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Model Number

OQT150-R101-2EP-IO-0,3M-V1

Triangulation sensor (SbR) with fixed cable and M12 connector, 4-pin

Features

- Miniature design with versatile mounting options
- Multi Pixel Technology (MPT) flexibility and adaptability
- Reduction of device variety several switch points within one sensor
- Reliable detection of all surfaces, independent of color and structure
- Low sensitivity to target color
- IO-link interface for service and process data

Product information

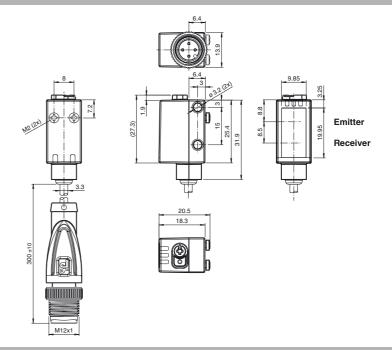
The R101 series miniature optical sensors are the first devices of their kind to offer an end-to-end solution in a small single standard design — from thru-beam sensor through to a distance measurement device. As a result of this design, the sensors are able to perform practically all standard automation tasks.

The entire series enables sensors to communicate via IO-Link.

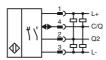
The DuraBeam laser sensors are durable and can be used in the same way as a standard sensor.

The use of Multi Pixel Technology gives the standard sensors a high level of flexibility and enables them to adapt more effectively to their operating environment.

Dimensions



Electrical connection



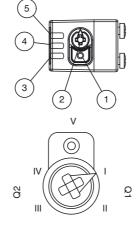
Pinout



Wire colors in accordance with EN 60947-5-2

(brown (white) (blue) (black) WH BU BK

Indicators/operating means



1	TEACH-IN button
2	Mode rotary switch
3	Switch output indicator Q2
4	Switch output indicator Q1
5	Operating indicator

I	Switch output 1 / switch point B	
Ш	Switch output 1 / switch point A	
Ш	Switch output 2 / switch point A / Switch output 2 / B	
IV		
٧	Keylock	

PEPPERL+FUCHS

Debection range min.	Technical data		
Detection range mix.	General specifications		
Detection range max	Detection range		
Adjustment range 20 150 mm standard white, 100 mm x 100 mm LED mix proup labelling exempt group standard white, 100 mm x 100 mm LED risk group labelling exempt group standard white, 100 mm x 100 mm LED risk group labelling exempt group continued with light spot exempt group exempt gr	Detection range min.		
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Angle of divergence Ambient light limit En 60947-5-2: 30000 Lux Entenctional safety related parameters MTTrd Mission Time (Ttu) Diagnostic Coverage (DC) O% Indicators/operating means Operation indicator Control elements En control elements	, ,		
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constantly off - switch output active constantly off control elements Control elements Deterrical specifications Operating voltage Operat	Function indicator		. ,
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Product standard EN 60947-5-2:2007+A1:2012 IEC 60947-5-2:2007 + A1:2012	Product standard		

Accessories

IO-Link-Master02-USB

IO-Link master, supply via USB port or separate power supply, LED indicators, M12 plug for sensor connection

V1-G-2M-PUR

Female cordset, M12, 4-pin, PUR cable

V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

Other suitable accessories can be found at www.pepperl-fuchs.com



Standards

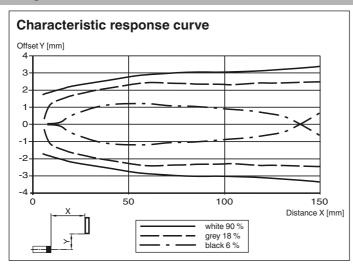
UL 60947-5-2: 2014 IEC 61131-9:2013 EN 62471:2008 EN 61131-9:2013

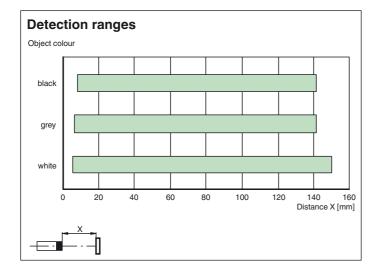
Approvals and certificates

UL approval

E87056, cULus Listed, class 2 power supply, type rating 1

Curves/Diagrams





Preferences

Teach-In:

You can use the rotary switch to select the relevant switching threshold A and/or B for teaching in for switch signal Q1 or Q2.

The yellow LEDs indicate the current state of the selected output.

To store a threshold value, press and hold the "TI" button until the yellow and green LEDs flash in phase (approx. 1 s). Teach-In starts when the "TI" button is released.

Successful Teach-In is indicated by alternating flashing (2.5 Hz) of the yellow and green LEDs.

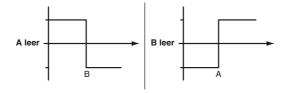
An unsuccessful Teach-In is indicated by rapidly alternating flashing (8 Hz) of the yellow and green LEDs.

After an unsuccessful Teach-In, the sensor continues to operate with the previous valid setting after the relevant visual fault signal is issued.

Different switching modes can be defined by teaching in the relevant distance measured values

for the switching thresholds A and B:

Single point mode:



Window mode:



Every taught-in switching threshold can be retaught (overwritten) by pressing the "TI" button again.

Pressing and holding the "TI" button for > 4 s completely deletes the taught-in value. The yellow and green LEDs go out simultaneously to indicate that this procedure has been completed. Successful resetting is indicated by alternating flashing (2.5 Hz) of the yellow and green LEDs.

Resetting to Factory Default Settings

Press the "Tl" button for > 10 s in rotary switch position ,O' to reset to factory default settings. The yellow and green LEDs go out simultaneously to indicate the resetting.

Resetting process starts when the "TI" button is released and is indicated by the yellow LED. After the process the sensor works with factory default settings, immediately.

OMT:

- Factory default settings switch signal Q1: Switch signal active, window mode
- Factory default settings switch signal Q2: Switch signal active, window mode

OQT:

- Factory default settings switch signal Q1: Switch signal active, BGS mode (background suppression)
- Factory default settings switch signal Q2: Switch signal active, BGS mode (background suppression)

Configuration via IO-Link interface

Configuring different operating modes via the IO-Link interface

The devices are equipped with an IO-Link interface as standard for diagnostics and parameterization tasks to ensure optimum adjustment of the sensors to the relevant application. Four different operating modes can be set, among other features:

Background suppression operating mode (one switch point):

· Detection of objects irrespective of type and color in a defined detection range. Objects in the background are suppressed.

active detection range

Background

Background evaluation operating mode (one switch point):

Detection of objects irrespective of type and color against a defined background. Reliable detection of objects at close range (detection range >= 0 mm). The background serves as reference.

active detection range

Single point mode operating mode (one switch point):

- Detection of objects irrespective of type and color in a defined detection range. Objects in the background are suppressed.
- The switch point corresponds exactly to the set point.

active detection range

Background

Window mode operating mode (two switch points):

- Detection of objects irrespective of type and color in a defined detection range. Reliable detection when object leaves the detection range.
- Window mode with two switch points.

active detection range

Foreground suppression

Background suppression

Center window mode operating mode (one switch point):

- Detection of objects irrespective of type and color in a defined detection range. Sets a defined window around a given object. Objects outside
 this window are not detected.
- · Window mode with one switch point.

active detection range

Foreground suppression

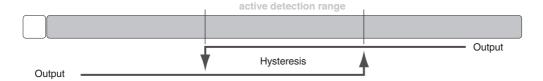
Background suppression

suppression

Background evaluation

Two point mode operating mode (hysteresis operating mode):

• Detection of objects irrespective of type and color between a defined switch-on and switch-off point.



Inactive operating mode:

· Evaluation of switching signals is deactivated.

The associated IODD device description file can be found in the download area at www.pepperl-fuchs.com.