Automation
Components – Systems – Services
Total customer proximity

Pilz has a tradition as a family-run company stretching back over 60 years. Real proximity to customers is visible in all areas, instilling confidence through individual consultation, total flexibility and reliable service. Worldwide, round the clock, in 26 subsidiaries and branch offices.

Benefit-oriented innovations

Our customer proximity is the basis for our innovative strength. We are always oriented towards current market requirements, which is why we can offer innovative automation solutions in every case. Customer proximity and innovation belong together and are mutually dependent.

Overall solutions

Pilz is your solution supplier for all automation functions. Including standard control functions. Pilz developments protect man, machine and the environment.

- Sensor technology
- Control technology
- Networks
- Drive technology
- Operator and visualisation systems
- Software
- Automation system PSS 4000
- Consulting and engineering
- Training

the spirit of safety

With their knowledge, enthusiasm, creativity and courage to take the unconventional route, our staff have made us what we are today: one of the leading brands in automation technology.

More than 1,400 staff, each one of them an ambassador for safety, make sure that your company’s most valuable asset – your staff – can work safely and free from injury.
Based in Corby, Northamptonshire since 1987, Pilz UK now has 30 employees, many of whom are considered to be UK experts in machine safety.

Leaders from the beginning
Since its formation, Pilz UK has been at the forefront of the UK machine safety market. The company recognised at an early stage customers needs for advice alongside products; the machine safety training programme has been successfully established for over 20 years and includes City & Guilds certified courses. In-house experts can also offer full independent safety consultancy services from plant assessment through to systems engineering.

Complete automation portfolio
In recent years, the UK branch has also successfully launched the full portfolio of Pilz products and can now offer and support both safety and standard control automation products for any size of machine or installation.

Industry expertise
Early UK business mainly centered around the Automotive industry, where the company is still strong today. Over the years however, expertise and a strong reputation has been built up in most prolific UK industries such as print and paper; packaging; food and beverage; leisure and more recently oil and gas. Projects can vary from single machines to complete plant overhauls; customers range from SME’s to many high profile household names.

Easy to deal with
Pilz UK has a long established network of partners throughout the UK, however direct business is welcomed and can be fulfilled for any size of order. In 2010 the UK E-Shop was launched and the company can accept Credit Card orders for non-account holders.

Pilz UK looks forward to dealing with you!

Steve Farrow
General Manager
UK Subsidiary

Pilz UK employees receive regular training and support from Pilz HQ.
Safe sensor technology

Webcode 6197

Webcode 6001

Webcode 0307

Webcode 0913

Units for safe position monitoring

PSENini PSENrope

PSENmech PSENcode

PSENbolt

Safe proximity switch PSENini

The safe proximity switch PSENini detects the approach of metallic objects without the use of contacts. It supplies the necessary safe signals via positions and end limits and guarantees a smooth production cycle. PSENini can also generate the pulse for counting tasks or for detecting rotational movements.

Safety switches

PSENmech, PSENmag, PSENcode

Safety bolt PSENbolt

Hazardous machine movements must be stopped when a guard is opened. It must not be possible to either defeat or manipulate these guards. PSEN safety switches meet this requirement and are therefore suitable for monitoring safety gates as well as position monitoring. Thanks to a variety of designs and operating principles they are flexible to use – individually or in series.

For safety gates that are difficult to adjust or in areas where safety gates are frequently opened and closed, protection must be provided against defeat and manipulation, but a long material service life must also be guaranteed. PSENbolt provides a complete solution, comprising safety switch, handle and bolt.

Safe rope pull switch PSENrope

The safe rope pull switch PSENrope is manually operated and is used to safely shut down functional processes that extend over a wide area, such as conveyors. It provides maximum safety, as the emergency stop function can be triggered at any point along the rope.

Pilz sensor technology offers a wide range of components which, in conjunction with Pilz control technology, form a tailored solution and a complete safe, approved system.

Components
Safety gate systems

**Safe hinge switch**
**PSENhinge**

The hinge switch PSENhinge is a safe, complete solution comprising safety switch and hinge, and is suitable for rotatable and hinged guards. Designed as one functional and installation unit, it offers a high level of flexibility in installation, connection and adjustment. It can be integrated directly into the safety gate, so that PSENhinge is particularly space-saving and secure from manipulation.

**Safety gate system**
**PSENslock**

With its combination of safe position monitoring and process guard locking, the safety gate system PSENslock is designed for the highest category applications. The magnetic guard locking device on PSENslock is largely non-wearing, compared with mechanical technologies. PSENslock is also more tolerant to changing environmental conditions, guaranteeing long-term use.

**Safety gate system**
**PSENsgate**

PSENsgate combines safety gate monitoring, safe guard locking and control elements in just one system, guaranteeing the protection of personnel and plant. Additional functions such as emergency stop and escape release are included in the safety gate system PSENsgate. The system is ready to install and reduces the work involved in configuration and installation.
Optoelectronic protective devices

If the production process requires active intervention, there is a high potential risk. Safety light beam devices, light curtains and light grids PSENopt offer greater productivity, while safeguarding access to the work process. Mutting, blanking and cascading open up a range of possibilities for optimum incorporation of PSENopt into your plant. For complex light grid applications, PSENopt SB with integrated SafetyBUS p interface is the right solution.

Safe camera systems

Camera-based protection and measuring system PSENvip

The camera-based protection and measuring system PSENvip is a mobile protection device, which can be used to monitor press brakes safely. When installed on the upper die, the system detects even the smallest foreign body in the protected field between the transmitter and receiver. It is also available as a productive version, combined with the control system PSSuniversal PLC from the automation system PSS 4000.

Safe camera system SafetyEYE

SafetyEYE, the safety technology for 3D zone monitoring, enables barrier-free protection. It combines intelligent sensor technology with effective control. The SafetyEYE safe camera system detects and reports objects that encroach into warning and detection zones, which can be defined in advance. Its reaction is flexible, based on the requirement. A hazardous movement may be slowed down or brought to an emergency stop, for example.
Control technology

Pilz control technology – for safety and standard! A solution for your automation function – economical, safe and from one source. With compatible components and systems.

Line inspection devices

The safe line inspection device PLIDdys provides safe power-up on two-wire connections, providing maximum safety on long cable routes. With PLIDdys, unintended power-up or plant start-up can be excluded in the event of an error. Plants can easily be retrofitted thanks to an extremely compact design and the ability to loop into the existing wiring.

Relays for electrical safety

For electrical safety such as voltage or true power monitoring, electronic monitoring relays provide the optimum solution. They reduce the number of hazardous situations for man and machine and increase the service life of plant and machinery through an efficient production cycle.

- PMDsigma units monitor true power or insulation resistance. With an integrated display and menu-based configuration via rotary switches, PMDsigma guarantees short set-up and commissioning times.
- PMDrange These units are 22.5 mm wide and monitor functions such as current, voltage, temperature and many more.

Relays for functional safety

Stand-alone machines with up to three safety functions, such as E-STOPs, safety gates, light curtains/grids and many more are monitored using the safety relays PNOZ. Every day they are proven in millions of applications worldwide. Due to the different features, the safety relays are divided into the following product ranges.

- PNOZsigma With particularly narrow housing widths and multifunctionality compressed into each unit, PNOZsigma provides maximum functionality in minimum width. Selectable operating modes and times, plus scalability thanks to the modular structure, are further benefits.

Safe line inspection device

PLIDdys in conjunction with PNOZeLog

Safety relays

PNOZ

Webcode 6721
Webcode 0224
PNOZelog units can be linked via logic operations to form complete safety functions. Wear resistance and expanded diagnostics with power-up tests, self-checking and runtime tests guarantee maximum safety.

PNOZ X
With the widest range of products, PNOZ X provides tailor-made safety for any application. Based technically on voltage-free, electromechanical contacts, widths vary from 22.5 to 90 mm, while the number of contacts ranges from 2 to 8. Universal power supplies are an added convenience for your application.

PNOZpower
PNOZpower switches high loads of 8-16 A and is also suitable for switching motor loads directly.

PNOZmulti Mini
PNOZmulti Mini is a scalable product range, offering both stand-alone and system solutions. All functions are created on the PC using the ingeniously simple configuration software PNOZmulti Configurator. Inputs and outputs are freely configurable and can be linked using logic elements. With a 45 mm width and simple diagnostics via display, application of the PNOZmulti is cost-effective from just three safety functions.

There are three base units:
A compact, modular non-expandable, stand-alone unit with 20 safe inputs and 4 safe semiconductor outputs. Other base units can be expanded using communication modules and safe link modules, enabling interlinked and decentralised plants to be implemented.

PNOZmulti bridges the gap between classic safety relays and programmable control systems. PNOZmulti can be used to monitor safety functions safely and to perform standard control functions economically. PNOZmulti is multifunctional and can be configured using the software tool PNOZmulti Configurator. It has a wide range of base units and expansion modules, which can be combined to meet individual requirements: there are special base units for press applications or burner management, as well as input, output, fieldbus and link modules, as well as speed and standstill monitors. Use of PNOZmulti is economical where four or more safety functions are to be monitored.
**Control systems PSScompact**

The control systems PSScompact exercise complete safety-related control of a plant, machine or process. Safe and powerful. Six series open the way to numerous application options – from centralised control systems with 47 fail-safe inputs and outputs through to decentralised control systems with up to 8,064 decentralised, fail-safe inputs and outputs via SafetyBUS p. Decentralised input/output signals can be exchanged quickly, safely and without feedback between field level and the control systems via SafetyBUS p interfaces.

**PNOZmulti Configurator**

The safety circuit is created on the PC using configuration software that is simply ingenious, yet ingeniously simple. The graphics-based user interface conforms to the Windows® standard; all elements are available as icons or in selection menus. Online help with documentation is available during configuration. Once the configuration is complete, the configuration tool checks the circuit for any errors. The completed configuration can also be certified, thereby protecting it from unwanted modifications. If the configuration has not been certified, it can be edited, modified and extended at any time by calling it up in the Configurator. The configuration can be printed out and used as documentation.

**Control systems PSSmodular**

Modular programmable control systems monitor safety-related functions and also perform standard control tasks. Thanks to the modular hardware structure, the necessary hardware components can simply be assembled to fit the individual project requirements. Available hardware components include module racks, CPU central processing units, digital and analogue input/output modules as well as communication modules for all common fieldbuses and Ethernet.
Decentralised periphery

The hardware and software for Pilz decentralised periphery offer the highest level of flexibility. Decentralised I/O systems and a wide range of I/O modules enable a variety of combinations, allowing the most diverse applications to be implemented.

Decentralised I/O system PSSuniversal

The decentralised I/O system PSSuniversal is available for a variety of applications. The open system includes head modules with interfaces to common fieldbus systems and a wide range of I/O modules. Safety-related and standard control functions are mixed physically but are logically separated from each other - thereby fulfilling the requirements for extremely short reaction times and absence of feedback. The system is designed completely in accordance with Cat. 4 of EN 954-1 and SIL CL 3 of IEC 61508.

Decentralised modules PDP67

These modules are resistant to dirt and water in accordance with IP67. They can be used decentrally in the field (outside the control cabinet). Decentralised input modules are available for SafetyBUS p and for connection to PNOZmulti/ PNOZmulti Mini, as well as passive junctions, enabling a high level of decentralisation.

Communication networks

With various network components for safe fieldbus, Ethernet and wireless systems in combination with the I/O system PSSuniversal and control systems, networks can now be implemented with even greater clarity and higher performance.

System software PSS WIN-PRO

Practical software solutions are available when designing and programming PSS control systems – providing support from planning to diagnostics. Over 100 software function blocks make it easier to implement safety-related and/or standard control functions in the user software. The decentralised I/O system PSSuniversal can be configured using the Startup Software and PSSuniversal Assistant. Save time by running an independent periphery test prior to commissioning, for example.
Automation system PSS 4000

Control systems
PSSuniversal PLC
The control systems PSSuniversal PLC are the optimum solution for individual machines or complex, distributed plants – whether networked or stand-alone, for standard and safety applications. The systems can be programmed with PAS IL (Instruction List). A graphics Program Editor is also available for configuration.

Network components
PSSnet for SafetyNET p
Ethernet infrastructure components PSSnet can be used to adapt the network topology flexibly to your plant layout. These components enable topologies such as star, tree and ring structure. Thanks to the use of various media such as fibre optics, network limits can now be expanded without problem.

Software platform
PAS IL and PASmulti
Editors
Programs can be created simply, quickly and intuitively using the graphics Program Editor PASmulti. Inputs and outputs can be freely configured and linked using logic elements. Simple structuring is also possible without difficulty. The Editor PAS IL (in accordance with EN/IEC 61131-3) can be used to create more complex programming for standard and safety. Both editors use the same software environment. A large library of software blocks is also available, aiding reusability and standardisation.

Decentralised system
PSSuniversal I/O
The decentralised system PSSuniversal I/O is responsible for recording and forwarding I/O data. A large number of standard and failsafe I/O modules guarantees diversity of application and security of investment.

Electronic modules
I/O modules
I/O modules are available for functional safety and standard control functions. Up to 64 modules can be installed in any order.
Pilz drive technology provides overall solutions for automating your machine, from operation via the controller through to the movement of highly dynamic drives, including all safety aspects.

**Drive technology**

### Motion control systems

- **PMCprimo**
- **PMCntendo DD**
- **PMCntendo D**

### Servo amplifiers

- **PMCntendo DD**
- **PMCprotego D**

### Motors

- **PMCntendo AC**

### Control systems

**PMCprimo**

PMCprimo 16+ and PMCprimo Drive are used for all types of motion and control tasks. They consist of PLC and motion technology. They perform the automation within a plant, including management of all the movements for a large number of physically separate servo axes.

### Servo amplifiers

**PMCntendo DD and PMCprotego D**

PMCntendo DD and PMCprotego D are suitable as drive controllers for the widest range of motor technologies: they can be used to operate all common types of motor, from servo motors to asynchronous and linear motors.

### Safe motion – Drive integrated safety

**PMCprotego DS**

The combination of the safety card PMCprotego S and the servo amplifier PMCprotego D produces the safe drive solution – safe motion. Safe functions help to reduce setup times and maintenance work and increase productivity.

- Safe torque off (STO)
- Safe stop 1 (SS1)
- Safe stop 2 (SS2)
- Safe operating stop (SOS)
- Safely limited speed (SLS)
- Safe speed range (SSR)
- Safe direction (SDI)
- Safe brake control (SBC)
- Safe brake test (SBT)
As a solution supplier Pilz offers products from the fields of sensor, control and drive technology. Why not add products from the field of operator and visualisation systems? That way you benefit from co-ordinated one-stop solutions.

**Operator and visualisation systems**

### Control and signal devices

- **PITestop**
  - E-STOP pushbutton
  - The E-STOP pushbuttons have a practical, industrial design and ensure safety for man and machine on emergency off/emergency stop equipment.

- **PITsign**
  - Muting lamps
  - Muting lamps PITsign indicate that an electrosensitive protective device is suspended. They are suitable for all muting applications in accordance with IEC 61496-1.

- **PITjog**
  - Manually operated control devices
  - The manually operated control devices PITjog are used to protect personnel when the effect of safety equipment on machinery has to be partially or fully overridden.

- **PITenable**
  - Enabling switch
  - The three-stage enabling switches PITenable are used as manually operated control devices when working in a plant or machine's danger zone.

- **PITmode**
  - Operating mode selector switch
  - The operating mode selector switch PITmode provides two functions in one compact unit: selection of operating mode and authorisation control for machine access.

### Operator terminals

- **PMImicro diag**
  - Diagnostic units
  - Compact diagnostic units PMImicro diag for the programmable control systems PSS, the safe bus system SafetyBUS p and the configurable control systems PNOZmulti.

- **PMIvisu/PMIopen**
  - Operator terminals
  - With the operator terminals PMIvisu/PMIopen you have modern touchscreen terminals in different sizes and with various feature options.
Consulting and engineering

Your projects belong in safe hands

**Risk assessment**
We will work with you to undertake a technical inspection of your machines in accordance with the applicable national and/or international standards and directives. The aim of this risk assessment is to identify and assess existing hazards in the workplace and define risk reduction measures.

**Safety concept**
Based on the results of the risk assessment, Pilz presents detailed technical solutions which guarantee plant safety through state-of-the-art mechanical, electrical and organisational measures, in compliance with national and international standards.

**Safety design**
Whether you are constructing new machinery or retrofitting existing machines – it is better to integrate a safe design right at the start of the project. Only a safety design that addresses the hazards can be implemented with minimum impact on the machine’s complexity, costs and productivity.

**International compliance services**
Pilz will work with your engineers to carry out the required assessment procedures and develop the necessary strategies to enable compliance with the respective ISO, IEC and ANSI standards or any other standards. This includes interpretation of the requirements for CE certification.

**Plant assessment**
The plant assessment includes an on-site inspection followed by evaluation and presentation of the results. Pilz will work with you to analyse the machine’s workflow. The documented results can be used for machine optimisation.

**Inspection of ESPE**
As a DAkkS accredited inspection body in accordance with DIN EN ISO 17020, with experience of the industry and technical competence, Pilz can guarantee objectivity, high availability for your machinery and the greatest possible safety for your staff.

As a solution supplier, Pilz can help you to apply optimum safety strategies worldwide. Services encompass the whole machine lifecycle. Our training package with practical, up-to-date course content completes the offering.
System implementation
Based on the results from the risk assessment and safety design, experienced Pilz engineers can quickly implement the selected safety measures. Installation is carried out in compliance with regulations and standards, at minimum cost and with minimum downtimes.

Safety validation
The safety validation must show that the solutions that have been developed meet the actual requirements. This is done by mirroring the risk assessment and safety concept. Competent, specialist staff from Pilz can guarantee an objective and systematic procedure. The PAScal calculation tool helps you with verification.

CE services
The CE mark indicates that the marked machines meet the essential requirements of all the relevant EU directives. Pilz carries out all the actions and processes for CE certification and produces the necessary compliance strategies, safety designs and documents. That way your machine has a "passport" into the EU.
Support

Technical help round the clock!

Technical support is available from Pilz round the clock. This service is provided free of charge beyond standard business hours.

Americas

- Brazil  
  +55 11 8245-8267
- Mexico  
  +52 55 5572 1300
- USA (toll-free)  
  +1 877-PILZUSA (745-9872)

Asia

- China  
  +86 21 60808078-216
- Japan  
  +81 45 471-2281
- Korea  
  +82 2 2263 9540

Australia

- Australia  
  +61 3 95446300

Europe

- Austria  
  +43 1 7986263-0
- Belgium, Luxembourg  
  +32 9 3217575
- England  
  +44 1536 462203
- France  
  +33 3 88104000
- Germany  
  +49 711 3409-444
- Ireland  
  +353 21 4804983
- Italy  
  +39 031 789511
- Scandinavia  
  +45 74436332
- Spain  
  +34 938497433
- Switzerland  
  +41 62 88979-30
- The Netherlands  
  +31 347 320477
- Turkey  
  +90 216 5775552

You can reach our international hotline on:

+49 711 3409-444
support@pilz.com

Pilz GmbH & Co. KG
Felix-Wankel-Straße 2
73760 Ostfildern, Germany

Telephone: +49 711 3409-0
Telefax: +49 711 3409-133
E-Mail: pilz.gmbh@pilz.de
Internet: www.pilz.com
Scan the QR code with your smartphone to find out more about Pilz.