

**Sharing expertise.  
Finding solutions.  
Developing partnerships.**

Global Solution Engineering Centers provide customized, certified solutions for hazardous locations.



Your automation, our passion.

**pf** PEPPERL+FUCHS



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# Solution Engineering Centers— A Partnership for Success

## Not all solutions are created equal

Pepperl+Fuchs' Solution Engineering Centers (SECs) offer engineering and tailor-made system solutions for customers all over the world. We lead the industry with innovative hazardous location products and services. No other automation provider can match our experience and our comprehensive portfolio. Safety is our business.

The foundation of a successful solution business is having complete control of the technologies and the manufacturing supply chain. The value we bring to solution engineering is

quality control and supply chain ownership. By manufacturing our components, boxes, control stations, and cable glands, we have complete control of the quality of the components. This allows us to limit the cost of markup typically found in the final price.

This never rings more true than when you are challenged with creating custom solutions—and budgets, timelines, and expertise are never large enough.



# The Solution Process: from Concept to Reality

## Knowing your customer

At Pepperl+Fuchs' Solution Engineering Centers, the foundation for a successful project starts at the ground level. The first step is setting up a consultation with an experienced Pepperl+Fuchs team member who works with you to outline all the requirements needed for your particular application. We get to know your individual needs down to the very last detail. From there, our experts meticulously develop a custom solution that meets your exact requirements and specifications. Combine this individualization with a large portfolio of products, enclosure types, sizes, and accessories, and the options for your custom solution are almost unlimited. From conventional interface modules to highly customized HMI solutions – there is no job that we can't handle.



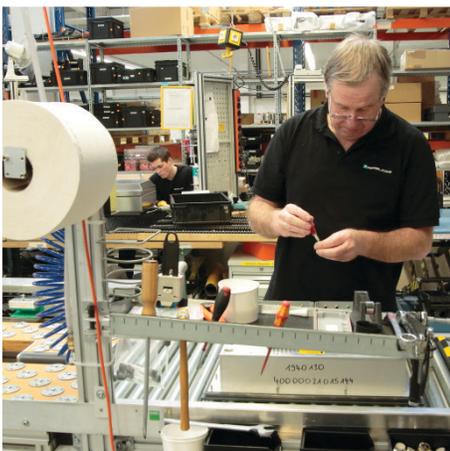
Customer specification



Solution proposal



Specification and design



Manufacturing



Inspection and acceptance



Documentation

# Leveraging Our Expertise and Products

Distribution

Control

Power

Monitoring

Customs and Hybrids

Pepperl+Fuchs works across industries and scales to satisfy our customers' needs, from single, unique, small-scale solutions to complex, global, high-quantity installation projects. Our customers include integrators, OEMs, skid manufacturers, EPCs, and end users.

Protecting people and equipment in gas or dust explosion hazardous areas is a sensitive task. Pepperl+Fuchs guides you and your application toward safe and reliable explosion protection—from the initial design through the manufacturing process and finally on to the installation within hazardous environments.

With an umbrella of highly flexible program certifications, we are able to create the most appropriate and cost-effective solution for your industrial application.

For Zone-rated areas, we provide a number of options depending on your particular needs:

- Equipment for gas groups IIA, IIB, IIB+H<sub>2</sub>, and IIC
- Solutions suitable for both gas and dust (Zones 0, 1, 21, 2, 22)
- Protection by increased safety (Ex e), enclosure (Ex t), purge (Ex p), flameproof enclosure (Ex d), and intrinsic safety (Ex i)
- ATEX, IECEx, INMETRO, CE, and Customs Union certification

For Division-classified areas, we have a variety of solutions including:

- Equipment for gas groups A, B, C, and D
- Solutions suitable for gas or dust (Division 1 & 2, Class I & II)
- Protection by purge, explosion-proof enclosures, and intrinsic safety
- UL and CSA certification

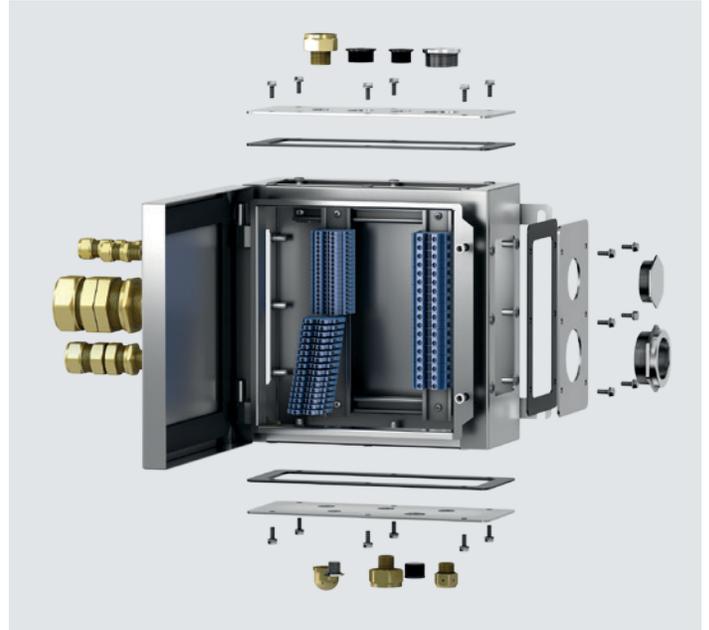


# Distribution

## Marshalling cabinets, terminal junction boxes, termination boxes, and fieldbus enclosures

This portfolio includes a broad selection of terminal and junction boxes. Find the right fit for your specification among the different materials, configurations, and types of explosion protection. Robust designs provide a high degree of safety for offshore applications and in other hazardous areas where adverse chemical, mechanical, and climatic operating conditions exist. With a wide selection of available options, customizable terminal and entry quantities and configurations are also possible with cable glands or plugs used to fill available entry holes. Optimized terminal arrangement speeds up the total installation time. Pepperl+Fuchs develops customized solutions that are delivered with certifications and are ready to use.

| Terminal and Junction Box Options |                                       |      |     |           |     |
|-----------------------------------|---------------------------------------|------|-----|-----------|-----|
| Protection                        | Ex e Ex i Ex t                        |      |     |           |     |
| Area Classification               | Zone 0, 1, 21, 2, 22<br>Division 1, 2 |      |     |           |     |
| Housing                           | Aluminum                              | SS   | GRP | Cast Iron |     |
| Certifications                    | IECEX                                 | ATEX | UL  | CSA       | EAC |



# Control

## Control panel and local control units

Select from configurable control units with up to four operators, or design your individual control station by combining operators and modules from our portfolio. A wide range of monitoring and control functions with various switching, labeling, and contact block options can be installed according to your application requirements. Customizable cable entry options with corrosion-resistant enclosures provide the perfect package for rugged industrial hazardous area use. Each solution is shipped with full certification and documentation.

The operator components include:

- Standard and illuminated pushbuttons
- LED indicators
- Emergency-stop buttons
- Control switches with up to 4 switching positions
- Potentiometers and ammeters

| Local Control Units and Control Panel Options |                                    |      |      |           |
|---|------------------------------------|------|------|-----------|
| Protection                                    | Ex e                               | Ex i | Ex d | Ex t      |
| Area Classification                           | Zone 1, 21, 2, 22<br>Division 1, 2 |      |      |           |
| Housing                                       | Aluminum                           | SS   | GRP  | Cast Iron |
| Certifications                                | IECEX                              | ATEX | UL   | EAC       |



# Power

## Switchgear cabinets, distribution boards, and motor starters

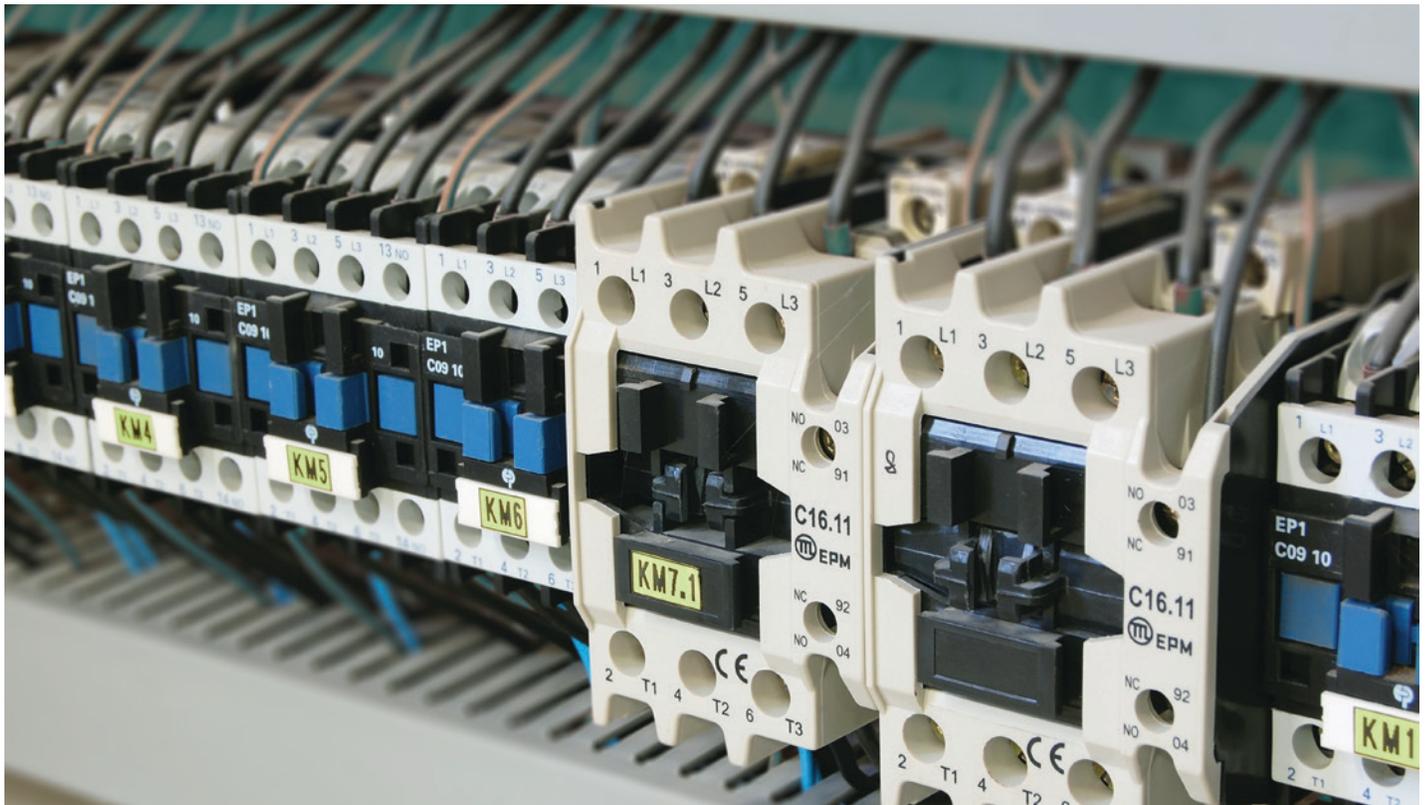
Reliable switch and fused disconnectors ensure the safe disconnection of the electrical supply. Direct online and star-delta motor starters provide ready-to-connect solutions complete with pre-calculated overload protection necessary for field use. Both single- and three-phase applications in a wide load range are available. Currents up to 315 A.

Motor starters provide solutions for operating engines and drives in hazardous areas. Models are available with integrated switch disconnect, direct-online starters from 1.1 kW up to 75 kW, and star-delta starters from 11 kW up to 30 kW.

Customized distribution panels are available with up to three rows of twenty single-pole circuit breakers rated from 3 A to 63 A and up to 500 V. All units are delivered fully tested, certified, documented, and ready for commissioning.



| Motor Starters and Switchgear Panel Options |                                    |      |           |
|---|------------------------------------|------|-----------|
| Protection                                  | Ex d                               | Ex t |           |
| Area Classification                         | Zone 1, 21, 2, 22<br>Division 1, 2 |      |           |
| Housing                                     | Aluminum                           | SS   | Cast Iron |
| Certifications                              | IECEX                              | ATEX | UL        |



# Monitoring

## HMI workstations and instrumentation panels

It is rare that two processes are identical. We have experienced, in-house design engineers to help create an operator workstation to meet your exact requirements. Engineered HMI solutions are a simple way to get the exact HMI you need. Whether the requirement is for a remote monitor or an intrinsically safe panel PC, Pepperl+Fuchs can engineer a solution that fits your application and budget. We can also incorporate your components and products from virtually any vendor to craft an ideal solution for your application.



| HMI Workstation Options |  |           |               |
|-------------------------|--|-----------|---------------|
| Protection              |  | Ex p      | Ex d          |
| Area Classification     |  | Zone 1, 2 | Division 1, 2 |
| Housing                 |  | Aluminum  | SS            |
| Certifications          |  | IECEX     | ATEX UL       |



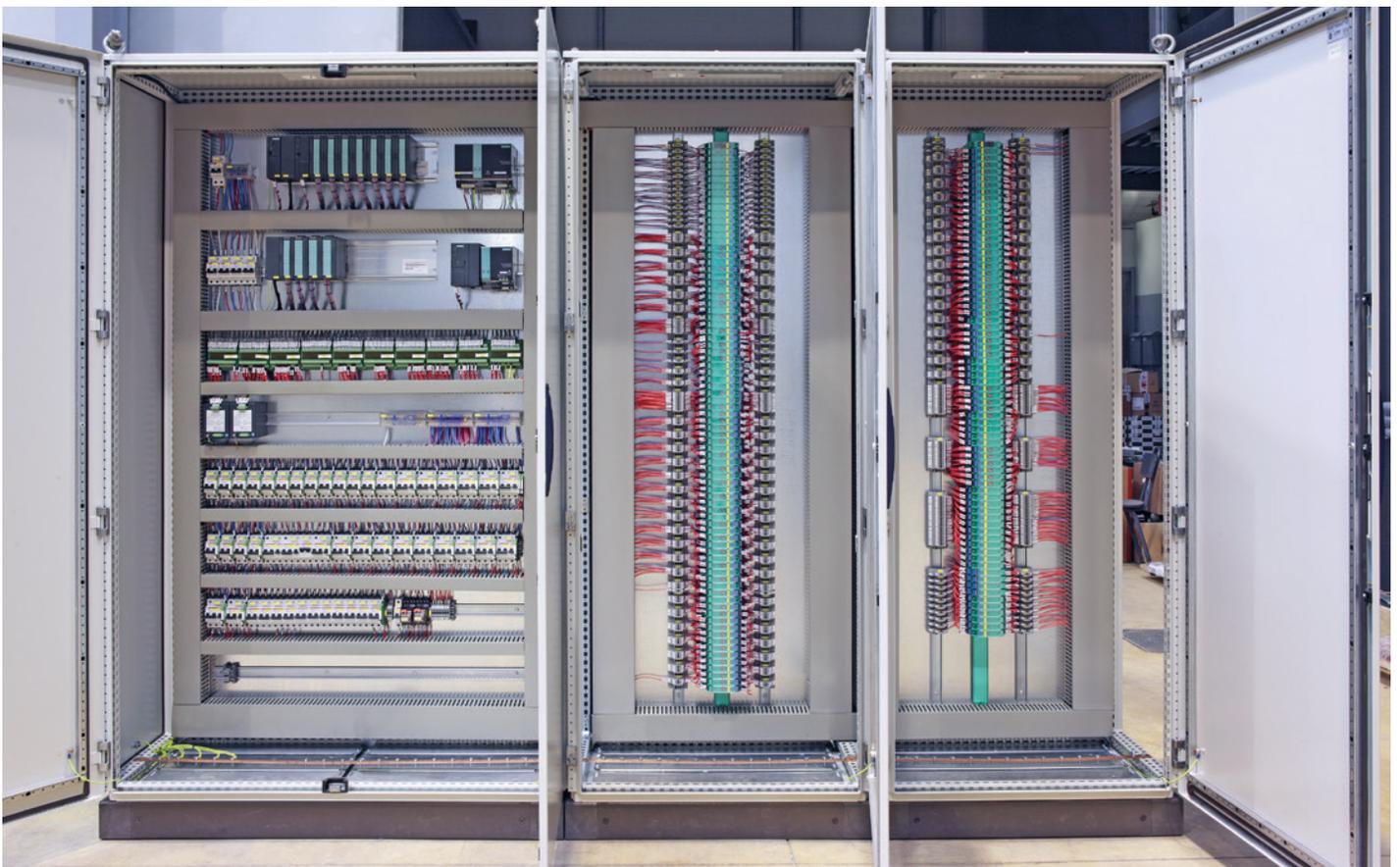
# Customs and Hybrids

## Internationally certified designs for use around the globe

Combining multiple types of protection methods into one sophisticated engineered solution can result in improved installation and commissioning time as well as ease of use. Decades of experience in explosion protection and a deep understanding of our customers' needs are the foundation for the high level of product quality in our portfolio of enclosures and instrumentation. Design, manufacturing, and support are all done by Pepperl+Fuchs. Regardless of the application, we guarantee your satisfaction.

Our standards for quality and craftsmanship along with our hazardous location expertise make Pepperl+Fuchs the right choice for your next solution:

- ATEX, UL508, and hazardous location equipment panel shop
- Easily modify existing solutions for customization
- Incorporate components and products from virtually any vendor to create the ideal solution for your application
- Certified solutions allow our customers to avoid NRTL submission and the lengthy approval process

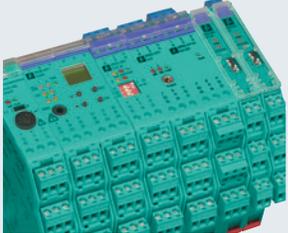


# Building Blocks for Success

## Reliable solutions need dependable components

By manufacturing our own components, such as enclosures, control stations, and cable glands, we can control the quality of what we produce. Pepperl+Fuchs holds accreditations for all major degrees of protection, as well as approval to manufacture certified solutions for applications in Zone 1 and 2 or Division 1 and 2 in accordance with regional specifications. This allows us to confidently deliver to you the highest caliber, complete solution for your hazardous location needs. We integrate these “building blocks” into complete system solutions, essentially becoming a one-stop shop. The advantage to our customers is clear: increased efficiency and ultimately, significant cost savings.

| Product Line                               |   | Description  |
|--|---|--|
| Stainless Steel Enclosures                 |   | <ul style="list-style-type: none"> <li>■ Electropolished 1.5 mm, 316L SS</li> <li>■ Ex e, Ex tb, 25 sizes</li> <li>■ -50 °C to 120 °C, IP66/Type 4X</li> <li>■ ATEX/IECEX certified and UL Listed</li> </ul>                       |
| Glass Reinforced Polyester Enclosures      |  | <ul style="list-style-type: none"> <li>■ UV stabilized, antistatic, carbon loaded</li> <li>■ Ex e, Ex tb, 17 sizes</li> <li>■ -40 °C to 60 °C, IP66</li> <li>■ ATEX/IECEX certified</li> </ul>                                     |
| Cast Aluminum & Stainless Steel Enclosures |  | <ul style="list-style-type: none"> <li>■ Copper-free cast aluminum or 316L SS</li> <li>■ Ex d, Ex tb, 48 sizes</li> <li>■ -50 °C to 60 °C, IP66</li> <li>■ ATEX/IECEX certified</li> </ul>   |
| Cable Glands                               |  | <ul style="list-style-type: none"> <li>■ Nickel-brass, 316 SS, plastic, metric and NPT</li> <li>■ Ex e, Ex tb, Ex d, armor, and non-armor versions</li> <li>■ -60 °C to 100 °C, IP66/68</li> <li>■ ATEX/IECEX certified</li> </ul> |

| Product Line              |   | Description  |
|---------------------------|---|--|
| Operators                 |    | <ul style="list-style-type: none"> <li>■ Pilot lights, pushbuttons, E-stops, rotary switches, and meters</li> <li>■ Ex de, Ex ib, Ex tb</li> <li>■ -40 °C to 55 °C, IP66</li> <li>■ ATEX/IECEX certified</li> </ul>  |
| Fieldbus                  |    | <ul style="list-style-type: none"> <li>■ Power supplies, distribution and process interfaces</li> <li>■ FOUNDATION fieldbus and PROFIBUS network capable</li> <li>■ Ex ia, Ex ib, Ex ic, Division 1, 2 applications</li> <li>■ Global certifications</li> </ul>                                    |
| Remote I/O                |    | <ul style="list-style-type: none"> <li>■ Full range of analog and discrete I/O</li> <li>■ PROFIBUS, Modbus, and FOUNDATION fieldbus networks</li> <li>■ Zone 1, Zone 21, Zone 2, Zone 22, and Division 2 mountable</li> <li>■ Ex ia and Division 1 I/O</li> <li>■ Global certifications</li> </ul> |
| Intrinsic Safety Barriers |   | <ul style="list-style-type: none"> <li>■ Full range of analog and discrete I/O</li> <li>■ Zone 2 and Division 2 mountable</li> <li>■ Ex ia and Division 1 I/O</li> <li>■ -20 °C to 60 °C</li> <li>■ Global certifications</li> </ul>   |
| Signal Conditioners       |  | <ul style="list-style-type: none"> <li>■ Full range of analog and discrete I/O</li> <li>■ Zone 2 and Division 2 mountable</li> <li>■ -25 °C to 70 °C</li> <li>■ Global certifications</li> </ul>   |
| Purge Systems             |  | <ul style="list-style-type: none"> <li>■ Type X, Type Y, and Type Z systems</li> <li>■ Ex px, Ex py, Ex pz systems</li> <li>■ Panel mount, packaged systems, and kits</li> <li>■ Fully automatic options</li> <li>■ ATEX, IECEX, and UL Listed</li> </ul>  |
| HMI                       |  | <ul style="list-style-type: none"> <li>■ Monitors, workstations, keyboards, KVMs, and scanners</li> <li>■ Zone 1, Zone 21, Zone 2, Zone 22, Division 1, and Division 2</li> <li>■ Wide operating temperature ranges from -40 °C to 65 °C</li> <li>■ Global certifications</li> </ul>               |

# A Global Presence Benefitting Customers Worldwide

No matter where your business is located, Pepperl+Fuchs is nearby – and always there for you. With a growing portfolio of Solution Engineering Centers, our global reach continues to provide customers with a worldwide network of trained engineers to provide the best possible service and support when you need it and where you need it.



## Locations

Pepperl+Fuchs' SECs have a global reach that expands to nine dedicated locations ready to meet your custom solution needs. Trained to handle applications that will be used all over the world, each of our SEC locations are equipped to provide safe and reliable solutions to meet today's demanding requirements for hazardous location environments.

## Production

Regardless of location, our Solution Engineering Centers install, integrate, and certify all solutions with ISO standards and provide the same high-quality products you would expect from Pepperl+Fuchs. We understand that you also have high standards for quality and performance and we welcome any Factory Acceptance Testing or other audits you may require to meet your needs.

## Support

At all of Pepperl+Fuchs' SECs, we take pride in staffing experienced engineers to ensure that every solution we produce will meet the standard of quality and reliability you expect. Our project engineers work closely with customers to meet the design specifications—our goal is to exceed expectations.



## Hazardous Location Experts—Trusted Quality and Certification

Without proper quality control and design, a custom solution in a hazardous location can be catastrophic for both time and safety. That is why at Pepperl+Fuchs' Solution Engineering Centers, quality is set at the highest standard to meet the strict requirements needed for hazardous location protection no matter how big or small the project may be. Combining decades of undisputed hazardous location expertise with continuous innovation, Pepperl+Fuchs provides customers with a trusted source to design, manufacture, and certify any custom solution you may need.

### Certifications

Our solutions are only as good as the certifications we carry. The SEC works closely with our certification department to guarantee that we provide you with all the necessary certifications you need, including:

- ATEX and IECEx rated solutions
- CSA Certified and UL Listed Division 1 and Division 2 solutions
- Class I, Class II, Zone 1, and Zone 2 solutions for industrial controls in hazardous locations

### Quality and expertise

Pepperl+Fuchs' products are world renowned for their high standard of ISO 9000 certified quality and reliability. We combine them with exceptional service in providing expert application analysis and technical expertise with each and every solution that is manufactured.

More information can be found at  
[www.pepperl-fuchs.us/solution-engineering](http://www.pepperl-fuchs.us/solution-engineering)

# Your automation, our passion.

## Explosion Protection

- Intrinsically Safe Barriers
- Signal Conditioners
- Fieldbus Infrastructure
- Remote I/O Systems
- HART Interface Solutions
- Wireless Solutions
- Level Measurement
- Purge and Pressurization Systems
- Industrial Monitors and HMI Solutions
- Electrical Explosion Protection Equipment
- Solutions with Explosion Protection

## Industrial Sensors

- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- AS-Interface
- Identification Systems
- Logic Control Units

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