The Factory Automation Magazine

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SENSING YOUR NEEDS

PEPPERL+FUCHS
SENSING YOUR NEEDS

EDITORIAL

Dear reader,

Our innovative products help you to achieve more flexible production processes and establish new logistics concepts, enabling you to increase productivity and improve quality. As a leader in the field of RFID technology, Pepperl+Fuchs designs not just components but solutions for special applications, specific to RFID technology—LF, HF, or UHF.

We are proud to present a brand new, extremely compact UHF read head that can be used for a range of identification tasks in the industrial environment, where other RFID systems have previously shown their limitations. Thanks to its long detection range and globally standardized and inexpensive tags, this UHF reader, together with our modular IDENT*Control*, is ideal for intralogistics applications.

In addition to the identification technology, simple networking technology such as AS-Interface helps to implement your applications effectively and to integrate safety functions at the same time. Discover our latest generation of ultrasonic sensors, which offer the right solution for any application thanks to their flexible parameterization options.

Read more about the highlights of the Pepperl+Fuchs product range on the following pages or visit us at one of the coming trade fairs.

Dr. Thomas Sebastiany
Director Business Unit Systems

TECHNOLOGY NEWS

New Opportunities

Extremely Compact UHF Read/Write He

In the field of intralogistics, efficiency is the number one priority. Goods have to be distributed quickly and reliably, and forwarded to their intended destination without any allocation errors. The new generation of UHF read/write heads from Pepperl+Fuchs opens up a wealth of opportunities for the logistics sector and the automotive industry.

UHF Technology Provides a Powerful Advantage

The new F190 UHF read/write head is extremely compact and has an impressive read range of over one meter. The head can detect up to 40 tags simultaneously within its read range in one read operation; this offers a significant advantage over other LF and HF systems, which show their limitations both in terms of their read range and when it comes to reading multiple tags at the same time. The F190 therefore simplifies intralogistics applications considerably. It optimizes both the frequency bands used during the read operation and the transmission power in accordance with the application and the environment—guaranteeing the best possible read results.

for Intralogistics

ad with Detection Range of Over One Meter

The new F190 UHF read/write head—extremely small and versatile

Durability and Compact Design Are Key

To ensure that the F190 can be used for tough industrial applications, the read/write head has a sturdy metal housing with encapsulated electronics. Its compact size of approximately 10 cm x 10 cm means that the F190 is easy to install, even in tight spaces.

Multicolored LED Status Indicators to Keep Track of Things

The three multicolored LED status indicators are clearly visible from any angle thanks to the double design on the front. The LEDs are particularly bright to give the user a constant overview of the current status even from a considerable distance.

Compatible with the Entire IDENT*Control* Series

The F190 is compatible with all IDENT*Control* interfaces from Pepperl+Fuchs. Existing LF or HF read heads can easily be replaced with an F190 or the two can even be used together in mixed operation. This level of flexibility, combined with the modular design, makes the new read/write head the perfect solution for the automotive industry and the logistics sector. Pepperl+Fuchs launches this innovative product first in Europe. Versions for the American and Asian market are in preparation. Put your trust in over 20 years of RFID experience.

Dr. Konrad Kern
Product Manager Systems

WEB INFO
www.pepperl-fuchs.com/rfid

PEPPERL+FUCHS
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APPLICATION

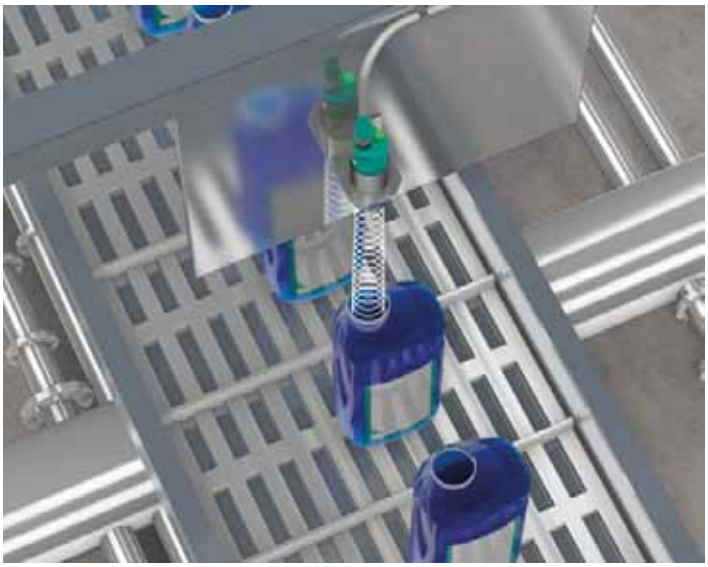
Two Solutions, Countless Applications

The Pulse of Automation—The New 30GM70 and 30GM-IO Series Ultrasonic Sensors

Ultrasonic technology looks set to reinvigorate the automation technology industry and tap into a host of application areas. Whether used for level measurement, presence monitoring, or counting objects, ultrasonic sensors are fast becoming the smart guys of sensor technology.

A Solution for Any Application

The new 30GM70 and 30GM-IO Series ultrasonic sensors in the cylindrical M30 housing design offer the right solution for every application. Flexible outputs, such as push-pull output, analog output, and multiple parameterization options via IO-Link or infrared interface, Teach-In, or potentiometer, mean that the two series can deal with any application. Thanks to the minimal blind zone and the adjustable sound cone, they can be used even for tricky tasks.

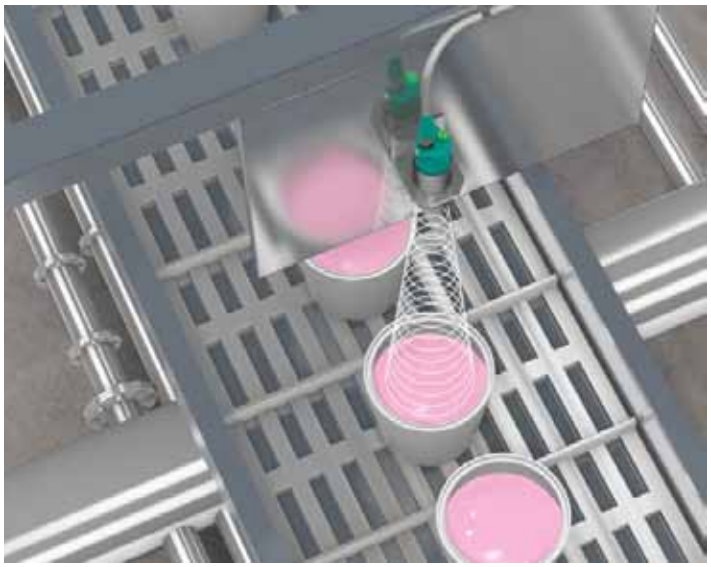


Flexible Parameterization using Buttons or IO-Link

The 30GM-IO Series ultrasonic sensors can be parameterized either using buttons or via the IO-Link interface. The two buttons on the sensor allow the operating distance to be adjusted with millimeter precision and the sound cone to be adjusted between three levels without connecting to any software. The switching output can be switched between NC contact and NO contact.

The IO-Link interface is used to perform detailed parameterization. Using the IODD device description and the PACTware parameter tool, the sensors are seamlessly integrated into the machine and system control systems. Constant communication with the sensors ensures that different object sizes can be detected automatically and the width of the sound cone can be adjusted accordingly. In the packaging industry in particular, central parameter maintenance is crucial as it enables rapid job changeovers without process interruptions or system downtime.

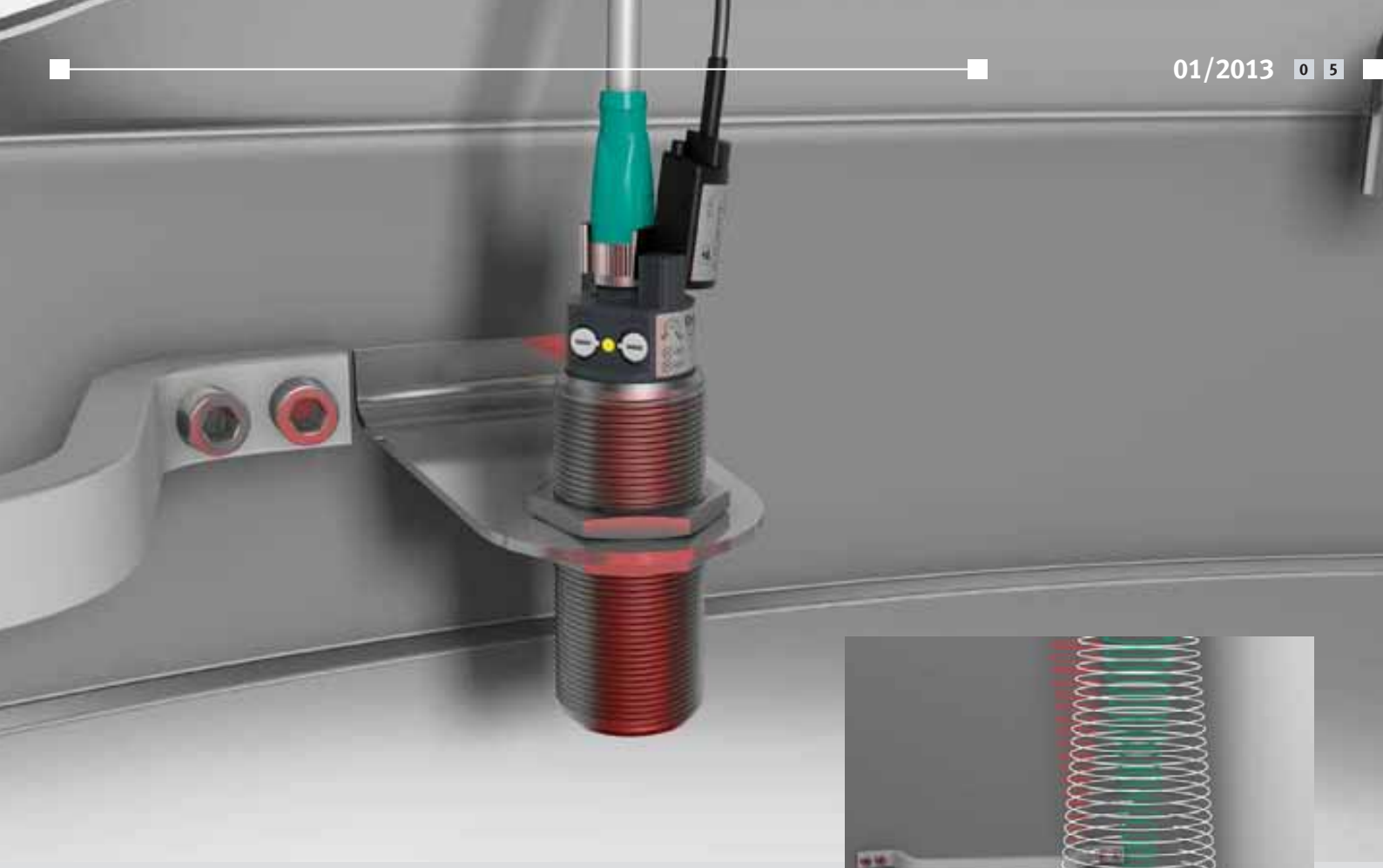
If a sensor needs to be changed during maintenance work, the parameter data saved in the control system can simply be transferred to the new sensor. It is also possible to save different parameter settings for different objects. This close networking of sensor and control system opens up completely new possibilities—from commissioning and process control to maintenance.

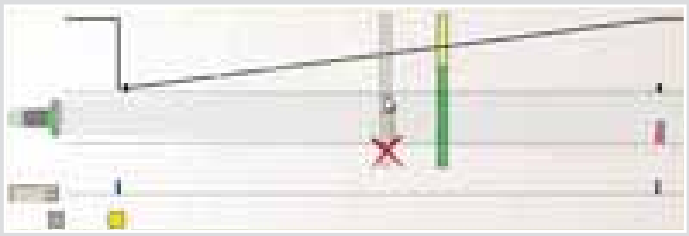


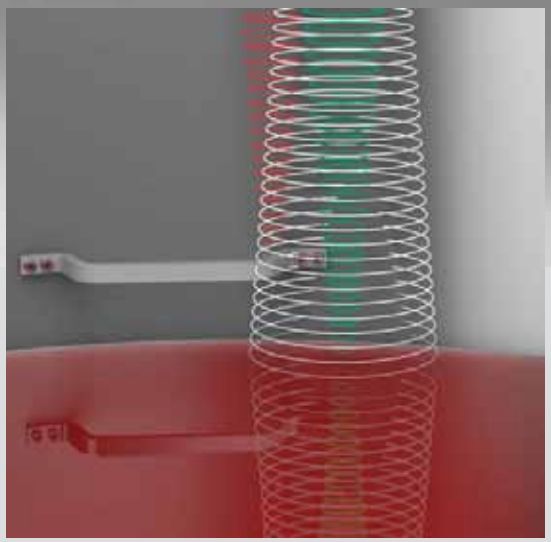
Parameters and sound cones are quick and easy to adjust centrally in the control system via the IO-Link interface. This makes plant commissioning easier and ensures that job changeovers can be completed quickly.

Intuitive Parameterization via Infrared Interface or Potentiometer

The 30GM70 Series is available in an impressive number of versions and an extremely wide range of output configurations. As such, the sensors can be used immediately and without parameterization. The operating distance can be adjusted easily and intuitively using







Real-time transfer of the signals via the infrared interface allows the sound cone to be adapted and any objects that could cause interference to be suppressed easily

a potentiometer, without needing an object to detect. This ensures that commissioning can be completed without difficulty during the installation phase.

Parameterization via the infrared interface offers great benefits. An infrared transceiver with USB connection can simply be plugged in and enables communication with a notebook without changing the sensor cabling. The sensor can be parameterized via the UltraProg-IR graphical user interface and can be adapted to the application without any process interruption. Any objects that could cause interference, for example, due to unfavorable mounting conditions, are visualized by the software and can easily be suppressed or the sound cone can be adapted accordingly. The 30GM70 Series ultrasonic sensors also visualize the echoes received by the sensor without reaction and in real time.

The new 30GM70 and 30GM-IO Series ultrasonic sensors from Pepperl+Fuchs are the right solution for both series and special-purpose machine manufacturers.

Franz-Josef Heimerl
Manager Product Management Ultrasonic Sensors

WEB INFO
www.pepperl-fuchs.com/ultrasonics

PRODUCT

Maximum Precision and Dynamics

The New Generation of Magnetic Rotary Encoders

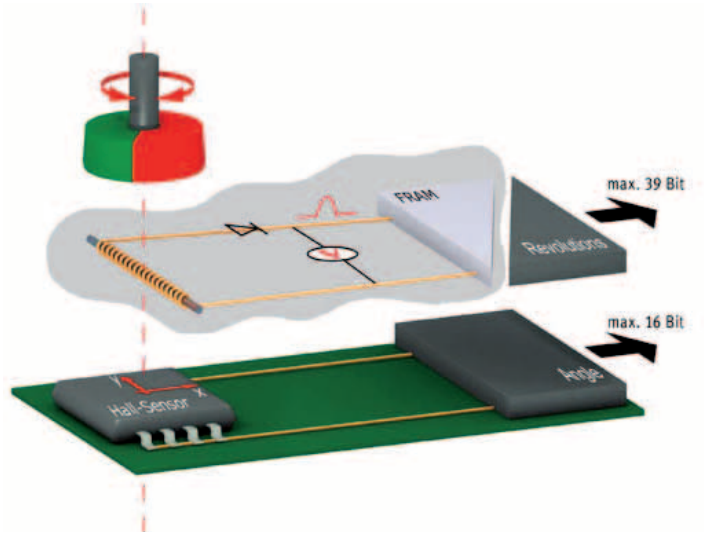
Singleturn resolutions of up to 16 bit, measurement accuracy comparable with that offered by current optical encoders, and all for the price of a magnetic rotary encoder—the next generation of absolute rotary encoders from Pepperl+Fuchs marks the start of a new era, introducing a series that offers by far the best price-performance ratio in its class.

Technology of the Highest Standard

Our magnetic absolute rotary encoders have been specially developed as reliable devices for completing positioning tasks in the factory automation sector. Even adverse and mechanically challenging environmental conditions, such as those encountered on offshore wind power plants or mobile cranes, are no problem for these encoders.

The new generation of magnetic absolute rotary encoders

Now we are going one step further and increasing their performance in terms of measurement accuracy and dynamics. Our engineers have developed special electronics that take magnetic rotary encoder technology to a level of performance that has never been seen before. Standard magnetic encoders currently available on the market achieve a maximum measurement accuracy of approximately 0.5° to 1° and a maximum resolution of 12 bit. The dynamics relative to the cycle time are greater than 600 µs. This limitation previously meant that only optical rotary encoders were suitable for many applications, but the new magnetic absolute rotary encoders from Pepperl+Fuchs, with a resolution of up to 16 bit, measurement accuracy of 0.08°, and cycle time ‹ 80 µs, are now at the same technical level—and are available at a lower total cost.



Functional principle of magnetic rotary encoders

Completely Maintenance-Free

The new series is further enhanced by Wiegand technology, which is used to visualize the multiturn functionality. This technology does not require batteries and significantly reduces the number of moving parts, ensuring completely maintenance-free operation. Multiturn resolutions of 12 bit to 16 bit are available as standard, and the maximum resolution is 39 bit.

Stefan Horvatic
Product Manager Rotary Encoders

PRODUCT

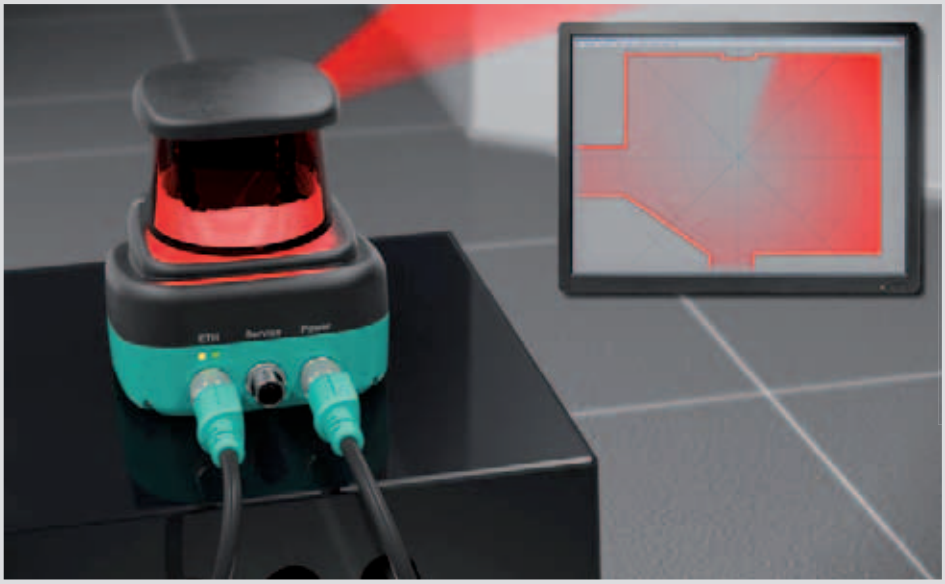
Interactive Display Opens Up New Possibilities

R2000 Laser Scanner

The display is easily the most eye-catching feature of the R2000 360° laser scanner. When you look at the device, you may soon forget to consider factors such as measuring performance. But here too, there are a host of impressive features just waiting to be discovered, such as the measuring frequency of 250,000 individual measurements per second and the angle resolution of 0.078°. The primary purpose of this unique display is to provide the user with information on the particular application. The device's strengths are used to their full potential during commissioning in particular, with an option to set an IP address. The behavior of the display in measurement mode can also be selected, which can be particularly helpful if only the reflectors need to be detected for a particular application.

The latest feature is a "spirit level" function which makes leveling the sensor a breeze, as the inclination of the device is shown on the display itself, ensuring that measurements are always performed at the desired level. This means that indirect adjustments are no longer necessary. The red emitter light is the perfect addition to the spirit level function. The light spot is clearly visible on reflectors and can therefore be used to make direct adjustments to the device.

In the future, it will be possible to use sensor information such as inclination data outside the sensor and to use this information for automation tasks. This opens up a range of interesting new applications for the R2000.



The interactive display on the R2000 simplifies the commissioning process

HERMES AWARD 2012

PLATZ 1 2012 AUTOMATION AWARD

Winner of the Automation Award 2012 and one of the top five nominees for the Hermes Award 2012

The multi-award-winning 2-D laser scanner features a 360° scanning angle, and the device is incredibly user friendly thanks to the innovative user interface with a display in the optical face. With a scanning frequency of 50 Hz and an extremely high angle resolution, the R2000 sets new standards for scan technology in factory automation.

Thorsten Schroeder
Product Manager Innovative Photoelectric Sensors

APPLICATION

Correct Allocation of Goods for Shipping

RFID Systems for Logistics

Online ordering allows us to take orders for goods at any time. As a result, a reliable logistics process is required to ensure a high volume of deliveries can be processed correctly and in a fully automated process within the shortest possible time frame. The goods in the warehouse must be picked according to the order and packed correctly. RFID systems help eliminate all allocation errors and optimize shipping volumes.

Completely Secure Identification

The containers circulating in the warehouse are identified using RFID and the products within the containers are allocated via a central database system. The narrow F97 RFID read/write head can be mounted either on the side of the conveyor system or between the conveyor rollers. Its large detection area ensures that the read/write head can identify the tags integrated in the storage containers quickly and with 100% accuracy. In addition to a read-only code, data can be stored on each tag to provide information locally and support decision-making processes.

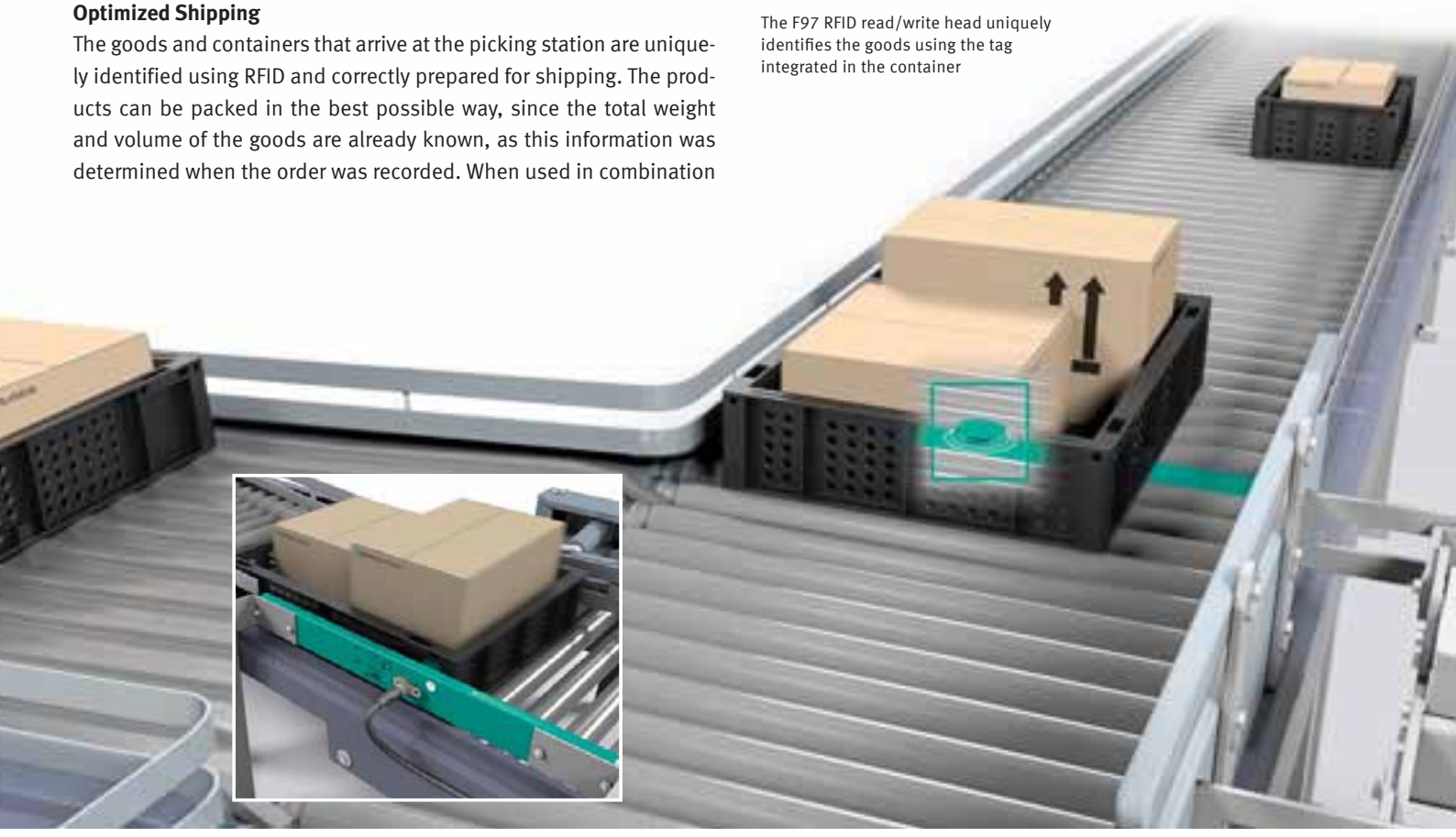
Optimized Shipping

The goods and containers that arrive at the picking station are uniquely identified using RFID and correctly prepared for shipping. The products can be packed in the best possible way, since the total weight and volume of the goods are already known, as this information was determined when the order was recorded. When used in combination with additional software, RFID makes it possible to optimize packaging volumes for each shipment and to select the correct packaging container which, in turn, reduces transport costs. Address allocation, creation of the delivery note, and creation of the bill can be performed automatically.

RFID technology ensures optimum logistical processing—from allocation of goods to picking and shipping.

Dr. Konrad Kern
Product Manager Systems

WEB INFO
www.pepperl-fuchs.com/rfid



The F97 RFID read/write head uniquely identifies the goods using the tag integrated in the container

PRODUCT

Impressive Read Performance

1-D and 2-D-Code Handheld with Patented Dual Lens

Exceptional read quality, ease of use, and the ability to adapt perfectly to the application—the new OHV100 and OHV200 handhelds for 1-D and 2-D codes meet all of these requirements with no trouble at all. The patented dual lens divides the read range into close and long range, and the high resolution of 1.2 million pixels ensures that small and large codes can be read reliably even from a long distance. The handheld is flexible and can be adapted to any application using JavaScript.

The OHV100 includes a USB and RS232 interface. Another product highlight is the OHV200 offering wireless data transfer. Information can be transferred directly to a PC either via Bluetooth or by placing the handheld in the charger. The OHV200 has a large data memory and a long battery life. Thanks to their robust housing and IP65 (OHV200) or IP54 (OHV100) degree of protection, the handhelds are ideally suited to heavy-duty industrial use.

The new OHV100 handheld and the OHV200 wireless solution can be adapted to the application using JavaScript

Dr. Tim Weis
Product Manager
Industrial Vision Components

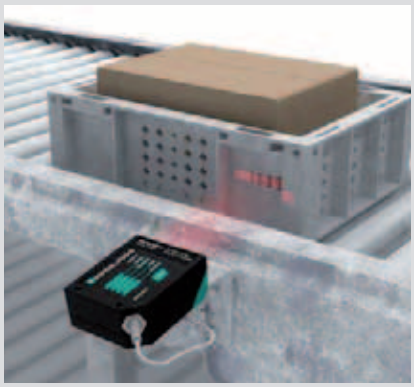
PRODUCT

Multi-talented—Whether It's Hot or Cold

The Flexible VB14N-T Frozen Storage Scanner

The new VB14N-T from Pepperl+Fuchs is a compact barcode scanner specially designed for applications in the frozen storage sector. The scanner operates safely and reliably even at temperatures as low as -35 °C thanks to its integrated heater. The VB14N-T comprises an intelligent control system that ensures optimum operation of the heater based on the temperature of the scanner and the ambient temperature. Its very short warm-up period of under 20 minutes and low power consumption of 10 W or less make the VB14N-T unique in its class. The heater automatically switches off at temperatures above 0 °C. Like its sister product, the VB14N, the scanner can be used at temperatures of up to +45 °C, ensuring complete flexibility of use.

A read rate of up to 1000 scans/s and the option to connect up to 32 scanners mean that the new VB14N-T offers an extremely high level of performance. The direct operating concept makes control easy, and without the use of an external PC. Put your trust in the VB14N-T from Pepperl+Fuchs for your sub-zero applications.



The VB14N-T barcode scanner, specially developed for use in frozen storage

Dr. Tim Weis
Product Manager
Industrial Vision Components

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PRODUCT

When Space Is at a Premium

Small Sensors, High Performance

Pepperl+Fuchs is responding to the trend toward miniaturization in machine construction with its new sensors in an extremely small housing design. Users want very small, flexible designs that provide a high level of performance. In addition to durability, easy commissioning is a key factor.

Precision in the Tightest of Spaces

The ultra-small photoelectric sensors in the R2 Series can be installed in extremely small spaces and offer the special feature of a 45° cable outlet. Thanks to their abrasion-resistant glass front, the sensors can be mounted very close to the object to be detected. Another interesting feature is the transmitter mode; it can be switched via cable and gives the user a choice between a high-range mode for detection ranges of up to 2500 mm and a high-precision mode for precise detection of object edges or small parts. It is even possible to detect objects of up to 0.16 mm using the Teach-In process.

The small R2 photoelectric sensors are extremely compact and flexible

Functional Reliability in All Applications

The new ultrasonic sensor F77 Series also satisfies these demanding requirements. At just 31 mm long and with a very small blind zone, the F77 is ideally suited for installation in tight spaces. The special evaluation electronics in the sensor offer a high degree of functional reliability. Sound interference, such as plant noise, is suppressed reliably. Their high level of noise immunity means that the sensors can be used for a wide range of applications without problems. Even transparent or reflective objects and openings can be detected reliably due to the wide sound cone. As the finishing touch, this sensor series is easy to mount and commission. The switching point can be programmed quickly and easily via Teach-In.

The smallest in its class—the F77 ultrasonic sensor

Both series comply with protection class IP67 and can therefore also be used for tough industrial applications. Alongside the two series highlighted, Pepperl+Fuchs offers a variety of other small and extremely small sensors as space-saving solutions for your applications.

WEB INFO
www.pepperl-fuchs.com/small-sensors

PRODUCT

Safety—In a Compact, Modular Design

Flexibility and Decentralized Functionality with AS-Interface Safety

Pepperl+Fuchs products make a significant contribution when it comes to the hot topics in material handling: increasing efficiency and saving space and energy. The ultra-compact AS-Interface G10 safety module with direct connection can be used as a modular solution and sets new standards in its application.

The ultra-compact safety module fits easily into any cable duct

Reduced Costs Thanks to Direct Connection

An emergency stop button, door locking, and even a light grid with relay contact output can be integrated directly into AS-Interface Safety without complicated parallel cabling. The direct connection reduces the number of connectors, saving time and money. Until now, AS-Interface integrated and standard safety switches have had to be maintained depending on the requirements of the end customer. With the G10 safety module, it is now easy to connect standard products instead of expensive AS-Interface integrated components. No additional flat cable connection distributors are necessary and the safety switch can be mounted away from the flat cable. This considerably reduces the variety of products required while keeping storage costs low.

The modular design enables any contact-equipped safety switch to be connected directly to the AS-Interface G10 safety module

In the event of an outage, an external pilot light can be controlled directly via a second cable output. No additional output or wiring is required.

The Smallest in the World

Many material handling specialists opt for the AS-Interface module as it can be installed in particularly narrow cable ducts. The G10 safety module is so small and lightweight that it does not need to be secured in place—another convincing reason to choose the world's smallest IP67 and PLe/SIL3 safety module.

Dr. Konrad Kern
Product Manager Systems

WEB INFO
www.pepperl-fuchs.com/G10-Safety

PRODUCT

Put to Use in the Great Outdoors

F31K2 Position Monitoring Sensor for Valve Actuators

In industrial process technology, valves are used to dose and control liquids and gases. The valves are either manually or electrically actuated. Instead of conventional mechanical switches, electronic systems such as inductive sensors are increasingly being used to detect the valve position. A growing number of open solutions are now available on the market, alongside the traditional limit switch boxes. The inductive dual sensors from Pepperl+Fuchs consist of a sensor and actuator element and use an innovative design. The dual sensors are noncontact and therefore wear- and maintenance-free.

To ensure that the benefits of inductive technology with contact-free sensors and standard targets can be put to even better use in the future, a 2-wire DC low-power version has been developed. This version behaves almost like a floating contact and is therefore suitable for most I/O cards in common control systems.

The F31K2 offers impressive durability for use in outdoor applications

Unique Sealing Concept

The new F31K2 inductive dual sensor is one of the highlights in the range of direct-mount, open solutions for valve position monitoring. The impressive features of this sensor include its durability and outdoor functionality. The dual mechanical protection and unique sealing concept protect the sensor electronics and display elements from moisture, mechanical vibration, impact, and UV light—meeting all the requirements for use in valves for outdoor applications.

Global Use

The F31K2 has been developed for use worldwide. Different housing materials and connection options are available for different requirements. Its temperature range of -40 °C to +75 °C and the IP66/67/69K degree of protection cover a wide variety of applications in the chemical, petrochemical, oil, and gas industries.

Thomas Wirth
Product Manager Sensors

WEB INFO

www.pepperl-fuchs.com/f31k2

EVENTS

Hannover Messe
Hanover/Germany
8 - 12 April 2013

Motek
Stuttgart/Germany
7 - 10 October 2013

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