

ASSISTANCE, SERVICE AND CUSTOMIZATION

A full portfolio to control and dose powder and granule flow in the pharmaceutical and chemical industry

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Dear Reader,

in this issue we want to present you a focus on "Digitalization" and show some of the different aspects in this wide field. It is an important topic, with so many different faces and directions that it is sometimes hard to define what the meaning of



it is if you look at a concrete situation and how you can profit from it in this situation. Stuart Harris from Emerson describes in the editorial on page 18 how such situations can be solved with the right partner, starting with the definition of goals you want to reach and waypoints that help you getting there on a straight route. Another interesting article shows you how an up-to-date network structure helps an Italian farm not only to produce the best possible mozzarella but also reduces the ecological footprint with the production of renewable energy for the national grid (page 20).

Even without any actual events to visit in the last months a news of a lot of interesting products have reached us, that we want to introduce to you in this issue and on our website, that you can also use to get in touch easily with all the different suppliers. And if you have news to share with us and the PCN Europe readership, we are happy to receive your feedback to: k.petermann@tim-europe.com.

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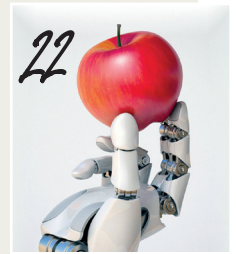


Digitalization

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Cornerstone Ceremony for New European Distribution Center

Endress+Hauser is strengthening its logistics capabilities in Europe. Business partner Hellmann Worldwide Logistics will operate a modern, high-performance logistics center on behalf of the Group in Wörrstadt, Germany near Frankfurt Airport. The hub is scheduled to be completed and in operation by mid-2021. The new location will replace the current logistics center in Nieder-Olm, Germany and will feature more than 18,000 square meters of logistics space and can handle eight times the volume of the old facility. In order to smoothly fulfill customer orders and ensure a high level of customer satisfaction, a reliable logistics system is a crucial link in the chain. Fast throughput times, a quick response and on-time delivery are just a few of the demands placed on modern product distribution centers. During the coronavirus pandemic, another aspect turned out to be especially important: flexibility. "In order to reliably supply customers around the world with measurement and automation technology despite the pandemic, our logistics hub in Nieder-Olm served as a solid foundation," says Oliver Blum, Corporate Director of Supply Chain. "Although 100 percent availability was crucial, having the flexibility to keep thousands of measurement instruments from being delivered to customers that were in lockdown was particularly important."



Syntegon Wins German Packaging Award 2020

The German Packaging Institute ("dvi – Deutsches Verpackungsinstitut e.V.") has honored Syntegon Technology, formerly Bosch Packaging Technology, with the German Packaging Award in the category "Packaging Machines": the compact TPU1000 form, fill and seal system convinced the jury with its wide range of possibilities for innovative, sustainable portion packs made of fiber-based material. The German Packaging Award 2020 underlines Syntegon's focus on sustainable and intelligent technologies. Every year, the German Packaging Institute dvi honors groundbreaking packaging ideas and machines in a contest that encompasses all industries and packaging materials. This year, one of the coveted prizes went to the TPU1000 paper forming machine from Syntegon. According to the jury, the form, fill and seal machine for paper-based packaging material paves the way for new, sustainable packaging solutions that meet the trends towards replacing petrochemical plastics and individualization. "The TPU offers brand owners with high demands on sustainability and aesthetics completely new packaging options for food, cosmetics and non-food products," says Matthias Klausner, sustainability expert at Syntegon Technology. "We are therefore all the more pleased that the dvi recognizes our innovation and sustainability efforts."



Rotork Launches Lifetime Management Services

The new service with a stronger focus on ensuring the most appropriate response based on application criticality. The new four-tiered approach offered from Rotork proves optimal for identifying the unique needs of a customer and providing appropriate support. These tiers are Health Checks, Planned Maintenance, Enhanced Warranty and Predictive Maintenance. A Health Check is an assessment of actuator asset condition relative to design specification and operational use. The Planned Maintenance tier encompasses thorough, intrusive product inspections and pro-active repair management. The data logger and configuration will be benchmarked, environmental O-rings and batteries may be replaced (if necessary) and functional tests (manual, remote and local) will be carried out. Enhanced Warranty provides an extended warranty period and condition-based monitoring. This encompasses at least two Health Checks a year and a review of historic performance. The final tier, Predictive Maintenance encompasses everything that the previous tiers provide, with the added provision of identifying potential problems before they are able to manifest. Data logger records are compared through machine learning and the patterns which occur prior to failures are identified.



Can Wax Moth Caterpillars Digest Plastic?

Researchers at the Fraunhofer Institute for Structural Durability and System Reliability LBF have taken a closer look in an attempt to answer this question. The initial situation: larvae of the wax moth *Galleria melonella* are thought to eat and digest polyethylene, which is why they are considered to contribute to the CO₂-neutral elimination of the mountains of plastic waste that are growing worldwide. However, whether the caterpillar can do this is still not understood and is currently the subject of controversial discussion. However, before this remarkable ability of the caterpillar can be harnessed technologically, it must be clarified whether it actually digests the PE or merely crushes and excretes it. The results so far have amazed the project team: The analytical measurement data does not provide any evidence that the caterpillars digest the polyethylene. "The fact that caterpillars biodegrade polyethylene remains a visionary goal for the time being, and intensive interdisciplinary efforts are essential to achieve it. For scientific research, it is therefore all the more important to avoid and recycle plastic waste, taking into account all stages along the packaging value chain," emphasizes Dr. Bastian Barton, who supervised the research project at Fraunhofer LBF.



POINT-TO-POINT WIRELESS I/O MODULES

Hassle-free replication of signals at remote locations



Acromag broadened their new Vertu brand of innovative instrumentation with the release of the VWB2000 signal wire replacement system in a rugged NEMA 4X/IP68 industrial housing. This point-to-point wireless signal bridge takes analog, discrete, or Modbus signals at one location and reproduces them at a second location. The system

consists of two pre-paired transmitter/receiver units that have a range of 1 mile outside or 500 feet indoors (about 1.600/150 m) at industrial environments. An LCD display provides signal strength and other diagnostic information. A VWB2000 wireless I/O bridge is easy to set up and install. Each unit has one analog I/O channel, four discrete I/O and Modbus communications that are field-configurable in minutes using the push-button controls. Free Windows software simplifies configuration on a PC via USB and enables advanced features such as encryption and analog signal calibration. Units can mount directly to a supporting conduit or securely to pipes and walls. Each unit has both inputs and outputs for bi-directional communication. Analog inputs accept 4-20mA, 0-5V, 0-10V, or 1-5V signals. Analog output is 4-20mA. Digital I/O channels support 0-5V TTL logic levels. Modbus RTU serial communication is EIA-485 compatible.

▶▶ 59203 at www.pcne.eu

OXYGEN SENSOR WITH HART INTERFACE

Bluetooth communication allows mobile device access



The business unit Process Analytics of **Hamilton Bonaduz** introduced a revised version of the sensor VisiTrace DO to the market: the optical dissolved oxygen sensor VisiTrace mA. The new generation is now equipped with a new HART interface in addition to its 4-20 mA output. This digital protocol, that is prevalent in hazardous areas, allows communication with the corresponding field devices. Naturally, VisiTrace mA can be used in potentially explosive atmospheres due to its ATEX and IECEx certifications. The integrated micro-transmitter not only provides both interfaces with a robust signal, it also allows the new Bluetooth 5 interface to communicate with mobile devices equipped with the operating systems Android or iOS and the ArcAir app. Sensor data and configuration can be accessed with the app. Furthermore, calibration and configuration reports can be

generated via the app and forwarded as pdf. Consequently, transcription errors of handwritten records are a thing of the past. The micro-transmitter stores calibration data in the sensor head, so that, after calibration in the lab, the sensor can be stored on the shelf and deployed at any time. Like the complete VisiFerm sensor family, VisiTrace mA is based on the optical measurement principle and is intended for use in aqueous media. The sensor shows a high process stability despite of the measurement range of 0-2000 ppb.

▶▶ 59422 at www.pcne.eu

WIRELESS HEAVY-DUTY TRANSMITTER

Pressure measurement with different port options



BCM's Model 226T Wireless Pressure Transmitters are developed from 225T Heavy-duty Pressure Transmitter for remote wireless applications. In hazardous conditions or places where no power supply is available, the 226T is useful, e.g., in oil wells, other applications where explosive gas

is present or at places which are either dangerous to people and/or no power supply is available. To fit to such applications, the housing of 226T is sealed tightly to meet the requirements for explosion proof of Exd IIC T5 Gb, Exia IIB T4 Ga and for IP66. For different remote distances and data transmission rates, model 226T is manufactured to have different wireless communication protocols, like LoRa (Long Range) or Zigbee. LoRa is suitable for longer distances (up to kilometers), Zigbee in shorter ranges, up to a few hundred meters. To fit various pressure media, three types of pressure port are available. Type-A (inner cavity) has its pressure diaphragm located inside the port to measure gases or dilute liquids. Type-B (flush diaphragm) has its pressure diaphragm in front of the pressure port and is suitable for measuring viscous fluids, fluids with particles or paste. Type-C (tri-clamp) has no thread and can be connected via a clamp, this is designed for use in pharmaceutical or food industries.

▶▶ 59135 at www.pcne.eu

COMPACT CAPACITIVE LEVEL SENSORS

IO-Link sensor for foaming or adhesive media



Anyone who has ever tried detecting the level of strongly foaming, conductive liquids using conventional capacitive sensors knows how difficult this is. The compact capacitive Q40 sensors with Smart Level technology from **Balluff** can solve the problem. Thanks to patented pulse technology liquid films or dirt buildup inside or outside

the container do not affect the measuring result. For these non-contact sensors using Smart Level 50 technology non-metallic walls up to 6 mm thick are no problem. They automatically compensate for the wall as well as for foam and build-up. Users can count on precise measuring results even with highly conductive or aggressive media. No more regular sensor and container cleaning is required. Thanks to the IO-Link interface users of the new version enjoy expanded application and setting options. Process monitoring, configuration and error analysis of the IO-Link sensors take place in the controller and over the IO-Link interface. The sensor can be operated in either standard I/O or IO-Link mode. The switching point as well as the output configuration (factory set to PNP normally open) can be easily changed over IO-Link. The rugged, time-tested PBT housings and IP 67 protection of the Smart Level sensors with dimensions of 40 x 40 x 10 mm can be easily installed using screws, brackets or simply using cable ties.

▶▶ 59277 at www.pcne.eu



IO-LINK MASTER WITH OPC UA INTERFACE

Communication from the lowest field level to the cloud



Pepperl+Fuchs is the first company to combine the advantages of IO-Link and OPC UA in a single device to help customers implement their vision of Industry 4.0. Although sensor data is currently stored in central control systems that are difficult to access, this solution now makes the information available to decision-makers and all systems worldwide. When used as a sensor

interface, IO-Link provides in-depth data for identifying, configuring parameters for and diagnosing a sensor. The data can be forwarded to computer- or cloud-based systems via OPC UA, an Ethernet-based protocol specifically designed for machine-to-machine or machine-to-cloud communication. These systems analyze the data for specific applications, such as predictive maintenance solutions in which an optical sensor can proactively flag lens contamination and thus prompt cleaning in good time before malfunctions occur. This flow of data helps customers to increase productivity and secure long-term business success as digitalization becomes ever more important. In addition to the ICE1 masters for PLC-based applications, two other modules are available for use in cloud-based and hybrid systems: the ICE2 (Ethernet/IP) and ICE3 (PROFINET) IO-Link master series.

►► 59431 at www.pcne.eu

FOR GERM- AND VIRUS-FREE PACKAGING

Mould dehumidification for aseptic production



For food and pharmaceutical manufacturers, sterilising the production areas is a common practice. When producing packaging for the same manufacturers, there is additional demand for sterile and low-particle plastic production. **Blue Air Systems** has developed a new product for this sector: the proven DMS (Dry Mould System)

dehumidifiers are now available in the germ and virus-free version, DMSterile. DMSterile directly generates a germ and virus-free atmosphere during mould dehumidification. The end products, such as pharmaceutical containers, PET pre-forms or sealing caps, come into contact exclusively with sterile air during production within the partitioning. Micro-organisms thrive where moisture and heat are present. Both conditions are often found in production halls. In addition, outdated or irregularly maintained filters of air conditioning systems, ventilation systems and even production machines facilitate the multiplication of germs and viruses. Aseptic production with DMSterile ensures an optimum environment for manufacturing plastic products and avoids costly after-care. Together with the existing dehumidification technology, DMSterile improves the quality of the end product.

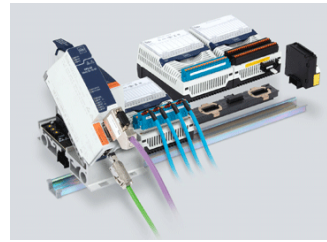
►► 59114 at www.pcne.eu



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REMOTE I/O FOR HAZARDOUS AREAS

Ethernet protocols for high demands on availability



IS1+, the remote I/O system for hazardous areas from **R. Stahl**, is now also PROFINET-certified, thereby fulfilling all criteria for Conformance Class B devices. Thanks to the support of both MRP rings and S2 system redundancy, IS1+ is suitable for

use in applications that place high demands on availability. With the "Dynamic Reconfiguration" (DR) PROFINET function, changes to the configuration, such as adding or replacing I/O modules, can be made online without interrupting communication. Even the CPU (gateway) assembly can be replaced without requiring reconfiguration or additional parametrisation. This feature - known as "Simple Device Replacement" - is yet another addition to the list of PROFINET features. As a "Shared Device", IS1+ is also capable of working simultaneously with multiple controllers. As well as PROFINET, the CPU assembly communicates Modbus TCP, EtherNet/IP and the classic PROFIBUS DP fieldbus as standard, including HART transmission and FDT/TDM support for each. The communication protocol can be set by the user, thereby enabling flexible migration and modernisation. This allows a PROFIBUS DP installation to continue operating initially and to be "upgraded" at any time without replacing any hardware by simply switching the CPU to PROFINET, for instance.

►► 59414 at www.pcne.eu

PH SENSORS WITH ADVANCED CAPABILITY

Color-coded sensor series for different application areas



The application driven designs of the new **ABB** sensors are categorized into three groups: the entry-level 100 series for cost-effective measurement in general process applications; the high-performance 500 series

for harsh industrial applications; and the 700 series for specialist applications. This makes it simple for users to select, own, and operate the pH sensors best suited to their needs. Digital and analog options are available, with the digital solution offering the greatest benefits because it provides advanced in-built diagnostics - the most effective way of ensuring constant high-quality water. ABB's EZLink plug-and-play technology links any of the new sensors to ABB's digital transmitter range, including the recently launched AWT420. EZLink enables faster installation and commissioning and provides easy access to maintenance data meaning that users can replace sensors at the optimum time, saving money without risking process control. Designed for long life to maximize process uptime, this new range incorporates innovations including ABB's perpetual impedance diagnostics to detect electrode faults without the need for a solution earth. Another feature is the smart Reference Electrode Monitoring (REM) system, which provides early warning of electrode poisoning.

►► 59486 at www.pcne.eu

Digital Control Technology for Blowers and Compressors

Software packages for different requirements in a wide range of industry sectors

Everyone is talking about digitalisation, automation and Industry 4.0. Integrating digital applications in the control of blowers and compressors also offers great potential for increasing machine availability, reliability and information transparency in the higher-level control system of the machine operator. With the newly developed AERtronic, AERZEN has now succeeded in extending the functional spectrum of its predecessor by digital applications.

AERZEN has quickly realised that the further development of digital functions in the control technology of process air systems brings extensive advantages for the operators of the machines: The software-based recording, analysis and evaluation of relevant process parameters not only makes digital solutions more user-friendly, but also enables significant optimisation in operation.

TAILORED TO INDIVIDUAL REQUIREMENTS

The new generation of the AERtronic machine control system has therefore been

specially developed to meet the customer requirements of the various industries. AERZEN offers the system in the three versions Basic, Advanced and Premium. These differ in their range of functions and can therefore be tailored to the individual needs of the plant operator.

The AERtronic Basic variant acts as a digital machine parameter display and fault indicator. The user can now read the relevant process parameters such as pressures and temperatures on a modern display and transfer them easily and conveniently to the control room via Modbus RTU interface - unlike its predecessor, an analogue display unit with circular instrumentation.

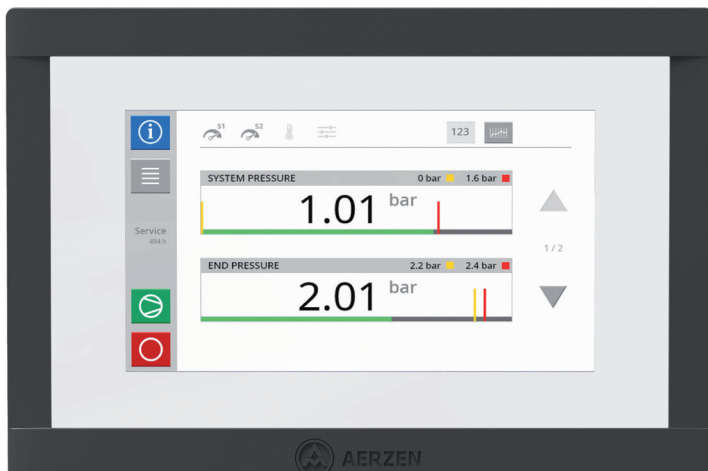
MOVING TO INDUSTRY 4.0

In addition to these functions, the AERtronic Advanced control unit offers the possibility of actively controlling processes. The device uses the sensors to identify critical states in the process and switches the machine

off if necessary to prevent damage. In addition, the plant operator has the possibility to transmit the recorded parameters via Modbus RTU to his higher-level systems such as Supervisory Control And Data Acquisition (SCADA). This function makes it possible to make processes in the plant even more transparent and to identify potential for improvement at an early stage. This variety of functions plays out its advantages above all with the Delta Screw screw compressor and is therefore provided as standard. If you are looking for an "Industry 4.0 ready" solution for your processes, you will find an advanced and user-friendly machine control in the AERtronic Advanced.

The premium version of the AERtronic is based on the Advanced control unit and enables the operator to access further services via the AERZEN platform to increase availability, efficiency and evaluation. The artificial intelligence trained and programmed on the basis of more than 150 years of mechanical engineering experience ensures even more efficient, reliable and smarter machine operation.

The innovative AERZEN control units set the course for operators of blowers and compressors towards digitalisation of production. Thanks to the extensive functional diversity of the systems, it is possible to combine the highest safety standards with maximum user comfort and process efficiency. The use of an AERtronic control unit also extends the service life of the system by protecting the machine specifically against failures caused by overloads.



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RADAR MEASUREMENT FOR LIQUIDS

Corrosion resistant polypropylene antenna



Siemens presents Sitrans LR250 PLA (polypropylene lens antenna) radar level measurement transmitter, a field-proven device delivering reliable level readings for inventory management or critical process control. This high performing horn and lens design fits for corrosive chemicals level measurement with a nominal pressure and temperature environment.

Sitrans LR250 is available with HART (Highway Addressable Remote Transducer), Profibus PA, or Foundation Fieldbus protocols to support the digitalization journey. With the graphical Quick Start Wizard, the Sitrans LR250 is operational in minutes and the infrared handheld programmer supports local programming.

►► 59463 at www.pcne.eu

HASTELLOY PRESSURE GAUGE

Wetted parts resistant to highly aggressive media



For pressure measurement in processes with highly aggressive media, **WIK A** has a new Bourdon tube pressure gauge in its portfolio, the model PG28. The wetted parts are made of Hastelloy C276

and are even resistant to chlorine gas, hydrofluoric acid and sulphuric acid. Users therefore have a corrosion-resistant measuring solution with a very good price/performance ratio that also requires little installation space. The PG28 is available with scale ranges from 0 ... 0.6 bar to 0 ... 700 bar. Its case (nominal sizes 100, 160) is optionally available with filling and in an "S3" safety version. Other instrument variants are suitable for ATEX and NACE sour gas applications. The PG28 extends the existing Hastelloy products with diaphragm pressure gauges and diaphragm seals.

►► 59317 at www.pcne.eu

BLUETOOTH CORIOLIS FLOWMETERS

Secure wireless device communication



KROHNE introduces Bluetooth Low Energy (BLE) option for all OPTI-MASS x400 Coriolis flowmeters equipped with MFC 400 converter. Together with the OPTICHECK Flow Mobile app for iOS and Android this allows for device commissioning,

verification, diagnostics and monitoring from mobile devices via secure wireless communication. The BLE option can either be ordered as an option with new devices or retrofitted depending on the hardware revision of the converter. It allows for wireless operation over distances of up to 20 m/ 65 ft, e.g. for devices installed in inaccessible locations. Use in Ex Zone 1 is possible with suitable mobile devices. The BLE option is available for Europe, approvals for USA, Canada, China and others are pending.

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Off-the-Shelf vs. Optimised Lenses – a key decision for instrument, sensor and camera manufacturers

Optics play an important part if you want to get the best possible results with your instrument, sensor or camera system. We interviewed Mark Pontin, Managing Director of Resolve Optics, about how this can be assured.

PCN Europe: With the huge number of off-the-shelf optical systems one should think it shouldn't be so hard to find the right one for individual requirements. Why isn't that the case?

M. Pontin: Though adopting an off-the-shelf solution may offer an initial purchase price benefit it generally requires a compromise somewhere, be it resolution, operating field of view or size. You are unlikely to find an optimised solution off-the-shelf. In selecting the route to sourcing those vital optics that will give your product a competitive advantage or allow you to make a challenging measurement you should also take into account the hours that may have been spent looking for and test various lenses. A no commitment discussion with Resolve

and we can advise what is required optically and offer an optimized custom solution to meet your exact needs.

PCN Europe: What is the range of industries you are working for? With all the different requirements that have to be covered, do you have all the competences you need to design a new product inhouse or do you work with partners?

M. Pontin: We have decades of experience of solving customer challenges in a diverse and growing range of areas that require an optical solution, including the Nuclear Industry, Aerospace, Automotive, Marine, Materials Testing, Petrochemical, Pharmaceutical, Surveillance and Broadcast TV. Investing in high quality staff allows us to un-



Mark Pontin, Managing Director of Resolve Optics Ltd



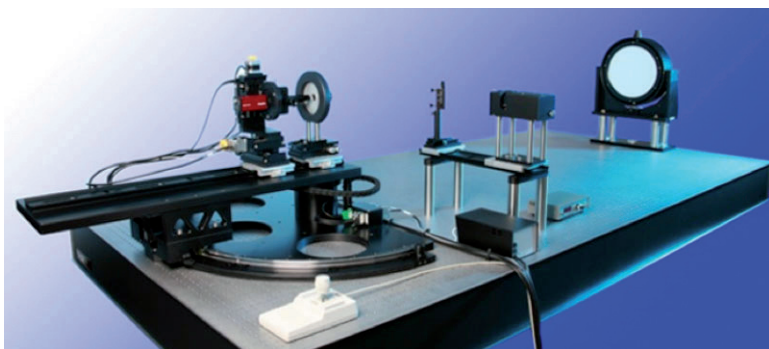
A range of specialist lenses for different kinds of applications from Resolve Optics

dertake all Optical and Mechanical designs in house. Operating in a global marketplace we source glass and metal component manufactured parts from carefully selected partners in the UK and abroad who can offer us reliable high quality and stable pricing / deliveries. Assembly and testing is carried out inhouse facility in Chesham, UK using a wide range of state-of-the-art equipment.

PCN Europe: What are the typical problems a potential customer wants to solve in a collaboration with you and how long could that process of problem-solving take?

M. Pontin: Our customer's applications are very diverse and consequently there are few typical problems, every new project has its own unique requirements. In order to deliver an effective, optimised optical solution we make it our business to first fully understand





Test rig for optical alignment

the customer's application and optical requirements before we develop and offer a solution. Our aim is to try and offer a theoretical solution and an estimation of costs within 7 days. If the customer is happy with the solution and the costs, we then proceed to fine tune the solution and produce a specification that they are happy to sign off on. Resolve will then commit to design and supply a lens that meets the specification. As a rule of thumb, a fixed focus design takes approximately 6 months from order to delivery of first prototypes. Zoom lenses take longer to their added complexity.

PCN Europe: Computer design and simulation processes are increasingly used alongside "old-fashioned" optical and mechanical testing to prove the quality of products. What quality assurance tools do you use to ensure reliable high quality from the lenses and optical systems you supply?

M. Pontin: Resolve Optics has invested in

the latest 3D CAD and modeling software to ensure all our inhouse designed components are designed and machined to the highest standards. After inspection the lenses are assembled in our onsite cleanroom to ensure the lenses are assembled under clean dust free conditions to ensure reliable, high performance

Our "old fashioned" optical testing is carried out on a state of the art fully automated MTF (Modulation Transfer Function) test bench that enables us to provide customers with detailed MTF curves, comprehensive distortion mapping and register distances with a click of a button. This test bench not only enables us to accurately qualify that all our lenses meet their specification.

PCN Europe: Digitalization is one of the big process industries trends across a wide range of product groups. Is this trend driving your business too?

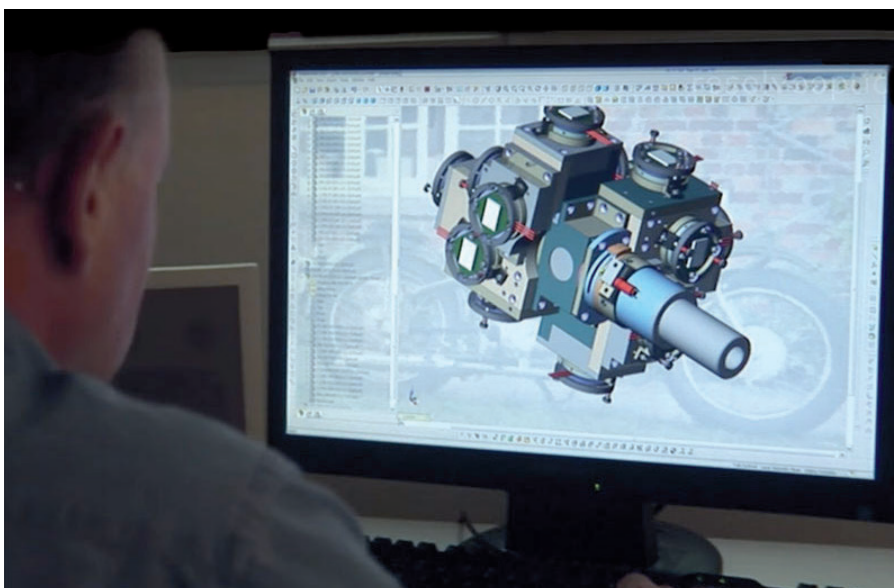
M. Pontin: Lens designs are driven by advances in sensor technology. While most modern cameras and sensors may be digital their optical components will always be analog. Our customers are becoming more demanding in terms of resolution as achievable pixel size become smaller and sensors continue to grow in size. This new generation of very high-resolution sensors often require very extreme optical designs which are rarely available off-the-shelf. As resolution increases the higher order optical aberrations in a lens design become more and more difficult to correct. This is where Aspheric elements may be required or even selection of exotic glass types. This is why high-resolution lenses will cost more than standard definition lenses.

PCN Europe: Could you give our readers a description of the most extreme environments that optics you designed and produced have had to withstand?

M. Pontin: We have designed endoscopes that monitor the turbine blades in an operational gas turbine. This required the endoscope to withstand extreme temperatures, pressure and vibration. The solution required special bimetallic spacers that expanded and contracted at a similar rate to the glass elements which enabled the elements to remain tightly held and avoided the temperature and vibration from destroying the elements. This is just one pleasing example of where Resolve was able to develop an optical solution to enable a customer make measurements that they previously thought were impossible.

PCN Europe: Thanks for sharing your insights!

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Designing custom optical systems



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Access Storage Tank Levels from Anywhere

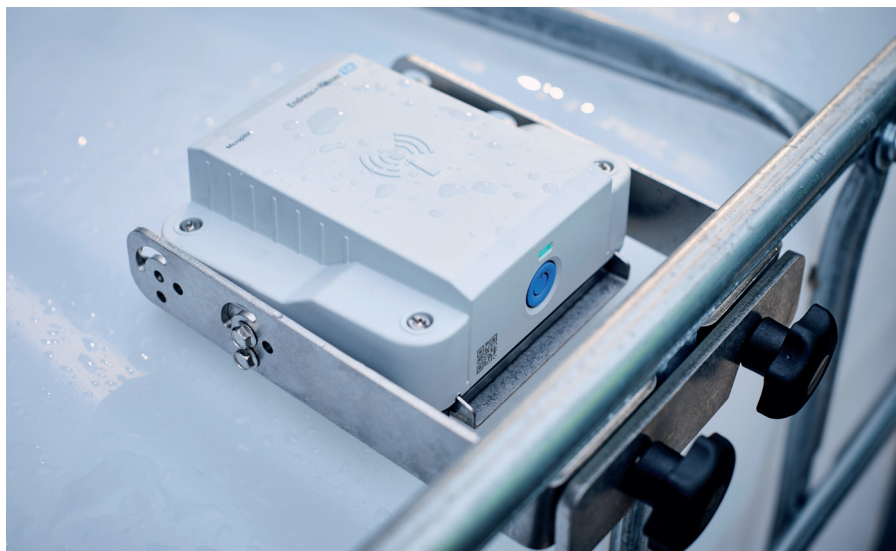
Easy to install cloud-connected radar level sensor for measurement in storage tanks

With more than 2.2 million installed applications and 50 years of experience, time-of-flight (ToF) measurement instruments are an important component of Endress+Hauser's portfolio. ToF-devices are used in a wide range of applications and are a reliable solution even under extreme process conditions, such as high pressure or temperatures and in corrosive or aggressive media. The new generation of Micropilot instruments offers compact design and maximum user-friendliness, as well as application-specific flexibility, to provide solutions for both mobile and stationary plastic tanks.

As the number of tanks increase, so do the measurement requirements. The fact that plastic tanks are often located at remote sites and are widely dispersed geographically makes the process even more complex. In more than 80% of all production plants, level measurement is done manually. This type of manual monitoring is both time and cost intensive. So, very often, this results in missing stocks only being registered when the tank has already run empty, and the production process has come to a halt. Even increased inventories are in most cases not an alternative due to the storage costs involved. Clearly, a better solution is needed.

OPTIMIZED INVENTORY MANAGEMENT - SIMPLE FROM THE SCRATCH

To meet the challenges mentioned above, Endress+Hauser has developed a solution consisting of a level sensor and software. This solution considerably simplifies the management of stocks in stationary and mobile applications. As with conventional devices, the measurement is based on high-frequency radar pulses. These are emitted by an antenna and reflected by the surface of the stored medium. The travel



time of the reflected radar pulse is directly proportional to the distance. With a known vessel geometry, the level can be calculated. But the new Micropilot offers more.

The 80GHz wireless IIoT sensor combines high-end technology and user-friendly digital services in one cost-effective device. The continuously recorded measurement data can be accessed at any time and from anywhere via the device's cloud connection. Communication is made possible by an integrated SIM card.

Installation is simple and can be done in less than three minutes. An integrated battery allows operation without an external power supply, which is an advantage especially at measuring points that are difficult to access or mobile. This compact device is a perfect fit for stackable tanks and enables a plug-and-play solution for flexible and easy installation. In addition to the measured level, the user receives information on the location of their

storage tanks and containers via local mobile phone masts. The cloud-based radar sensor provides facts where previously only assumptions were possible.

FIELD OF APPLICATION

The Micropilot FWR30 can be used for level measurement and inventory management of mobile and stationary plastic tanks. In addition, the tracking of mobile storage tanks is also possible. The free radiating measuring device covers measuring ranges up to 15 meters (50 feet) and temperatures between -20 °C and 60 °C (-4°F and +140°F). Due to non-contact measurement, the Micropilot FWR30 can be used in all liquid media. It works where other measuring principles cannot be applied due to corrosion, abrasion, viscosity, or toxicity and it can be employed in a variety of industries.

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FLEXIBLE STAINLESS-STEEL TOUCH PC

For visualisation and control in hygienic environments



ProLogistik expands its range of industrial touch PCs with its new pro-V-pad Steel IP69k. The new IPC from the series has a fully closed and water-proof stainless-steel casing. The stainless-steel touch PCs meet the strictest hygiene require-

ments with protection classes from IP65 to IP69k. The corrosion-resistant stainless-steel casings made of V2A/V4A can be treated with strong detergents, acidic and alkali disinfectants alike. Equipped with capacitive multitouch technology and a hardened and AR-coated protective screen, the terminals from this series provide comfortable and intuitive operability. The devices come with comprehensive equipment features using the latest technologies, including Bluetooth 5.0, Wi-Fi 6, or NFC, as well as USB 3.0, LAN, and serial interfaces (RS232). Customers can select 8th Generation Intel Core i series processors for economic solutions with high performance. The IPCs can be delivered with Windows, Android, Linux and Igel operating systems. The Steel series from proLogistik is available with display sizes 12,1", 15", 19", and 21.5". The portfolio offers 4:3 and 16:9 full-HD formats. A modular construction kit system enables both individual memory adjustment and designs to match the customer's corporate identity (CI).

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APP FOR LONE WORKER PROTECTION

Reliable alarm notifications with minimal effort



Companies that employ lone workers must ensure their safety at all times. In case of an emergency it must be ensured that help can be called quickly and that the exact location of the worker is known. Therefore, the experts at **ECOM Instruments**, a Pepperl+Fuchs brand, have developed the eSENTINEL app. With this app, safety for employees can be significantly increased with little effort. The aim in designing eSENTINEL was to provide

users with basic security measures for day-to-day use. It is the ideal tool for lone workers or people working in high-risk situations. A mobile device and the app are all the worker needs. Thanks to low installation effort and acquisition costs, eSENTINEL can be easily integrated into existing company infrastructures. In case of an emergency, things must happen quickly. The handling of the app is simple but effective. This way, no valuable time is lost when a digital call for help is sent. With ECOM terminal devices such as Smart-Ex 02 or Tab-Ex 02 the app is linked to the red emergency button on the hardware. With third-party hardware, a red emergency button is shown on the display. This enables the worker to send an alarm notification in a dangerous situation in a flash. For cases where workers are only save in an environment for a limited period of time, the eSENTINEL app provides a timer function.

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IO-LINK LEVEL CONTROLLERS

Guided microwave devices with high reliability



EGE introduces a new generation of level controllers, the MFN series with IO-Link interface, that enables continuous access of PLCs to process and parameterization data. Using a corresponding master, the level controllers can be con-

connected to any common bus system and conveniently parameterized via PC or notebook. The guided microwave measuring principle ensures high reliability due to its insensitivity to external influences such as temperature, pressure, or density. It provides for precise measurements in liquids such as water, oil, and emulsions as well as in viscous media. MFN sensors stand out due to their particularly short reaction times in case of level changes. Their display units can be configured to show the measured level in mm, cm, inch, liter, or percent. The housings can be rotated by 360° along with integrated LED indicators and control panels, allowing users easy access for configuring the devices and reading measured values. The level controllers feature IP67 ingress protection and are designed for an ambient temperature range of -25 °C to +85 °C. EGE's level controller portfolio includes variants with coaxial, single, and double probes for use in different media. The company also manufactures probes from special materials such as Hastelloy or titanium for use in aggressive media.

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Absolutely efficient.

- Efficient retrofitting and simple digitization of plants
- Analog output (4 to 20 mA) or IO-Link interface
- High level of process reliability and long operating life due to robust stainless steel housing
- High degree of vibration and shock resistance
- Reduced mounting costs thanks to M12 connections on both sides





More than sensors + automation

JUMO dTRANS T09

Cable transmitter for temperature

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Assistance, Service and Customization

A full portfolio to control and dose powder and granule flow in the pharmaceutical and chemical industry

Talking about assistance today more than ever, it has become for CO.RA. the main objective to assist their customers in different areas of pharmaceutical and chemical industries.

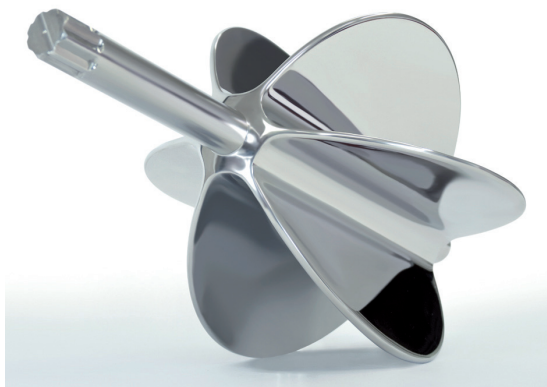
Thanks to the versatility of the product range and the skills of the team of researchers, production designers and engineers with an experience of 30 years in the field, CO.RA. concretely realizes solutions for customer needs.

More and more CO.RA. offers a 360° service guarantee: it is ready to intervene, remotely or on site, with specialist technicians that assist the customer to choose the

right solution, with tests in their technology center,

and during installation and start-up with a team of qualified service personnel. They also perform customer staff training and give cus-

ROTARY VALVE detail.



tomers technical assistance within 48 hours from report of the problem.

For keeping up with the developments in the sectors and the still improving importance of accuracy and care in handling products in pharmaceutical processes all members are constantly improving the products and services of the company to facilitate processes for the operator.

PRODUCT HANDLING

The MINI DUK is a new lifting device, designed and manufactured by CO.RA. for lifting and handling loads such as drums, pneumatic conveyors, agitators, with a maximum weight of 70 kg. The machine is made with the necessary precautions to be used in pharmaceutical and food environments.

The improvement, in this case is related to the Touch Screen Control Panel introduced by CO.RA. on board the MINI DUK, to help the operator control the actions of the Pneumatic Conveyor installed on the gripping system: the operator can monitor the operation directly from the position of the MINI DUK, for example, if the drums are full or empty, he can control directly the conveying process and the product discharge into the machine from the touch panel, he can also action the vibrator systems if he notices from the screen that the product has packed. The simple and compact design allows an easy cleaning and inspection and also shortens and simplifies maintenance processes.

The Touch Screen Control Panel on board the MINI DUK helps the operator to monitor and control the actions of the pneumatic conveyor in the gripping system.



The ROTARY VALVE is designed for applications where a continuous flow of powders and granules pass through and continue to the next process. The half body design assists with the removal of component parts for cleaning and maintenance, reducing the time needed for service cleaning.



ABOUT CO.RA.:

CO.RA. was founded in 1989 in Altopascio, a town near Lucca in Italy, born as a supplier of components to connect different machines in the pharmaceutical and chemical process. During 30 years the company expanded their know-how in order to offer customers complete service in the SOLID HANDLING process.

The staff is composed of a team of researchers, production designers, engineers and customer service. The 30 years of tradition in chemical and pharmaceutical SOLID HANDLING allow CO.RA. to guarantee its products based on strict norms (FDA, ATEX); design and development are completely made and manufactured in Altopascio. CO.RA. has left a trail of success that customers follow with trust - many of which we have been serving for more than 20 years.

To learn more about the company, products and the services visit www.coraitaly.net

CONTROLLED DISCHARGING

When the basic products are filled into a machine and a selected process has taken place, unloading of the intermediate or end product is the next important step. For this the CO.RA. ROTARY VALVE comes into play.

The ROTARY VALVE is designed for applications where a continuous flow of powders and granules pass through and continue to the next process, the half body design assists with the removal of component parts for cleaning and maintenance purposes, reducing the time necessary for service cleaning. The operator can also control the ROTARY VALVE from the touch screen installed on the MINI DUK and can check the machine feeding until the end of the process.

GOOD CONSTRUCTION STANDARDS

All CO.RA. components and systems are completely made of certified stainless steel, designed according to the European referenced standard for lifting loads, according to the lifting regulations and according to the FDA regulations, ideal for use in sterile environments and in compliance with CGMP recommendations (Current Good Manufacturing Practice). Complete traceability of components is secured thanks to laser engraving directly on the steel surface.

NORMS AND RECORD TO CUSTOMER DISPOSAL

As per all CO.RA. Products, components have related certification and documentation that can be delivered upon request: Surface roughness certificate, functional specification, operation & maintenance manual, layout, EC certificate of conformity, FAT & SAT records, IQ & OQ records and declaration of suitability for ATEX environments.

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Safe and Quick Mixing of Sensitive Substances in Cosmetics Production

For a recent client, manufacturer of special cosmetics, Lindor's unique gentle-touch technology proves to be a perfect solution for mixing sensitive substances.

The mixing machine is at the heart of production. It ensures that different ingredients, such as fine powders, granulates and natural products, are well mixed and processed into the required end product. Very sensitive, fragile products require a different way of processing. To meet this demand, Lindor developed gentle-touch technology, an efficient way of mixing. This uses natural gravity without the risk of breakage, heat or smearing by friction.

EXPLOSIVE SUBSTANCES

Thorough and quick mixing can be dangerous when working with sensitive or even explosive substances, as in this case. As there were doubts about the quality and safety of the installed traditional mixers, they were looking for a new technique that would make the production of these particular powders even safer. A thorough search on the Internet, a site visit to Lindor in the Netherlands and a pilot scale test quickly established the match between the Lindor technology, team, and client application and team.

DELICATE PRODUCTION PROCESS

"We wanted to improve the process and especially the safety aspect. The production of these particular powders is a delicate process involving sensitive raw materials, which must be processed safely to prevent friction and excessive temperatures," the operations manager explains.

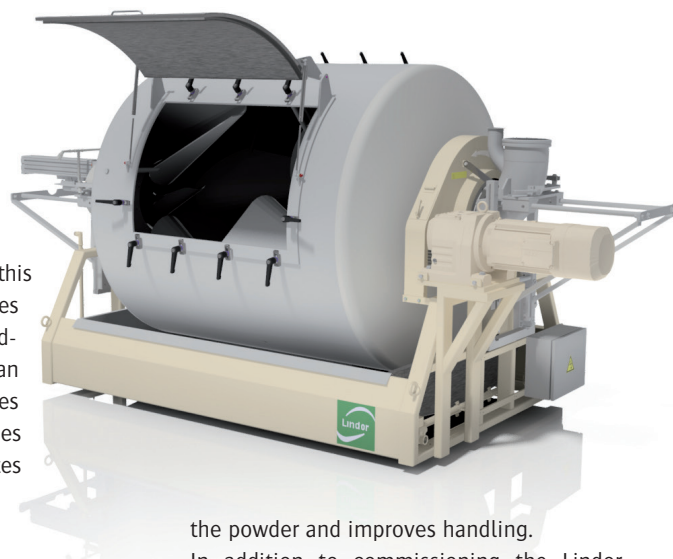
The fact that the factory is located in a town, high in the mountains, has everything to do with temperature and humidity. Our client has

Lindor L1500 mixer with gentle-touch technology

several factories in Latin America, but because of humidity, only the factory in this high town location produces these special cosmetic products. The town is located at an altitude of about 2500 metres and is one of the highest cities in America, which translates into a relatively cool and dry climate.

LIQUIDS AND POWDER

Customer has ordered the Lindor L1500 mixer with two liquid injectors, with which they can add the correct dose of powder combined with a perfume to counteract the chemical smell, and a second liquid which compacts



the powder and improves handling.

In addition to commissioning the Lindor L1500, which proved to be a step forward in terms of safety the customer was able to save time, allowing them to focus more on the production of other cosmetic products. "We now have the same quality as with the traditional solution, only the process is safer and faster. The production process itself has become approximately an hour quicker. Time savings are gained mainly in the cleaning of the mixer and changing of the colouring powder. A job which previously took us two days can now be done in four hours!" says the operations manager.

CLEANING WITH A CIP (CLEANING IN PLACE) CONFIGURATION

In addition to an easy-clean design, time savings are, according to Herwin Santos, process technologist at Lindor, partly due to



ABOUT LINDOR

Lindor, based in Dordrecht/Netherlands was started in 1963 as an engineering workshop. The company developed itself to a global supplier of powder and granulate mixing, coating and drying systems.

The own engineering department develops mixers according to customer specifications by using modern CAD systems and calculation methods. To meet the requirements worldwide customers Lindor maintains a spacious test center in Dordrecht and has testing facilities in the UK, Japan, Malaysia and India.

itself to be not only gentle, but also very thorough and quick”.

ADVANCED PARTNERSHIP

According to the operations manager, there is no doubt that his company has found an excellent partner in Lindor. The operations manager also intends to replace another manufacturer's traditional mixer with a second Lindor L1500 at some point between 2020 and 2021. This will include additional liquid injectors and a Pt100 temperature sensor, allowing them to also monitor the product temperature online.

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a technology which Lindor has applied to the L1500. “The mixer has a CIP (Cleaning in Place) configuration. This means that the mixer does not need to be opened, but the machine cleans itself automatically at the

touch of a button,” Santos says. He also understands why a company like this one appreciates the unique gentle-touch technology. “Our mixer treats a product with great care. In this application, the Lindor proves

ROTARY VALVE FOR ABRASIVE POWDERS

Designed for a long life and easy maintenance



In the construction chemical, environmental or mineral industry they handle specific abrasive products like glass cullet, carbon, cement, dolomite, quartz and more. They are exposed to important effects of abrasion. The

wear of the rotor but also of the body happens even if the rotary valves are made of hardened materials and alloys. Such treatment will prolongate the working life but will not avoid the abrasion completely. The conclusion is that sooner or later, the rotary valve has to be undertaken a revision and worn out parts have to be replaced. Otherwise the leakage will increase, and the operation and duty of the valve cannot be fulfilled anymore. The OEE (overall equipment effectiveness) will decrease. **Gericke** has developed its EHD rotary valve for these applications. The goal is to increase the lifetime, shorten the downtime and make the maintenance very easy and done in place. This is realised by a design which foresees all parts under stress of abrasion as inserts. These parts can easily be exchanged. The EHD valves are available in all sizes of the Gericke rotary valve range and are designed to use in places where solids handling and operating conditions combine to cause abrasive erosion within the valve.

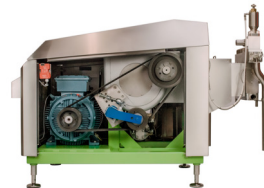
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HOMOGENISER ENHANCES PRODUCTIVITY

Compact and reliable design for wide industry range



SPX FLOW has launched two new APV Rannie and Gaulin homogeniser models. The latest additions to the homogeniser portfolio are designed to deliver powerful performance and make operation and maintenance easier for a wide range of

industries, including dairy, food, beverage, pharmaceuticals and personal care. The 57T and 77T homogenisers use a three-plunger reciprocating pump and incorporate a durable slow speed power end that, paired with the low and compact design, improves performance and reliability. To ensure the homogenisers are easy to use, the new models are more ergonomic with a single point of control and direct visibility to all internal and external indicators. The homogenisers' new design offers easy access to all service areas, saving time and money by simplifying inspection and reducing maintenance. Modular electrical controls allow for easy installation and an optional programmable logic computer (PLC) operator control cabinet is available to automate and integrate the controls as well as providing alarm monitoring. In addition to the standard specification, users may select several options. These optional modules include various enhanced liquid end block designs, homogenising valve materials, control panels, vibration sensors and explosion-proof designs.

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Demystifying Digital Transformation

Digital transformation doesn't have to be complex. The right approach can ensure technology investments deliver the results that matter with confidence, ease and speed.

by **Stuart Harris, Emerson**

Digital transformation can have a profound impact on business performance, but without a plan to translate vision into reality, efforts can stagnate, if not outright fail. For organisations looking to find practical solutions, they need to be able to cut through the hype surrounding IIoT, select the technologies that will tangibly improve operational performance, and deploy them effectively. To achieve this, they need to adopt the right approach to digital transformation – one that's rooted in practicality and linked to their desired business outcomes. This enables a company to confidently implement proven solutions, easily integrate those solutions into its existing infrastructure and quickly get real results and return on investment.

THE CASE FOR DIGITAL TRANSFORMATION

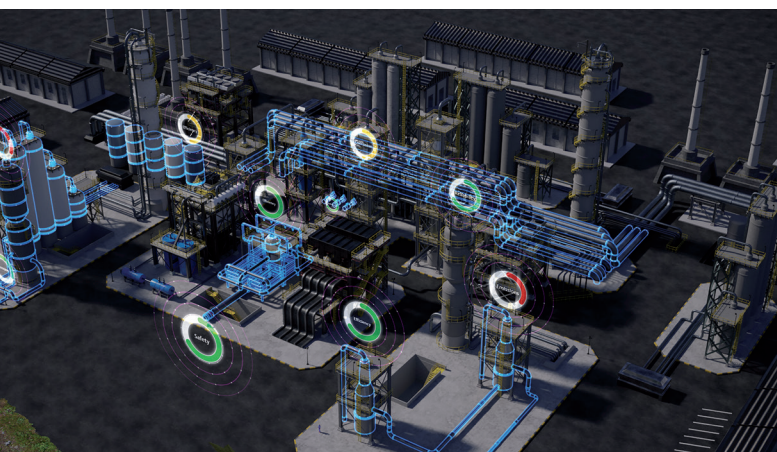
Before understanding how to move forward

with your digital transformation initiatives, it's important to understand why you should move forward. At its most basic level, digital transformation can be defined as applying technology to solve problems – but it's so much more than that. True digital transformation happens when real change is effected within an organisation. It's a change that's sparked by rethinking and optimising processes and by empowering personnel with the knowledge and tools to do their jobs more effectively. When this happens, a company can achieve measurable performance improvements in areas such as production optimisation, reliability, safety, and sustainability. These areas are critical to operations, and real performance improvement in these areas can help a company maintain its competitive edge and drive long-term health and profitability.

Look no further than the companies excelling in these key performance indicators (KPIs). When compared to their average-achieving peers, Top Quartile performers:

- Experience two additional weeks of production annually due to better plant reliability
- Incur half the maintenance costs
- Have three times fewer safety incidents
- Use about a third less energy

In other words, the majority of companies have ample room to improve, and the rewards for doing so can be significant. For example, a typical refinery can experience as much as €50-100 million in collective, bottom-line annual savings by moving from average to Top Quartile performance in these KPIs. Digital transformation represents an incredible opportunity to create those savings and propel operational performance to new levels.



Transferring information into knowledge by retrieving the most important data from measuring points



Digital transformation is rethinking and optimising processes and by empowering personnel with the knowledge and tools to do their jobs more effectively.



A PRACTICAL APPROACH TO DIGITAL TRANSFORMATION

Now that you know what you want from your digital transformation initiatives, you need a plan to make it happen – and that's where adopting a practical approach comes in. There are four basic tenets of this approach that can help you confidently determine what technology investments to make, easily implement targeted solutions, and quickly get results from those solutions.

START WITH A GOAL IN MIND

Start by identifying your most pressing operational challenges; those areas that are well recognised as opportunities for improvement and where there will likely be a quick return on investment. By contrast, do not start with a list of IIoT technologies to apply, in the hope that your operations teams will find something useful to do with them. Focus on the many familiar but nagging operational issues that rob operational performance. These issues can be broad, such as too much unplanned downtime, or as specific as pressure relief valve problems. Determine your specific problem areas and then apply proven, scalable and secure IIoT solutions that will directly address those issues. Start with known solutions to known problems as a sure way to show results from your digital transformation initiatives. This ensures the solutions you implement are directly linked to the outcomes you want to achieve.

GET THE MOST FROM YOUR DATA

Most companies already generate lots of data, but there are usually important gaps as well. Easy-to-install, cost-effective sensors can supplement existing measurement technologies to capture data that will serve as the basis for new insights. You'll want to apply the appropriate level of operational analytics – intuitive, user-friendly software with embedded domain expertise that can quickly analyse data and provide actionable recommendations. Avoid generic analytics tools and instead deploy solutions that are designed to directly address your challenges. For example, pre-packaged solutions that leverage foundational diagnostics to provide insights into asset health might



Start your project with a goal in mind, that can be as specific as how to avoid problems with a specific group of units or instruments or more open.

be what you're needing. More complex operational issues call for comprehensive software platforms that combine collaboration tools with artificial intelligence and machine learning to determine root causes.

EMPOWER YOUR PEOPLE

For all the talk about technology, digital transformation is ultimately about people. IIoT technologies can dramatically change work practices for the better, but if these practices aren't embraced and adopted by your personnel, success is unlikely to happen. The key here is empowering each worker to do their jobs more effectively. This is accomplished with technologies and services that help personnel shift from routine activities like data collection to more value added activities based on collaboration and business-critical decision-making. Digital transformation empowers personnel across the organization to optimise performance.

MULTIPLY YOUR SUCCESSES

Applying proven solutions to specific problems can result in immediate benefits, and it's an effective way to start your digital transformation journey, but once you've demonstrated success and seen return on investment for a given project, think bigger. Greater gains come from scaling a proven success across your facility or across the whole enterprise. For example, you

could take a continuous monitoring solution for a set of pumps and easily apply it to all the important pumps that are in a typical refinery. And for even bigger benefits, you could then replicate your initiative to other sites. This approach allows you to start small and ensure your investments are truly improving your operations – and then rapidly expand your digital transformation efforts in a focused, targeted direction.

THE RIGHT PARTNER CAN HELP

Digital transformation doesn't happen overnight, and there's no solution that will instantly make you a Top Quartile performer. Rather, it's a journey, requiring an ongoing commitment to improving your operations by empowering people to make more effective decisions that benefit your business. Partnering with a vendor who has deep industry knowledge, domain expertise and a proven record of developing innovative technologies, can bring you significant benefits. When choosing the right partner, look for a vendor who offers a broad, scalable and secure portfolio of technologies, software, services that will accelerate your digital transformation. Working together, you can then navigate your digital transformation journey with confidence, ease and speed.

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From Buffalo Mozzarella to Green Energy

High-speed networking helps biomass plant automation at a different kind of dairy farm

Maximising the use of agricultural by-products to reduce waste and improve sustainability has several positives; including reducing a business' environmental impact and maximising an important profit opportunity. This is why Italian farm Roana has invested in a biomass plant that utilises livestock manure and other organic waste to generate energy.

To optimise its automation infrastructure, the farm required an advanced control network to monitor the anaerobic digestion process and maximise productivity. CC-Link IE Field provided the right solution, connecting a series of Mitsubishi Electric factory automation components with a flexible open industrial Ethernet solution delivering Gigabit bandwidth.

Roana Zootechnical farm is in the countryside of Latina, Italy, and is home to approximately 1100 water buffalos. Every day, these animals provide over 3 tonnes of milk, which is used

to produce a celebrated buffalo mozzarella cheese. Along with product, the herd produces approximately 60 m³ per day of useable livestock manure. Before this becomes fertilizer for Roana's agricultural fields, however, it can be used to produce bioenergy. The farm was interested in maximising the use of this by-product to have a positive impact on the environment whilst generating increased revenue for the business. Local renewable energy specialist ProgestAmbiente was chosen to build the green power plant.

Carmen lemma, Co-owner of Roana, explains: "Roana has been interested in implementing a biomass plant for years. The project suggested by ProgestAmbiente was particularly appealing, as the company was able to tailor a solution that would address our commercial requirements and still fit with our existing operations and infrastructure."

THE ANATOMY OF ROANA'S BIOMASS POWER PLANT

The plant consists of scrapers and pipelines, collecting all the manure from the stables into a pre-treatment tank, which homogenises and equalises the material. This tank is connected to an anaerobic digester system equipped with submersible mixers. At this stage, different bacterial strains digest biomass in an oxygen-free environment at temperatures similar to those in a buffalo's stomach. As a result of this biochemical process, bacteria break down complex organic substances, generating a methane-rich biogas.

The gas produced in the digester moves upwards, towards the dome, and is then directed to a gas treatment unit, where a thermal process helps to purify the gas, increasing the concentration of methane. The end product is sent to a gas-powered generator, which produces enough electricity push power back to the grid.

The control of critical process parameters, such as temperature, gas pressure, in-feed rates and mixing within the digester, plays a crucial role in maximising both the volume of methane produced and its purity. The sensitivity of the system and its coordination can make the difference between it being profitable or not, so responsive automation and network communications are vital to the commercial success of the project.

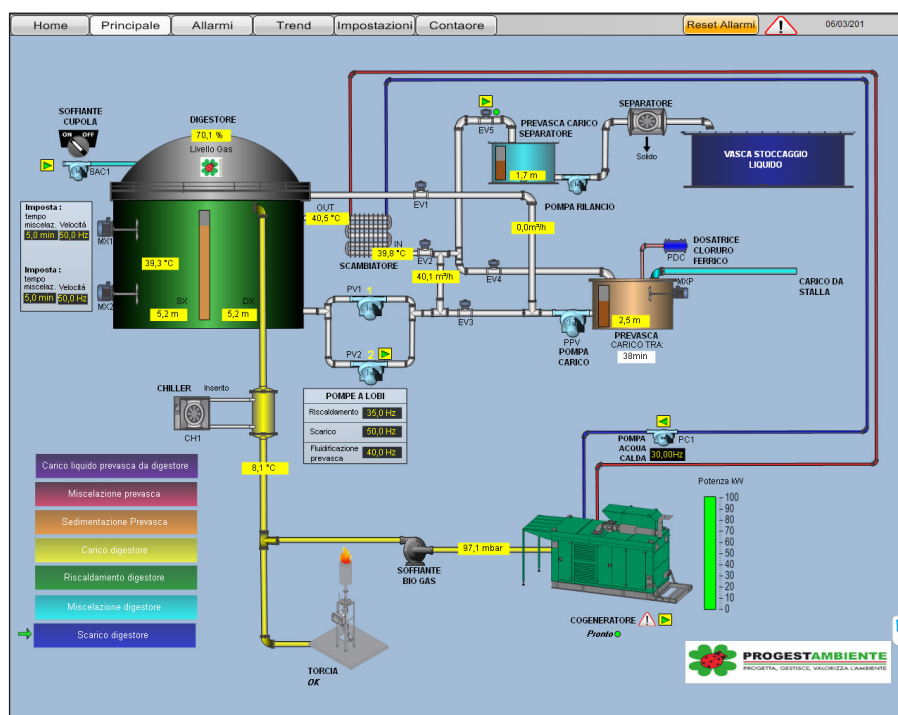
RELYING ON HIGH-QUALITY AUTOMATION SOLUTIONS

Michele Di Stefano, Project Manager at ProgestAmbiente, adds: "One of the most important aspects for ProgestAmbiente is offering the best functional process equipment and



Roana has invested in a biomass plant that utilises livestock manure and other organic waste to generate energy. With it 2,400 kWh of electric energy can be produced every day.





Using the MAPS SCADA system, operators at the Roana Zootechnical farm can monitor and control the entire biomass power plant to maintain optimal operating conditions and maximise the amount of energy generated from agricultural waste.

operator tools, featuring state-of-the-art technologies and high reliability. In this case, we chose a combination of Mitsubishi Electric and CC-Link IE.

“We rely on Mitsubishi Electric’s automation products and the CC-Link IE family of open industrial Ethernet technologies for our biogas production and water treatment projects. In fact, we believe that the performance offered by these solutions is currently unmatched on the market.”

To support Roana’s biogas operations, CC-Link IE Field gigabit Ethernet connects a number of automation devices from Mitsubishi Electric to ensure high-performance communications. More precisely, MAPS SCADA system is linked to a MELSEC Q series PLC. This is then connected to five inverters, from Mitsubishi Electric’s energy-saving FR-F800 series, that regulate the functioning of all the electromechanical devices and components used in the process. As a result, operators have a comprehensive view of the entire plant and its pro-

cesses in real-time, adjusting critical process parameters as well as conducting predictive maintenance strategies.

Alberto Griffini, Product Manager at Mitsubishi Electric, comments: “Our main goal was delivering a system that is highly functional but also easy to use, maintain and expand. For example, as the plant develops and increases its volume of processed livestock manure, Roana could easily upgrade its system by installing a newer MELSEC iQ-R controller, which provides more advanced onboard features and supports a broader range of I/O modules. The networking solution is already very flexible and advanced so effectively futureproofs the installation.”

NETWORK SPEED AND OPENNESS AS GATEWAY TO FUTURE-PROOF OPERATIONS

Key elements of CC-Link IE Field that helped implement the vision described by Alberto Griffini are the network technology’s gigabit bandwidth and its openness. Michele Di Stefa-

no explains: “Thanks to CC-Link IE Field, Roana could leverage a high-speed system that benefited from a fast response time as well as an infrastructure that can be easily modified and upgraded to address future needs.”

John Browett, General Manager at CLPA, adds: “By offering gigabit bandwidth, we can help processing plants, such as Roana, to make sure time-critical data is shared in a highly deterministic manner. CC-Link IE Field supports interconnectivity between 1Gbit devices from multiple vendors so allows the integrator to choose from more options.”

Carmen Iemma adds: “Using a reliable and responsive monitoring system and high-performance communications is particularly important for Roana, as it allows us to promptly intervene if anomalies are detected, reducing downtime.”

THE BENEFITS OF A WELL DESIGNED AND IMPLEMENTED BY-PRODUCT SYNERGY STRATEGY

Now that the biomass power plant and its network infrastructure are operational, Roana can produce 2,400 kWh of electric energy every day. This is supplied to the national electrical grid, generating an extra revenue of EUR 15’000 per month for Roana.

Carmen Iemma comments: “We are very happy with the solution provided, as it clearly shows the benefits of shifting towards renewable energy and maximising by-product synergies. In particular, we appreciate the fact that the plant can manage itself autonomously, without requiring our staff to acquire new technical skills in order to control the plant. The system is intuitive and easy to use, helping all of our operators to effectively use the system.”

John Browett concludes: “Reducing the environmental impact of manufacturing and processing activities is a global priority and we are happy to play a key role, helping businesses adopt more sustainable practices. In addition, by supporting Roana, we can show how our open network technologies can address the needs of a wide variety of industrial sectors.”

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Enhance Productivity with Cobots

The use of collaborative robotics (cobots) in the manufacturing of food and beverages can bring many advantages in terms of savings and efficiency for both large and small manufacturers. Automation is a cost-effective way of reducing waste and human errors, leading to higher quality products. One leading company, CLECA SpA, has recently automated some of its processes using cobots from Omron, leading to higher productivity in its packaging department.

CLECA was formed in Italy in 1939 and has since developed creative cuisine solutions, leading to the company becoming a point of reference in the food sector due to the high quality of its products. The key to its success is its blend of innovative products and great classics, as shown by its S. Martino pudding.

The company recently decided to improve its maintenance and shipping operations by boosting the productivity of the entire packaging department at its main plant in San Martino dall'Argine. An essential element of this has been the introduction of a pair of Omron cobots.

tion between people and machines. In today's factories, robotics, the Internet of Things (IoT) and Artificial Intelligence are already being combined for the purpose of acquiring data efficiently from a production site and enabling robots to work together with people in perfect harmony. From automation where the operators' activity is physically separated from machines, new and efficient scenarios are now arising due to collaboration between people and robots, resulting in increases in productivity.

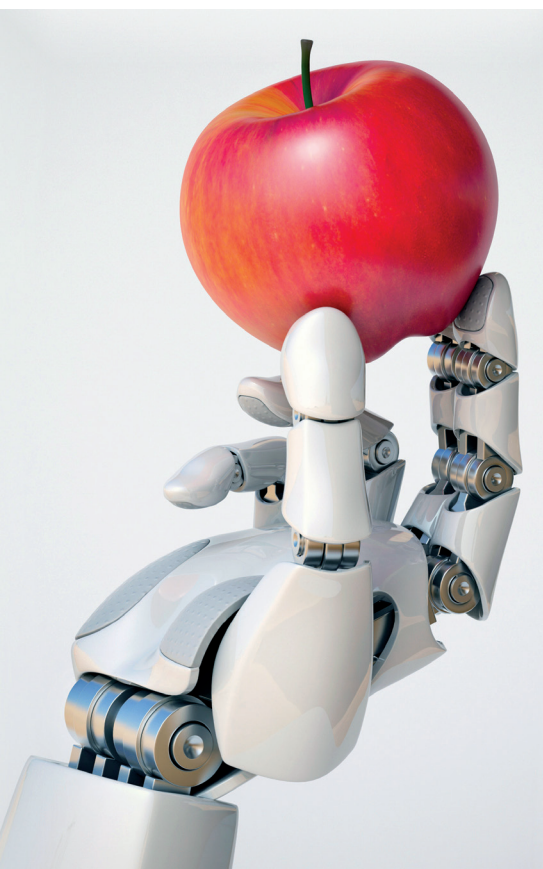
TRENDS IN AUTOMATION

This move towards greater automation is because in today's environment, food production processes are in many ways as important as the product itself. Consumers are asking more and more questions about the supply chain; the resources consumed by the industry; and the working conditions and safety of the workers. On the one hand, there is this increasing consumer attention to issues such as sustainability, safety, well-being, and quality (at the right cost). On the other hand, the food industry needs to establish the rules of interaction between people and machines. As with many changes, people might not fully understand - at least at first - the impact of the fundamental changes introduced by robotics. This includes how cobots can take a vital role in helping companies to adapt to the changes in the current landscape; and how companies can also make the technological and cultural adaptations needed in response to the fifth industrial revolution.

To make this collaboration possible, automation must meet specific requirements for safety, ergonomics, ease of use and rapid implementation. Traditional robotics may not always be able to meet some of these requirements, and this has resulted in a move that goes beyond the current process-driven integration. Cobots are leading the way in this paradigm shift, by connecting people with machines in automated processes. This echoes the motto of Omron's founder: "To the machine the work of machines, to man the thrill of further creation". Cobots have created a meeting point between man and machine. This flow achieves the goal of efficient automation and relieves operators from strenuous and repetitive tasks, whilst leading to the production of goods of the highest quality.

COBOTS HELP TO POWER CLECA FORWARD

So how does this work in practice? Following CLECA's review of its packaging processes, it decided to deploy a pair of Omron TM12 cobots at the end of the packaging line, in a palletising application. This decision was received very well by the operators, who soon noticed a clear improvement in their work



The use of cobots in food and beverage manufacturing brings many advantages in terms of savings and efficiency, for both large and small manufacturing companies.





Automation using Omron's TM12 cobots, with a payload of 12Kg and reach of 1,300mm, has enabled the company to achieve its objectives.

conditions. They experienced a reduction in repetitive operations (as these were delegated to the machine), as well as improved change-over times.

The Omron TM12 cobot is equipped with an integrated vision system: the built-in camera locates objects in a wide field of vision, while lighting for image enhancement ensures image recognition in almost all conditions. The vision system improves the reliability, uniformity, and accuracy of the positioning of items. It also includes features such as pattern-matching, barcode reading and colour identification, enabling the company to carry out inspection, measurement and sorting activities at no additional cost or effort. The harmony between people and machines enables them to work side-by-side. However,

they still need to meet high safety standards: fortunately, the Omron cobot was designed to promote a safer working environment.

Safety regulations require machine manufacturers to carry out a project-based risk assessment in the design and construction phase, even if the machine is produced for internal use. This risk assessment helps CLECA to comply with the machinery directive 2006/42/EC and the safety requirements of the technical standard ISO 10218 and the technical specification ISO / TS 15066. The Omron cobots don't require protective fencing, due to their integrated safety functions and can be installed without resorting to cumbersome (and expensive) investments in hardware and software. The TMflow™ programming environment, based on flow charts, enables high

application flexibility, allowing production processes to be quickly reconfigured.

As any downtime can be expensive, the Omron cobots needed to be able to be operational rapidly, to ensure business continuity. Fortunately, they are equipped with plug-and-play software which makes them ready for use immediately after they've been installed. This is an intuitive process that allows operators to perform rapid programming activities during start-ups and production changes, which in turn ensures production continuity as quickly as possible. The operators at CLECA work with smart systems with which they can interact and which they can easily operate without the need for long training. Programming is simple and does not require an additional keyboard or push buttons.

COBOTS ENHANCE PRODUCTIVITY

The introduction of Omron's cobots at CLECA coincided with the implementation of key automation solutions relating to Industry 4.0, including the connection and interface with the factory's manufacturing execution system (MES). The integration of the collaborative cell and the machines present in the plant was made possible by the Ethernet communication integrated between CLECA's various Omron programmable logic controllers in its San Martino dall'Argine plant. The increase in productivity and process efficiency achieved by using the cobots, combined with the reduction of indirect costs, will enable CLECA to achieve a return on investment (ROI) in less than a year from the start-up of the collaborative cell.

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N° 9 - SEPTEMBER 2020

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SMART ELECTRIC VALVE ACTUATORS

Multi- and part turn versions for fast & precise positioning



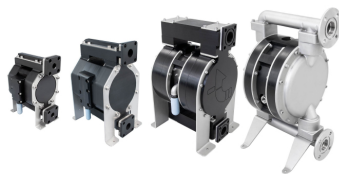
AUMA's new PROFOX series of electric actuators is a high-performance actuator series with an excellent cost-benefit ratio. Aimed at applications requiring fast and precise positioning, utmost flexibility and future-proof interfaces, the smart and compact series is suitable for all industry sectors, including

water treatment, combined heat and power plants, process industries, and shipbuilding. Built-in intelligence makes PROFOX equally suited to both simple open-close duty and challenging modulating applications. Motor speed is adjustable, ensuring fast and precise positioning without overrun. Soft start and soft stop functionality increases valve lifetime. Operating costs are low, thanks to high mechanical efficiency and low standby consumption. Innovative diagnostics ensure long-term availability and future-proof actuators for IIoT applications. The actuators work with gate, butterfly, ball and globe valves. There are multi-turn versions for torques of 10 - 100 Nm and part-turn versions delivering 32 - 600 Nm. Host system integration is flexible, PROFOX actuators support the most common communication protocols and are well prepared for future evolutions. The series is designed to last, even under the toughest process conditions. High-quality metal housing with IP67 protection (IP68 optional) and AUMA's unique corrosion protection.

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DOUBLE DIAPHRAGM PUMPS

Short-stroke design with durable diaphragm for even flow



With the new tim[®]CHEM series **timmer** is expanding the application range for their products to critical chemicals. The company starts with four pneumatic double diaphragm pumps. Now timmer offers the pumps in ½-, 1- and

2-inch versions made of PTFE or PE as well as a 2-inch version made of cast stainless steel (V4A). The conveying capacities range from 60 up to 600 l/min. The extremely smooth-running ceramic valve is the heart of the pumps and has already proven itself in many other applications. It is not only virtually wear-free, but also enables a safe start-up with low starting pressure as low as 0.7 bar over the entire lifetime. The stability does not come at the expense of easy and quick disassembly, thanks to the innovative tim[®] FIX connecting elements. Even essential parts such as the media valves are accessible without special tools. However, maintenance is rarely necessary. This is because the short-stroke diaphragm has a much longer lifetime than the diaphragms used in many conventional chemical pumps that operate with a longer stroke. Optionally, operators can monitor various parameters such as number of strokes and stroke frequency, operating time, diaphragm condition, etc. For the chemical industry all pumps are certified according to the ATEX directive.

►► 59291 at www.pcne.eu

HYGIENIC SMART VALVE POSITIONER

IO-Link interface for integration into intelligent concepts



Bürkert has advanced the intelligent control of process valves with the introduction of the Type 8694, the first valve positioner on the market that offers an IO-Link digital communication interface for use in the hygienic sectors. While offering the accurate control

of process valves expected of a positioner, where the Type 8694 really differentiates itself is its interconnectivity options to equipment across a facility. IO-Link is an open communication standard that can interface with all common fieldbus and automation systems with minimal implementation work. This allows to digitally store operating parameters and easily share diagnostics to a PLC, enabling control of the device. The result is a smart positioner that can be quickly implemented to provide reliability benefits. The primary advantage of the Type 8694's intelligence is its ability to generate detailed valve data. This can be utilised to proactively schedule plant maintenance and inform asset management. With access to these metrics, operators can predict potential issues and react quickly - securing continued process uptime. Naturally, the Type 8694 offers seamless integration with Bürkert valves, especially the ELEMENT series.

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MAGNETIC-INDUCTIVE FLOW MEASUREMENT

For standard and hygienic applications up to DN 2000



The 2 new devices from JUMO provide a simple introduction to the world of magnetic-inductive flow measurement. JUMO flowTRANS MAG S10 was designed for industrial standard applications in nominal widths from DN 3 to DN 2000 and the flowTRANS

MAG H10 for hygienic applications in nominal widths from DN 3 to DN 100. The universal transmitter electronics for various voltage supplies are new. Uncomplicated cabling enables a simple and fast startup. Diagnostic messages can be displayed in plain text on the illuminated display. The LCD display can be replaced if necessary. For both versions, the conductivity of the measurement medium must be at least 20 µS/cm. The maximum temperature is as high as 130 °C, depending on the version. Both flowmeters are available either as a compact device or with a separate transmitter. Thanks to a wide selection of lining materials, nominal widths, and measuring electrode materials flowTRANS MAG S10/H10 devices are suitable for a variety of processes (such as in the CIP/SIP field). Both devices can also be used in corrosive and abrasive media. FlowTRANS MAG S10 can even be used in slurries. In all applications the flowmeters make an impression with their high degree of measuring accuracy and short response times.

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NEW SEAL MATERIAL FOR DRINKING WATER

For a long service life and reliable sealing performance



The Engineered Materials Group of **Parker Hannifin** has developed a new, robust EPDM sealing material named EJ820, specifically designed for drinking water applications. Thanks to gaining all relevant drinking water approvals, the material can be

utilized worldwide. Due to its material properties and compatibility profile, EJ820 is also perfectly suited for other applications, such as in heating and solar thermal energy systems, the chemical industry and more. In addition to drinking water, hot water, and hot steam at up to 180 °C, the new material's robustness and properties means it is also the ideal choice for use in many organic and inorganic acids, detergents, sodium and caustic potash, in polar solvents, silicone oils and greases, and in hydraulic fluids based on phosphoric acid esters (HFD-R). The product range extends from conventional O-rings (imperial and metric dimensions up to several meters in diameter) to membranes and custom components engineered according to customer drawings. Additionally, EJ820 can be utilized in rubber-metal composites. Seals made from EJ820 can be used in valves, fittings and piping systems, as radial shaft seals in feed pumps, or for sealing sensors in drinking water operations. Thanks to its properties, EJ820 delivers the reliability and long service life needed in most applications.

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BALL VALVES FOR HIGH-FLOW APPLICATIONS

Versatile full-flow valve designed for harsh environments



Swagelok has announced the release of the full-bore, bi-directional flow-capable GB series ball valve. The new valve is engineered to provide high flow rates at a working pressure of 6000 psig (413 bar) while simplifying installation, minimizing rework requirements, and delivering the reliable shutoff performance

needed to keep workers safe and systems operating efficiently in a variety of demanding applications. The GB series ball valve can be widely deployed as a general-purpose ball valve. When combined with Swagelok's broad range of tube fittings, tubing, and instrument valves, the new ball valve enables customers to build a complete 6000 psig-rated fluid system with tubing diameters up to one inch using all Swagelok components. Integral Swagelok end connections that range in size from 3/8 - 1 inch further simplify system design and minimize labor and component requirements. The potential for leaks or costly rework after initial installation is reduced through 100% assembly testing that ensures Swagelok GB series ball valves meet specifications out of the box. Body seal performance is validated through hydrostatic system proof testing up to 1.5 times the maximum rated pressure.

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EXPLOSIVE ATMOSPHERE FLOW MONITORING

Housing materials with wide range of compatibility



Based upon a proprietary oval gear design, **Titan's** OG Series flow meters are designed to give reliable, high performance across a wide range of applications. Unlike other types of flowmeter, the measurement accuracy of these oval gear flow meters improves as liquid

viscosity increases, from a nominal 1% towards 0.1% of flow rate at higher viscosities. OG flowmeters are also available to pressure in excess of 700bar, where required. A simple option for monitoring flow in an explosive atmosphere is based upon using a Reed switch that operates via the customers intrinsically safe circuit. Employing this design there is no potential for storage or generation of electricity, allowing the Oval Gear flow meters to fall under the "Simple Apparatus" definition and can therefore be used without the need for ATEX certification. The second ATEX compliant approach uses a fully certified NAMUR Proximity Switch to give the pulsed output from the oval gear meter. For customers that elect for this option, Titan will install the switch into the Oval Gear flow meter and can supply the appropriate amplifier if required. The OG meters are offered with Stainless Steel, Aluminium, PEEK and Hastelloy housing options to provide a comprehensive range of chemical compatibility to suit almost any application.

►► 59394 at www.pcne.eu

RUGGED DIN SIGNAL ISOLATOR/CONVERTER

15mm housing reduces installation footprint and costs



The UL approved **Moore Industries** ECT-DIN 2-Wire Isolator is now available in a narrow 15mm aluminum housing. The thinner ECT-DIN 2-Wire Isolator with 15mm width retains the same General and Hazardous area approvals as the

rest of the ECT family of isolators. It also has the same RFI/EMI protection and -40°C to 85°C operating temperature range. The ECT-DIN 2-Wire Isolator can be installed in hazardous locations and does not require installation in climate-controlled environments, making it perfect for more extreme locations. The rugged narrow 15mm ECT DIN 2-Wire isolator and converter with 4-20mA, 1-5V and 0-10V inputs and 4-20mA output, allows more isolators to fit in cabinets and field enclosures where installation space is a premium. This is ideal for utilizing existing field mounted cabinets. The solid metal housing stands up to the continuous, daily rigors of process control and factory automation applications. The ECT is UL approved Class I, Division 2, Groups A, B, C & D T4. The rugged and reliable ECT family of signal isolators and converters provides versatile choices to match the type of AC or DC power available at each location. ECT-DIN 2-wire Output-Loop powered models, ECT 2-wire Input-Loop powered models, or 4-wire (Line/Mains) Powered Isolators/Converters and Splitters are also available.

►► 59307 at www.pcne.eu

INTRINSICALLY SAFE I/O MODULES

Simplified device connection in hazardous areas



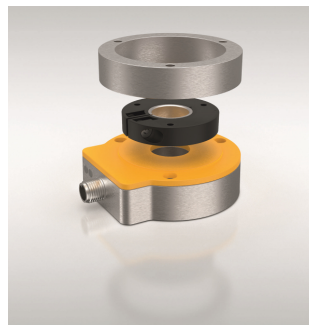
Industrial producers can more easily and efficiently connect to devices in hazardous areas using the new Allen-Bradley 1718 Ex I/O modules from **Rockwell Automation**. The intrinsically safe distributed I/O modules

provide EtherNet/IP connectivity to field devices in Zone 0 and Zone 1 hazardous areas. 1718 Ex I/O modules can reduce wiring in industrial applications because they can be mounted in Zone 1, closer to field devices in hazardous areas. The I/O modules can also save space with a compact, chassis-based I/O design that contains the primary power supply and an optional redundant power supply in the chassis. Different chassis options and slot sizes allow users to scale the 1718 Ex I/O modules to meet a wide range of system requirements. Add-on Profiles in the Studio 5000 Logix Designer application help ease configuration of the modules. And a dual-port EtherNet/IP adapter that enables a Device Level Ring (DLR) topology can help improve network resilience. The 1718 Ex I/O modules are designed for hazardous applications found in industries like chemical, oil and gas, and food and beverage. An ATEX-certified enclosure is required for the 1718 Ex I/O modules to be mounted in an ATEX Zone 1 area. As a complete solution, Rockwell Automation collaborates with our Encompass partner Pepperl+Fuchs, who offers Zone 1 certified enclosures.

►► 59462 at www.pcne.eu

IO-LINK ROTARY ENCODER FOR EX AREAS

Shock and dust resistant contactless measurement



Turck is offering a variant of the contactless QR24 encoder for use in explosion protected areas Zones 2, 22 and 3GD. Contactless measurement considerably outperforms bearing guided optical encoders in dust-laden environments since optical encoders are susceptible to dust. The sensor unit and positioning element on the QR24 are fully potted and

cast as two totally sealed independent units. This gives the encoder optimum protection from dust, vibration, impact and shocks. Unlike encoders with magnetic positioning elements, the QR24 offers a greater resistance to magnetic field interference. Typical applications for the QR24 Ex include the chemical, mining or food industries - particularly in mills. However, many applications in the textile or wood-processing industry also require the use of an encoder with 3GD approval. The encoder outputs its signal via the IO-Link V1.1 interface, thus offering simpler parameter setting such as for the output signal or zero point. It can be used as a single turn, semi-multiturn rotary encoder that counts its revolutions. For this the encoder uses 16 bits of the 32-bit IO-Link signal for the single-turn value, 13 bits for the number of revolutions and the remaining three bits for diagnostics data.

►► 59350 at www.pcne.eu



Rugged Android Device for Use in Hazardous Areas

The tablet meets all explosion protection standards for zone 1/21

i.safe MOBILE presents the IS930.1 tablet that combines the indestructible robustness of an IP-certified tablet with ATEX and IECEx approvals for safe use in hazardous environments. It can be used in the oil, petrochemical, pharmaceutical and food industries as well as in mining, public utilities, municipalities and energy suppliers, among others. The tablet comes with an 8" large, capacitive and low-reflection screen made of RugDisplay glass with a maximum resolution of 1,920 x 1,200 pixels, which is easy to read even in direct sunlight. The tablet is powered by Qualcomm's 2.2 GHz octa-core processor, which is backed up by an 8,400 mAh rechargeable battery that provides ample power even during long periods of use. The device runs on Android 9 and can be updated to the latest Android version without any problems. Support for the LTE band and the current



WiFi standards ensures fast internet connections. The robust tablet can also be controlled via Bluetooth 5.0 or NFC. The device can easily connect to Industrial Internet of Things (IIoT) devices of today and tomorrow. It has 4 GB RAM and 64 GB (of which 54 GB are available) internal memory, which can be expanded by a further 128 GB via microSD.

EXPLOSION-PROOF AND RUGGED

The IS930.1 is IP68-rated and therefore resistant to dust, microparticles, water (up to 1 hour at a depth of 2 meters), shocks and temperatures between -20 °C and +60 °C. The tablet has an extremely robust polycarbonate plastic frame with rounded corners. The LTE module integrated in the new IS930.1 allows circuit diagrams, order forms or spare parts orders to be opened quickly and reliably. In addition, pictures and videos taken with the 13 MP main camera or the 5 MP front camera can be easily

sent to the head office or the customer. Various sensors for location, acceleration, gravity, gyroscope, ambient light, humidity, temperature and air pressure as well as the magnetic sensor complete the equipment package. Despite its robust housing, the IS930.1 offers almost the same dimensions (237 x 156 x 22 mm) as a regular tablet and is easy to use. The weight of 890 grams gives the device the necessary stability. The display of the IS930.1 can also be operated with gloves. For data acquisition, the ergonomically placed NFC reader and the rear camera with an additional app (e.g. Mobxscan) are available. GPS (GPS, A-GPS, Glonass, A-Glonass, Beidou, Galileo) is integrated for positioning and smooth route guidance. The IS930.1 is Push-to-Talk (PTT)-Ready and has a sole operator protection function for which a third party application is required.

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INDUSTRIAL FREE-CHLORINE ANALYZER

Approved for hazardous processes and plant areas



Wherever free chlorine is measured to assure water purity, cleanliness or disinfection in hazardous industrial processes and plants, the FM/ATEX/IECEX approved Model FCX80 Free-Chlorine Analyzer from **Electro-Chemical Devices (ECD)**, will help engineers and technicians get the job done in a safe manner. The Analyzer is certified

for hazardous locations where combustible gases can be present in water treatment areas, helping prevent hazardous situations that could jeopardize employee safety, plant equipment and the surrounding area. The panel mounted analyzer is designed to monitor free chlorine in drinking water, rinse water, cooling water or other fresh water samples from 0.05 to 20 ppm chlorine as the standard range or 0.01-5.00 ppm with the optional low range sensor. The sensor's no-reagent design features amperometric sensing based on polarographic technology relying on gold/silver materials and a PTFE membrane. The sensor operates over a wide temperature range from 0 to 50°C (32 to 122°F). Response time is T90 in 2 minutes. The only maintenance needed is replacing its economical electrolyte solution at intervals of up to 12 months. The standard configuration features two 4-20 mA outputs, three single-pull/double-throw (SPDT) alarm relays and MODBUS RTU. Digital HART communications is also available.

►► 59112 at www.pcne.eu

NEW FEEDER CONTROL GENERATION

Smart control for batch or continuous production



Coperion K-Tron introduces the newest generation of KCM feeder controller. The newly redesigned KCM-III has a variety of new features, including a larger 5-inch LCD screen with an improved user interface, context-sensitive help, stainless steel enclosure,

and built-in Ethernet capability with optional Wi-Fi. With Ethernet capability (wired or wireless) the KCM-III can be accessed via a user-friendly feeder web page that includes a full feature user interface. In addition, the KCM-III is ready for Industry 4.0 functionalities for predictive maintenance, electronic service options, machine optimization and more. The KCM-III controller combines the motor drive and control modules of a feeder and its ancillary components into one component and is generally mounted directly at the feeder, pre-wired and pre-tested at the factory. All motor setup, diagnostics, and operator interface functions are integrated into the KCM-III user interface. Each KCM-III includes a complete software package to support a wide variety of application types, both batch and continuous, from loss-in-weight feeders to weigh belt feeders to Smart Flow Meters. The KCM-III controller is rated for ATEX 3D environments and listed for NEC Class II Division 2 hazardous areas.

►► 59420 at www.pcne.eu

LIQUID FLOW SENSOR SERIES

Bidirectional measurement of low flow rates



The SLF3x is **Sensirion's** latest innovation in liquid flow sensing. The sensors of the the SLF3x series are based on Sensirion's CMOSens® Technology and optimize costs by simplifying the design with-

out sacrificing performance or having to forgoing any user-friendly fluidic, electrical and mechanical connections. The new sensor allows for the bidirectional measurement of flow rates up to ± 3000 $\mu\text{L}/\text{min}$ for both water and hydrocarbon-based fluids. In combination with its excellent signal-to-noise ratio and unprecedented turndown ratio of 300:1, it allows real-time monitoring of any fluidic system, which improves process control and enables advanced failure detection. The straight, unobstructed flow channel has no moving parts and is made from inert wetted materials that provide outstanding chemical resistance and excellent media compatibility. The SLF3x sensor series provides an unparalleled level of fluid control, system reliability, performance and end-user satisfaction for a range of applications in the fields of diagnostics, analytical instruments and life sciences. The ultra-compact form factor and cost-effective design pave the way for system designs featuring one or more sensors, which were previously unfeasible. First prototype samples of are now available for testing, the new product variant will be available in the second half of 2020.

►► 59113 at www.pcne.eu

SECURE COMMUNICATION FOR DEVICES

Protected OPC UA and MQTT communication



The increased market demand for IIoT connectivity calls for next-level data security solutions to ensure that data from automation devices reach the cloud in a secure way. Full

security is needed for the OPC UA or MQTT communication itself, as well as during file transfer and on web pages. The data must be encrypted, and the integrity of any given data system must be guaranteed to prevent data theft, tampering, or sabotage. Addressing this challenge, **HMS** releases a complete and ready-made embedded security product that enables fully secure communication from devices in the field to the cloud. The solution is called CompactCom IIoT Secure and features new powerful security hardware, secure boot, certificate management, encryption, as well as secure OPC UA and MQTT communication. The release focuses on CompactCom for EtherNet/IP and PROFINET with OPC UA and MQTT connectivity and includes the following main new software and hardware elements. A security chip ensures full product integrity and identity. The solution has been thoroughly tested from a cybersecurity point of view by HMS. Components comply with the applicable EMC and UL-standards same as all Anybus products. All in all CompactCom customers benefit from a fast path to secure IIoT communication without having to redesign their device.

►► 59202 at www.pcne.eu



Wireless Industrial IoT Solution Available in Europe

New sensors enable easy online collection of pressure and temperature data

Yokogawa Electric Corporation announced the release of new pressure and temperature sensors for the Sushi Sensor wireless industrial IoT (IIoT) solution in Europe, North America, and specific Southeast Asian markets, with the release in other markets set to follow at a later date. These additions to the Sushi Sensor lineup, part of the OpreXTM Asset Management and Integrity family, were first released in Japan in July 2019.

The new sensors facilitate the online collection of pressure and temperature data from equipment such as tanks and furnaces, and supplement the vibration and surface temperature monitoring capabilities of the integrated XS770A wireless vibration sensor launched in 2018. The expanded sensor lineup allows for equipment condition monitoring based on a wider variety of plant data. This in turn enables the reduction of equipment inspection man-hours and the detection of signs of equipment abnormalities at an early stage.

MODULARISATION AND ENHANCED BATTERY LIFE

Yokogawa has developed the XS530 pressure measurement module, the XS550 temperature measurement module, and the XS110A wireless communication module. The new sensors are configured by attaching either the XS530 or the XS550 to the XS110A. The XS110A has a replaceable battery that can be easily accessed by removing the communication module from the pressure or temperature measurement



module. The new modules all have an environmentally robust design, and are dustproof, waterproof (IP66/67 certified) and explosion-proof (ATEX and IECEx certified. Certification pending in North America). The battery life has also been extended to 10 years, based on an ambient temperature of 23° C +/-2° and an update interval of 1 hour. This reduces both the lifecycle cost and the frequency with which maintenance must be performed in often hazardous plant locations such as explosive environments or high places.

RELIABLE PRESSURE MEASUREMENT

The XS530 pressure measurement module measures the gauge pressure (the pressure relative to atmospheric pressure) of gases

and liquids in pipes and tanks. The wetted parts are all constructed of non-corrosive materials and the module is capable of withstanding high pressures. It has the high sensitivity necessary for low pressure measurements and can monitor both valve leakage and pipe/filter clogging.

MONITORING OF TEMPERATURES OVER A WIDE RANGE

The XS550 temperature measurement module supports dual input from nine thermocouple types (B, E, J, K, N, R, S, T, and C) regulated by the IEC standard, and can measure both high and low temperatures. Data from the module can be used to identify the condition in each stage of a multistage heat exchanger, monitor the energy loss

from steam leaks, and monitor the temperature inside tanks and on refractory bulkheads.

WIRELESS IOT

The Sushi Sensor Wireless Solution is a wireless solution that can detect signs of equipment abnormalities by storing the data from small vibration, temperature, and pressure sensors on an on-premises server or in the cloud. This solution helps customers maintain their plants and manage their energy use. Yokogawa also provides a cloud environment in addition to the Sushi Sensor wireless solution consisting of wireless sensors and wireless network devices.

►► 59401 at www.pcne.eu



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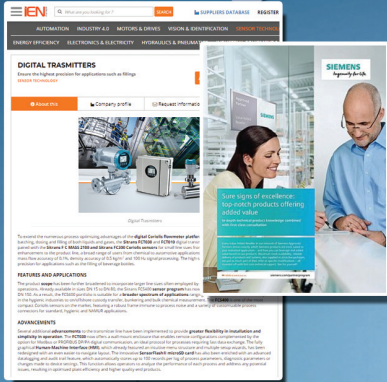
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