

MENSCH und AUTOMATION

PILZ
THE SPIRIT OF SAFETY

The magazine for customers of Pilz GmbH & Co. KG Issue 1/2022



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TÜV Süd certifies Pilz product
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Pilz developments not only safe,
but also secure!

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► Don't get lost in the standards jungle!

Machines and products around the world must above all be: safe and reliable. Standards are the most important regulatory tool to ensure that they deliver on their promises. But managing standards is a learning process.

Imagine that your customer's employees work in South Korea with the same machine as your customer's employees in China, Brazil or India. Each of their machines meets the formal, technical and safety-related requirements that apply there, they are homogeneous and equally reliable and as a result they were more efficient and less expensive than usual for you to manufacture. An ideal world which sadly is quite tricky to implement in practice.

Standards across the world act as "bouncers" that either allow the use of plants and products in a country – if these meet the corresponding

specified expectations – or prohibit their use. They are considered documented agreements which establish the criteria for products, services and procedures. They can be used to guarantee that products and services are fit for purpose, comparable and compatible. Their use within the EU is more or less voluntary, as opposed to in China which also has standards whose application is mandatory.

National standards regime

The conditions for entering each "door", or country, vary widely. For example, in the EU: The EU uses regulations (which apply as a binding legal

act immediately after publication) or directives (such as the Machinery Directive) to formulate general safety objectives. EU directives only take effect when countries within the EU implement them as national laws. Verification of achieving safety objectives thus requires an exact specification.

Machine builders use standards to this end. Verification is easiest when there are harmonised EU standards which are used by machine builders. The reason for this is the "presumption of conformity" these elicit: If I apply these standards, the conformity with the safety objectives

defined in them is guaranteed. The harmonised EN standards are an indication of how the objectives of the EU directive can be met, but they are not mandatory. And especially not outside of the EU.

Continued on page 2





Dear Reader,

Manufacturers in automation will be facing important changes in the coming years. This initially concerns the revision of the Machinery Directive, which is the legal foundation for bringing machinery into circulation in Europe. The EU Commission submitted a draft regulation in April 2021 that is being negotiated in Brussels. At the same time, work is being done to develop a regulation for artificial intelligence (AI) which will affect many products in automation.

One thing is already clear: The basic safety requirements for products in automation will be changing. There will also be additional requirements relating to AI and cyber security. This will entail changes to harmonised standards in order to be able to continue listing these standards in the EU Official Journal in future.

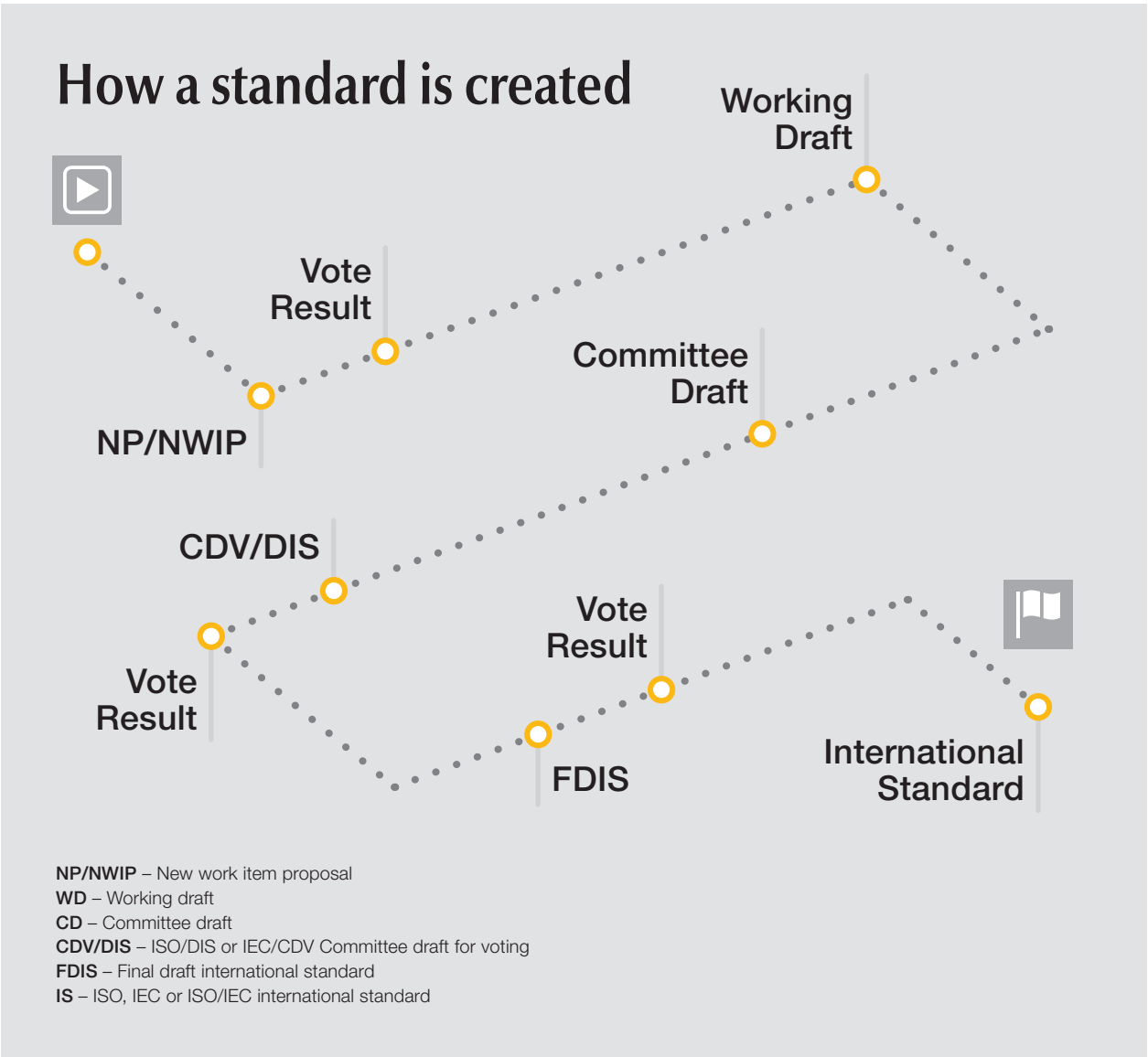
As soon as the final versions of these new legislative acts are available – likely around the end of the year – the actual work in the standardisation process will begin. The task then is to transform the legal requirements into technical requirements for products. At the same time, these requirements must be harmonised with the international standards to ensure that the products are suitable for the world market. The task ahead of the industry is certainly not an easy one.

Best regards,

Franziska Wirths
Senior Manager Technical Regulation
ZVEI e.V. – Electro and Digital Industry Association

Instead, specifications differ between countries and a design in accordance with the Machinery Directive with the corresponding CE marking is not enough to be able to use a machine or an individual product everywhere in the world – even if a high level of safety is achieved in the EU in itself: meaning that if an Italian machine builder wants to send a machine to South Korea, they must first deal with the national requirements in South Korea, while a delivery to Brazil requires dealing with the national specifications there (NR Norma Regulamentadora e.g. NR-12 “Machinery Safety”). In 2003, the Chinese

“An increasing number of our customers are asking for our help with regard to the requirements of the new national UKCA marking from Great Britain,” explains Arndt Christ, Vice President Customer Support International. “Together with our local subsidiary, we can act as a national representative and provide competent support in the process of achieving UKCA conformity as well as in the event of problems with local market surveillance authorities.” Depending on the task, the scope of support can include risk assessment, drafting a safety concept and international conformity assessment services. Pilz usually



It takes a lot of work: Ideally, it takes 3 years to progress from a proposal for a new ISO/IEC standard to its publication.

government introduced mandatory certification and marking called China Compulsory Certificate (CCC) for selected products. In this case, the machine builder should check whether the relevant components have this certification in addition to dealing with the Chinese specifications (GB standards) (see interview, page 5). An efficient and legally compliant handling thus becomes a balancing act for global companies.

Expertly standardised

As an “Ambassador for Safety”, Pilz has decades of intensive experience with current standards and is happy to shoulder this burden for its customers. Pilz has established itself globally with 42 subsidiaries and 17 sales partners and can provide local support as an independent partner when implementing normative specifications in the individual countries. Experts from Pilz are actively helping to shape around 100 product and application standards in almost 80 standards committees, allowing them to keep a finger on the pulse. This knowledge is also reflected in the services and the training courses within the international Pilz training portfolio. In the absence of official standards, Pilz engages with users, associations, authorities and research institutes in order to collectively develop appropriate safety standards.

puts together an international team of experts for this purpose which is made up of domestic contact partners for the customer, specialists from Pilz in the corresponding countries and, where applicable, an international project manager.

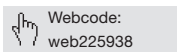
Together these members achieve the ideal world previously imagined: The machinery can be put into operation in the respective target country in compliance with the required conformity assessment procedures and the national standards valid there. The starting point for this is simply making contact with your local Pilz representative.

Wealth of standards experience

Pilz, as a global provider of products, systems and services for automation technology that offers the highest safety for man, machinery and the environment, places the highest priority on meeting guidelines and standards that apply

around the world for the widest variety of requirements and industries, even for their own products. Another argument in favour of choosing to rely on the support offered by Pilz.

To the international Pilz Service portfolio:



Online information at www.pilz.com

“I want my work to make a difference”

Klaus Dürr is a standards specialist at Pilz. As Vice President of the Standards Group, he is responsible for the coordination and organisation of national and international standardisation work and brings this essential knowledge into the company. In our discussion, he explains which standards are currently keeping him busy and which trends he is monitoring, and he reveals whether standards have a common thread globally.

► **Klaus Dürr, you are working in 16 standards committees to help design standards. What are you working on at the moment?**

At the moment the industrial robot standards ISO 10218 (Robotics – Safety requirements – Part 1: Industrial robots and Part 2: Industrial robot systems, robot applications and robot cells) are being revised. The work here has been considerably impeded by corona-related complications and various time zones. My international working group has however managed to consistently incorporate the EHSR (Essential health and safety requirements) of the Machinery Directive. This is the precondition that allows the ISO to later be adopted as an EN ISO (European standard) practically without changes and enables harmonisation with the Machinery Directive. This considerably facilitates its comprehensive implementation. We are also currently working on revising IEC 62046 (Safety of machinery – Application of protective equipment to detect the presence of persons).

► **And how do you spend your time when you happen to not be meeting with a standards committee?**

Indeed, with five national and eleven international standards committees, the preparation and follow-up for the meetings tends to be time-consuming. Ultimately I want my work to

really make a difference and to produce practical suggestions that help industry. I am also busy ensuring that our internal standards database at Pilz is always up to date. Working with current standards is absolutely essential for us as a safe automation specialist. I filter information about standards, proposed standards and trends in standards. The trick here is differentiating between important and unimportant and deciding which information is reliable.

► **Are additional standards even necessary?**

Yes, the amount of proposed standards is actually rising sharply. More proposed standards, however, also means a greater need for experts in the committees. But experts are rare and already quite busy with their primary tasks at their companies. Companies in the EU have to not only pay for the working hours, but also for the employees' travel expenses to the standards committees. Other countries such as China have an advantage here.







Thanks to government funding, it is easier to send experts.

► **Since we are already looking at the world: Do you find that there is some kind of global common thread among standards? Wouldn't that make life easier?**

Definitely, what could be better than a standard that is essentially recognised worldwide and that requires everyone to meet the same specifications? It's difficult, however, because of the differences in economic interests, markets and cultures. But frequently at standards meetings, we will be having dinner together and will discover

just how much common ground there is. It is a chance to better understand the perspectives of fellow colleagues. Most experts in international standards committees work hard to develop standards so that they do not serve as an obstacle to any technology. But a functional global foundation still remains a distant goal. ◀

How to keep on top of proposed standards:

-  List of harmonised standards
-  Overview of draft standards from IEC, CENELEC and ETSI
-  German draft standards DIN, DIN EN, DIN EN ISO
-  "Technical Committees ISO/TC199 Safety of machinery"

Up-to-date information on standards can also be found on the Pilz website:

 Webcode: web830821
Online information at www.pilz.com

► Panorama Safety relays PNOZ revolutionised safety in 1987

Quantum leap for safety

Once upon a time ... In the early days of control technology, relays and contactors controlled plant and machinery. If there were any devices at all for shutting down or for protecting people, they would separate the actuator from the power supply as necessary.

The safety systems in those days could be disabled, including the protective function, if a fault occurred. Then people thought: how to secure those type of separation functions? And people researched: an initial result was special relay circuits such as the 3 contactor combination.

“Double safety” takes over the market

Then came the breakthrough: 35 years ago, Pilz had the revolutionary idea for a redundant safety circuit integrated in a housing, which then captured the market: smaller than the conventional circuit with contactors, easier to operate, but above all safer thanks to a certified type examination. The birth of the first PNOZ! The patented prototype PNOZ (P = Pilz, NO = Not-Aus [E-Stop], Z = zwangsgeführt [positive-guided]) from 1987 was followed by continuous new versions as well as a new product category: that of the “safety relays”. The innovative devices were readily accepted – safety relays very quickly advanced to the world market leader. Even today, PNOZ remains synonymous with safety relays and is used by the millions every day.



The development history of the PNOZ range: from the world's first E-STOP relay PNOZclassic to the current myPNOZ in batch size 1.

“Complete menu” from Pilz


The development of the PNOZ range also serves as a documentation of the technical standards of its time. And of its requirements – increasing automation, efficient safety solutions, no restriction of productivity. The current PNOZ portfolio includes simple safety relays (e.g. PNOZsigma) as well as the hardware-configured, modular safety relays myPNOZ and software-configured

safe small controllers PNOZmulti 2. The common thread: monitoring of safety functions and protective devices such as E-STOP, safety gates, light curtains, two-hand controls, pressure sensitive mats, speed and standstill, among others. A success story that is still being written. ◀

Technological milestones at Pilz:

 Webcode: web201068
Online information at www.pilz.com

More about safe control technology:

 Webcode: web196065
Online information at www.pilz.com

In brief ...



Update on EN ISO 13849 and EN IEC 62061

The safety standards EN ISO 13849 and EN IEC 62061 for compliance with functional safety during the design and construction of machines are currently being revised. They specify requirements for safety-related parts of machine controls. A concise summary of the information – from risk-related assessment in accordance with EN ISO 12100 to the assessment and verification of safety functions using EN IEC 62061 or EN ISO 13849 – can be found at www.pilz.com/functional-safety.

(EU) 2019/1020


Market Surveillance Regulation and compliance of products

In addition to specific product-related directives and regulations – such as the Machinery Directive or the EMC Directive – when placing products on the European market, generic product regulations must also be taken into account. This includes the regulation (EU) 2019/1020 for market surveillance and compliance of products that took effect in July 2021. Important provisions of the regulation that impact machinery safety can be found at:

<https://www.pilz.com/en-INT/support/knowhow/law-standards-norms/manufacturer-machine-operators/market-surveillance>

Fault tolerance in machine safety – part 2 of the ZVEI whitepaper published

In technology, fault tolerance means the property of a technical system to maintain its function even when failures and faults occur. This increases availability. The ZVEI has published the 2nd part of its whitepaper on this topic. This describes the necessary conditions for operation in a degraded state. Readers learn how fault-tolerant safety functions are to be implemented which allow further operation of plant and machinery under certain fault scenarios without neglecting the personnel protection requirements.

 Fault tolerance in machine safety
Part 2 – zvei.org

More information on fault tolerance in machinery safety:

<https://www.pilz.com/en-INT/support/knowhow/law-standards-norms/functional-safety/fault-tolerance>

► Panorama Pilz is working on tool-supported CE conformity in the research project SDM4FZI

Digital CE conformity

In the research project SDM4FZI, around 30 partners are working together on the development of software-defined production for the automotive and supplier industry. Pilz is involved as a research partner for a uniform digital safety concept.



Pilz is working on CE conformity for the digital twin (Credit: BOSCH).

A new vehicle model is to be introduced to the market quickly, a current product should be reworked in a short time – but it often takes months or even years until the production chain is converted and ready for the new requirements. To shorten the time to market launch and increase competitiveness, production in the automotive and supplier industry must move away from plant-specific machinery and software and embrace dynamically adaptable production with a uniform software framework. The research

project SDM4FZI (Software-defined Manufacturing for the vehicle and supplier industry) is being sponsored by the German Federal Ministry for Economic Affairs and Climate Action (BMWi) over the next three years and is working on the relevant requirements.


The basis: digital twins of the existing plants. These can be used to efficiently prepare and implement improvements while production is running. In addition, however, the control and communication

infrastructure must be compatible with software-defined manufacturing – as must the safety of the machinery.

A digital safety concept

That's where Pilz comes in: "The safety-related assessment of a plant is a highly manual process that is largely performed without technical aids. Any assisted or even automated function thus directly results in increased efficiency," explains Matthias Schweiker, Dipl.-Ing., Advance Development at Pilz. As part of the research association made up of automation, mechanical engineering, IT and the automotive sector, Pilz is working on tool-supported CE conformity. This includes defining and evaluating important safety parameters for digital representation of a plant and automatically detecting safety-critical reconfigurations on a plant. Additional work packages include topics concerning connectivity and security. As soon as all work packages are defined, the individual teams will start working. ◀

More information on the project:

 SDM4FZI

► Inside New in qualification courses: CEFS – Certified Expert in Functional Safety

Well-coached in functional safety

Become a safety expert with Pilz – now also for functional safety, with the new course for internationally recognised qualification as CEFS – Certified Expert in Functional Safety.

In addition to the subject areas of "Machinery safety" and "CE marking", Pilz now also offers a top-level qualification that is recognised worldwide in the area of "Functional safety of machinery". The qualification as CEFS – Certified Expert in Functional Safety supplements Pilz's training portfolio to include the supreme discipline of safety technology: keeping machinery safe for people and the environment during operation through a correctly functioning control system.

All requirements at a glance

What makes this Pilz qualification special? In two days, participants receive comprehensive information about how complex safety systems can be designed according to the requirements of the two standards EN ISO 13849 and EN IEC 62061. The international Functional Safety Professionals from Pilz – who are themselves members of various standards committees – provide training on the current developments in standards. They explain what requirements are placed on control systems and how to implement these with maximum efficiency and cost-effectiveness.

Then the participants put this into practice: What architecture do the safety circuits have to have? How do you create a validation plan or protocol? How do you implement a functional safety management system at the company?



Ready for anything: the CEFS – Certified Expert in Functional Safety.


The participants create a complex, practical safety system using a virtual machine model. The result of this qualification: the ability to personally create and assess safety systems – from the design and verification to the implementation and validation – as well as a certificate issued by TÜV NORD verifying this qualification. The certificate is recognised worldwide and allows the holder to use the designation "CEFS – Certified Expert in Functional Safety".

Further training to become a CEFS is primarily suitable for anyone who already has prior knowledge about functional safety. In particular,

machine manufacturers, design engineers and integrators with special responsibility with regard to safe control systems are invited to work with Pilz to increase their skills in functional safety to the expert level. ◀

Are you interested?

Sign up now:

 Webcode:
web231459

Online information
at www.pilz.com

Master of all angles

In the press brakes from the press manufacturer Bystronic, the camera-based protection system PSEnvip has for years been used in combination with the automation system PSS 4000 from Pilz to ensure safe, efficient and user-friendly processes. With the module for bending angle measurement for PSEnvip 2 newly developed by Pilz, Bystronic is once again expanding the scope of its safety system.

The tools that are often used on press brakes tend to push conventional safety devices to their limits for various reasons. Especially on compact machinery: space is in short supply. Not with PSEnvip 2 – the size of the receiver module is reduced by about half.

Special use for protection

In line with the standard EN 12622, each bending line must be protected by a protected field that is positioned in the factory at least 15 mm in front. The challenge and requirement in complying with the normative specification is that the tool is completely within the protection system's field of vision. PSEnvip and the second, extended generation PSEnvip 2 meet these standard specifications. In combination with the automation system PSS 4000, the integrated "Fast Analysis Unit" guarantees shutdown times of under one millisecond and the shortest stopping distances for the press brake tool. The press brake is thus safe, even at very high speeds. "The simple handling, the high reliability and the resulting achievable increase in productivity and machine availability are the major reasons why we have relied on the PSEnvip protection system for the Xpert series for years," emphasises Karsten Trautvetter, responsible for product management at Bystronic.

Observer with precision values

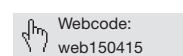
Close customer contact and knowledge about current needs and requirements on the user side are constant drivers of innovation at Bystronic. "The newly developed module for bending angle measurement from Pilz that is unique in this form and can be easily integrated in the camera-based protection system PSEnvip 2 came at exactly the right time," states Karsten Trautvetter. PSEnvip is particularly advantageous for small press brakes with short bending lengths and no room for any measuring equipment to be installed. The camera system is installed at the side on the upper die and determines the measurement data; the bending angle module evaluates all determined measurement data on the bending contour of the sheet and provides it to the machine visualisation via a standard interface. The image data transmitted to the control system directly shows the operating personnel the current angle measurement on the operating display during press braking. This enables a fast

and efficient check of the achieved bending angle. Laborious manual measurements or expensive angle measurement systems that take up space are not needed. The technological basis for meeting the high normative specifications are powerful optics with LED light as well as the robust design of the protection system which is insensitive to reflections as well as external and stray light. "As was already the case with the predecessor, with PSEnvip 2 installation, configuration and commissioning can also be easily performed directly via a web interface," adds Karsten Trautvetter.

"Low speed" phase as highlight

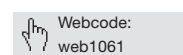
An effective contribution to increasing productivity is also made by dynamic muting: With a conventional muting procedure, the upper tool consistently moves the last millimetres at the permissible safe speed of 10 mm per second. With dynamic muting of the protection system PSEnvip 2 in combination with the "Fast Analysis Unit", the upper tool dynamically reduces its speed to a minimum from the initial 300 mm per second across a "slow route". The press brake tool does not travel at "low speed" until the last millimetre before making contact with the workpiece. "Low speed" is thus the guarantee for "fast" press brakes: "By using camera-based protection system PSEnvip 2 and automation system PSS 4000, we have verifiably increased the productivity of our press brakes by around 20 percent," claims Karsten Trautvetter. "Compared to models with comparable pressing force, our press brakes are more responsive and more efficient!"

More information on the product:

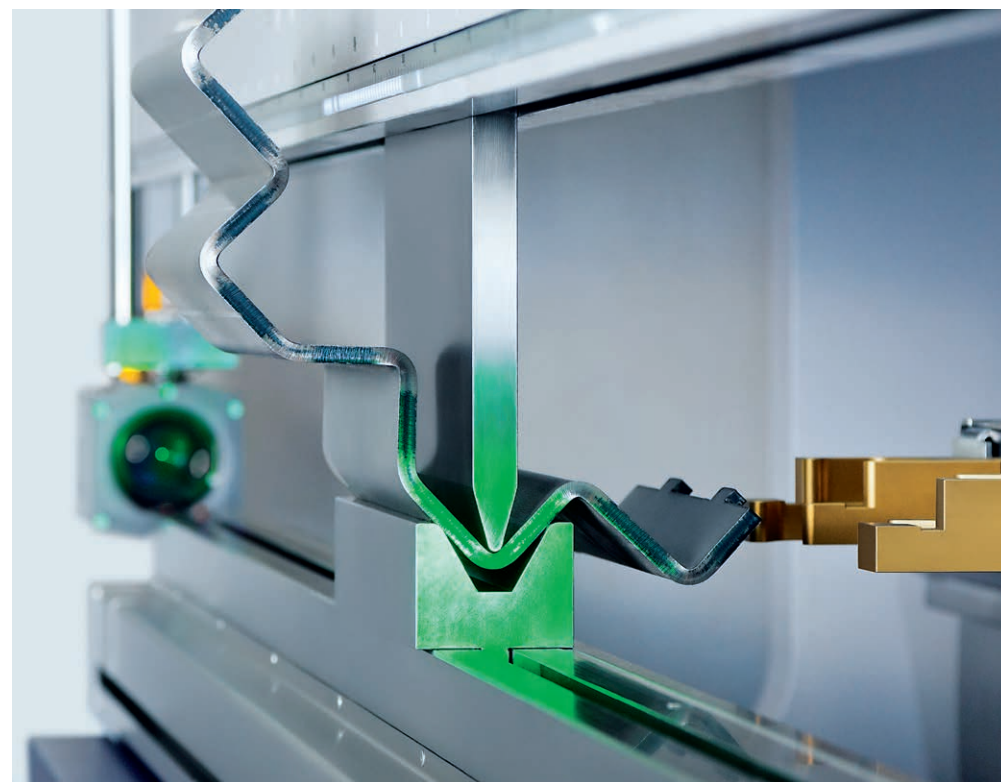


Online information at www.pilz.com

More information on the press industry:



Online information at www.pilz.com



The camera-based protection system PSEnvip 2 combines protection with simple angle measurement on press brakes.

Three minutes with ...

... Robin Huang

National Technical and Product Manager / Manager of Service Business, Pilz China, and member of the national standards committee

► What role does the topic of standardisation play in China?

The law that came into effect in the middle of last year on safety in production ("Production Safety Law of Peoples' Republic of China") compels companies to comply with national standards. There are mandatory standards and those that are considered recommendations.

► And what standards are you working on right now?

Following the reorganisation of standardisation in China, most mandatory standards have become recommendations. Currently, several Pilz employees are working in Technical Committees (TC) to develop new mandatory standards.

I personally am a member of several different TCs, including the National Technical Committee 208 on Safety of Machinery Standardization Administration of China (TC 208). There I am in charge of working group 4, which deals with safe control systems.

► How will machinery safety continue to develop in China?

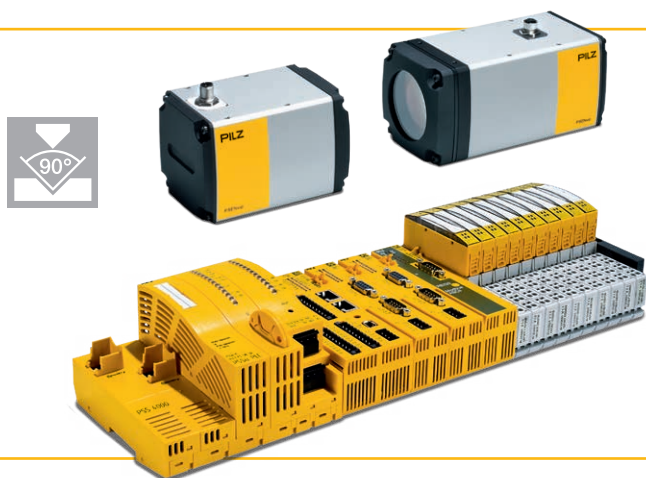
The topic is evolving very quickly and is constantly gaining in importance. The willingness to invest in machinery safety is growing for many reasons: The orientation towards people in production is a guiding principle that is growing increasingly important. Secondly,

The "Production Safety Law" is facilitating this development. Thirdly, costs for work accidents are constantly increasing. And finally, both TC 208 as well as foreign companies such as Pilz have continued to advance the idea of machinery safety over the last 20 years.



► What role does Pilz play in this?

Thank to its specialist knowledge and experience in safe automation technology, Pilz is making an important contribution to the development of this topic in China. In 2004, Pilz was the first foreign company that became a member of TC 208. With trainings, seminars and other services in the area of machinery safety, Pilz is constantly making more people familiar with this topic. We want to continue to raise the level of awareness in order to ensure safety at the workplace in this country.



Always an eye on the correct angle: The camera-based protection system PSEnvip 2 and automation system PSS 4000.

In brief ...

At a glance: Whitepaper for safe applications of automated guided vehicle systems



Safe operation of automated guided vehicles (AGVs) requires the right technology and an understanding of the specific application as well as the normative framework. This type of holistic approach to the AGV application allows for the perfect harmonisation of safety and productivity.

Experts from Pilz have collected the relevant information on the topic of safety in AGV applications in a whitepaper. This whitepaper provides information on how the interaction between humans, the environment and automated guided vehicles can run smoothly and free of accidents, and which normative requirements must be taken into account – illustrated by means of a small practical example.

The whitepaper is available for download on the Pilz website in German and English:

<https://www.pilz.com/en-INT/services/safety-of-automated-guided-vehicles>

Pilz – a “Brand of the Century”

What makes a brand a “Brand of the Century”? The DIE ZEIT Publishing Group examines this based on a standard set of rules and collects leading German brands for each product category in the renowned encyclopaedia of the same name. For the publisher of this year’s edition,



Dr Florian Langenscheidt, these are the brands that stand as a pars pro toto for a whole product category: “Deep within we have formed an inseparable link between the product and the name of its most prominent representative,” he states. This is also the case with Pilz in the category “Control technology”. The safety relay PNOZ has become a synonym for the category itself. As a “Brand of the Century”, Pilz joins a number of other German brands such as Dräger, Meissen Porzellan or TÜV.

You want to learn more about the Pilz brand?

<https://www.pilz.com/en-INT/company>

► Inside TÜV Süd certifies product development in accordance with IEC 62443-4-1

Pilz development is extra safe

Pilz products ensure the safety of human, machine and the environment. It thus comes as no surprise that even their development processes have to satisfy certain requirements. TÜV Süd has now certified Pilz:

Pilz developments not only safe, but also secure!



Pilz’s development processes are well-positioned when it comes to industrial security.

The international series of standards IEC 62443 “Industrial communication networks – Network and system security” create the appropriate framework for industrial security in automation. The range of topics includes risk analysis, best practices and the secure development of products (“security by design”). For this development, the standard IEC 62443-4-1 describes requirements for a so-called “Security Development Lifecycle Process” (SDL process). A development approach in which the security features of a system are systematically considered starting in the design phase. The intention here is to ensure that all security risks in a product are detected by

means of modelling the threats and that these risks are ideally already rectified in the product.

TÜV Süd assessed the development processes of Pilz accordingly and checked them based on the standard IEC 62443-4-1. “This check of the development processes in their entirety for industrial security helps to avoid security incidents and the associated impacts – often devastating – on the company, employees and equipment to the greatest possible extent,” explains Walter Schlögl from TÜV Süd. “To rule out weaknesses during the entire lifecycle of the system and individual components, it is necessary to plan proactively and to take into account security aspects from the very beginning.” The independent certification by TÜV Süd creates trust and gives plant operators and owners the certainty that the purchased product is completely secure and is consistent with the best practices from the industry.

One certificate follows the other

The result of the audit: The development by Pilz

meets all requirements of the standard and corresponds to the SDL process. Walter Schlögl says, retrospectively: “Pilz prepared for the audit very well. This is a sign that the development of secure products in accordance with IEC 62443-4-1 is taken very seriously by Pilz on all levels and is comprehensively embedded in the development process, even in the details. Pilz thus has built a solid foundation for subsequent product certifications.”

In the next step, Pilz is planning the certification in accordance with IEC 62443-4-2. This standard describes technical requirements that must be implemented by the security functions of the products. If these requirements are met, Pilz offers its customers the benefit of being able to purchase a product with security and safety certification – so with double the safety. ◀



For further information on certificates from Pilz:

Webcode:
web152957

Online information
at www.pilz.com

► Profile A portrait of Pilz Portugal

Tradition meets innovation

Portugal is the official partner country of this year’s Hannover Messe. Within the Pilz Group, Pilz Portugal is already celebrating its 20th anniversary and reflects how tradition and innovation go hand in hand in Western Europe.

20 years ago, Pilz Portugal started its work in Porto, the most important industrial centre on the Atlantic. Here the traditions of Portuguese wine cellars merge with innovations in industry. The export-oriented industry of Portugal is vitally important to the country – despite the structural trend towards services.

Pilz Portugal is active in the most important industry sectors in the country, particularly in the automotive and supplier industry. The subsidiary offers comprehensive knowledge and experience in the field of safe automation – in cooperation with long-standing partners who ensure the availability and technical support for Pilz products in the entire country. The strong presence of machine builders resulted in the safety relays PNOZ being among the products with the highest demand from the very beginning. In addition, the engineering team from Porto supports all the large multinational corporations active in their country in the optimisation and modernisation of their machinery.

Pilz is actively involved in future projects in Portugal that were initiated in a consortium with innovation centres and technology leaders from the European Union as part of the programs Horizon 2020 and Next Generation. The challenge: applying knowledge and safety products to innovative and forward-looking ideas

in such a manner that these lead to sustainable solutions for the market. This future will also be shaped in Portugal by digitisation and a high degree of process automation due to robots and systems with artificial intelligence. Pilz Portugal continues to aim to remain the benchmark for all innovative and technological initiatives in order to



contribute to progress within both Portuguese and global industry. ◀

Delivery capability has top priority

Bottlenecks and long delivery times are placing a massive burden on the global economy. In order to manage this difficult situation, Pilz founded a cross-departmental task force back in autumn 2020.

This task force includes the Purchasing, Development, Production Technology, Production and Sales departments. The Purchasing department is thus in close co-operation with the suppliers, escalates bottlenecked articles and establishes additional sources of supply. Development qualifies alternative components and materials, Production Technology controls the use of (scarce) components, Production flexibly adapts its processes and, in the event of good availability of components, also works in additional shifts for short periods, and Sales always maintains contact with the customer and keeps them informed of any current developments.

Delivery capability is the highest priority! This requires Pilz to travel unconventional paths. To resolve a bottleneck in green plastic granulate, for example, Pilz has been supplying safety

relays from the product ranges PNOZsigma, PNOZmulti and PMDSigma with transparent plastic housings since mid-September 2021 – without any technical restrictions for the customers. The housing colour was changed in record time and in close collaboration with the responsible notified bodies TÜV, UL, CQC, Kosha and EAC.

Unfortunately, all our measures were not enough to prevent Pilz from also experiencing breakdowns in production. In these cases, the affected customers were informed immediately and alternatives were developed together.

These collective efforts paid off: Despite the most challenging framework conditions, Pilz was able to produce more devices than ever for its customers in 2021. ◀



Solution-oriented appearance in Hanover

In 2022, the world's largest industrial fair will once again open its doors – the Hannover Messe will focus on “Industrial Transformation” at the end of May instead of in April, due to the pandemic. And Pilz will be there.

Pilz shows how this Transformation with complete automation solutions comprising safety and industrial security can be individually and flexibly implemented.

Comprehensive exhibition

At the hybrid format industrial showcase, Pilz will be focusing on solutions for access management: How

can safety gates be efficiently and individually safeguarded? The areas of intralogistics and packaging are also a central theme. In Hall 9 at Stand D17, visitors can learn a number of things, including about how these areas can be safely automated and operated using a special services package tailored to the requirements of automated guided vehicle systems. Also making an appearance at the trade fair are the safety laser scanners PSENscan and the new safety relays myPNOZ, which ensure dynamic navigation and the safety of mobile applications, among other things.

Resource efficiency is another focus in Hanover and for Pilz: The packaging industry in particular is undergoing significant changes. Pilz will be presenting how to increase efficiency with all-round safe complete solutions that optimise primary as

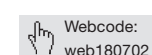


Also on board: tailored solutions from Pilz for the areas of access management, packaging and intralogistics.

well as secondary and end-of-line packaging. Pilz's “safe cardboard feed” illustrates that control systems are key for safe and individually adaptable processes: In a certified solution package, users can select “their” control system – for more complex plants, the configurable safe small controller PNOZmulti 2, for less extensive plants, the modular safety relays myPNOZ. ◀

We look forward to seeing you again at the Hannover Messe 2022!

Additional information and free tickets at:



Online information at www.pilz.com

Apropos ...

With Mat P. on his automation tour

Whether he's dealing with applications from the fields of packaging, automotive, traffic engineering or metal processing – as an expert, Mathias P. travels the world with automation solutions by and for Pilz. He often talks to his wife about his experiences ...



PILZ
APPLICATIONS

► You know what, love? I am so glad that we chose parquet flooring for more than just our living room ...

Wood just gives off this cosy warmth, and my favourite part is that parquet floors are tough while also being easy to care for. And I am also impressed with how much care is taken in the production of parquet floors. I recently visited my customer Scheucher, a wood processing company in Austria, for a retrofit project. Just the wonderful smell of wood that surrounded me in the hall there.

► And wood just happens to also be a good choice from an ecological point of view ...

Scheucher truly emphasises sustainability: The company only uses high-quality, indigenous wood, operates the largest company-owned roof-mounted photovoltaic system in Austria and works sustainably in their own Production department.

► Was that also your task as part of your project?

Yes, retrofitting and sustainability fit so well together.


At Scheucher, only the wear parts, such as the conveyor belts, were replaced. On the processing machines themselves we were responsible for the complete planning and implementation: from the hazard analysis and the resulting safety concept to the subsequent conversion including engineering, programming and validation. We have thus optimised the safe control of the drives. Just one example: All milling machines have five motors on each side that all continued idling even when they were not actively required. Thanks to the retrofit, now only those motors run that are actively needed. 80 percent energy savings, retrofit for safety and efficiency at its best!

Extremely compact power basis



The new, extremely narrow standalone base unit PNOZ m C0 from the product range of configurable safe small controllers PNOZmulti 2 has the structural properties of a safety relay but is as powerful as a programmable safety system: With a width of only 22.5 mm, it has eight safe inputs and four safe semiconductor outputs. The new standalone base thus monitors up to four safety functions, including E-STOP, safety gate, light curtain or two-hand controls, reliably and – depending on the application – up to the highest category PL (Performance Level) e or SIL CL 3. Users can easily

and intuitively create the respective safety circuit in the software tool PNOZmulti Configurator, which is free of licence costs. The tool provides a number of approved software blocks with which safety requirements can be easily and flexibly implemented. Small machines can thus also be automated economically and to a high performance level independent of the machine type, plant type, country or industry.


 Webcode:
web2253511
Online information
at www.pilz.com

Robust and flexible in the field

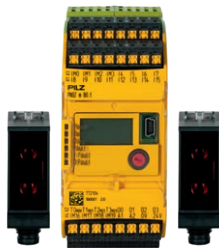


With the new remote I/O module PDP67 PN, Pilz is expanding its product portfolio for decentralised applications. Equipped with protection type IP67 and robust die cast zinc housing, PDP67 PN reliably monitors sensors and actuators in environments with extreme temperatures (–30 °C to 70 °C). At the same time, it is affordable and flexible. This is ensured by a PROFINET/PROFIsafe interface and universal connections, which can be configured as inputs or outputs. Users only need to stock one unit type. The PDP67 PN thus also saves valuable space in the

warehouse. M12 connectors connect safety and non-safety-related sensors and actuators quickly and easily with the PDP67 module. Complicated wiring is avoided. This reduces costs and effort when expanding and commissioning modular production plants. The new remote I/O module can be integrated into the network of the remote I/O system PSSuniversal 2 from Pilz as well as into any other PROFINET/PROFIsafe networks – full flexibility for every application.


 Webcode:
web150450
Online information
at www.pilz.com

Doubly safe cardboard supply



Pilz offers a solution certified by TÜV Süd for monitoring the cardboard feed for safety requirements on packaging machines for PL d or Cat. 3 to EN ISO 13849-1 or SIL 2 to IEC 62061. The solution package includes the safe small controllers PNOZmulti 2 or the modular safety relays myPNOZ. Two optical sensors are included with each feed device. When using PNOZmulti 2, safe automation projects can be flexibly implemented via a graphic configuration software tool: With just one base unit, two cardboard magazines can be monitored at the same time, if necessary. myPNOZ is available for machinery with a small function range: The

tailored product can be ordered preconfigured in batch size 1 and is ready for immediate use via plug-and-play. For both programmable safety systems, the monitoring of additional safety functions such as E-STOP, safety gates or light curtains is possible. The complete solution also flexibly adapts to individual requirements, even with subsequent conversions. Thanks to the certification, users save time in the planning, configuration and commissioning. This helps to increase the productivity of packaging machines.

 Webcode:
web231143
Online information
at www.pilz.com

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