



### Model Number

**OMD30M-R2000-B23-V1V1D-T-1L**

2-D LiDAR Sensor

with three M12 x 1 connectors

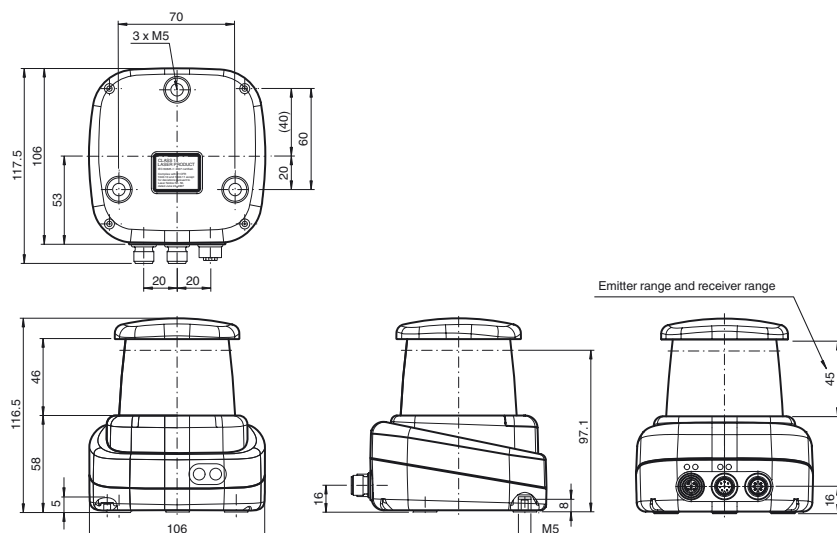
### Features

- High operating range
- Very high angle resolution
- Infrared light
- Deep-freeze applications
- Measuring method PRT (Pulse Ranging Technology)
- Flexible measured data filter

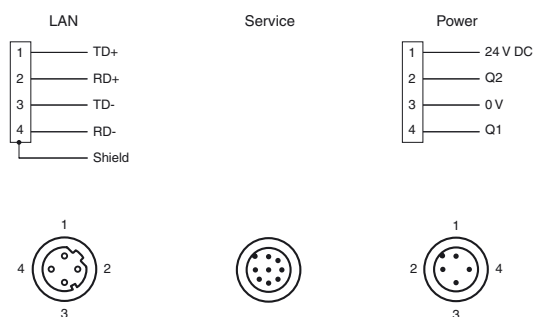
### Product information

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.

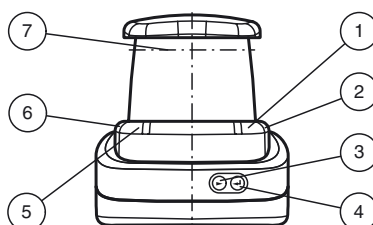
### Dimensions



### 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 ... 200 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	250 kHz
max. pulse energy	< 94 nJ
Measuring method	Pulse Ranging Technology (PRT)
Scan rate	10 ... 50 s <sup>-1</sup>
Scanning angle	360°
Diameter of the light spot	25 mm x 105 mm at 10 m
Filter	Maximum, average, median, reflectivity
Ambient light limit	> 80000 Lux
Resolution	1 mm

### 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 LED yellow: Q1 + Q2
Control elements	2 Button
Parameterization indicator	24 x 252 pixels , red

### Electrical specifications

Operating voltage	U <sub>B</sub>	10 ... 30 V
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>	< 15 W
Time delay before availability	t <sub>v</sub>	< 40 s

### Interface

Interface type	Fast Ethernet, 2 switching outputs
Protocol	HTTP , TCP/IP and UDP/IP

### Input/Output

Input/output type	2 Outputs , Independently configurable , short circuit/reverse polarity protected
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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

### Conformity

Laser safety	EN 60825-1:2014
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### Measurement accuracy

Measuring speed	250000 measurements per second
Measured value noise	typ. ± 10 mm (1 sigma; max 20 mm; 0.1 m ... 8 m) typ. ± 12 mm (1 sigma; max 20 mm; 8 m ... 30 m) with measured value filter deactivated
Angle resolution	0.014 °
Absolute accuracy	typ. ± 25 mm
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
Mass	approx. 0.8 kg

## 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

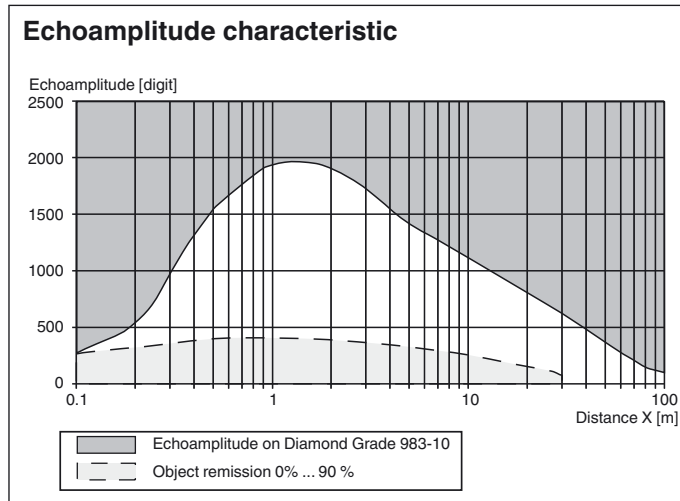
Other suitable accessories can be found at  
[www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

**Compliance with standards and directives****Standard conformity**

Product standard	IEC 60947-5-2
Shock and impact resistance	EN 60068-2-6 EN 60068-2-27

**Approvals and certificates**

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

**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.