



**Model Number**

**OBD8000-R300-2P1-V1-L**

Diffuse mode sensor  
with 4-pin, M12 x 1 connector

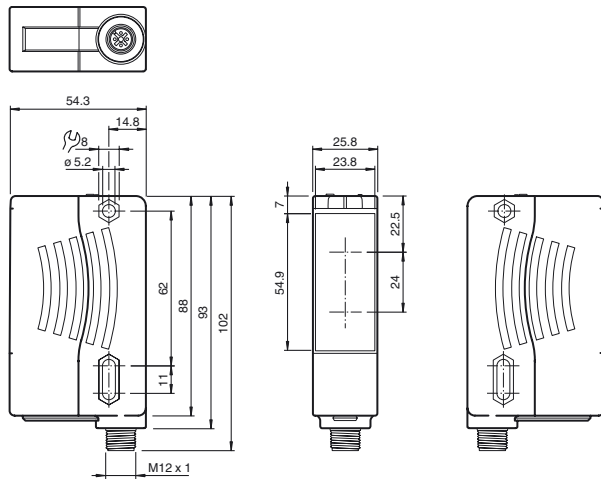
**Features**

- Extremely long detection range paves the way for new applications
- Pulse Ranging Technology (PRT)
- Visible light source for easy alignment
- Minimal black-white difference
- Switch point adjustment with quick twist
- Absolutely reliable background suppression

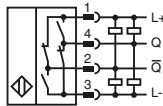
**Product information**

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.

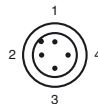
**Dimensions**



**Electrical connection**



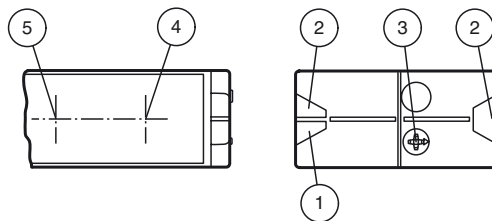
**Pinout**



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	Sensing range adjuster	
4	Emitter	
5	Receiver	

Release date: 2017-03-21 09:02 Date of issue: 2017-03-21 292666\_eng.xml

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

Detection range	0.03 ... 8 m
Adjustment range	0.05 ... 8 m
Reference target	Kodak white (90%)
Light type	modulated visible red light
<b>Laser nominal ratings</b>	
Note	LASER LIGHT , DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS
Laser class	1M
Wave length	660 nm
Beam divergence	< 25 mrad
Pulse length	4 ns
Repetition rate	250 kHz
max. pulse energy	< 2.4 nJ
Black/White difference (6%/90%)	< 0.5 %
Angle deviation	max. $\pm 2^\circ$
Measuring method	Pulse Ranging Technology (PRT)
Diameter of the light spot	vertical 60 mm , horizontal 30 mm at a distance of 2 m
Ambient light limit	50000 Lux

**Functional safety related parameters**

MTTF <sub>d</sub>	100 a
Mission Time (T <sub>M</sub> )	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 <sub>B</sub>	10 ... 30 V DC
Ripple		10 % within the supply tolerance
No-load supply current	I <sub>0</sub>	$\leq 80$ mA / 24 V DC
Time delay before availability	t <sub>v</sub>	< 0.7 s , for temperatures < -30°C compliance of the specification 5 mins after power on

**Output**

Switching type	Q - Pin4: NPN normally closed / dark-on, PNP normally open / light-on /Q - Pin2: NPN normally open / light-on, PNP normally closed / dark-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 IEC 60825-1:2007 UL 60947-5-2: 2014
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**Ambient conditions**

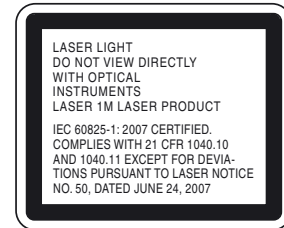
Ambient temperature	-40 ... 55 °C (-40 ... 131 °F)
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)

**Mechanical specifications**

Degree of protection	IP67
Connection	4-pin, M12 x 1 connector
<b>Material</b>	
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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**Laserlabel****Accessories****OMH-05**

Mounting aid for round steel  $\varnothing$  12 mm or sheet 1.5 mm ... 3 mm

**OMH-07**

Mounting aid for round steel  $\varnothing$  12 mm or sheet 1.5 mm ... 3 mm

**OMH-21**

Mounting bracket

**OMH-22**

Mounting bracket

**OMH-MLV11-K**

dove tail mounting clamp

**OMH-RLK29-HW**

Mounting bracket for rear wall mounting

**OMH-K01**

dove tail mounting clamp

**OMH-K03**

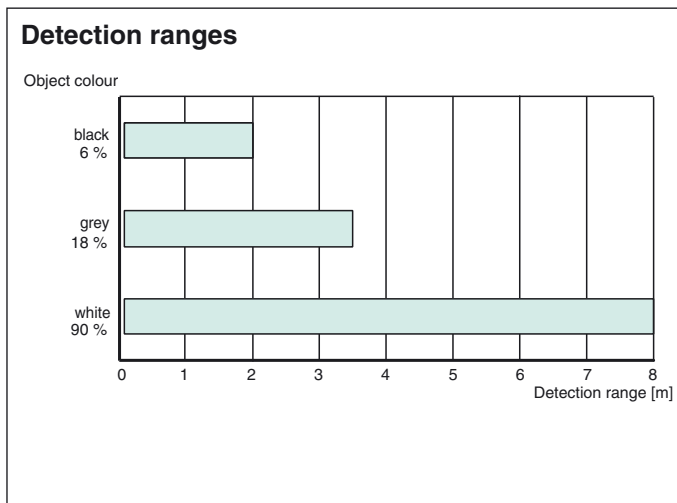
dove tail mounting clamp

**OMH-VDM28-01**

Metal enclosure for inserting protective panes or apertures

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

## Curves/Diagrams



## Laser notice laser class 1M

- The irradiation can lead to irritation especially in a dark environment. Do not point at people!
- Caution: laser light, do not observe laser light with optical instruments such as magnifying glasses, microscopes, telescopes or binoculars!
- Maintenance and repairs should only be carried out by authorized service personnel!
- Caution: use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- IEC 60825-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007