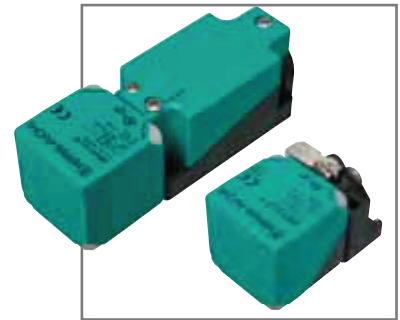


# THE WORLD OF SENSORS OVERVIEW OF PRODUCTS FOR FACTORY AUTOMATION



As a worldwide leading manufacturer of industrial sensor technology and sensor systems, we specialize in the field of Factory Automation with an extensive range of products that are easily adapted to specific applications. Certification in accordance with ISO 9001 ensures that our products meet the highest quality demands.

Our sales offices are located in all industrial markets around the world, making us the ideal partner for global players in factory automation. With competent contacts we offer a first class service around the clock, worldwide. Our local staff have a solid product and application knowledge and can adapt ideally to your requirements.

#### Target markets

- Machine and Plant Engineering
- Automotive Industry
- Mobile Equipment
- Renewable Energy
- Material Handling
- Print and Paper Industry
- Packaging Industry
- Process Equipment
- Doors, Gates and Elevators

Our service team is available to answer your questions about Factory Automation:

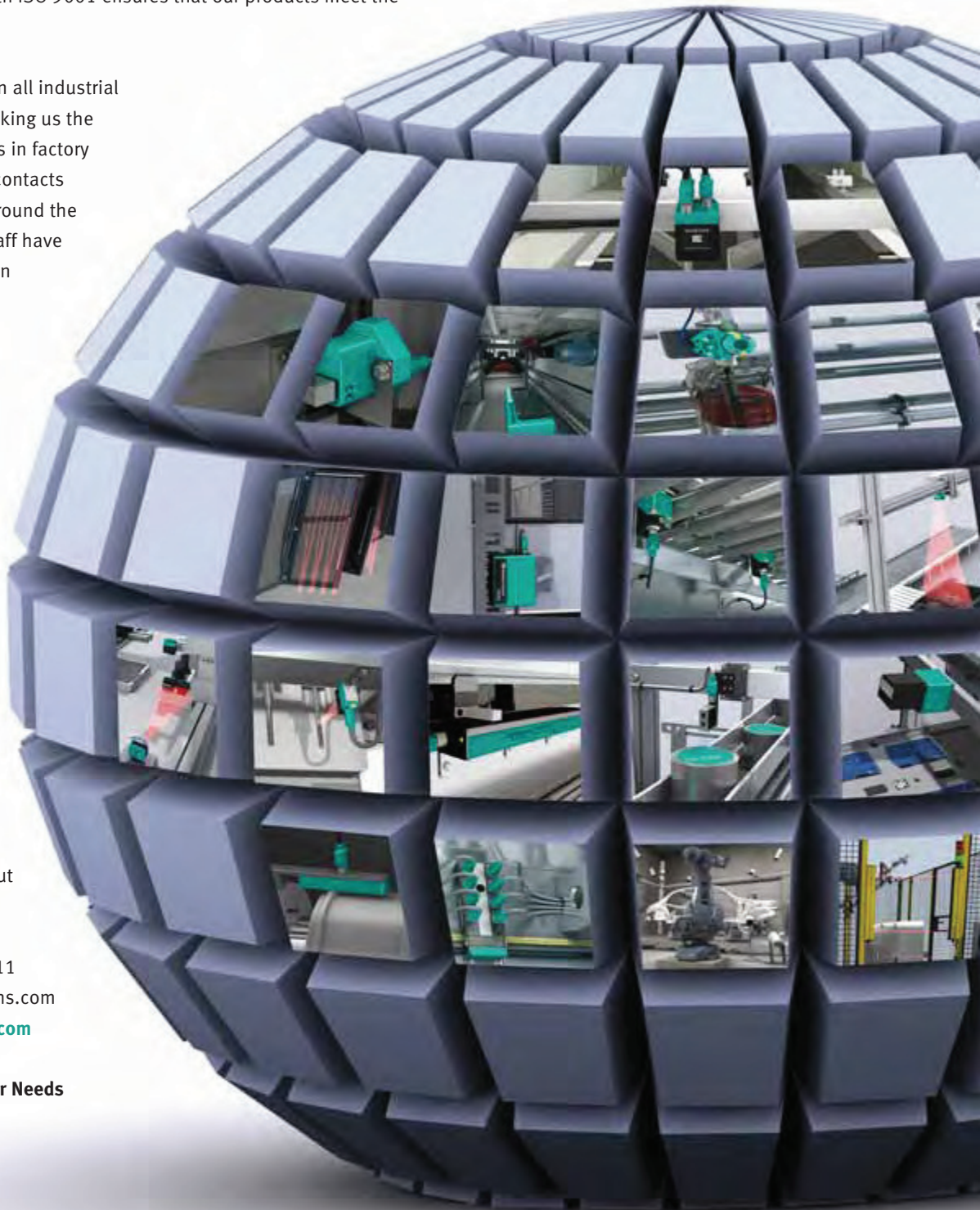
Phone: +49 621/776-4411

Fax: +49 621/776-27-4411

E-Mail: [fa-info@pepperl-fuchs.com](mailto:fa-info@pepperl-fuchs.com)

Website: [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

**Pepperl+Fuchs – Sensing your Needs**







<b>PROXIMITY SENSORS</b>	<b>4</b>
■ Inductive Sensors	■ Capacitive Sensors
■ Position Sensors	
<b>ULTRASONIC SENSORS</b>	<b>6</b>
<b>STANDARD PHOTOELECTRIC SENSORS</b>	<b>8</b>
<b>DISTANCE MEASUREMENT DEVICES · DISTANCE SENSORS</b>	<b>9</b>
<b>SENSORS FOR DOORS, GATES, ELEVATORS</b>	<b>10</b>
<b>PHOTOELECTRIC SAFETY SENSORS</b>	<b>11</b>
<b>VISION SENSORS</b>	<b>12</b>
■ Vision Sensors	■ Laser Light Sensors
<b>VISION SYSTEM SOLUTIONS</b>	<b>13</b>
<b>POSITIONING SYSTEMS</b>	<b>14</b>
■ Inductive Measuring Distance System	■ Inductive Position Coding System PCI
■ Data Matrix Positioning System PCV	■ Position Encoding System WCS
<b>INCLINATION AND ACCELERATION SENSORS</b>	<b>16</b>
<b>ROTARY ENCODERS</b>	<b>17</b>
■ Incremental Rotary Encoders	■ Absolute Rotary Encoders
<b>IDENTIFICATION SYSTEMS</b>	<b>18</b>
■ RFID-Identification	■ Barcode
■ Camera-based Code Readers	■ Data Matrix
<b>AS-INTERFACE</b>	<b>20</b>
<b>LOGIC CONTROL UNITS</b>	<b>22</b>
<b>ACCESSORIES</b>	<b>23</b>



Inductive sensors are the right technical and commercial solution for the reliable, non-contact detection of metallic objects for ranges up to 100 mm.

With Pepperl+Fuchs sensors you opt for quality and service! Pepperl+Fuchs has been producing inductive proximity sensors for industrial applications since 1958 making us a pioneer in this field. Our creativity and decades of experience have enabled us to build a world-renowned reputation with this important product line.

Our inductive sensors are used extensively throughout automation technology. The combinations of designs, electrical outputs, and mounting options are almost inexhaustible.

## INDUCTIVE SENSORS

### AT A GLANCE

- Housing made of brass, stainless steel and plastic
- Reverse polarity protected or tolerant connections
- Short-circuit and overload resistant outputs
- LED indication
- M8, M12 quick disconnect or polarity independent
- Sensors with cable connectors from PVC, PUR or silicon
- Output in 2/3/4 wire DC, AC, NAMUR and AS-Interface versions
- Analog output signal 0 or 4 mA ... 20 mA
- Integrated speed monitor with up to 100 Hz
- Pressurized sensors for up to 500 bar
- Approved for gas and dust Ex zones
- Built-in mechanical stop and screw connectors
- Stainless steel sensing face
- Reduction factor 1
- Protection category up to IP69k (under water and steam jet resistant)
- Weld-immune design with PTFE-coated surface
- Full distance sensing of ferrous and non-ferrous materials
- Safety function
- Extended temperature range: from -40 °C to +250 °C
- e1 type approval





In addition to metallic objects, capacitive sensors detect a large variety of other materials. They are used for level detection or flow monitoring.



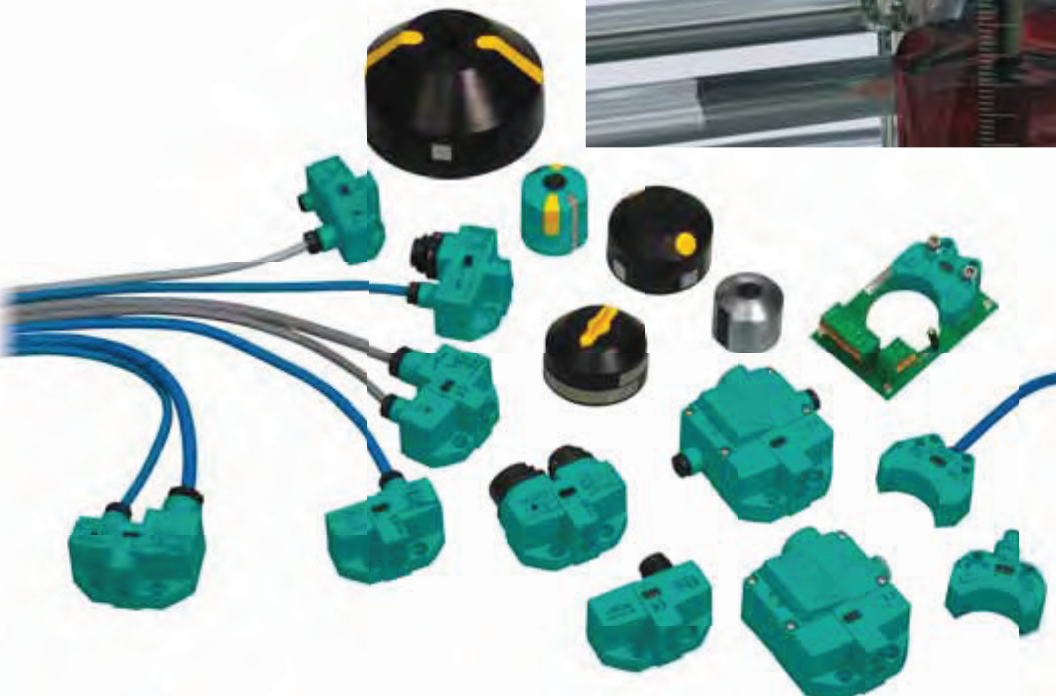
### CAPACITIVE SENSORS

#### AT A GLANCE

- Cylindrical housing made of plastic or stainless steel (M12, M18, M30)
- Super-flat designs with a height of only 5 mm
- Operating distance of up to 40 mm for rectangular design 80 mm x 80 mm x 40 mm
- Approvals for Ex zones

Position sensors are used for monitoring valves and actuators. Position sensors from Pepperl+Fuchs combine a “dual sensor”: two devices in one housing. They minimize space requirements, are easy to install, and models are available for virtually every position monitoring application. Based on decades of experience Pepperl+Fuchs provides a vast range of sensors and actuators approved as NAMUR versions for explosive environments. Solutions for installation within the “classic box” as well as sensors for “direct mounting” on the actuator are both available.

Position sensors are available with quick disconnect, spring terminal, or cable connections. Valve actuation is possible directly via the sensor, which reduces the installation costs.



### POSITION SENSORS

#### AT A GLANCE

- Direct mounting
- Installation in the box
- Circuit board for installation in the box
- Direct AS-Interface connection
- Simple and fast installation
- Integrated valve actuation



## ULTRASONICS XL

### AT A GLANCE

- **Technology XL** – In-house ultrasonic transducer development and production
- **Portfolio XL** – The largest range of ultrasonic sensors for factory automation
- **Experience XL** – Top team of ultrasonic sensor specialists
- **Innovation XL** – Designed to solve any application challenges





Ultrasonic sensors present the ideal solution for non-contact position and distance measurement in all industrial areas where environmental conditions such as dust, smoke or steam may affect the sensors. Objects consisting of a variety of materials can be detected within millimeters regardless of color or surface.

Ultrasonic sensors have proven their reliability and precision especially in the wood and furniture industry, the construction materials industry, farming equipment, construction equipment and in level control applications. However, ultrasonic technology is not used exclusively in rough industrial environments.

Ultrasonic sensors have also shown their strength in the packaging industry, where a wide number of objects need to be detected ranging from small to large, transparent to colorful.

Pepperl+Fuchs' ultrasonic sensors include twelve different mechanical designs for thru-beam, direct detection and retro-reflective modes. Customer-specific solutions – tailored to the specific needs of the application – underscore our technological expertise which is characterized by the following features.

## ULTRASONIC SENSORS

### AT A GLANCE

- For fast and simple installation – devices with Teach-In function
- Software that simplifies programming – service program ULTRA 3000
- Temperature compensation – compensates for deviations in sound velocity due to temperature fluctuations
- Synchronizaton input – to prevent cross-talk interference when installing two sensors in close proximity
- Sensors with digital and analog outputs
- Chemically resistant sensors

# STANDARD PHOTOELECTRIC SENSORS



In automation, photoelectric sensors and light barriers in general provide all the benefits of fast and noncontact detection. Our broad range of standard photoelectric sensors is aimed at all solutions in which noncontact object detection is to be utilized. The great variety of different versions means that the best possible sensor can always be found for the relevant application. The continuous advancement of these sensors is setting new market trends as evidenced, for example, by measuring photoelectric sensors or efficient connection to the control hierarchy via IO-Link.



## STANDARD PHOTOELECTRIC SENSORS

### AT A GLANCE

- A variety of operating principles are available:
  - Thru-beam sensors
  - Retro-reflective sensors
  - Diffuse mode sensors, energetic or with background suppression
  - Fiber optic sensors with the corresponding fiber optic cables
  - Print mark contrast and color sensors
  - Photoelectric slot and slot grid sensors
  - Light grids
- Brass, stainless steel or plastic enclosures
- From miniature designs and cylindrical screw-in enclosures through to robust compact sensors
- Innovative functions for simple commissioning and reliable operation

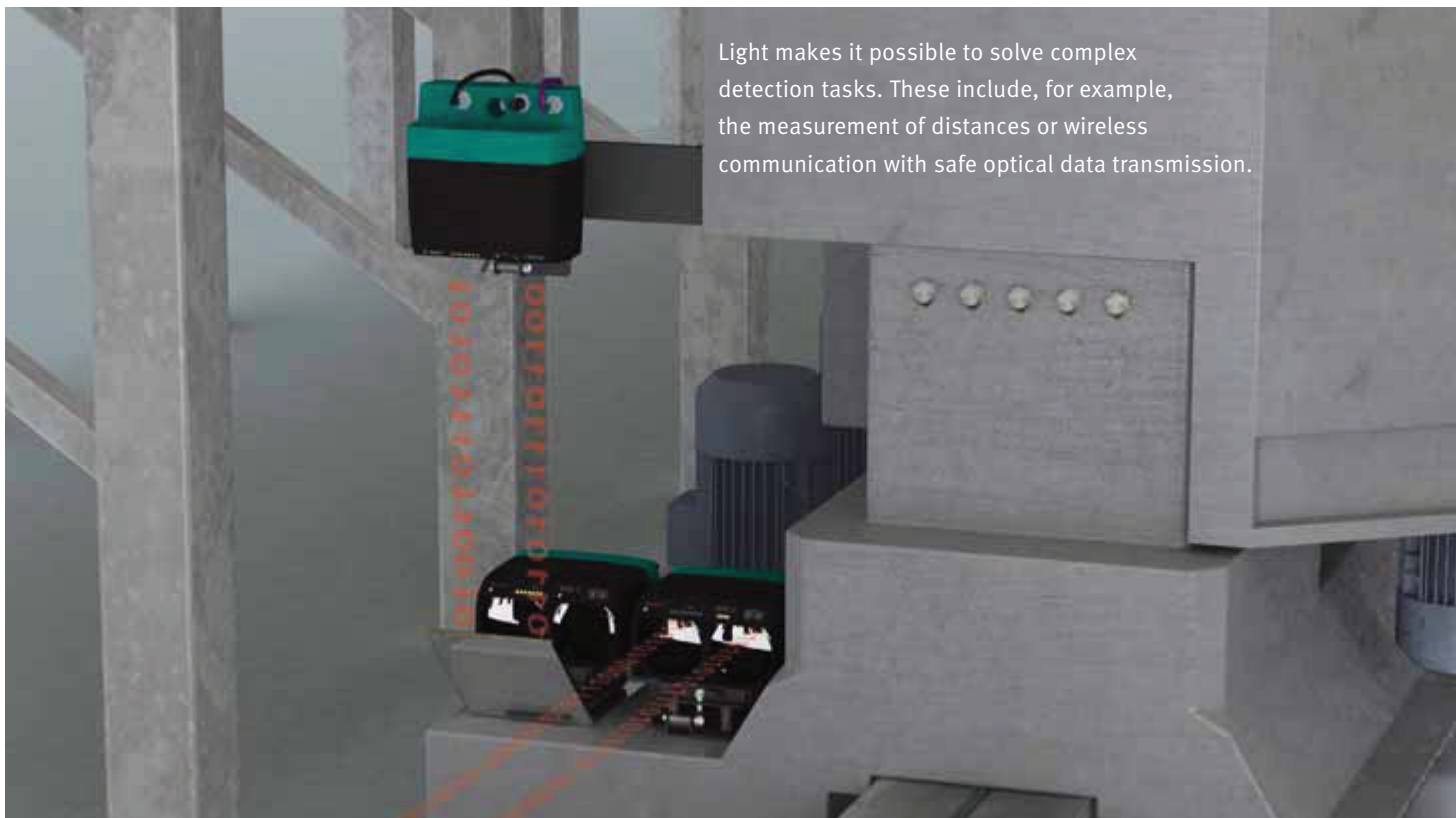
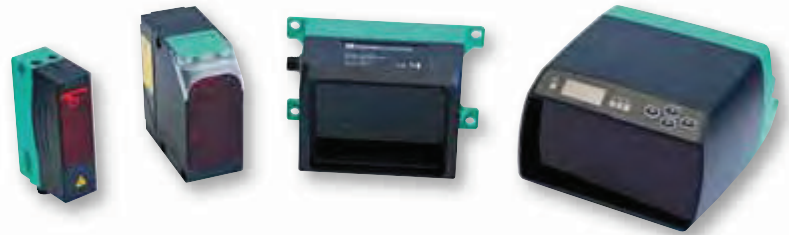
### VISO+: PHOTOELECTRONICS WITH DECISIVE BENEFITS

Our photoelectric sensors master extreme influences such as bright ambient light, high humidity or dirt. Consequently, most of our standard optical sensors bear the VISO+ quality symbol. High priority is placed on functional reliability. Correct operation is ensured even in the case of heavy soiling, dusty environments, the influence of extraneous light, or inaccurate alignment. VISO+ sensors therefore offer an extremely high level of operating reliability and independence from any environmental conditions.



## DISTANCE MEASUREMENT DEVICES AND DISTANCE SENSORS

These sensors are based either on the well-established triangulation principle or the innovative Pulse Ranging Technology (PRT). PRT permits long sensing ranges and accuracies, resulting in extremely reliable measurement results. Through the use of high-intensity light pulses, these sensors provide a high degree of operating reliability, even under difficult ambient conditions. The “mini” low-cost VDM28 sensor in a compact standard photoelectric sensor enclosure opens up completely new applications thanks to this direct measurement via PRT. The “heavy-duty” VDM100 sensor has a maximum range of 300 m and high accuracy. It is ideal for the rapid, precise positioning of stock feeders.



Light makes it possible to solve complex detection tasks. These include, for example, the measurement of distances or wireless communication with safe optical data transmission.

## OPTICAL DATA COUPLERS

Optical data couplers use light for the wireless transmission of information between two points where wired communication is not economically feasible. They transmit data available at the interface protocol-free to the serial interface of the receiver. This solves communication problems with regard to trouble-free operation of stock feeders, industrial trucks, automated transportation systems and overhead conveyors, for example. Devices with a variety of sensing ranges and transfer rates are available. The latest version, the LS680-DA, is the fastest optical data coupler on the market and, for the first time, supports connection to Fast Ethernet networks without a reduction in transmission rate.





The convenient and safe operation of doors, gates and elevators is the theme of this special product range. The application range extends from opening impulse sensors for automatic doors, start-up controls for escalators and approach-area control of industrial gates, through to securing the closing edges of elevator doors.

opening up possibilities



Zertifiziert nach  
**DIN 18650**  
In accordance with

## SENSORS FOR DOORS, GATES, ELEVATORS

### AT A GLANCE

With a wide variety of sensor principles, we offer one of the broadest sensor ranges in the industry.

- **Radar motion sensors**  
with flexible options as opening impulse sensors
- **Active infrared scanners**  
for securing closing edges according to DIN18650, including TÜV approval
- **Area scanners**  
with programmable monitoring fields
- **Elevator light grids**  
for monitoring elevator pinch edges
- **Photoelectric sensors**  
with enclosure shapes adapted to specific requirements, including miniature enclosures for installation in door profiles, or extremely robust housings for outdoor applications
- **Fire protection sensors**  
as certified safety devices for arrester systems on fire barriers
- Rotary encoders, slot-style initiators and position encoding systems for elevator car positioning



# PHOTOELECTRIC SAFETY SENSORS



Noncontact optical machine protection devices are an excellent solution when other safeguarding alternatives may present access restrictions. They enable personnel to have open, protected access to areas or equipment that can potentially cause injury. Pepperl+Fuchs provides a full range of photoelectric safeguarding solutions to control the risk of injury.

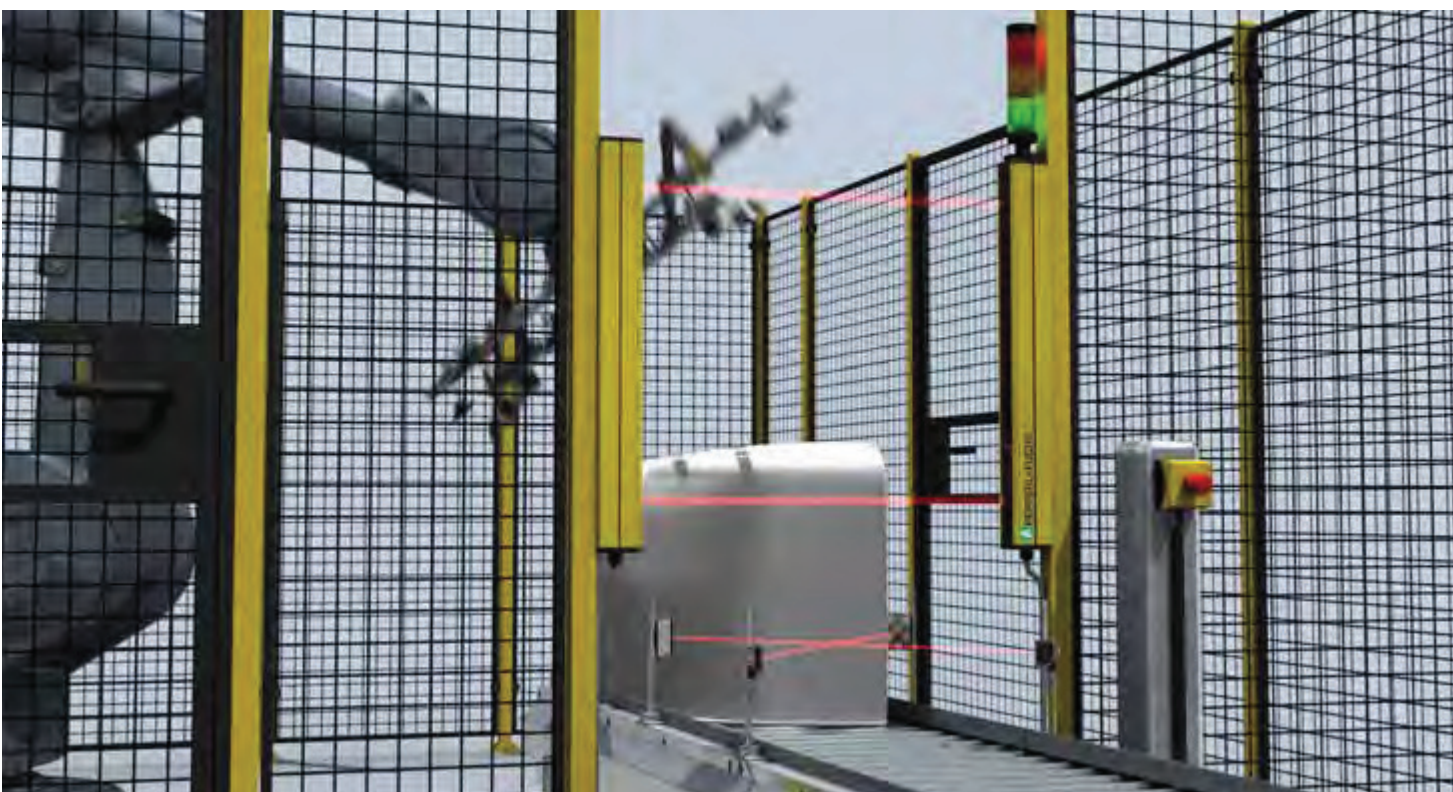


**SafeBox**

## PHOTOELECTRIC SAFETY SENSORS · SAFETY CONTROL INTERFACE UNITS

### AT A GLANCE

- From the single-beam safety photoelectric sensor to the multi-beam safety light grids
- Safety control interface units also available as modular system, easy to adapt to the application at hand
- Finger protection, hand protection and body protection
- Safety category 2 or 4 in accordance with IEC 61496-1 with automatic monitoring
- Diagnostic displays for easy troubleshooting
- With start and restart interlock capability
- OSSD safety outputs
- Various muting functions
- Easy integration into machine controls





## VISION SENSORS

### AT A GLANCE

#### Rack fine positioning in high rack storage areas

- Extremely precise positioning of stock feeders
- Intelligent industrial vision

#### Versatile optical detection

- Intuitive operator interface
- High detection reliability by combining various evaluation methods

#### Sheet inspection

- High-speed image comparison (up to 6 m/s and 12 sheets/s)
- Intuitive Teach-In
- Image and code matching in one sensor

Customized to meet the needs of various applications, vision sensors deliver a powerful and flexible solution.

They are designed for simple installation and operation without the need for programming knowledge.

Vision sensors are much more efficient and flexible than photoelectric sensors, but their design is simpler, and therefore more cost-effective than traditional imaging systems.

Vision sensors are particularly suited for sorting, checking, and evaluation. They are used, for example, for rack fine positioning in high rack storage areas or to detect incorrect sheets in print post-processing.

## LASER LIGHT SENSOR

### AT A GLANCE

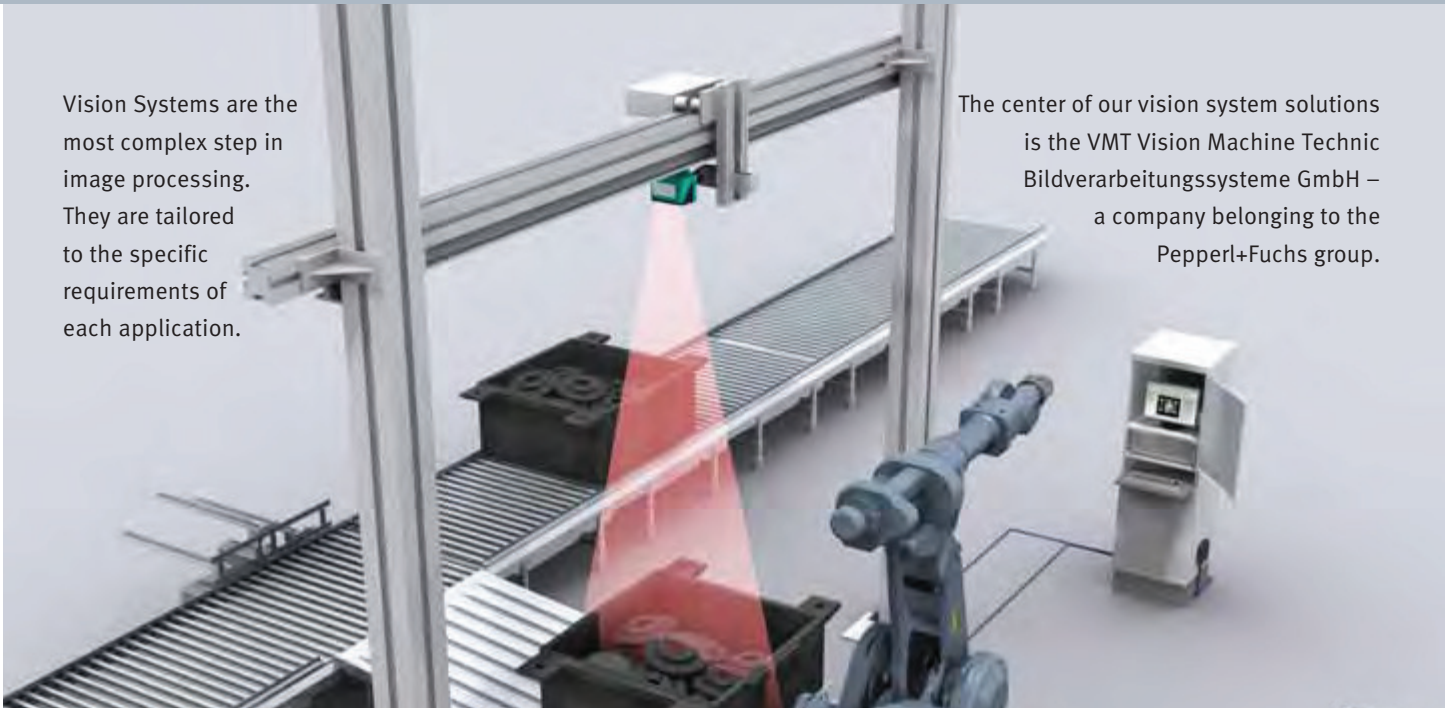
- Laser light sensor for 3D-measuring as a system component
- Robust measuring also with different object- and background color
- Laser class 1
- More insensitive against incidence of extraneous light compared to conventional camera technology





Vision Systems are the most complex step in image processing. They are tailored to the specific requirements of each application.

The center of our vision system solutions is the VMT Vision Machine Technic Bildverarbeitungssysteme GmbH – a company belonging to the Pepperl+Fuchs group.



## VMT VISION SYSTEMS

### AT A GLANCE

#### Markets

- All of the automotive industry, all automotive suppliers
- Suppliers of automation plants, robot manufacturers and system
- Machine engineering and handling equipment suppliers
- Pharmaceutical industry, medical technology, food industry
- Electrical and electronics industries
- White goods industry
- Foundries

#### Supply Program

- Industrial image processing and laser sensor systems for integration into existing and new production plants.
- 2D and 3D visual robot guidance
- Robot position control
- Robot path correction
- Geometric inspection
- Inline measurements
- Check to ensure complete and correct assembly
- Clear text and barcode reading
- Verifiable systems for the pharmaceutical industry (FDA Standard)
- Adhesive application inspection

#### Service Program

- Experienced engineers, technicians and installers commission your plant and provide training for you, your staff and your clients. Detailed studies and field trials are carried out professionally and carefully in order to provide you with a solid decision-making basis for your investment.
- Our mobile 3D coordinate measuring system allows us to eliminate the error-inducing influence of robot and feed unit.

VMT supplies turnkey image processing and laser sensor system solutions that are suitable for almost all branches of industry, from automotive to pharmaceutical. The highly qualified team of experts has 20 years of experience in industrial image processing.



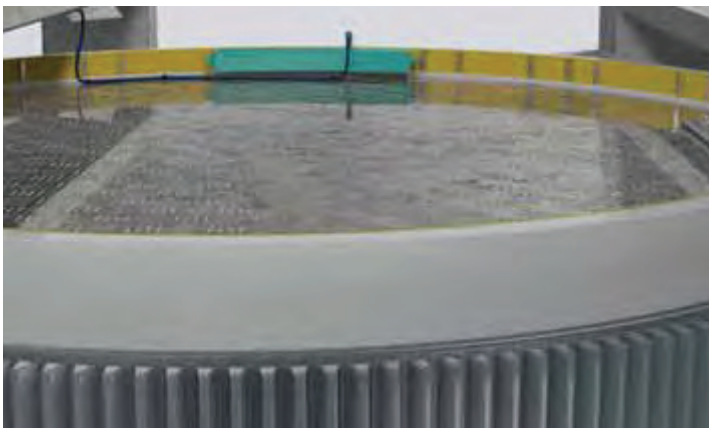
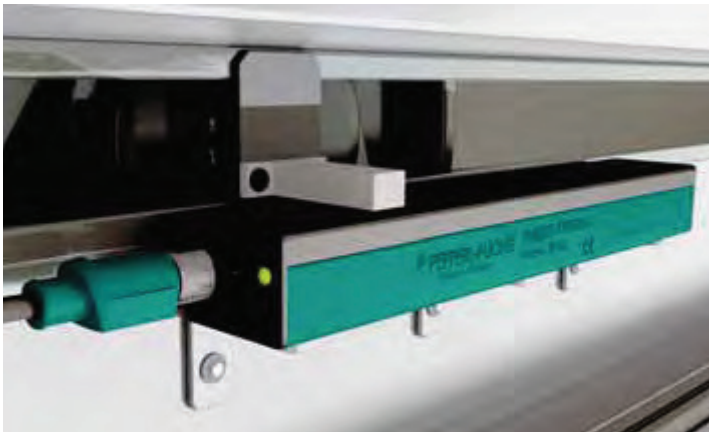
**VMT**  
PEPPERL+FUCHS

VMT-IS operator interface:  
Visualization of  
4 camera images



Precise position detection plays a key role in many industrial processes. Depending on the application, this might include determining the position of linear movement units, such as work specimens or tool carriers, verifying angles in part-turn valve actuators, or monitoring the position of a car on a suspended rail system in warehousing and conveying operations. Pepperl+Fuchs offers non-contact sensors and sensor systems for industrial use for all these applications.

A number of position measurement systems for detecting linear and rotary movements are available. Their inductive operating principle makes these systems highly resistant to dirt. The possible measuring lengths cover a range from a few millimeters up to just short of a meter, or a range of angles from 0 to 360 degrees. In addition to a measured value that is proportional to the distance traveled, programmable switch outputs are also available. These also provide a way of connecting other machine functions according to position as will be familiar, for example, from feed systems in which the limit positions are damped.



## INDUCTIVE DISTANCE MEASURING SYSTEM PMI

### AT A GLANCE

- Programmable measurement range and signaling zone
- High level of tolerance in respect of control or concentricity errors
- Measured value acquisition using simple steel actuator



The Inductive Position Coding System PCI consists of the PCI head and multiple actuators, which encode the position by the particular arrangement to each other. The PCI system is particularly suitable for precise angle determination of slewing bearings in heavy machinery.

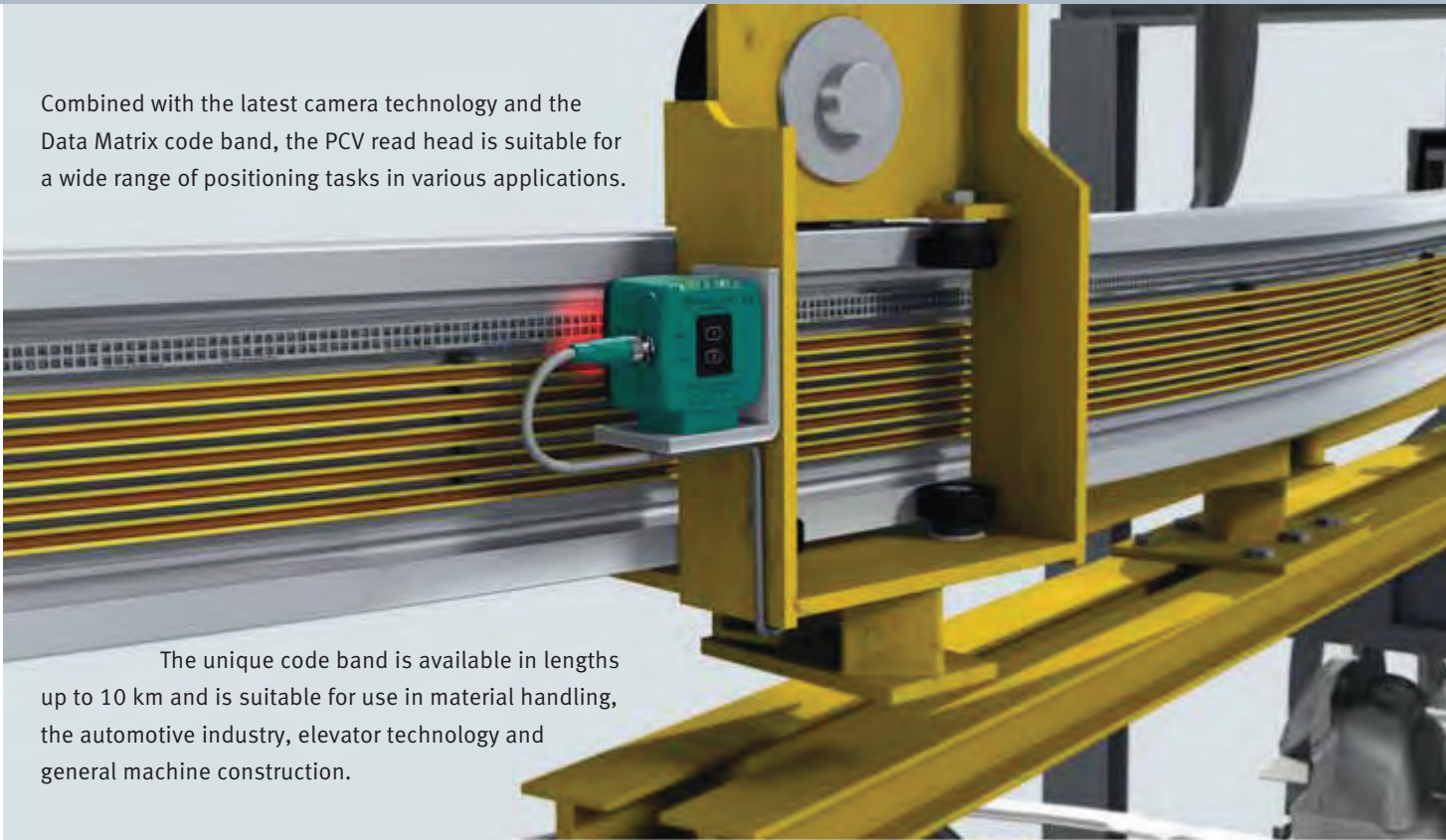
## INDUCTIVE POSITION CODING SYSTEM PCI

### AT A GLANCE

- Wear-free
- Insensitive to dirt, oil and grease
- Provides absolute position even after power failure
- Large reading distance which allows for loose mechanical tolerances of the machine parts



Combined with the latest camera technology and the Data Matrix code band, the PCV read head is suitable for a wide range of positioning tasks in various applications.



The unique code band is available in lengths up to 10 km and is suitable for use in material handling, the automotive industry, elevator technology and general machine construction.

### DATA MATRIX POSITIONING SYSTEM PCV

#### AT A GLANCE

- High degree of position integrity through Data Matrix Codes
- Small reading window enables smallest curve radii as well as inclines and declines
- Extremely robust against dirt and damaging



### POSITION ENCODING SYSTEM WCS

#### AT A GLANCE

- Absolute measuring system
- Noncontact wear free
- No reference positions
- Speed up to 12 m/s



For positioning with long paths of travel we offer a proven and mature product in the position encoding system WCS.

The WCS positioning encoding system excels in systems with turns, junctions and gradients. With measuring lengths up to 327 meters it is suited for position detection in:

- Warehousing and conveying systems
- Galvanization stations
- Studio technology
- Elevators
- Crane positioning

and for the identification of cars in conveying systems with the synchronized positioning of these cars at fraction-of-a-millimeter precision.

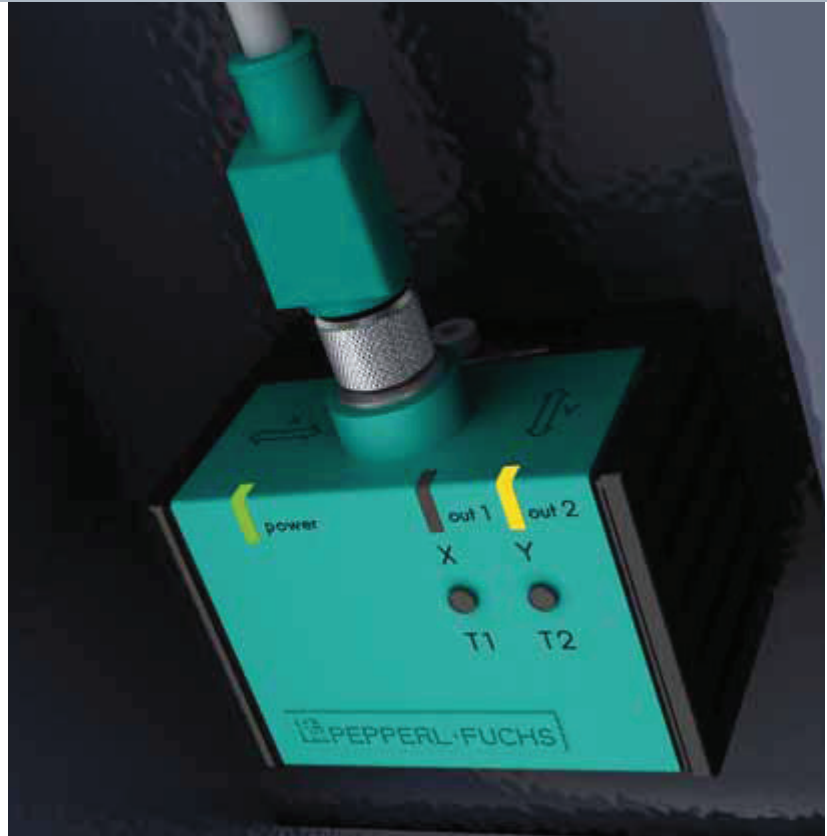
# INCLINATION AND ACCELERATION SENSORS

Whether you want to monitor the inclination angle of a machine component or the acceleration values of system structures or components?

Inclination sensors from Pepperl+Fuchs meet the needs of industry with a simple and easy angle measurement solution, and are ideal for automation and commercial vehicle applications, or for use in renewable energy applications such as wind energy and solar plants.

The new generation of F99 inclination sensors from Pepperl+Fuchs are easily configured to provide incline or tilt angles between 0° ... 360° on a standardized 4 mA ... 20 mA or 0 V ... 5 V analog interface.

Switch outputs are also provided in order to monitor limit angles.



## INCLINATION AND ACCELERATION SENSORS

### AT A GLANCE

- Programmable switching and analog ranges via teach-in buttons
- Sturdy housing suitable for outdoor use
- Extended temperature range from -40 °C ... +85 °C
- High protection class IP68/69K
- e1 type approval for use on public roads
- Wear-free and without target

### Acceleration sensors

- Non-contact measuring of accelerations in the range -2 g ... +2 g
- Wear-free and without external operating element

Complex machine systems use acceleration sensors for precise real-time monitoring of machine vibration. Acceleration sensors detect machine component wear and any critical operating states. This allows for corrective action to avoid potential damage to large-scale systems such as wind turbines.

The F99 series acceleration sensor monitors strong vibrations or accelerations in a wind turbine due to wind loads on the equipment.





Rotary encoders are precise sensors for the detection of angles of rotation and derived parameters, such as speed and acceleration, as well as rotational and – indirectly – translational motion. Due to their universal application, modern rotary encoders can be found in almost all applications in automation, as well as in machinery and plant construction. Let us help you select the rotary encoder that can fit your application demands from our own very wide range of rotary encoders.



## ROTARY ENCODERS

### AT A GLANCE

#### Incremental Rotary Encoders

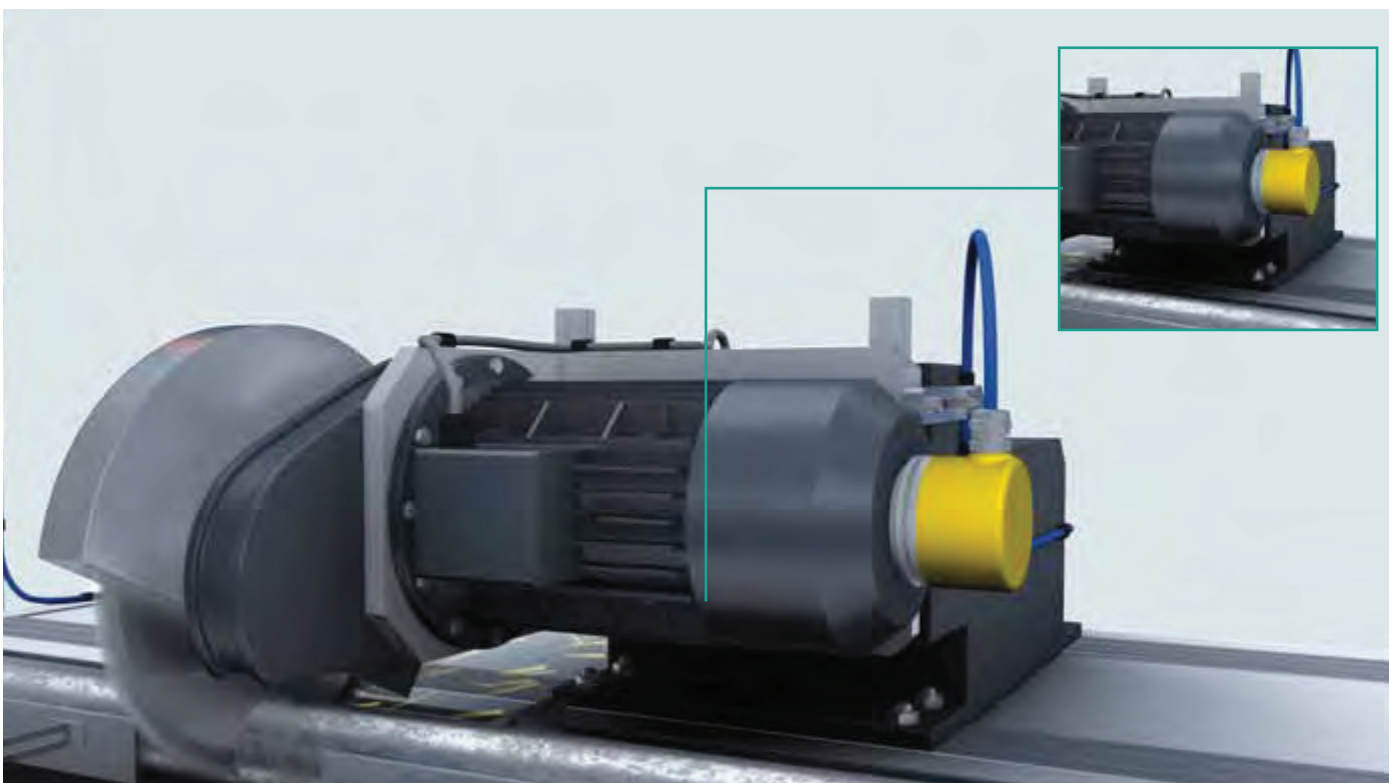
- Solid shaft, hollow shaft, recessed hollow shaft
- Optical and magnetic technology
- Interfaces: RS422, Push-Pull, sine/cosine
- Up to IP67
- Up to 30,000 rpm
- Up to 50,000 ppr

#### Absolute Rotary Encoders

- Solid shaft, recessed hollow shaft
- Single turn/multiturn
- Optical and magnetic technology
- Interfaces: SSI, PROFIBUS, DeviceNet, CANopen, AS-Interface, ProfiNet, Powerlink, EtherNet, TCP/IP, IP
- Total resolution up to 30 bit

#### Certified rotary encoders for special application areas

- Hazardous areas
- Wind power plants, shipbuilding
- Safety-related applications (SIL, PL, etc.)



# IDENTIFICATION SYSTEMS

Identification systems are used for object identification in logistics and provide the first step in cost optimization and quality improvement: automating production processes, reducing throughput times, quality control, and flexible in project planning and production.

## RFID IDENTIFICATION

The brand name *IDENTControl* represents an innovative identification system that uses a standardized operating concept to bring together all RFID frequencies. The identification system consists of an IDENTControl control interface with a fieldbus interface, inductive R/W heads (125 kHz, 250 kHz and 13.56 MHz) or microwave antennas (2.45 GHz) and the accompanying read only and read/write tags.

- Metal housing for field or switching cabinet use (IP67)
- Connection of up to four inductive read/write heads or microwave antennas
- Interfaces: PROFIBUS, ProfiNet, INTERBUS, EtherNet/IP, Modbus/TCP, TCP/IP, DeviceNet and serial
- All connections are quick disconnect

## IDENTControl



Serial



INDUSTRIAL  
ETHERNET



DeviceNet™

## INDUCTIVE SYSTEMS

- RFID handhelds programmable on application-specific basis
- Inductive read/write heads in block-shaped and cylindrical housings
- Robust and battery-free data carriers in the most versatile designs and versions, e.g. in protection category IP69, as a high-temperature carrier (up to 300 °C for 5 min.) or with 8 kByte memory size
- Range up to 40 cm

## UHF SYSTEMS

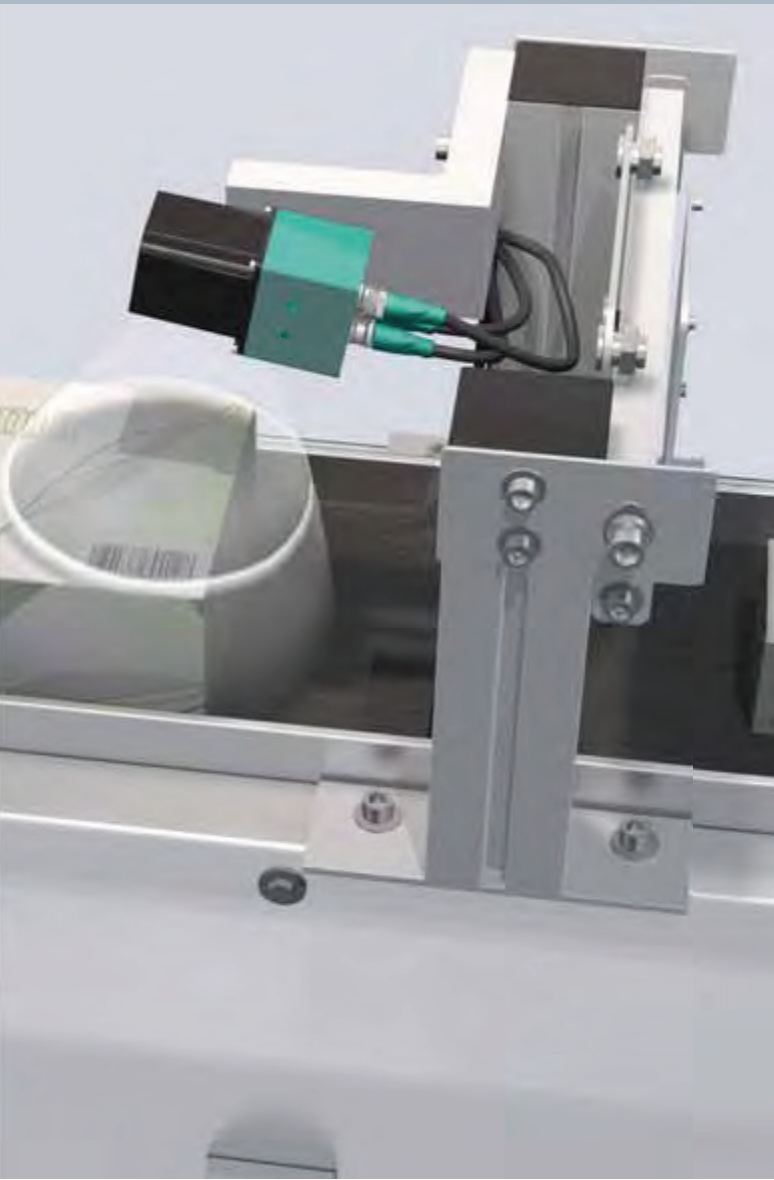
- UHF antenna with a read/write distance of up to 6 m and a M12 quick disconnect
- Robust data carrier

## BARCODE

Barcode systems scan barcodes and forward the information via PROFIBUS to a control system. Scanning is based on the reflection principle of a laser. The compact readers are available for close ranges and for distances up to 60 cm – at 1200 scans per second. Generally, barcodes are a fixed code system with minimum costs for the code carrier.







## CAMERA-BASED CODE READERS

Pepperl+Fuchs has a very wide range of innovative, camera-based code readers. These readers use high-resolution CMOS and CCD image converters to support a number of functions, including:

- Static and handheld devices
- Reading of all today's standard 1D and 2D codes
- High-speed reading (up to 60 readings/s) at movement speeds of up to 20 m/s
- High temperature identification up to 500 °C
- EtherNet, RS232, USB and PS/2 interfaces (and others)



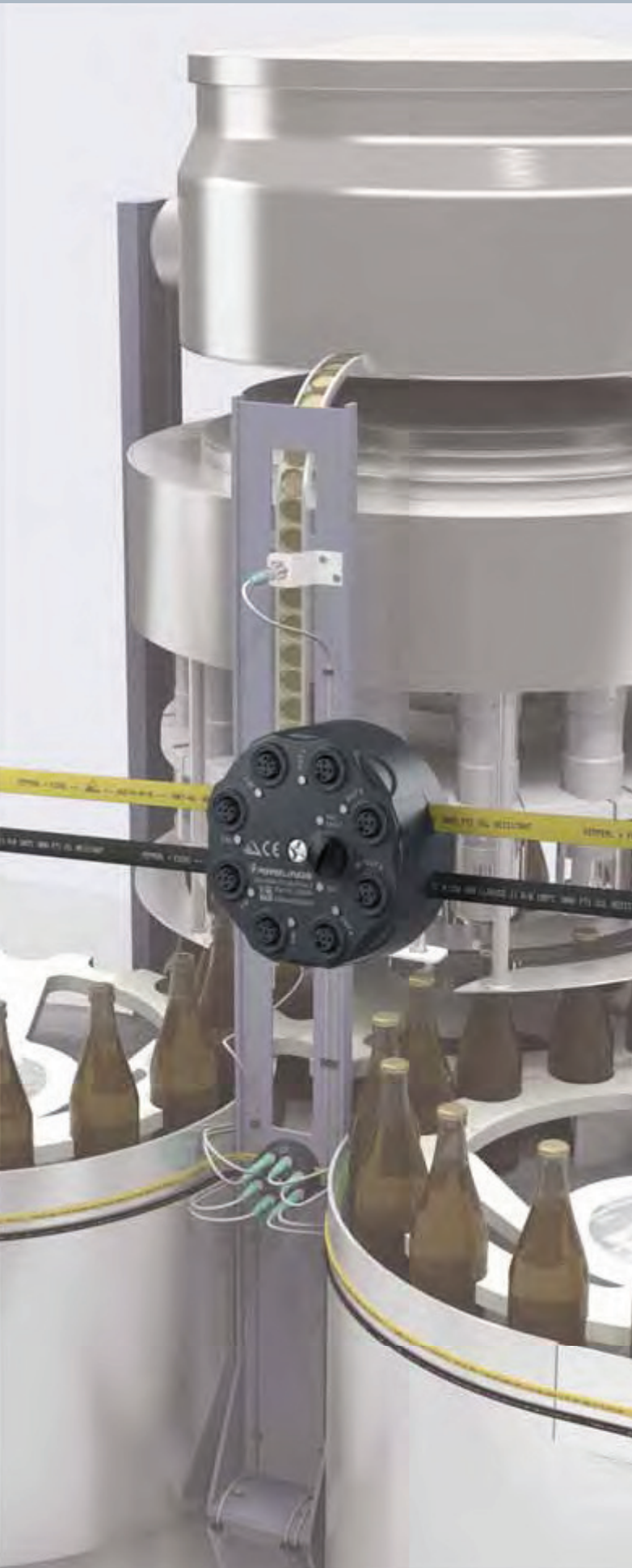
## DATA MATRIX

The two-dimensional Data Matrix Code represents up to 1.5 kByte of encoded information in a very small footprint.

Data Matrix codes can be printed directly on plastic or metal!

The data matrix readers capture the code in an image and pass the decoded information as text. This enables high passing speeds and codes can be read even if the information is partially destroyed.





AS-Interface is the standard solution for simple, cost-effective networking of sensors and actuators in the field. In addition to expert application analysis and technical expertise, Pepperl+Fuchs provides a complete product family.

## AS-INTERFACE

### AT A GLANCE

- Topology free: easy to extend and modify
- Works with all fieldbuses
- Mechanically keyed flat cable guarantees correct polarity, utilizes redundant piercing connection technology
- High interference immunity
- Automatic single node replacements
- Comprehensive diagnostic functions and graphical LC display
- Power and communication on the same 2-conductor cable



### AS-Interface G10 Ultra-Compact Module

- The world's smallest AS-Interface module
- Decentralized installation
- Fits easily into the cable duct one-piece enclosure
- Unique swivel mechanism

### AS-Interface G11 Modul

- Highest degree of protection IP68/IP69K
- Compact and robust circular design
- Display of short circuit directly at the M12 port

## AS-INTERFACE – SAFETY AT WORK

AS-Interface Safety at Work technology has been tested by the TÜV and found to meet the requirements for safety categories up to and including Category 4 of EN 954-1 and has achieved certification for use in systems up to and including SIL3 (as in IEC 61508).

This is accomplished using AS-Interface and safety on only one flat cable. Cabling costs are minimized. The wiring between the Safety Monitor and the Safety Nodes is continually monitored. Any fault in the cabling is immediately detected. Software ASIMON is available to configure the Safety Monitor.





## MASTER AND GATEWAYS

- For PROFIBUS, Interbus, EtherNet/IP, ProfiNet, Modbus/TCP, DeviceNet, CANopen, CC-Link and serial connection
- With integrated PLC functionality
- For field and switching cabinet installation
- As a single or dual master (for two AS-Interface circuits)
- Graphical display with full text diagnostics
- Detects ground fault and duplicate addressing

## COUPLING MODULES

- For binary and analog signals
- For the connection of pneumatic valves
- For hazardous areas
- For indicator lamps
- Displays and controls

## SENSORS WITH AS-INTERFACE

- Inductive and optical sensors
- Level sensors
- Rotary encoders

## SAFETY SWITCHES AND ENABLING SWITCHES

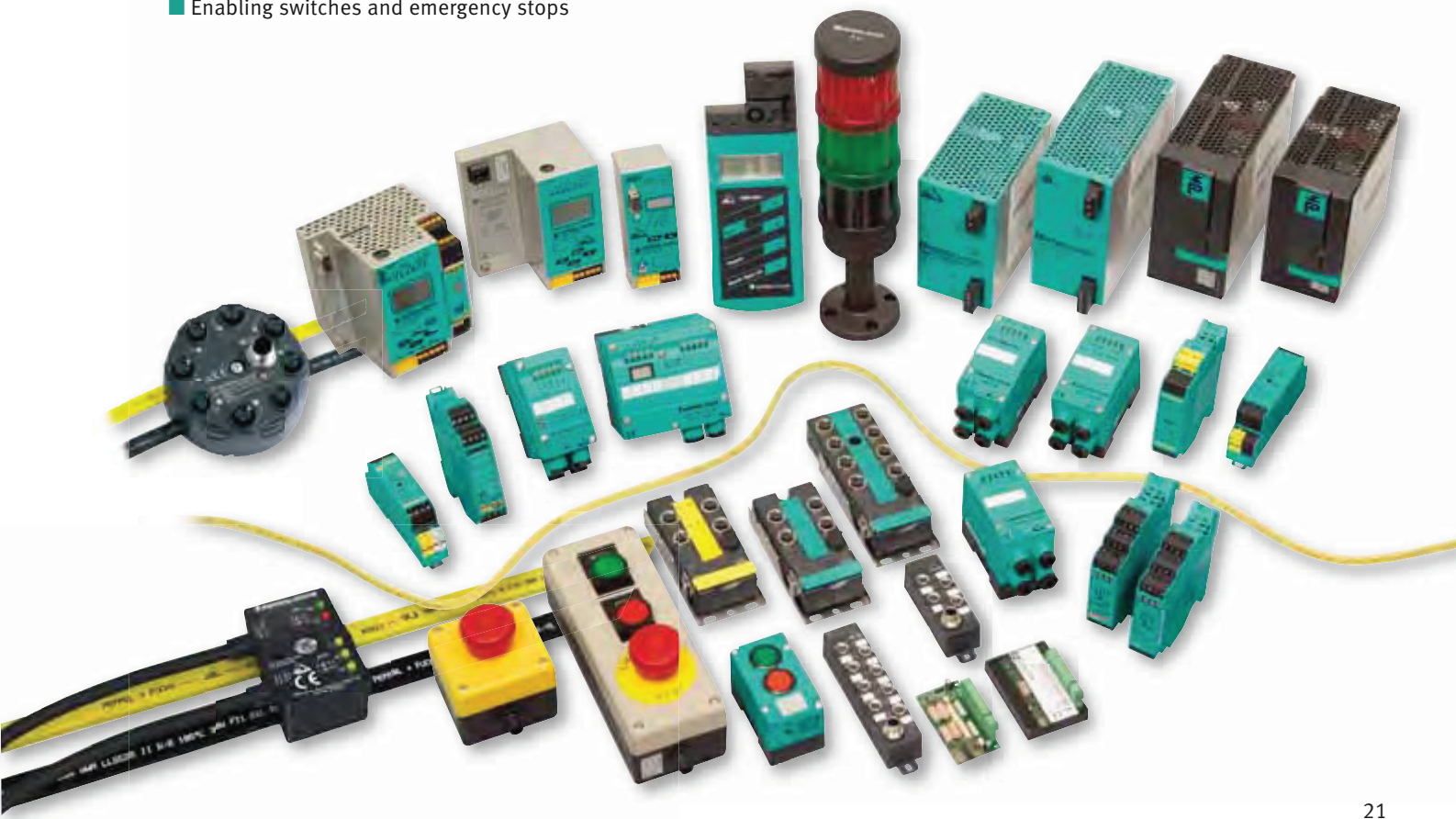
- REED switches
- Door latching devices and door latching retentions
- Enabling switches and emergency stops

## TECHNICAL DATA OF THE SPEC. 3.0:

<b>Access method</b>	Master/Slave
<b>Number of nodes</b>	Maximum of 62 AS-Interface slaves per segment
<b>Address assignment</b>	via Master or with hand-held programmer
<b>Reach</b>	Networks of up to 1 km in length possible with repeater
<b>Power supply</b>	approx. 30.5 V DC, max. 8 A total current
<b>Auxiliary energy</b>	approx. 24 V DC, max. 8 A total current
<b>Data/message</b>	4 bit bidirectional
<b>Cycle time</b>	max. 10 ms for the inputs with 62 A/B slaves
<b>Configuration</b>	possible during current operation
<b>Diagnosis</b>	during current operation

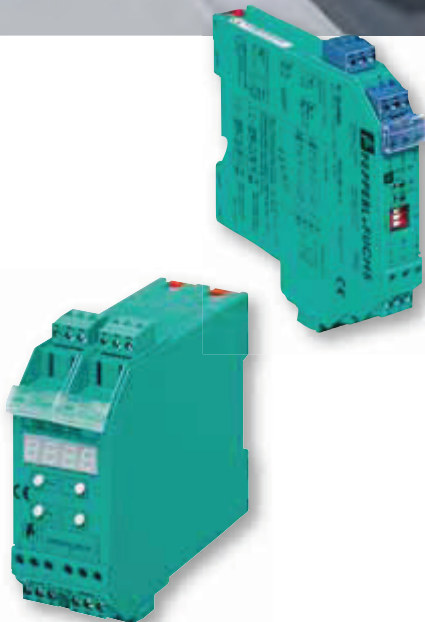
## POWER SUPPLIES

- From 2 A to 8 A with overload protection
- With and without line fault detection





When it comes to signal and pulse analysis, Pepperl+Fuchs offers you a broad choice of products.



## COUNTERS, TACHOMETERS, TIMERS

- Display: LED and LCD
- Up to 2 presets with relay or transistor output
- Scalable display values
- Up to 100 kHz frequencies
- Auxiliary power for sensors and rotary encoders
- Designs: 24 x 48, 48 x 48 and 96 x 48 (in mm)



## DISPLAY DEVICES

- Bright LED display (easily readable at 10 m)
- Scalable over up to 24 mounting points
- 14-bit resolution
- Up to 2 preset values
- Storage of min/max value

## SPEED MONITOR

- For example, for checking the motor speed
- As a standstill monitor with an adjustable cutoff frequency via DIP switch

## CURRENT FREQUENCY CONVERTER

- As a measured value converter of a frequency on current/voltage

## SIGNAL CONVERTER

- For NAMUR sensors on semiconductor output (npn, pnp)
- For wire sensors with semiconductor output on relay output



Accessories to mount and connect sensors provide a potential for savings during installation and adjustment. In addition, diagnostic and commissioning tools save a great deal of time and effort – not only during first commissioning, but also during service! Pepperl+Fuchs offers you a comprehensive selection of electrical and mechanical accessories for your sensor system solution:



## ACCESSORIES

### AT A GLANCE

- A variety of quick disconnect connectors:
  - M12 (3-pin, 4-pin) or M8
  - Straight or angled jacks or connectors
  - Various cable lengths, 1 m, 2 m, 3 m, 5 m or 10 m
  - PVC, PUR, halogen-free, shielded
- Valve connectors in styles A, B and C
- Mounting aids for rectangular sensors and safety light grids
- Mounting flanges for cylindrical sensors
- Splitters with M8 and M12 slots
- Protective hose connections
- Matching accessories for each individual product, such as reflectors for retro-reflective sensors or the appropriate connection technology for AS-Interfaces
- Sensor tester

### ARE YOU LOOKING FOR SOMETHING SPECIFIC?

**Our service team is ready to answer your questions about Factory Automation:**

**Phone:** +49 621/776-4411  
**Fax:** +49 621/776-27-4411  
**Email:** [fa-info@pepperl-fuchs.com](mailto:fa-info@pepperl-fuchs.com)  
**Internet:** [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

# FACTORY AUTOMATION – SENSING YOUR NEEDS



Pepperl+Fuchs sets the standard in quality and innovative technology for the world of automation. Our expertise, dedication, and heritage of innovation have driven us to develop the largest and most versatile line of industrial sensor technologies and interface components in the world. With our global presence, reliable service, and flexible production facilities, Pepperl+Fuchs delivers complete solutions for your automation requirements – wherever you need us.

## Contact

Pepperl+Fuchs GmbH  
Lilienthalstraße 200  
68307 Mannheim · Germany  
**Tel. +49 621 776-4411 · Fax +49 621 776-27-4411**  
**E-mail: [fa-info@pepperl-fuchs.com](mailto:fa-info@pepperl-fuchs.com)**

## Worldwide Headquarters

Pepperl+Fuchs GmbH · Mannheim · Germany  
E-mail: [fa-info@pepperl-fuchs.com](mailto:fa-info@pepperl-fuchs.com)

## USA Headquarters

Pepperl+Fuchs Inc. · Twinsburg, OH · USA  
E-mail: [fa-info@us.pepperl-fuchs.com](mailto:fa-info@us.pepperl-fuchs.com)

## Asia Pacific Headquarters

Pepperl+Fuchs Pte Ltd · Singapore  
Company Registration No. 199003130E  
E-mail: [fa-info@sg.pepperl-fuchs.com](mailto:fa-info@sg.pepperl-fuchs.com)

[www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

 **PEPPERL+FUCHS**  
SENSING YOUR NEEDS