's rotational speed, axis speed and standstill plays a key role, alongside static safety functions such as emergency stops or safety gates. For this reason the PNOZmulti safety system includes a safe speed monitoring module, which monitors up to eight different rotational and axis speeds, plus standstill and direction of rotation. To do this the PNOZmulti uses the proximity detectors or incremental encoders within the measuring system; these are connected to the speed monitor via an adapter. Limit values for the spindle's rotational speeds and axis speeds are set via the configuration tool.

With the PNOZmulti safety system, many of the machine tools made by Deckel Maho Seebach already use a standardised safety platform that covers all the necessary safety functions.

So the same safety system is always available, no matter who supplies the CNC and drive controller. This makes processes simpler and saves times and money.

### The new safe speed monitor PNOZ ms2p ...

... enables speed and standstill to be monitored via proximity detectors or incremental encoders. Two axes



are monitored using one module, up to and including Category 3. PNOZ ms2p is independent of the supply voltage of the incremental encoder.



Photo: Deckel Maho Seebach



# Artistic decorations, safely

## PNOZmulti makes the carousel safe

You would normally associate a more artistic activity than safety with the decoration of objects. However, if objects of daily use need to be decorated in large quantities, this quickly

turns into a complex production process.

This is one of the main business areas of the Italian company Fermac, who are based in Parma

and who specialise in the manufacture of "carousel machines". An object can pass through up to eight different screen printing phases in eight work stations. The main component on these



operators work simultaneously on a machine but without visual contact, so that a control command from one could endanger the other.

The PNOZmulti safety system monitors the enable switch, operating mode selector switch and safety gates and aligns their status. This guarantees safe operation at reduced speed when the safety gate is open, for test runs or maintenance work.



Photos: Fermac S.R.L.

machines is a rotating worktable, which is divided into individual stations.

Each sector of the carousel is safeguarded by safety gates in order to protect operating personnel. This safety solution may sound simple, but it isn't. The situation may arise in which two

# New parcel logistics cover that last mile

## PNOZmulti monitors self-service parcel delivery systems

The so-called last mile is to parcel transportation what the final spurt is to competitive sport. But this is precisely where the hurdles are, when the recipient is not available. Each year in Germany alone, attempts to deliver millions of parcels fail over that last mile.

Help is at hand in the form of efficient self-service parcel delivery systems, such as the KeBox system made by the Austrian company KEBA. The customer is informed that a parcel is waiting via SMS; he can then collect the parcel from "his" parcel delivery system round the clock.

Safe automation on the KeBox is guaranteed by the PNOZmulti safety system, which monitors the closed position of the gate valves on the parcel compartments and also monitors standstill on the parcel carousel behind them. Multifunctionality brings benefits – numerous safety functions as well as safe standstill and speed monitoring can be implemented with just a single unit.



Photo: Deutsche Post AG

## ► Imprint

# pilz

more than automation  
safe automation

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