



Model Number

OBR50M-R300-2P1-V1

Retroreflective sensor

Features

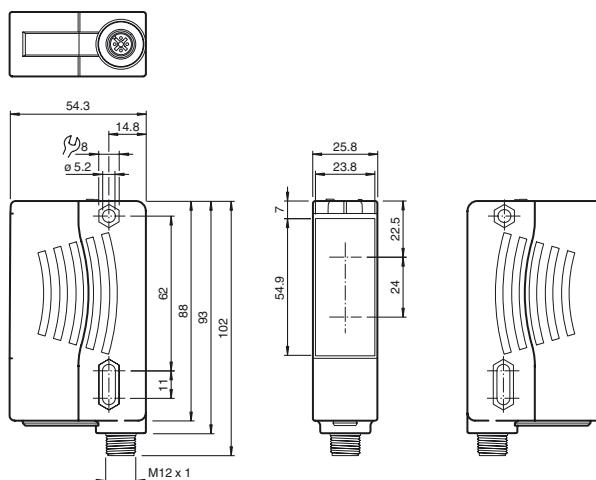
- Pulse Ranging Technology (PRT)
- Optimized for use with fixed reflectors
- Good alignability due to red transmission LED
- Reliable detection of reflecting metall objects
- Simple operation with only one TEACH-IN button

Product information

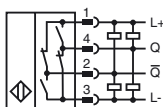
The sensors in the R300 series represent a versatile product line and adopt various functional principles. All sensors operate using proven Pulse Ranging Technology (PRT) and are characterized by high sensing ranges and detection ranges. Contained within the compact housing of the 28 series of light barriers, the R300 offers all of the properties of PRT such as maximum reliability when detecting objects and immunity against ambient light and cross-talk. To achieve this, the sensors in the R300 series make use of a number of different kinds of measurement data. What's more, the sensors are equipped with red light that is safe for the human eye as standard, making it easier to align the devices, even across expansive work areas. These features, combined with an innovative and intuitive operating concept, provide solutions for conventional automation tasks delivering the highest level of performance.

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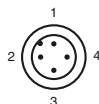
Dimensions



Electrical connection



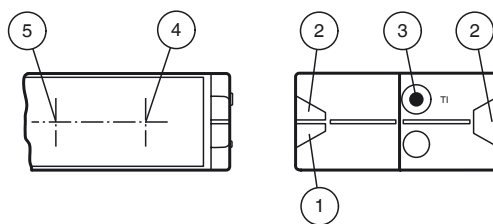
Pinout



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 indicator	Green
2	Signal indicator	Yellow
3	Teach-in button	
4	Transmitter	
5	Receiver	

Technical data**General specifications**

Effective detection range	0 ... 50 m
Reflector distance	0.2 ... 50 m
Reference target	3 x REF-H100
Light source	LED
Light type	modulated visible red light
LED risk group labelling	exempt group
Angle deviation	max. $\pm 2^\circ$
Measuring method	Pulse Ranging Technology (PRT)
Diameter of the light spot	approx. 16 cm x 18 cm at a distance of 10 m
Ambient light limit	50000 Lux
Window width	100 mm

Functional safety related parameters

MTTF _d	100 a
Mission Time (T _M)	10 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Operation indicator	LED green
Function indicator	2 LEDs yellow for switching state
Control elements	Teach-In key

Electrical specifications

Operating voltage	U _B	10 ... 30 V DC
Ripple		10 % within the supply tolerance
No-load supply current	I ₀	≤ 80 mA / 24 V DC
Time delay before availability	t _v	< 0.7 s , for temperatures <-30°C compliance of the specification 5 mins after power on

Output

Switching type		Q - Pin4: NPN normally closed / light-on, PNP normally open / dark-on /Q - Pin2: NPN normally open / dark-on, PNP normally closed / light-on
Signal output		2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Switching frequency	f	50 Hz
Response time		5 ms

Directive conformity

Electromagnetic compatibility	
Directive 2014/30/EU	EN 60947-5-2:2007 EN 60947-5-2/A1:2012

Standard conformity

Standards	EN 60947-5-2:2007+A1:2012 IEC 60947-5-2:2007 + A1:2012 EN 60825-1:2007 UL 60947-5-2: 2014
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Ambient conditions

Ambient temperature	-40 ... 55 °C (-40 ... 131 °F)
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)

Mechanical specifications

Housing width	25.8 mm
Housing height	88 mm
Housing depth	54.3 mm
Degree of protection	IP67
Connection	4-pin, M12 x 1 connector
Material	
Housing	Plastic ABS
Optical face	PMMA
Mass	90 g

Approvals and certificates

UL approval	E87056 , cULus Listed , class 2 power supply , type rating 1
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Other suitable accessories can be found at



Curves/Diagrams

