

**Mastering challenges.
Opening communication channels.
Redefining flexibility.**

R100 Series
Small Photoelectric Sensors



Your automation, our passion.

pf PEPPERL+FUCHS

The New Generation of Photoelectric Sensors

The complete family of photoelectric sensing modes packaged in a versatile and standard compact housing, enable flexible, long-term solutions for intelligent sensor integration. The powerful laser technology DuraBeam and MPT distance measurement ensure reliability and precision. With its built-in IO-Link functionality, the R100 series fulfills all the requirements for Sensorik 4.0. The new photoelectric sensors from Pepperl+Fuchs offer an economical choice and security through their innovative product design.



State-of-the-Art Product Design Combines Sensing Modes

The R100 series includes the complete family of photoelectric sensing modes in an identical sensor housing: from the thru-beam sensor 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 the intelligence of the sensors to be used to its full potential.

More Installation Possibilities than Ever Before

The R100 series offers several mounting options in just a single housing. This gives the user a unique level of flexibility: The diffuse and measuring sensor can be installed into identical mounting situations 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.



Simple and Intuitive Operation

The operation of the R100 is based on tried and tested technology. The intelligent combination of a multiturn potentiometer and push button 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 push button. The display, consisting of three LEDs, is identical for all the sensors. As a result, you can benefit from increased operating efficiency and safety, while saving time and money during installation.



Sensorik 4.0: Customizable Automation with IO-Link

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 all 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 Sensorik 4.0 – the sensor technology of the future that Pepperl+Fuchs is developing to meet the requirements of digital networking in Industry 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 Sensorik 4.0 concept: IO-Link is consistently implemented 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 the Smart-Bridge® 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 state-of-the-art product design of the R100 series is the first to combine the complete family of photoelectric sensing modes all together in one housing.

DuraBeam: The New Laser Technology for a Noticeable Power Boost

In addition to the PowerBeam and Infrared LED, the R100 features a powerful new laser technology: DuraBeam combines the strengths of both LED and laser sensors for the first time. 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 measuring core makes this series the first to integrate high-precision, reliable distance measurements for close-range applications in a standard compact housing.

Combined with IO-Link, the R100 distance sensors offer powerful new possibilities in small housing designs. 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.



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



R100 Series		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 (IR)	0 ... 20 m
Retroreflective sensor with polarization filter	OBR*-R100*	0.03 ... 7.5 m 0.03 ... 7 m (IR)	0.2 ... 12 m
Retroreflective sensor without polarization filter	OBR*-R100*IR		
Retroreflective sensor for clear object detection	OBG*-R100*	N: 0 ... 5 m CI-III: 0 ... 3.5 m	
Diffuse mode sensor	OBD*-R100*	2 ... 1000 mm 2 ... 1100 mm (IR)	
Diffuse mode sensor with background suppression	OBT*-R100*	5 ... 350 mm 5 ... 350 mm (IR)	7 ... 100 mm 7 ... 300 mm
Diffuse mode sensor with background evaluation	OBT*-R100*-1T*	5 ... 350 mm 5 ... 350 mm (IR)	7 ... 100 mm 7 ... 300 mm
Measuring sensor with multiple switch points	OQT*-R100*	5 ... 150 mm 5 ... 150 mm (IR)	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 standard small housing
- Innovative laser technology DuraBeam 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 Sensorik 4.0 — in all sensor types

Your automation, our passion.

Explosion Protection

- Intrinsically Safe Barriers
- Signal Conditioners
- Fieldbus Infrastructure
- Remote I/O Systems
- HART Interface Solutions
- Surge Protection
- 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
- Fieldbus Modules
- AS-Interface
- Identification Systems
- Displays and Signal Processing
- Connectivity