Model Number

OBT350-R101-EP-IO-0,3M-V3

Triangulation sensor (BGS)

with fixed cable and 3-pin, M8 connector

Features

- Miniature design with versatile mounting options
- Best background suppressor in its class
- Precision object detection, almost irrespective of the color
- Extended temperature range -40°C ... 60°C
- High degree of protection IP69K
- IO-link interface for service and process data

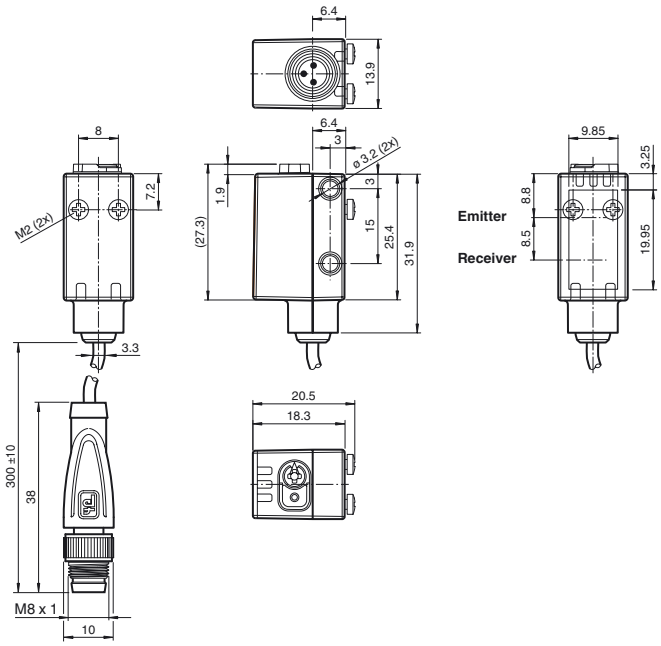
Product information

The 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.

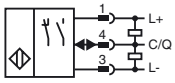
The DuraBeam laser sensors are durable and can be used in the same way as a standard sensor.

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

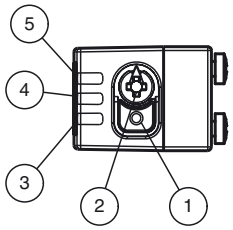


Pinout

Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)

Indicators/operating means



1	Light-on/dark-on changeover switch
2	Sensing range adjuster
3	Operating indicator / dark on
4	Signal indicator
5	Operating indicator / light on

Release date: 2019-03-26 Date of issue: 2019-03-26 267075-0096_eng.xml

Technical data

General specifications		
Detection range		5 ... 350 mm
Detection range min.		5 ... 25 mm
Detection range max.		5 ... 350 mm
Adjustment range		25 ... 350 mm
Reference target		standard white, 100 mm x 100 mm
Light source		LED
Light type		modulated visible red light
LED risk group labelling		exempt group
Black/White difference (6 %/90 %)		< 15 % at 350 mm
Diameter of the light spot		approx. 20 mm at a distance of 350 mm
Angle of divergence		approx. 3 °
Ambient light limit		EN 60947-5-2 : 40000 Lux
Functional safety related parameters		
$MTTF_d$		600 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operation indicator		LED green: constantly on - power on flashing (4Hz) - short circuit flashing with short break (1 Hz) - IO-Link mode
Function indicator		LED yellow: constantly on - object detected constantly off - object not detected
Control elements		Light-on/dark-on changeover switch
Control elements		Sensing range adjuster
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I_0	< 25 mA at 24 V supply voltage
Protection class		III
Interface		
Interface type		IO-Link (via C/Q = pin 4)
Device profile		Smart Sensor
Transfer rate		COM 2 (38.4 kBaud)
IO-Link Revision		1.1
Min. cycle time		2.3 ms
Process data witdh		Process data input 1 Bit Process data output 2 Bit
SIO mode support		yes
Device ID		0x110601 (1115649)
Compatible master port type		A
Output		
Switching type		The switching type of the sensor is adjustable. The default setting is: C/Q - Pin4: NPN normally open / light-on, PNP normally closed / dark-on, IO-Link
Signal output		1 push-pull (4 in 1) output, short-circuit protected, reverse polarity protected, overvoltage protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA , resistive load
Usage category		DC-12 and DC-13
Voltage drop	U_d	≤ 1.5 V DC
Switching frequency	f	500 Hz
Response time		1 ms
Conformity		
Communication interface		IEC 61131-9
Product standard		EN 60947-5-2
Ambient conditions		
Ambient temperature		-40 ... 60 °C (-40 ... 140 °F) , fixed cable -25 ... 60 °C (-13 ... 140 °F) , movable cable not appropriate for conveyor chains
Storage temperature		-40 ... 70 °C (-40 ... 158 °F)
Mechanical specifications		
Housing width		13.9 mm
Housing height		33.8 mm
Housing depth		18.3 mm
Degree of protection		IP67 / IP69 / IP69K
Connection		300 mm fixed cable with M8 x 1, 3-pin connector
Material		
Housing		PC (Polycarbonate)
Optical face		PMMA
Mass		approx. 17 g

Accessories

IO-Link-Master02-USB
IO-Link master, supply via USB port or separate power supply, LED indicators, M12 plug for sensor connection

V3-WM-2M-PUR
Cable socket, M8, 3-pin, PUR cable

V31-GM-2M-PUR
Female cordset, M8, 4-pin, PUR cable

V31-WM-2M-PUR
Female cordset, M8, 4-pin, PUR cable

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

Release date: 2019-03-26 09:57 Date of issue: 2019-03-26 267075-0096_eng.xml

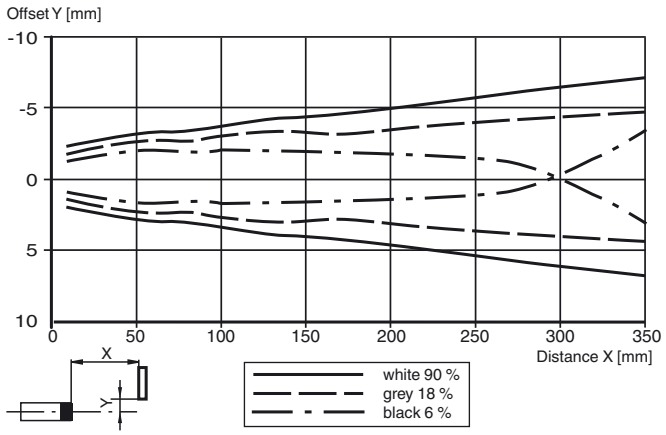
Cable length	0.3 m

Approvals and certificates

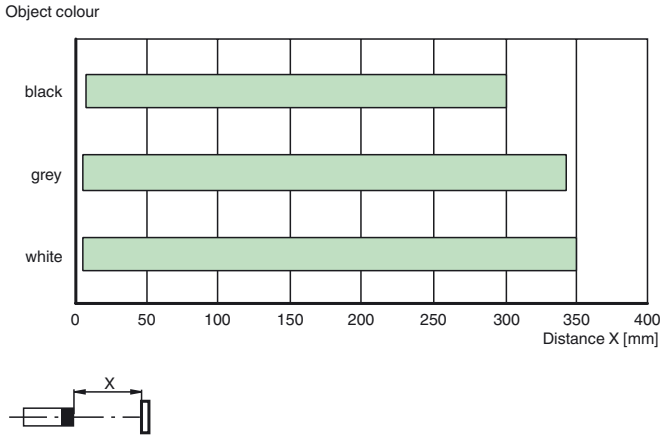
UL approval	E87056 , cULus Listed , class 2 power supply , type rating 1

Curves/Diagrams

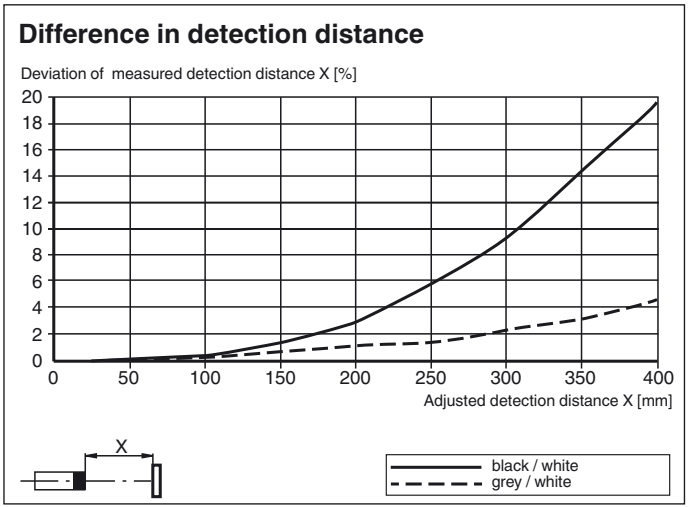
Characteristic response curve



Detection ranges

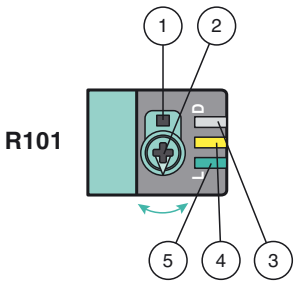


Difference in detection distance



Release date: 2019-03-26 09:57 Date of issue: 2019-03-26 267075-0096_eng.xml

Functions and Operation



1 - Light-on / dark-on changeover switch
2 - Sensing range /sensitivity adjuster
3 - Operating indicator / dark on
4 - Signal indicator
5 - Operating indicator / light on

To unlock the adjustment functions turn the sensing range adjuster for more than 180 degrees.

Sensing Range / Sensitivity

Turn sensing range / sensivity adjuster clockwise to increase sensing range / sensitivity.

Turn sensing range /sensivity adjuster counter clockwise to decrease sensing range / sensitivity.

If the end of the adjustment range is reached, the signal indicator starts flashing with 8 Hz.

Light-on / Dark-on Configuration

Press the light-on / dark-on changeover switch for more than 1 second (less than 4 seconds). The light-on / dark-on mode changes and the operating indicators are activated accordingly.

If you press the light-on / dark-on changeover switch for more than 4 seconds, the light-on / dark-on mode changes back to the original setting. On release of the light-on / dark-on changeover switch the current state is activated.

Restore Factory Settings

Press the light-on / dark-on changeover switch for more than 10 seconds (less than 30 seconds) until all LEDs turn off. On release of the light-on / dark-on changeover switch the signal indicator turns on. After 5 seconds the sensor resumes operation with factory default settings.

After 5 minutes of inactivity the sensing range / sensivity adjustment is locked. In order to reactivate the sensing range /sensivity adjustment, turn the sensing range / sensivity adjuster for more than 180 degrees.

Release date: 2019-03-26 09:57 Date of issue: 2019-03-26 267075-0096_eng.xml