



## 2-D LiDAR Sensor

OMD30M-R2000-B23-V1V1D-HD-1L



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

R2000 HD, 2-D LiDAR sensor for precise measurement tasks and positioning, measuring range to object up to 30 m, Ethernet



### Function

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.

### Safety Information



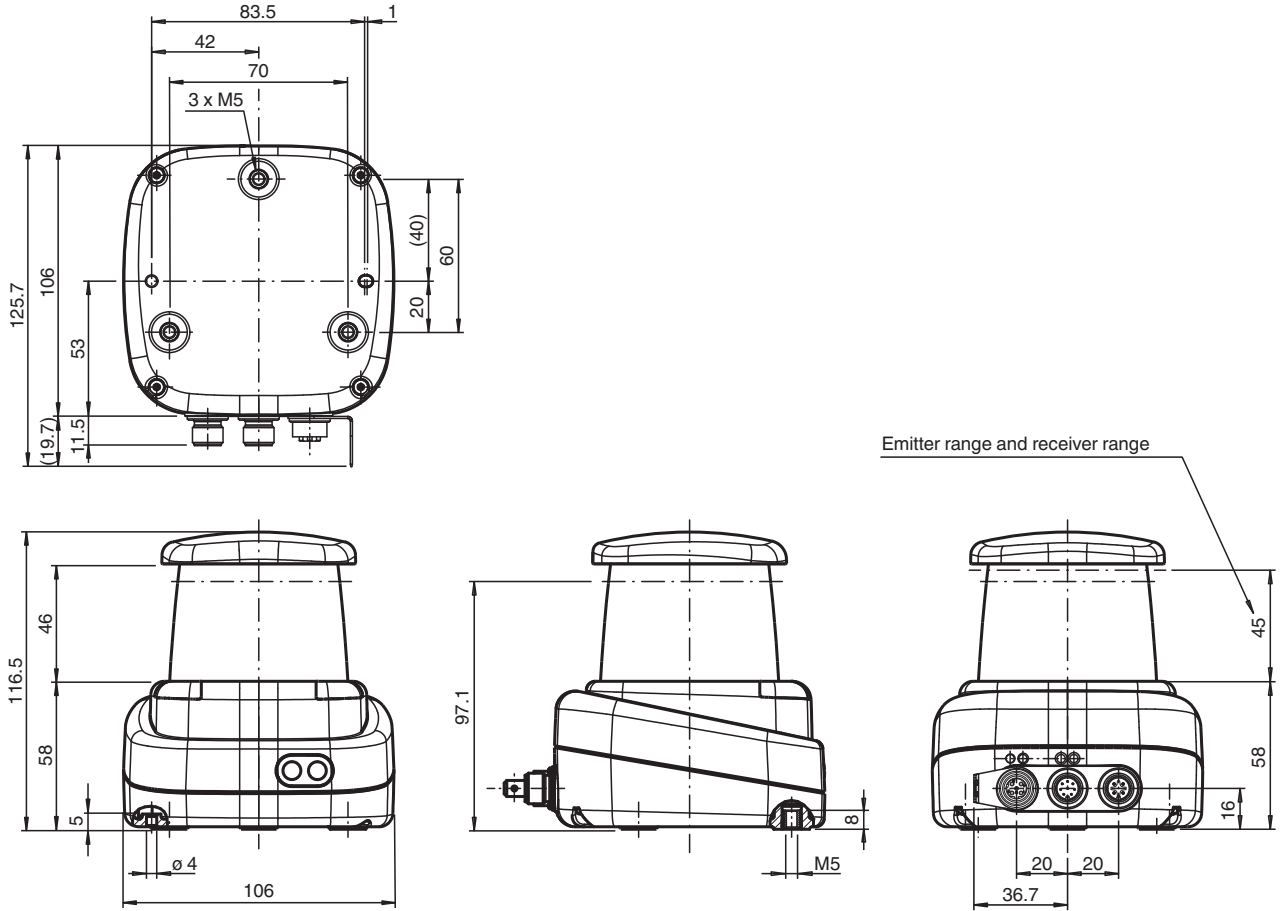
### Safety Information

#### Laser Class 1 Information

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.

Dimensions



Emitter range and receiver range

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	84 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

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## Technical Data

MTTF <sub>d</sub>		75 a
Mission Time (T <sub>M</sub> )		20 a
Diagnostic Coverage (DC)		0 %
<b>Indicators/operating means</b>		
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
<b>Electrical specifications</b>		
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>	< 15 W
Time delay before availability	t <sub>v</sub>	< 40 s
<b>Interface</b>		
Interface type		Fast Ethernet, 2 switching outputs
Protocol		HTTP , TCP/IP and UDP/IP
<b>Input/Output</b>		
Input/output type		2 Outputs , Independently configurable , short circuit/reverse polarity protected
<b>Output</b>		
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
<b>Conformity</b>		
Laser safety		EN 60825-1:2014
<b>Compliance with standards and directives</b>		
Standard conformity		
Product standard		IEC 60947-5-2
Shock and impact resistance		EN 60068-2-6 EN 60068-2-27
<b>Measurement accuracy</b>		
Measuring speed		84000 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		0.042 °
Absolute accuracy		typ. ± 25 mm
Repeat accuracy		< 12 mm
<b>Approvals and certificates</b>		
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
<b>Ambient conditions</b>		
Ambient temperature		-10 ... 50 °C (14 ... 122 °F)
Storage temperature		-20 ... 70 °C (-4 ... 158 °F)
Relative humidity		95 % , no moisture condensation
<b>Mechanical specifications</b>		
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		

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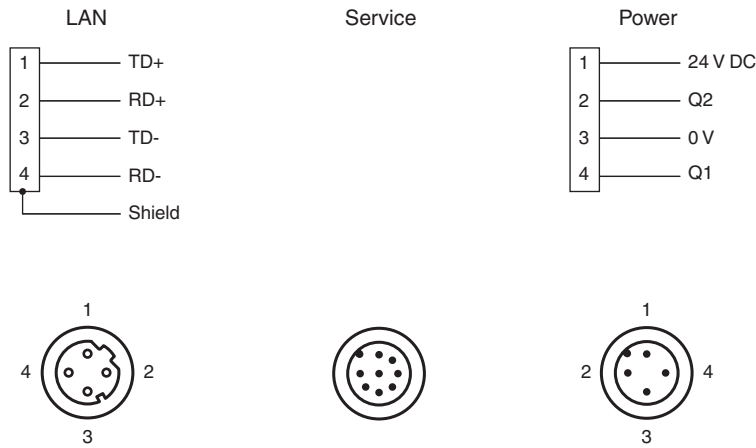
Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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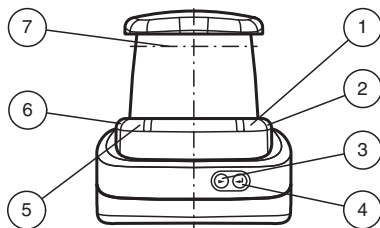
## Technical Data

Housing	ABS + PC + Aluminum
Optical face	PMMA
Mass	approx. 0.8 kg

## Connection Assignment

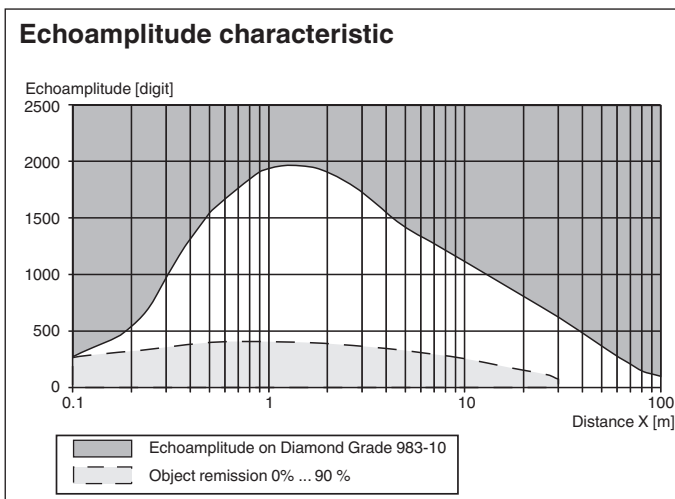


## Assembly



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	

## Characteristic Curve











## Accessories

	<p><b>Schutzkappe LS610</b> Zubehoer</p>	M12 protective cap set (connector + socket) for series LS610 / LS611
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## Accessories

	<b>Funktionserdung LS610/VDM100 Zubehoer</b>	Function grounding for LS610 / LS611 / VDM100 series
	<b>V1SD-G-2M-PUR-ABG- V45-G</b>	Connection cable, M12 to RJ-45, PUR cable 4-pin, CAT5e
	<b>V1SD-G-5M-PUR-ABG- V45-G</b>	Connection cable, M12 to RJ-45, PUR cable 4-pin, CAT5e
	<b>V1SD-G-ABG-PG9</b>	Cable connector, M12, 4-pin, D-coded, shielded, non pre-wired
	<b>V1-G-5M-PUR</b>	Female cordset, M12, 4-pin, PUR cable
	<b>V1-G-BK5M-PUR-U</b>	Female cordset, M12, 4-pin, PUR cable
	<b>MH-R2000</b>	Mounting aid for R2000 series, Quick clamp and adjustment system
	<b>PACTware 4.1</b>	FDT Framework