



## Complete solutions for safe automation

**piltz**  
more than automation  
safe automation

Excellent components  
Open systems  
Professional services



## ► Complete solutions for safe automation

What matters now more than ever is to design safe automation economically.

Universality, openness and a secure future for the applied solutions play a key role in purchasing decisions. If an economical solution

is to be found for an automation function, first-rate advice is what matters.

Before and after purchase. For safe automation is more than just a product. Safe automation is thorough expertise, which is demonstrated partly in innovative products, and partly in advice, engineering and training. That's why you can always expect more from Pilz: overall solutions, tailored to your requirements.

Opt for that certain something extra:

- Pilz – more than automation – safe automation.



professional services

open systems

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excellent  
 components



# ► Excellent components, open systems, professional services

Whether you need a single product or a total solution.

Whether machine or plant, centralised or decentralised, safety or standard control function. At Pilz you will find your own individual,

economical safety solution.

And you can remain independent, because Pilz products are fundamentally open and compatible. To make sure you find your solution quickly, we stand right alongside you with our comprehensive range of services.



professional services

excellent components  
open systems

nal services

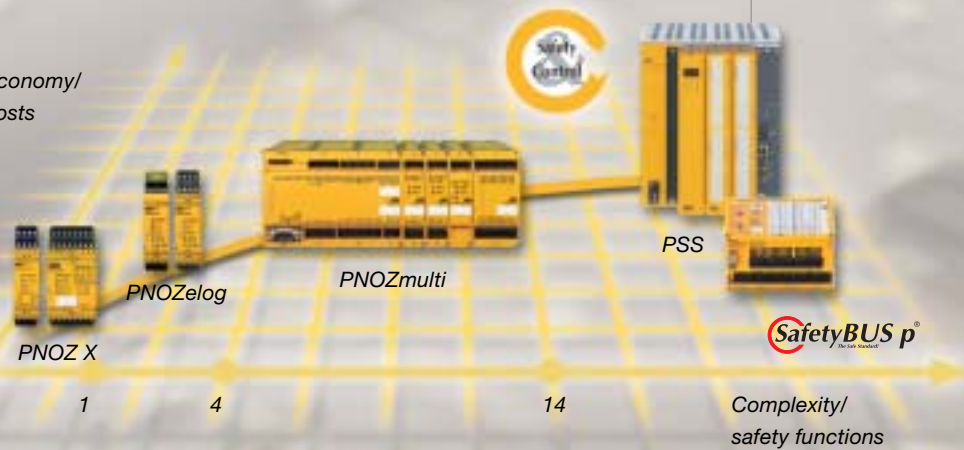
**SafetyBUS p**  
 The Safe Standard!



open  
 systems



Economy/  
 costs



cellent  
 ponents

**SafetyBUS p**



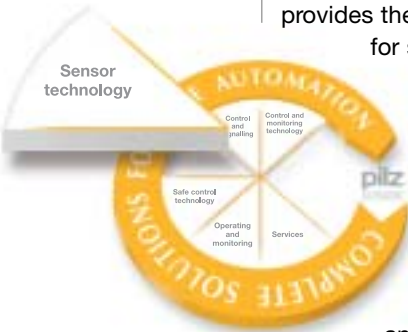
## ▶ Coded safety switch PSENcode

As a system supplier, Pilz provides the optimum solution for safe, economical safety gate

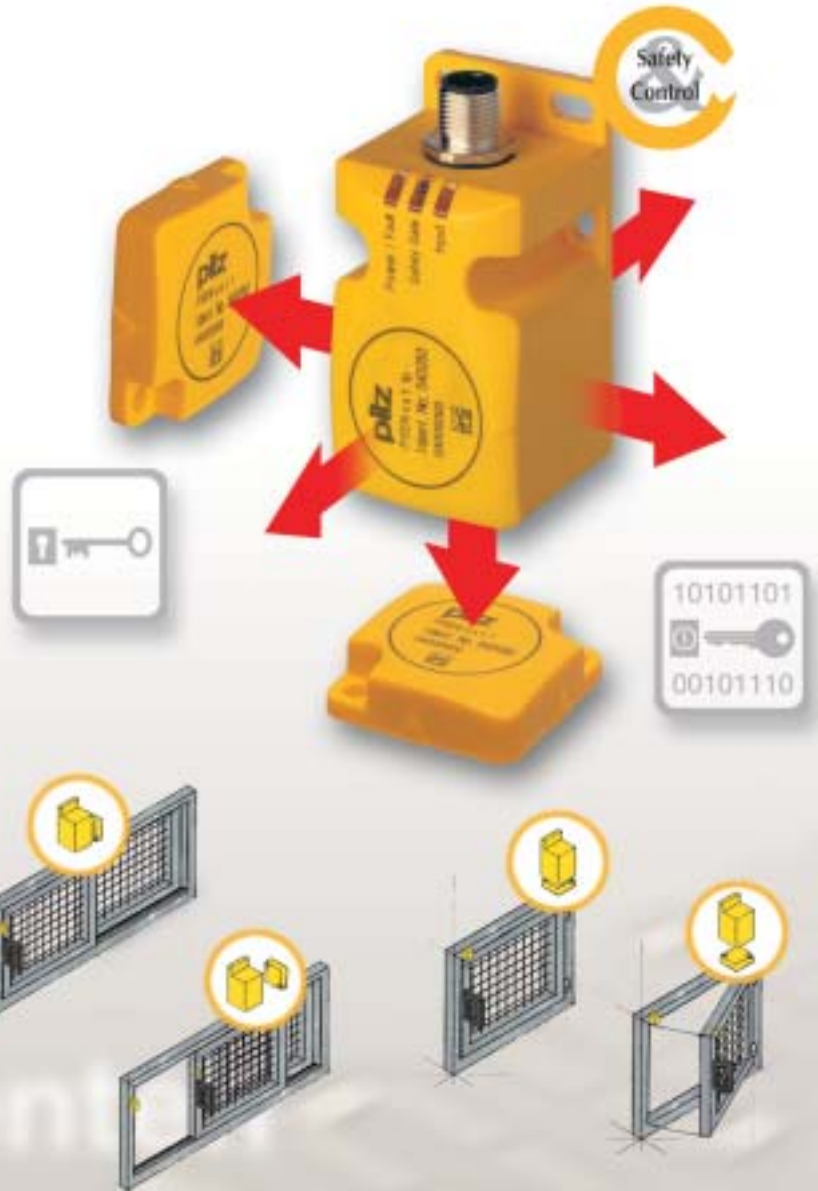
monitoring: non-contact safety switches on the input side, with proven evaluation devices, including relay, semiconductor and power outputs, on the output side. Evaluation

devices include the extensive PNOZ-range of safe relays, PSS programmable safety systems and the safe, open bus system SafetyBUS p.

The range of magnetic safety switches PSENmag now includes the new coded safety switch PSENcode.



*A co-ordinated, complete solution: safety switch and corresponding evaluation device*



### The very latest: non-contact coded safety switch PSENcode

The new PSENcode is used for safe, non-contact safety gate monitoring. With just a single switch you can achieve a high level of safety, up to category 4 of EN 954-1. It is also quick and easy to install, as there is no need to wire a second switch! The five directions of actuation and long switching distance on the PSENcode ensure maximum freedom for installation.

Thanks to the coding of the switch and its counterpart, the PSENcode provides excellent protection against manipulation. A unique, fully coded version of the switch is even available for particularly demanding safety requirements. The unique assignment of the switch and its counterpart blocks any manipulation of the safety gate. Both switch types are also suitable for more complex plant or machinery, as it is possible to

connect not just one but more than 10 switches in series. This saves on wiring, while providing maximum safety, and the highest level of integral protection against manipulation. With IP67, the PSENcode is suitable for the pharmaceutical and food industry. It is ideal for use on metal processing machines and plants.

Enquiry no. **1**

## ► Pilz relays

### Economical safety is our strength

Pilz relays control and monitor standard control and safety functions economically. They can be used across industry on the widest range of plant and machinery. Electrical safety is at the very heart of the S-range monitoring relays. Voltage, phase sequence, current or standstill can be monitored, for example. Safe PNOZ relays represent the standard in the world of automation. Assigned to functional safety, they control and monitor safety functions such as E-STOP, safety gate monitoring or two-hand operation.



### Sensorless safe standstill monitoring

The safe relay PSWZ X1P monitors standstill without the use of any external components such as rotary encoders. The standstill monitor can even be used to monitor servo drives. Additional features: plug-in terminals with cage clamp or screw connection. Safe standstill detection safeguards man and machine – protecting you and your investment.

Enquiry no. **3**



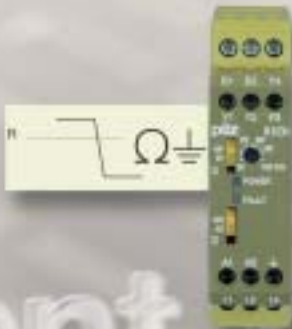
Now in  
45 mm housing!



### Insulation monitoring with the S-Range

The S1EN electronic monitoring relay can be used for insulation monitoring in accordance with EN 61557-8. Its use helps to achieve greater availability in hospitals, particularly in operating theatres. S-Range – Taking control of every situation.

Enquiry no. **2**



Complies with  
EN 61557-8



## ► Safety of man and machine

### Safe PNOZ relays – Now with innovative cage clamp technology

Save time and money when wiring. Use plug-in terminals. In addition to terminals with screw connections, PNOZ X and PNOZelog relays

are now also available in versions with a cage clamp connection.

Benefits to you:

- Faster wiring as there is no need to fit crimp connectors
- Unique: two cables per terminal thanks to double level terminal blocks
- Great contact security – predefined clamping force means there's no need to tighten up

Why not switch to terminals with a cage clamp connection? Existing units with plug-in screw terminals are compatible – you won't need to change your circuit diagrams. PNOZ safety relays – the optimum safety solution for each application!

Enquiry no. **4**



### Safe monitoring of safety mats, with BG approval

Safe, electronic PNOZelog relays can be used to monitor safety mats up to category 3. Pilz can offer a complete BG-approved solution in conjunction with Mayser SM/BK type safety mats.

PNOZelog provides the following benefits:

- Less wiring due to logic function links (AND/OR)
- Maintenance-free and long-lasting thanks to semiconductor technology

Enquiry no. **5**



Tread safely with  
PNOZelog!





# ▶ PNOZmulti, many functions – one solution

## Ingeniously simple – simply ingenious

PNOZmulti is multifunctional and freely configurable. Instead of intricate wiring, the circuit is easily generated on the PC using a graphics configuration tool.

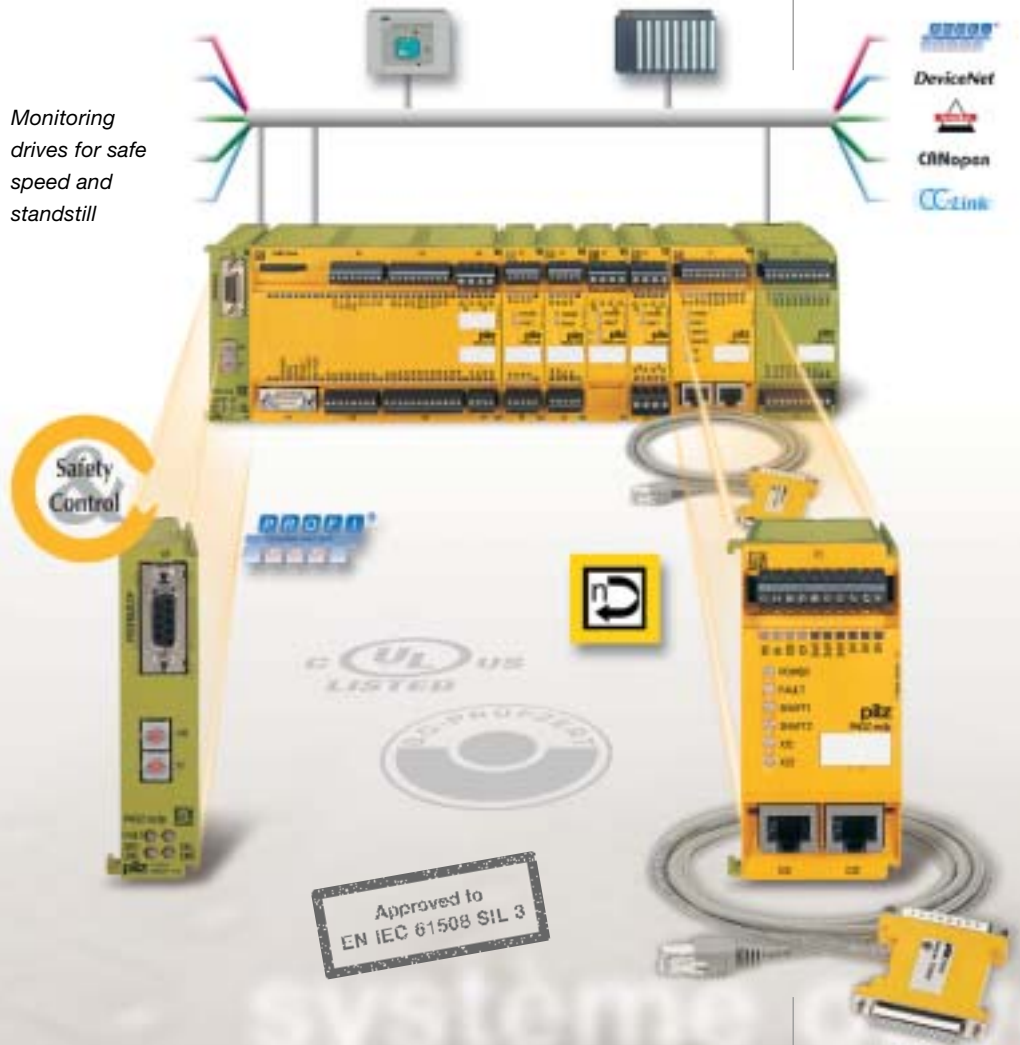
## Child's play to configure

All safe functions for monitoring E-STOPS to speed are simply configured on the PC – including standard functions.

## Safe and economical

Using PNOZmulti you can control your plant and machinery both safely and economically. Greater productivity through time and cost savings – PNOZmulti can provide potential savings of up to 40%! Why not see for yourself.

*Monitoring drives for safe speed and standstill*



Planning,  
configuration

Commissioning

Operation,  
maintenance

Hardware



*40% cost saving  
in all engineering  
phases*

## We've got the knack

PNOZmulti enables drives to be monitored for speed and standstill. Suitable for set-up and automatic mode up to category 3 of EN 954-1, PNOZmulti can monitor up to eight drives.

*Free demo  
version available!*

## Always in the picture

Fieldbus modules for connection to all common fieldbus systems are available for user-friendly diagnostics.

Enquiry no. **6**





## ▶ PSS® programmable safety systems

The PSS/SafetyBUS p-range includes compact and modular programmable systems, communication modules and software tools. It provides the appropriate solution for safety-related requirements such as emergency stop/safety gate monitoring or two-hand operation, and also for controlling standard functions on your plant or machine. In consultation with its customers, Pilz has actively developed and optimised the PSS/SafetyBUS p-range, adapting the system to suit current market requirements. The result is clear to see.



### High speed, maximum communication with the new compact systems

Fast and flexible: 12 new compact systems from the PSS 3047-3 and PSS 3075-3 series expand the product portfolio of the PSS/SafetyBUS p-range and ensure that your machinery is controlled safely and economically. You can also enjoy the benefits of increased user-friendliness and expanded application options:

- ▶ Faster, with up to five times better performance thanks to:
  - Increased processing speed on time-critical functions
  - Faster program processing
  - Expanded memory
  - Optimised diagnostics
- ▶ More flexible thanks to the ability to select between compact versions with:
  - SafetyBUS p interface
  - Ethernet interface
  - Standard fieldbus interfaces
  - Safe analogue input

Benefit to you: high flexibility and economy

Enquiry no. **7**

it  
components

## ▶ Safe, open bus system SafetyBUS p<sup>®</sup>

SafetyBUS p is just five years old but is already the standard for safety-related networking. Since its market launch in 1999 the safe, open bus system has successfully established itself worldwide:

- ▶ 100 000 installed network nodes,
- ▶ 5 000 applications implemented in the widest range of industries,
- ▶ 50 products for SafetyBUS p

This provides impressive evidence of its functionality and acceptance.

### **Networking over double the distance and with double the subscribers, with SafetyBUS p**

Fast and flexible: The new compact programmable systems from the PSS SB2 3006-3 series for SafetyBUS p will shortly be available with two SafetyBUS p interfaces:



Limitless possibilities with the new compact programmable safety systems for SafetyBUS p:

- ▶ Simplified network structure
- ▶ Double the network extension with just one system
- ▶ Double the number of bus subscribers
- ▶ Double the number of safe inputs and outputs

Benefit to you: high flexibility and economy

Enquiry no. **8**

- ▶ Faster, with up to five times better performance thanks to:
  - Increased processing speed on time-critical functions
  - Faster program processing
  - Expanded memory
  - Optimised diagnostics
- ▶ More flexible thanks to the ability to select between versions with:
  - 2 SafetyBUS p interfaces
  - Ethernet interface
  - Standard fieldbus interfaces



*SafetyBUS p: now you can network up to 126 subscribers over up to 7000 m*

open systems



# ▶ Safe, open bus system SafetyBUS p®

## New Ethernet communications interface and PSS WIN-PRO system software



Communicative and simple: The new Ethernet communications interface expands the product portfolio of the PSS/SafetyBUS p-range.

Enjoy the benefits of improved communication options and extended application areas for the compact safety systems in the PSS 3047-3, PSS 3075-3 series, plus the second generation PSS SB 3006-3 ETH-2 with integrated Ethernet function:

*Simple parameter setting and programming via Ethernet*

- ▶ In communication terms, the new Ethernet interface enables the non-safety-related exchange of process and diagnostic data:
  - To other Pilz controllers
  - To controllers from other manufacturers
  - To graphics systems
  - To the master computer at control level

- ▶ Simple, because parameter setting and programming can be done directly via Ethernet, without a serial interface. This means:
  - Optimised maintenance and diagnostics, even from a distance – centralised access to several controllers
  - Reduced travel times, both within the plant and when servicing is required, thereby reducing costs
  - Less organisational work, as the program sources are managed on a central server
  - Increased safety and overview of the current status of programs and projects



These new communication options are supported by the powerful PSS WIN-PRO system software for the PSS/SafetyBUS p-range. The new program version is available now, so why not start enjoying the benefits of making configuration and program generation so much easier:

- ▶ IL, LD and FBD editor
- ▶ Command browser for IL, LD and FBD
- ▶ Integrated help function
- ▶ Extended SafetyBUS p diagnostics

Benefit to you: Greater economy and optimised diagnostics

Enquiry no. **9**

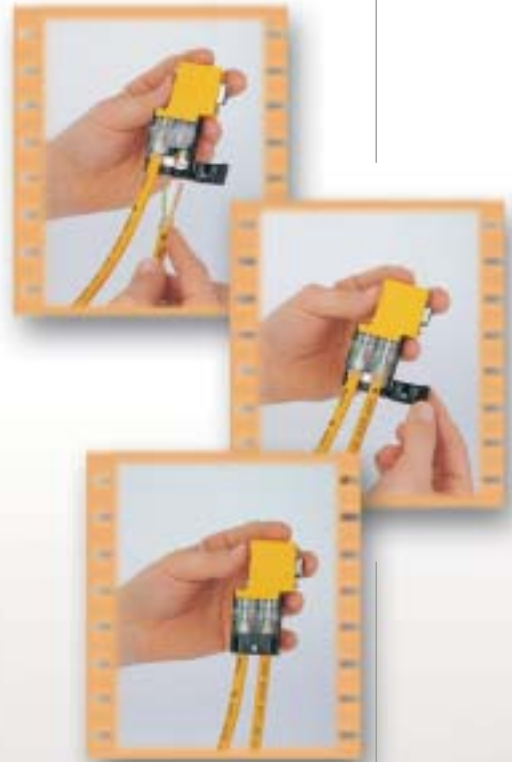




### Bus connector with quick-connect technology

Simplest possible installation thanks to IDC quick-connect technology – that's the main benefit of the new PSS SB SUB-D4 bus connector for SafetyBUS p. It will also be available shortly as a diagnostic connector PSS SB SUB-D4-DIAG. Installation is performed in three stages: insert the cable, press down the clamp body, connect the strain relief. Benefit from:

- ▶ A significant reduction in installation work
- ▶ Considerable time savings
- ▶ Higher plant availability
- ▶ Reduced costs
- ▶ Greater cost effectiveness



*Simple parameter setting and programming plus extensive diagnostic functions*





## ► SafetyBUS p Club International e.V.



### SafetyBUS p Club International e.V. writes a five year success story

In 2004 the SafetyBUS p Club International e.V. can look back on 5 successful years. As the forum for safety – for manufacturers, integrators and users – it sets the standard for safety technologies and continues to develop that standard on the basis of the safe, open bus system SafetyBUS p.

Its success speaks for itself:

- Currently 60 members
- In 10 countries
- On 4 continents
- Wide range of products that can be connected to SafetyBUS p:
  - Robots
  - Light guards
  - Radio routers

### Request a copy now – new edition of the technical journal “Praxis Profiline SafetyBUS p”

The second edition of the journal “Praxis Profiline SafetyBUS p” is being published in time for the fifth anniversary of the safe, open bus system SafetyBUS p and the SafetyBUS p Club International e.V. Find out more about:

- The system
- The organisation
- The applications
- The products
- The services

Available in bookshops worldwide, priced EUR 21.00, ISBN 3-8259-1916-6. Or directly from the SafetyBUS p Club International e.V., telephone number: +49 711 3409-118.

Enquiry no. **10**



## ► Now with even greater performance

The PMI product range provides comprehensive solutions for diagnostics and graphics:

- Diagnostics on PSS programmable safety systems
- Options to connect to standard controllers
- Open platform for running your own software

Equipped with the latest processor technology and expanded functionality, PMI sets new standards, providing greater flexibility as you design your projects.

### Greater freedom in the design of your applications

High performance, a new 15" display diagonal and additional interfaces provide more room for manoeuvre during configuration. New features:

- High performance at lowest energy consumption levels: 400 MHz Intel® XScale CPU
- Embedded operating system with the latest functions: Windows® CE.NET (v4.2)
- Further options for a clearer overall display: 15" TFT display
- Efficient connection to fieldbus systems: internal fieldbus interfaces
- Powerful communications interface: 100 MBit/s Ethernet

Optional interfaces are available to complete the range, such as external VGA, a second Ethernet interface and others. To ensure the operational phase runs smoothly, Pilz has largely foregone the use of mechanical wearing parts. The compact design, whether 5.7", 10", 12" or 15", makes all the systems ideal for machine-oriented applications.



### Reliable, Pilz-quality hardware

Another feature of the PMI product range is the complete in-house development of the CPU board and the adaptation of the Windows® operating system CE.NET. The quality level meets high safety technology standards. Benefits can also be seen in the availability and adaptability of the devices.

*New: integral fieldbus interface and second Ethernet interface (optional)*

### Rapid diagnostics – short downtimes

The PMI systems are designed to be ventilation-free and heat-stable as well as benefiting from significantly increased performance. This enables shorter reaction times and greater availability of your diagnostics or graphics system. Benefit to you: Shorter downtimes across your plant





# ► Professional operating and monitoring

## PMIvisu – The PMI product range with pre-installed PMI-PRO graphics software



Are you looking for compatible graphics software as well as high-quality hardware? Then PMIvisu offers you a solution: the proven hardware of the PMI operator terminal in conjunction with the powerful Pilz graphics software PMI-PRO!

PMI-PRO provides the ideal base for a variety of graphics solutions:

- Save time during configuration: it's quick, easy and intuitive
- No hidden costs: unlimited number of I/O points
- Worldwide use: online language switching
- Independent, varied application: wide range of drivers for PLC connection
- Communication beyond system limits: several PLC drivers can be connected simultaneously
- Secure investment on your graphics: flexible, expandable, with network functionality

## PMIopen – open for your software

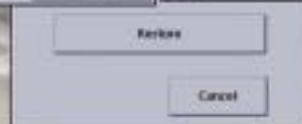
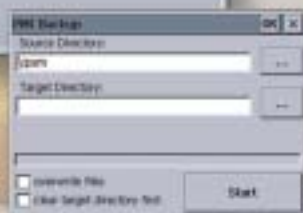
Are you looking for reliable hardware for your software? PMIopen offers you the solution – proven hardware ready for installing your own software. PMIopen provides the universal platform for your software or graphics:

- Installation support through Microsoft® ActiveSync
- Extensive set-up functions and additional system tools
- Cost benefit through the use of familiar software
- New functionalities through Windows® CE.NET

An extensive diagnostic application has been created based on PMI-PRO, specifically for diagnostics on PSS programmable safety systems. Predefined plain text messages and graphical overviews help to simplify configuration. So in any situation it is possible to obtain a quick overview of the current status of a plant or machine.

Enquiry no. **12**

Enquiry no. **11**

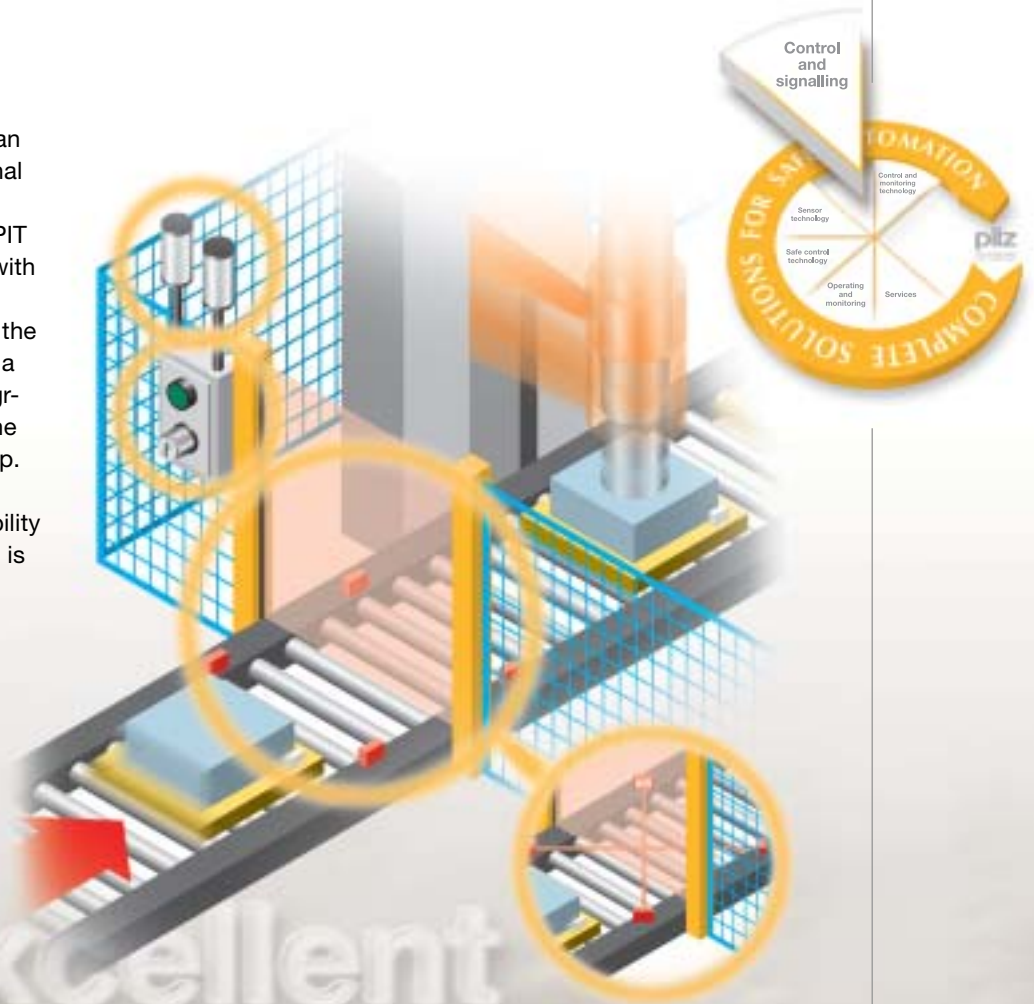




## ► Smooth production with muting

### Control and signalling with the PIT product range

As a solution supplier, Pilz can also provide control and signal devices for use in a rugged industrial environment. The PIT product range can be used with the whole Pilz range of safe control technology. Whether the evaluation device you use is a PNOZ safety relay, PSS programmable safety system or the safe bus system SafetyBUS p. Pilz products guarantee maximum safety. The availability and reliability of your system is also increased.



excellent  
components

### Smooth production with muting function

Muting is the safe, automatic and temporary suspension of an electrosensitive protective device.

Muting is used to transport material into and out of a hazardous area. In the process, light guards are generally suspended temporarily, while muting lamps signal their status.

- PIT si1.1 – non-monitored muting lamp for use with PSS
- PIT si1.2 – monitored muting lamp for use with PNOZmulti

Back Pilz and your production will run like clockwork.

Enquiry no. **13**



open system



## ► Pilz – Your Solution Supplier

As a system supplier for the safety of plant and machinery, Pilz offers you more than just a product: you receive a comprehensive service, intensive training and, if required, we can also provide support as you configure, plan and implement your safety-related functions.



### Services related to safety

You can meet your responsibility as a manufacturer/operator of plant and machinery and save time and money.

Pilz can help you configure your plant and machinery in accordance with the current standards and regulations or help you upgrade existing plant. Pilz can undertake the whole process or just parts of the process, from planning, project management or implementation. We can check the condition of your plant, perform a risk assessment, work out suggested improvements and present a solution that is tailored to meet your requirements. If you wish, Pilz can also install the necessary components for you, directly on site.

### Success through training

Do you wish to expand your knowledge or keep staff up to date with events?

Our seminars use practical examples to present and communicate current issues, such as the safety-related upgrade of plant and machinery, new standards or CE-marking. Experienced, well-trained speakers are also able to answer your specific questions.

Naturally we also offer product training courses.

Information on our highly topical range of training courses is available on the Internet at [www.pilz.com](http://www.pilz.com).

Enquiry no. **14**

*Benefit from our expertise*



## ► Find out more!

Would you like to learn more about the components, systems and services featured here? Then simply complete the form below and return it to one of the Fax numbers overleaf.

Yes, please send me information on the following areas:  
(please tick the enquiry numbers)

- 1     2     3     4     5     6     7  
 8     9     10     11     12     13     14

Company \_\_\_\_\_

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7-4-2-009-04/04



Always  
up-to-date:  
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**pilz**  
more than automation  
safe automation