



**Model Number**

**OBD30M-R2000-4EP-V1V17-T-1L**

2-D LiDAR Sensor  
with three M12 x 1 connectors

**Features**

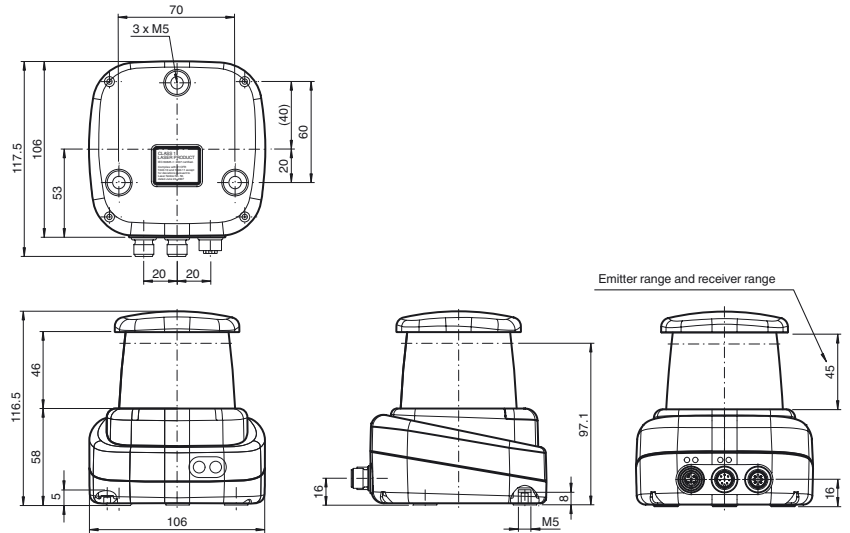
- 4 freely programmable monitoring fields
- 4 inputs/outputs (selectable)
- High operating range
- High angle resolution
- Deep-freeze applications
- 360°-angle of measurement
- Measuring method PRT (Pulse Ranging Technology)

**Product information**

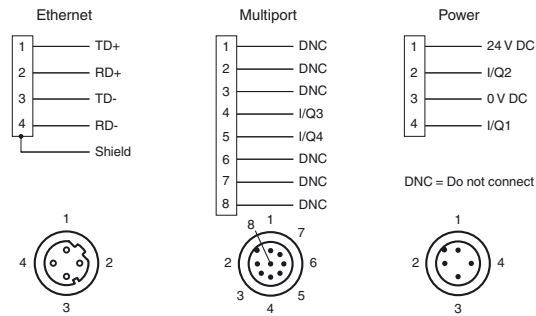
Based on Pulse Ranging Technology (PRT), the sensor is powerful for measurements with a long range and a small light spot. The device scans its environment over the complete measuring angle of 360°. Due to the high scanning frequency, this sensor type is suitable for advanced applications. The device meets laser class 1 and is eye safe. Additional precautions to protect the operating personnel are not required. The interactive all-round display integrated in the optical surface can freely display individual texts and graphics. A wide range of accessories enables the sensor to be used in different applications. A PACTware device type manager (DTM) specially developed for this series offers extensive configuration and diagnostic options.

Release date: 2019-02-06 08:21 Date of issue: 2019-02-06 279200\_eng.xml

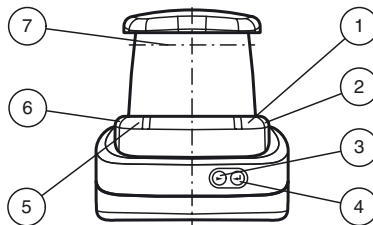
**Dimensions**



**Electrical connection**



**Indicators/operating means**



1	Operating status	green
2	Fault indication	red
3	Menu button	
4	Menu button	
5	Q2 signal indicator	yellow
6	Q1 signal indicator	yellow
7	Laser outlet	

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

Measurement range	0.1 ... 10 m (bk 10%) 0,1 ... 30 m (wh 90 %) 0,1 ... 30 m (reflector) Min. reflectivity 2.5%
Light source	laser diode
Light type	modulated infrared light
Laser nominal ratings	
Note	LASER RADIATION , DO NOT STARE INTO BEAM
Laser class	1
Wave length	905 nm
Beam divergence	transversal 2 mrad , longitudinal 10 mrad
Pulse length	5 ns
Repetition rate	54 kHz
max. pulse energy	< 94 nJ
Measuring method	Pulse Ranging Technology (PRT)
Scan rate	10 Hz, 20 Hz, 30 Hz
Scanning angle	360°
Diameter of the light spot	25 mm x 105 mm at 10 m
Ambient light limit	> 80000 Lux

**Functional safety related parameters**

MTTF <sub>d</sub>	75 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %

**Indicators/operating means**

Operation indicator	LED green
Data flow indicator	LED yellow: active ethernet LED green: Ethernet link
Function indicator	LED red: fault Yellow LED: I/Q1 + I/Q2
Control elements	2 Button
Parameterization indicator	24 x 252 pixels , red

**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>	≤ 400 mA / 24 V DC
Power consumption	P <sub>0</sub>	< 10 W
Time delay before availability	t <sub>v</sub>	< 40 s

**Integrated application**

Application	Field monitoring
Number of fields	4
Response time	30 ms + 1 Scan duration
Detectable object shape	Almost any
Object size	> 1 mm
Linking fields	Up to 4 x 3 levels

**Interface**

Interface type	4 x switching inputs/outputs (selectable)
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**Input/Output**

Input/output type	4 Inputs/Outputs , Independently configurable , short circuit/ reverse polarity protected
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**Input**

Switching threshold	low: U <sub>e</sub> < 5 V, high: U <sub>e</sub> > 10 V
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**Output**

Switching threshold	low: U <sub>a</sub> < 1 V, high: U <sub>a</sub> > U <sub>b</sub> - 1 V
Switching current	100 mA per output

**Measurement accuracy**

Measuring speed	54000 measurements per second
Angle resolution	0,071°; 0,15°; 0,2°
Repeat accuracy	< 12 mm

**Ambient conditions**

Ambient temperature	-30 ... 50 °C (-22 ... 122 °F)
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)
Relative humidity	95 % , no moisture condensation

**Mechanical specifications**

Housing width	106 mm
Housing height	116.5 mm
Degree of protection	IP67
Connection	4-pin, M12x1 connector, standard (supply) , 8-pin, M12x1 connector, A-coded (MultiPort) , 4-pin, M12x1 socket, D-coded (LAN)
Material	
Housing	ABS + PC + Aluminum
Optical face	PMMA

**Laserlabel****CLASS 1  
LASER PRODUCT**

IEC 60825-1: 2007 certified.

Complies with 21 CFR  
1040.10 and 1040.11 except  
for deviations pursuant to  
Laser Notice No. 50,  
dated June 24, 2007**Accessories****Schutzkappe LS610 Zubehoer**M12 protective cap set (connector +  
socket) for series LS610 / LS611**Funktionserdung LS610/VDM100  
Zubehoer**Function grounding for LS610 / LS611 /  
VDM100 series**V1SD-G-2M-PUR-ABG-V45-G**Connection cable, M12 to RJ-45, PUR  
cable 4-pin, CAT5e**V1SD-G-5M-PUR-ABG-V45-G**Connection cable, M12 to RJ-45, PUR  
cable 4-pin, CAT5e**V1SD-G-ABG-PG9**Cable connector, M12, 4-pin, D-coded,  
shielded, non pre-wired**V1-G-5M-PUR**

Female cordset, M12, 4-pin, PUR cable

**V1-G-BK5M-PUR-U**

Female cordset, M12, 4-pin, PUR cable

**MH-R2000**Mounting aid for R2000 series, Quick  
clamp and adjustment system**PACTware 4.1**

FDT Framework

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

Mass	approx. 0.8 kg
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#### Compliance with standards and directives

##### Directive conformity

EMC Directive 2004/108/EC	EN 60947-5-2:2007
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##### Standard conformity

Product standard	EN 60947-5-2:2007 , IEC 60947-5-2:2007
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Laser class	IEC 60825-1:2007 EN 60825-1:2007
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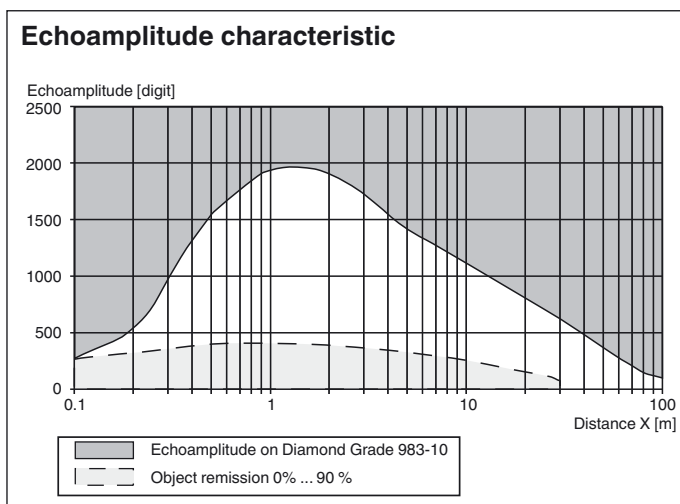
#### Approvals and certificates

Protection class	III (operating voltage 50 V)
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UL approval	cULus Listed, Class 2 Power Source, Type 1 enclosure
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CCC approval	CCC approval / marking not required for products rated ≤36 V
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#### Curves/Diagrams



#### Laser notice laser class 1

- Maintenance and repairs should only be carried out by authorized service personnel!
- Attach the device so that the warning is clearly visible and readable.
- Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.