Sensorik 4.0®: Customizable Automation with Sensor Technology 4.0

To manage the tasks of the future, sensors need to do more than simply deliver the process data to the machine controller. They must be able to communicate with different kinds of receivers and send and receive sensor data to and from higher-level information systems. The key to achieving this is the ability of the sensors themselves to communicate. This is the defining characteristic of Sensor Technology 4.0—the sensor technology of the future that Pepperl+Fuchs is developing to meet the requirements of digital networking in Industrie 4.0.

The state-of-the-art IO-Link technology serves as an interface that allows us to unlock the sensors’ ability to communicate. This IO-Link technology, which is part of the Sensor Technology 4.0 concept, is built into the entire portfolio. The result: a host of new possibilities for the user—whether for configuration, diagnostics, or maintenance. Even wireless communication is possible using SmartBridge® technology, data can be sent wirelessly to mobile devices.

The R101 series from Pepperl+Fuchs represents another step toward the digital factory of the future, opening up a wide range of potential new applications.

Simple and Intuitive Operation

The operation of the R101 is based on tried and tested technology. The intelligent combination of a multiturn potentiometer and pushbutton control enables intuitive adjustment of all functions—across the entire family. This design significantly reduces the complexity of the sensor adjustment. Depending on the sensing mode, the sensitivity adjustment or operating mode can be set via the multiturn potentiometer. The output type as well as the teach-in of the switch point are controlled using the pushbutton. The display, consisting of three LEDs, is identical for all the sensors. This makes it easy to use, allows for quick configuration and adjustment, and contributes to increased operability and safety, while saving time and money during installation.

Your automation, our passion.

**Explosion Protection**
- Intrinsically Safe Barriers
- Signal Conditioners
- Fieldbus Infrastructure
- Remote I/O Systems
- HIMI® Interface Solutions
- Wireless Solutions
- Level Measurement
- Purge and Pressurization Systems
- Industrial Monitors and HIMI Solutions
- Electric Explosion Protection Equipment
- Solutions for Explosion Protection

**Industrial Sensors**
- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- IO-Link
- Identification Systems
- Logic Control Units
- Connectivity

www.pepperl-fuchs.com

Mastering challenges. Opening communication channels. Redefining flexibility.

R101 Series
An Innovative Family of Small Photoelectric Sensors
The New Generation of Photoelectric Sensors

A new series of photoelectric sensors from Pepperl+Fuchs fuses state-of-the-art product design with economy, simplicity, and innovative technologies. This series bundles a complete family of photoelectric sensing modes into a standard yet versatile compact housing to enable flexible, long-term solutions for intelligent sensor integration. A powerful DuraBeam laser technology and Multi Pixel Technology (MPT) distance measurement ensure reliability and precision. With integrated IO-Link functionality, the R101 series redefines flexibility and fulfills all the requirements for Sensor Technology 4.0, Sensorik4.0®.

Cutting-Edge Product Design Combines Sensing Modes

The R101 series includes the complete family of photoelectric sensing modes in a single housing design, from thru-beam to diffuse and distance measurement sensors. The advantage is that the required sensing mode is selected when the sensor is ordered and is not required for installation. The design is modular, allowing various sensors to be combined in a single housing. This approach gives designers the flexibility to select the sensors and mounting options best suited to the application.

In addition to the PowerBeam LED, the R101 features a powerful new laser technology: DuraBeam. For the first time, the strengths of LED technology are combined with the innovative benefits of laser technology, offering the best of both worlds. Laser eye-safe Class 1 lasers offer an exceptionally long service life and open up new application options, even at high ambient temperatures.

Another feature of the new laser technology is the special beam profile, which allows each laser light spot to be circular with high beam quality. This extremely precise detection and distance measurement of small objects.

A Complete Family in One Housing Type

The sensors in the R101 series vary only on the inside. The pioneering product design of the R101 series makes it possible to bundle the complete family of photoelectric sensing modes in one housing.

More Installation Possibilities than Ever Before

The R101 series offers several mounting options with just a single housing. This gives the user a unique level of flexibility: The diffuse and measuring sensors can be installed in identical mounting locations with no further adjustments required. All sensors are available with integrated M8 connector, M8 or M12 pigtail, and cable options. Accessories specific to the application requirements open up new possibilities for integration of the R101 into machines and systems.

DuraBeam: The New Laser Technology for a Noticeable Power Boost

In addition to the PowerBeam LED, the R101 features a powerful new laser technology: DuraBeam. For the first time, the strengths of LED technology are combined with the innovative benefits of laser technology, offering the best of both worlds. The eye-safe Class 1 lasers offer an exceptionally long service life and open up new application options, even at high ambient temperatures.

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MPT Distance Measuring in a Compact Size

The R101 series distance sensors feature proven Multi Pixel Technology (MPT) from Pepperl+Fuchs. The small size of the measuring core makes this sensor the first to integrate precise and reliable distance measurements for close-range applications into a standard compact housing.

Combined with IO-Link, the R101 distance sensors offer powerful new possibilities in a small housing design. They achieve accurate measurement. Object detection and background suppression are extremely precise and the distance measurement function is highly reliable and adaptable in every situation.

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