

Digital Process Optimization for Medium-Sized Companies

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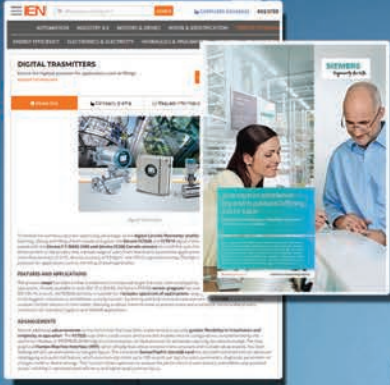


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Kay Petermann
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Dear Reader,

The United Nations in 2015 adopted 17 Sustainable Development Goals for a better future for all. They address the global challenges in societies and for the planet. It is a very broad approach, including the fight against



hunger, bringing quality education to everybody and reduce inequalities. Very appreciable goals, you may say, but what this has to do with us as professionals? Well, that is where some of the other goals come in, as in responsible production, clean water and affordable and clean energy. Since nobody can work on all the goals simultaneously, these are the fields where we can work on tackling the problems and be successful.

In this issue we present you some of the successes in these areas, e.g. the collaboration of SAMSON and Infracerv, to improve the biological water treatment plant of an industrial park through digitalization on page 6. Or you can learn about the opportunity of brownfield digitalization on page 12, giving existing systems a longer life implementing the advantages of an Industry 4.0 environment.

I hope you will have an interesting read with this issue and I will be happy to hear back from you with your feedback to this issue or your own success stories from your work projects.

Editor of PCN Europe

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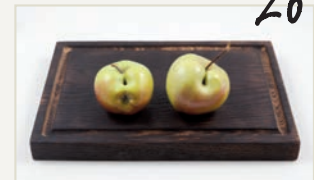
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Change in Management at Endress+Hauser Flow

Dr Mirko Lehmann is taking on new responsibilities within the Endress+Hauser Group. He will become managing director of the product center for flow measurement technology, based in Reinach, Switzerland, on 1 April 2021. He succeeds Dr Bernd-Josef Schäfer, who has left the company. The product center is one of the leading manufacturers of flow measurement technology for industrial applications. The company employs more than 2,000 people worldwide and, in addition to Switzerland, manufactures in France, the United States, China, India and Brazil. Currently, the company's site in Reinach is being expanded at a cost of more than 60 million Swiss francs. Since 2007 Mirko Lehmann has been managing the business of Innovative Sensor Technology IST AG, which is part of the Endress+Hauser Group and specializes in primary sensor production. Since then, the number of employees has increased fivefold and sales have increased tenfold. The company manufactures in Switzerland and the Czech Republic; it employs more than 400 people worldwide. "Mr Lehmann has successfully developed and expanded Innovative Sensor Technology IST AG together with the employees. He stands for uncompromising customer orientation, professional expertise and a strong corporate culture. We are happy that he will be leading one of our largest product centers in the future," said Matthias Altendorf, CEO of the Endress+Hauser Group.



Advances in Cellulose-Based Food Packaging Material

VTT, the Technical Research Centre of Finland, is testing Thermocell plastic film made of cellulose and fatty acids in the production of food packaging in cooperation with Arla Foods, Paulig, and Wipak. Thermocell plastic material, which is made from renewable components, is to be used in the same way as fossil-based plastic. Thanks to the development work, many features of the film already meet the requirements of the food industry, and cooperation has advanced to the testing of industrial production. A method developed by VTT enables the production of Thermocell plastic, a thermoplastic substance, out of cellulose and bio-based fatty acids, which are suitable for applications such as injection molding, coating of paper and paperboard, and 3D printing. The current focus of development work in the manufacture of films is in extrusion technology. Food packaging favours films that are as thin and durable as possible, but yet protect foods safely. Thermocell has already been shown to provide good protection against water vapour, and none of its components migrate into the food. Once the research group has completed the

fine-tuning of the traditional plastic film applications to suit the needs of packers, the focus of development work can be shifted to practical recycling concepts. The aim is to adapt the film to collection and recycling systems that are used on the main markets in the world.



World's Largest PEM Electrolyzer for Green Hydrogen

Linde announced it will build, own and operate the world's largest PEM (Proton Exchange Membrane) electrolyzer plant at the Leuna Chemical Complex in Germany. The new 24-megawatt electrolyzer will produce green hydrogen to supply Linde's industrial customers through the company's existing pipeline network. In addition, Linde will distribute liquefied green hydrogen to refueling stations and other industrial customers in the region. The total green hydrogen being produced can fuel approximately six hundred fuel cell buses, driving 40 million kilometers and saving up to 40,000 tons of carbon dioxide tailpipe emissions per year. The electrolyzer will be built by ITM Linde Electrolysis GmbH, a joint venture between Linde and ITM Power, using high-efficiency PEM technology. The plant is due to start production in the second half of 2022. "Clean hydrogen is a cornerstone of the German and EU strategies to address the challenge of climate change. It is part of the solution to help reduce carbon dioxide emissions across many industries, including chemicals and refining," said Jens Waldeck, President Region Europe West, Linde. "This project shows that electrolyzer capacity continues to scale up and it is a stepping stone towards even larger plants."



Expansion of Turck's Executive Board

On February 1, Dr. Michael Gürtner has taken over the responsibility for R&D and IT in the Turck Holding GmbH. The 46-year-old has also been appointed as Managing Director of Werner Turck GmbH & Co. KG, which he will manage jointly with Michael Gröbner. Gröbner is responsible in the Holding company for the areas of Production and Supply Chain Management (SCM), while Hans Turck GmbH & Co. KG Managing Directors Christian Wolf and Christian Pauli will manage the areas of Sales and Marketing as well as Finance, HR and Legal in the Turck Holding GmbH. Dr. Michael Gürtner studied electrical engineering at the Munich University of Applied Sciences, where he also completed a doctorate at the Institute for Measurement Systems and Sensor Technology. In the Bosch Group, he managed several R&D areas specializing in IT-related topics such as IIoT ecosystems and cloud-based software as service solutions, in addition to sensor technology. As CTO at Sixt SE, Dr. Gürtner was recently responsible for the digital transformation of the company and its business processes.



Digital Process Optimization for Medium-Sized Companies

SAMSON and InfraServ Wiesbaden Join Forces to Develop Digital Information System for Biological Water Treatment Plant in Industrial Park

SAMSON AG and InfraServ GmbH Co. Wiesbaden KG have reached an important milestone as part of a strategic cooperation to advance digital solutions for process industry 4.0 environments. SAMSON is a supplier of products and systems to control the flow of all kinds of media and for over 110 years now a specialist in control valve engineering. Currently they are focusing on the integration of smart products into Industrial Internet of Things (IIoT) environments. InfraServ Wiesbaden has managed the Kalle-Albert industrial park since 1997. The site in Wiesbaden is home to around 75 companies and the second-largest industrial park in the German federal state of Hesse. The core competencies of InfraServ Wiesbaden include the supply of energy, the disposal

of waste and the provision of modern infrastructure and industry services.

At the start of their strategic development cooperation in October 2019, SAMSON and InfraServ Wiesbaden launched a common pilot project to optimize the processes in the biological water treatment plant operated in the industrial park. The pilot project kicked off in early 2020. In January 2021, the completion of the first project stage marked an important milestone.

FIRST STAGE: IIOT-BASED INFORMATION SYSTEM

At the end of the first project stage, the newly developed information system for the water treatment plant went online. This system is based on SAMSON's IIoT platform,

which was further developed and tailored to the information specific requirements as part of the cooperation with InfraServ Wiesbaden. The new system enables the mostly automated acquisition and provision of data required for plant operation and mandatory documentation to fulfill legal requirements. An extensive range of sensors and analytical equipment are used to collect data. Currently, 1,800 measured variables are processed. Data from an analytics lab at Infracerv Höchst are also imported into the platform as part of data acquisition. Furthermore, historical data from the previous system recorded as far back as 2009 were integrated into the new information system.

The data used in the new system, which are much more accurate and reliable, generate better key performance indicators. This results in a much more precise and user-friendly analysis of the highly complex processes involved in biological water treatment. Certain parameters, such as the dirt load at different processing stages, can also be visualized over a user-definable timeline.

Other highlights of the new system include digital operating logs, automated report generation for the site management and the authorities in charge of supervising the overall plant. Automated sample planning with label printing additionally facilitates operation of the plant. All in all, the plant is already running much more efficiently even though only the first project stage has been completed so far.

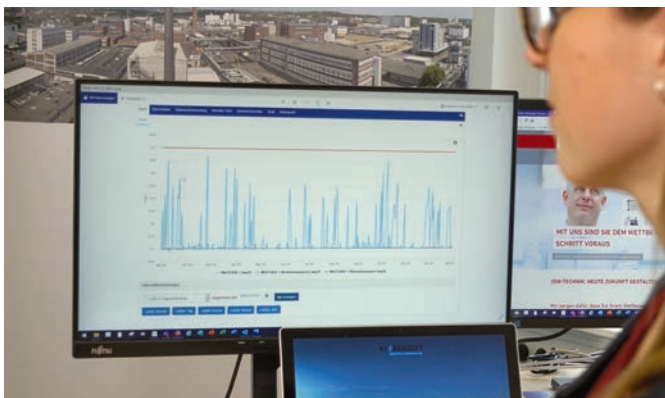


As part of the strategic development cooperation between SAMSON and InfraServ Wiesbaden, the two companies launched a joint pilot project to optimize the processes in the biological water treatment plant in the industrial park. ©InfraServ Wiesbaden

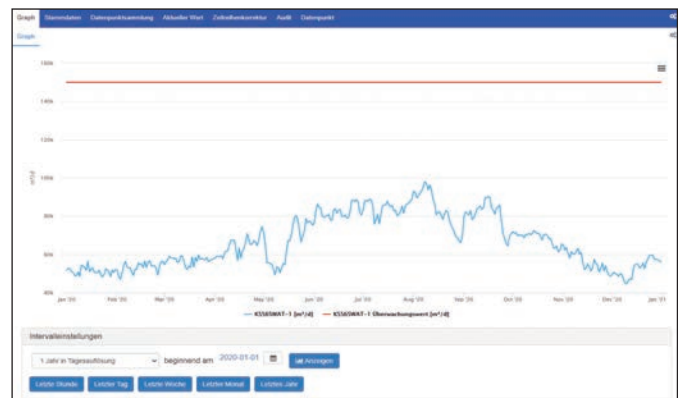
SECOND AND THIRD STAGES: DIGITAL DATA ANALYTICS AND AI-BASED PROCESS CONTROL

In the second stage of the pilot project that started in January 2021, the focus has





Graph showing the calculated annual TOC (total organic carbon) load produced by a company in the industrial park. ©InfraServ Wiesbaden



Graph showing the annual wastewater processed by the biological water treatment plant. ©InfraServ Wiesbaden

shifted to data analytics on the IIoT-based platform. Once systematic data acquisition is achieved, the project team can define performance indicators to be calculated by the system. These performance indicators are used for detailed data analysis with the aim of optimizing processes. In the next few months, more process data will gradually be integrated into the system. As a result, it will be possible to reveal correlations between raw materials supplied to companies in the industrial park and the input required in the water treatment plant.

SAMSON's IIoT platform has the major advantage that it can integrate various data sources and offers far greater connectivity of the plant and system thanks to the newly programmed interfaces. In contrast to conventional computer systems, the platform also generates time series databases, which are a powerful tool for the processing and analysis of data including various visualization options.

During the course of the first six months of 2021, the project is scheduled to enter the third stage involving first attempts to

digitalize process control in addition to data analysis. For this purpose, the project partners intend to develop algorithms that are based on artificial intelligence to automatically calculate possible ways of improving plant and process control. The long-term objective behind this development is the gradual transformation towards automated process control in which the AI-optimized parameters directly control specific process parameters.

DIGITAL TWINS AND PILOT PROJECT

The pilot project is part of the cooperation between SAMSON and InfraServ Wiesbaden, which has been concluded for an unlimited period of time. The main goal is to jointly advance the IIoT platform that digitally supports the optimization of processes and plant control. SAMSON runs an IIoT-based multi-tenant platform for the digitalization, visualization and automated control of industrial plants. The platform includes flexible interfaces for the connection of customer systems and external analytical tools. In its role as industrial park operator and industrial

service provider, InfraServ Wiesbaden develops and operates analog and digital solutions for companies based in the industrial park as well as for other companies. It offers smart data analytics under the product name KI Konzept. Customer access to the IIoT platform via the on-site data center is configured to ensure maximum data security.

The objective of the two companies is to continue the cooperation to jointly develop and expand SAMSON's platform. InfraServ Wiesbaden contributes to the cooperation by sharing the experience it has gained within industry and while programming specific control processes for its own facilities, such as the biological water treatment plant, or for the implementation of customer requirements. The result will be 'digital twins' of the analyzed systems to simulate plant control operations, analyze the flows of energy or goods as well as solutions for the smart, predictive, cost-effective maintenance of plants and equipment of medium-sized industrial companies.

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BLUETOOTH REMOTE SPEAKER MICROPHONE

Clear communications with workers in hazardous areas



The **ECOM Instruments RSM-Ex 01 BT Z0** comes with an IP65/67 rating and a built-in noise reduction function. It produces clear, high-volume audio up to 103 dB. The remote speaker microphone is extremely robust and yet very flat and ergonomic to wear on the body. It is intuitive and easy to use, even when wearing gloves. The built in BT Interface allows a connection to industrial BT devices like Radios, Tablets and Smartphones, and of course to current and future ECOM products. The speaker microphone provides additional buttons like Chanel Up/Down that allows an easy channel switching on the RSM and it is lone worker ready by providing a red SOS button. This way workers can call for help quickly and easily connecting to the company's headquarters or directly to an emergency operations centre nearby. The included 2200 mAh Li-ion battery pack secures a long operating time up to 78 hours. Therefore the RSM-Ex 01 BT Z0 can stay in operation for several shifts before changing the device or battery back. The magnetic charging cable and optional charging cradle make charging easy even in dusty environments and extends the equipment's lifecycle. The device also offers several possibilities for a customized button individualisation for sending custom commands to servers and other IoT switches.

▶▶ 59894 at www.pcne.eu

INVERTERS FOR DEMANDING APPLICATIONS

High-performance with built-in corrosive gas alert



A highly flexible, compact inverter series with multiple built-in networks, including TSN (Time Sensitive Networking), has been released by **Mitsubishi Electric** to support the needs of smart factories. The FR-E800 series offers increased flexibility by incorporating multiple com-

munications without the need for option cards. Major industrial Ethernet networks are supported as standard, including CC-Link IE TSN. Network flexibility is also increased with two Ethernet ports which support line, ring and star topologies. Enhancing predictive maintenance, the inverter features the industry's first corrosive gas environment detection circuit. In conjunction with Mitsubishi's drives AI diagnostic technology, this helps to reduce overall downtime by allowing early identification and resolution of fault causes without the need for specialist skills. To maintain safety and productivity, the inverter achieves SIL2 Pld and 3 PLe. Enhanced, customised control is provided by the built-in PLC functionality which is configured via the FR-Configurator2 software. Multiple inverters can be controlled by a single master, removing the cost of an external PLC. With scalable power for application diversity, the FR-E800 series has output from 0.1 kW to 7.5 kW, supporting 200V single/three phase, 400 and 575 V three-phase.

▶▶ 59732 at www.pcne.eu

COATING POWDER FOR FOOD TECHNOLOGY

FDA-compliant polymer for wear-resistant sheet metal



Nowadays, it is impossible to imagine the food industry without automated systems. But what happens if a bottle falls over in the filling line or a packet soup gets wedged in the parts chute and tears open?

Scenarios that lead to unplanned plant shutdown, cost time and money. Moving machine components with low coefficient of friction are in demand here. In order to give guide plates, metallic slides or even parts with complex geometries a high wear resistance, **igus** has now developed a new coating material especially for use in food technology. The high-performance IC-05 polymer complies with FDA requirements and EU10/2011 regulations and is therefore ideally suited for contact with food. Its blue colour makes it optically detectable. The material significantly reduces the coefficient of friction of the coated parts and increases the service life and availability of the equipment. It also improves product safety and reduces costs. Lubricants can be dispensed with completely. The powder material can either be sprayed onto the desired components by the user or by igus. Layer thicknesses of 60 to 120 µm are possible. The coating is a good solution for places where there is no space for a plain bearing to do its job. igus tested the durability of the coated parts in its own 3,800 square metre laboratory in Cologne.

▶▶ 60234 at www.pcne.eu

SMART SAFETY VALVE FOR TECHNICAL GASES

Adjustable from 0.5 to 45 bar in brass or stainless steel



A safety valve for gases with integrated sensor technology and communication interface is now available from **Witt**. For users this means more transparency and ultimately greater safety when handling gases. Safety valves from Witt are spring-loaded and direct-acting. They automatically release overpres-

sure from vessels, pipelines and equipment before an accident occurs. If the pressure drops below the danger threshold, they close again automatically, but the new, smart valves can do more: The status of the valve is continuously monitored by integrated sensors and communicated via optical and digital signals. Witt has accommodated the smart function extremely compactly in a box which is firmly connected to the fitting. If the valve opens, this is indicated immediately, optically by a red/green diode directly on the valve and digitally by an NPN/PNP Open Collector signal. The user can be notified every time there is a demand on the valve and is thus informed of process deviations. The new SV805 Smart can be used for all technical gases and is available in brass or stainless steel. The opening pressure is individually adjustable from 0.5 to 45 bar. A TÜV certificate confirming the correctly adjusted opening pressure is supplied by the manufacturer.

▶▶ 60399 at www.pcne.eu



VIDEOSCOPE FOR PIPE INSPECTION

Maneuverable solution for long-distance inspection



Long, complex piping is especially difficult to navigate and inspect because of complex bends and potential obstructions. The **Olympus IPLEX GAir** long scope solution solves these challenges with a combi-

nation of pneumatic articulation that enables maneuverability at distances up to 30 meters with outstanding image quality. To reach the inspection target quickly, the videoscope's unique guide head enables it to slide easily through pipe joints while pneumatic articulation provides fine control, even when the 30 m insertion tube is fully extended. To enable easy inspection, a gravity sensor automatically rotates the onscreen image regardless of the scope's orientation, while the insertion length indicator tracks how far the videoscope has been extended. The videoscope's advanced image sensor, ultra-bright LED illumination and image processing software provide clear wide-view images that enable users to see more in a single view. An optional 220-degree fish-eye optical tip adaptor is available to show both the pipe's side wall and forward view at the same time. For dangerous or hazardous inspections, users can set up the videoscope and control it from a safer location up to 100 m away. The videoscope's touch screen can be detached from the main unit and positioned up to 5 m, while wireless capabilities make it easy to share screen images with colleagues.

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MODBUS TRANSMITTER WITH DUAL INPUTS

Multi-Drop of up to 32 units to single communication link



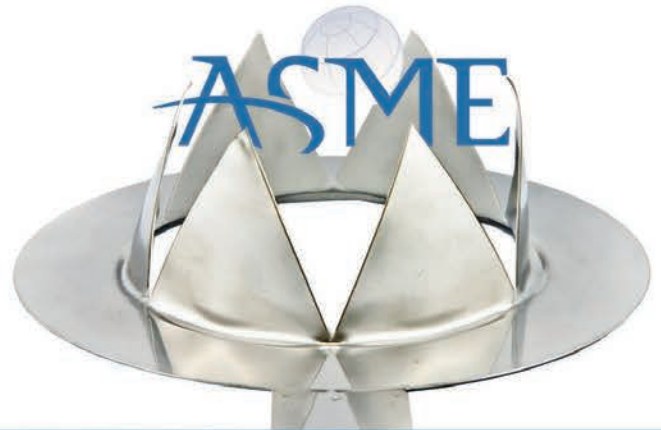
Moore Industries announces the new TMZ PC-Programmable MODBUS Transmitter with Dual Universal Input channels. The TMZ Dual Universal Input (2PRG) model accepts most industry standard current, voltage, RTD and thermocouple type sensors along with resistance and potentiometer inputs. Since the Dual Universal Input (2PRG) model has a digital MODBUS output, the error typically associated with Analog-to-Digital converters for units with analog outputs is eliminated. Plus, the MODBUS output includes the measurement signal from both input channels, allowing the host to use the data for averaging, differential, or sensor backup monitoring schemes. Up to 32 Dual Universal Input TMZs can be multi-dropped onto a single low-cost communication link (such as a twisted wire pair) without repeaters, thus eliminating the need to run a dedicated wire for each signal. Installing dual channel TMZs in a multidrop network provides increased sensor density and delivers significant savings on installation, cable, conduit, connection, and wire tray costs. Since the measurement is delivered to your control system as a digital signal, the output error produced by a traditional analog transmitter is eliminated.

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Windows 10 Upgrades and Updates-What to Keep in Mind for Process Automation

The current Microsoft Windows® 10 operating system is widely used in the automation industry. PCs and thin clients with Windows can be found in scores of today's industrial applications. Windows 10, which was released in 2015, is available in several editions and has been continuously expanded with new features and security updates over the years.

The Windows 10 IoT Enterprise Edition has been designed specifically for industrial applications such as 24-hour operation. The current versions are Windows 10 IoT LTSC 2016 (Long Term Servicing Branch) and its successor Windows 10 IoT LTSC 2019 (Long Term Servicing Channel). The change from Branch to Channel is merely a name change that does not affect the Microsoft strategy. The additional year date sheds light on the introduction of the underlying Windows 10 version. There is no time limit on usage, but Microsoft's long-term support ends ten years after its launch. The status of the operating system on which the user purchases it will remain largely unchanged. For existing features, only bug fixes and minimal customizations will be released during the first support cycle—within three years of launch. Security updates will be offered as and when needed. Doing so means that a fast response to potential security vulnerabilities is possible and the opportunity to compromise com-

puter security is greatly reduced. Since regular support and the provision of bug fixes for Windows 10 IoT Enterprise LTSC 2016 features ends in October of this year, it is advisable to account for this in your in-house IT infrastructure now. Users have the option to upgrade their devices combined with a fee to the newer Windows 10 IoT Enterprise 2019 LTSC version, or should take this into account when purchasing new hardware. The new version includes all customizations and updates from recent years.

EFFICIENT MANAGEMENT IN PROCESS AUTOMATION

Many of today's thin clients—such as Pepperl+Fuchs industrial box thin clients—operate based on Windows 10 IoT Enterprise. Thin clients are based on Windows 10 IoT Enterprise owing to the long-term support, excellent security mechanisms, and simple customization. The thin client user interface adds to firmware developed in-house—the

RM Shell 5—that shows only those aspects of system setup required for configuration. This facilitates setup.

Currently, all Pepperl+Fuchs HMI thin clients are based on Windows 10 IoT Enterprise LTSC 2016. To guarantee continued long-term support and to access the customizations and updates to features from recent years, Pepperl+Fuchs devices are gradually being converted to Windows 10 IoT Enterprise LTSC 2019. The new version will be introduced on a gradual basis. This new version has the advantage that subsequent security updates are much more compact, meaning a huge reduction in the update time.

KEEP YOUR EYES PEELED DURING UPDATE INSTALLATION

Regardless of the Windows operating system version, Pepperl+Fuchs can distinguish between security updates and functional updates. Functional updates are offered in shorter cycles and can be installed as required.

Security updates: Available security updates for Pepperl+Fuchs devices include security patches from Windows and are available quickly on www.pepperl-fuchs.com when potential security vulnerabilities are detected.

Functional updates: Functional updates are offered by Pepperl+Fuchs in shorter cycles and are free of charge to the user. Users benefit from regular, new functions and optimizations tailored to the market. Particular attention is paid to the development of security, reliability, and, above all, user-friendliness. Although applications and features are increasing in complexity, the RM Shell 5

Lifecycle phases for products under the Fixed Lifecycle Policy

Type of support	Mainstream Support	Extended Support	Beyond End of Support
Request to change product design and features	Available	Not available	Not available
Security updates	Available	Available	Available via Extended Security Update Program
Non-security updates	Available	Available ¹ via Unified Support ²	Not available
Self-help support ²	Available	Available	Available
Paid-support	Available	Available	Available ³

The various life cycle phases of the respective version are defined as part of the Microsoft LifeCycle Policy



continues to be intuitive to use. This allows non-IT experts to make settings in minutes and benefit from the new functions.

FUNCTIONAL UPDATES-TAILORED TO PROCESS AUTOMATION REQUIREMENTS

Time is money. It is therefore vital to prevent production downtime times or to keep them to an absolute minimum.

By optimizing the update process, security updates based on Windows 10 IoT Enterprise LTSC 2019 can be installed in a minimal amount of time. Outdated system components can be cleared each time an update is installed, which saves space on hard drives. This takes place using the cleanup process, which runs in the background of the Pepperl+Fuchs RM Shell. As of now, the process can be started while the device to be cleaned can continue to be operated and

Thin Clients for different applicational requirements



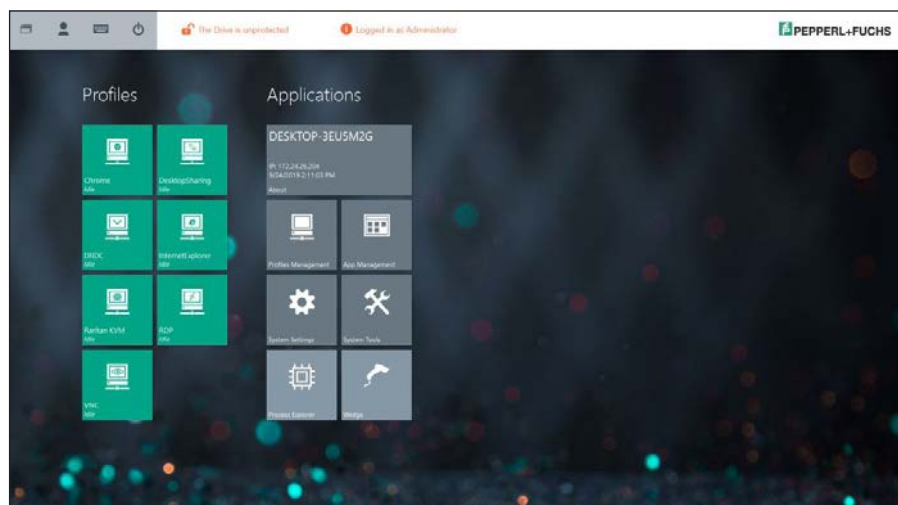
used, regardless of the installation process. The updates can be installed in approximately 30 minutes—a reduction from approximately 3.5 hours. By comparison, installing security updates based on Windows 10 IoT Enterprise LTSC 2016 can take up to eight hours. The device will not operate throughout the installation process.

To benefit from this advantage fully, various operator stations and thin clients from Pepperl+Fuchs are already available based on Windows 10 IoT Enterprise LTSC 2019. Upgrade kits that allow the operating system to be used on devices already installed are also available.

FUNCTIONAL UPDATES—FOR OPTIMIZED, EFFICIENT, AND CENTRALIZED MANAGEMENT OF VISUNET THIN CLIENTS

Users will receive free functional updates at regular intervals for the VisuNet Control Center add-on software, which enables centralized management of thin clients connected to the network. The add-on software is compatible with both current Windows operating systems. Users can choose from a variety of wizards that provide step-by-step support and make thin client management even more efficient. In addition to the Clone Device Wizard, which allows configurations to be transferred quickly and easily from one device to another, the Update Wizard is a tool that saves customers a huge amount of time. Both security and functional updates can be installed on multiple thin clients simultaneously.

However, individual new features of the VisuNet Control Center are already supported only in combination with devices based on Windows 10 IoT Enterprise LTSC 2019. For example, the Firmware Update Wizard can display all information regarding compatibility, status, and free memory. The new Cleanup Wizard, which cleans multiple devices simultaneously in the management tool, only reduces the update times if a security update for Windows 10 IoT Enterprise LTSC 2019 is installed.



Simpler setup and operation using the RM Shell 5 user interface

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Connectivity From the Field to the Cloud

Brownfield digitalization in line with Namur Open Architecture

Industry 4.0 concepts are comparatively easy to realize when building new industrial process systems. But when it comes to existing or brownfield systems that have always operated with the 4–20 mA communications standard, plant operators have been unable to justify the effort required to convert. To address this issue, Endress+Hauser is now introducing the FieldPort SWA50, a communications module designed for HART-capable instruments, which can establish a bridge to digital signal transmission without burdening the existing communications channels or impacting the system architecture. The new FieldPort SWA50 transmits additional data from the field instrument, parallel to

the measurement values, and can be easily retrofitted to operate with HART-capable instruments. With this communications module, operators can take advantage of digitalization's potential even in existing industrial systems.

RELIABLE DATA TRANSMISSION VIA SECOND COMMUNICATIONS CHANNEL

Data is the foundation of Industry 4.0. Connectivity is one of the basic prerequisites for making it available. The challenge facing plant operators in Germany is that most of them have been operating their systems for years or even decades. As a result, they find themselves stuck in brownfield environ-

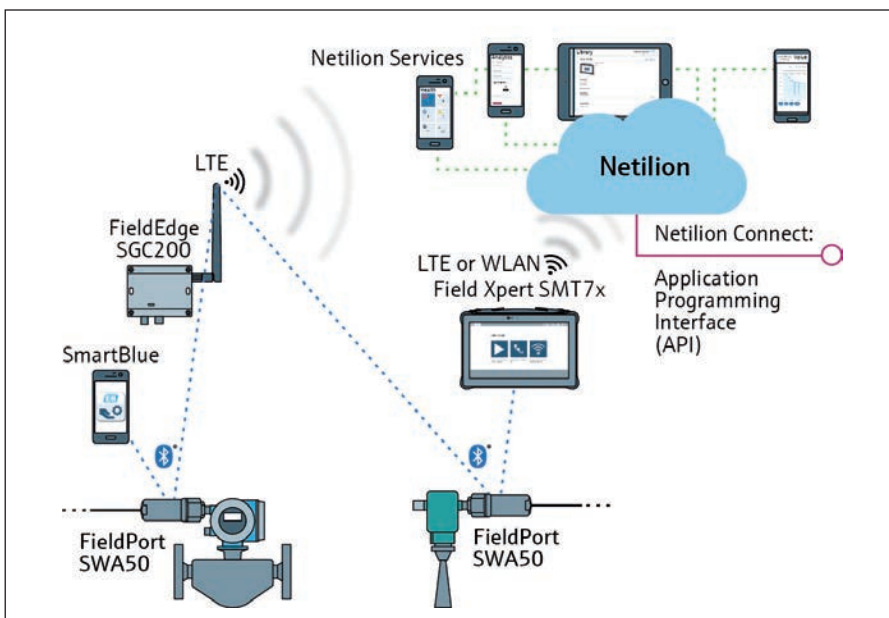
ments. This is also why NAMUR developed the so-called "NOA – NAMUR Open Architecture" and adopted the corresponding NE 175 NAMUR recommendation. The basic idea of the "NAMUR Open Architecture" is as simple as it is captivating: the transmission of additional digital data from the field level is carried out in parallel to the transmission of the measurement values across a second communications channel. This approach minimizes the amount of additional data traffic and the impact on existing system architectures.

NAMUR OPEN ARCHITECTURE AS A BRIDGE TECHNOLOGY

The NAMUR Open Architecture (NOA) serves as an important bridge technology from the strict hierarchical structures of Industry 3.0 to the fully connected, digital Industry 4.0 environments. Implementing parallel data transmission as an extension makes it ideal for existing systems. Today, 97 percent of data from field instruments is not utilized. Existing systems thus contain a huge amount of potential that could be tapped into through digitalization. It also offers users an opportunity for permanent asset monitoring since instruments can be clearly identified and the configuration parameters and correct layout reflected in the "digital twin." Thanks to state-of-the-art diagnostic functions, the health condition of "smart sensors" can be permanently monitored.

CORE PROCESSES ARE NOT IMPACTED

The "second channel" NOA concept provides service and maintenance personnel direct access to condition monitoring while reduc-



With the wireless FieldPort SWA50, data from any HART-capable instrument can be transmitted to the cloud and used for various digital services.



ing the volume of data in the core processes. Digitalization furthermore enables comprehensive asset management and process optimization through the additional analysis of monitoring data. The NOA is an important step in being able to exploit digitalization's potential in existing systems. To realize the NOA concept in practice – for both new (greenfield) and existing (brownfield) plants – Endress+Hauser now offers a clever and simple solution with the new FieldPort SWA50.

COMMUNICATIONS MODULE CAN BE RETROFITTED FOR THIRD-PARTY INSTRUMENTATION

90 percent of Endress+Hauser field instruments already feature a digital interface, including fieldbuses such as Profibus or FOUNDATION, in addition to HART, the most common technology. In practice though, the HART signal is not utilized in most environments. With the new FieldPort SWA50 wire-



With the FieldPort SWA50, the “second channel” for data transmission (NOA concept) can easily be retrofitted for brownfield environments.

less adapter, all HART signals can be transmitted parallel to the measurement values, including those from third-party manufacturers. The FieldPort SWA50 is intrinsically safe (Ex ia), loop powered and can be easily retrofitted to work with HART instruments from any manufacturer.

WIRELESS TRANSMISSION OF THE HART SIGNALS

The HART signals can then be transmitted to the cloud via WirelessHART or Bluetooth®. If Bluetooth® is used, transmission is carried out via the FieldEdge SGC200 direct into the Endress+Hauser Netilion cloud. This provides users access to the entire range of

Netilion services such as Netilion Analytics, Netilion Health and Netilion Value, which enable features such as condition monitoring and the remote display of measurement values. And with the SmartBlue app, users can remotely configure the field instrument parameters. In another step, the data can also be transmitted to customer-specific clouds or ERP solutions via an application programming interface (Netilion Connect). With WirelessHART, connectivity occurs via the Endress+Hauser FieldGate SWG70 and the FieldEdge SGC500.

MAKING BROWNFIELD SYSTEMS INDUSTRY 4.0-CAPABLE WITH LITTLE EFFORT

To date, the lack of options for transmitting data from field instruments has been a roadblock in the implementation of Industry 4.0 concepts, thus halting any progress in the digitalization of brownfield plants in Germany. With the introduction of the FieldPort SWA50, it's now possible to retrofit the communications modules and securely utilize the data available in the instruments with cloud applications such as Endress+Hauser Netilion – all with minimal effort – since communication occurs via the second channel recommended by NAMUR. And because it features an intrinsically safe Ex ia design, the technology can be employed in most plants without restrictions, thus extensively paving the way for Industry 4.0.



One of the challenges of digitalization remains to exploit the potential of existing plants.

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N° 3 - MARCH 2021

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LEVEL, FLOW AND PUMP CONTROLLER

For a versatile radar and ultrasonic transmitter range



Siemens presents the new Sitrans LT500 level, flow, and pump controllers for radar and ultrasonic transmitters or any other two-wire 4-20 mA devices. From basic level control to complex pumping routines, these instruments deliver the accuracy and reliability demanded by a variety of applications.

Complete with up to 2 measur-

ing points, 6 control or alarm relays, 2 discrete inputs, 3 analog outputs, and communications options, Sitrans LT500 is an attractive option for controller applications. High-precision flow measurements meet ISO standards and onboard datalogging makes sure data backup is reliable for regulatory compliance. Users can easily retrofit older equipment with Sitrans LT500, as improved system control delivers savings directly to a company's bottom line. By scheduling pumps before high-demand periods begin, users can avoid peak energy hours and the increased prices that accompany them. Other programmable features help to reduce costly maintenance, including grease ring reduction, pump runtime and alternating pumps. High-level alarms and backup level override help prevent material overflow, ensuring the safety of staff, equipment, and the environment.

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ACCURATE HUMIDITY/TEMPERATURE PROBE

For measurements in critical production facilities



Vaisala has today introduced a new HUMICAP® Humidity and Temperature Probe HMP1. With its top-of-the-line accuracy and sensor purge functionality that ensures excellent stability over time, the HMP1 is an ideal choice for demanding humidity

measurements in environments such as pharmaceutical facilities, data centers, cleanrooms, or any other environments that require strict humidity monitoring and control. The HMP1 complements the Indigo product family, which is a premium solution for multi-parameter measurements with flexible connectivity, and is compatible with any transmitter of the series. The possibility to detach the probe from the transmitter allows efficient maintenance and calibration. With the Indigo200 series transmitter the HMP1 probe forms a single wall-mounted unit with no probe cable or probe holder needed. The robust Indigo520 transmitter offers installation flexibility and allows optimal positioning of the probe. It also enables dual-probe installations for extended parameter monitoring or extreme accuracy. The unique combination of measurement performance, easy maintenance, and the extensive range of additional features in the Indigo transmitter series creates a premium solution for wall-mounted humidity and temperature measurements in demanding applications.

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DIFFERENTIAL PRESSURE TRANSMITTER

Robust combination of compact design and large display



Differential pressure gauges are often large and hard to fit into small systems. **LABOM** has now developed the PASCAL CV4 Delta P CV 4300, an especially compact and flexible digital differential pressure transmitter that is easy to install and operate, even in confined spaces. The stainless-steel case with protection class of IP 65 or 67

(optionally IP 69K) has an electrical connection that is continuously rotatable by $\pm 170^\circ$ relative to the process connection. The high-resolution display can also be rotated, allowing it to be positioned so it faces the operator, no matter where the device is located in the plant. Thanks to the high-performance processor, the controls runs particularly smoothly; the intuitive 4-button user controls and freely configurable display modes also contribute to its user-friendliness. The differential pressure transmitter is suited for level measurement of pressure vessels, for monitoring filters in process engineering, the chemical/petrochemical industry and in mechanical and plant engineering. The nominal range is 0.25 to 40.0 bar with an accuracy of 0.15%. The output signal is 4...20 mA with HART protocol. The device has extensive setting, simulation and diagnostic functions as well as a quick setup function.

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RUGGED THERMAL MASS FLOW METER SERIES

With ATEX/IECEx approvals for a wide range sectors



The rugged ST80 Series Thermal Mass Flow Meter from **Fluid Components International (FCI)** is now available with ATEX/IECEx approvals. The independent third party testing and certified ratings of the ST80 are on the complete instrument, including the sensor element, electronics, and the enclosure, to assure ST80 customers of the

highest integrity and plant safety. The approvals apply to both DC and AC powered versions of the ST80, as well as integral or remote mounting of the transmitter. Further, the ST80 Flow Meters are also SIL rated for use in SIS applications. With its no-moving parts thermal dispersion flow sensor, robust transmitter enclosure and a wide selection of process connections, the ST80 provides ease of installation, requires virtually no routine maintenance, and achieves exceptionally long service life. The series uses a hybrid sensor drive and measuring circuit that combines both proven thermal dispersion techniques of constant power (CP) and constant temperature (CT) in the same instrument. The ST80 with AST measures in CT mode when measuring in lower flow ranges and start-up conditions, and will transparently and seamlessly shift to CP mode at mid-range and higher flow rates.

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EASY TO INSTALL GAS DETECTION SOLUTION

Cost-effective one channel controller/detector combo



When you require gas detection that's easy and simple to install and operate, **Teledyne Gas & Flame Detection** offers a new cost-effective product package for Oxygen (O₂) and Carbon Dioxide (CO₂) detection in medical and food & beverage and other applications for ensuring safety in working environments. The new

'Easy Duo' detector and controller combo is a cost-effective package providing a innovative controller, the MX 16, and the digital OLCT 10N gas detector to ensure a complete gas detection solution that's been designed with ease of use and installation in mind. The solution is factory configured, needs no configuration software and only a power connection as addition.

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DIGITAL RATE & TOTAL INDICATOR

Low cost display indicator for versatile applications



The Pulsite Solo from **Titan Enterprises** is a low cost, digital rate and total display indicator that is adaptable to suit almost any flow and rate measurement application across the manufacturing sector. Requiring no external

power, the compact Pulsite Solo has multiple mounting possibilities and can be configured to any flow element. Programming is quick and simple using just the two front panel keys and following the prompts on the LCD display. Battery powered and designed to indicate a variety of pulse input, such as coil, reed switch and logic, it will take frequencies up to 2 KHz and scale them to display rate or total. The scaling factors are adjustable from 0.01 to 9999 and time base is selectable as seconds, minutes or hours.

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CLAMP-ON FLOW MEASUREMENT OF STEAM

Non-invasive flowmeter for temperatures up to 400 °C



FLUXUS ST-HT measures steam flow non-invasively from the outside of the pipe. Since clamp-on ultrasonic transducers are simply mounted on the outside of the pipe, it requires just minimal installation effort and no pipeline

penetrations. The acoustic measuring method has exceptionally high measuring dynamics and functions independently of the flow direction. The FLUXUS ST-HT offers precise bidirectional flow measurement over a wide turndown ratio up to 25:1. The new FLUXUS ST-HT is complementary to **FLEXIM's** existing steam flow meter FLUXUS ST, that is limited to temperatures up to 180 °C. Now, the new FLUXUS ST-HT can be applied for steam measurements up to 400 °C in pipes up to 900 mm in diameter.

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NYLON-12-BODY ULTRASONIC FLOW METER

Reliable measurement for low viscosity liquids



FTI Flow Technology has introduced the QCT_PA12 Series of in-line liquid ultrasonic flow meters, a cost-effect and versatile solution for a wide range of industries. The meters' construction and Nylon-12 (PA12) material make them the meters of choice for many high purity and corrosive liquids. The flow meters have

non-wetted sensors, no moving parts, and there is nothing in the flow stream that will cause an obstruction to the flow path. The meter is available in sizes 1/8 inch to 2 inches it has a 0.035 to 250 GPM flow range, 14°F to 176°F (-10°C to 80°C) temperature range, and analog, scaled frequency and Modbus RTU outputs.

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Shaping the Future of Process Industries



Ethernet-APL

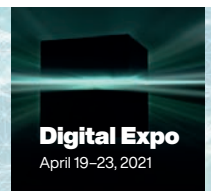
From hazardous areas to the cloud: with ranges of up to 1,000 meters and transmission speeds of 10 Mbit/s, Ethernet-APL is paving the way for the Internet of Things in process automation. Existing installations can be used and existing plants can be modernized at low cost. Decades of experience make us a competent partner as you prepare for Industry 4.0.



For more information, visit pepper-fuchs.com/apl

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Your automation, our passion.



Automation Technology for the Digital Age

Global data volumes are growing exponentially as a result of digitization. More and more industrial processes are being monitored, analyzed, and automated using sensors. The new JUMO Cloud and the JUMO smartWARE SCADA make an important contribution to the development of the intelligent factory of the future.

For many years, JUMO has been evolving into a supplier of industry-specific complete solutions for which JUMO also produces the complete hardware. The JUMO portfolio stretches from sensors for various physical measurands to controllers, paperless recorders, and powerful automation systems.

The JUMO Cloud is the next logical step in this development. It is based on the "Software as a Service" (SaaS) model, which is a cloud-based application software with a predefined user interface.

As an IoT platform for process visualization as well as collecting, acquiring, analyzing, and archiving data, the JUMO Cloud provides a global access point to measurement data

using conventional web browsers. It is characterized by a high degree of security as well as valuable visualization, alarm, and planning functions. Customers can use the JUMO Cloud to monitor several distributed plants, processes, or sites in one dashboard, which, in turn, increases process reliability.

JUMO uses a redundant and certified infrastructure for data storage, as a result of which users save a significant amount of time. Professional reporting and export functions considerably reduce the effort required for data acquisition requiring proof. JUMO works exclusively with European data centers, which means users can rest assured that all GDPR standards are met.

The possibilities provided by the JUMO Cloud span from simple alarm messages through to condition monitoring and complete plant control. The Cloud has been configured to integrate seamlessly with the new hardware and software platform JUMO JUPITER, which is the key component in the equally new automation system JUMO variTRON.

JUMO smartWARE SCADA was developed along with the cloud solution. This software solution based on the JUMO Cloud is located in the automation pyramid at the control level. JUMO smartWARE SCADA provides easy access to measurement data using conventional web browsers. It offers functions for process visualization as well as for evaluation



JUMO opens up completely new automation possibilities with the JUMO Cloud and JUMO smartWARE SCADA.





The Cloud has been configured to integrate seamlessly with the new hardware and software platform JUPITER, which is the key component in the equally new automation system JUMO variTRON.

When paying for the JUMO Cloud the customer can choose between a flat rate and a pay-per-use model. The cloud memory can be flexibly expanded and adapted to the respective customer's individual requirements. JUMO smartWARE SCADA allows variable and customer-specific pricing.

The JUMO Engineering team with its many years of expertise assists in the implementation of industry as well as project-specific cloud and SCADA applications. By combining high-quality JUMO hardware, a modern cloud-based environment, and innovative Engineering services, JUMO is able to offer a "comprehensive carefree package" for users from a diverse range of industries.

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and archiving the acquired data. Visualization occurs through an editor that has an integrated animation and test tool as well as vector-based, self-scaling process screens. As a result, JUMO smartWARE SCADA is a highly scalable and high-performance digitization platform that supports manufacturing as well as work processes with

efficient visualization, alarm, and planning functions. Thanks to its modern web-based interface, customers can access it without having to install any software. As a system that supports multiple clients, user rights can be configured on an individual basis. Security is guaranteed by end-to-end encryption with possible two-factor authenti-

ULTRASONIC LEVEL SENSOR

Robust sensor for measurements in smaller tanks



Turck is now offering sensors for level measurement in the range up to 40 and 130 cm, which are based on the Fluid 2.0 platform and can be operated at the process connection at pressures between 0.5 and 5 bar. The new LUS211 ultrasonic sensors are thus the fourth sensor category of this robust Turck platform complementing the pressure, flow and temperature sensors, which all offer a uniform look and feel. Like all sensors of the Fluid 2.0 portfolio, the high IP67/69K

protection rating also enables the LUS211 devices to be used reliably in adverse conditions. The continuous signal strength evaluation and the recessed and thus protected sonic transducers of the level sensors furthermore ensure increased system availability. An air cushion prevents the medium from contacting the sonic transducer in the event of overfilling. The LUS211 series is active with the commonly available G $\frac{3}{4}$ and NPT $\frac{3}{4}$ process connections for a 40 and 130 cm range, either with two switching outputs or with one switching and one analog output. Thanks to their additional IO-Link interface and intelligent decentralized signal preprocessing, all variants are also suitable as smart data suppliers for IIoT.

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VIBRATION AND TEMPERATURE MONITORING

Low cost, easy-to-configure, and 24/7 remote sensing kit



Vibration detection not only provides early warning to help eliminate maintenance surprises before they happen, it also empowers staff to prioritize and streamline its maintenance schedule to maximize efficiency while reducing down-time.

However, traditional wired continuous vibration monitoring systems can be expensive, not always up to date, and cumbersome to install. The FLIR SV87-KIT™, on the other hand, is low-cost, easy-to-configure and can install on any surface with wireless connectivity to a Wi-Fi network. This also provides maintenance staff with the ability to track changes in vibration and heat in real time and over time, providing operational insights to predict potentially serious problems before failure. Available for purchase today, the FLIR SV87-KIT includes four wireless SV87™ Vibration and Temperature Remote Sensors, along with a wireless FLIR GW65™ Gateway for 24/7 continuous monitoring of asset vibration and temperature data. The SV87-KIT is also expandable with options to purchase additional SV87 Remote Sensors or GW65 Gateways. The data can be transferred to any tablet, smartphone or computer via a Wi-Fi network, and allows the user to visualize trends and receive alerts via an app or email in the event of exceeding a threshold.

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Wireless Level Measurement for Unlimited IoT Projects

Intelligent feed silos on the farm, communicative waste containers in the city and mobile containers that “communicate” how full they are: The use of smart radar sensors VEGAPULS Air helps to optimise supply processes and save resources.

In the agricultural sector, in the smart city, in industrial plants or in the logistics cycle, the use of autonomous level sensors can optimise many processes. Continuous monitoring of the fill levels in feed silos can automatically trigger the replenishment process in good time before the feed runs out. Until now, technical or economic hurdles have stood in the way of using level sensors in many of these applications. The installation was often complex. Cables had to be laid and a power connection had to be provided. Transmitting the data was also difficult: It incurred high costs and was only profitable in exceptional cases.

WIRELESS AND BOUNDLESS LEVEL MEASUREMENT

VEGA has now developed a new instrument series especially for these situations. The re-

sult is reliable, self-sufficient level sensors based on powerful 80 GHz radar technology. Energy efficiency was at the forefront of this development. For this purpose, measurement technology, radio data transmission and energy consumption were optimally coordinated.

The result can guarantee autonomous operation for 10 years or more. The autonomous wireless VEGA sensors can be reliably used in the various scenarios – wherever level measurement is necessary. No matter whether this involves storage containers with chemicals or cleaning agents, or simply bins waiting for collection. The new VEGAPULS Air series covers measuring ranges from a few centimetres up to 30 metres

IDEAL FOR MOBILE CONTAINERS AND IBCS
VEGAPULS Air sensors are ideal for Smart Lo-

gistics and can be easily integrated. Thanks to radar, measurement on the IBC or plastic container is possible from the outside through the container wall. The plastic bubble does not have to be opened or modified. With a few simple movements, this solution can be permanently or temporarily installed on the container, remain there and transmit the respective status. Even when stacked high, the self-sufficient VEGA sensors on each individual container record the current level several times a day – and transmit it by radio.

INSTALLED IN A FEW MINUTES

VEGAPULS air sensors operate autonomously, i.e. they do not need any process connection, cables or control system. The path to the cloud is correspondingly simple: No laying of cables, no refitting. Here, the measurement data is available at any time. The handy radar sensors themselves are robustly designed and can even withstand outdoor weather. The sensor is glued to the container or attached to the versatile mounting accessories. From then on, it runs as safely and reliably as a traditional wired sensor, but is much simpler.

NEEDS-ORIENTED DELIVERY

In combination with the VEGA Inventory System, an automated information flow can be established within a company or between partner companies on the basis of the data that VEGAPULS Air sensors produce in the field. Various clearly arranged analysis and planning tools enable optimal demand, inventory and delivery planning.

With the help of the web-based software,



Portfolio for wireless radar level measurement in versatile applications.



Providing different ways of communication to the cloud is important to find the right one for different applications.

suppliers gain reliable insight into the current inventory situation of their customers. This enables suppliers to plan promptly and soundly while their customers benefit from reliable and always sufficient stock. The visualisation software creates transparency for customers as well as suppliers – and thus guaranteed replenishment for Smart Logistics, Smart Farming and Industry 4.0. Therefore, VEGA thus turns a classic weakness in the supply chain into a strong link. In addition, the usual connections to ERP or CRM systems remain possible.

WITH RADIO TECHNOLOGY OF THE FUTURE

VEGAPULS Air works with the radio technologies LoRaWAN (Long Range Wide Area Network), NB-IoT (Narrowband-IoT) and LTE-M. For Smart Cities, Smart Logistics and other IoT applications, they offer high ranges and, thanks to their very low energy requirements, can be operated autonomously solely from batteries.

With these LPWAN* technologies, VEGAPULS Air sensors can be networked not only very cost-effectively, but also easily over long distances.

The radio standards are designed for high coverage. This makes communication between sensors and the cloud possible in places where there is no mobile phone reception with a smartphone. Even from the basement of a building, an equipped container can still communicate easily and securely to the cloud.

NB-IoT allows the sensors to be connected to the globally standardised 3GPP mobile network. One of the other advantages: The hardware and maintenance costs are low.



SAVE TWICE, WIN-WIN

In concrete terms, this means: Increased availability and optimum utilisation of various processes and plants brings about long-term gain. Firms that shorten downtimes by monitoring their flow of goods with au-

tonomous sensors across the board save on service and operating costs on the one hand – while increasing their turnover at the same time.

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LORA OR NB-IOT: WHO OFFERS WHAT?

	NB-IoT / LTE-M	LoRaWAN
RADIO NETWORK	Mobile networks (Telekom, Vodafone, etc.)	Local network (e.g. a municipal network in the smart city that networks electricity and water meters)
FREQUENCY	900 MHz (Telekom),	868 MHz (ISM)
INSTALLATION	Simple. The sensor only needs to be switched on. It works immediately and transmits its data to the cloud	Expertise and gateway required
EFFECTIVE RANGE	Area-wide (depending on provider)	2-15 kilometres (depending on terrain)
IP CONNECTION	Yes	No (only indirectly)



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Vacuum Conveyor in use to Miniaturize Active Pharma Ingredients

Size matters – particularly in competitive markets such as pharma and nutraceuticals due to its direct result on costs. Tradichems patented Hipering® process begins right at the start of the process chain by miniaturizing the ingredients. Thanks to Piab's piFLOW®p vacuum conveyor their patented process is continuously fed thus maintaining the required pressure level.

With the continuous trend in the pharmaceutical industry to outsource the production of active pharma ingredients (APIs) to reduce costs, the manufacturing process has been split and more players are part of the process chain until the final dosage form is produced and ready for the patient to take against their ailments. Even more, keeping the stability and purity of an API increases in importance.

To fully utilize the cost saving potential of this split process, the API manufacturer needs to deliver the substances ready to use by the drug manufacturer in a form or state suitable for the respective drug dosage form, be it solid or liquid for oral, intravenous or topical administration. The drug manufacturer on the other side needs to be able to ensure a continuous process, reducing cleaning time in his systems and avoiding reprocessing. For this purpose, he needs APIs allowing compliance with final product specifications.

THE HIPERING PROCESS AGGREGATES AND DENSIFIES DRY POWDERS

To meet the needs of both sides Tradichem in Spain has developed a pharmaceutical process for the transformation of raw materials based on a sequence of processes that modify the physical properties of the starting material while keeping its purity and chemical specification. This process was named Hipering and enables aggregation and densification of dry powders into a uniform solid mass that is broken down into specific granule size via a milling system and is offered as a service to API manufacturers by Tradichem.

The Hipering technology set-up consists of a roller compactor with one smooth and one knurled surfaced roll fed by a screw feeding system, which is filled through Piab's piFLOWp vacuum conveyor directly from the bin using a feed adapter. The compactor is connected to a rotor granulator for milling the outgoing compacted plaques into granules.

PIAB'S VACUUM CONVEYOR PROTECTS APIS FROM CONTAMINATION AND SUPPORTS COMPACTING BY CONSTANT FEEDING OF THE PROCESS

Cristina Lozano, Chemical Engineer and Site Manager at Tradichem explains "The advantage of using the piFLOWp vacuum conveyor for feeding the Hipering system lies in its closed system, which prevents the API from taking on moisture and from being contaminated from outside sources. The ingredient does not need any manual handling as it is sucked in from the bin it is delivered in through the vacuum created by the conveyor, allowing it to run automatically through the system until the final granules are derived."

The system is set-up upright, as the vertical pressure is an important factor in achieving the compactness required. The vertical pressure is further enhanced by ensuring a continuous feeding of the hopper, which is equipped with a sensor measuring the filling level. It auto-



The Hipering process transforms APIs leading to smaller capsules for the patient to swallow



matically activates Piab's piFLOWp vacuum conveyor when the level drops below a certain point. Thanks to the homogenous load of the hopper achieved through the continuous feeding by the conveyor, a consistent product with the same density within the whole production batch is achieved.

UNCOMPLICATED CLEANING OF THE PIFLOWP ALLOWS FAST CHANGES BETWEEN DIFFERENT APIS

"Being able to conduct rapid product changes to process the APIs depending on the demand coming in from drug manufacturers was another important factor", adds Cristina Lozano "The simple and uncomplicated cleaning of the Piab vacuum conveyors convinced us further. Thanks to the quick-release system with filters and gaskets, the entire conveyor can be disassembled, cleaned and reassembled for the next production in just a few steps, and it is important to us that the conveyor can be cleaned not only in the shortest possible time, but also thoroughly so that no residues of the previous production could possibly contaminate the next."

David Sanchez, Sales Director Vacuum Conveying for Southern Europe at Piab asserts.

"The vacuum is generated by the COAX® technology by the discharge of compressed air from a multi-stage nozzle system. This allows both a high efficiency of the system and an absolute vacuum level of 250 mbar maximum. Blockages in the delivery line are almost impossible. Since no mechanically moving parts are present in the vacuum pump, the system works maintenance-free.

The vacuum pump is mounted directly on the conveyor. The collection volume of the conveyor can be adapted to different requirements depending on, for example, the product density."



The piFLOWp vacuum conveyor from Piab ensures constant feeding of the Hipering process at Tradichem

PURE API COMPACTING

While compacting powders in the pharmaceutical industry is possible in general with other dry granulation processes, the compaction of active ingredients alone, without the aid of adequate excipients reaching a quality level to prepare final pharmaceutical formulations was so far not possible.

Compacting the APIs alone, however, has numerous advantages. The major one is the creation of multiple new surface sites, additional contact points, and potential binding sites as these allow excipients that support the activation of the substance in the body to better interact with the API. This leads to a lower use of excipients and, hence, a smaller product size – a tinier capsule to swallow. Continuing the material and thereby cost reduction, a smaller capsule uses less gelatine for its shell. With less product volume packaging material can be reduced, which ultimately affects logistics costs.

From a drug manufacturers point of view, it further increases productivity and finished product production by 30 to 50 percent. The more free-flowing powder with its higher particle density coming out of the Hipering process diminishes cleaning times, while the improved particle size distribution increases the overall product quality. All the while,

the API stability is further extended as the granulated product is less volatile, and purity maintained.

VACUUM CONVEYING IN COMPLIANCE WITH PHARMA AND FOOD STANDARDS

Piab's piFLOWp conveyors for powders and bulk solids recommended to Tradichem by the

The piFLOWp conveyor from Piab perfectly matches to the high standards of operational safety and hygiene in the pharmaceutical and food industries



manufacturer of the compactor are perfectly matched to the high standards of operational safety and hygiene in the pharmaceutical and food industries. They are made of electropolished stainless steel and materials that comply with US FDA and EU 1935/2004 regulations. As a conveying line, a suction hose made of PU is used. An internal steel spiral helps to minimize the electrostatic charge of the product or diverts it to equipotential bonding. The filter in the upper part of the conveyor is cleaned with a filter shock after each conveying cycle. The device control is in a separate control cabinet. The piFLOWp conveyors are ATEX Dust and Gas certified. Typical applications are powder and granules transfer, form-fill-seal machines, big bag loading and unloading, drum/bag filling and emptying, mill/sieve/mixer/blender filling, tablet/fragile products transfer, applications in explosive atmosphere, hygienic applications or places where space is at a premium.

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Static Digital Twin Functionality for Valves and Manifolds

AS-Schneider Group is equipping all E Series valves and manifolds with an unique QR-code. That QR-code provides easy access to static product information like material properties, certificates and physical dimensions via CAD drawings. It also includes operating and installation instructions or spare parts or replacement information.

The Industrial Internet of Things (IIoT) is getting more and more traction. The IIoT promises to transform processes of the industry. It demands the securing and availability of far higher amounts of data, at far greater speeds. Often the data is moved into cloud for big data processing. Connectivity and scalability are mandatory.

OEMs, EPCs, and end-users that have embraced the IIoT have seen significant improvements in respect of time, cost savings, efficiency, safety, and profitability. Experts expect this trend to continue and even accelerate.

UNIQUE IDENTIFIER

With all the enthusiasm, we often ignore one

fact. Engineers don't only build process systems out of intelligent, digital, and communicative devices. Technicians install millions of items of technical equipment each year into green or brownfield applications. A big chunk are pure mechanical components like valves and manifolds.

For a holistic system view, we need to include those components into the digital twin, too. Such a system needs secure, bi-unique, and standardized IT based identification. It will offer invaluable benefits to both owners/operators and OEMs.

The unique ID provides easy access to static product information of the OEM like material properties, certificates and physical dimensions via CAD drawings. It also includes op-

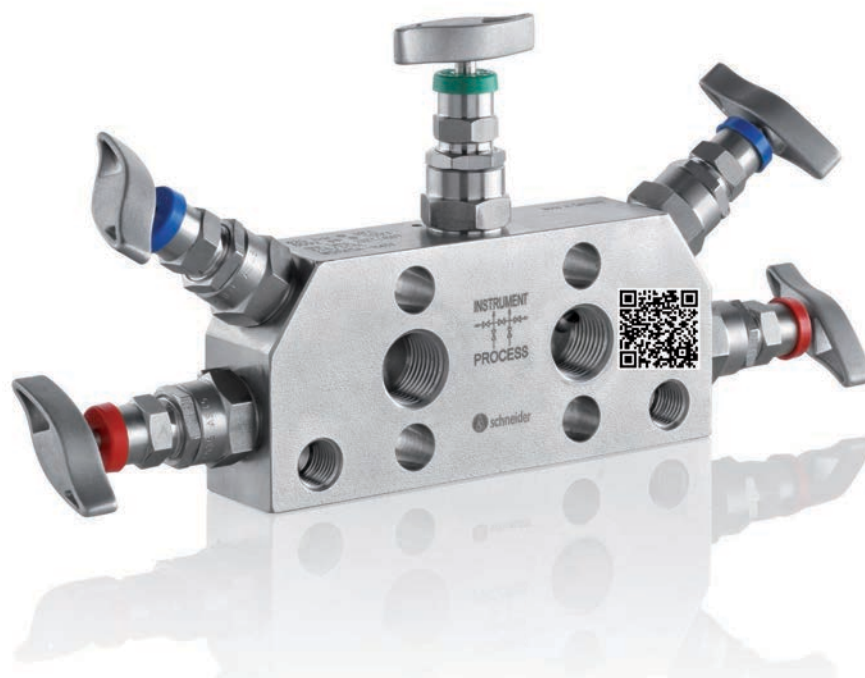
erating and installation instructions or spare parts or replacement information. Operators link this information into their respective asset and operation management system. This system adds value to many project phases. It results in more straightforward planning and installation via the mechanical properties of the product, helps with automated error free equipment identification at the incoming good inspection and during the field installation and more information to make maintenance and repair easier.

Finally, it supports environmentally responsible disassembly and disposal because all material properties and disposal guidelines are at hand.

DIGITAL PRODUCT PASS

Since 2019 AS-Schneider Group has worked on the implementation of the Digital Product Pass. This digital pass is now available for one of the high-volume portfolios - the E-Series Valves and Manifolds.

During the agile development, the AS-Schneider Group evaluated different technologies and approaches in close cooperation with their customers. The final decision was to laser a 2D-code in the form of a QR-code onto the product. The serial number appears on top in plain text underneath. This kind of product identification offers many benefits to the end-user, e.g. there are no temperature limitations and it is a robust and proven marking method. Also the information is readable without a supporting device like mobile device or 2D reader. A pen and paper are enough.



►► 60354 at www.pcne.eu



CONTROL VALVE WITH MOTORIZED ACTUATOR

For a wide range of applications with low flow rates



The **GEMÜ** R563 eSyStep control valve is preferably used for control applications with low flow rates. With Kv values from 63 l/h to 3300 l/h, it is possible to react to customer-specific control parameters. Due to the use of selected plastics and elastomers in the media wetted area, the valve has a wide range of uses and can be used with a wide variety of media, for example for supplying water for

mixing precise ratios of acid and lye in ion exchangers. GEMÜ eSyStep is a universal actuator for open/closed and simple control applications and consists of a compact spindle actuator with stepper motor and an integrated IO-Link interface for exchanging process data. A positioner is integrated as standard. Further components and accessories can be fitted using an interface. An emergency power supply module can be used to configure the actuator to a safety position. The self-locking actuator holds its position in a stable manner when idle and in the event of power supply failure. The actuating speed is a maximum of 3 mm/s. Thanks to its slim design, the actuator is also perfect for block solutions.

►► 60199 at www.pcne.eu

AC POWERED LINEAR ACTUATOR

For pressure ranges from 0-0.5 psig to 0-3,000 psig



The wider PAX range is made up of a variety of linear actuators and motorised regulators. PAX1 units are flexible, low voltage actuators that are ideal for use in remote explosionproof locations. The **Rotork**

actuators offer a thrust output of up to 2,890 N (650 lbf), enabling control of most regulators, small valves and pumps. They are capable of controlling pressure ranges of 0-0.5 psig to 0-3,000 psig. Common applications include pump stroke control, valve control, test equipment and the automation of mechanical spring-loaded pressure regulators. Hazardous area rated to FM, CSA and ATEX, they also have high levels of ingress protection; NEMA 4X, Type 6P, IP66 and IP68 (7 metres for 72 hours), increasing the areas in which they can be used. They have a wide ambient temperature range of -40 to +80 °C (-40 to +176 °F). The addition of an AC power variant allows for longer cable runs without degradation of the power supply. This allows PAX series units to be installed within existing installations where DC power does not exist or is too expensive or difficult to run. Existing field-proven features, such as reliable fail-freeze and manual operation, help ensure uninterrupted service. The PAX series is low powered and dramatically reduces power usage while maintaining position.

►► 60014 at www.pcne.eu



FREE DIGITAL SUBSCRIPTION

STAINLESS-STEEL PUMPS

FSIP progressive cavity pumps for precise dosing



NEMO® progressing cavity pumps in FSIP® design can be used in nearly any area of industry as it is capable of pumping and precisely dosing a great variety of different substances. To further expand its range of capacity, **Netzsch** is making the model now available in stainless steel in the additional sizes NM053, NM090 and NM105, where up to now only pumps in cast iron were available. The FSIP concept of the NEMO progressing cavity pump is especially suitable for wear intensive applications requiring more service and

maintenance work, as the design makes service work so easy: The pump is designed in a way that the housing itself functions as support and orientation guideline during maintenance, making sure each part "automatically" fits into its destination. Therefore the change of all wear parts takes less than half of the time required so far, as they can easily be replaced after opening the pump from flange to flange. In stainless steel the pump is ideal for media with temperatures up to 80°C and a pressure of up to 9 bar. The suction flange can be supplied left- or right-handed or vertical.

►► 60120 at www.pcne.eu

BALL VALVES FOR GASES AND LIQUIDS

Designed for maintenance without need to disconnect



GEA has launched an addition to its range of ball valves by adding the KVplus and KVplus cryo series of top-entry ball valves designed specifically to operate with pressures of up to 100 bar. The KVplus series is capable over the temperature range from -50°C to +200°C, the KVplus cryo series is capable over the temperature range from -196°C to +100°C. This makes the KVplus and KVplus cryo series

suitable for use with natural refrigerants (NH₃, CO₂) cooling brines, and non-corrosive gases and liquids according to EN 378-1. They are equipped with an anti blow-out stem, are Fire-Safe-Tested according to ISO 10497 & API 607 and the stem sealing system in compliance with ISO 15848 "technically emission free". The top-entry design allows maintenance and inspection work to be completed without having to disconnect the valve from the line. The bi-directional seal/seat system operates irrespective of the direction of flow. When in the 'closed' position, the pressure is automatically relieved via the seat system of the valve. Operation is by manual hand lever or can be used with electric or pneumatic actuators if required. The KVplus series valves are built within a one-piece, bolted stainless steel housing.

►► 59664 at www.pcne.eu

Less Unnecessary Rejects Thanks to Automated Inspection

The increasing variety and complexity of parenteral drugs calls for new dimensions in quality assurance. Fully automated inspection technology with a combination of visual inspection and container closure integrity testing (CCIT) offers the highest product and hence patient safety. Pharmaceutical manufacturer CDM Lavoisier decided to change their inspection processes for no less than 30 products in four different packaging formats. They are now all inspected on the new AIM 3000 from Syntegon.

Against the background of rising complexity in products and requirements, the pharmaceutical manufacturer CDM Lavoisier decided to fully automate its inspection process for injectable glass ampoules. Since 1888, CDM Lavoisier has operated as a family-owned business and is a leader in the manufacturing of injectable drugs. "Since the beginning, we have developed products according to the needs of healthcare professionals and sick people. We are committed to top quality for the safety and efficiency of our products. It is with this state of mind that we regularly develop new packaging and formulas," says Philippe Truelle, CEO of CDM Lavoisier in the company's mission statement.

And they not only develop new technologies;

they also adopt them. After very positive experience with several inspection machines and further filling and packaging technologies from Syntegon Technology (formerly Bosch Packaging Technology), the company decided to rely on a new, fully automated solution from the long-term partner. "The AIM 3000 is a new-generation, high-speed machine which has the capacity to detect very small particles and a wide range of cosmetic defects," says Mr. Truelle.

ENSURING PROCESS CONSISTENCY, SPEED AND COST EFFECTIVENESS

To date, the pharmaceutical manufacturer had been working with a combination of automated and manual inspection. Accordingly, one of

the requirements of the new system was its capability to execute the previous manual inspection steps fully automatically, i.e. cosmetic defects like the so-called black spots originating from the ampoule closing process, as well as non-moving particles within the containers. "Fully automated visual inspection offers several advantages, such as process consistency, speed and cost effectiveness," says Mr. Truelle. "Nevertheless, the main challenge was to optimize particle detection rates and reduce false reject rates within the system." Since many different parameters such as viscosity, density, fill volumes or the presence of bubbles can affect process performance, it was crucial to evaluate the performance of the system based on a wide range of process parameters and solution properties in order to qualify a robust and consistent visual inspection process. Once this challenge was overcome, a large variety of inspection recipes had to be implemented and fast changeovers ensured for some 30 different products in four packaging formats.

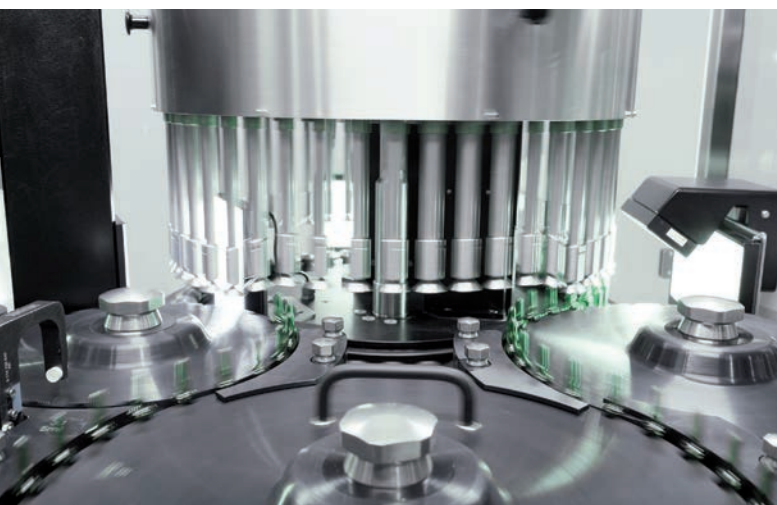
AIM 3000: COMPACT PLATFORM FOR VISUAL INSPECTION AND LEAK DETECTION

The first model of the AIM series was developed by Eisai Machinery some 40 years ago. In 1985, the successful KLD series using high-voltage leak detection (HVLD) was introduced by Bosch Packaging Technology. It detects leaks by measuring the electrical resistance of containers with conductive solutions. Today, both technologies are an integral part of Syntegon Technology's inspection portfolio, and the AIM 3000 combines both further developed visual inspection from the original AIM series and HVLD from the KLD series. The new platform inspects

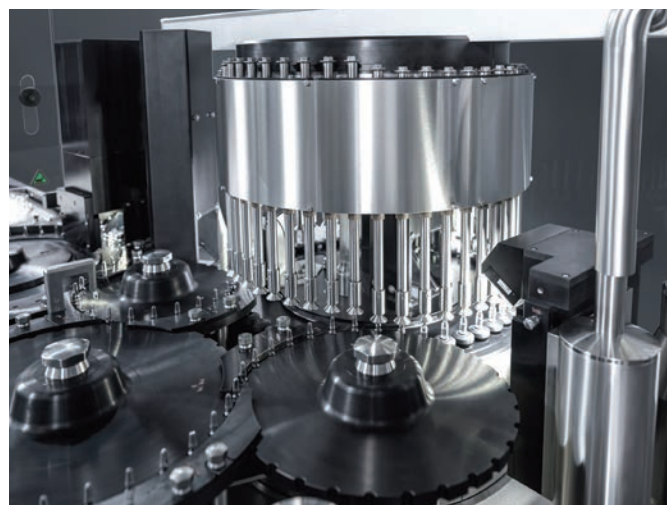


Safe and efficient product inspection the new AIM 3000 from Syntegon.





Detailed view on the inspection process



Inspection turret with fully automated glass ampoule throughput

ampoules and vials containing solutions and suspensions at an output of up to 450 containers per minute.

To sort out damaged containers before they enter the main inspection turret, the AIM 3000 is equipped with a pre-inspection station. The core module features a high-resolution CMOS camera with high-speed interface for particle and cosmetic inspection, as well as a built-in re-inspection function. The customizable platform can be retrofitted on site to add further visual inspection stations or the HVLD module – which is exactly what CDM Lavoisier opted for. “The AIM 3000 not only offers us high speed, but also a reduced footprint thanks to its integrated HVLD module,” Philippe Truelle underlines. Moreover, it equips CDM Lavoisier for the current and upcoming requirements of EU GMP Annex 1.

TECHNOLOGY AND PROJECT MILESTONES

For Philippe Truelle, the highlights of the new technology are obvious: “First, the HVLD module really works for all products, including Water for Injection (WFI). And second, the mechanical aspect of the equipment leads to significantly reduced glass breakage rates during the process.” Syntegon’s transportation technology relies on the Bernoulli principle instead of transporting containers via a

star wheel using vacuum grippers. This principle allows for contactless handling of glass containers without mechanical stress. In the unlikely event of glass breakage, no glass splinters will be sucked into format parts or the pneumatic system.

Despite all the sophisticated technology, several steps were required to implement the AIM 3000 with the ideal settings for CDM Lavoisier. “The Syntegon team tackled each challenge. It was a real partnership between our two companies,” says Mr. Truelle. The first major milestone consisted in selecting good and bad samples for each of the 30 plus products. The Syntegon inspection experts tested all of them offline and developed the suitable inspection recipes. Then came the machine layout validation, the Factory Acceptance Test (FAT) in Germany, followed by the re-installation and machine instruction training at the CDM site in France, including Installation and Operational Qualification (IQ/OQ). “Finally, it was time to see whether the new equipment really is more efficient and effective than the previous combination of automated and manual inspection,” Mr. Truelle recalls.

COMPREHENSIVE INSPECTION ENABLES END-TO-END QUALITY CONTROL

For CDM, the AIM 3000 project not only

had a positive outcome on the efficiency of inspection processes. Another important optimization was related to the previous manufacturing steps. “The more sensitive and sophisticated the inspection process, the more you learn about your prior production processes,” Mr. Truelle explains. “Thanks to the information we obtained from the AIM 3000, we were able to systematically identify and adapt crucial sections within our filling and sealing processes, to make them more stable and to reduce the number of unnecessary rejects even further. In fact, our performance is increasing from week to week.”

CDM Lavoisier has successfully managed the technology shift in its inspection of glass ampoules. “We are still in a continuous improvement process. But we can definitely confirm that the Syntegon inspection technology and the entire AIM 3000 project has led to major improvements. After 25 years of successful cooperation, we were already familiar with the professional and future-oriented working methods. This very demanding project with its thorough project management and efficiency has once again convinced us of their qualities as a reliable partner,” Philippe Truelle concludes.

▶▶ 60426 at www.pcne.eu



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N° 3 - MARCH 2021

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Hyperspectral Imaging as Chance to Improve Inspection Quality at Automated Food Lines

Vision can be deployed in a number of different ways on a food processing line to tell if food is safe to eat and meets the quality standards demanded by retailers. Now the kind of hyperspectral technology that NASA has used to study planets and plant life is being applied to the food that ends up on household plates.

For UK-based automation specialist Brillopak, the emergence of more affordable hyperspectral imaging is enabling food packing plants to leverage sci-fi kit and apply to daily operations. In addition to offering a critical quality control advantage, it helps packhouses previously reliant on EU migrant workers and experiencing staffing pressures to now automate their quality inspection process.

Historically, quality assurance in packhouses relied extensively on human intervention - someone scanning conveyors as packs headed towards the case loading operation and spotting and removing defective or damaged product. However, there are obvious limitations to visual screening. Most notably, the human eye lacks Superman's x-ray powers, while conven-

tional cameras only see what is in the visible light spectrum. Workforce fatigue and human error has meant that on super-fast packing lines, even visible defects, such as bruising and blemishes, can pass even the most observant human inspectors by. Today's hyperspectral vision systems are programmed to have a level of impartiality that human eyes just don't have. With many end-of-line packing stations now automated and processing in excess of 100 packs of produce a minute, incorporating vision is becoming increasingly commonplace. To help minimise the risk of an 'out-of-spec' product heading out of the warehouse doors and onto retailer's shelves, Brillopak has begun to integrate hyperspectral imaging as an option onto its automated case loading sys-

tems, predominantly the company's UniPAKER robotic crate packer.

FOOD SAFETY OF THE FUTURE

Providing instant results and capable of analysing an entire line of packed produce, a hyperspectral camera can be positioned at any part of the food production process. Yet, Brillopak utilises this AI technology predominantly between the packing and case loading operation where operatives previously inspected and rejected produce packs based upon sensory evaluations - sight, touch and smell.

In addition to checking the quality of produce being packed, the use of hyperspectral imaging can detect multiple anomalies with greater precision and speed. This includes appraising the colour, position, count, labels, packaging condition, print inspection, position detection (2D/3D), barcode / data code reading. For cooked items, like bread rolls, a change in colour may indicate burnt areas. Change in size may indicate that a partial product, for example an apple sliced in half, has been inserted into a pack during the wrapping process. On beverage lines, it may identify partial filling. Cameras can also check the presence of labels, including verifying critical data such as date codes, and spot where food or debris may have become trapped, affecting the closure of packaging.

Advanced applications can even detect the chemical compositions of produce to accurately determine ripeness and the shelf life. Some producers already use it to check the pH level and tenderness of meat, such as beef.

For Brillopak customers, however, the ability to improve the accuracy of how products are picked and presented to the packing robot at



With many end-of-line packing stations now automated, incorporating vision is becoming increasingly commonplace.



speed is where director David Jahn sees immediate tangible advantages. He explains: "Using these cameras we can find the centre and orientation of products. This information is conveyed to the robot, which accurately responds, adjusting its speed and position to pick up the pack, regardless of its location on the conveyor. The result is fewer line stoppages to address bottlenecks and better presentation in the retail crates."

In its simplest form, the technology works by analysing how light is reflected across the electromagnetic spectrum. The camera generates a digital image containing far more colour for each pixel than a traditional vision system, or the human eye, which is limited to three primary colours. This ability to differen-



This imaging system will spot minor blemishes, such as a small bruise on an apple. (Istock Credit ALEKSEI BEZRUKOV)

tiate between similar coloured objects means that factories would now be able to spot minor blemishes, such as a small bruise on an apple.

The exact vision technology deployed by Brillopak will depend on the application, continues David. "We might use a camera to select and reject products that don't meet the quality criteria with regards to colour, size or count. Alternatively, vision might be used to sort multiple products as they move randomly down a conveyor in preparation for the next process. Critically, packs that don't comply with labelling laws will also be rejected before the case loading process."

By 2024, the hyperspectral imaging systems market will be worth an estimated US\$18.88 bn. Although still a relatively small adopter of the technology, food processing and agriculture are expected to benefit significantly from advancements micro-hyperspectral imaging camera technology.

"With food safety, quality assurance and food waste so high on the agenda, we anticipate that hyperspectral imaging will soon become the go-to vision system on food processing lines in the future," adds David.



To help minimise the risk of an 'out-of-spec' product heading onto retailer's shelves, Brillopak has begun to integrate hyperspectral imaging as an option onto its automated case loading systems.

►► 60386 at www.pcne.eu



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N° 3 - MARCH 2021

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FUSE AND POWER DISTRIBUTION MODULE

For demanding process industry applications



HIMA presents the new fuse and power distribution module K 7217. The new development offers numerous advantages, including a more compact power distribution, a higher number of available slots, and particular suitability for inte-

gration with HIMA's flexible and scalable safety-related control system HIQuad X. The K 7217 module has also been ATEX and IECEx certified, an additional benefit for its users. The module enables flexible fuse protection for up to 30 individual circuits with circuit breakers or electronic circuit protectors, where a monitoring contact signals when they have tripped. Two separate groups of 15 individual circuits can be secured as well. The device is operated with a maximum current of 150 A or 2 x 75 A and is designed for 24 VDC or 48 VDC (SELV/PELV). Thanks to the large number of slots, compact power distributions can be achieved in existing plants as well as in new power distribution systems. The K 7217's 30 slots well exceed the 18 slots capacity of its predecessor. The advantage: users can save a significant amount of space in control cabinets. The compact, 19-inch mounting frame ensures particularly easy installation and time savings. Being mounted in a 19-inch frame, the K 7217 is particularly suitable for use with the safety-related HIMA system HIQuad X.

▶▶ 60081 at www.pcne.eu

AMMONIA LEAK MONITOR

Reliable toxic gas detection protects workers & equipment



The new Chillard 5000 Ammonia Leak Monitor from **MSA Safety** offers highly reliable toxic gas detection to protect people and equipment in the food/beverage, pharmaceutical, chemical, electric power generation and other industries. The Leak Monitor utilizes Photoacoustic Infrared (PAIR) sensor technology, which provides a rapid response at the 10 parts-per-million level

for early notification. They are highly accurate too: 0-50 ppm ± 1 ppm, 51-1000 ppm $\pm 10\%$ of reading. PAIR sensors are not affected by temperature and humidity swings, which minimizes drift unlike other detection technologies. They are also immune to sensor interferants, such as cleaning agents and solvents. Designed for easy installation, the Ammonia Leak Monitor can be configured with 4, 8 or 16 sampling points all at once from its single dedicated calibration port. This capability eliminates the typical arduous effort and cost required by other gas sensor technologies to calibrate the multiple sensors that must be placed on ceilings in larger production areas or buildings for adequate coverage due to the lighter than air nature of ammonia gas. Technicians will appreciate the Chillard 5000 Ammonia Leak Monitor's large, highly intuitive local user interface touch-screen color display (7-inches, 178 mm) with real-time text and graphics.

▶▶ 59883 at www.pcne.eu

VERSATILE MULTI-PURPOSE INDICATOR

Robust housing for use in intrinsically safe applications



The **Fluidwell** D490 is a Multi-Purpose Indicator. It can display the actual process value, range and current loops. In addition to flow rate, level, temperature and pressure applications, the D490 can also work with other measur-

ing units, such as %, mA, RPM and more. Therefore, the D490 is a versatile indicator that suits many applications. The D490 is a unique intrinsically safe product within the D-Series. The input circuit has a low voltage drop < 1V DC and is isolated from the backlight circuit. It is classified with the highest protection level Ga/Da (Zone 0) and won't influence the intrinsically safe circuit to which it is connected. The loop powered D490 accepts 4 - 20mA input signals from a wide range of process instruments, including flow (linear or square root), level, pressure and temperature transmitters. All these process parameters can be displayed in their own engineering units. An outstanding advantage of this DIN panel mount indicator is its unique waterproof qualities. The robust IP66, IP67 and Type 4X enclosure withstands extreme weather conditions and powerful water jets! It will save time and cost. It is perfect for marine, cleaning and wash-down applications without worrying about water damage. The configuration of the D490 is done via a simple, logical and menu-driven structure.

▶▶ 59976 at www.pcne.eu

SAMPLING SYSTEM FOR FINE CHEMICALS

Versatile system with new dosing function



With its Multiprobe sampling system, **De Dietrich Process** Systems has established a reputation in the pharmaceutical and fine chemicals markets for safety and versatility, while continuing to adapt it to the needs of its customers. For several years now, Multiprobe, has been available. It is a simple solution for taking samples in complete safety which offers many advantages, including representative sampling directly at the heart of the reaction while the process is ongoing, as well as temperature and pH measurements and a baffling function. All this can be carried out even when the reactor is

working under pressure or vacuum, without having to open the manhole, thereby ensuring operator safety. Now, in response to customer demand a new function has been introduced in addition to those already mentioned: the injection of a reagent or catalyst into the heart of the reaction medium. This function, designed and customized based on each customer's individual specifications, make it possible to safely inject a defined quantity of liquid product, even a small quantity (a few tens of grams) into the heart of the chemical reaction. The system is designed to ensure that all the specified quantity reaches the reaction medium.

▶▶ 59829 at www.pcne.eu



LOW-TEMPERATURE PROXIMITY SWITCHES

For easy direct connection in Ex zones 0/20



EGE provides IGEX20Pa-type proximity switches that withstand low temperatures down to -60°C . ATEX- and IECEx-certified for use in Ex zones 0 and 20, these sensors can be used in hazardous areas with gas or dust atmospheres, for example in filling stations and facilities with gas pipelines etc. EGE now also offers easy-installation variants of these

Polar-series proximity switches. Featuring the ignition protection type Ex m (encapsulation), these models can be employed in Ex zones 0 and 20 by themselves, without the need for additional switching amplifiers. The sensors are supplied with IP67 and IP68 ingress protection and in M12, M18, and M30 designs. Given a flush installation, nominal switching distances are 2, 5 and 10 mm.

►► 60304 at www.pcne.eu

GATEWAY FOR INDUSTRY 4.0 APPLICATIONS

Controller-independent access to PROFIBUS DP networks



Softing's smartLink HW-DP V1.01 enables access to process, asset, and diagnostic data from PROFIBUS devices and HART devices connected to PROFIBUS remote I/Os. Furthermore, it allows for secure data export to any

system inside and outside the company's own network. Users in the process industry who want to adapt their communication architecture to modern IoT use cases can integrate smartLink into existing plants in a simple and cost-effective manner. The data which is relevant for optimization processes is made available via open, standardized interfaces such as HART IP and FDT for subsequent applications.

►► 60119 at www.pcne.eu

1 DEVICE, 2 TEMPERATURE INSTRUMENTS

Local and remote indication over one connection point



The **Ashcroft Model K** dual sensor thermometer combines two independent temperature sensing devices into a single instrument. For local indication, a silicone-dampened mechanical ANSI/IEC/EN

classified bimetal system drives the pointer over an 80, 100, 130, or 150 mm diameter dial. There is a choice of stems from 90mm to 2000 mm that also contain a type K thermocouple to signal a remote readout, data acquisition device or control system. While providing these two distinct capabilities, the Ashcroft Model K only requires a single process connection point. This multi-capable design will save both installation time and the cost of purchasing two separate instruments.

►► 59755 at www.pcne.eu



FREE DIGITAL SUBSCRIPTION

HYGIENIC OUTLET WITH INFLATABLE SEALS

Easy-to-clean, for applications with frequent cleaning



Gericke batch mixers are now available with an additional type of discharge valve. This innovative and patented valve offers high process reliability, meeting all hygienic require-

ments, reduces the overall height of the mixing line and even lowers energy consumption. Mixer outlet valves not only serve to empty the mixer but are an important interface that is crucial in terms of cross-contamination and mixing quality. The new outlet valve closes tightly, even with sticky product thanks due to an inflatable seal. Furthermore, this configuration allows monitoring of the tightness of the outlet flap and in case of a malfunction the process can be stopped immediately, which allows to avoid product recalls.

►► 60133 at www.pcne.eu

INDUSTRIAL RTUS OPERATING FROM -40°C - 70°C

Rugged and flexible solution for monitoring and control



Red Lion announced the expansion of its SixTRAK line of industrial RTUs with the launch of STIPm-8460 powered by the Red Lion Workbench, which uses an IEC61131-3 compliant editor and runtime engine. Designed for applications that need increased processing and communication speed and storage, the new RTU

provides the flexibility and reliability that customers require and expect from Red Lion to monitor and control equipment. The ability of the ST-IPm-8460 to operate in harsh and hazardous locations is achieved through UL Class I, Div 2 certification, an ABS listing, and an operating temperature range of -40°C to 70°C .

►► 59871 at www.pcne.eu

ROBUST HIGH-PRESSURE NEEDLE VALVE

Shut-off valves with pressure ranges of up to 60,000 psi



WIKA has supplemented its portfolio of shut-off valves with the model HPNV high-pressure needle valve. The new valve is designed for four pressure ranges: up to 15,000 psi (1,034 bar), up to 20,000 psi (1,379 bar), up to 30,000 psi (2,068

bar) and up to 60,000 psi (4,136 bar). The sensitive components - spindle tip and sealing - are made of suitably resistant material. Furthermore, the model HPNV has the same characteristics as the other WIK A needle valves: low-wear operation due to the non-rotating spindle tip, smooth handling with low torque and leak tightness tested to BS6755/ISO 5208 leakage rate A. The high-pressure valve is available in various configurations and materials.

►► 59815 at www.pcne.eu

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