Mastering challenges.
Opening communication channels.
Redefining flexibility.

R100 Series
The New Generation
of Small Photoelectric Sensors

Your automation, our passion.

PEPPERL+FUCHS

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 R100 series redefines flexibility and fulfills all the requirements for Sensor Technology 4.0, Sensorik4.0®.

Cutting-Edge Product Design Combines Sensing Modes

The R100 series includes the complete family of photoelectric sensing modes in a single housing design, from thru-beam sensors to measuring and distance sensors. Regardless of which sensing mode is required in the application, housing characteristics such as dimensions, wiring, and installation are identical throughout the series.

The integration of IO-Link in every version of the R100 enables communication all the way down to sensor level, allowing sensor intelligence to be used to its full potential.

More Installation Possibilities than Ever Before

The R100 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 R100 into machines and systems.

IO-Link

Simple and Intuitive Operation

The operation of the R100 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 provides increased operating efficiency and safety, while saving time and money during installation.

Sensorik4.0®: 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. The R100 series is the next logical step in the Sensor Technology 4.0 concept: IO-Link is built into the entire portfolio. This opens up 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 R100 series from Pepperl+Fuchs represents another step toward the digital factory of the future, opening up a wide range of potential new applications.

A Complete Family in One Housing Type

The sensors in the R100 series vary only on the inside. The pioneering product design of the R100 series is the first to combine the complete family of photoelectric sensing modes in one housing.

DuraBeam: The New Laser Technology for a Noticeable Power Boost

In addition to the PowerBeam LED, the R100 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.

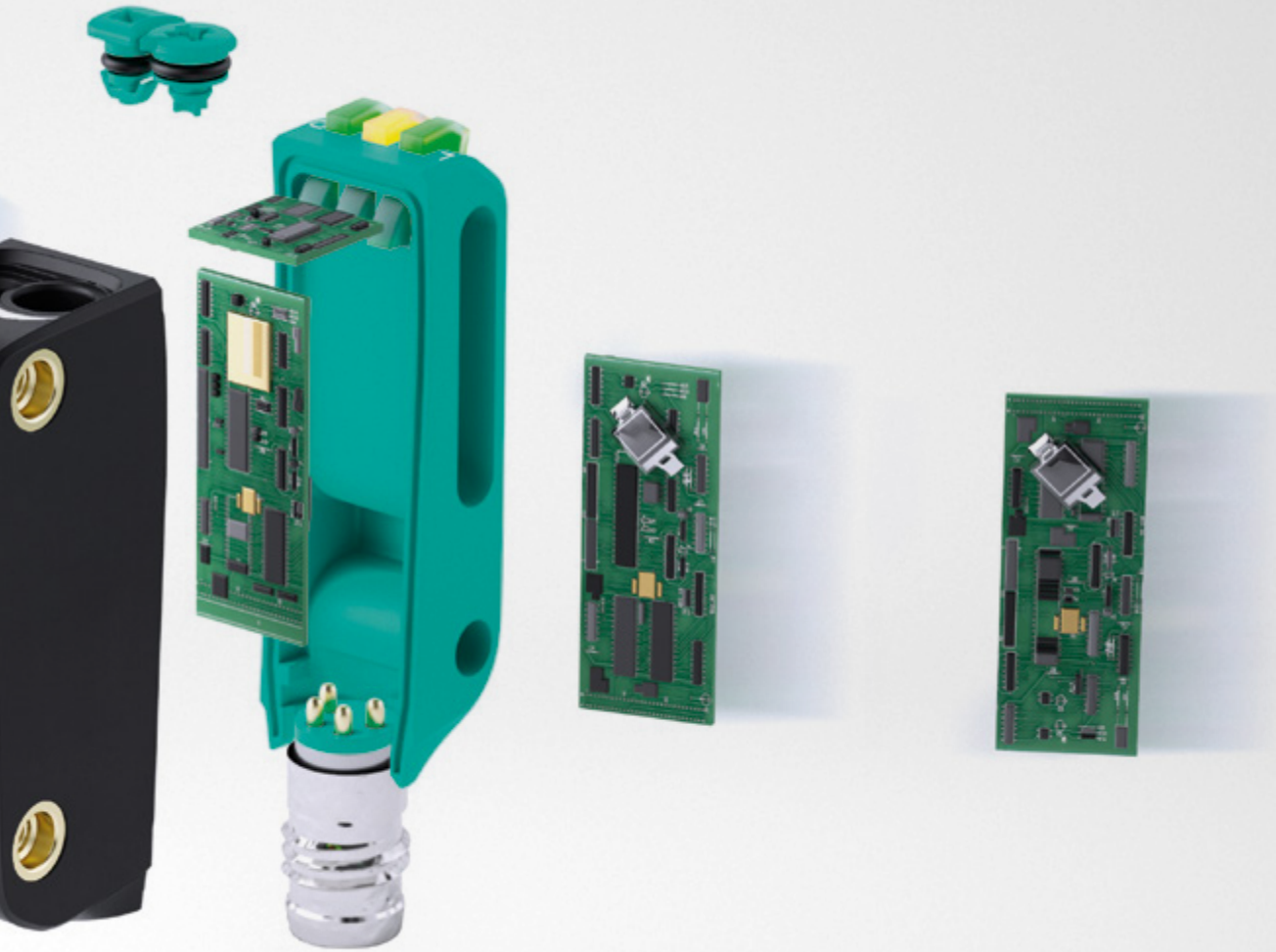
Another feature of this new laser technology is the special beam profile, which always casts a sharp, circular light spot on an object. This particular feature is ideal for extremely precise detection and distance measurement of small objects.

MPT Distance Measuring in a Compact Size

The R100 series distance sensors feature proven Multi Pixel Technology (MPT) from Pepperl+Fuchs. The small size of the measurement core makes this series the first to integrate adaptability as well as precise and reliable distance measurements for close-range applications into a space-saving standard compact housing.

Combined with IO-Link, the R100 distance sensors offer powerful new possibilities in a small housing design. They achieve accurate measurements: Object detection and background suppression are extremely precise and the distance measurement function is highly reliable and adaptable in every situation.

- Long life
- Sharp light spot
- Higher temperature range
- Interference-free distance measurements in the near range
- Proven technology in small housing design
- Precise object detection



R100 Series		PowerBeam LED	DuraBeam Laser
Sensing Modes	**Type Code**	**IO-Link** Detection/ Sensing range	**IO-Link** Detection/ Sensing range
Thru-beam sensor	**OBE*-R100***	0 ... 12 m	0 ... 20 m
Retroreflective sensor with polarization filter	**OBR*-R100***	0,03 ... 7,5 m	0,2 ... 12 m
Retroreflective sensor for clear object detection	**OBG*-R100***	0 ... 5 m 0 ... 3,5 m	
Diffuse mode sensor	**OBD*-R100***	2 ... 1000 mm	
Diffuse mode sensor with background suppression	**OBT*-R100***	5 ... 350 mm	7 ... 300 mm
Diffuse mode sensor with background evaluation	**OBT*-R100*-1T***	5 ... 350 mm	7 ... 300 mm
Measuring sensor with multiple switch points	**OQT*-R100***	5 ... 150 mm	8 ... 150 mm
Distance sensor	**OMT*-R100***	20 ... 50 mm 40 ... 100 mm 60 ... 200 mm	20 ... 50 mm 40 ... 100 mm 60 ... 150 mm

Highlights

- State-of-the-art product design: integration of several photoelectric families of sensors with innovative technologies combined together in one housing design for the first time
- Maximum flexibility and more integration possibilities than ever before
- Precise and reliable MPT distance measurement in a standard small housing
- Innovative DuraBeam laser technology for an exceptionally long life and increased operating temperature range
- Communication all the way down to sensor level with IO-Link as the basis for Sensorik4.0® — in all sensor types

Additional information is available at:
www.pepperl-fuchs.com/r100

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 for 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
- Connectivity

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