Model Number

OBT15-R3-E2-1T

Triangulation sensor (BGE)

with 2 m fixed cable

Features

- 45° cable outlet for maximum mounting freedom under extremely tight space constraints

- Improvement in machine availability with abrasion-resistant, antistatic glass front

- Detection of flat objects in front of a close background

- Extremely small light spot for very high switching point accuracy

- Highly visible light spot, even on dark materials

Product information

The R3 series 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.
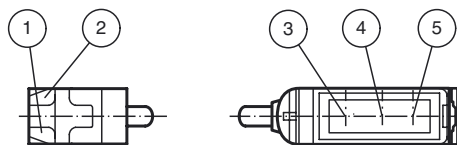
Dimensions
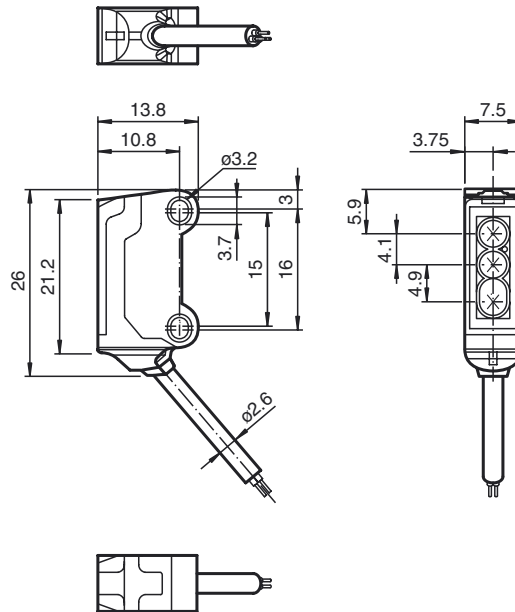
Electrical connection
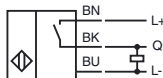
Indicators/operating means

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

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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1

Technical data

General specifications

Detection range	0 ... 15 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 %)	< 5 % at 15 mm
Angle deviation	approx. 2 °
Diameter of the light spot	approx. 2 mm at a distance of 15 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: Power on flashing: Short circuit/overload indication
Function indicator	LED yellow ON: sensor detects background

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC , class 2
No-load supply current	I_0	< 10 mA

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

Ambient conditions

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

Mechanical specifications

Degree of protection	IP67
Connection	2 m fixed cable
Material	
Housing	PC/ABS and TPU
Optical face	glass
Cable	PUR
Mass	approx. 20 g
Cable length	2 m

Compliance with standards and directives

Directive conformity	
EMC Directive 2004/108/EC	EN 60947-5-2:2007

Approvals and certificates

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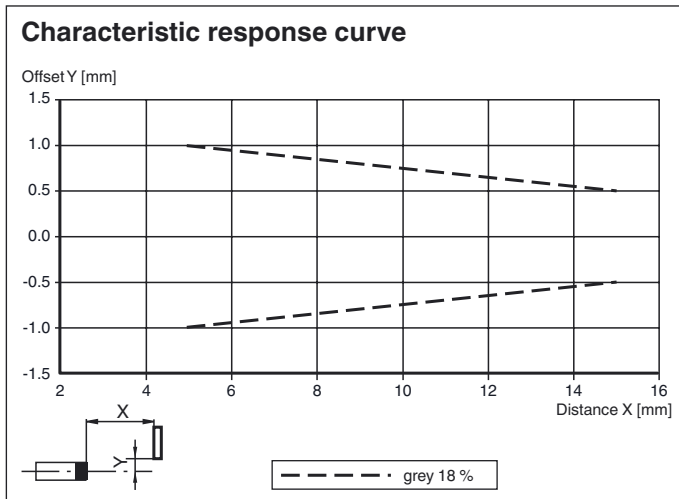
Accessories

MH-R2-01
Bracket for mounting R2 series sensors

MH-R2-02
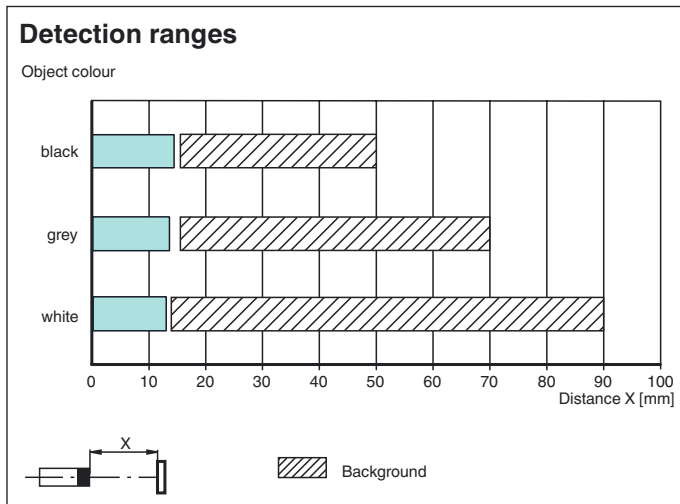Bracket for mounting R2 series sensors

MH-R2-03
Bracket for mounting R2 series sensors

MH-R2-04
Bracket for mounting R2 series sensors

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

Curves/Diagrams

Characteristic response curve

Offset Y [mm] / Distance X [mm]

- - - grey 18 %

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Detection ranges

Object colour

black	
grey	
white	

Distance X [mm]

X

Background

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3