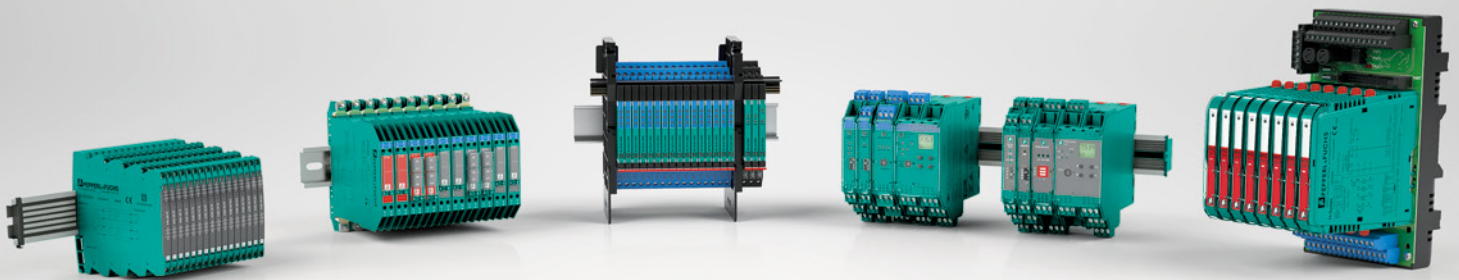



**Maximizing safety.
Improving signal performance.
Advancing technology.**

Product Overview Interface Technology



Your automation, our passion.

pf PEPPERL+FUCHS

A photograph of two men in a factory or industrial setting. The man on the left is wearing a light blue shirt and glasses, pointing towards the right. The man on the right is wearing a grey suit jacket and a white shirt, looking intently at a large, curved metal part in the foreground. The background is a blurred industrial environment with overhead lights.

**Innovative Solutions.
Perfect Applications.**

As a leader in industrial sensor technology and a pioneer in electrical explosion protection, Pepperl+Fuchs has been developing components and solutions for over 70 years. Above all, our goal is to offer the perfect solutions for our customers' applications. This is only possible with close collaboration. Not only do we share our passion for automation with customers—we also share our in-depth expertise and experience.

Forging ahead with new ideas and finding new approaches is what drives us. This is the foundation for technologically advanced solutions that are tailored to individual applications and geared toward future requirements.

Creating customer-focused solutions to meet today's and tomorrow's challenges is at the center of everything we do. And Industry 4.0 makes this more important than ever.

Pepperl+Fuchs is reenvisioning tried-and-trusted technologies and developing innovations that pave the way for networked production and communication that transcends your company's boundaries. Our innovation—your competitive advantage.

For more information, visit us online:

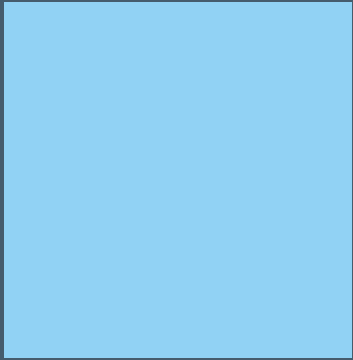
www.pepperl-fuchs.com

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Interface Technology by Pepperl+Fuchs: Reliable Processes— Signal after Signal



Since its introduction, interface technology from Pepperl+Fuchs has formed a core component of the process industry: With more than 60 years of experience and as the inventor of the intrinsic safety barrier, Pepperl+Fuchs is a world leader in hazardous area interfaces. Technical expertise, and in-depth knowledge of the industry ensure that the products we develop are precisely tailored to meet market requirements.



One highlight is our extensive range of modules and systems. No matter the application, we have the right solution as well as millions of installed devices from North sea platforms to clean room applications in the pharmaceutical industry.

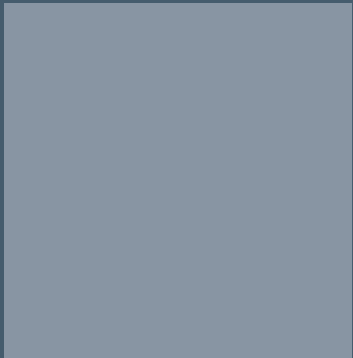


Typical Applications

- Monitoring plant components such as pumps, drives, and boilers
- Controlling processes
- Connecting safety devices to control panels

Industries

- Chemical
- Oil/gas production and processing
- Pharmaceutical
- Food and beverage
- Wastewater
- Steel production





More than 10
Million SIL
Safety Products
Installed

Secure Signal Transmission, Optimal Processes

Large Portfolio for Maximum Flexibility

Interface technology from Pepperl+Fuchs combines maximum process reliability with an enormous variety of applications. The extensive portfolio offers the right solution for virtually any process industry requirement. It is perfectly tailored to applications in hazardous and non-hazardous areas—a highly flexible solution for a wide range of requirements.

- Extensive product range
- Solutions for every requirement
- International approvals

Explosion Protection with Barriers for Intrinsic Safety

Intrinsic safety provides the highest level of protection for your plants' hazardous areas. Signals can be connected up to Zone 0/Div. 1 in order to limit the energy to the field, thereby ensuring no explosion is possible. Intrinsic safety barriers from Pepperl+Fuchs are installed globally in all major hazardous areas.

Safety Integrity Level (SIL)

The safety integrity level is a unit of measure for quantifying risk reduction. It is used to assess devices and systems in terms of the reliability of their safety functions. The SIL rating is based on international standard IEC/EN 61508.

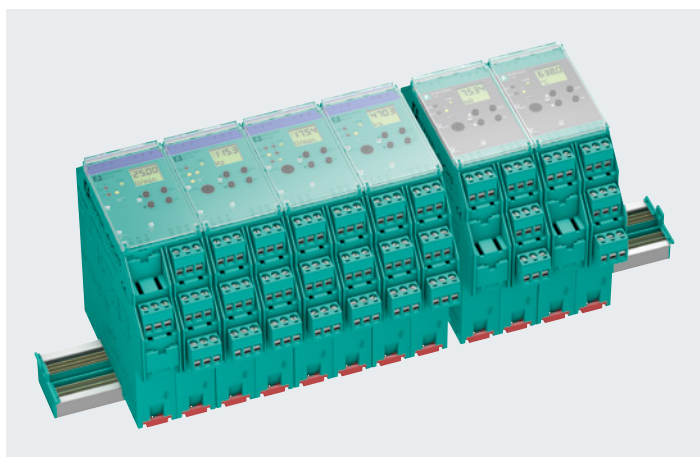
Unrivalled Portfolio of SIL-Rated Products

If products are to be used in signal circuits with a safety integrity level, they must meet a variety of requirements. Pepperl+Fuchs offers a comprehensive portfolio of devices with SIL 2 and SIL 3 ratings. All products with SIL rating and safety manuals are available at no extra charge. This provides customers worldwide with a wide range of modules for SIL applications that offer users even greater flexibility.



Flexible Technology: DIN Mounting Rail

It is the combination of maximum process reliability, easy operation, and enormous flexibility: K-System from Pepperl+Fuchs offers the most comprehensive portfolio of isolators on the market, with the right solution for any interface requirement. The Power Rail ensures easy, flexible mounting and power supply without the need for labor-intensive point-to-point wiring. A highly flexible system for a wide range of applications.



Power Rail—Reliable Supply and Reduced Wiring

The Power Rail ensures the reliable supply of power to modules and, since there is no separate wiring required, also reduces installation costs. It also transmits a collective error message in the event of faults. The faults detected by the interface module are outputted via the volt-free contact of the power feed module.

Features of the Modules

- More than 200 different barriers available to cover even the most special applications
- Display for measurements and parameterization in high-functioning modules
- Many devices can be supplied with SIL 2 and SIL 3 as well as safety manuals at no extra cost

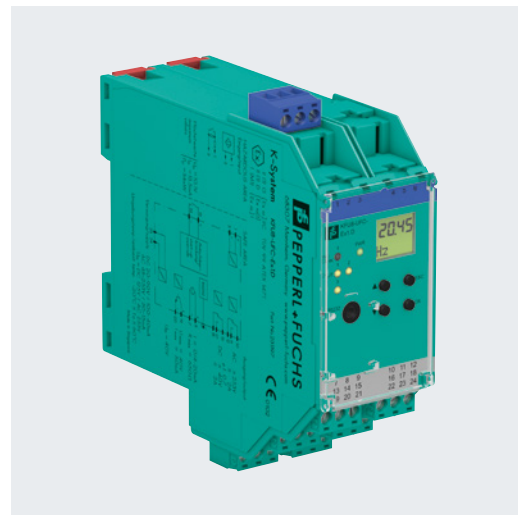


Proven Technology from the Market Leader in Intrinsic Safety



Quick and Easy Mounting

K-System offers quick and convenient installation using a DIN mounting rail. The modules are added by simply clipping them in, which eliminates the need for labor-intensive wiring. If modules need to be replaced or expanded, this can be done without tools and without a hot-work permit. This ensures fast, easy, and efficient maintenance.



Flexible and Individual Combination

K-System is designed for a mixture of applications involving both Ex modules and non-Ex modules. Whether a simple switch amplifier or a high-performance component, the modules can be combined flexibly on the DIN mounting rail in a space-saving solution. KC modules with a width of 12.5 mm for compact single-loop integrity or multi-channel KF modules with a width of 20 mm or 40 mm for maximum packing density are available.

Individual Solutions for Control System Manufacturers

The range of termination boards from Pepperl+Fuchs offers special solutions for all major control system manufacturers. A technology that caters to the project and the individual requirements of our customers and offers reliable explosion protection.

Minimal Planning Effort, Quick Integration

The large range of engineered termination boards from Pepperl+Fuchs is precisely tailored to the requirements of control system manufacturers. The solutions are optimized for switch cabinets and have been tested on original hardware from the manufacturers. Specific system connectors on the termination board guarantee fast and reliable connection of the signals to automation systems (DCS, ESD). In this way, the prefabricated termination boards reduce costs, particularly in the case of large-scale projects.

Overview of Control System Manufacturers

- Emerson
- HIMA
- Honeywell
- Schneider Electric
- Yokogawa
- Other PLC, ESD, and DCS solutions available



Direct Connection to Your Control System



Termination boards are available for all automation systems



Minimal Wiring Complexity, Individual Solution

Termination boards are mainly used for contacting the control and instrumentation signals. For this purpose, the modules are mounted on termination boards, via the unique quick lock tabs, so no tools are required. All field wiring is attached directly to the termination board, while standard system cables connect the barriers to the control system. This approach ensures a clean installation as no wiring is on the modules, making the system easy to maintain.

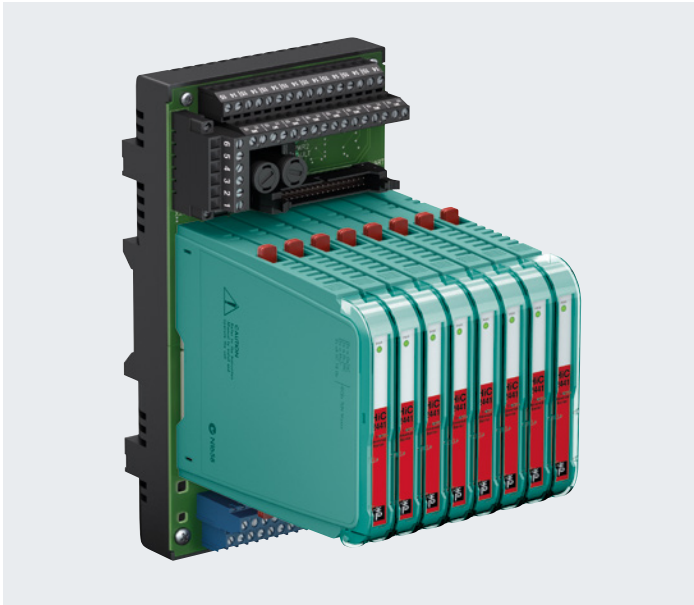
Your Benefits at a Glance

- Modules for all signal types
- Horizontal and vertical mounting with no reduction in operating values (derating)
- Control-system-specific connectors—fast connection to automation systems
- Tested on original control panels from leading control system manufacturers
- Product portfolio coordinated with DCS manufacturers for short delivery times
- Testing of modules to ensure DCS/ESD system compatibility
- Tool-free mounting
- Module replacement without a hot-work permit
- Clean installation, no wiring on barrier modules

The Freedom of the Universal Solution

THE BARRIER —
World's First
Universal Barrier

Innovative technology from the market leader in intrinsic safety—THE BARRIER is a universal digital or analog input and output isolated barrier. Just connect the signal and THE BARRIER auto detects and adapts to the signal type.



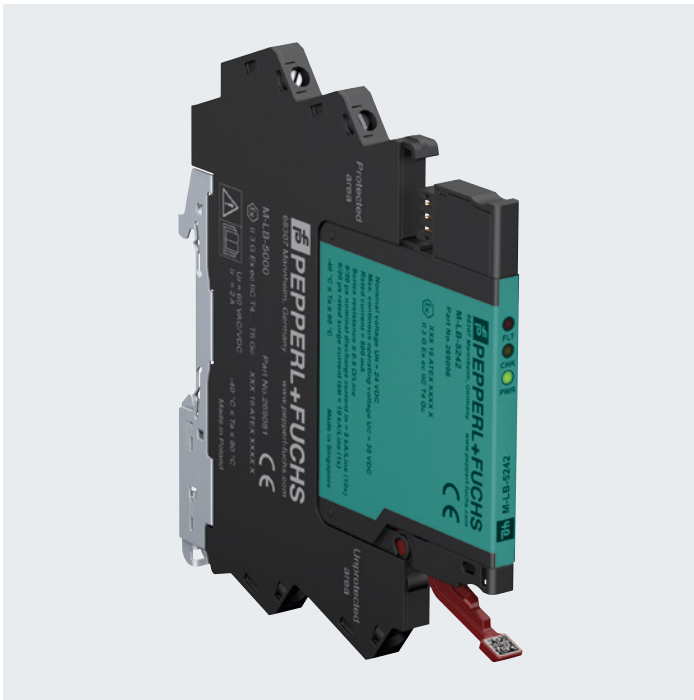
Simple Handling, Flexible Use

No channel dependence, automatic adaptation to the signal type, and maximum flexibility: the universal barrier from Pepperl+Fuchs is a multifunctional alternative to the traditional isolated barrier. Whether digital or analog input or output—THE BARRIER offers quick and simple solutions for every challenge.

All Benefits at a Glance

- Last-minute changes are possible
- Simplified storage
- Marshalling panel not required
- Automatic adaptation to signal type
- Fast, easy commissioning without any adjustments to hardware or software
- High degree of flexibility when planning projects
- Up to SIL 2 according to IEC 61508

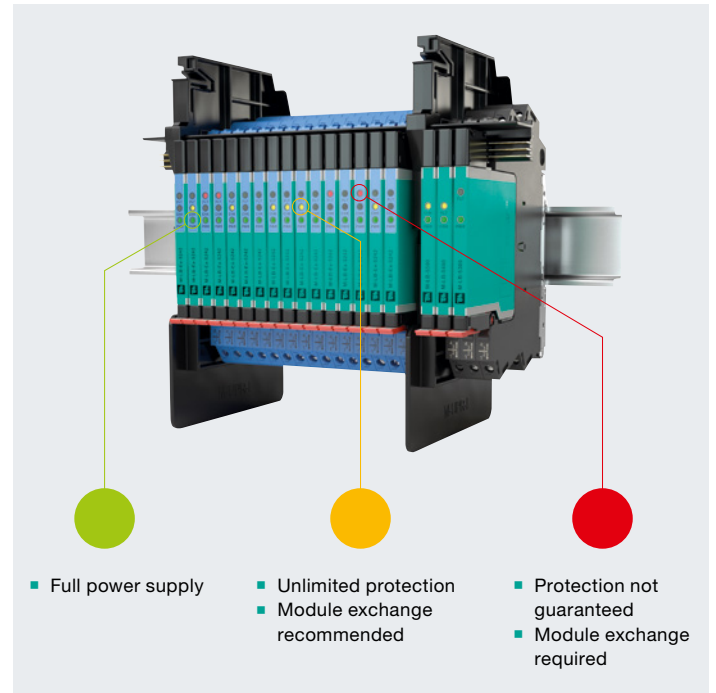




Protect Your Plant Assets with Intelligent Surge Protection

Smart. Small. Unique.

Pepperl+Fuchs developed a range of smarter surge arrestors, which indicate replacement before failure—that maintains your plant equipment at an optimum level.



Your Benefits at a Glance

- Modular system for DIN rail mounting
- Compact width of 6.2 mm
- Diagnostics for monitoring the protection status
- Module replacement during operation
- Easy installation—plug-and-play
- Loop disconnect for simplified commissioning

More information is available at www.pepperl-fuchs.com/surge-M-LB-5000

Signal Conditioners for Every Application— Versatile, Compact, Efficient

Pepperl+Fuchs offers the appropriate interface components for virtually any application. K-System features the largest variety, simple mounting, and flexibility. SC-System, with its compact, high-performance design, offers signal conditioning with galvanic isolation for non-hazardous areas.

Safe Signals for Reliable Processes

Interference on the signal path can cause signals to become distorted and no longer be recognized by the control panel. This can lead to malfunctions that have a substantial impact on the efficiency and availability of the plant. The galvanic isolation of the signal conditioners from Pepperl+Fuchs protects the measurement and control circuits against false signals and dangerous surges. Signal conditioners are used in virtually all automation processes.

Application Options for Signal Conditioners

Secure Communication in the Plant

Galvanic isolation prevents transmission and control errors caused by equalizing currents in ground loops.

Protection against Short Circuits and Surge Voltage

Galvanically isolated outputs provide protection to your plant and personnel against dangerous high voltages.

Multiple Use of Signals

Signal conditioners with galvanically isolated outputs ensure reliable forwarding of the signal on different systems.

Conversion to Standard Signals

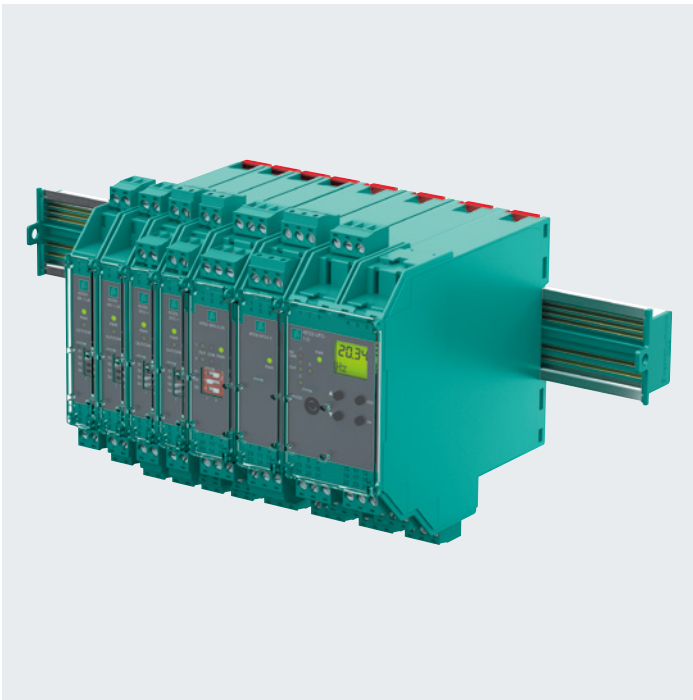
Signal conditioners can convert signals so that they can be processed – expensive input cards for the control panel are no longer necessary.

Industries

- Energy production
- Water/wastewater plants
- Steel industry and metal processing
- Food
- Packaging
- Testing facilities
- Cement industry
- Paper industry
- Building automation



Highest Signal Quality for Smart Processes



Convenient and Highly Versatile

The K-System Portfolio from Pepperl+Fuchs combines process reliability with a large variety of possible applications. It offers the most extensive range of its type on the market and has the right solution for virtually any requirement. The system is perfectly adapted to mixed applications in hazardous and non-hazardous areas.



Extra Slim and Powerful

The SC-System was developed by Pepperl+Fuchs specifically for plants that do not have any hazardous areas. The powerful signal conditioners ensure completely fault-free communication between the control level and the field level. Special features of the system include the high standard of isolation quality, an extended temperature range, and an extremely compact design.

Typical Features

- Compact design
- High isolation quality: optimum protection for personnel and equipment
- Wide temperature range: flexible in use and longer life cycle
- Power bus for optimum supply: low wiring costs, compatible with all customary products, ideal for retrofitting

HART Connectivity from a Single Source

With more than 30 million HART-compatible field devices in use worldwide, the HART digital standard has been firmly established in the process industry for decades. Benefit from Pepperl+Fuchs HART solutions to unlock your plants' digital communication capabilities.

HART Technology

The use of HART technology enables more extensive communication between the control level and the field devices. Measurements that are present as digital process data in the field devices can be used by these devices and integrated into conventional control systems. HART allows field devices to be parameterized and their status and diagnostic information to be transmitted. Plants can therefore be modernized simply and efficiently.

Typical Applications

Additional information from transmitters can be transferred to the control panel as digital HART variables and then evaluated:

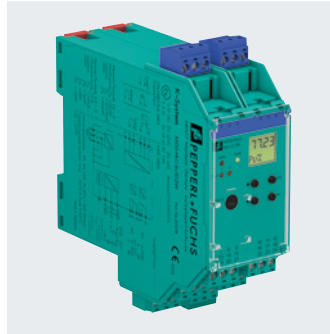
- Control of the output from industrial burners in the chemical industry: detection of flow, humidity, and pressure fluctuations of the fuel gas to increase the quality and efficiency of the process
- Calibration of hard-to-access analysis equipment to measure oxygen in exhaust systems for increased safety and efficiency of combustion plants

HART Loop Converter

The HART loop converter can read up to four variables from a HART field device and transmit them as analog output signals. In addition to other data, these variables include maintenance, status, and diagnostic information. Partial stroke tests are also possible.

HART Multiplexer

Multiplexers of the K- and H-systems extract digital signals without affecting the communication between field devices and the control system. They store the information taken from the field device internally and make it accessible, for example, to an asset management system.



HART—for More Information from The Field



Viator® HART Modems – Your Simple Access to HART Data

In combination with the Pepperl+Fuchs HART interface solutions, the Viator® portfolio provides access to crucial information from field devices and offers a reliable solution for commissioning and servicing them. A variety of models provide the right connectivity for your application: RS-232, USB, USB with PowerXpress™, as well as Bluetooth® models for general purpose and hazardous locations.

For more information please see our brochure “Viator® HART Interfaces”.



BULLET WirelessHART Adapter for Flexible and Easy Connection

The BULLET is the only *WirelessHART* adapter on the market in an Ex d housing. The BULLET comes with all relevant certifications (ATEX, UL, IECEx, and many more) for use all over the world. Simply connect the BULLET to your field device and enable efficient wireless signal transmission.

More information is available at www.pepperl-fuchs.com/bullet

Experts Around the World for Customized Solutions

For decades, the name Pepperl+Fuchs has been synonymous with high-quality explosion protection products. Our six Solution Engineering Centers (SECs) provide engineering solutions and tailor-made system solutions for any customer application all over the world.



One-Stop Shop for the Right Solution—Every Time

Pepperl+Fuchs SECs offer expert support for companies of all sizes and from all industries. Qualified experts always have the right solution for even the most demanding of applications. From small single-unit production to customized system solutions with Ex certification and documentation—the SEC specialists offer everything from a single source, ready for installation on-site.

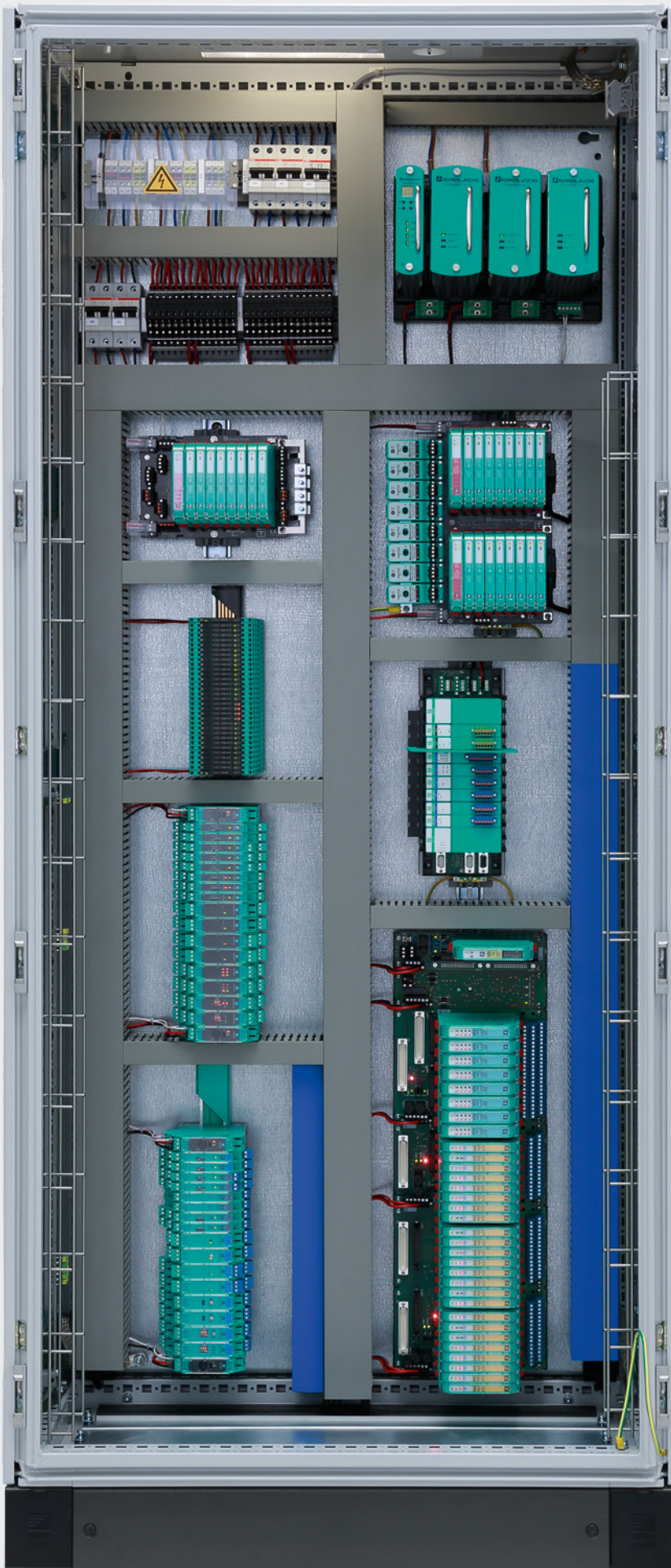
Locations Around the World

With six SECs worldwide, Pepperl+Fuchs ensures that a team of experts is always close at hand. Three of the centers cover North America and Europe. Optimal support is also available in the Asia-Pacific region—with three SECs located in China, India, and Australia, the company is able to offer expertise and the highest level of service here.

In-depth knowledge of explosion protection and many years of experience in project planning form the basis for developing tailor-made and fully certified solutions at these locations. Thanks to the extensive portfolio—with an enormous range of modules and systems—users receive exactly the right solution for almost any requirement.



- Pepperl+Fuchs Headquarters
- Pepperl+Fuchs SECs



Pepperl+Fuchs' Solution Engineering Centers create customized engineered solutions for every requirement in process industry applications.



The Exact Specification for Every Requirement

There are a number of directives and regulations that must be observed to ensure that process plants operate safely and efficiently. Pepperl+Fuchs' SEC experts support customers from the initial planning steps all the way through to the commissioning of new plants. An exact specification is created on the basis of the environmental conditions, the requirements of the application, and the relevant safety standards. This is then developed into a solution in close consultation with the customer, ensuring projects are handled efficiently and delivered quickly.

Optimal Solutions, Including Certification

Each solution is precisely tailored to the requirements, with even the smallest details being taken into account. Once this process is over, the customer receives a complete system that has all relevant approvals. Comprehensive documentation of all components is also included.

Production and Commissioning

Highly qualified experts install the selected components in suitable housing designs. Customers also receive optimal support from the project team at all times during the subsequent acceptance tests. This allows for quick commissioning and ensures that the solution operates safely. The SECs also provide logistical support for optimal packaging and storage, as well as for shipping and customs, ensuring that the system is fully functional once it reaches its operating location.

Your automation, our passion.

Explosion Protection

- Intrinsic Safety Barriers
- Signal Conditioners
- FieldConnex® Fieldbus
- Remote I/O Systems
- Electrical Ex Equipment
- Purge and Pressurization
- Industrial HMI
- Mobile Computing and Communications
- HART Interface Solutions
- Surge Protection
- Wireless Solutions
- Level Measurement

Industrial Sensors

- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- Fieldbus Modules
- AS-Interface
- Identification Systems
- Displays and Signal Processing
- Connectivity

Pepperl+Fuchs Quality

Download our latest policy here:

www.pepperl-fuchs.com/quality

