



### Model Number

**OBT50-R3-E2-0,2M-V3**

Triangulation sensor (BGS)  
with fixed cable and 3-pin, M8 connector

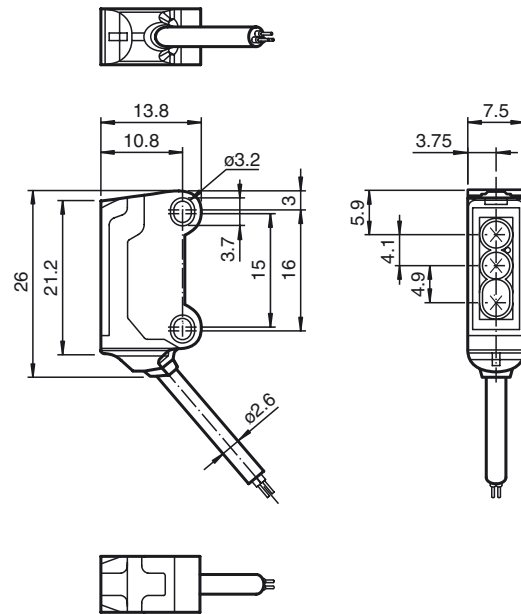
### Features

- 45° cable outlet for maximum mounting freedom under extremely tight space constraints
- Improvement in machine availability with abrasion-resistant, antistatic glass front
- Highly visible light spot, even on dark materials
- Precision object detection, almost irrespective of the color
- Extremely long detection range paves the way for new applications

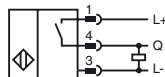
### Product information

The nano sensor has been developed for a broad range of applications. It offers excellent durability and is exceptionally easy to install. The housing is compact and, with its 45° cable outlet, can be installed in the smallest spaces. New functional principles and functionality open up a range of new options. The abrasion-resistant lens allows long operating times close to the moving object.

### Dimensions



### Electrical connection



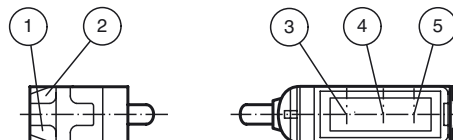
### Pinout



Wire colors in accordance with EN 60947-5-2

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

### Indicators/operating means



1	Operating display	green
2	Signal display	yellow
3	Emitter	
4	Receiver 1	
5	Receiver 2	

**Technical data****General specifications**

Detection range	3 ... 50 mm
Reference target	standard white, 100 mm x 100 mm
Light source	LED
Light type	modulated visible red light , 630 nm
Black/White difference (6 %/90 %)	< 15 % at 50 mm
Angle deviation	approx. 2 °
Diameter of the light spot	approx. 3.5 mm at a distance of 50 mm
Angle of divergence	approx. 2 °
Optical face	frontal
Ambient light limit	EN 60947-5-2 : 30000 Lux

**Functional safety related parameters**

MTTF <sub>d</sub>	800 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %

**Indicators/operating means**

Operation indicator	LED green, statically lit Power on , short-circuit : LED green flashing (approx. 4 Hz)
Function indicator	LED yellow ON: lights when object is detected

**Electrical specifications**

Operating voltage	U <sub>B</sub>	10 ... 30 V DC , class 2
No-load supply current	I <sub>0</sub>	< 10 mA
Protection class		III

**Output**

Switching type		NO contact
Signal output		1 PNP output, short-circuit protected, reverse polarity protected, open collector
Switching voltage		max. 30 V DC
Switching current		max. 50 mA , resistive load
Voltage drop	U <sub>d</sub>	≤ 1.5 V DC
Switching frequency	f	approx. 800 Hz
Response time		600 μs

**Directive conformity**

Electromagnetic compatibility	
Directive 2014/30/EU	EN 60947-5-2:2007 EN 60947-5-2/A1:2012

**Ambient conditions**

Ambient temperature	-25 ... 60 °C (-13 ... 140 °F)
Storage temperature	-30 ... 70 °C (-22 ... 158 °F)

**Mechanical specifications**

Housing width	7.5 mm
Housing height	26 mm
Housing depth	13.8 mm
Degree of protection	IP67
Connection	200 mm fixed cable with 3-pin, M8 x 1 connector
Material	
Housing	PC/ABS and TPU
Optical face	glass
Cable	PUR
Mass	approx. 20 g
Cable length	200 mm

**Approvals and certificates**

UL approval	E87056 , cULus Recognized, Class 2 Power Source
CCC approval	CCC approval / marking not required for products rated ≤36 V

**Accessories****MH-R3-01**

Mounting aid for sensors from the R3 series, mounting bracket

**MH-R3-02**

Mounting aid for sensors from the R3 series, mounting bracket

**MH-R3-03**

Mounting aid for sensors from the R3 series, mounting bracket

**MH-R3-04**

Mounting aid for sensors from the R3 series, mounting bracket

**V3-WM-2M-PUR**

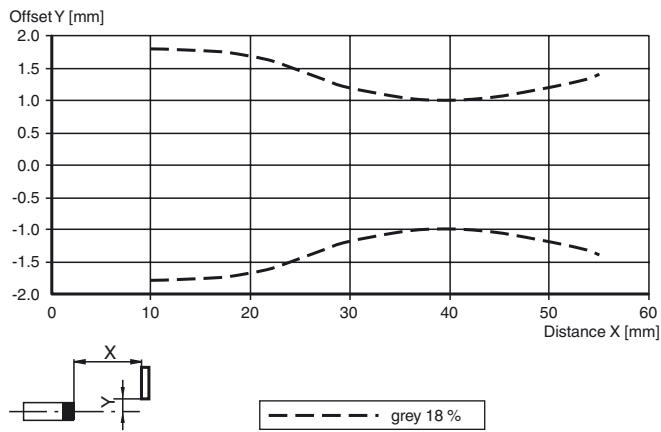
Cable socket, M8, 3-pin, PUR cable

Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)



## Curves/Diagrams

## Characteristic response curve



## Detection ranges

