



Model Number

OBD30M-R2000-4EP-V1V17-1L

2-D LiDAR Sensor

with three M12 x 1 connectors

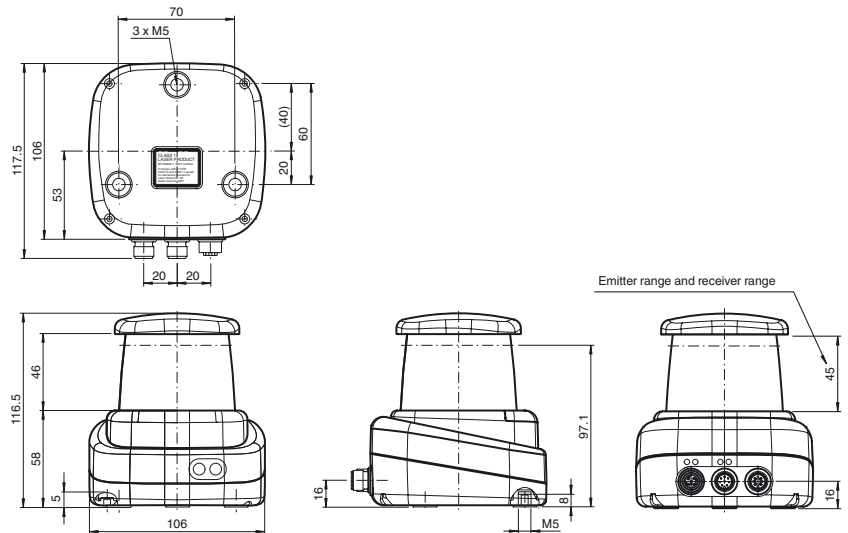
Features

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

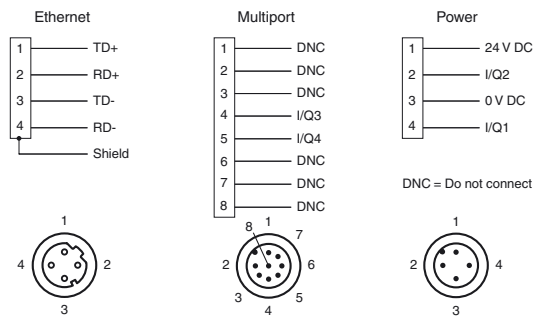
Product information

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.

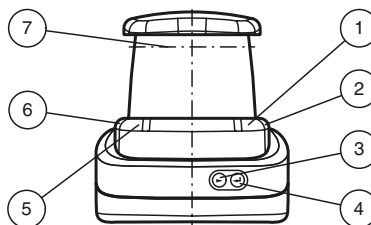
Dimensions



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 _d	75 a
Mission Time (T _M)	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 _B	10 ... 30 V DC
Ripple		10 % within the supply tolerance
No-load supply current	I ₀	≤ 400 mA / 24 V DC
Power consumption	P ₀	< 10 W
Time delay before availability	t _v	< 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 _e < 5 V, high: U _e > 10 V
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Output

Switching threshold	low: U _a < 1 V, high: U _a > U _b - 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	-10 ... 50 °C (14 ... 122 °F)
Storage temperature	-20 ... 70 °C (-4 ... 158 °F)
Relative humidity	95 % , no moisture condensation

Mechanical specifications

Housing width	106 mm
Housing height	116.5 mm
Degree of protection	IP65
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-R2000Mounting 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

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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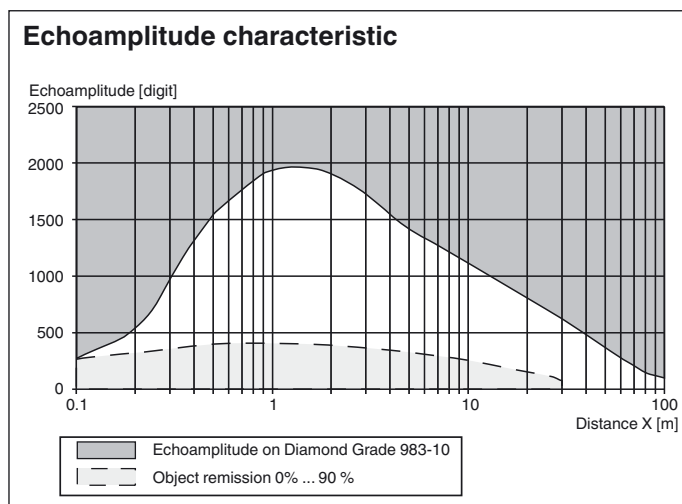
Laser class	IEC 60825-1:2007 EN 60825-1:2007
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Approvals and certificates

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.