



## Retroreflective sensor

### OBR1000-R2-E3-0,2M-V31-P



- Ultra-small housing design
- 45° cable outlet for maximum mounting freedom under extremely tight space constraints
- Integrated polarization filter allows the detection of reflective objects
- Extremely long detection range paves the way for new applications

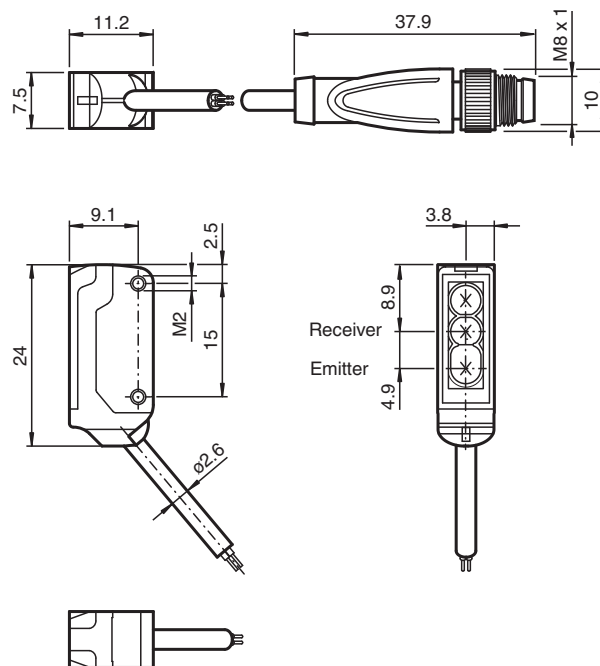
Retroreflective sensor for standard applications, miniature design, polarization filter, 1000 mm detection range, red light, light on, PNP output, 200 mm fixed cable with plug M8, 4-pin



### Function

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.

### Dimensions



### 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

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

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## Technical Data

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	
Opening angle	approx. 2 °	
Optical face	frontal	
Ambient light limit	EN 60947-5-2 : 30000 Lux	
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>	800 a	
Mission Time (T <sub>M</sub> )	20 a	
Diagnostic Coverage (DC)	0 %	
<b>Indicators/operating means</b>		
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 operating reserve; OFF when light beam is interrupted	
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	10 ... 30 V DC , class 2
No-load supply current	I <sub>0</sub>	< 10 mA
<b>Input</b>		
Test input	Test of switching function at 0 V	
<b>Output</b>		
Switching type	NC contact / light 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	
<b>Conformity</b>		
Product standard	EN 60947-5-2	
<b>Approvals and certificates</b>		
UL approval	cULus Recognized, Class 2 Power Source	
CCC approval	CCC approval / marking not required for products rated ≤36 V	
<b>Ambient conditions</b>		
Ambient temperature	-25 ... 60 °C (-13 ... 140 °F)	
Storage temperature	-30 ... 70 °C (-22 ... 158 °F)	
<b>Mechanical specifications</b>		
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	
<b>Material</b>		
Housing	PC/ABS and TPU	
Optical face	PMMA	
Cable	PUR	
Installation	Fixing screws , 2 x M2 allen head screws included with delivery	
Mass	approx. 20 g	
Cable length	200 mm	

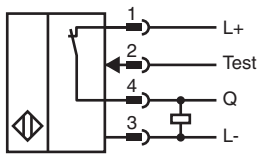
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**Connection**



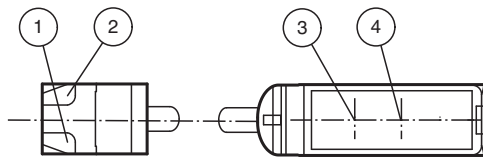
**Connection Assignment**



Wire colors in accordance with EN 60947-5-2

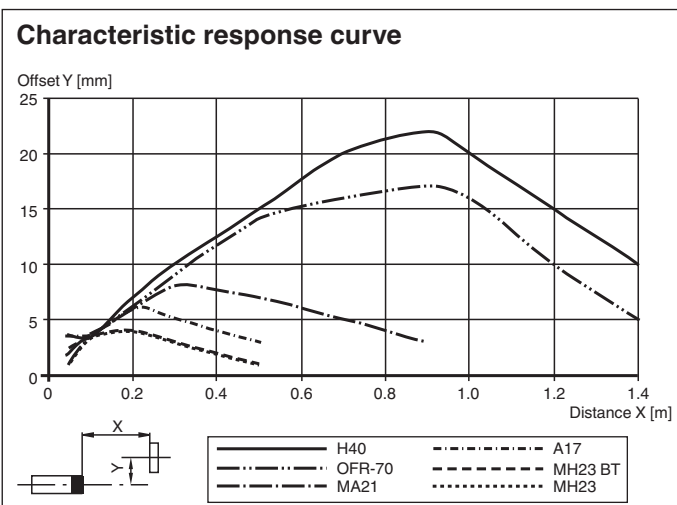
- 1 | BN (brown)
- 2 | WH (white)
- 3 | BU (blue)
- 4 | BK (black)

**Assembly**



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

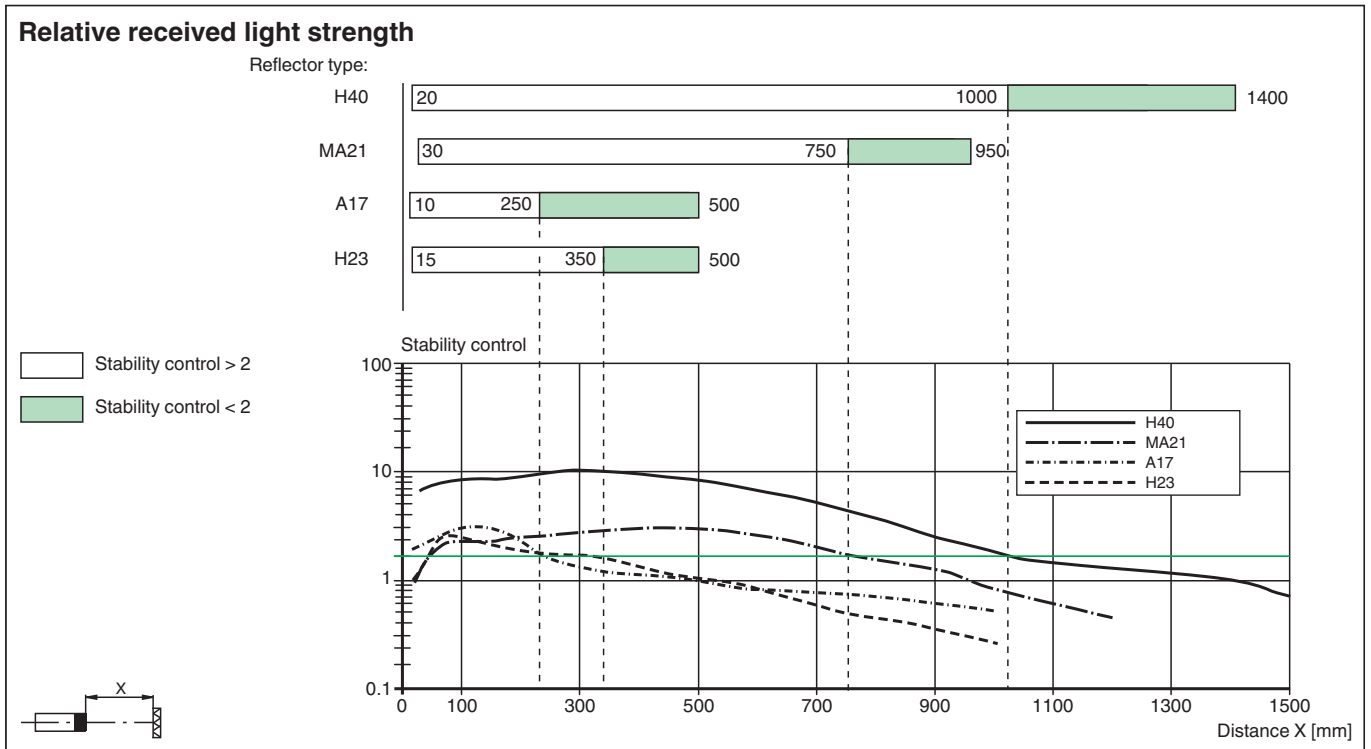
**Characteristic Curve**



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## Characteristic Curve



## Accessories

	<b>MH-R2-01</b>	Mounting aid for R2 series, Mounting bracket
	<b>MH-R2-02</b>	Mounting aid for R2 series, Mounting bracket
	<b>MH-R2-03</b>	Mounting aid for R2 series, Mounting bracket
	<b>MH-R2-04</b>	Mounting aid for R2 series, Mounting bracket
	<b>V31-WM-2M-PUR</b>	Female cordset single-ended M8 angled A-coded, 4-pin, PUR cable grey
	<b>V31-GM-2M-PUR</b>	Female cordset single-ended M8 straight A-coded, 4-pin, PUR cable grey

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