

Customised support

In an interview, Stefanie Kussmann and Petra Wallhof discuss the trend toward customised services.

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Safety a cut above the norm

Sharp blades portion food at high speeds: solutions from Pilz guarantee enhanced safety and performance.

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Nice and lean

To make their manufacturing processes efficient, Elesta GmbH practices lean management in their overall day-to-day work.

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Tailor-made access

Every application places different demands on the safety concept and the selection of safety solutions varies accordingly. Like, for example, safeguarding danger zones with safety gate systems. The options range from simple safety switches to modular safety gate systems. The latter allow not only tailored solutions, but also – with the appropriate expansions – combine safety and industrial security.

Movable guards offer a high degree of functional safety in the most varied applications. The focus here is on the protection of the worker against hazardous machine movements. Depending on whether it is a stand-alone machine or complex interlinked plants, a suitably tailored safety concept is required. If machinery has a hazardous overrun, guard locking will be important. If gates are accessible, an escape release is a must.

No chance for manipulation

Beyond protection of the person, the plant itself should also be protected – for example against manipulation. If the goal is to prevent workers from bypassing safety precautions to (seemingly) make their job easier, intuitive operating systems that are easy for the user to handle are a necessity. Solutions for industrial security are also becoming increasingly important. To ensure

that only authorised persons are granted access to the application, modules for access authorisation can be integrated in modern safety gate systems.

Building block for securing safety gates

A modular safety gate system offers flexibility and decentralised intelligence to safeguard a wide range of applications. The individual

solution is comprised of a combination of sensors, escape release, door handles and a control and pushbutton unit. Depending on the application, the user selects the appropriate safety gate sensor and combines this with the components required for their application in order to create their individual solution.

Continued on page 2



Editorial



Dear Readers,

In a rapidly developing global market, agile product development offers a competitive advantage. Agile methods provide support when creating new products and responding quickly to changes – particularly when products are growing increasingly more complex and unique. At first glance this does not appear to be compatible with safety requirements. But there are considerable advantages when merging safety and agility as early as the development phase.

An iterative approach reduces complexity in development and quality assurance, for example. Thanks to the ongoing involvement of customers and testing institutes, problems in the definition or implementation of requirements are identified and rectified quickly. Performing an assessment parallel to development not only optimises the time to market, but also the safety.

If agile methods are adapted to the requirements of safety standards potential stumbling blocks can be detected and addressed in good time. An essential part of this is constant communication between experts who take a constructive and critical look at the topic. After all, agility and safety are not opposites; instead they can meaningfully complement one another.

Best regards,

Claudio Gregorio

Claudio Gregorio
Department Manager Functional Safety Software
TÜV SÜD Rail GmbH

New versions for intuitive operation

With the pushbutton unit PITgatebox, users can easily operate safety gate switches and systems. PITgatebox is available in thirteen preconfigured versions. Pilz now offers additional combination options comprising pushbuttons, switches and E-STOP pushbuttons. A version with the reading unit PITreader is also available to control access authorisations via the pushbutton unit.

With its high quality die cast zinc metal IP65 housing, the PITgatebox is robust to shock, vibration and collision. Thanks to the slimline design, the user can quickly and easily install the pushbutton unit on standard profile systems.



► 360° Continued from page 1

These sensors include the safety gate sensor PSEnmlock. Thanks to safe interlocking and safe guard locking, it can be used for personnel and process protection up to the highest safety category PL e.

Smart diagnostics included

Combined with the diagnostic solution Safety Device Diagnostics (SDD), comprehensive diagnostics and status information is available that enables quick trouble shooting, thereby reducing downtimes. The SDD also enables safe series connection and at the same time the targeted

sponding authorisation. Depending on the qualification and function of the employees, it is possible to ensure that only the correct group of people has access to the system. Commands such as machine stop, unlock, lock or reset the plant or machinery can be controlled following successful authentication. The machinery is thus optimally protected against incorrect operation or even manipulation.

Centrally managing authorisation

Particularly efficient authorisation management with PITreader is possible in combination with the



It is possible to implement efficient safety gate concepts with particular flexibility with the modular safety gate system from Pilz. They also meet the requirements for safety and industrial security.

actuation of individual sensors. Users can define which gates are allowed to be opened after switching off, for example if maintenance work is to be performed on a plant. Otherwise all safety gates connected in series would open at once when the unlock function is requested, which could lead to a restriction of the productivity.

Safety under control

In addition to the safety sensors, appropriate control elements complete the individual safety gate solution. PSEnmlock handle modules have an expandable actuator and an integrated escape release. They can be flexibly installed on the inside or outside of the door and a locking insert prevents a restart of the machine. Accessible doors are optimally safeguarded.

The safety gate system is operated via a pushbutton unit. Pilz offers the pushbutton unit PITgatebox in various preconfigured versions with combinations of pushbuttons, key switches and E-STOP pushbuttons.

Access for authorised persons only!

The version of the PITgatebox with integrated reading unit PITreader is new for controlling access to plant and machinery. Users receive their individual authorisation on a coded RFID key and use this to authenticate themselves at the safety gate: The key is read out in the PITreader and access is granted with corre-

configurable safe small controller PNOZmulti 2: the user can easily configure access permissions for machines and plants by dragging and dropping them in the corresponding PNOZmulti Configurator software. Even complex hierarchical permission matrices can be configured in the free user area. They are then transferred to the RFID keys using the reading unit PITreader.

With this type of modular system that combines safety gate monitoring and access control, individual safety gate solutions can be efficiently implemented. If the safety gate system with safe control technology from Pilz is used, this provides a safe complete solution: the result is a uniform safety system that combines safety and industrial security and at the same time contributes to higher productivity. ◀

Webcode:
web194460

Online information
at www.pilz.com

Customised support

Customised service packages that precisely meet your needs: the trend is also moving toward tailor-made solutions for services. Stefanie Kussmann, Customer Support International, and Petra Wallhof, International Marketing Management, explain what this looks like in practice.

► Ms Kussmann, Customer Support accompanies the customers from risk assessment and commissioning to repairs. What expectations do the customers have here?

Stefanie Kussmann: First and foremost, our customers naturally want to use safe machinery and offer their employees a safe working environment. For this reason they expect an overall package from Pilz that incorporates current standards and directives. With regard to a sensitive topic such as safety in particular, they attach great importance to a trustworthy partner who is a one-stop shop for service and support with corresponding expertise. The goal is always to keep the downtimes as short as possible to avoid productivity losses.

► Ms Wallhof, does customisation also play a role in services and support?

Petra Wallhof: Yes, of course. Every customer has their own demands and requirements. The type and scope of the machinery plays a role here, but also at what point in the production process they are used and what consequences a temporary standstill would have. It also depends what personal contribution the customer wishes to make or how much support they require from us: if the company has a particular expertise in-house, for example, we do not offer this consul-



Stefanie Kussmann (right), Customer Support International, and Petra Wallhof (left), International Marketing Management, introduce the new Pilz Care program.

tancy service separately. Depending on the industry, the availability or reaction time is important – spanning from industrial single shift operation to airports that require 24/7 support.

► Why is Pilz offering the new Pilz Care programme and who is it oriented toward?

SK: Pilz Care was actually formed from customer feedback because there is a high demand for

tailored support contracts that offer reliability. We created the content of our Pilz Care modules based on customer requests. The programme is particularly beneficial for machine operators and maintenance managers in fast-paced industries such as the process industry or logistics area.

► What sets Pilz Care apart?

PW: With Pilz Care we offer pre-defined modules from which an individual support package for the customer is bundled – depending on the area of use and type of machinery. The focus here is on support for all aspects of Pilz products that are used by the customer in various applications. This includes rapid assistance by phone and remote support, on-site consultation or comprehensive repair and express spare parts deliveries. For the customer, this means greater machine availability in addition to the agreed reaction time guaranteed by Pilz. ◀

Pilz Care will be introduced in early 2021.

Further information is available now via our contact form at www.pilz.com

More precise validation of collisions

Promoting the usage and proliferation of Human-Robot Collaborations (HRC): this is the goal of the EU research project ROSSINI.

13 partners from eight different EU countries are collaborating on the project. Pilz contributes its expertise for the validation of HRC applications.

The goal of the ROSSINI project is to develop a hardware platform to easily and safely integrate collaborative robots into existing production plants. HRC applications are to be optimised and expanded with both existing and new technologies. The Fraunhofer Institute for Factory

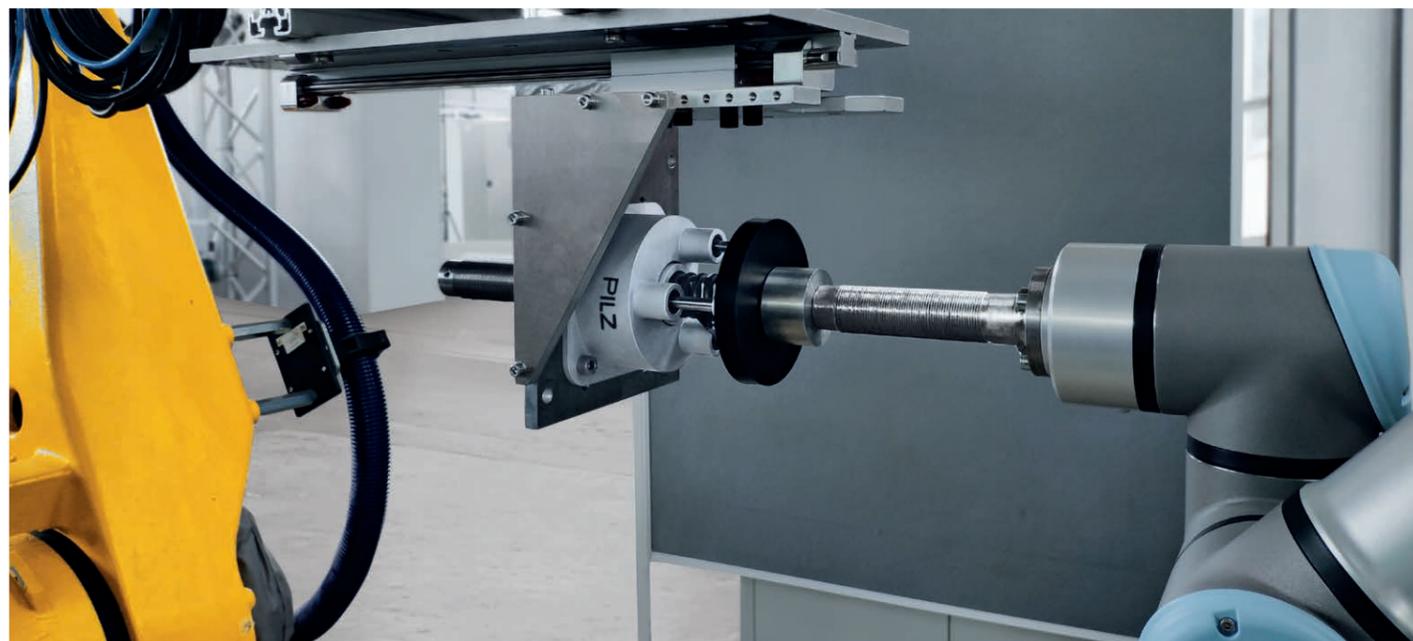
Operation and Automation (IFF) is responsible for a new method for validating safety features of HRC-capable robots within the project and is collaborating with Pilz to achieve this.

According to ISO/TS 15066, collisions between

humans and robots are possible in human-robot collaboration (HRC). At the same time, however, the safety of the human must be guaranteed. In order to offer a high level of safety, Human-Robot Collaborations according to method 4 are currently only possible if the robot moves at reduced speed.

Within the ROSSINI project, the teams are to work together to identify a method with which the hazard potential of the transient impact of collaborative robots can be assessed. A fixed measuring device is needed to measure the collision forces – but this does not allow re-enactment of a transient impact. To be able to assess this type of impact in future, the Fraunhofer IFF has suggested a recalculation of the collision forces measured at the measuring device. In order to test the method and perform validation, the collision measurement set PRMS (Pilz Robot Measurement System) from Pilz is being used in combination with various robots. PRMS is used to measure the force and pressure that can be created during a possible collision between human and robot.

With this new method, the safety level can also be guaranteed at higher robot speeds. The project is thereby contributing to the acceptance of HRC applications. ◀



The Pilz collision measurement set PRMS is used to determine the force and pressure during a possible collision between human and robot.

In brief ...

You can now listen to Pilz

"For your safety" – this is the name of the new podcast series from Pilz on all topics concerning safety, industrial security and automation. Listeners can call up the podcasts with a touch of infotainment at any time and conveniently learn more about current topics from safe automation. The show features experts who, based on their practical experience and using application examples, talk about how automation projects can be economically and safely implemented. They also explain how to deal with modified frameworks with regard to standards and directives or report on the implementation of industry-specific requirements in automation.



The new podcast series can be found on the Pilz website at www.pilz.com/podcast and on popular podcast platforms such as Spotify, Deezer and Apple Podcasts.

► Inside SPS – Smart Production Solutions – is taking place online

Digital industry meeting place

Due to the coronavirus pandemic, the international trade fair SPS will be taking place virtually this year under the name SPS Connect (24 – 26 November 2020). Pilz will also make an appearance at the trade fair. Through various information and consulting offers, Pilz is making the current topics and product highlights into an online experience.

sps connect

The digital automation hub

The international trade fair for the automation industry, SPS (Smart Production Solutions), in Nuremberg had to be cancelled this year as an in-person event. To ensure that the industry still has the opportunity to compare notes about new topics and products, the virtual variant SPS Connect has been brought into being. The digital trade fair will focus on the networking of exhibitors and visitors as well as a varied presentation programme with prestigious speakers and experts addressing the trending topics from automation. In this context, Pilz is also presenting its latest innovations and current trade fair highlights. The participants can also talk to experts from Pilz in real time and get advice on new developments in industrial security, sensor technology, control and drive technology, Industrie 4.0 or robotics.



Also present digitally in Dubai

Pilz is also taking part in the SPS Automation Middle East in Dubai on 18 and 19 November 2020, which will also be entirely digital. This trade fair is the first and only specialist event in this region to present all aspects of automation as well as the newest innovations and intelligent solutions from the world of IIoT, Artificial Intelligence and Industrie 4.0. Like at SPS Connect,

the trade fair visitors can digitally learn and consult about the newest innovations.

Further information

SPS Connect:
www.pilz.com/sps
SPS Automation Middle East:
www.pilz.com/spsdubai

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Safety a cut above the norm

Speed matters in food processing: the knives in Portio range portion cutters cut up fish or meat into portions at a speed of at least 17 cuts per second. For the Belgian machine builder Marelec, both performance and safety were decisive factors in the development of its machines. The company puts its trust in Pilz's expertise.

When developing machines, the machine builder Marelec concentrates on the portioning process with which fresh meat, poultry or even fish can be cut up into portions with a precisely specified weight. Roland Verleene from Marelec, who is responsible for the Technology division, explains the operating principle of the portion cutters: "The product is fed in over two or more infeed conveyors. The crescent-shaped knife rotates between the two conveyors. On the first conveyor, the product runs through a 3D camera system. The measurement performed there in combination with the known specified weight of the product guarantees that the knife can cut precisely so that a specific weight of the individual portions is achieved." After the product has been cut in the specified portions, these precisely measured portions are sent on for further processing on the second conveyor belt.

Focus on safety

Safety is the priority for Marelec as the portioning machines have a very high risk of injury due to the movement of the razor-sharp blade. The goal of the safety-related considerations: the highest safety of machinery to Performance Level e (PL e). This is where the automation and safety expert Pilz came in. The scenario: a knife that cuts extremely fast – at least 17 cutting motions per second – making its movement barely perceptible for the worker. Safety therefore had to be guaranteed by the machine itself to exclude any residual risk. There is another risk with this type of machine because the machine operator must frequently stand near the "knife" danger zone.

Knife under a hood

To cover these risks to PL e, Pilz recommended the use of a protective cover including safety fence monitoring. If the cover is intentionally or accidentally opened, the non-contact coded safety switch PSENcode ensures that the knife is safely switched off immediately and can no longer be activated as long as the cover is open. The safety sensor, which is insensitive to shock and vibration, thus enables the highest manipulation protection. A tunnel that acts as a mechanical barrier additionally ensures that the operator cannot reach far into the machine. PSENcode has short circuit diagnostics that make the product safe to PL e. "At Marelec we also decided on sensors that are certified according to protection class IP69K so that they



are suitable for high pressure cleaning, which is important for machinery used in the food industry. Additionally, these sensors are resistant to corrosive cleaning agents," explains Kwinten Cantraine from Pilz Belgium.

Smooth transition for more performance and safety

Roland Verleene neatly summarises another requirement: "We develop our controllers completely in-house so we were looking for a reliable partner for the safety controller." With regard to the technology for this requirement, Marelec originally needed a safety controller with four outputs and 20 inputs. Only the conveyor belt, the laser and the knife were intended to be controlled via these outputs. A great number of safe inputs were required, however, that also had to have a redundant structure in order to achieve the required safety level. Hence the reason for choosing the configurable safe small controller PNOZmulti 2. The safety controller outputs can be read out via the serial communication. If the higher level PLC shows that it should be rebooted, PNOZmulti 2 checks whether all safety conditions are met. Marelec is fully satisfied with this solution: "We can now guarantee that we are only bringing machinery onto the market that meets the highest requirements for performance and safety. We can always rely on Pilz to be our partner when it comes to safety. A successful partnership as far as we're concerned!"

The machinery in the Portio range from Marelec automatically cuts fish and meat portions to size. When opening the protective cover, the non-contact coded safety switch PSENcode from Pilz ensures that the knife in the portioning machine is immediately and safely switched off.

Three minutes with ...

... Erich Wagner

Product Manager, Sensor Technology

► Mr Wagner, is it possible to unite variety and customisable sensor technology products with standardisation?

Safety gate solutions live on variety. But it is also possible to be spoiled for choice. In order to support our customers, it has proven worthwhile to work with corresponding application examples. This incorporates our entire wealth of experience in terms of safety, application and components.

► What challenges pop up here during implementation?

The focus is on safe, economical solutions. Machinery, and particularly safety gate solutions, are increasingly being standardised, which is why our customers would like to use the same components on different machinery around the world where possible. This means that they can follow the same processes during servicing, for example, which means not only enhanced safety but also considerable time savings. The solution offer must be simple: simple ordering and implementation and simple spare parts management when servicing.

► What role will sensor technology play in future?

Electromechanical systems will increasingly be replaced by electronic systems. Using RFID and transponder technology, valuable

data can be stored and evaluated. In terms of Industrie 4.0 and industrial security, this enables flexible, efficient production. Furthermore a bus system such as IO-Link Safety enables standardised communication between safety controller (Master) and field device (Device).



The safety signals and diagnostic information are hereby reduced to two pins. I am continuously impressed at how the evaluation of complex sensors is performed over a simple M12, four-pin cable.



The configurable safe small controller PNOZmulti 2 is at the heart of the plant's safety system. The safety level meets Performance Level e.

In brief ...



Revision of the standards EN ISO 13849 and EN/IEC 62061

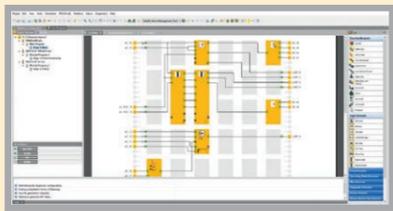
The two standards EN ISO 13849 and EN/IEC 62061 play an essential role in meeting the specifications of the Machinery Directive. A key focus area is the reliability of safety-related control systems and their electrical, electronic, hydraulic or pneumatic components. Both generic standards for functional safety are currently being revised and new versions are expected to be published in 2021.

During the revision, the focus is on the definition and validation of safety functions, a better definition of different safety-related parts of the control systems and detailed requirements and information for specific safety functions (such as operating modes, monitoring of safety functions).

Pilz is a member of the associated committees and is involved in the revision. Details on the planned modifications can be found on the Pilz website under Specialist knowledge or under the following webcode.

Webcode: web84286

New features in PNOZmulti Configurator Version 10.13



From software version 10.13, the software tool PNOZmulti Configurator offers new elements for simple configuration of safe user programs that are executed by the configurable safe small controller PNOZmulti 2. This allows the user to efficiently implement the diverse requirements for monitoring of safety functions. The muting element was expanded to include L-muting for light curtain applications. An additional element is used for the configuration of the signal sequence for locking and unlocking the safety gate system PSENmlock. In the monitoring of analogue functions, the mathematics element was expanded to include multiplication and division of analogue values. There are two new logic elements, Digital Coder/Decoder, for coding and decoding input or output signals. On the hardware side, two new expansion modules are supported from version 10.13: the burner module PNOZ m EF 4DI4DORD with diverse relay outputs and the motion monitoring module PNOZ m EF 1MM2DO with two semiconductor outputs for monitoring one axis. The user now has more options for configuring the PNOZmulti 2.

Webcode: web150399

► Inside Pilz strengthening international sales presence with distributor programme

Safe automation worldwide

Pilz is known as an expert for safe automation with 42 subsidiaries around the world. With the new international distributor programme, Pilz is now supplementing its global sales network.



Selected partners, the Pilz Authorised Distributors, will additionally be selling the Pilz product portfolio in all markets. In this way, customers also receive comprehensive consultation in markets without Pilz subsidiaries. With their knowledge of all aspects of safe automation solutions, the contracting partners supplement the global Pilz network. A uniform training programme and access to technical background knowledge ensure that Pilz Authorised Distributors have comprehensive expertise about the system solutions from Pilz. Customers can therefore rely on competent contact partners near them and benefit from faster availability of parts from their local partner, for example.

High quality demand

Pilz has had positive experiences with its distribution partners of many years and will incorporate these into the new programme. The existing partners will naturally be part of the Pilz distributor programme. "Thanks to uniform global teamwork, we can guarantee that Pilz solutions and services are available quickly and with consistent quality around the world," explains James Large, Senior Manager Business Development at Pilz. "Our distributors can also strengthen their market position if they expand their product portfolio to include the strongest brand for safe automation." Trusting cooperation is based on the quality criteria that Pilz uses to select its partners.

Good, comprehensive support

The Pilz subsidiaries and authorised distributors advise and support customers around the world when it comes to sales issues. In addition to this, the Pilz System Partners around the world are taking on the system integration for safe automation solutions. As a result customers around the world receive support in line with the high Pilz standards.

► Profile Lean management is part of the recipe for success at Elesta

Nice and lean

Modern manufacturing processes should be efficient and lean. Elesta GmbH practices lean management – with great success! The principles are implemented in the daily work – from the management to the production staff – and constantly developed further. Elesta was honoured with the GEO Award for this accomplishment.

Production batch sizes starting at one piece are the order of the day at Elesta, a company in the Pilz Group. With more than 1 000 active product variants, from relays with positive-guided contacts, proximity switches or safety gate systems to optoelectronic systems, efficient manufacturing processes are a must. All products are developed and produced for the global market at the Elesta location Bad Ragaz in Switzerland, where 286 employees are hard at work.

Lean management in daily work

Elesta depends on lean management to accomplish this. This is implemented in the entire company and is even anchored in the strategic corporate objectives. In addition to four lean managers who are responsible solely for lean management and agile topics, the company has its own further training system for all employees. Ideas for improvement are constantly incorporated via a continuous improvement process (CIP) and weekly Gemba Walks, which provide direct feedback on site. In addition, monthly lean workshops and interdisciplinary teams are tasked with implementing and assessing measures for improvement – and the participation of the



employees is an essential component of this.

Outstanding engagement

This consistent implementation was rewarded with the GEO Award 2019 – Global Excellence in Operations 2019. The prize is awarded to companies with exemplary production concepts. In a multi-step selection process, the entire value chain at Elesta was assessed and audited in the final step. The jury, consisting of renowned experts from industry and science, found the

lean and flexible production concepts across the entire value chain and the environmental focus to be the deciding factors. "The Elesta plant was highly profitable with its concept in a manner unparalleled by its competitors," stated Marc Lakner, head of the project "Factory of the Year", under which the GEO Award is also presented.

Continuous learning process

But the workers in Switzerland are not allowing themselves to become complacent: in order to remain agile in the future and establish lean thinking beyond the boundaries of their own company, the Elesta employees continue to train in lean management. They also enjoy sharing their knowledge with their business partners. Thanks to constant further development and continual improvement in all areas, Elesta wishes to remain competitive in the future.



Regular communication is crucial for the implementation of lean management at Elesta.

Flexible combination options

Save space, reduce warehousing and ensure quick commissioning of machinery: these are the challenges that machine manufacturers face, even in drive technology applications. With the new drive controllers PMC SC6 and PMC SI6, Pilz is expanding its portfolio of servo amplifiers to include space saving, scalable systems for both single-axis and multi-axis applications.

The drive controllers PMC SC6 and PMC SI6 are characterised by their compact design: Six axes therefore only require an overall width of 180 mm in the control cabinet and the user benefits from the space saved in control cabinet. For the commissioning of PMC SC6 and PMC SI6, the motor data is easily and safely parametrised via the electronic motor nameplate. The nameplate digitally provides all the relevant mechanical and electronic motor data. The connection is possible via common communication protocols such as EtherCAT and PROFINET. With hybrid cables, with which encoder communication and power transfer are performed in a combined cable, it is also possible to reduce the wiring effort.

Scalable multi-axis solution

The drive controller PMC SI6 that is supplied via the power supply unit PMC PS6 is suitable for use in large plant and machinery starting from four axes. This is available in two different power

supply unit sizes. Thanks to the option of parallel operation of several power supply units, scalability of the central supply module PMC PS6 is achieved. When using double-axis modules, an asymmetrical rated current load is possible. A double-axis module with 2 x 10 A can have a load of 11.4 A from the first axis and a load of less than 7.7 A on the second axis, for example. The asymmetrical rated current load thereby enables a reduction of the variety and therefore the warehousing. The multi-axis system can be scaled to suit every application and be combined to form a powerful multi-axis system with a narrow width.

Expandable stand-alone solution

The compact stand-alone drive controllers PMC SC6 with integrated power supply, on the other hand, are suitable for use in compact plant and machinery. They are available as single and double-axis controllers as well as for asynchro-

nous and synchronous servo motors. For machines with more than two axes, PMC SC6 can be expanded with axis modules from the drive controller PMC SI6. The axis module does not have an integral power supply, but instead is supplied via an intermediate circuit connection by PMC SC6. This enables an economical implementation of multi-axis applications.

Complete drive technology

The drive solution with PMC SC6 and PMC SI6 is actuated and evaluated via the motion control system PMCprimo. All functions in a plant can thus be synchronised with one another. This enables smooth production processes and short downtimes. Commissioning is simple with the leading IEC 61131-3 programming system Codesys 3.5.

The system is completed with the servo motors PMC EZ and Pilz safety controllers for safe stopping of the drive-integrated STO ("Safe Torque Off"). The user can therefore flexibly use the drive controllers for their individual single or multi-axis applications, for example in metalworking, the packaging industry and the wood-working industry.



The compact drive controllers PMC SC6 and PMC SI6 can either be used for single or for multi-axis applications.

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 ...



PSENopt II
APPLICATIONS

► Tell me about your last project. Didn't it have something to do with magic shows?

Yes, that's right. The Ehrlich Brothers magical duo actually needed our help. You might know them from television. They wanted to perform a perfect show, which meant that everything had to function precisely and safely – including the sequence in the stage equipment and especially at the edge of the stage. This includes a tracking shot in front of an entrance to the understage for which a suitable safety solution was needed.

► Yeah, I know the Ehrlich Brothers. How exciting! And how were you able to help?

We safeguarded the area near the entrance to the understage that I mentioned. It was important that the camera was not speeding along in just that spot when an employee wanted to access the understage. This was not a problem with the light curtain PSENopt II Type 3. As soon as someone passes or reaches through the first light curtain, the camera stops immediately and does not begin moving again until the second light curtain on the other side is also passed through. This protects against collisions and the stagehands can go about their business without having to worry.

► Would it also be possible to integrate this into the stage when they are on tour?

Of course. The compact light curtains were simply secured on the stage elements. This means that they can be removed and reinstalled repeatedly. This is not a problem for the robust light curtains, as the danger zone to be safeguarded can be quite small thanks to their rapid response time. The Ehrlich Brothers are now well equipped to enchant their audiences with their amazing shows.



Drive technology solutions from Pilz offer a high degree of flexibility when implementing various applications, e.g. in the packaging industry.

Everything in one handle



The modular safety gate system from Pilz now includes the PSENmlock handle module. It combines a handle with an integrated actuator as well as an escape release in one solution that is quick to install and easy to operate. Using the yellow handle, the user extends the actuator to open or close the gate. The escape release is actuated using the red handle on the inside of the gate.

To prevent the machine from restarting, the handle actuator also has a locking insert for the attachment of up to five locks. The PSENmlock handle module also offers great flexibility during installation on the inside or the outside of right or left hinged gates. Combined with the safety gate sensor PSENmlock for safe interlocking and guard locking, the user receives a modular complete solution.

Webcode:
web150409

Online information
at www.pilz.com

More efficiency for the bending process



The camera-based protection system PSENVip safely monitors and controls press brakes. With the new module for bending angle measurement, the bending process is now even more efficient: the usable image data from PSENVip is forwarded directly to the press control system. As a result, complicated measurement of the angles by hand and expensive distance measuring systems are no longer necessary. The user benefits from the time and cost savings resulting from the integrated bending angle meas-

urement. There is also no need to attach additional devices to the plant. In technological terms, PSENVip is based on LED light that is installed parallel to the press brake tool and guarantees high availability even in rugged application conditions such as vibration, temperature stratification, reflections or external/diffused light. Combined with the automation system PSS 4000, PSENVip offers safety in accordance with EN ISO 12622 and maximum productivity with simple handling.

Webcode:
web150415

Online information
at www.pilz.com

Productivity boost for area monitoring



New versions of the safety laser scanner PSENscan offer higher productivity for safe area monitoring. With the 17-pin version and the ME-version (Master Encoder) of PSENscan, additional digital inputs and outputs are available. It is therefore possible to achieve up to 70 switchable configurations and up to three separate safe zones can be monitored at the same time and independent of one another. Because the encoder inputs in the laser scanner can be evaluated quickly and directly, the wiring effort and costs are reduced considerably.

PSENscan is resistant to external environmental influences and offers a high resolution. Area monitoring with PSENscan is therefore flexible while at the same time remaining versatile. Applications include stationary as well as mobile danger zones, like on applications with automated guided vehicles. New accessories such as the exchangeable head module and memory module support fast commissioning and increase availability.

Webcode:
web181395

Online information
at www.pilz.com

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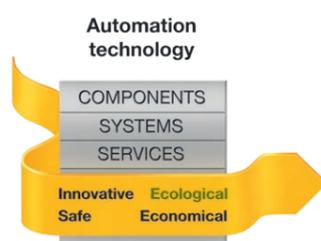
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