Model Number

OBT30-R3-E2-0,2M-V31

Triangulation sensor (BGS)
with fixed cable and 4-pin, M8 connector

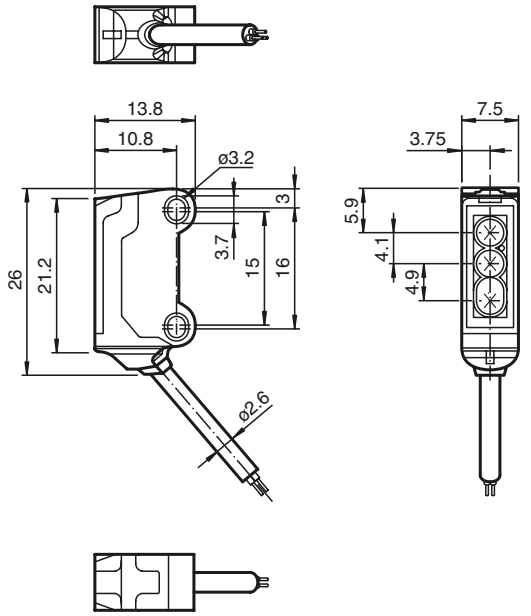
Features

- 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

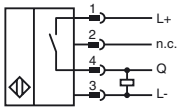
Product information

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

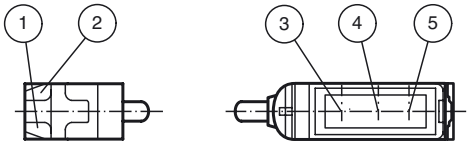


Pinout

Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
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	

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Technical data

General specifications		
Detection range		1 ... 30 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 %)		< 7 % at 30 mm
Angle deviation		approx. 2 °
Diameter of the light spot		approx. 2 mm at a distance of 30 mm
Angle of divergence		approx. 2 °
Optical face		frontal
Ambient light limit		EN 60947-5-2 : 30000 Lux
Functional safety related parameters		
$MTTF_d$		800 a
Mission Time (T_M)		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_B	10 ... 30 V DC , class 2
No-load supply current	I_0	< 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_d	≤ 1.5 V DC
Switching frequency	f	approx. 800 Hz
Response time		600 µs
Conformity		
Product standard		EN 60947-5-2
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 4-pin, M8x1 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

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

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

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

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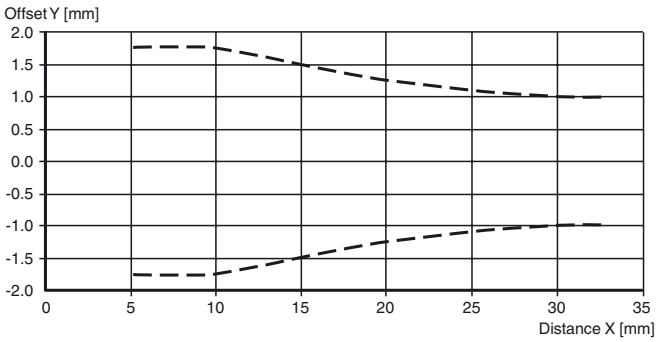
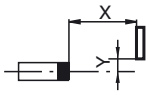
Curves/Diagrams

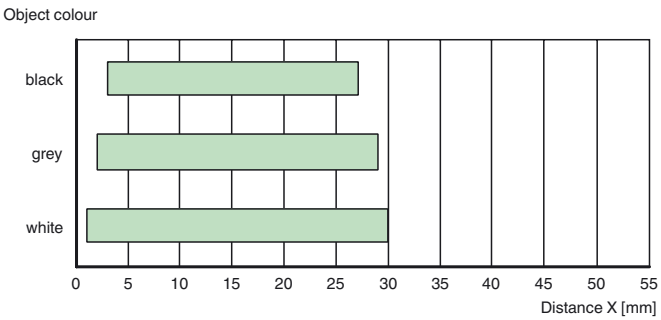
Characteristic response curve

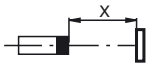




grey 18 %

Detection ranges





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