What's New in
PROCESSING

Instrumentation, Process Automation, Chemical, Electrical, Analytical

UniStream Cloud series - the First and Only PLC with built-in Cloud services.

All Inclusive embedded subscription for Cloud.
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NEW

UniCloud
By UNITRONICS
Inside

UNITRONICS®

Go IIoT in 30 minutes. 'UniCloud' is Unitronics' Complete, No-Code, IIoT Cloud Platform for OEMs and Machine Builders

The Machine Builders' Smooth, Pain-Free Entry, into the World of IIoT—no code or cloud development needed!

UniCloud is specifically designed to enable OEMs and Machine Builders to get up and running with their IIoT cloud platform in less than 30 minutes.

Unitronics' goal is to enable its customers to enter the Cloud and take advantage of today's powerful IIoT technology, using a simple, no-code platform that could be rapidly implemented **by the customer—** eliminating the need to invest in programmers and cloud professionals.

UniCloud is an end-to-end, scalable and secure IIoT platform. Unitronics PLCs and Routers securely connect machines to UniCloud's Software as a Service (SaaS), which stores the data generated by the machines. Users can then display, analyze, and monetize this data via fully customizable, personalized, and multi-lingual dashboards.

UniCloud supports any machine based on Unitronics UniStream, Vision, Samba, and Jazz controllers. Even older applications can go Cloud—without the need to change, update, or modify the existing project logic in any way.

UniCloud's no-code Dashboard Designer enables users to build dashboards with simple drag & drop elements, easy Widget Wizards for Gauges, Graphs, Charts, Tables, Maps, and more. The user selects exactly what their business requires and determines which machine data will be harvested, analyzed, displayed, and stored by UniCloud. The Machine Builder can then leverage this data to boost efficiency, troubleshoot problems, and implement preventative maintenance—reducing management overhead and leaving time to grow their business.

As part of Unitronics' UniCloud launch, they are offering an **industry first**: the UniStream Cloud series. These powerful PLCs come with an embedded UniCloud subscription—**no need for any additional hardware or software and no need to pay any additional fee for cloud services subscription**!

End-to-end, scalable and secure, UniCloud enables users to **boost both new and existing applications into the age of IIoT—as-is, without changing any existing programming in the PLC project.** When Cloud is this easy, there is no reason or excuse to miss out on the benefits of IIoT.

To learn more, head to https://unitronics.cloud/
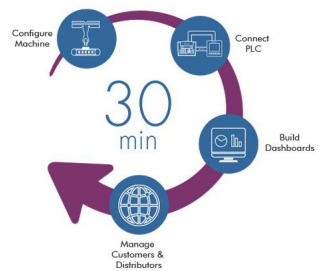
Now See Voltage and Current on One Screen Without Touching a Wire!

The new Fluke T6-1000 PRO True-RMS Electrical Tester measures voltage up to 1000V AC and current up to 200A AC, all through the open fork and without test lead contact to live voltage.

Users connect the black lead to ground with the included heavy-duty alligator clip, slide the wire into the open fork and can see both voltage and current at the same time.

The T6-1000 PRO works with most wires up to AWG 4/0 (120 mm2), carrying as much as 200A and 1000V AC. It can even be used with gloves. The electrical tester will change how you do your job.
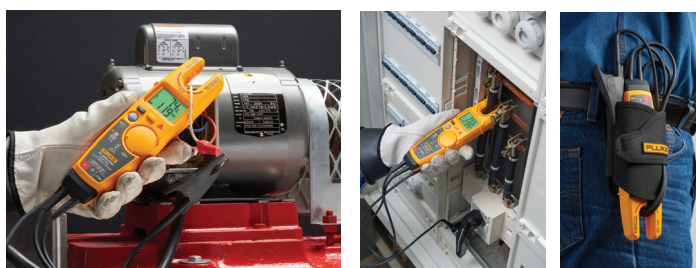
The T6-1000 PRO allows electricians to test in impossible places. Instead of pulling wire nuts, users just slide the open jaw over a single conductor. It's much faster and safer than working to find a metallic contact point.

Plus, voltage and current measurements can be made at the same time. The T6-1000 PRO measures and displays both voltage and current at the same time, simply by sliding the open jaw over the conductor.

The T6-1000 PRO is equipped with Fluke FieldSense technology, which is a proprietary method of measuring the actual voltage value without making live electrical contact.

Unlike other non-contact voltage testers and detectors, the T6-1000 PRO uses FieldSense technology to provide an actual voltage measurement. Users get measurements that are more reliable and more accurate than existing go/no-go testers.

Not having to probe live conductors also makes jobs safer. Since there is no need to make electrical contact, the chance of human contact with an energized wire is greatly reduced. This also reduces the chance of making contact with the wrong conductor, which can produce unexpected results.

The T6-1000 PRO is especially designed for electricians working in potentially dangerous environments.

Since users will almost always be wearing gloves or other PPE, the T6-1000 PRO is designed to use an external ground clip 100% of the time.

In addition, the area where FieldSense technology measures voltage is extended further down the open fork. This means getting consistent, accurate voltage and current measurements without touching a live wire is easier than ever before.

PC-based Control Simplifies Integration of S7 Controllers

The openness of PC-based control and the resulting array of connectivity options with other systems number among the fundamental advantages of TwinCAT automation software from Beckhoff. A new add-on now also enables easy and efficient communication with Siemens S7 controllers.

TwinCAT 3 offers numerous options for connecting TCP/IP-based third party systems to the main control program: OPC UA, MQTT, HTTPS and Modbus are only a few prominent examples of an entire range of communication protocols.

The TwinCAT S7 Communication (TF6620) function now expands this broad spectrum to include the S7 communication protocol.

This product implementation enables reading and writing of variables from an S7 controller. The PLC application program carries this out directly – either via dynamically parameterizable PLC function blocks or via easily configurable I/O mapping. No additional hardware is required and the local TCP/IP network serves as the transport medium.
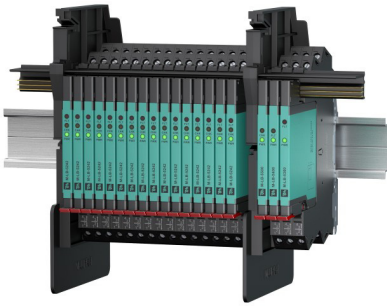
Small, Smart, Unique Surge Protection System

Process engineering plants must be protected against surge voltages to avoid jeopardising their availability.

However, the surge protection modules must be checked regularly and replaced if necessary.

This requires significant effort if the checks are carried out manually, and restricts operation if a signal circuit has to be switched off for the module to be replaced.

Using the modular M-LB-5000 high-end system with diagnostics eliminates extensive testing and operational interruptions. It is supplemented by the M-LB-2000 system for applications in which a minimum specification with additional loop disconnect is sufficient.

Surge voltages have many possible causes. Electronics can receive sustained damage from lightning strikes, transients caused by switching operations and load drops, and interruptions to the supply.

There are other effects in addition to the direct destruction of components, in particular the risk posed to plant availability and the resulting consequences, such as production downtime, which drives operating costs up.

Surge protection systems must therefore form an integral part of process engineering plants. In addition, current standards such as EN 62305 (SANS 62305) require that the effectiveness of these systems be checked regularly.

Up to now, this check has usually been carried out manually on-site, which is very costly for large plants in particular, and requires trained personnel and tools such as a test kit. However, the test results do not give any indications of prior damage to the protection module and its state of wear.

It has previously only been possible to rate the tested devices as "good" or "bad." To meet the different safety requirements of the signal line market, Pepperl+Fuchs offers two surge protection systems with different functions.

Surge Protection with Condition Monitoring

The M-LB-5000 surge protection system with condition monitoring function monitors signal lines automatically and continuously. The patented diagnostics use a special algorithm to detect the different load situations that cause the surge protection system to wear.

This includes counting the number of times the gas discharge tube has ignited, detecting the silicon temperature of the suppressor diodes, and measuring the interior temperature of the surge voltage protection module.

When the protection module has reached 90 % of its life cycle, this is indicated by a yellow diode. The protection modules are therefore replaced neither too early nor too late.

Replacing them too early leads to an unnecessarily high replacement frequency, while replacing them too late leads to the plant having phases without sufficient surge protection if defective protection modules are not replaced immediately. This optimises the availability of the surge protection functionality and of the plant, and at the same time minimises maintenance costs.

The M-LB-5000 modules are mounted on a standard DIN mounting rail. The devices each consist of a base module and the actual protection module. The system also has an insulating partition to maintain clearance when mounting Ex and non-Ex modules on a DIN mounting rail.

All modules have a width of only 6.2 mm and allow simple commissioning without special aids. In addition to the protection and base modules, there are three function modules.

The maintenance module reports when a yellow LED lights up on at least one protection module, indicating that this module should be replaced.

The fault module indicates when at least one device has a fault (red LED) and needs to be replaced directly. The third unit is a power module that powers the protection modules via the power rail.

The error messages are also sent to the function modules or the control panel via the power rail.

Protection Modules with Signal LEDs

The intuitive, easy-to-read traffic-light display on the protection modules greatly reduces testing effort since the fault can very easily be assigned to a specific signal circuit.

A green LED on the protection module means that the full protective effect is present, there is a sufficient functional reserve, and there is no need for action.

As part of the condition monitoring function, the yellow LED signals that the protection module has reached 90 % of its life cycle. The signal circuit is still protected, but the module should be replaced soon, for example during the next regular servicing.

A red LED indicates that the protection module may be permanently damaged and no protective effect can be guaranteed. It should be replaced immediately to prevent damage during the next surge voltage event.

The Benefits of Modularity

During maintenance, the modular assembly of the surge protection system offers significant advantages compared with conventional solutions. Due to the base module on the DIN mounting rail, removing the protection module does not cause a signal interruption.

The signal circuit is closed without interruption via the base module at the moment when the connection between the signal circuit and the protection module is no longer established.

A protection module can therefore be replaced without affecting plant operation. An additional loop check is not necessary.

However, if the signal circuit needs to be intentionally interrupted—for isolation tests during commissioning or in recurring tests—the protection module can simply be rotated by 180 degrees and plugged in.

In this case, the signal circuit is interrupted by an integrated isolating function. This allows the module to replace terminal blocks in the cross connect level with no additional space required.

This combination of condition monitoring, more than 100 modules per function module block, loop separation, and 6.2 mm width with single-loop integrity is unique on the market.

Terminal Block with Surge Protection

Pepperl+Fuchs has developed the M-LB-2000 for applications requiring only minimum specifications plus loop connect. It has a form factor very similar to the M-LB-5000 and is designed to be attached directly to the DIN mounting rail.

The main differences are that the module cannot be diagnosed or replaced without interrupting the signal line. A loop disconnect function is achieved when the module is plugged in via two easily accessible switches on the front.

The M-LB-2000, which is also only 6.2 mm wide, not only saves a lot of space in the switch cabinet, it practically replaces the terminal block with surge protection.

This means that disconnect terminal blocks are no longer necessary, saving costs. The certificates range from ATEX, IECEx, Zone 1 and SIL 3.

Conclusion

The M-LB-5000 surge protection system's diagnostics use a special algorithm to detect different load situations and send a signal when the protection module has reached 90 % of its life cycle.

This significantly increases the efficiency of the protective function and keeps maintenance costs to a minimum. The modularity of the device enables the protection module and loop disconnect to be replaced without tools and without interrupting operation.

The M-LB-2000 with loop disconnect function is designed for significantly lower requirements in surge protection. With a width of 6.2 mm, it saves just as much space in the switch cabinet and can be used as a replacement for the terminal block with surge protection.

Technology for the Digital Age - Automation 4.0
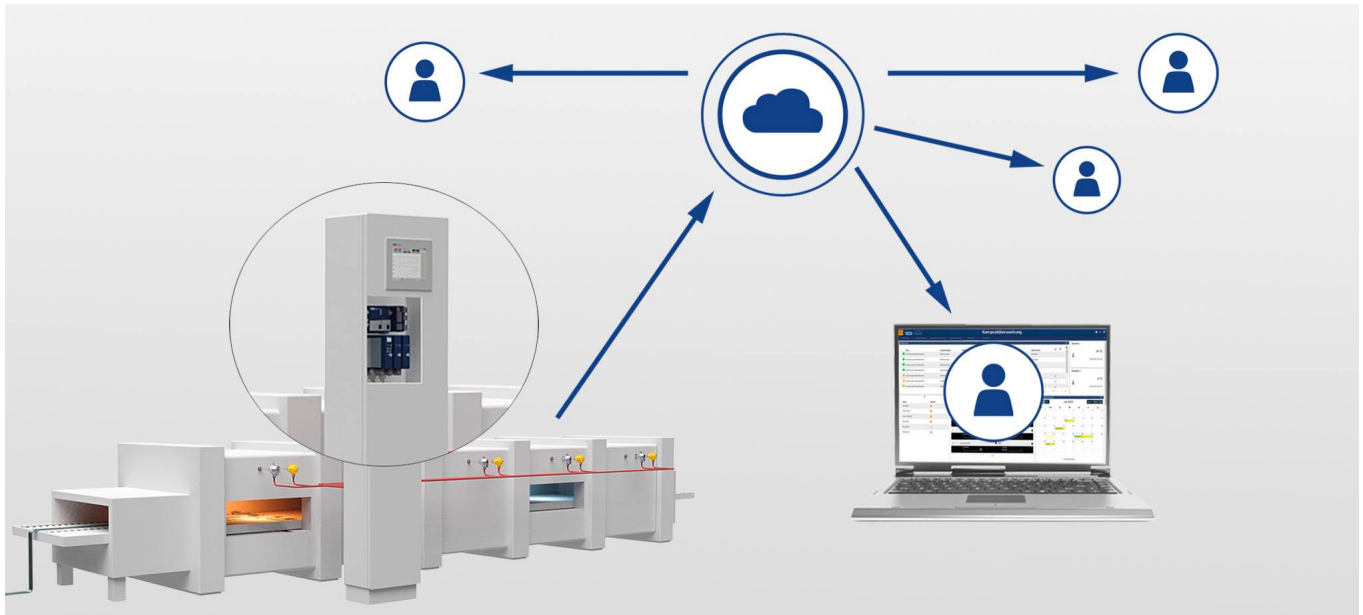
Global data volumes are growing exponentially as a result of digitization. More and more industrial processes are being monitored, analyzed, and automated using sensors. The new Jumo Cloud and the Jumo smartWARE SCADA make an important contribution to the development of the intelligent factory of the future.

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

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

As an IoT platform for process visualization as well as collecting, acquiring, analyzing, and archiving data, the Jumo Cloud provides a global access point to measurement data using conventional web browsers. It is characterized by a high degree of security as well as valuable visualization, alarm, and planning functions. Customers can use the Jumo Cloud to monitor several distributed plants, processes, or sites in one dashboard, which, in turn, increases process reliability.

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

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

Jumo smartWARE SCADA was developed along with the cloud solution. This software solution based on the JumoCloud is located in the automation pyramid at the control level. Jumo smartWARE SCADA provides easy access to measurement data using conventional web browsers. It offers functions for process visualization as well as for evaluation and archiving the acquired data. Visualization occurs through an editor that has an integrated animation and test tool as well as vector-based, self-scaling process screens.

As a result, Jumo smartWARE SCADA is a highly scalable and high-performance digitization platform that supports manufacturing as well as work processes with efficient visualization, alarm, and planning functions. Thanks to its modern web-based interface, customers can access it without having to install any software. As a system that supports multiple clients, user rights can be configured on an individual basis. Security is guaranteed by end-to-end encryption with possible two-factor authentication using the latest technology.

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

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

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New Ultrasonic Level and Distance Sensor

The new Senix ToughSonic Chem12 ultrasonic level and distance sensor is ideal for applications where rapid changes in temperature occur and is tested under more stringent temperature conditions.

The compact design, with shorter and smaller diameter transducer, measures closer to the top of a tank and is easier to install when space is limited.

The rugged, PVDF housing makes the unit suitable for use in diesel fuel and chemical level applications in closed or open tanks.

It is also has mounting flexibility, with both top and bottom mounting threads.

ToughSonic CHEM 12 features:

· Five outputs
· Includes 0-10VDC, 4-20mA, serial communications with choice of RS-232 or RS-485
· Built-in switches, control relays, alarms, motors, pumps, lights
· Temperature compensation
· Standard with every ToughSonic sensor
· Serial Data Only models also available

All ToughSonic sensors can be programmed with free SenixVIEW software which includes nearly 80 parameters that can be tailored to users' specific application/s.

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Buffer and Redundancy Modules for 24/48 V DC Power Supply Increase System Availability

The 24/48 V DC power supplies are universally required in every machine and plant and are therefore critical to reliable operation.

With the new PS9xxx supplementary modules for the PS power supply series from Beckhoff, another efficient option is now available for avoiding machine and plant downtime and, as a result, increasing system availability.

With the PS power supply series, the corresponding supplementary modules and the CU81xx UPS series, Beckhoff offers a complete and coordinated range of solutions for reliable power supply in the 24 and 48 V DC range. The range of functions of the PS power supplies now extends further with new buffer and redundancy modules.

Buffer modules prevent power disturbances

The PS90xx buffer modules prevent disturbances caused by voltage dips and fluctuations in the electrical grid or by peak loads, so that the power supply units and connected loads can operate reliably and without failure. For this purpose, the buffer modules store energy via maintenance-free electrolytic capacitors and release it as required. In this way, power failures, for example, can be effectively bridged.

The buffer modules require no control wiring; they can be added in parallel to the load circuit at any point. In addition, multiple modules can be connected in parallel to provide more power or further increase the power failure bridging time.

Redundancy modules avoid system downtime

The PS94xx redundancy modules create a redundant fail-safe supply network. In such a system, two or more power supply units are connected in parallel and decoupled by one or more redundancy modules. This prevents an output-side short circuit in one of the power supplies from short-circuiting the output voltage.

The redundancy modules use efficient MOSFET technology for decoupling, which reduces voltage drops and thus power dissipation. Accordingly, the devices have significantly lower power loss compared to conventional diode modules.

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Proportional Valves and Controller Solutions

HydraForce electro-proportional valves are suitable for use in many applications in agriculture, construction, materials handling, fluid conveyance, mining and quarrying.

Hydraforce hydraulic cartridge valves and controls are subjected to rigorous field testing and are proven for dependable operation in heavy-duty conditions. Efficiency, response times and signal integrity are optimised using Pulse Width Modulation (PWM) digital signal logic.

PWM works by pulsating DC current and varying the amount of time that each pulse stays 'on' to control the amount of current that flows to a device. PWM is digital, which means that it has two states - on and off. The main advantage of PWM is that power loss in the switching devices is negligible. When a switch is off, there is virtually no current and when it is on and power is being transferred to the load, there is a minimal voltage drop across the switch.

BMG's range of Hydraforce proportional valves includes flow control (PV) and pressure compensating flow regulator valves (PFR), directional control (SP) and pressure control (TS) valves, with a focus on proportional control.

According to BMG Fluid Technology specialists - unlike directional control valves, which allows full flow when energised - proportional control directional valves control flow proportional to an electrical input signal. In pressure regulating / limiting valves this signal corresponds to a pressure setting.

Proportional valves provide a change in output pressure or flow in the same ratio as the change in the input signal. For example, a 4 – 20 mA input signal may correspond to a 50 – 200 bar pressure setting. If the input signal is 4 mA, then the output pressure setting will be 50bar. As it gradually increases to 20 mA, so too does the pressure setting increase to 200 bar. This feature offers machine cycles, which are safely operated at greater speeds, with controlled start and stop characteristics. Regulated acceleration and deceleration results in improved overall machine cycle times and enhanced production rates.

Hydraforce has compiled a quick-reference electronics guide, designed to assist with the selection of the best controller for every application. The easy-to-use configurator platform, HF-Impulse is available from the HydraForce electronics portal.

User-defined parameters, which vary depending on the controller, include input type, bias for PWM or frequency inputs, signal errors, reverse mode triggers and reverse sequence parameters, as well as output scale breakpoints and output ramp up/down rates.

After setting operating parameters, users are able to easily monitor performance and for trouble shooting, there is a CAN interface.

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Become a Bosch Rexroth Distributor in Africa

Bosch Rexroth South Africa Group of Companies is looking to welcome new sales partners into its African distribution network. Through Hytec Services Africa (HSA), the Group is looking to expand its network by bringing its entire technology and service portfolio to various industries and countries across Africa.

Prospective sales partners are required to have a registered business with an existing customer base, as well as experience in the fluid power industry (hydraulics, pneumatics and automation). Partners are also expected to attend regular training, as this promotes progressive learning and growth within the field of fluid power and automation.

Through HSA the new sales partners gain access to the full Bosch Rexroth South Africa Group offering, in addition to input from experts in the various technologies represented by the Group. "We deliver technical support across the full product and service range, consistently searching for opportunities to support and empower our sales partners," explains Louis Potter, Africa Development Manager, HSA.

"Working closely with our sales partners from inception, HSA focuses on training and skills development to establish a healthy, productive and effective partnership. Potter elaborates.

HSA supplies world-leading hydraulic, pneumatic and automation brands throughout Africa, offering Bosch Rexroth South Africa's entire technology and service portfolio to mines and industries across the continent.

Interested companies should contact HSA on +27 11 573 5460
or email africa@boschrexroth.co.za

We bring colour into view!

Compact pressure sensors and switches with 360° custom-colour status display

NEW!
Status display also for two-wire sensors.

S1 ○S2
1.248
bar
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256 colours
Individually selectable:

- Measurement in progress
- Sensor switching
- Process malfunction

Compact design

15 cm

Hygienic adapter system

IO-Link

Adjustment via smartphone

www.vega.com/vegabar   **Looking Forward**   **VEGA**

Cable Locator for Failsafe Cable Fault Diagnostics

Main applications

· Locates energized 50/60 Hz cables carrying current
· Identifies the location of all metallic utilities: pipes*, energized and de-energized cables
· Traces individual pipes* or cables (energized or de-energized)
*Tracing of non-metallic pipes and conduits is possible after inserting metal fish tape or cable

Accidentally hitting a power cable during a project can lead to costly repairs and create seriously hazardous safety situations. Digging in the wrong place can also lead to significant and unnecessary delays, not to mention run-on costs for the project.

Lourenco Menezes, Comtest Sales Account Manager, explains the importance of having the correct equipment for the job. The Amprobe rugged and durable UAT600 series is specifically designed to accurately pinpoint underground utilities and buried services up to 30m deep and has accuracy to a depth of 6m - ideal for this job.

Mines generally use Thumper technology for cable fault location - a portable high voltage (±25kV) surge generator into the cable. At the fault, a high-current arc makes a thumping sound.

Disadvantages of thumping are it's very time-consuming, and the cable, exposed to high voltage surges, may be degraded and will definitely require reinsulation. It also can't find short circuit faults.

In December 2020, a Free State Gold Mine had a damaged cable incident, and the breach needed to be pinpointed urgently.

An external Thumper contractor was called in and the eventual diagnosis was that the damaged cable was at a length of 120m. An excavation team was called in and dug to that length.

Unfortunately, no breach in the cable was found. A new channel was then dug at 60m and still no fault was found. On the third tracing attempt they located the breach across the road and on a different cable.

The consequence of the cable breach/fault was numerous days of lost production, and the cost of the Thumper analysis. For the cost of an AMPROBE UAT600 cable locator, the mine would not only have reduced the risks associated with the test, but have an instrument that is able to give an accurate reading, location diagnosis and solution within a day.

Features of the AMPROBE UAT-600 series

The locating kit comes complete and ready for use with a transmitter, receiver, test lead kit, batteries and additional fuses, all in a mobile, protective duffle bag.

The UAT-620 kit also includes a Signal Clamp for transmitting a signal when it is not possible to make electrical contact with the cable to be traced. For applications where ground fault locating is required, the UAT-600 Transmitter can be used in combination with the optional A- Frame accessory.

Three testing modes for wide range of applications

· Passive power mode (50/60 Hz) – tracing energized lines conducting current (no Transmitter necessary)
· Passive radio mode (RF) – using surrounding radio waves to trace underground utilities (no Transmitter necessary)
· Active mode using UAT-600-T Transmitter

Three active modes using the UAT-600-T Transmitter

· Induction – the Transmitter will automatically start to radiate a signal around it using an internal antenna, used for tracing individual cables where there is no access to the line to connect test leads or a clamp
· Direct connection with test leads – the most reliable method to trace individual cable or a pipe
· Clamp (Included in the UAT-620 kit, optional for the UAT-610 kit) – provides an efficient and safe method of applying a locate signal to a cable, where it is not possible/safe to gain access to a cable for making an electrical contact

Special applications

· 2 frequency options: 8 kHz and 33 kHz
· Locate non-metallic pipes and sewer lines
· Take depth and current measurements
· Measure voltage, resistance and output current
· Advanced locating with two people
· Locate ground faults with the optional AF-600 A-Frame accessory

Unparalleled safety

What truly sets the UAT-600 Series apart from other underground locators is its CAT IV 600 V safety rating. This allows users to safely connect the transmitter directly to an energized line up to 600 V in a CAT IV environment. Previously, if a crew needed to trace a specific electrical line by transmitting a signal through it, the line had to be de-energized first, adding time and reducing productivity.

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Video: **https://www.youtube.com/channel/UCgGquYDXK0-eNyKanvevfew**

In-Line Converters - Bring More Operations Online

Are you using IO-Link to enable OEE analytics yet still have remote pockets where critical equipment should be continuously monitored during operations?

The Banner S15C Modbus to IO-Link converters can be used at the end of a Modbus communication line, very near the IO-Link Master.

Now, the 20-meter IO-Link communication line constraint is not a factor. The S15C converters make it easy to deploy both existing and new sensors to access the data that is vital to OEE initiatives.

Additional converter benefits include remote configuration and more efficient sensor replacements when needed.

Models for modbus and analog sensors

The eight new models of the S15C Series of In-Line Converters were designed to easily re-deploy your existing Modbus and analog sensors as IO-Link devices.

There are six Modbus to IO-Link converters that can be used with Banner's line of Modbus sensors including Vibration/Temperature, Temperature/Humidity, Ultrasonic, Measuring Light Curtain, and GPS. There is also a configurable generic converter that permits most any Modbus device to be deployed as an IO-Link device. The two analog sensor models will convert 4 to 20mA or 0 to 10 V dc signals to their digital values and recast them as IO-Link data.

Small, rugged housing for easy installation

The S15C converters are designed to plug directly into a sensor and begin operating immediately. The small, 15 mm tubular design and M12 connectivity enables easy installation in tight, space-constrained deployments. The converter also uses the same power supply as the sensor, keeping wiring simple. Rugged, over-molded IP68 housing ensures reliable performance even in harsh manufacturing environments.

Applications

These converters are used where IO-Link systems are being added to existing production lines or processes for OEE initiatives or where the digital value of the analog sensor needs to be communicated via IO-Link, such as:

· Condition monitoring
· OEE initiatives
· Remote monitoring
· IO-Link systems

Modbus Sensor-Specific and Generic Converter Models

· S15C- MVT-KQ   Vibration/Temperature
· S15C- MTH-KQ   Temperature/Humidity
· S15C- MGP-KQ   GPS
· S15C- MUL-KQ   K50 Ultrasonic
· S15C- MEZ-KQ   EZ-Array Series Measuring Light Curtain
· S15C- MGN-KQ   Generic – Configurable

S15C Analog to IO-Link:

· S15C-U-KQ   0 to 10VDC
· S15C-I-KQ   4 to 20 mA

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Pressure Switch with Wide Adjustable Switch Differential and High Repeatability

The WIKA model PSM-700 mechanical pressure switch has been designed for control and monitoring applications. The measuring element is a fully welded bellow made of stainless steel 316L. This corrosion-resistant pressure switch is suitable for a broad range of media used in the process industry.

The case consists of a high-grade aluminium alloy with which the pressure switch can withstand the harsh operating conditions of the process industry. The model PSM-700 is equipped with UL listed micro switches to ensure high endurance with durable operation and long service life.

The model PSM-700 has a high switch point repeatability of d" 0.5 %, which enables reliable switching. Adjustable switch differential to a wide range of up to 60 % of the setting range to realise flexible on/off controls This wide setting range is often needed for the on/off control mode of cyclic applications.

The switch point can be specified on site. With the available tamper proofing, unauthorised adjustment of the switch point can be prevented.

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Robot Streamlines Food Deliveries in a Pilot Trial

An autonomous mobile robot has been seen moving around the corridors of the REDI shopping centre in Kalasatama, a neighbourhood in Helsinki.

Operated by Omron's solution partner Dimalog, the robot was taking part in a month-long 'Home-on Demand' automated courier service trial. This is testing the potential for using autonomous robots for deliveries to urban homes.

It's part of a larger experiment called the Six City Strategy 'New solutions in city logistics' project, which is looking at possible options for last mile deliveries in Finnish cities. It's looking for solutions that will organise urban logistics as lightly, sustainably and efficiently as possible.

The trial was arranged by Forum Virium, the City of Helsinki's development company, in conjunction with construction company SRV. Other organisations involved in the project include elevator company Kone; the K-Supermarket in the REDI shopping centre, Asumi, a digital resident service platform and the design studio, Muotohiomo.

For the trial, the Omron mobile robot was programmed to deliver items of food from the shopping centre to apartments in the nearby Majakka tower block.

Refining the robot

Omron, Dimalog and Muotohiomo worked closely together to refine the operation and design of the robot so that they met the specific needs of the project. To move around successfully, the robot had to navigate the supermarket and tower block corridors as well as using elevators and service tunnels. As it moved, the robot both whistled and talked in Finnish (using a speech synthesiser).

Lotta Toivonen, Development Manager for Housing Services at SRV (which built both the shopping centre and the Majakka tower block), comments: "The idea of whistling is that it's a funny thing. On the other hand, people realise that the robot is coming. It speaks a bit, and people greet it. It is treated as if it was a person." Kaisa Spilling of Forum Virium adds: "It's been fun to see how people along the way feel like it's human. It might say in the elevator: 'I'm sorry I would like to get out here' or 'Oops, the elevator is full, I'll ask to use another elevator.'"

Running the trial

So, how did the trial work? Each delivery started with the receipt of an online order from a customer using the Asumi platform.

Orders could also be placed through the supermarket by the shopping centre's smaller businesses.

The items (mainly meals) would be collected at the supermarket and loaded by staff into the robot, which would then deliver the order to the relevant business or apartment. The customer would receive an automatic notification as soon as the robot delivered the item.

Kaisi Spilling remarks: "During the coronavirus epidemic, the robot has brought lunches for homeworkers. Lunch time has been fully booked."

Throughout the trial, the robot could request an elevator itself but needed an escort to open any doors that might have to be kept closed due to fire safety regulations. The escort was a university service design student, who reported any problems encountered by the robot and observed its interaction with people.

Self-navigating robots

The robot used on the trial was an Omron LD model - a self-navigating autonomous mobile robot (AMR). Unlike traditional autonomously guided vehicles (AGVs), Omron's mobile robots don't need any expensive modifications to facilities (such as floor magnets or navigational beacons).

They navigate by the natural features of the facility, having been designed to move material within challenging environments that might include confined passageways, as well as locations where there might be people moving around. Omron's software also integrates with a company's other systems so that the robots can become operational in minimal time.

Esa Korhonen, Area Sales Manager at Omron in Finland, explains: "Our mobile robots can dramatically boost the productivity of logistics operations. They can navigate effectively and provide invaluable support to human workers. This enables employees to focus on other tasks that require complex human skills. "

Kaisi Spilling concludes: "We are looking for new agile logistics solutions in the city. We are exploring how we could improve the smoothness of everyday life in building the future. Robotics is essentially related to a smooth everyday life."

High-performance Visualization of Product Transport With a Single Mouseclick

The intelligent eXtended Transport System (XTS) from Beckhoff enables the dynamic and individual transport of products. The collision-free and independently movable XTS movers can be positioned dynamically on customer-specific track geometries.

For the associated visualization, an application-specific HMI Control can now be created from an existing configuration with just one mouse click.

The generated XTS HMI Control is automatically linked with all necessary parameters from the user's application and can directly display the current positions of all movers within the system.

The solution consists of three levels and can therefore be simply combined with other HMI Controls or even with non-animated images as required.

This means that users can create highly realistic representations of complete systems with minimal effort.

The XTS HMI Control also simplifies system diagnostics and in particular, the location of certain movers in complex transport systems through colour highlighting.

Furthermore, it can be used effectively for simulations.

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Kinetrol Extends its Actuator Product Range with the Addition of the Model 60

Kinetrol Limited, the UK manufacturer of quarter-turn pneumatic actuators, has further increased its product portfolio with the introduction of the Model 60.

The new unit, which joins the wide range of actuators already manufactured by Kinetrol, increases the company's torque output coverage to over 40,000 Nm (350,000 lbf.in) to include 16" engineered ball valve and 2m butterfly valve applications.

The Model 60 is currently the largest actuator in the Kinetrol collection, adding to the sixteen units already available, starting at 0.1 Nm.

The unit is a single vane actuator, giving 'direct drive' rotary control. The one moving part construction minimises side loading, eliminates axial loading and increases life expectancy.

The Model 60 also utilises Kinetrol's preloaded, double-opposed, polyurethane lip seal and air consumption reducing/energy absorbent side plate technologies. This, coupled with a new end-stop design, extends the actuator's life, reduces its energy consumption and maximises its operating speed.

As with their existing actuator range, the new Model 60 benefits from Kinetrol's popular modular concept of control accessories.

This allows the customer to choose from a range of options such as the AP (pneumatic), EL (electropneumatic) and DP3 positioners, safe and hazardous area limit switch boxes and the company's distinctive clock-type spring failsafe packs.

Geoff Burton, Sales and Marketing Manager at Kinetrol, said 'This new addition to the Kinetrol range will allow us to expand into new markets, offering customers an alternative actuator solution for their larger valves with all of the proven benefits of Kinetrol's quarter turn rotary design.

The new unit is subjected to our rigorous quality and test procedures and carries a guarantee for up to 1 million cycles'.

Compared to traditional actuator types of this size, Kinetrol's Model 60's output torque, in double acting applications, is uniform across its operating cycle, facilitating more optimal sizing and providing a very compact solution.

In addition, Kinetrol's spring design, for single acting applications, results in much lower torque output losses - further enhancing compactness and eliminating spring fatigue failure.

A technical data sheet for the new Model 60 is available on the company website.

The unit is featured in the company's new look product catalogue which gives complete technical details on the full range of Kinetrol products.

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World's Only Ultrasonic Sensor for PL d Applications

Pepperl+Fuchs has expanded its factory automation portfolio by acquiring the USi® safety ultrasonic sensor from Mayser GmbH & Co. KG, a renowned supplier of products and system solutions, many of which are relevant to safety engineering.

This ultrasonic sensor with safety certification in accordance with EN ISO 13849 category 3 PL d—the only sensor of its kind in the world—reinforces Pepperl+Fuchs' position as a market leader in ultrasonic sensors and safety applications.

The USi®, a 2-channel ultrasonic sensor, features two transducers connected to a control interface. On each of the two independent channels, objects can be detected via an elliptical sound beam within ranges of up to 2500 mm. Two safe OSSD outputs are provided for signal output.

The USi® has been added to the existing Pepperl+Fuchs safety portfolio, which includes inductive safety sensors, photoelectric sensors and light grids, safe positioning systems, safety-related AS-Interface components, and many different explosion-protected interface modules.

"The USi® is the perfect complement to our broad portfolio of ultrasonic sensors and extends our range of products in the strategic target sectors of intralogistics and mobile machines to include an intelligent and highly reliable solution for safety applications," says Reiner Müller, President of the Factory Automation Division at Pepperl+Fuchs.
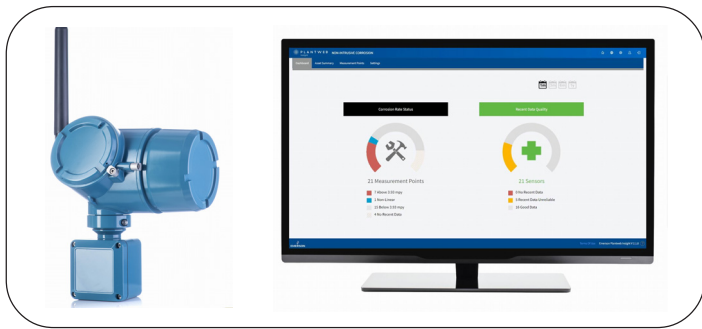
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Digital Solutions for Operators Monitoring Corrosion and Erosion

Introducing a complete corrosion and erosion monitoring portfolio with digital capabilities and full integration with the Plantweb™ digital ecosystem through the new Rosemount™ 4390 series of corrosion and erosion wireless transmitters and Plantweb Insight Non-Intrusive Corrosion application.

The monitoring portfolio turns existing offline corrosion probes into online tools to monitor for the risk of corrosion or erosion in oil and gas processing. Combined with Emerson's class-leading range of non-intrusive Rosemount Wireless Permasense sensors for monitoring metal thickness, which is a major factor in determining the health of piping and other fixed equipment, Emerson now offers a comprehensive solution to monitor both the risk of corrosion or erosion, and the impact of that risk on the health of the plant or asset.

The new Plantweb Insight Non-Intrusive Corrosion application for non-intrusive corrosion monitoring complements the existing suite of Plantweb Insight applications, enabling comprehensive corrosion and erosion analysis at the end-user's desk.

When instrumented with inline probes, changes in corrosion risk can be detected in minutes, enabling sites to take corrective actions before damage occurs. The Rosemount 4390 series of corrosion and erosion transmitters leverage WirelessHART® for reliable and robust data retrieval and work with Emerson's inline probes that measure the corrosive and erosive nature of the fluid and provide early risk detection for a site.

The Plantweb Insight Corrosion applications allow users to access and analyse data from pipe thickness monitoring sensors and inline probes at their desk and gain real-time advanced analytics to assess the risk and impact of corrosion or erosion on the asset or plant.

"Launching these products augments Emerson's existing corrosion and erosion monitoring capability within our Plantweb ecosystem. Wireless data retrieval enables cost-effective deployment at-scale, class-leading data visualization and analysis software, and connected services for our clients to fully monitor their corrosion and erosion challenges to drive maximum capability and profitability in their plant assets," said Jake Davies, global product director for Emerson's corrosion business.

Emerson Automation Solutions
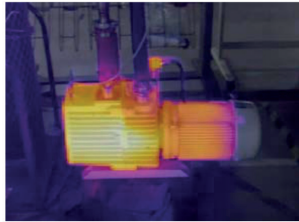**emrsouthafrica@emerson.com**

Rugged New Thermal Camera With Unexpected Features
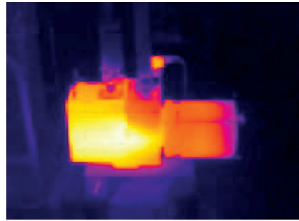
Full infrared image*
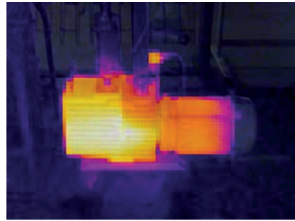
75 % blended image*

50 % blended image*

Full visible image

The new Fluke TiS20+ handheld thermal camera puts the power of thermal imaging at users' fingertips, saving time with the right level of infrared and analysis.

Whether inspecting heating, ventilation and air conditioning on a rooftop, scanning a motor at a remote plant, or locking out an electrical panel, maintenance technicians rely on professional tools for the power and features that get the job done quickly, safely and efficiently. The TiS20+ thermal imager is specifically designed for:

· Commercial electricians
· Heating, ventilation, air conditioning, and refrigeration technicians
· Maintenance technicians

Why does context matter? TiS20+ combines visual light and infrared image

In thermography, context matters. Fluke's IR-Fusion™ uses a thermal image overlaid on a visual light image to give users the full picture of where the issue is before it becomes a problem.

Simply adjust the level of IR by swiping across the screen. If an uneven load is found on a switchgear or an inspection is carried out on a ventilation system, the Fluke TiS20+ helps detect issues which may need further attention.

Fluke's thermal imagers are designed not to fail due to environmental conditions. It's Fluke's "Peace-of-Mind" factor that lets you sleep easy at night knowing that this TI camera will hold up to whatever conditions arise.

The TiS20+ can withstand a 2-meter drop-test, is water resistant (IP54) and dust resistant (IP54), too.

Stop sorting, start analyzing with Fluke Connect Asset Tagging

The TiS20+ eliminates hours at the computer organising thermal images, with Asset Tagging. No need to 'drag and drop' or rename files in office - just scan a QR code on the asset, capture the thermal images and they automatically are sorted by asset - an invaluable time-saver, leaving more time to analyse images and create reports instead of sorting files one at a time.

Empower the TiS20+ with Fluke Connect™ desktop software that creates professional reports in minutes, while efficiently capturing full radiometric data to support maintenance programs.

· Edits and optimises images
· Combines infrared and visible images for simpler analysis
· Creates detailed reports
· Accesses thermal images from Cloud Storage
· Organises and searches images by asset, severity, and title

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Inductive Safety Sensors with OSSD Outputs

Inductive safety sensors with two OSSD (output switching signal device) outputs complete Turck's portfolio for safety technology. The proximity switches enable users to also exploit the benefits of contactless and thus wear-free position and range monitoring in safety-related applications – whether on presses, cranes, fairground machinery or machine covers.

The sensors use their OSSD outputs to send switching signals to safety systems. This is used for detecting short circuits, overload, or cross-circuits and for testing switch-off capability at the same time. With SIL 2 (IEC 61508) and performance level d (EN ISO 13849), the devices meet demanding requirements in terms of functional safety.

Turck's new product series comprises the flush mountable

M12, M18 and M30 threaded-barrel devices, each with a large assured switch-on distance, robust metal housing and a wide temperature range from -25 to 70 °C. Thanks to their insensitivity to dust and humidity, the inductive proximity switches reduce the risk of plant failures – and are thus ideal for users wishing to implement a cost efficient safety solution with a metal target instead of with a specially mounted actuator.

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What's New in PROCESSING

Sensor Solutions for Mobile Automation

Modern commercial vehicles as we know them today are intelligent, flexible and networked. However, the requirements of robustness and longevity remain the same, because the vehicles and machines are permanently exposed to harsh environments.

Regardless of whether subject to hot or cold environments, high shock or vibrations, water, mud or dust, these machines must function reliably under any conditions.

To automate mobile machines, entire workflows or even have vehicles run autonomously, it takes smart sensor solutions.

With application experience in mobile machines of more than 30 years, SIKO provides a wide range of sensors for position, velocity and inclination detection.

SIKO's range of sensors are specifically and exclusively developed for mobile machines and mobile hydraulics, with the focus on the application itself. E1 approval by the German Federal Motor Transport Authority, high electromagnetic compatibility, as well as shock and vibration resistance, protection up to IP69K and reliable sensors for applications up to Performance Level d (PLd) are an integral part of almost any sensor.

A wide range of interfaces are available to network the robust sensors digitally: CANopen, Devicenet Safety, SAE J1939 or the conventional analog interfaces current and voltage.

SIKO is regarded as a system supplier in the position detection and also works together with customers to provide customer-specific solutions to ensure best efficiency at low process costs.

SIKO underlines this technical leadership with the world's first modular sensor "Pure.Mobile", which has been developed 100% for use in commercial vehicles, and promises more flexibility, robustness and security than ever before.

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TwinCAT Vision Combined with TwinCAT HMI - Visualization Using Vision-Specific Controls

TwinCAT Vision, the Beckhoff image processing solution, offers with the new TwinCAT HMI Control Package the option of integrating image processing into the TwinCAT HMI user interface. This includes an expanded image display control and a color control. The image display control enables directly linking multiple image variables and switching easily between displayed images.

It also supports the following:

· freezing the image to stop it refreshing and allow detailed analysis of the last capture

· scaling and moving the image within the vision control (by means of touch gestures, mouse input, or direct entry of specific values) for more precise viewing of image details

· displaying a toolbar with directly usable control elements (e.g. for selecting images, scaling, creating shapes, freezing the image refresh, and downloading the displayed image)

· displaying an information bar showing current details and values, such as image size, pixel coordinates, color values and shape data

· drawing shapes (points, lines, rectangles, ellipses and polygons) with modifiable positions and sizes, used to determine size, area and coordinates and to set regions of interest, among other things

· displaying graphics (a cross, rectangles and circles) or image overlays for the purpose of setting up and positioning cameras and workpieces.

Without the convenience of this control, users would have to go through the time-consuming process of creating and coding these capabilities themselves with the help of other elements.

The new image control, which incorporates a large number of separate other controls as well as extensive JavaScript programming, makes these capabilities available in full and in a readily configurable form.

In addition, the Vision HMI package's colour control provides the following features:

· three options for entering and displaying colour values (a text box, a slider, and a colour input element in the browser)

· flexible configuration and editing of the number of channels, the value range and available controls – a choice of horizontal or vertical orientation

· conversion between various colour formats, such as gray scale, RGB and HSV

The colour control likewise incorporates various other controls as well as JavaScript programming. It can also link to a four-element array variable to edit a colour filter directly from the PLC. This, too, saves users time and engineering effort when integrating image processing into control applications.

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Monitoring for OEM Control Cabinets

Turck is expanding its series of cabinet guards with the addition of the IM18-CCM. The integrated sensors of the narrow 18 mm device monitor temperature, air humidity and door distance, in order to send this information via Ethernet to higher-level IT systems. External devices such as vibration sensors for monitoring states can also be integrated via Modbus RTU and CAN.

The IM18-CCM is particularly suitable for OEMs wishing to provide basic condition monitoring values in their IT system. It detects critical states of the control cabinet directly in the field. Creeping changes or systemic problems can also be detected through long-term evaluations. The IM18-CCM thus bridges the gap between the OT and IT world and enables users to analyze the data material from the factory level directly from their office

desk. The Linux platform of the IM18-CCM also allows installation of any customized condition monitoring software. In this way, measured values can be pre-processed and prepared on the device for the specific requirements of the application.

The IM18-CCM is the third model in Turck's cabinet guard series. The two 12mm devices IM12-CCM and IMX12-CCM come with an onboard condition monitoring software for monitoring limit states and long term data series.

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UniCloud: The Complete, No-Code IIoT Cloud Platform Designed for Unitronics PLCs

U nitronics has come out with its very own cloud platform called UniCloud. With no Cloud expertise needed by users, UniCloud is said to be a smooth, pain-free entry into the world of IIoT. Designed for OEMs and machine builders, this new platform was made to help users work more efficiently on a scalable and secure platform.

UniCloud allows users to build customized dashboards, harvest, analyse, and leverage PLC application data to boost efficiency, troubleshoot problems, and implement preventative maintenance.

Some additional key benefits include:

Setup in 30 Minutes – No Code Development

• Setup and commission your system via a simple drag & drop interface
• Build & customize your dashboards in a fast and easy way using UniCloud's Wizards
• Fully and seamlessly integrate with all Unitronics PLCs
• No-code means no need for programming, IT knowledge, or Cloud expertise
• UniCloud has built-in cloud infrastructure, interfaces, and functionality
• SaaS Platform —no need to install software components, database management services, or hardware

Fast Commissioning & Raise Efficiency

• Create, assign roles, and personalize multi-lingual dashboards
• Fully customize branding via logo and colours
• Access, monitor, and troubleshoot machines securely from anywhere
• Manage operational data for performance analysis
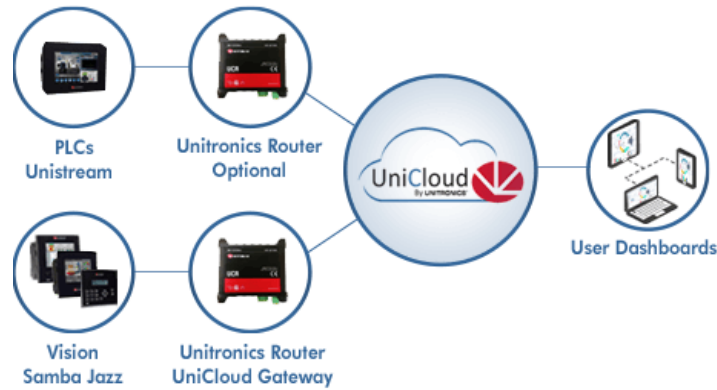
• Determine KPI's using centralized and aggregated data
• Reduce operational and maintenance costs
• Predict failures and minimize unplanned slowdowns and shutdowns
• Generate revenue: analyse data to locate sales opportunities for complimentary products, consumables, and services

Extend Your Reach:

• Utilize the built-in BI functionality to compare machine performance in selected geography or by specific customer
• Centralize management of your machines, PLCs, customers, distributors, and employees
• Assign permissions and dashboards based on your business needs
• Control machines and data flow centrally

UniCloud can be integrated with any of **Unitronics' PLCs** – meaning if you have one already, you can still integrate the platform without having to buy a new PLC.

However, if you're looking for an all-in-one PLC with the UniCloud built-in already, Unitronics has come out with a new **UniStream 'Cloud' series**.

It's a PLC series with built-in, no-cost cloud services. The UniStream Cloud PLC comes with an embedded start-up subscription at no extra charge and no monthly subscription fee.

You simply connect the PLC to UniCloud, design a no-code dashboard aided by the built-in setup assistant, and go live.

Line Fault Transparency for Energised-to-Safe Functions

In sensitive areas of the process industry, it must be ensured that pumps, valves, and active cooling systems are safely switched on in the event of a fault. This requires high availability of the installed safety functions and monitoring of signal circuits for line faults on the field side.

Time-consuming workarounds can be avoided using the principle of line fault transparency (LFT). Information concerning line faults is transferred to the control panel via the signal line. This allows channel-specific identification of line faults without additional wiring.

Industrial applications place exacting requirements on de-energised-to-safe and energised-to-safe functions. Safety relays play a central role here as the link between control panels and load circuits.

There are two different applications. Safe shutdown (de-energised-to-safe, DTS) is used, for instance, to de-energise motors, stop the filling of containers, or stop the flow of material.

Implementing DTS applications is not problematic. For instance, a power supply failure or an unrecognised lead breakage on the field side puts the interface module transmitting the switching pulse into the safe state and triggers the safety function: The field device is switched off. Safe power-up (energised-to-safe, ETS) in an emergency is significantly more complex and particularly relevant for the process industry and functional safety.

Safe Power-Up

In an ETS signal circuit, the safe state is a closed contact that is often not activated for many years. As a result, contamination or corrosion may entirely or partially prevent a current from flowing.

ETS applications include active cooling, switching on pumps and valves, supplying extinguishing agent or coolant, and discharging overpressure from containers.

The importance of safe power-up is also evident in processes where toxic substances are transferred via conduits. The conduits are under slight negative pressure for reasons of safety. In the event of a leak, it must be ensured that further pumps are safely switched on.

In an emergency, they suck in large amounts of ambient air through the leak point, preventing toxic substances from leaking out.

Line Fault Transparency

A safety function may fail even if a safety relay is working properly. Possible causes include lead breakages or short circuits. In many existing solutions, line faults on the field side are indicated by LEDs on the module itself and optionally as a collective error message.

As a result, it is not readily possible to detect control-side line faults in the field through the galvanic isolation of the module. Collective error messages contain no information concerning which signal circuit is faulty; the LEDs of the modules must also be checked.

If a fault indication output is available, it must also be wired for modules without LFT to ensure that the control panel can detect the specific channel on which the fault occurred. An additional input card is also required in the control panel.

Application in Safety Relays

The KFD2-RSH safety relays from Pepperl+Fuchs offer seamless line monitoring across the galvanic isolation of modules and to the field side. They not only detect short-circuits and lead breakages on the field side, they also ensure that the control panel can assign these to a specific signal circuit.

The LFT-enabled relay module monitors the connected load in the field. If there is a fault in the field wiring (short circuit, lead breakage), a test pulse filter on the control side will become detuned. The DO card of the control system can detect the fault via the diagnostics measures integrated on the field side.

The test pulse filter is required to ensure that the safety relays and the control panel are compatible, and, therefore, that the signal circuit functions correctly. Diagnostics provided by safety control systems must not cause devices to malfunction under any circumstances.

Control panels DO (digital output) cards generally feature integrated diagnostics. In addition to delivering dynamic diagnostics, known as test pulses, they also often check the field circuit statically.

To implement this function, the applied trickle currents are measured and evaluated by the DO card both when switched on and switched off.

The input on the safety relay filters the test pulses coming from the DO card. This prevents the field device from being inadvertently switched on by a diagnostic measure or a line fault being inadvertently displayed in the control panel.

In addition, this input enables trickle currents to flow from the DO card. A minimum load is supplied in the On state and a trickle current can flow in the Off state. This trickle current has no impact on the switching function.

K-System Safety Relays with LFT

KFD2-RSH safety relays from Pepperl+Fuchs combine diagnostics, line fault transparency, and 1oo3 (one-out-of-three) architecture.

The function of the switching contacts is automatically checked during every switching operation. This dramatically reduces the complexity of proof tests for the user.

The devices have comprehensive test pulse immunity and

are therefore compatible with commercially available digital output cards. Applications according to IEC61508 up to SIL 3 can be switched off and on using the new safety relay, and applications in line with EN-ISO 13849 Performance Level e can be switched off.

Complete monitoring of line faults on the field side is essential for energised-to-safe functions. Interface modules with line fault transparency can transfer information concerning line faults to the control panel without additional wiring.

Experience gained from projects conducted by the fire and gas specialists at Pepperl+Fuchs shows that LFT modules can save an average of 200 – 400 Rand per signal circuit compared to conventional solutions. Almost all major control system manufacturers have now successfully carried out project-specific tests of Pepperl+Fuchs LFT-enabled devices. These tests demonstrate interoperability with specific field devices, such as optical or acoustic sounders and control system output cards.

The K-System for DIN rail mounting and the termination-board-based H-system provide many other functions with LFT, such as switch amplifiers and solenoid drivers, in addition to LFT safety relays.

Flameproof Switchgear for Enhanced Safety and System Protection

B ecker Mining South Africa's Energy Distribution division manufactures customised switchgear, designed for the efficient distribution of electrical power, energy co-generation, rectification and traction.

"These systems are certified for safe and dependable use in hazardous and non-hazardous applications in surface and underground mining, as well as chemical and petrochemical plants," says Nico de Lange, Vice President: Operations & Systems, Becker Mining South Africa. "Becker's compact flameproof KE 1008 1.1 kV switchgear units, which are imported from Germany and adapted to customer requirements, comprise power bus technology and plug connections, that ensure a high level of operator safety and system protection.

"Modular KE 1008 switchgear units are fitted with integrated and adjustable monitoring and control functions, for easy programming, dependable operation and low maintenance requirements."

KE1008 switchgear units have seven module slots, one earth leakage monitor and a lighting module. Parameters for the slide-in modules can be set at the closed compact station during operation, or via various field bus systems.

Notable characteristics of this system include Modbus and Profibus communication, temperature and power factor monitoring, maximum voltage recording, kilowatt hour monitoring, an operational hour meter and individual phase current and voltage display. Machine selection with pre-set safety settings, is available for ease of operation.

Safety protections comprise short circuit, loss of vacuum, earth leakage, earth fault lock out and pilot relay. Added to this are over and under current, thermal curve, over and under voltage, loss of phase and phase unbalance occurrences protections. For enhanced safety, this unit has an interlocking system and can only be powered up on closing of the main door. All external electronics are rated as intrinsically safe (IS).

Other features of this system include modular mounting on a skid or trailer and a quick opening door that cannot be opened until all slide-in modules of a housing have been disconnected. This compact station has separate compartments for a contactor unit, the display and relay module.

KE1008 switchgear also comprises Becker's HPC 450 V5 contactor unit, which is a 1,1 kV unit rated to 450 Amp, with IECEX certification. These contactor modules are fitted with fully integrated electronics for control, monitoring and protection functions and comprise proven technology that has been successfully used in the global mining sector for over 20 years.

HPC contactor modules have been designed for the easy exchange of pin adaptors for various applications, without the need for disassembly. For added safety, sliding guides into contact points can only engage on initiation of the switching handle.

These contactor units have a high breaking capacity of 22 kA for 1 kV. A motorised phase reversing switch allows the direction of rotation on the outgoing circuit to be changed within five seconds. Individual items can be reversed, without affecting other outlets.

KE 1008 switchgear also comprises a TU6 lighting module, which encompasses a dry type single phase 4.1 kVA transformer. This unit, with a 50/60 Hz mains frequency, has a primary voltage up to 1.1 kV (6.6 kV is available and secondary voltages of 1 x 230V (or 110V) – 10 Amp or 1 x 230 V (or 110V) – 6 Amp. Safety features include integrated 30 mA earth leakage and overload protection.

Screw-In Temperature Sensors. A Wide Range of Measurements – Always in View

M12 or DIN 43650

Optional Plug-on display

With or without integrated 2-wire transmitter

Thread, compression fittings, Varivent®, Tri-Clamp® or DIN 11851

Ø 6 mm, arbitrary length

Class A, 1/3 DIN, 1/10 DIN, Cryogenic

The MMA range of industrial temperature probes, or insertion resistance thermometers (with/without transmitter) … engineered using 316 stainless steel and incorporating high accuracy Pt100 resistance sensors with analogue output options.

The MMA is delivered standard with M12 or DIN 43650 plug electrical connections, as well as a wide variety of popular process connections.

Integrated transmitter

Temperature sensors with transmitter are capable of transmitting measuring signals noise-free over long distances. The two-wire transmitter is integrated in the resistance thermometer.

The output-signal is 4-20mA. The transmitter range is configurable from PC through the KM-HART interface and the KM-Soft software.

Kobold MMA features:

- Economically-priced digital thermometer with optional plug-on display
- Compact construction with or without transmitter 4-20mA output: PC-configurable range by software
- Measuring ranges: -198°C - +250°C (more on request)
- Pt100 sensor class A, S! DIN, $\frac{1}{10}$ DIN or cryogenic
- Process connection threaded clamp DIN32676, VARIVENT or union nut DIN 11851
- Electrical connection DIN 43650, or M12
- Stainless steel
- Withstands vibration

This quality range of economically priced temperature instrument is suitable for a wide range of industrial applications such as: heating installations, furnace and apparatus construction; machine construction and building installations; marine engineering; general industrial applications; food, and pharmaceutical industry.
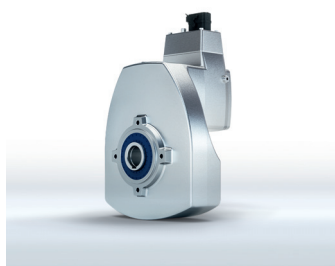
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New Integrated Geared Motors for High Efficiency

The new NORD DuoDrive unit - an integrated geared unit that combines the recently launched NORD IE5+ synchronous motor and a single-stage helical gear unit in one compact housing - has been designed for optimum system efficiency.

By installing the motor and the gear unit in one single housing, the lightweight DuoDrive offers many benefits, including high power density, low noise emissions and reduced installation space.

With the launch of this new integrated system, NORD DRIVESYSTEMS is setting new energy efficiency standards of drive systems in food and pharmaceutical production, as well as the intralogistics sector.

Other important benefits of BMG's new DuoDrive are fewer wearing parts, which reduces maintenance requirements and the simple commissioning of a complete solution via plug-and-

play, decreases the Total Cost of Ownership (TCO) compared to existing drive systems.

This corrosion resistant unit has an advanced wash-down design and is suitable for safe use in hygiene-sensitive and harsh environments. Because this unit is easy to wash, cleaning costs are reduced.

The DuoDrive system currently offers the highest efficiency of a gear unit/motor combination in this power class and achieves high system efficiency in the partial load range - an advancement on NORD's LogiDrive concept, where the IE5+ synchronous motor is combined with a NORDBLOC.1® bevel gear unit.

DuoDrive units available from BMG cover gear unit speed ratios of i = 3.24 to i = 16.2 and are designed for torque ranges of up to 80 Nm and speeds of up to 1,000 min^{-1}.
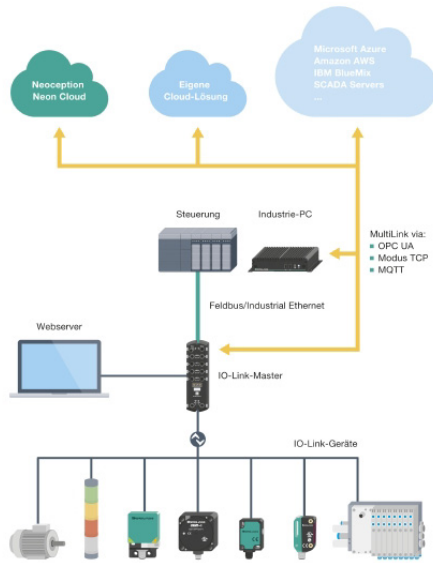
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IO-Link Master with OPC UA Interface

By combining IO-Link and OPC UA in a single device, Pepperl+Fuchs offers its customers data communication from the lowest field level to the cloud. The data can then be analysed in detail to facilitate Industry 4.0 solutions.

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 AI 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 analyse 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 digitalisation becomes ever more important.

Bypass Level Indicators – Always on the Level

Introducing Kobold's NBK level indicators for continuous measurement, display and monitoring of liquid levels in above- or below-ground tanks.

According to the law of communicating tubes the level in the bypass tube equals the level in the vessel. The bypass tube is attached onto the side wall of the vessel.

A float, with embedded circular magnets in the bypass tube follows the liquid level and transfers it, without contact, to a display fitted outside the tube or to a monitoring device.

In addition, reed contacts can be installed on the bypass to evaluate limit values or to control the filling level.

Users can choose from clearly visible magnetic roller or ball displays as well as from a range of measuring transducers enabling remote transmission or level values.

Kobold NBK features:

• Stainless steel 1.4571
• Pressure maximum: PN320
• Temperature maximum: 400 °C
• Measuring maximum: 5.5 m (if longer: 2parts)
• Electrical connection DIN flange DN15 …DN50 & ANSI-flange $1/_2$" … 2"

Kobold NBK finds application in tanks (shipping, storage and water) and agitator vessels.

Options available for the Kobold NBK are 4 -20 mA transmitter, reed contacts, and HART®, Profibus® PA, and Fieldbus®.

A True All-Rounder: Precision Pressure Transmitter

Jumo Taros S47 P is used for acquiring relative and absolute pressures in liquid and gaseous media.

Its excellent active temperature compensation ensures precise pressure measurements and therefore increased process reliability over a wide temperature range.

The robust construction enables protection types up to IP69 allowing use in all areas, regardless of the environmental influences. Default measuring ranges for the Jumo Taros lie between 0 to 100 bar relative pressure and 0 to 40 bar absolute pressure.

The medium temperature can be between -40 and +125 °C. It can even be 140 °C for a maximum of one hour per day. Linearity and long-term stability are both very low at 0.1%. The overall accuracy at 20 °C is at most 0.25% of the measuring span.

The zero point correction can easily be carried out with a magnet. This way, the pressure transmitter delivers reliable measured values over a long time.

A wide range of process connections are available for the compact design of the Taros. Cable fittings M12 x 1 round plugs, line sockets, or terminal cases are available as electrical connections.

One area in which the precision transmitter is used is mechanical and plant engineering. It is also suitable for pumps and sterilizers.

Test equipment construction, calibration technology, and laboratories are also area in which the Jumo Taros S47 P has application.

Coastal, River and Urban Flooding – Sensors of Choice

THE IOWA FLOOD INFORMATION SYSTEM USES THE TOUGHSONIC 50

ToughSonic sensors, waterproof and housed in stainless steel, have become the "flood sensor" of choice for flood monitoring systems around the world including the Iowa Flood Monitoring information system, the Philippine Metro Advanced Traveler Information System, the Murray Australia Irrigation system, Vietnam Waterways, the City of Virginia Beach, and many more.

Many governmental organisations select Senix for their exceptional engineering and customer support to help monitor and respond to rising seas and flooding.

What makes ToughSonic sensors unique?

· Built-in digital filtering that distills pulses taken over several seconds down to just one single measurement output to the monitoring system.

Exclude extraneous objects, such as birds, bugs, people, vehicles, debris, etc., which may pass through the ultrasonic beam. Or, use the extensive filtering capabilities to determine the average of wave heights or water levels.

· Ruggedly built, with 316 stainless steel housings, potted and protected polyurethane shielded cables and heavy-duty electronics.

With an IP68 rating, they are tough enough for outdoor use. Built-in Temperature helps accommodate for diurnal changes.

· Easily integrate with other equipment such as a system's cellular modems, solar panels, on-board clocks, and other equipment. Built in switches can control alarms, lights, sirens, motors, pumps, etc.

· User friendly set up with either the innovative Senix Push-Button TEACH technology, or through a PC with free SenixVIEW software offering nearly 80 user-configurable parameters that can be adjusted to tailored each sensor to its unique application.

Contact Instrotech, manufacturer and distributor of process control instrumentation and specialized systems, to find out how to modernise water-level monitoring systems to monitor coastal, river and urban flooding and help mitigate the risks associated with tropical rains, storm surges and tsunamis.

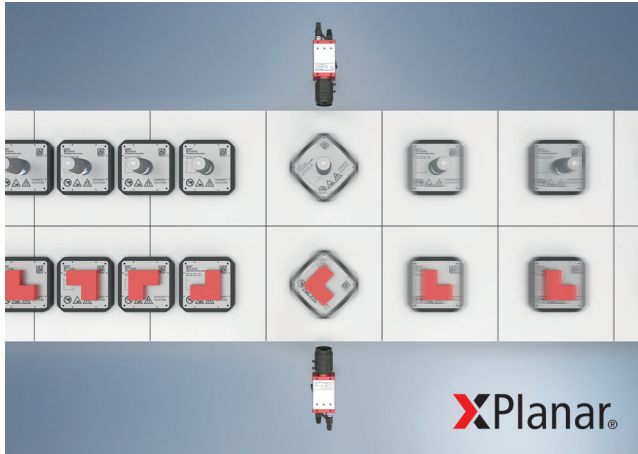# Levitating 360-degree Mover Rotation Extends Scope of Application for Contactless and Intelligent Product Transport

The XPlanar planar motor system enables the contactless, parallel and individual transport of products. The XPlanar movers can fly freely in two dimensions over the XPlanar tiles and execute lifting movements with a stroke of up to 5 mm.

These system properties have now been enhanced by new software-based 360-degree mover rotation functionality.

The purely software-based 360-degreemover rotation extends the familiar and highly flexible XPlanar movement range by a full degree of freedom.

The XPlanar movers can rotate endlessly around their own axis while levitating at selected positions on the system. The rotation can be executed dynamically with a frequency of up to 10 Hz and makes a variety of groundbreaking applications possible.

For instance, the mixing of liquids or the 360-degree inspection of objects can be realized with this additional degree of freedom. Furthermore, the movers can leave the rotation positions with an orientation changed in 90-degree steps, so that the transported workpieces are correctly aligned in accordance with the remaining processing steps.

The 360-degree mover rotation is made possible by the deep integration of the XPlanar system into the PC-based control technology from Beckhoff.

A simple software update is all that is needed to implement the new rotation function in existing systems. Special hardware products are not required.

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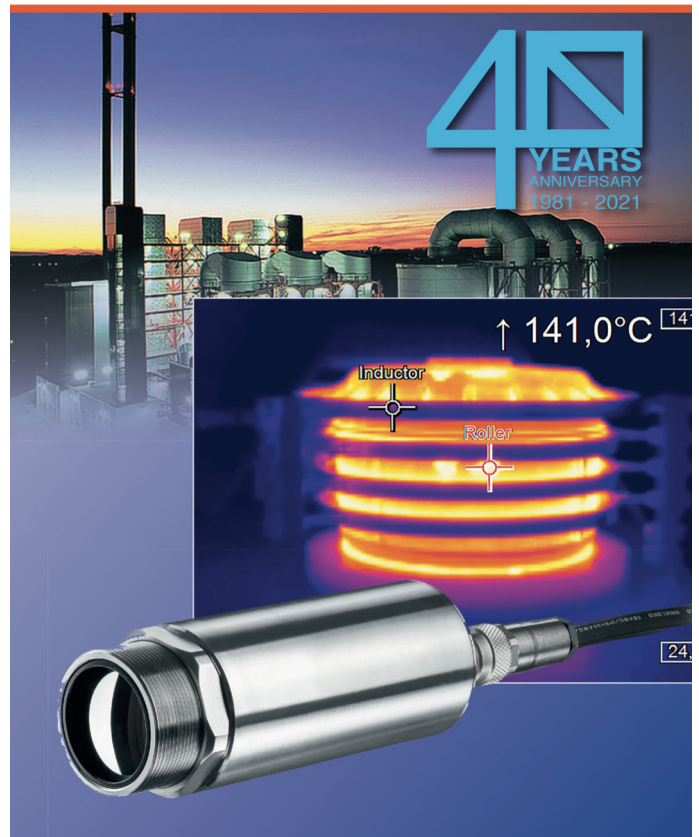
Say Goodbye to Gas Maintenance Headaches

If you purchase gas detectors, you're responsible for ensuring that the instruments are working properly and will alert workers to potential hazards.

But it can be difficult to know when there is an issue, what the issue is, how long it could take to fix it, and how much it will cost. The good news is you have options to reduce or eliminate maintenance pains.

Industrial Scientific, leading global provider gas solutions, are offering iNet® Exchange, that allows customers to say goodbye to gas maintenance, warranty claims, unexpected costs, and downtime and say hello to an always-ready fleet and more time to focus on what matters.

How it works

iNet Exchange uses the DSXi Docking Station to predict when an instrument will need maintenance or repair, performing bump tests, calibrations and record keeping.

Every time the monitors are docked, Industrial Scientific reviews the performance of the monitor, sensors, the circuit board, the microprocessors, and the pump, and tells customers whether a monitor needs to be replaced soon - before it fails, and it's replaced automatically.

Before you know it, an iNet Exchange box is delivered to you with a new unit.

Now customers can spend more time managing their safety program and less time repairing gas detectors.

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EtherCAT Terminal Enables Direct Connection of Inductive Displacement Sensors

Integrating compact, precise displacement measurement into standard control technology reduces complexities. The EL5072 EtherCAT Terminal from Beckhoff enables direct connection of up to two inductive displacement sensors, including transducers in LVDT and half-bridge designs or inductive angular position sensors in the RVDT version.

Thus, precise position and distance measurements, e.g., in the context of process control or the control of joining processes, can be solved in a compact, finely scalable and cost-effective way. The EL5072 measures just 12 mm wide for space-saving installation in the standard EtherCAT I/O system.

Displacement measurement is one of the most important metrological tasks, both in the industrial production environment and in infrastructure monitoring. Examples include the measurement and inspection of workpiece geometry, the monitoring of press-fit and joining processes, inline quality assurance and building monitoring.

With the EL5072 EtherCAT Terminal, all commercially available inductive measuring probes can be integrated into the standard control platform and evaluated without great effort.

The integrated excitation source of the EL5072 provides a wide range of parameterizable excitation frequencies and voltages. Further special features are the automatically adapted measuring signal range, switchable input impedances for different probe types as well as one digital input per channel for setting and storing the position value (incl. time stamp).

The measured value is determined with high precision by a 24-bit A/D conversion and output directly as a 32-bit position value that can be easily integrated into the control program.

In addition, the terminal features diagnostics for short circuit and overload of the excitation source as well as amplitude errors of the measuring signal per channel.

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Custom Cabinet Coolers for Electrical Enclosures

The EXAIR Cabinet Cooler systems can be customized to provide cooling within electrical enclosures in NEMA 12, NEMA 4, NEMA 4X and Hazardous location environments.

These customizations include specific Btu/Hr values from 275-5600 Btu/Hr., adaptations for high temperature environments up to 200°F (93°C), and a selection of materials including aluminium, Type 303SS and 316SS to combat corrosive environments.

For dirty and dusty environments, a Non-Hazardous Purge option will create a positive pressure inside the cabinet to keep dirt and debris from entering your control panel. All systems are UL Listed and CE compliant.

Additional customizations include settings to maintain a specific cabinet temperature, special coatings, high temperature materials, special cold air distribution kits and more.
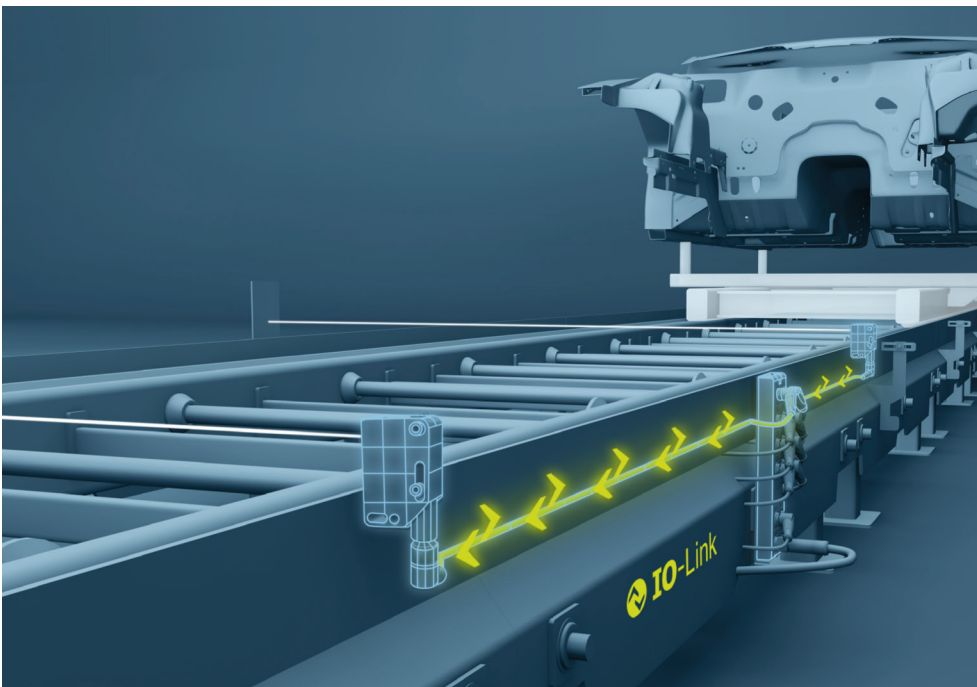
Cabinet cooler systems are the low-cost way to purge and cool electrical control panels. They convert an ordinary supply of compressed air to cold, 20?F air without refrigerants. The cold air is circulated through the enclosure to eliminate heat damage and control shutdown.

The compact cabinet coolers can be installed in minutes through a standard electrical knockout hole. Optional thermostat control minimizes compressed air use.

There are no moving parts to wear out and no maintenance is required.

Applications include cooling PLCs, microprocessors, variable frequency drives, industrial computers, and robotics.

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An Industry First—a PLC with Embedded Cloud Services

UniStream 'Cloud' Controllers are the only PLCs with a built-in subscription to UniCloud, an end-to-end, no-code IIoT platform designed for OEMs & Machine Builders

UniStream 'Cloud' controllers make it easy for OEMs & Machine Builders to enter the world of IIoT & Big Data—*without* relying on Cloud /IT professionals or paying for data storage.

The value of IIoT, Big Data, and Cloud platforms are clear—yet many OEMs lag behind in integrating it into machines, worried about set-up costs, the need for IT/Cloud experts, time pressures, etc.

By embedding a 5-year subscription to UniCloud, the new IIoT platform, into UniStream 'Cloud' controllers, Unitronics provides a simple, efficient solution.

Any user, whether business manager, engineer, programmer, can use UniCloud—and can be up and running in less than 30 minutes.

UniCloud is a complete, no-code IIoT Cloud Platform that provides secure built-in Cloud infrastructure, interfaces, & functionality.

Built-in wizards help users to create unlimited multi-lingual, multi-tenant Dashboards via drag & drop widgets, create organizations with a hierarchical structure, Roles & Permissions for team members, distributor, customers, & use Business Intelligence tools.

UniStream 'Cloud' controllers are members of Unitronics award-winning UniStream series: powerful, multi-function PLCs available as PLC+HMI or stand-alone PLCs. A broad range of COM protocols is supported out-of-the-box including EtherNet/IP, CANopen, MODBUS TCP/IP, and more. The series also supports GPRS modems & routers, email, SMS, web server, and advanced protocols such as OPC-UA, REST API, SQL, FTP, SNMP and MQTT.

All-in-One UniLogic software provides the environment for the PLC program, Servo motion, HMI & Web page design, all hardware setup, commissioning, configuration, & communications.

Read more about Unitronics cloud solution: https://unitronics.cloud/

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Compact Reflex Photoelectric Sensor for Glass Bottle Detection

Introducing the SELET model OCV56T/C photoelectric sensors (block type) for optical detection of bottles (glass or PET with a good degree of transparency), of any shape, depth or colour.

The operating principle of the OCV56T/C sensor is based on a high-tech optical system, ensuring an excellent result if normal optical sensors are not suitable or reliable.

The functionality is programmed by the Teach button: manual or automatic sensitivity setup, light/dark selection.

OCV56T/C key features:

• Mechanical size: 50 x 50 x 18 mm
• Reflex with reflecto type
• Suitable for glass or PET bottles detection
• Plastic housing
• Covered range: 2 m con reflector type SCT2, 3 m with reflector type SCT4
• Teach-in sensing range adjustment
• Connection via 2 m cable, pigtail M12 connector or M12 connector
• Multi-use output: PNP + NPN, light/dark selection
• Supply voltage: 10 - 30 Vdc

SELET, based in Turin, Italy since 1973, started out producing components for automation fields. The production of inductive sensors began with the idea to replace the limitations of mechanical switches in automation.

In the 80s, SELET started producing capacitive and photoelectronic sensors, as well as rotary encoders (incremental and absolute).

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New Float Switch in Horizontal Design Combines Simple Mounting with High Reliability

Introducing a new addition to the Jumo NESOS series of float switches. The R40 LSH now includes devices for point level measurement such as floats and reed contact.

The series also includes devices for level measurement such as float and reed chain. The unit is particularly easy to mount so that it can be used in a wide variety of industries.

The horizontal design allows mounting on the side walls of tanks and containers where it can be reliably measure the respective point levels (min/max).

The measurement is independent of many media properties, pressure conditions and container geometries. It provides up to 2 switching contacts for that do not require auxiliary power, for redundant level measurement.

The NESOS R40 LSH is available with a guide tube length of up to 1 m. The device can be operated at temperatures from -52 to +240 °C and process pressures of up to 88 bar.

It is available in protection classes IP65 and IP68 and optionally with ATEX as well as IECEx approval (Ex i) and (Ex d) for use in zone 0. Consequently, the unit guarantees a particularly high level of process reliability.

A version with a temperature probe/switch is also part of the product range. As a result, no additional tank or container opening is requited for temperature measurement.

The maintenance-free device design and simple mounting saves on costs. Storage costs can also be reduced by using the min/max level with a variant.

The float switch is individually adaptable to many applications in the chemical and petrochemical industries as well as in mechanical engineering and container construction.

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Thermal Imagers ... Now, Maintenance Can be Proactive Instead of R

The new TiS55+ and TiS75+ thermal imagers are easy-to-use infrared cameras that easily transform plans for preventive maintenance (PM) programs into reality.

These cameras offer technicians and contractors who need quality images and feature-rich cameras, an option for their troubleshooting, intermittent inspection, and preventive maintenance needs.

Technicians make many inspections daily, and it can be hard to remember what was seen and the inspection location. Clipboards to jot down notes are old-school!

The new technology Fluke TiS55+ and TiS75+ come with built-in personal assistants, meaning the old clipboard can finally be ditched and technicians can have all the information needed, embedded in the images saved, including:

Voice annotation - Record up to 60 seconds per thermal image - Identify exactly what is seen, in real time

IR-PhotoNotes - Take photos of asset numbers and other identifiers, and use as a reference when looking at the thermal image on a computer

Asset Tagging* - Sort the thermal images by asset, scan a QR code on the asset, then start capturing thermal images. Images will automatically be sorted by asset, simply connect the camera to a computer to view them.

Focus is one of the most important parts of a thermal image so whether users are seasoned thermographers or new to thermal cameras, Fluke has:

· Manual focus: Seasoned thermographers can use the manual focus wheel to adjust the image based off how far they are from the target.

· Fixed focus: For quick scans or for users new to thermography, simply use fixed focus position. Now take images at 1m from the target and images will be in focus every single time.

Building Health matters: Building inspectors always look for moisture - that's why Fluke includes a dew-point calculation in the TiS75+ thermal camera.

When air is cooled to the temperature where it is saturated with water, moisture develops and wreaks havoc on buildings. Once dew point is calculated, the camera will display the Dew Point Colour Alarm.

Everything the camera displays that is at the dew point temperature and below, will display as a thermal image. Everything above will display as a visual light image.

This allows users to see where in the image condensation is occurring, and a scale of how far objects are below the dew point.

Complete, No-Code, IIoT Cloud Platform for OEMs and Machine Builders

UniCloud is specifically designed to enable OEMs and Machine Builders to get up and running with their IIoT cloud platform in less than 30 minutes.

Unitronics' goal is to enable its customers to enter the Cloud and take advantage of today's powerful IIoT technology, using a simple, no-code platform that could be rapidly implemented by the customer—eliminating the need to invest in programmers and cloud professionals.

UniCloud is an end-to-end, scalable and secure IIoT platform. Unitronics PLCs and Routers securely connect machines to UniCloud's Software as a Service (SaaS), which stores the data generated by the machines. Users can then display, analyse, and monetize this data via fully customizable, personalized, and multi-lingual dashboards.

UniCloud supports any machine based on Unitronics UniStream, Vision, Samba, and Jazz controllers. Even older applications can go Cloud—without the need to change, update, or modify the existing project logic in any way.

UniCloud's no-code Dashboard Designer enables users to build dashboards with simple drag & drop elements, easy Widget Wizards for Gauges, Graphs, Charts, Tables, Maps, and more. The user selects exactly what their business requires and determines which machine data will be harvested, analysed, displayed, and stored by UniCloud. The Machine Builder can then leverage this data to boost efficiency, troubleshoot problems, and implement preventative maintenance—reducing management overhead and leaving time to grow their business.

As part of Unitronics' UniCloud launch, they are offering an industry first: the UniStream Cloud series. These powerful PLCs come with an embedded UniCloud subscription - no need for any additional hardware or software and no need to pay any additional fee for cloud services subscription!

End-to-end, scalable and secure, UniCloud enables users to boost both new and existing applications into the age of IIoT—as-is, without changing any existing programming in the PLC project. When Cloud is this easy, there is no reason or excuse to miss out on the benefits of IIoT.

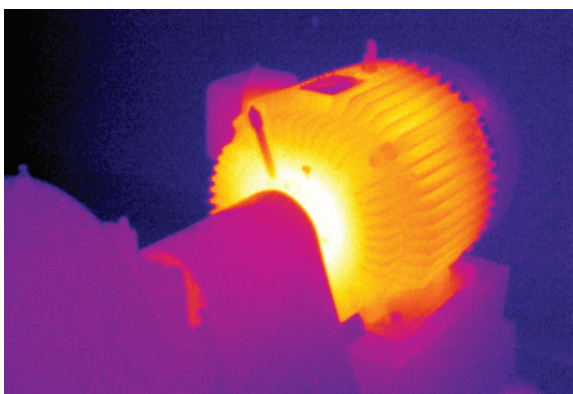## Reactive

TiS55+ and TiS75+ thermal imagers feature:

· 384 x 288 (TiS75+) or 256 x 192 (TiS55+) infrared resolution
· -20 °C to 550 °C temperature range
· 3.5" VGA Touchscreen LCD display
· Water and dust resistant (IP54)
· Engineered to withstand a 2-meter drop

  Fluke's TiS55+ ad TiS75+ infrared cameras are a part of a growing system of connected test tools and equipment maintenance software.

  *Fluke Connect Asset Tagging - Eliminate hours at the computer organising thermal images, let Asset Tagging do all that work.

  No more dragging and dropping or renaming files in the office, just scan a QR code on the asset, capture the thermal images and they automatically are sorted by asset.

  Start spending time analysing images and creating reports, instead of sorting files one at a time.

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Changeover Solutions for the Pharmaceutical Industry

Siko, represented locally by Instrotech, increases the efficiency and production quality of machines, by offering intelligent positioning systems for machine manufacturers and end users in the pharmaceutical industry.

The manufacture of pharmaceutical products requires an extraordinarily high degree of efficiency and safety in the manufacturing process. Production plants need to be flexible and so it is important to be able to implement a quick and error-free changeover of machines.

Siko's monitored position indicators and fully automated positioning drives make format changes in pharmaceutical processes significantly faster, with 100% process reliability and digital protocolling. The advantage of this would be optimisation of production and its costs, traceability, and the retrofitting of existing machinery. Here are Siko's solutions for format adjustment - this crucial component.

Monitored format adjustment

Cartoning machine. The process of erecting and filling packaging units needs to be carried out quickly. Time losses due to long change-over processes have a counter-productive effect. Failures during changeover also result in a high scrap rate, because of the high cycle rate in this manufacturing process.

Bus-capable position indicators monitor manual adjustment and report errors visually and via bus communication. A production start with an incorrect format setting is therefore 100% excluded. Status LEDs and direction indicators allow for fast and precise setup.

Automated format adjustment

Compact actuators replace manual adjustment and enable format change practically at the touch of a button, quickly and safely. Folding boxes depends on the packaging size and material quality. The respective adjustment axes need to be changed safely and quickly. Compact actuators move to the new axis positions at the touch of a button. The next packaging size is implemented automatically and is 100% process-reliable.

Labelling / marking

In the course of serialization and 'track & trace', the requirements for labelling and inspection have increased immensely. Even with format adjustments, these must be ensured every time the product is changed so that the labelling is also correctly aligned for the next repackaging. Otherwise, the subsequent test device can no longer correctly identify the product with serial number. Actuators ensure fast and safe height adjustment of the labelling module according to the size of the packaging.

Retrofit simple and intuitive – a complete system from a single source

Siko's *Retrofit* provides a self-sufficient control system for bus-capable Siko-position indicators and actuators. *Retrofit* is an option for manual format adjustment as well as monitored format adjustment or automatic conversion at the touch of a button. Commissioning is done practically via plug-and-play. Source code programming is not necessary. The intuitive user interface makes operation child's play!

Compatible mounting dimensions

The DA09S, AP05, AP10 SIKO position indicators and the compact AG05, AG06 actuators are combinable and mechanically interchangeable (compatible mounting dimensions).

This means an enormous advantage for machine manufacturers, who can configure the automation level of machines individually and offer customers a solution to suit their needs. Siko's compact actuators are ideal for installing on axes which need frequent adjustment, while low-cost position indicators can be used to position axes which rarely need adjusting.

Retrofitting is also possible at all times. The crucial point: All three devices have the same hollow-shaft diameter and quasi-identical mounting contours.

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Ex-i Isolating Switch Amplifier – Two Channels and Versatile Application Possibilities

The two-channel Jumo Ex-i isolating switch amplifier represents a new product category within the extensive Jumo portfolio.

It was developed especially for the float switches from the Jumo NESOS series, but also supports all proximity sensors in accordance with the NAMUR standard.

The intrinsically safe isolating switch amplifier is a new addition to the Jumo Safety portfolio that enables reliable, galvanic 3-way isolation as well as safe transfer of switching signals – for both normal and Ex applications. It can be used in an extended ambient temperature range of -40 to +60 °C, has ATEX and IECEx approval, and can also be mounted in Ex zone 2.

The connected float switch contact or proximity sensor can be operated up to zone 0. In addition, the Jumo Ex-i isolating switch amplifier has UL as well as DNV GL approval and meets SIL 2 in safety-related applications. A changeover relay with a phase reversal option per channel is available as a switching output.

A line failure detection system identifies line breaks or short circuits which ensures a high degree of process reliability. This makes the Jumo Ex-i isolating switch amplifier a reliable partner for a wide range of applications in mechanical and plant engineering, the chemical industry, the food technology sector, and many other areas.

By integrating 2 channels in 1 device, the Jumo Ex-i isolating amplifier requires very little space during installation. Its coded screw terminals and simple configuration with DIP switches help to save time during startup. LEDs indicate the respective status directly on the device. The use of a wide-range power supply unit (24 to 230 V AC/DC) reduces storage costs.

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Dual Output Sensor Monitors Vibration and Temperature Levels

The MTN/2285STC is a dual output sensor, ideal for monitoring vibration and temperature levels in the same location to protect motors, fans, pumps, compressors and other assemblies with rotating parts.

Both outputs are in the industry-standard range 4-20mA and are suitable for direct connection to a PLC, DCS or other industrial controllers.

The MTN/2285STC is a stainless steel side-entry transducer, sealed to IP65 and supplied with 5m of integral stainless steel over-braded ETFE cable as standard with other lengths available upon request.

Its dynamic range is 50g peak and it has a frequency range of 16Hz to 720Hz ±10%.

The sensor requires a DC supply voltage in the range 12 to 32V. Its Vibration output is proportional to RMS velocity with a range of 0 to 10, 20, 25, 50 or 100mm/S; to be specified when ordering.

The sensor's Temperature output sensitivity is 0.106mA/°C across its operating temperature range of -25 to 90°C, and it has an accuracy of 0.08%/°C.

Changes in vibration or temperature levels tend to provide the earliest indication that a piece of plant or equipment is in need of maintenance, and in some cases warrants shutting down to avoid damage.

With our new dual-output sensor, engineers can connect directly to any equipment that accepts inputs in the 4-20mA range in order to monitor both parameters for maintenance, control or emergency-shutdown purposes.

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Robust, Longer Range Alternative to Ultrasonics

The T30R offers more robust detection capabilities and longer range than ultrasonic solutions in a similar package size without the risk of crosstalk from multiple sensors mounted close together. The compact radar sensor has an IP67-rated housing for use in challenging environments.

It is resistant to ambient weather such as sunlight, wind, rain, and snow that can be problematic. Radar waves are not affected by ambient temperature changes, providing consistent measurement from -40 to 65°C (–40°F to +149°F). The 15 m range and excellent performance in harsh environments make the T30R ideal for outdoor detection at loading docks, tolls, gates, and car washes.

More precise and reliable alternative to traditional 24 GHz radar

Like other Banner radar sensors, the T30R features Frequency Modulated Continuous Wave (FMCW) for detection of both stationary and moving targets. However, the T30R has much more precise detection of a wider variety of materials than traditional 24 GHz radar.

Banner's T30R can detect objects as close as 150 mm and can measure with linearity and repeatability less than +/- 1 cm. The T30R can reliably detect high-dielectric targets, like metal or large amounts of water, as well as challenging lower-dielectric materials, such as wood, rock, or organic material.

Easy setup - simple integration

The T30R can be programmed using the free and intuitive configuration software, remote teach input, push buttons, or IO-Link for flexible setup and configuration.

Dual discrete outputs are available for slow and stop positions and analog and IO-Link options are available for absolute distance measurement.

The T30R also features Banner's Pulse Pro output that can connect directly to a variety of Banner lights to provide direct process feedback to the operator by illuminating a light green to yellow to red, or any custom configuration. Pulse Pro only requires power, and no separate controller is needed.

Applications

The T30R solves a wide variety of challenging applications, including, but not limited to:

· Mobile equipment collision avoidance
· Positioning of baggage handling trucks and passenger bridges at airports
· Outdoor detection and measurement applications
· Vehicle detection, profiling, and positioning
· Level measurement applications
· Car wash vehicle profiling

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Comtest to Represent NETSCOUT

Comtest, leading local distributor of test and measurement instrumentation to industry, is pleased to announce that it now represents NETSCOUT SYSTEMS, INC. (NASDAQ: NTCT) assuring digital business services against disruptions in availability, performance, and security.

NETSCOUTs market and technology leadership stems from combining patented smart data technology with smart analytics, and is deployed across all market verticals ranging from Telecoms to Enterprise to Military to Healthcare.

NETSCOUT provides real-time, pervasive visibility, and insights customers need to accelerate and secure their digital transformation. NETSCOUTs approach transforms the way organizations plan, deliver, integrate, test, and deploy services and applications.

Test Optimization is NETSCOUTs market leading Test & Measurement business unit, and provides support for today's high-performance test labs in their demand for agile test lab automation and infrastructure management, support for all types of Media and Network testing including functional testing, load testing, regression testing, conformance testing, and production network testing.

nGenius service assurance solutions provide real-time, contextual analysis of service, network, and application performance.

Arbor security solutions protect against DDoS (attacks that threaten availability and advanced threats that infiltrate networks to steal critical business assets).

NETSCOUTs approach transforms the way organizations plan, deliver, integrate, test, and deploy services and applications.

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Greater Transparency and Efficiency Through Complete Digitalisation in Kanban-Based Value Chains

Kanban-controlled production and material flows are taken to a completely digital level with an intelligent combination of optical sensors, identification systems, and modern, process-oriented cloud software. The associated end-to-end automation means shorter replenishment lead times, improved transparency of the overall process, and increased process quality.

Clean interfaces and a modular software architecture mean that the solution can be seamlessly integrated into existing IT infrastructures with ERP, MES, or WMS, or operated completely separately.

In line with the just-in-time concept of lean production, Kanban is now widely used for controlling the flow of material and information on the shop floor.

However, the process is still implemented using many manual steps. Workers must transport paper cards or perform manual scans using barcode or RFID readers.

An intelligent combination of optical sensors, identification systems, and modern, process-oriented cloud software takes Kanban to a completely digital level. Racks in interim storage areas and PSAs can be digitally enhanced to detect and process material movements.

Because all components are user-friendly and easy to install, the solution can be integrated both into an initial design for greenfield production systems and retrofitted in existing logistics infrastructures.

A fully digital Kanban management system that is created in this way provides in-depth transparency of material flows throughout production in real time. Time-consuming and error-prone manual recording of statuses is eliminated and the replenishment lead time is reduced.

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Connect Your Pressure Measurement to The Future

Announcing the launch of the new Cerabar and Deltabar pressure transmitters. Thanks to their Bluetooth interface, they are easier to operate and more efficient to maintain in safety-critical systems. The high level of safety combined with enhanced productivity follows the Endress+Hauser smart safety approach to increase plant availability.

Heartbeat Technology creates the basis for predictive maintenance and allows the devices' functionality to be verified without process interruption.

There are various reasons why ease of operation is a major advantage. Many industries are struggling with an increasing lack of qualified personnel. Major plant revisions often involve service providers whose personnel do not have a thorough knowledge of the equipment and systems on site.

The amount of safety-related equipment has also increased significantly in recent years, for example in the chemical industry, and with it the number of costly proof tests of the safety integrity level (SIL).

Easy operation increases productivity

To meet all these developments, Endress+Hauser has simplified the new Cerabar and Deltabar pressure measurement line. This is reflected in its intuitive operation via the SmartBlue app, which includes guided operating sequences for parameterisation and commissioning of the pressure sensor. This is made possible by an additional Bluetooth interface, which bridges distances of up to 15 m.

Thus, even measuring points that are difficult to reach or in hazardous areas are easy to maintain, even if they are only integrated into the process via a 4–20mA interface. The employee/ personnel does not have to open the housing or connect a cable. Real-time data from the pressure transmitter is available at any time.

The Bluetooth connection has a special protocol that meets the increased safety requirements in industrial applications.

The Fraunhofer Institute AISEC tested the interface for its level of protection and rated it "high" for protocol and algorithm.

Unlock your IIoT potential

The NAMUR roadmap "Process-Sensors 4.0" names three key criteria for digital process sensors: wireless communication, sensor diagnosis and the provision of information about the sensor and the process. With the optionally available Bluetooth® and Heartbeat Technology functions, the new Cerabar and Deltabar product lines meet these criteria.

For example, Heartbeat Technology supports maintenance staff in verifying their measuring points. This can be done via a Bluetooth connection and at the touch of a button with the SmartBlue app.

The verification can be carried out in less than 3 minutes without process interruption. A verification protocol, which provides detailed information about all tests, is generated automatically. The basis for this is the continuous self-diagnostic function of the pressure transmitters. It achieves a diagnostic coverage rate of over 95%.

With this information, it is possible to plan system revisions and maintenance work for measuring devices in advance and reduce downtimes. This significantly simplifies maintenance processes.

Heartbeat Technology gives users the scope they need to optimize their production processes through data-based insights into the process. It provides transparency about the condition of the measuring devices and the process.

But Heartbeat Technology can do even more. It also detects irregularities in the process, for example deviations in the loop resistance, which in turn indicate a defective cable. Blocked impulse lines, e.g. due to crystallized medium, are detected by differential pressure transmitters. This data provides the basis for predictive maintenance.

Improve your process safety

Guided operating sequences support employees during the commissioning of measuring points and during SIL proof tests. They show the operator what to do, step by step. This prevents operating errors, so-called systematic errors, and increases safety.

At the same time, these tasks can be completed more quickly, as there is no need to consult the safety manual.

The new colour display also provides safety at first glance. In the event of an error, it switches from green to red and thus provides a quick overview.

The new Cerabar and Deltabar devices feature proven, reliable and robust sensor technology and a smart safety concept. The new pressure measurement technology features self-explanatory and efficient operating concepts that prevent systematic errors during device parameterization.

They maintain the high safety level of the system and at the same time reduce maintenance costs – during commissioning as well as repair.

The advantages at a glance

Improve your process safety

· Virtual wizards guide through the SIL lock and proof test and thus prevent operating errors
· Safety by Design: Developed according to IEC 61508
· A checksum (CRC) ensures that security parameters are unchanged
· Backlight of the display changes from green to red in case of error

Increase your productivity

· Intuitive operation via Endress+Hauser SmartBlue app and Bluetooth interface
· Guided operating sequences simplify commissioning
· The HistoROM data management concept ensures safe and easy transmission of the parameters
· Operation of the device by control buttons without opening the cover

Unlock your IIoT potential

· Verification of devices without process interruption thanks to Heartbeat Technology
· Heartbeat Monitoring can detect process irregularities and clogged impulse lines
· Heartbeat Technology gives you smart diagnostic functions

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World-First Sensor Platform for Mobile Machines

Heat, cold, shock, vibration, water, mud or dust – however dire or adverse the conditions are, mobile machines must work reliably under the harshest of conditions. To ensure uninterrupted performance, these machines need sensors that detect and provide data continuously under all conditions.

To acquire and send this data, Instrotech, instrumentation & process control specialists representing SIKO locally, proudly announce the world's first modular sensor PURE.MOBILE, developed exclusively for use in commercial vehicles.

SIKO's PURE.MOBILE promises more flexibility, robustness and security than ever before. This technology platform was designed and developed exclusively for position-detection in mobile machines.

Unlike many of the sensors on the market that come from industry and are then merely adapted for mobile machines, sensors from SIKO that use the technology platform have been developed exclusively for applications of this sort.

Every PURE.MOBILE sensor meets the EMC requirements for construction, agricultural and forestry machines, the requirements of E1 (UN ECE R10) for road vehicles, and is based on wear-free, robust, magnetic sensing technology.

The flexibility of the extendible modular design is also unique. The rotary encoders that use the PURE.MOBILE platform can be extended to include additional functions through option cards selected by the user; these include, for example, an integrated inclinometer, DIP switches for parameterization, and digital inputs and outputs.

All of the sensors with PURE.MOBILE technology are also available in a safety version for applications up to Performance Level d (PLd). These features are rounded off by a large number of analog and digital interfaces to choose from. This means greater flexibility, resilience and safety than ever before.

With PURE.MOBILE, the focus is on the future of SIKO customers, providing support for automation, digitization and efficiency.

Advantages of the PURE.MOBILE technology

• Developed exclusively for mobile machines for linear, rotation, speed and inclination detection

• Protection ratings: IP65 to IP6K9K

• Wide temperature range (-40 ... +85° C or 105° C; -40 ... +185° F or 221° F)

• High EMC (construction machines, agricultural and forestry machinery)

• High shock and vibration resistance

• Safe sensors up to Performance Level d (PLd)

SIKO's range of sensors are specifically and exclusively developed for mobile machines and mobile hydraulics, with the focus on the application itself. SIKO is regarded as a system supplier in position detection, working with customers to provide customer-specific solutions, and ensuring best efficiency at low process costs.

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Robust Needle Valve for High-Pressure Applications

The new model HPNH high pressure needle valve is designed for four pressure ranges: up to 15,000 psi (1,034 bar), up to 20,000 psi (1,379 bar), up to 30,000 psi (2,068 bar) and up to 60,000 psi (4,136 bar).

The sensitive components - spindle tip and sealing - are made of suitably resistant material.

Furthermore, the model HPNV has the same characteristics as the other WIKA needle valves: low-wear operation due to the non-rotating spindle tip, smooth handling with low torque and leak tightness tested to BS6755/ISO 5208 leakage rate A.

The high-pressure valve is available in various configurations and materials. WIKA also offers a customer-specific assembly of valve and measuring instrument.

Such an instrument hook-up is delivered ready-to-install and leak tested.

Greg Rusznyak
WIKA Instruments
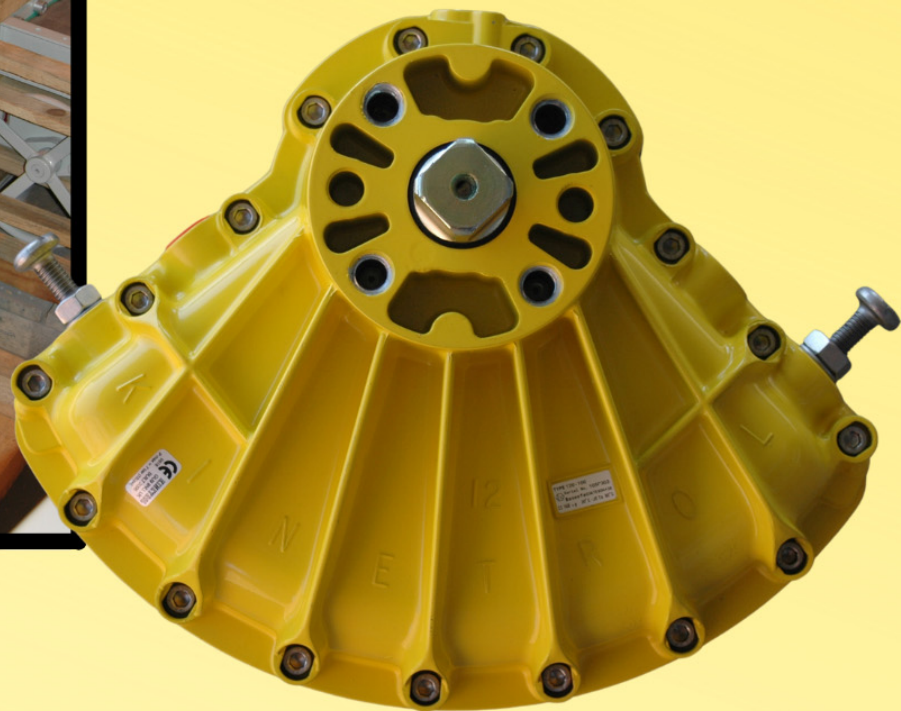**Tel. +27 11 621 0000**
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