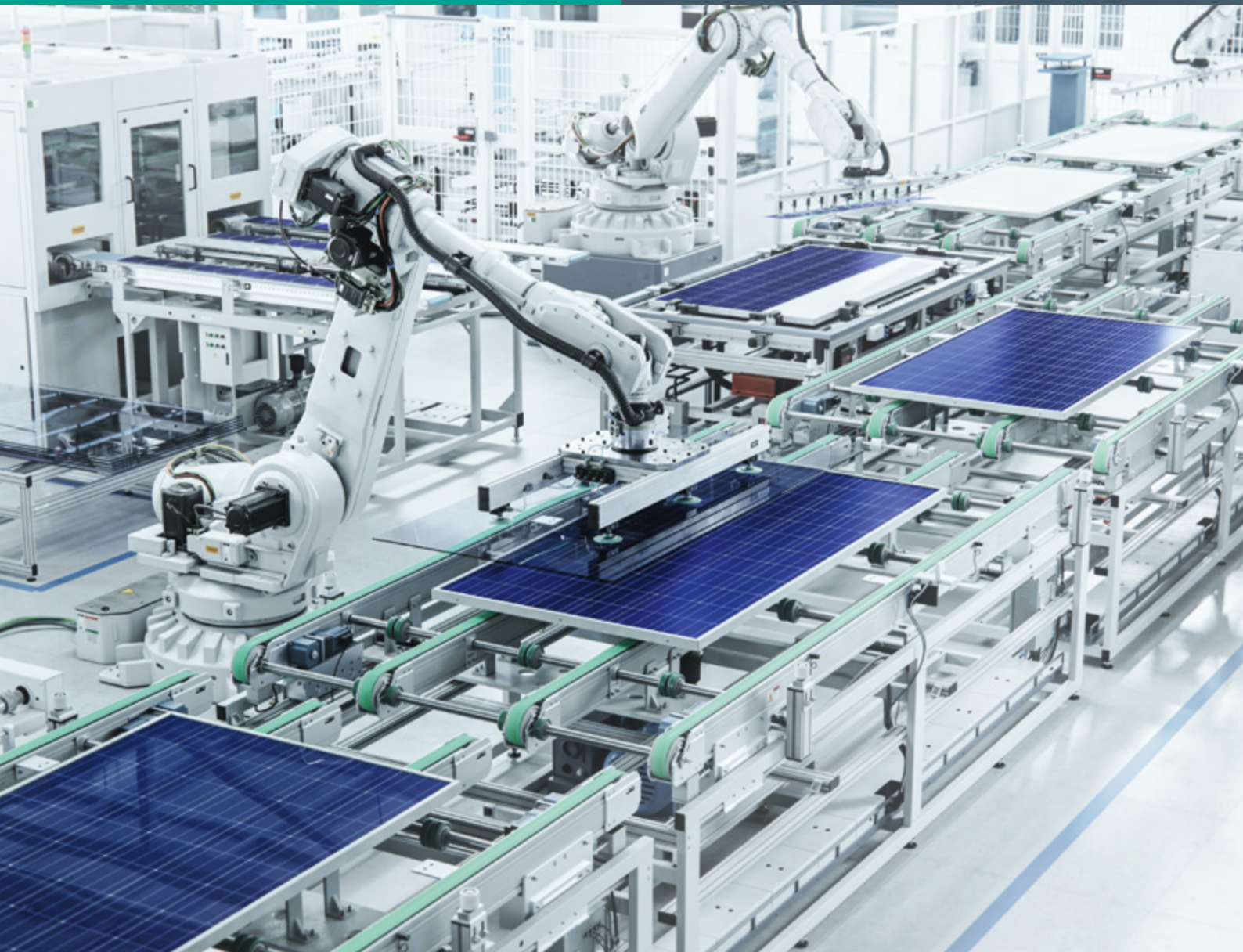


# Your Perfect Automation.

The right solution for every application. Regardless of the technology. Standard or customized.

Industrial Sensors, Systems,  
and Communication



Your automation, our passion.

 **PEPPERL+FUCHS**





Pepperl+Fuchs

# Innovations for the Future of Automation

“Your automation, our passion”—Pepperl+Fuchs’ company claim is also our promise to our customers: that we are committed and passionate about developing solutions and products that optimally support their automation challenges.

A spirit of research, entrepreneurial vision, and a belief in their own abilities—in 1945, founding fathers Walter Pepperl and Ludwig Fuchs laid the foundations for a success story in a small radio workshop in Mannheim that continues to this day. A look at the more than 75-year history of Pepperl+Fuchs reveals many milestones, including the invention of the inductive proximity sensor in 1954, which not only demonstrates the company’s consistently high level of innovation. It also reflects a fundamental attitude that has been the most important pillar of this success story from the very beginning: working in partnership with our customers, working together as equals.

The individual needs and challenges of each customer, which we identify together in an intensive dialog, are the focus of our actions, both today and in the future. This applies in particular to the digital transformation of processes and applications in the automation industry. We continue to drive this progress forward: with innovations and investments in a well-rounded range of services that pave the way for IIoT-enabled applications. Reinterpreting proven technologies is just as important to us as developing state-of-the-art technological concepts such as Ethernet-APL.

Always thinking one step ahead, developing and realizing visions for automation, and shaping its development in the future—this is what drives us.

Welcome to our world—let us inspire you!

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



A large-scale industrial roller conveyor system in a factory setting. The system consists of multiple parallel tracks of rollers supported by metal frames. A motor unit is visible on one of the tracks. The background shows more of the facility with various equipment and structural elements.

# Efficient Intralogistics

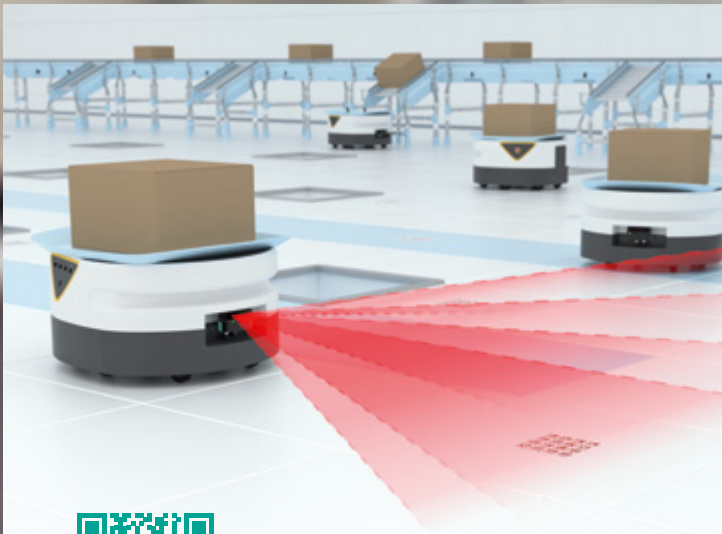
Increasingly Complex  
Production Processes Require  
Smooth Intralogistics



## Conveyor Technology at Its Best

Conveyor systems are the heart of intralogistics—they ensure a smooth flow of materials and offer enormous potential for increasing efficiency. In addition to a wide range of sensors based on various technologies, Pepperl+Fuchs also offers unique motor control modules. The G20 series optimizes roller conveyor systems through precise control, easy integration, and reliable communication. Due to their compact design and tool-free mounting, conveyor lines can be quickly and accurately assembled.





### **Reliable Control of Material Handling Equipment**

Material handling equipment is always in motion and drives the efficiency of intralogistics. Intelligent sensors from Pepperl+Fuchs are used especially in automated guided vehicles (AGVs). The broad portfolio of sensors and systems enables precise navigation, reliable environmental detection, and efficient load handling. Innovative technologies ensure smooth processes and perfected value chains.



More information:  
[pepperl-fuchs.com/if-intralogistics](https://pepperl-fuchs.com/if-intralogistics)



# Industrial Communication

Data Flow Across System  
Boundaries and Interfaces  
Creates New Areas of Application



More information:  
[pepperl-fuchs.com/  
if-communication](https://pepperl-fuchs.com/if-communication)

## Complete Infrastructure from a Single Source

Whether it is communication from the sensor to every control panel in classic applications or to IT systems, including in cloud-based applications: Pepperl+Fuchs provides you with the complete infrastructure from a single source. The ultimate goal is to drive the fusion of IT and OT. A comprehensive portfolio is available to you for this purpose, which integrates seamlessly into your system and enables a consistent data flow at all times.





**Real-time fieldbus  
communication**

EtherNet/IP



EtherCAT

**Sensor/actuator  
communication**



IO-Link

CANopen

**IT communication**

MQTT

OPC UA

{REST:API}

**Wireless  
communication**



Bluetooth

LoRaWAN

Additional interfaces and technologies can be found at [pepperl-fuchs.com](https://www.pepperl-fuchs.com)



# Renewable Energies

Optimal Energy Yield Is Essential  
for Effective Climate Protection



More information:  
[pepperl-fuchs.com/if-renewable](https://pepperl-fuchs.com/if-renewable)

## Precision for Maximizing Wind Power

Pepperl+Fuchs offers a comprehensive range of technologies that increase the efficiency of wind turbines. One example is the F99 inertial measurement unit, which precisely measures the rotational speed of the rotor, the angle of the rotor blades, and the forces acting on them. This real-time data enables continuous optimization of the rotor blade alignment, therefore increasing energy yield. As a result, the performance of wind turbines is maximized, making an important contribution to the use of renewable energies.

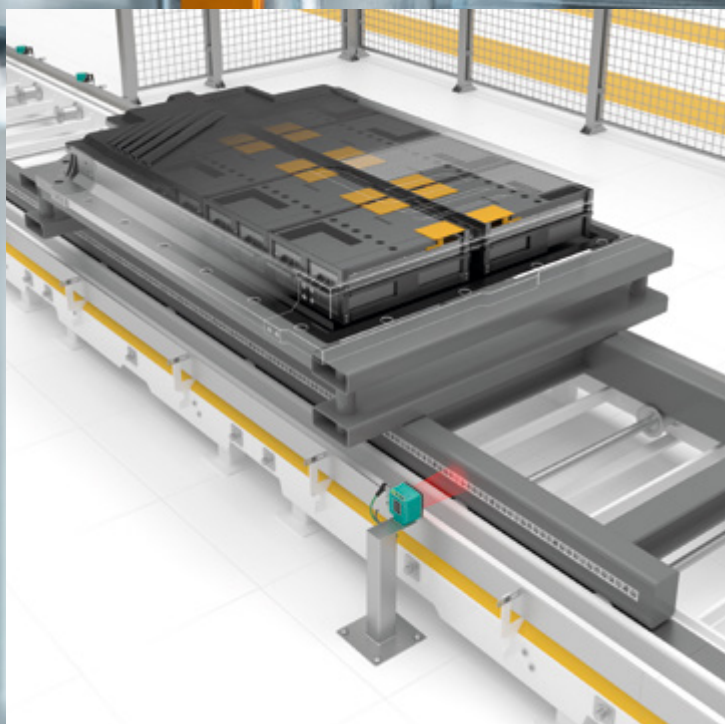






# Battery Production

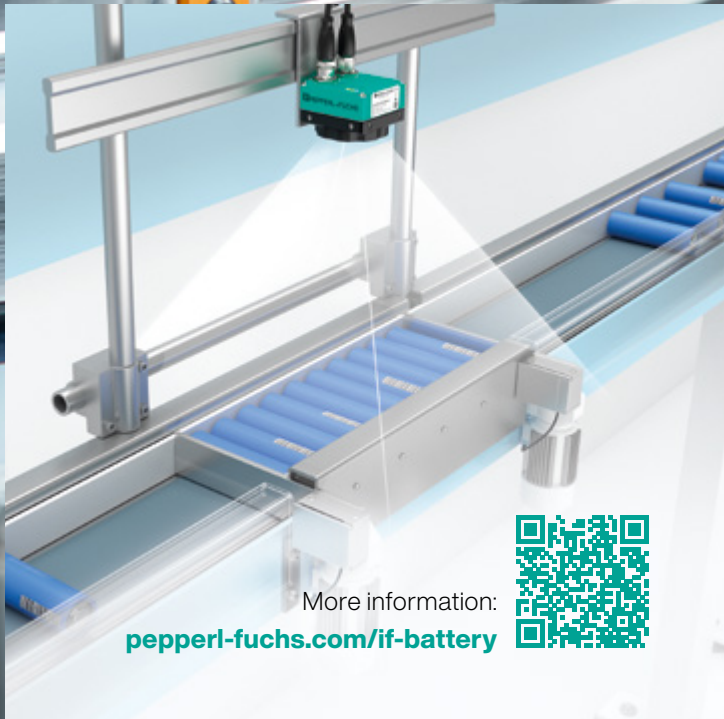
With New Battery Technologies,  
Electromobility Is Gaining  
Momentum



## Development Partner for New Mobility

For decades, Pepperl+Fuchs has been working with the automotive industry on optimizing automation and production processes. From body construction to painting and final assembly, industrial sensor technology and many years of application expertise are required. As an innovation driver who knows the processes in the industry inside out, we are the right partner for the transformation of mobility.





### Optimizing All Process Steps

Pepperl+Fuchs offers a complete portfolio for battery production, from sensors to components for industrial communication. All process steps can be designed more efficiently, from battery cell production to the assembly of the battery module in the battery pack. Due to individual advice and extensive expertise, you will find the right product to ensure your manufacturing processes run smoothly.

More information:  
[pepperl-fuchs.com/if-battery](https://pepperl-fuchs.com/if-battery)





# Wireless Sensors

LoRaWAN® increases efficiency and data access in industry, cities, and agriculture

## Level Measurement in Recycling Containers

Wireless sensors offer a flexible and cost-effective solution for data acquisition, without the need for complex cabling. This technology integrates seamlessly into existing systems and optimizes operations. One example is the wireless ultrasonic sensor WILSEN.sonic. It precisely measures the fill level in recycling containers. This makes disposal more efficient and improves logistics processes without costly system integration or wiring.



More Information:  
[pepperl-fuchs.com/if-wireless](https://pepperl-fuchs.com/if-wireless)





### **Versatile Sensor Technology for Intralogistics**

The WILSEN.node from Pepperl+Fuchs allows different sensor types such as inductive and capacitive sensors as well as any volt-free contacts to be connected to a central unit. This flexibility enables precise monitoring of material stocks in Kanban racks and other material supply areas. LoRaWAN technology ensures easy integration into existing systems. Retrofit-friendly installation makes it possible to efficiently automate material logistics processes without costly changes to the existing infrastructure.



# Predictive Maintenance

Early Fault Detection Reduces Failures and Extends the Lifetime of the Plant



## Smart Maintenance with Vibration Sensors

The continuous monitoring of machines enables smart maintenance planning. Vibration sensors of the VIM series detect irregularities at an early stage, thereby preventing unplanned downtime and costly repairs. With this predictive maintenance strategy, companies can optimize their maintenance intervals, extend the lifetime of machines, and make production processes more efficient.

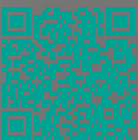
More information:  
[pepperl-fuchs.com/if-vibration](https://pepperl-fuchs.com/if-vibration)





### **Wear Monitoring for Shock Absorbers**

Inductive distance sensors with IO-Link monitor shock absorbers in pick-and-place applications and offer a unique solution for condition monitoring. They not only measure distances, but also the speed and acceleration of the damper to detect signs of wear at an early stage. By analyzing the braking effect, the exact condition of the shock absorbers can be determined. This enables targeted maintenance, prevents unexpected breakdowns, and optimizes machine operating times.



More information:  
[pepperl-fuchs.com/  
ii-inductive-distance](https://pepperl-fuchs.com/ii-inductive-distance)



# Mobile Equipment

Mobile Machines Require Rugged Automation Components

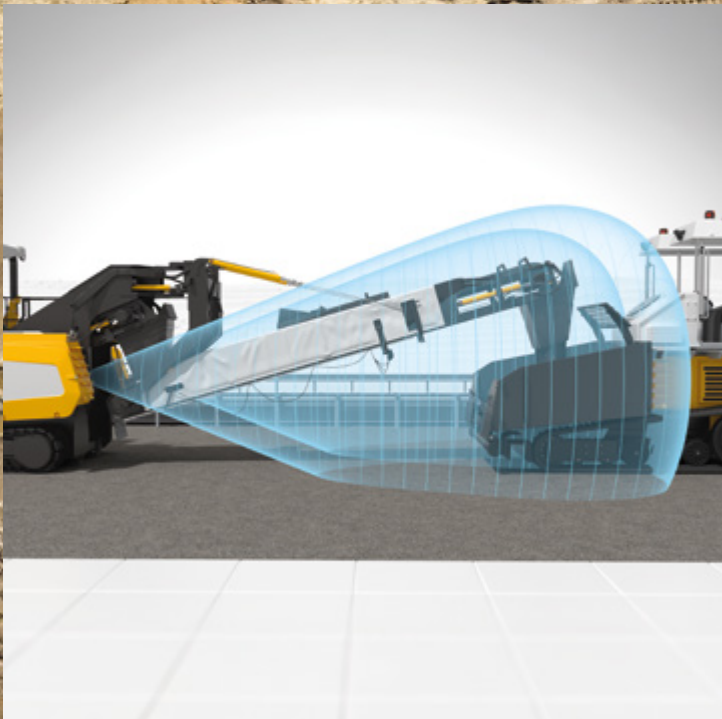


More information:  
[pepperl-fuchs.com/if-mobile](https://pepperl-fuchs.com/if-mobile)

## Simple Integration and Retrofitting

Pepperl+Fuchs offers sensors with integrated CAN interfaces for CAN-based applications. This means that they can easily be integrated into the existing CAN infrastructures of mobile machines without complex new individual wiring. Due to typical connectors such as AMP Superseal and DEUTSCH, you can easily integrate the sensors into the onboard network. A cost-efficient retrofit is also an option.





### **Radar Sensors in Road Construction**

Radar sensors are an excellent example of devices that must meet the harsh demands of the mobile equipment industry. In road construction, they enable precise distance measurements between vehicles such as road pavers and feeders. They continuously monitor the distance between the vehicles, even in poor visibility or bad weather. This helps to avoid collisions and errors in process control. Other advanced technologies in the Pepperl+Fuchs portfolio also support demanding applications in mobile machines.



# Functional Safety

Highest Levels of Safety  
for the Protection of People  
and Machines

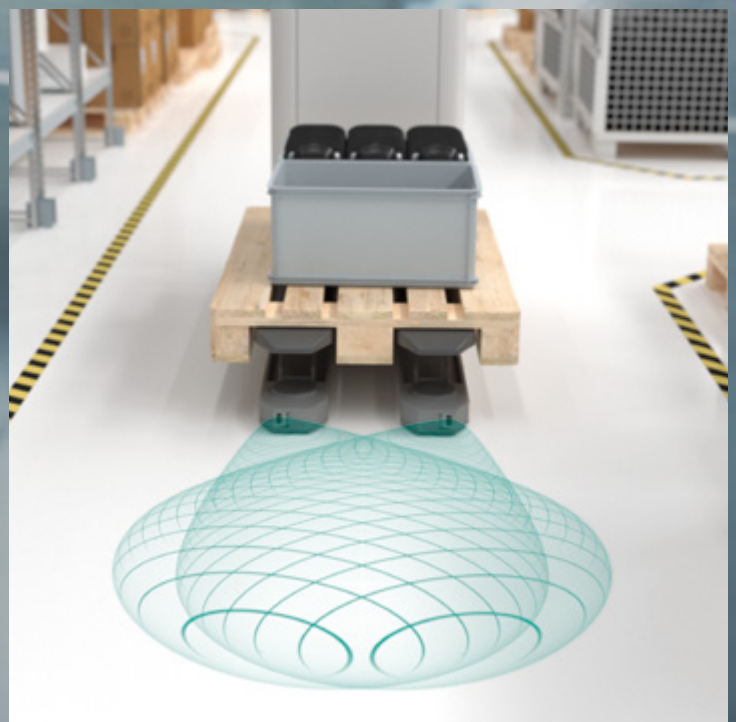


More information:  
[pepperl-fuchs.com/if-safety](https://pepperl-fuchs.com/if-safety)

## Expertise in Functional Safety

Pepperl+Fuchs has decades of experience in developing safety solutions. Our broad portfolio enables implementation of individual safety concepts for a wide range of applications. Unique safety sensors round off the range. One highlight is the USi-safety ultrasonic sensor system: Due to special ultrasonic technology, people and machines can be reliably protected even in challenging, dusty environments.







# Custom Sensors and Systems

Increasingly Complex Production  
Systems Require Tailor-Made  
Sensor Solutions

## Our Solutions, As Individual As You

Automating processes often requires custom sensing solutions to ensure seamless integration. And when designing these solutions, the requirements of our customers are just as diverse as the customers themselves. Based on decades of experience and sound technical know-how, we collaborate with you to develop the perfect sensing solution.



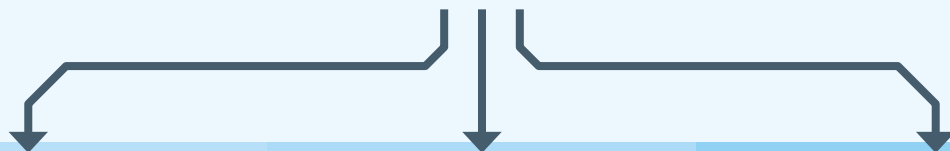
More information:

[pepperl-fuchs.com/if-customized](https://pepperl-fuchs.com/if-customized)





## Consulting



### Modification

Features are adapted

### Engineering

New product is developed based on existing technologies

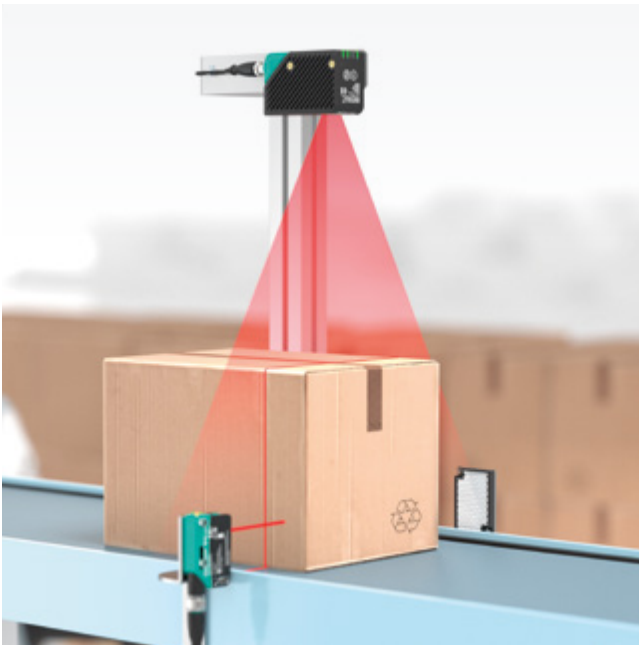
### Integration

Product is integrated into the overall system



# The Best Solution for Every Application

You have the task; we have the measurement technology. Whether detecting transparent bottles, measuring packages, determining the position of conveyor systems, identification in logistics, or networking all plant areas: sensors and systems from Pepperl+Fuchs ensure seamless processes. These are just a few examples of applications—get in touch with us and together we will find the right technology for your requirements.



## Detecting and Measuring

Reliable detection of a wide range of objects and precise measurement of distance, speed, volume, or contour are just a few examples. Pepperl+Fuchs offers an extensive portfolio with a large variety of technologies.

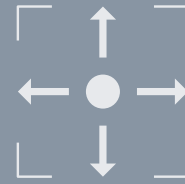
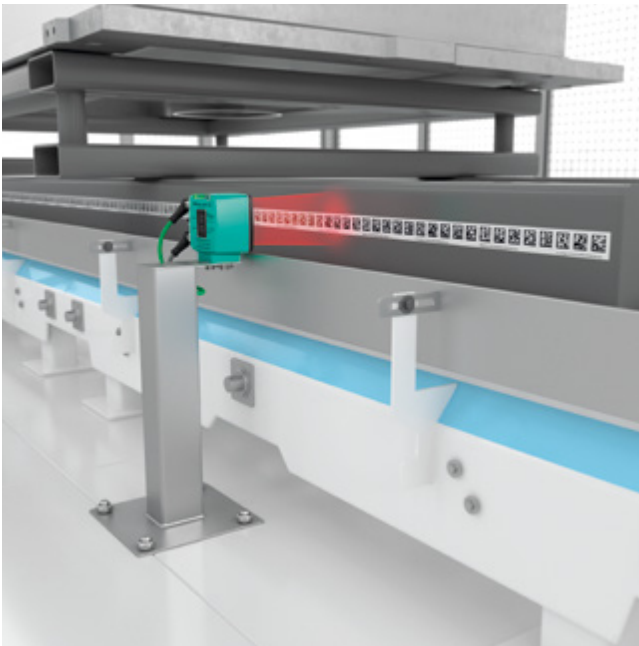


## Securing, Monitoring, and Controlling

Protecting people is our top priority. But machines and other investments also need to be secured, and process sequences or conditions need to be monitored. Pepperl+Fuchs offers comprehensive expertise and a broad portfolio.

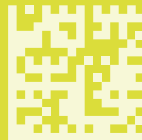






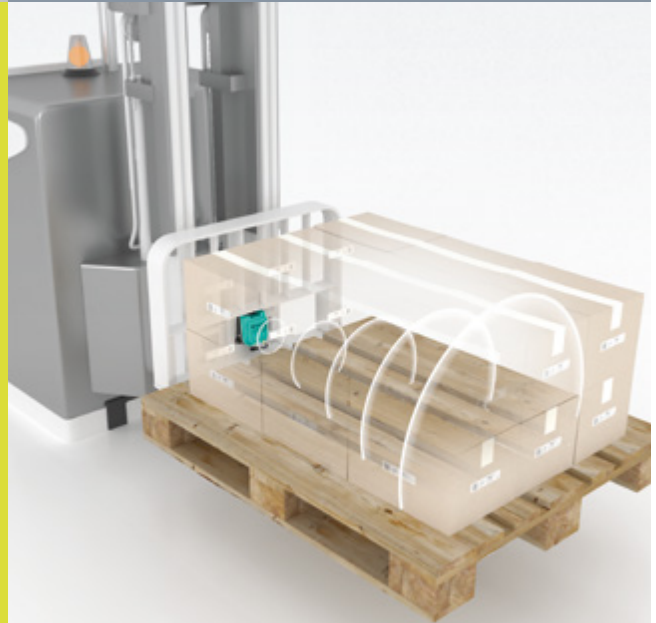
## Position Detection

Whether highly precise, especially rugged, or cost-efficient: the requirements for positioning systems are multifaceted. Pepperl+Fuchs offers various solutions and combines the advantages of optical, camera-based, and inductive positioning systems in one portfolio.



## Identification

Identification systems guarantee reliable, transparent processes. Depending on your requirements, you can make use of camera-based or wireless systems from Pepperl+Fuchs and benefit from the specific advantages of both technologies.



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## Industrial Communication

Industrial Ethernet, AS-Interface, and IO-Link—to make industrial network communication more efficient and flexible, Pepperl+Fuchs offers powerful components that transport even large data volumes reliably and across all network levels.



# Sensors and Systems from Pepperl+Fuchs

For over 75 years, Pepperl+Fuchs has relied on the highest quality standards to develop innovative solutions. This is a claim that has made us one of the world's leading manufacturers of industrial sensors, with a portfolio based on a wide range of technologies that provides exactly the right solution for every application.

## Industrial Sensors



- Inclinaton and Acceleration Sensors
- Level Measurement
- LiDAR Sensors
- Photoelectric Sensors
- Positioning Systems
- Proximity Sensors
- RFID and Optical Identification
- Radar Sensors
- Rotary Encoders
- Safety for Factory Automation
- Sensors for Entrance Automation
- Ultrasonic Sensors
- Vibration Sensors
- Vision Sensors
- Wireless Sensors
- Accessories
- Connection Technology

## Industrial Communication and Interfaces



- AS-Interface
- Displays and Signal Processing
- Ethernet-APL
- Fieldbus Infrastructure
- HART Interface Solutions
- HMI Systems
- IO-Link
- Industrial Ethernet
- Power Supplies
- Remote I/O Systems
- Signal Conditioners
- Smart Systems
- Surge Protection
- Thin Clients
- Connection Technology
- Software





More information:

[pepperl-fuchs.com/if-products](https://pepperl-fuchs.com/if-products)

## Enterprise Mobility for Industrial and Hazardous Areas



- Bluetooth® Low Energy Beacons
- Data Capturing
- Headsets and Speakers
- Measurement and Calibration
- Portable Lights
- Smartphones
- Tablets
- Accessories
- Software

## Hazardous Area Products and Solutions



- Control Units and Control Stations
- Control and Distribution Panels
- Enclosures and Cable Glands
- Ethernet-APL
- Fieldbus Infrastructure
- Industrial PCs and Monitors (HMI)
- Intrinsic Safety Barriers
- Network Technology
- Purge and Pressurization Systems
- Remote I/O Systems
- SIL-Capable Products for Hazardous Areas
- Sensors for Hazardous Areas
- Signaling Devices, Safety and Disconnect Switches
- Smartphones and Tablets
- Surge Protection Barriers
- Terminal and Junction Boxes
- Zener Barriers





Twinsburg

Pepperl+Fuchs

## Close to Our Customers, Worldwide

With 80 locations on six continents and three logistics hubs in Europe, the USA, and Asia, Pepperl+Fuchs is close to you virtually anywhere in the world. Over 7,100 employees, including more than 600 engineers, offer you unique application expertise in all aspects of industrial sensor technology. What challenge do you have for us?



More information:

[pepperl-fuchs.com/if-facts](https://pepperl-fuchs.com/if-facts)



**1 company**  
that solves every challenge



**2 founding families**  
own 100 % of the company



**80 locations**  
on six continents



**Founded in 1945**  
in Mannheim



**3 company headquarters**  
in Europe, the USA,  
and Asia





**6 production sites**  
around the world



**6,450+ employees**  
supporting you in all tasks  
worldwide



**EUR 840 million**  
turnover in 2024



**600+ engineers**  
who are already  
developing tomorrow's  
solutions today



**50,000 products**  
for all your requirements



**Unlimited**  
possibilities for solutions  
offered by our experts  
worldwide

# Your automation, our passion.

- Industrial Sensors
- Industrial Communication and Interfaces
- Enterprise Mobility
- Hazardous Area Products and Solutions

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