MENSCH UND AUTOMATION

PILZ
THE SPIRIT OF SAFETY

The magazine for customers of Pilz GmbH & Co. KG Issue 2/2022

Packaging – I trust you!

Packaging offers products protection and gives consumers the feeling: "My product is safe." But to be able to ensure that they can fully trust in the quality of the packaging, it is necessary to consider safety and security as early as the manufacturing process of packaging machinery and plants.

If you open a new package of sausage for breakfast, enjoy a soft-boiled egg along with it and break open a fresh bottle of juice, after which you take a pill for that headache that is bothering you before starting work, you do all this without reservation. You automatically trust the air-tight plastic tray, the vitamin-protecting glass bottle or the sterile blister pack – germs don't have a chance. By implication: packaging means safety.

But to make sure that food, beverages or pharmaceutical products can be consumed without worries, packaging machinery and plants must meet the same requirement: being 100 % safe. A task that is quite tricky. The packaging industry is an innovative driver and forerunner within the automation and engineering industry with regard to digitisation and networking machinery. How is it thereby possible to protect against manipulation? At the same time, orders are becoming more customised, products are more frequently packaged individually and machines should be able to be set to different packaging variants within the shortest time. How can consistent safety be guaranteed with high flexibility? And finally, the demand for sustainable packaging solutions continues to increase, and rising prices of raw materials and supply bottlenecks are also negatively affecting planning stability. So how is an efficient, easy to operate implementation of safety possible without long downtimes?

The right package – safety & security

Intelligent automation concepts tailored to the challenges of the packaging industry not only make complete production lines and compact case erectors, for example, safer, they also make them easier to operate, less prone to failure and, ultimately, more productive. Safety here not only means the protection of operators from hazards emanating from the machine, but also the protection of plant and machinery against people, manipulation and incorrect operation – also called industrial security.

Continued on page 2

Editorial

Dear Reader,

Few other industries in the area of engineering have experienced the type of ups and downs that packaging machine construction has in terms of public perception. Disparaged before the pandemic as part of the sustainability discussion in the context of packaging, systemically relevant once again due to the pandemic: packaging means safety, particularly in the food and pharmaceutical sectors.

Packaging machine builders must however also face questions of safety in a totally different regard. Certain companies within the industry were themselves the targets of cyber attacks, while at the same time they had to guarantee that their plant and machinery are safe from this type of attack. If the manufacturers of packaging machines themselves are exposed to cyber attacks, the topic is thus of particular importance as these manufacturers are networked with the customer plants for service purposes.

Germany is not only strong in the field of packaging machine construction, it also has the world's foremost automation technology. German manufacturers understood the importance of security early on and developed the corresponding products for industrial use. As shown by the current political developments, industrial security will continue to grow tremendously in importance.

Best regards,

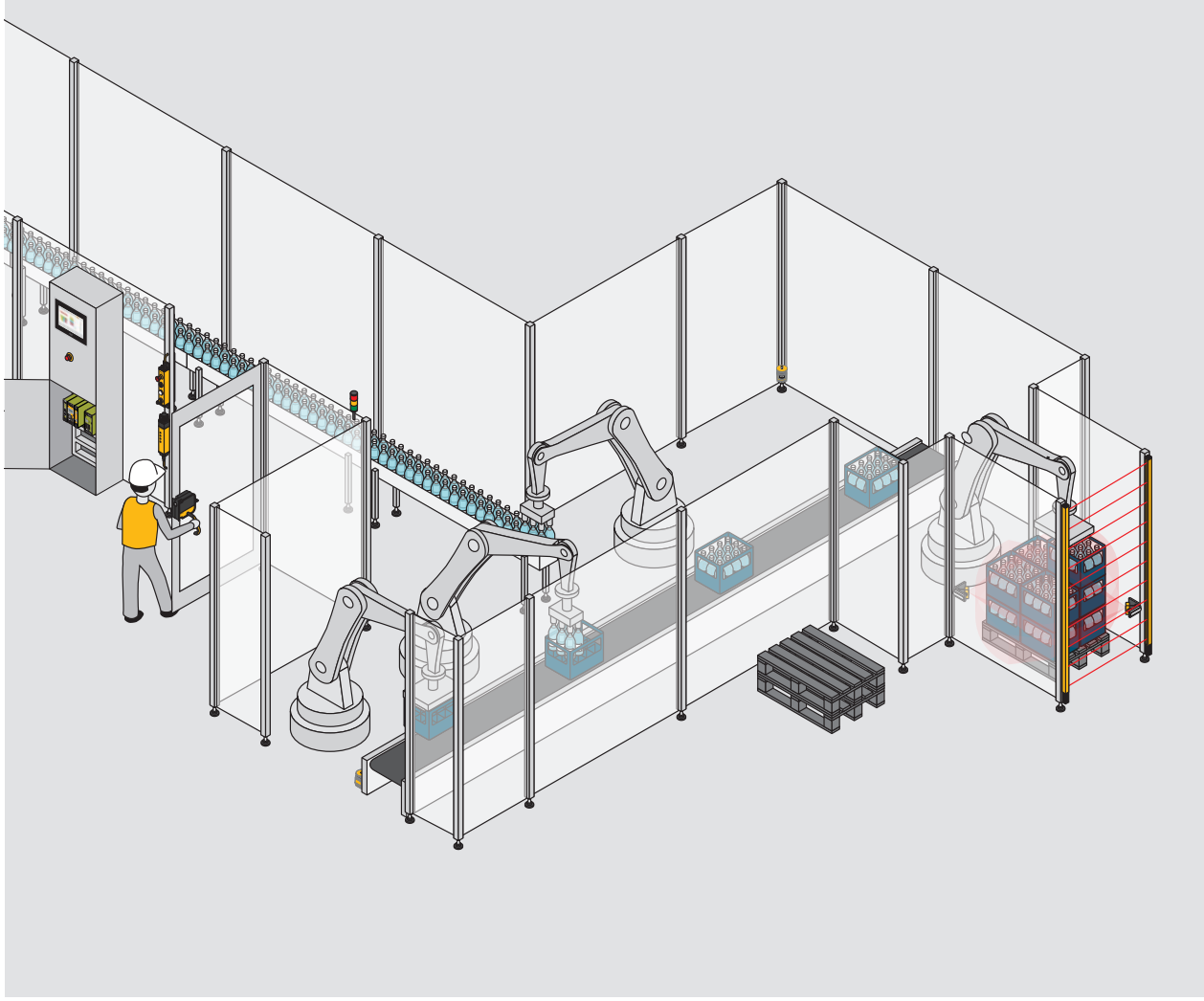
Martin Buchwitz
Managing Director of Packaging Valley Germany e. V.

360° Continued from page 1

Both branched bottle filling plants as well as compact packaging machinery have to varying extents guard locking, covers, flaps, gates and drives. Various degrees of risk are concealed here which manufacturers and operators must face in accordance with the Machinery Directive. Furthermore, the internationally valid EN ISO 14119 (interlocking devices) must also be observed. A particular emphasis is placed here on manipulation security; a risk evaluation is to be created for each interlocking device.

With its comprehensive portfolio of services and products and solutions covering sensor, control and drive technology plus visualisation as well as diagnostics, Pilz is a reliable partner for automation and safety in the packaging industry.

The result: Monitoring of the safety functions is performed by the configurable small controller PNOZmulti 2 that communicates with the plant automation system via PROFINET. Coded, non-contact safety switches PSENcode prevent manipulation and ensure that the minimum distance is maintained. "The risk assessment performed by Pilz experts formed the basis for the safe construction of our plant as well as for the identification of suitable protective measures. Pilz's expertise when it comes to machinery safety then enabled us to implement the necessary measures ourselves," says Gianluca Contesso, safety product manager at ACMI S.p.A.



Safety from the bottle to the pallet: Glass bottles filled with water come from primary packaging, which has high requirements for safety and hygiene (left). In the secondary packaging, the packaged product is placed in the outer packaging, the beverage crate (centre). In the end-of-line packaging, the containers are placed on pallets, ready for shipment (right).

Whether a new development, plant retrofit or a conversion of the material feed: Pilz offers both manufacturers and operators of plants scalable and flexible automation and safety solutions from one source which also meet the requirements of EN ISO 14119. What they all have in common: they protect users, reduce machinery failures and thus increase the productivity of plants. Because they have major influence on the performance, manageability and flexibility of a plant. Experts from Pilz will advise you on the necessary safety concept for each machine.

Safely into the bottle!

An example: A plant for filling and packaging 44,000 square PET bottles per hour is to be designed and automated for the largest Italian bottler of mineral water. ACMI S.p.A., a manufacturer of end-of-line systems and packing plants, faced this task and developed a complex plant comprising interlinked machines. Pilz took on the risk assessment and developed the necessary safety measures to ensure safe interaction of the machines – naturally in compliance with the latest standards and including productive processes.

Pure enjoyment

Together with its customer, Pilz uses its solutions individually tailored to the packaging industry to protect plants against machine standstill and guarantees high availability across the entire packaging process. Packaging machines and plants are protected against manipulation and external interference so that consumers can continue enjoying their breakfast without any concerns!

Webcode: web195352

Online information at www.pilz.com

Pilz at FACHPACK

FACHPACK 2022

Visit us from 27 to 29 September at FACHPACK 2022 in Nuremberg, the European trade fair for packaging, technology and processes! Under the motto "Transition in packaging" we will show you many flexible and safe solutions for safety and security and provide consulting on all aspects of the Machinery Directive. Our exhibition highlights: Safety & security for your packaging plant and packaging processes, digitisation & packaging 4.0 as well as the safe cardboard feed solutions from Pilz. We'll WRAP it up together!

Webcode: web232087

Online information at www.pilz.com

“We find tailored solutions”

In an interview, Thomas Nitsche, Senior Manager of Sales Training at Pilz, explains where the challenges lie in the packaging industry, how packing plants are designed and what customers can rely on from Pilz.

What role does safety play in the packaging industry?
It is the nature of packing plants to execute hazardous movements that users need to be protected from. This is exacerbated by the current trend toward single-product packaging and individualisation. You no longer find cookies together in one package, but instead individually packaged. Packaging that is growing increasingly more sophisticated leads to the packaging process having to become quicker and more efficient. This means that the throughput is increased. And with the increased speed of the movements and the high degree of automation, the danger posed by the packaging machines and plants also increases. The safety technology must also be adapted to these growing challenges.

What specific support does Pilz provide?
We support you across the entire packaging process – from primary and secondary packaging to end-of-line. During the primary packaging process, the end product makes direct contact with the plant and the packaging material. Accordingly, the requirements for sterility and so-called hygienic design are high. Pilz thus provides robust stainless steel versions of safety gate switches such as the washable PSENmag VA in IP 67/69k with a very wide temperature range.

What else needs to be taken into account in addition to hygiene?
The process must also be protected against unauthorised access. This can be performed using a modularly designed operating mode selection and access permission system such as PITreader and PITmode fusion. With this, certain functions and safe operating modes can only be called up or gates, flaps and covers opened by people with the corresponding permission. This is a good example of how both safety and security requirements can be covered with one system.

Industrial firewall solutions like our Security Bridge protect from unauthorised external access to the machine controller – for example during service and maintenance. It monitors the data traffic between the PC and controller and reports unauthorised changes to the control project – making manipulation impossible.

And in secondary packaging?
The individual packaging is placed into outer packaging, such as cardboard boxes. Tray formers are used here, for which Pilz now offers a new TÜV Süd certified solution. This prevents reaching into the machine when the cardboard stack is used up. (Read more on page 5.)

What must be taken into account when goods are placed on a pallet?
Palletising is primarily performed using robots that take packages from the conveyor and stack them on a pallet. The safety concept of these end-of-line cells often includes safety fences with safety gates and openings for feeding the packages as well as loading and unloading the pallets. To safeguard the openings, we offer safety light curtains and scanners that are also used for protection against encroachment from behind. The safety gates are ideally safeguarded with our modular safety gate system comprising PSENmlock, a handle module and the push-button unit PITgatebox – which can be combined with our access permission system PITreader.

As a side note, our modular safety gate system is also well suited to the big, heavy gates in the packaging industry. The module provides the required robustness and tolerance so that the gate – should it ever happen to warp – can still be reliably operated. Or we are also happy to work with the customer to develop a specific solution depending on the requirement, one that they can rely on.

What does “being able to rely on Pilz” mean?
For me, one part of it is the human side. We take the customer by the hand and work together to find a tailored solution. We provide comprehensive consulting on machinery safety in the packaging industry and on the application of our products and provide support in every phase, 24/7. On the other side, our products satisfy the valid standards and high quality demands. The customer can be sure that employees and plants are protected from hazards, that downtimes are minimised and that productivity increases as a result.

Visit the Pilz Digital Showroom: In the area “Components. Systems. Solutions.” you can experience a safe packaging machine in action! (For a better user experience, please view on a computer with a larger display.)

www.discover-your-automation.com

Focus on automation trends

What is shaking up the automation world, which trends are currently driving conversation and what is the word in standardisation? International participants in the digital Pilz Automation Days 2022 asked themselves these questions, which were then answered by Pilz experts in the multifaceted selection of presentations as well as the digital showroom.

More than 500 guests from 40 countries dialled into the Pilz Automation Days, which were broadcast three times each day of the event in all time zones in German and English. The “Spirit of Safety in Digital Automation” was thus shown on screens all over the world. The virtual showroom afforded the participants the opportunity to learn about any Pilz system solutions and services that interested them. Our sales experts were available for personal discussions via web meeting.

Sharing knowledge for more safety and security
At the heart of the Pilz Automation Days were the presentations: the Pilz experts were thrilled by the keen interest in the varied speaker programme. “What will the future bring for the safety of machinery?” and the overview of new developments in standardisation for functional safety (Machinery Directive 13849/62061) attracted the most participants. In addition, the presentations on safeguarding packaging machines, on holistic safety concepts including safety and security, on the safe use of automated guided vehicle systems in intralogistics and on how safety measures can contribute to higher productivity were also well received. Participants also took advantage of the discussions with our experts from Germany, Ireland and Belgium that were moderated after every presentation for an in-person question and answer session.

Curious?
If you missed the Pilz Automation Days but would be interested in listening to the presentations, recordings are available at:

Webcode: web231758

Online information at www.pilz.com

In brief …

IEC 62061: 2021 harmonised as an EU standard

IEC 62061 was published in 2021 and now has been published with identical content in April 2022 as the harmonised standard EN IEC 62061 in the Official Journal of the EU. The presumption of conformity thus officially comes into effect in the EU. A machine manufacturer can assume that it is complying with the requirements of the Machinery Directive for health and safety if it is in compliance with the regulations of the EU standard. In the conformity assessment procedure the manufacturer can submit the declaration of conformity to attach the CE mark on its plant or machinery.

The presumption of conformity for the predecessor EN 62061:2005 will end no later than 11 October 2023. After this transition period, new declarations of conformity must only be submitted based on EN IEC 62061:2021. The announcement of the new harmonised standards was performed by the European Commission with CID 2022/621 dated April 2022 on the website of the EU.

Webcode: web843081

From cyber attack to safety award

After Pilz was the victim of a cyber attack in October 2019, the company launched a communication offensive. As part of the 4th CyberSicherheitsForum, a forum for cyber security presented by the state of Baden-Württemberg, Pilz received the safety award for their response.

13 October 2019: Pilz is at a standstill following a hacker attack. Data on servers and computers around the world has been encrypted to exact a ransom. But the company immediately switches gears. With agile methods and thanks to the employees' tremendous dedication, Pilz quickly recovered. The company is open about the attack, regularly informing its employees and the public. Pilz received the Baden-Württemberg safety award this year for its exemplary crisis communication.

Outstanding openness

Thomas Strobl, Digitalisation Minister and Deputy Minister President of Baden-Württemberg, and Minister of Economic Affairs Dr Nicole Hoffmeister-Kraut presented the award to Thomas Pilz. "An authentic and open handling of a cyber attack is absolutely necessary to successfully take action against this type of crime," praised Thomas Strobl. "A strong awareness among our companies for safety matters is more important than ever to maintain and strengthen the economic success of our state." The threat to data and expertise has unfortunately become a constant companion in company processes. And yet, the topic is still frequently underestimated. The safety award is meant to raise companies' awareness of these risks and promote the innovation potential in this area," added Dr Nicole Hoffmeister-Kraut.

From the very beginning, Pilz openly communicated about the hacker attack to customers and the public in order to raise awareness about the dangers of cyber attacks. Thomas Pilz in particular has given many talks on the topic since then and has supported and advised other companies affected by this. While receiving the award, he expressly thanked the law enforcement performing the investigation for their support. He also mentioned the work of the Pilz employees who gave their all to ensure that the company made it through those dark days.

2nd place was awarded to Porsche AG, the energy provider EnBW Energie Baden-Württemberg and collectively the transport and logistics companies SVG Süd and smartSEC.

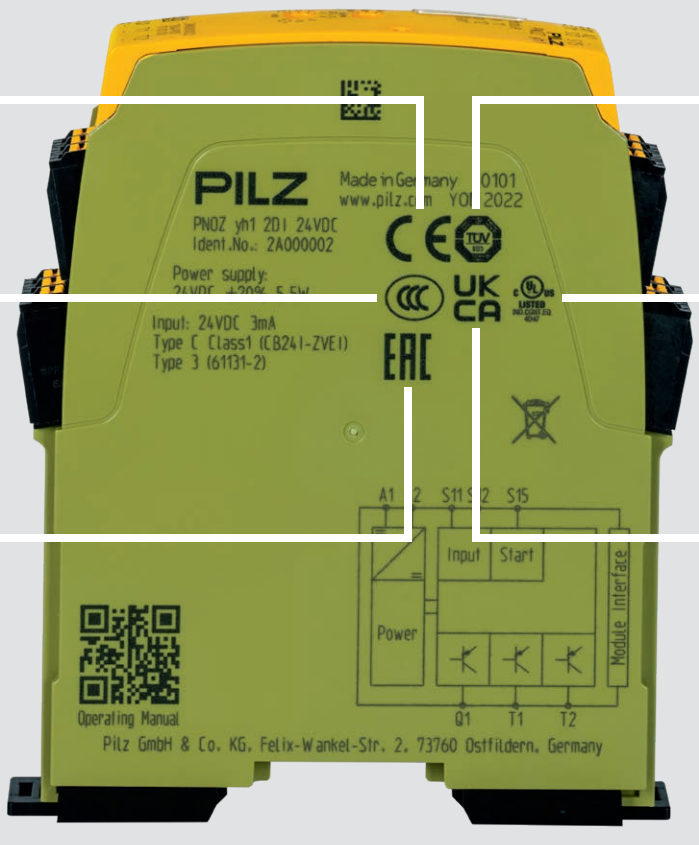
Ready for use around the world

No matter whether Pilz products are to be used in Canada, Italy or China, no Pilz customer should have to worry about the required certification. The variety of quality marks on the products shows that customers can rely on Pilz, such as on the conformity of the modular safety relay myPNOZ.

By attaching the European **CE mark ("Conformité Européenne")** Pilz confirms that all required European health and safety requirements as well as the requirement for the absence of pollutants, for example, are met.

Pilz also meets the certification and labelling requirement of the Chinese government called **China Compulsory Certificate (CCC)**.

With the **EAC conformity mark (Eurasian Conformity)** Pilz confirms that the products satisfy the valid safety requirements that are defined in the technical rules of the Eurasian Economic Union and the products can thus be placed on the market there.



The **TÜV quality mark** confirms that Pilz products meet the strict European requirements (e.g. the Machinery Directive) based on corresponding type examination certificates.

The **UL certification** from the global test organisation Underwriters Laboratories confirms that Pilz products meet the national standards in the **USA and Canada**.

Pilz was the first company to receive a **UKCA (United Kingdom Conformity Assessment)** certificate from TÜV Süd. It confirms that Pilz products will continue to comply with standards and can thus be used on the British market after January 2023. Following Brexit, it replaces the previously valid CE mark used in the European Union.

As seen on many other Pilz products: the **S mark** ("s" stands for safety) for approval in **South Korea**.

Open for efficiency

In one-second intervals, the puller pulls in the prepunched cardboard blanks and the tray former from Sema Systemtechnik GmbH folds, glues and seals these to form finished outer packaging. The interesting part: the cardboard blanks function as a movable guard. If the material feed runs empty, however, the operating personnel can reach right inside. For this reason, a TÜV Süd certified safety solution guarantees safety in every work step.

The tray former 1200 s from Sema Systemtechnik, a manufacturer of plant and machinery for the semifinished goods and packaging industry, produces up to 60 trays per minute. Cassettes that can be exchanged quickly and easily enable format changes at ultra-fast speed and thus high flexibility. The machine starts when the stack of prepunched blanks in the feed magazine has reached a depth of at least 80 millimetres. The vacuum-driven puller pulls the cardboard blanks in and presses them onto the carrier of a toothed belt. In the subsequent production steps, the tray former folds, glues and seals the blanks in one-second intervals. Once formed, the trays are carried on a conveyor either directly to the filling station or for onward transport.

Beware of the gaps

In regular operation, the cardboard blanks function like a movable guard. Because as long as multiple cardboard blanks cover the feed opening, the operator is unable to reach into the danger zone while the machine is running. If the material feed runs empty, however, this protection is no longer afforded. If blanks are smaller than the opening of the tray former, the area not covered is sealed by a Plexiglas pane made to the precise contours. This is replaced without the use of tools and scanned by the manipulation-proof coded RFID sensor safety switch PSENcode from Pilz.

A certified overall package

It became clear from the risk analysis that an effective safety solution restricting neither the operator nor the process had to be found for the case that there is “no cardboard in front of the feed opening.” Sema chose an integrated, TÜV Süd certified safety solution for PL d and Cat. 3 of EN ISO 13849-1 or SIL CL 2 of EN IEC 62061 from Pilz. In the meantime, two diffuse sensors at the material feed permanently monitor the presence of cardboard blanks. The sensors have to be located 30 mm to 100 mm away from the cardboard stack, which allows flexibility in positioning. If the sensors don’t scan anything, the safe small controller PNOZmulti 2 brings the hazardous movement of the machine to a safe stop. Once the cardboard has been replenished, the machine can be restarted after confirmation.

Trusting cooperation

“We have been relying on the robust and reliable products from Pilz for more than ten years already. What’s more, many of our customers don’t want to see safety and security solutions from anyone other than Pilz in their machines,” emphasises Thomas Wehrhahn, responsible for hardware construction at Sema. The safety function was therefore implemented using the configurable small controller PNOZmulti 2. The small controller monitors multiple cardboard feeds at the same time with just one base unit. Only the necessary hardware inputs and outputs have to be considered in the configuration. The function blocks for the evaluation are included in the software tool PNOZmulti Configurator. If the sensors are operated in combination with PNOZmulti 2 or the new kind of modular safety relay myPNOZ, the users can be confident that this TÜV Süd certified solution for compact packaging machinery meets all safety requirements.

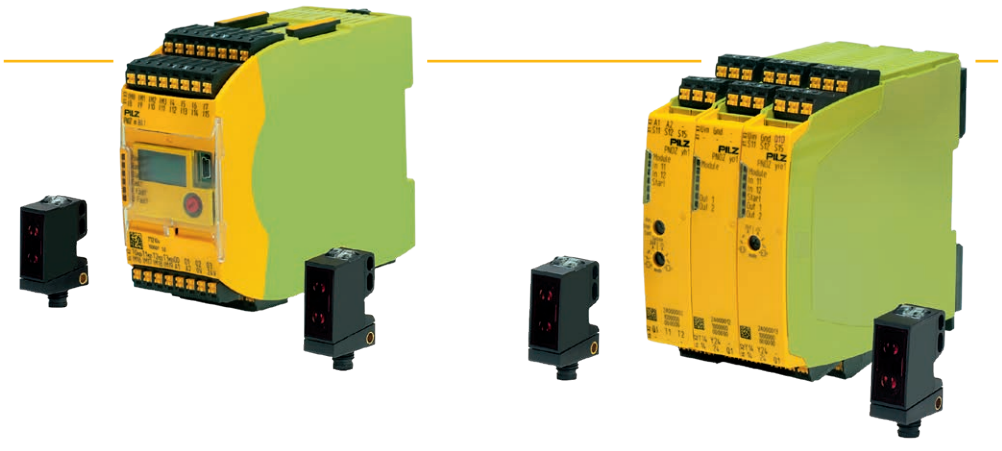
Safe, but with room for manoeuvring

The solution removes the need for rigid protective devices such as tunnels, while the blanks can be flexibly reloaded from both sides. To prevent the machine moving needlessly to a “safe stop”, a light sensor installed at the feed magazine acts as a notification stage.

Sema recognised that the focus is increasingly being placed on efficient safety solutions for end customers. That, after all, is how process efficiency can be improved, downtimes reduced and, ultimately, a competitive edge achieved. “We’re happy to work with Pilz because we always get detailed answers to our questions, are kept regularly informed of changes and new features and, quite simply, get good advice,” summarises Thomas Wehrhahn.

Webcode: web231143

Online information at www.pilz.com



The TÜV-Süd certified solution for safe cardboard feeding comprises the small controller PNOZmulti 2 or the safety relay myPNOZ as well as special sensors.

No more cardboard blanks in the feed? The TÜV Süd certified Pilz solution for safe cardboard feed ensures that the feed opening does not pose a hazard.

Three minutes with …

… Sven Jungmann

Sales Engineer at Pilz

How did Pilz end up offering a TÜV Süd certified solution specifically for the cardboard feed?

There is a truly classic problem behind this, because cardboard can be used as safeguards in the packaging industry and our customers must ensure that the safety function protects the plant operator. For this reason, there was a high demand for a solution from Pilz that includes a TÜV Süd certification.

What does this package include?

Our customers receive a certified comprehensive carefree package from Pilz: it includes the appropriate sensors, the safety controller and comprehensive documentation that provides support during the commissioning and acceptance. If the customer is already using the configurable small controllers PNOZmulti 2, he does not need an additional analysis unit. In the PNOZmulti Configurator, the customer supplements its configuration to include the safety gate function block for monitoring the cardboard feed. If the solutions is implemented with a different controller and without software, the modular safety relay myPNOZ is used as an analysis unit.

And what are the benefits of this solution?

The certified overall package offers the customer flexibility: The sensors can be positioned not only laterally, but also above the application, for example. This is important if the process should be designed to be particularly ergonomic and productive. The documentation also includes connection examples, a safety description and assembly notes for simple installation. This is an important aid for our customers in order to integrate the safety functions into their plant and machinery.

In brief …

reddot winner 2022

“Winner” in product design!
The Red Dot jury confirms: With the new safety relay myPNOZ from Pilz, innovative strength meets good design. After all, the international jury of the Red Dot Design Award only selects products that have an outstanding design: “The distinguished products exhibit distinct creativity,” notes Professor Dr Peter Zec, Initiator and CEO of Red Dot. “The quality and level of innovation are equal, making them well-deserved winners.” This is also the case with myPNOZ: The jury is impressed with its practical flexibility, which allows customers and users to adapt the modular safety relay to specific requirements. In the software tool “myPNOZ Creator”, users can create, simulate and order their safety solution – the Creator puts together the optimal hardware as an individual solution. The user receives an individually assembled, set and tested product, ready for commissioning. Safety in batch size 1 – including the outstanding design!

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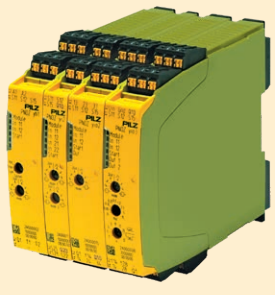
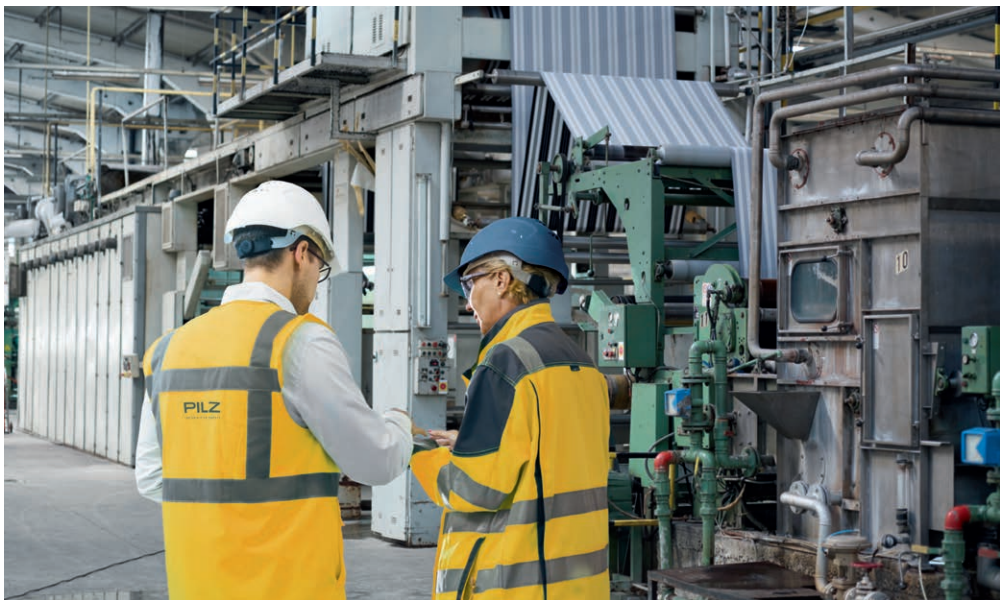


Well-advised

What should you do if your machine is getting on in years? We show Pilz’s systematic approach to bringing plant and machinery back up to the state of the art – including higher availability and a longer service life.



You can find them almost everywhere: “classic machines” in production halls. They have been working hard for many years now. Up-to-date automation and safety technology can breathe new life into them. However, a so-called retrofit of the machines generally leads to a number of questions. But the focus is always: the question of cost effectiveness. In the first step it is therefore important to consider what the retrofit should include: a simple exchange of old for new, or should the existing machine be expanded or the process optimised and adapted? How does Pilz support customers when answering these questions? Back to the beginning!

1. The risk assessment
Experts from Pilz thoroughly examine the “classic machine” under consideration in the first step and create a risk assessment: Where does the plant or machinery stray from the state of the art according to the current standards situation? Which safety-related gaps have to be filled? And how? For this purpose, Pilz also makes basic suggestions for achieving the necessary mechanical and safety-related protection objectives as part of a safety concept.

2. The safety design
If needed, our experts then create a detailed safety design for the implementation – a consulting component that smoothly transitions into the implementation and includes hardware as well as software, where possible. Which components should be exchanged in order to preserve availability? Which movable guards or protective devices should be used to guarantee safety of the machine and increase availability and productivity? Which electronic access systems could improve the protection against manipulation? Consulting is adapted to the individual needs of the customer here – from smaller to larger retrofit scopes – and is initially fully product-neutral. The customer can then decide how to proceed with the retrofit, and with whom. If so desired, Pilz will provide the entire package from one source: Consultancy service including engineering and integration.

3. Following the conversion: the verification and validation
Before completing a successful conversion, the verification and validation of the targeted safety features must still be performed. After all it’s not just important what one does, but also that each step is checked for accuracy. An approach that is a matter of course at Pilz. Protocols required by standards transparently verify every step.

4. Training the employees
And finally, the employees should also be able to easily and straightforwardly deal with the machine upgrade in their daily work. The experts offer seminars for safety-related software, hardware and design as well as machinery safety and CE seminars in the training centres at Pilz locations or on-site with the customer. On the whole, an all-round safe and sustainable retrofit!

Webcode: web216143

Online information at www.pilz.com

Profile 25 years of Pilz’s market presence in Japan

Expertise in demand

While on European factory floors it is normal for personnel to feel safe when working on plant and machinery thanks to laws and standards, in other places around the world there is still work to be done to convince people to carry out technical safety measures. Like in Japan, where Pilz Japan has been helping change minds for 25 years.

At the end of the 90s, the protection of human and machine was primarily viewed as a high cost factor by Japanese companies. This was the period, specifically in 1997, when Pilz opened its first subsidiary in Japan in Yokohama. Since that time, the employees, currently numbering 22, have been dedicated to increasing safety.

Focus on raising awareness
In 2000 SafetyBUS p Club, which is now called Safety Network Japan, was founded by Pilz Japan and other member companies like the automotive manufacturer Toyota and the automation company Hokuyu. The organisation raised awareness for greater safety and a reduction of work accidents in Japan by offering presentations on machinery safety and the current trends in functional safety. But what’s the Japanese legislation setup like? Employment law was adapted in 2006 so that interest in safe automation is growing. Even though the law does not make any binding specifications, safety is becoming more relevant and consciousness is changing. Safety and security are less likely to be considered as cost factors, and instead as a “must-have” in modern industrial environments.

Safety “made in Germany”
There is still much work to be done, especially in the food and packaging industries. For example, Pilz Japan first performed a risk assessment for an international food group. The customer thus became aware of the automation solutions and the training offer from Pilz. Now the customer is interested in training its employees in South Korea in machinery safety. “Our customers naturally export their plants abroad, which is why it is important for them to have a reliable expert by their side to support them during the certification

of their plant and machinery,” explains Olivier Ligibel, General Manager of Pilz Japan. As a German company, Pilz is preceded by its good reputation, as Germany is considered a pioneer when it comes to safety.

But not only large corporations deal with safety matters, argues Olivier Ligibel: “We are seeing a growing interest in safety and security among smaller companies. Many of them are still put off by the investments, but recognise the growing importance.” In other words, there is still much to do after the anniversary celebration, as safety and security are currently in demand in Japan.

Incidentally: Pilz is introducing its innovative solutions from 20 to 23 September 2022 in Berlin at InnoTrans (Hall 27, Stand 550).

Webcode: web195854

Full speed ahead

Everyone is talking about the Mobility Turnaround, meaning that railway operating companies around the world are facing the challenge of digitising the entire rail network over the coming years. The aim? Railway operations should become safer, better, simply revolutionised for climate-neutral mobility. Pilz is therefore expanding its product range for railways and, with the establishment of the Business Unit Rail, is bundling its global railway activities.

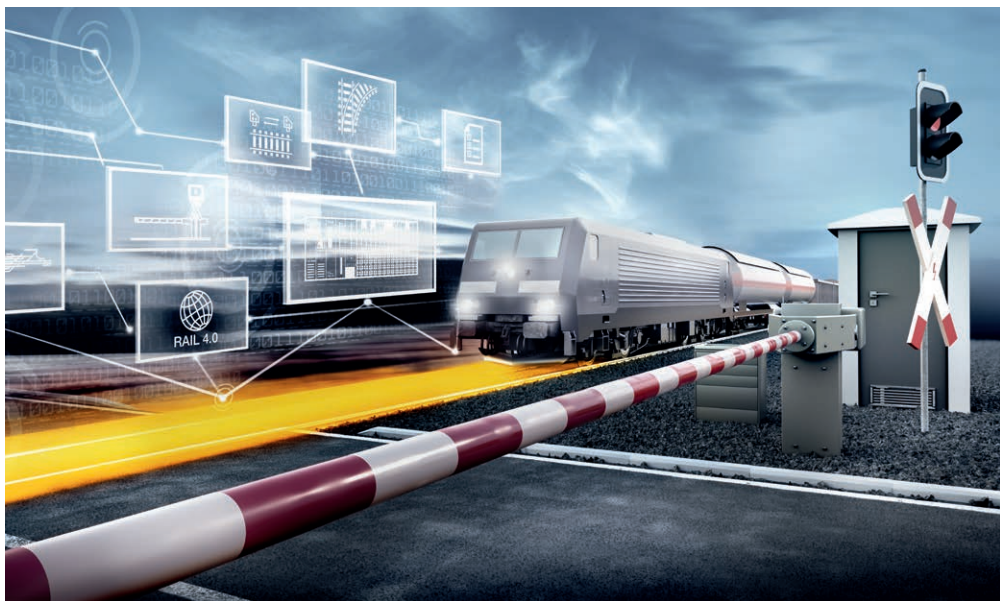
Punctual trains, energy-efficient technology and an infrastructure that allows higher capacity – those are the basic requirements for a mobility turnaround. In order to achieve these goals, European railway operating companies must digitise and standardise their control and safety technology. What is needed are modern, safe and environmentally friendly technologies like those that are already commonplace in industry. Industry-tested system solutions from Pilz are already being used in classic railway applications such as switch controllers or railway crossings, as well as for areas of overlap between industrial and railway applications. Pilz has thus successfully entered the field of railway technology.

Fusion of industrial automation and railway technology

Pilz now wishes to actively help shape the future of the rail industry and, with the founding of the new Business Unit Rail, is broadening its product range for railway technology to offer more automation solutions for railways. “We are creating more internal resources for a portfolio and application engineering specially tailored to our railway customers. Additionally, we are designing new digital solutions by merging industrial applications with railway and signal engineering. With our industry-proven automation solutions, we are already fully satisfying the wide-ranging requirements of the rail industry! We are thus the first choice for a safe digital infrastructure for railways,” explains Sebastian Lüke, Head of Business Unit Rail.

Comprehensive portfolio from one source

For Michael Fohrer, President of Business Unit Rail, Pilz is taking exactly the right steps: “Industry started on the path of digitisation much earlier. The strengths and experiences that Pilz was already able to gather in industrial applications are ideally suited to the extensive requirements of railway engineering. The open interfaces and standardised Pilz solutions have enormous potential for replacing previously proprietary railway applications.” The automation company’s expertise is also directed into railway-specific services such as project planning and project management, programming, documentation and support in the approval process. Know-how in the areas of workplace safety, machinery safety and the ‘Industrial Safety and Health Ordinance’ is also needed for the plants on company premises. Railway operating companies benefit from this comprehensive railway portfolio from one source.



Working together for the technology of tomorrow

The automation system PSS 4000 with its special railway modules already takes on the control and monitoring functions in various railway applications, which railway operating companies rely on. This is because PSS 4000 has railway-specific safety approvals as a product feature and plays an important role, for example, in the European project EULYNX. 13 major European operators, including Deutsche Bahn, ProRail Niederlande and SBB Schweiz, have joined together under this mantle. The goal is to develop and provide uniform standards for modular interlocking technology. Specifically, Pilz has been working in a development partnership with ProRail, the largest railway infrastructure manager in the Netherlands.

Dare to be more open

In the project, the safe automation system PSS 4000 from Pilz is used as the hardware basis for the so-called EULYNX adapter. This enables the use of manufacturer-independent EULYNX standards in existing interlockings because the adapter establishes the compatibility between the interlocking technology and the so-called object controllers. Digital control commands from interlockings are translated by the object controller into analogue signals in the EULYNX standard. These can then be interpreted by the end device – like the switch, for example. This would be a major step away from local, country-specific solutions and toward an open railway market based on digital control and safety technology. And what happens on the European railway market and standardisation is frequently used as a global example for railways. Exciting future prospects for Pilz, and the Business Unit in particular.

Webcode: web8485

Online information at www.pilz.com

Apropos ...

With Mat P. on his automation tour

PILZ APPLICATIONS

Whether he’s dealing with applications from the fields of packaging, intralogistics or, in this case, retrofitting tunnel boring machinery – as an expert, Mathias P. travels the world with automation solutions by and for Pilz. He often talks to his wife about his experiences – even when they’re taking off for a well-deserved vacation …

▸ You know, love, I can hardly believe that we only need eleven minutes to get to Kärnten thanks to this tunnel.

Yes, it’s unbelievable. Even more so when you consider the conditions under which the Tauern Railway tunnel was built back then. Luckily tunnel construction is mostly automated these days. I was actually involved with the safety approval of a tunnel boring machine recently.

▸ Tunnel boring machine? I can’t imagine there being a machine that manages such a thing.

These machines are impressive due to their size alone, love. Some are as big as our house. The mining machinery of our customer Sandvik Mining and Construction has to be able to do its work reliably and with no danger to people or the mining location. The underground safety requirements are high, especially because of the risk of possible explosions when the drill head encounters gas cavities in the rock.

▸ My darling, I am so proud of your work to promote safety.

This time my job was performing a retrofit. To rule out the potential hazard of a possible explosion, minimum values had to be maintained for water flow and pressure as well as air pressure in the spray system of the roller bit on the drilling head. Our automation system PSS 4000 is now responsible for the safe spray system monitoring. Now clogged or lost nozzles can be detected safely. A real upgrade when it comes to operational safety – for complete safety underground.

Pilz is riding the rails

With the establishment of the rail business unit, Pilz is increasing its activities in the railway industry under the leadership of Sebastian Lüke, Head of Business Unit Rail. After all, Pilz is the first choice for a safe digital infrastructure for railways. Sebastian Lüke (on the right in the picture) has been responsible for building up the Business Unit Rail from the very beginning and now heads the international team. The renowned rail expert Michael Fohrer (on the left in the picture) – along with his experience as a former VDB president (Verband der Bahnindustrie in Deutschland e. V. [German railway industry association]) and his expertise from 13 years of management responsibility at Bombardier Transportation – will support the rail business unit.

Robust “all inclusive” radar package

In the safe radar system PSENradar for protection zone monitoring in rugged environments, the analysis unit PSEN rd1.x I/O is now available. Configuration is performed easily via the USB connection. That saves time and costs during commissioning. PSEN rd1.x I/O supplements the existing analysis unit PSEN rd1.x I/O PN, which offers interfaces for Modbus and PROFINET. Thanks to this, the protection zone monitoring in rugged environments with PSENradar is even more flexible in application: now the safe radar solution can also be easily integrated into existing applications. On top of this, there is a complete service solution from Pilz for protection zone monitoring: it includes the risk assessment and covers the system integration, including the conformity assessment procedure. Together with the configurable safe small controller PNOZmulti 2, users benefit from a safe and economical complete carefree package for extreme application scenarios with high temperature influences, with dirt or rain or even with vapour and vibrations as well as flying sparks.

Webcode: web199914

Online information at www.pilz.com

Emergency stop on conveyor belts

The safe rope pull switch PSENrope mini provides cost-effective and reliable protection for a wide range of applications involving conveyor belts, for example in the packaging, automotive and textile industries or at airports. The operator simply triggers the mechanical emergency stop function by pulling the rope or pressing the integrated E-STOP pushbutton – even with large-scale applications thanks to the rope length of up to 30 metres. The user thus saves money and also achieves a conveniently operated safeguard in compact form.

The PSENrope mini requires very little space for installation. What’s more, the versions with a straight or an angled head offer flexible assembly. The robust metal or plastic housing to IP67 is what sets the rope pull switch apart for both indoor and outdoor applications. If concealed installation of the PSENrope mini is required due to the machine design, the user can select the version with an integrated reset button.

Webcode: web150404

Online information at www.pilz.com

An upgrade for security

With the web-based visualisation software PASvisu automation projects on plant and machinery can be easily visualised. This provides a convenient overview of the plant. With the software version 1.12, the manipulation protection has now been improved. How it works: If operators select the reading unit with RFID technology and integrated OPC UA server for access control and PITreader S as data source, users can now be directly authenticated at their PASvisu projects. If PITreader S detects an authorised user via transponder key, PASvisu reacts to the respective user-specific information that is stored on the transponder. The correct language or appropriate user level is thus set, for example, or a defined start page shown. Users only see the information that is intended for them. The respective status information for the users is shown in real time. The PASvisu software version 1.12 now also supports Windows 11. That is how easy transparent industrial security is!

Webcode: web1504301

Online information at www.pilz.com

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Photography / copyright:
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Reproduction:
SZ Repro, Esslingen, Christine Huebbe, Stuttgart

Printing:
Druckhaus Waiblingen Remstal-Bote GmbH

Edition run: 15,300 copies

Publisher:
Pilz GmbH & Co. KG
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73760 Ostfildern, Germany
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Paper:
Printed on 100 % recycled paper for the good of the environment.

8-8-en-3-128, 2022-08 Printed in Germany

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THE SPIRIT OF SAFETY