



**Model Number**

**OBR1000-R2-E2-0,2M-V31**

Retroreflective sensor with polarization filter  
with fixed cable and 4-pin, M8 connector

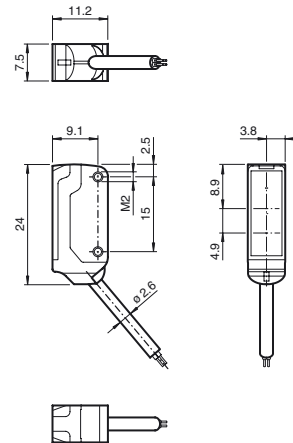
**Features**

- Ultra-small housing design
- 45° cable outlet for maximum mounting freedom under extremely tight space constraints
- Improvement in machine availability with abrasion-resistant, antistatic glass front
- Integrated polarization filter allows the detection of reflective objects
- Extremely long detection range paves the way for new applications

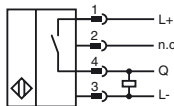
**Product information**

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**



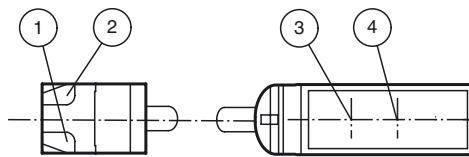
**Pinout**



Wire colors in accordance with EN 60947-5-2

- 1 | BN (brown)
- 2 | WH (white)
- 3 | BU (blue)
- 4 | BK (black)

**Indicators/operating means**



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

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

Effective detection range	0 ... 1 m
Reflector distance	40 ... 1000 mm
Threshold detection range	1.4 m
Reference target	H40 reflector
Light source	LED
Light type	modulated visible red light , 630 nm
Polarization filter	yes
Angle deviation	approx. 2 °
Diameter of the light spot	approx. 60 mm at a distance of 800 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: lights up when receiving the light beam ; flashes when falling short of the stability control; OFF when light beam is interrupted

**Electrical specifications**

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

**Input**

Test input	Test of switching function at 0 V
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**Output**

Switching type	NO contact / dark on	
Signal output	1 PNP output, short-circuit protected, reverse polarity protected, open collector	
Switching voltage	max. 30 V DC	
Switching current	max. 50 mA	
Voltage drop	U <sub>d</sub>	≤ 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**

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

**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**

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**

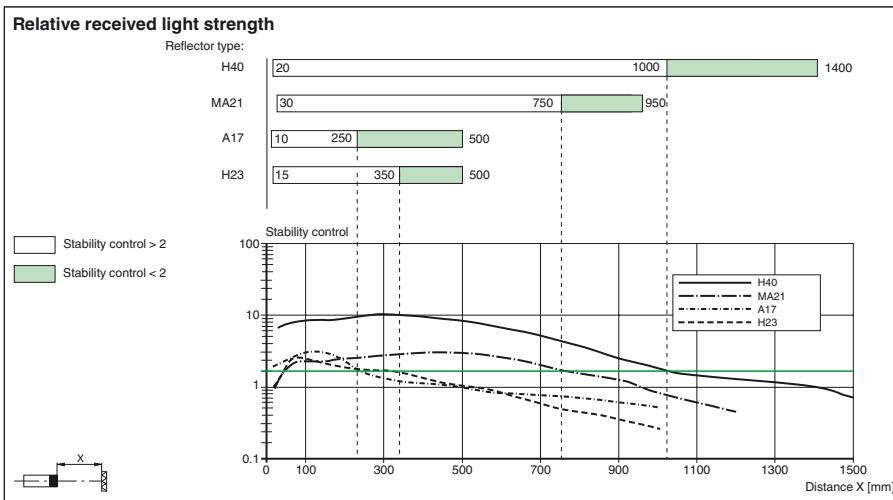
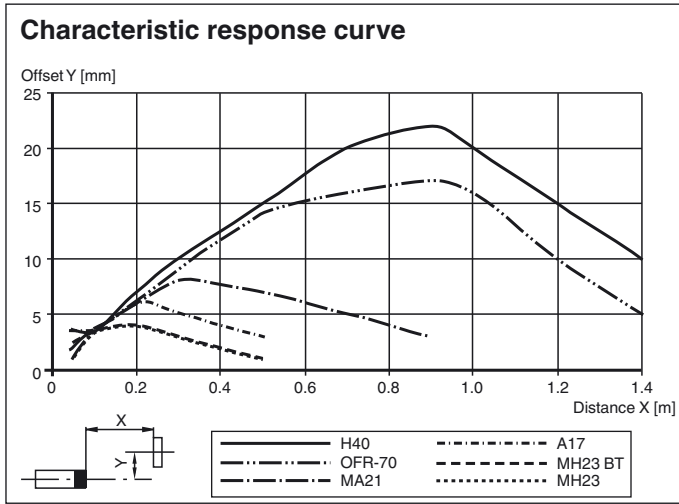
Female cordset, M8, 4-pin, PUR cable

**V31-GM-2M-PUR**

Female cordset, M8, 4-pin, PUR cable

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

Curves/Diagrams



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

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