



Model Number

OBT20-R2-E2-0,2M-V31

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

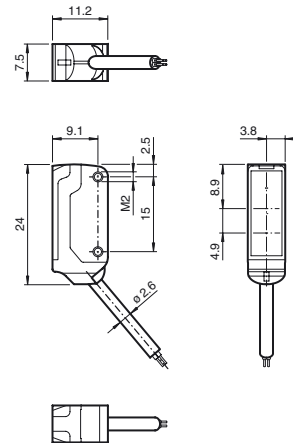
Features

- High-performance miniature photoelectric sensors
- 45° cable outlet for maximum mounting freedom under extremely tight space constraints
- Improvement in machine availability with abrasion-resistant, antistatic glass front
- Extremely small light spot for very high switching point accuracy
- Highly visible light spot, even on dark materials
- Precision detection of objects within the defined sensing range, almost irrespective of the color

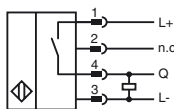
Product information

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



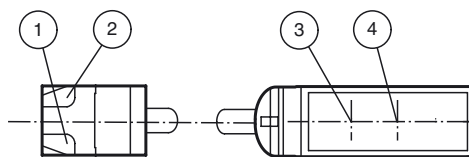
Pinout



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	

Release date: 2017-07-17 13:40 Date of issue: 2017-07-17 225917_eng.xml

Technical data**General specifications**

Detection range	4 ... 20 mm
Reference target	standard black, 100 mm x 100 mm
Light source	LED
Light type	modulated visible red light , 630 nm
Black/White difference (6%/90%)	< 5 % at 20 mm
Angle deviation	approx. 2 °
Diameter of the light spot	approx. 2 mm at a distance of 20 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

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	24 mm
Housing depth	11.2 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
Installation	Fixing screws , 2 x M2 allen head screws included with delivery
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-R2-01**

Mounting aid for R2 series, Mounting bracket

MH-R2-02

Mounting aid for R2 series, Mounting bracket

MH-R2-03

Mounting aid for R2 series, Mounting bracket

MH-R2-04

Mounting aid for R2 series, Mounting bracket

V31-WM-2M-PUR

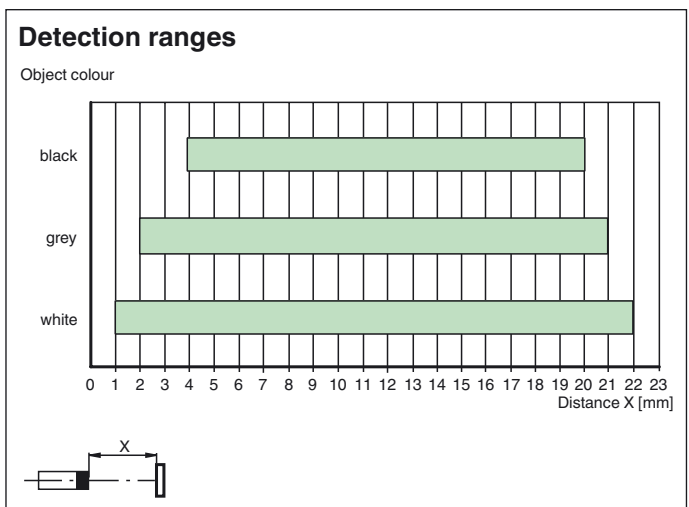
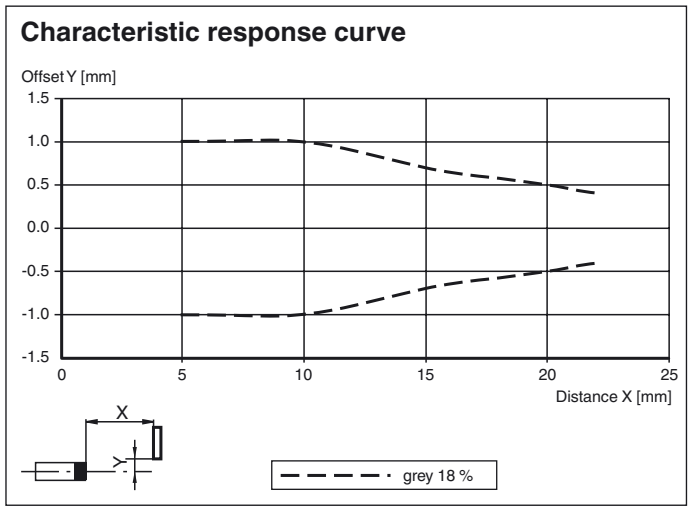
Female cordset, M8, 4-pin, PUR cable

V31-GM-2M-PUR

Female cordset, M8, 4-pin, PUR cable

Other suitable accessories can be found at

Curves/Diagrams



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