



## 2-D LiDAR Sensor OMD30M-R2000-B23-V1V1D-1L



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

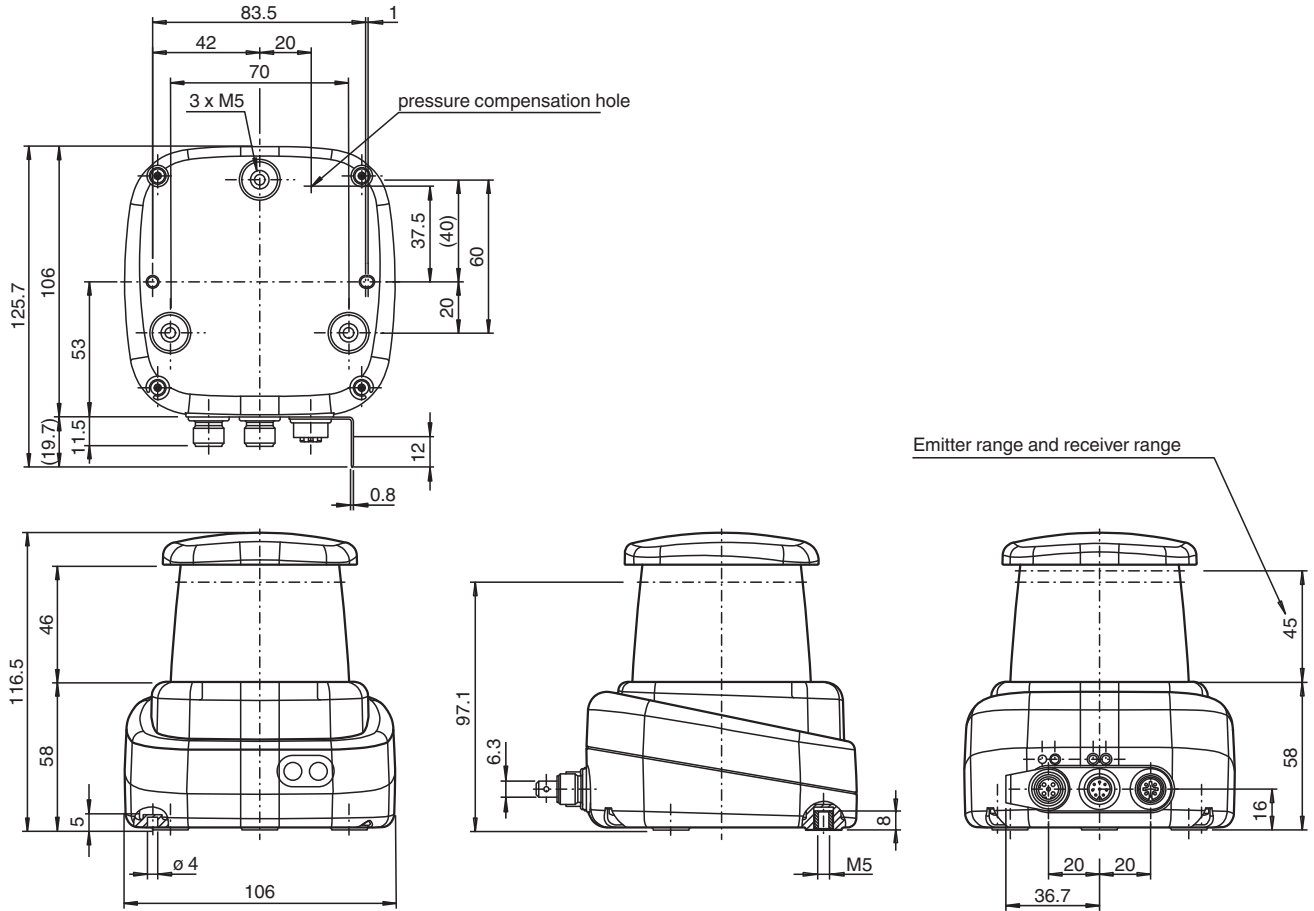
R2000 UHD, 2-D LiDAR sensor for precise and highly dynamic positioning, measuring range to object up to 30 m, Ethernet



### 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.

Dimensions



Technical Data

General specifications

Measuring range	0.1 ... 10 m (black 10%) 0,1 ... 30 m (white 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
<b>Functional safety related parameters</b>	

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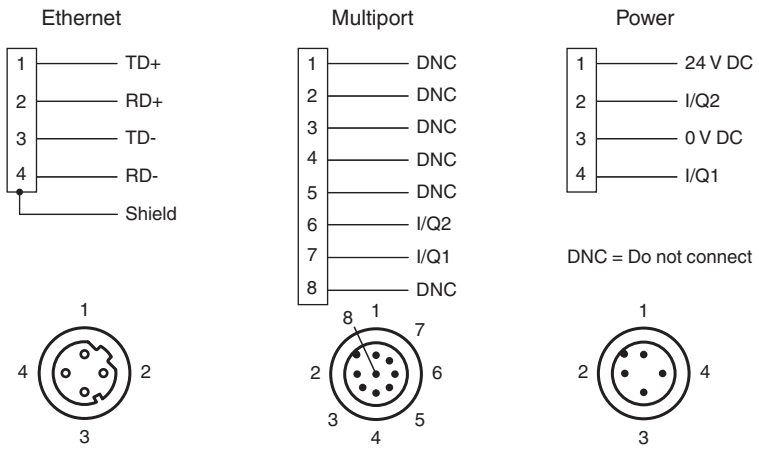
## Technical Data

MTTF <sub>d</sub>		75 a
Mission Time (T <sub>M</sub> )		10 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>	< 10 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 Inputs/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> - 2 V
Switching current		100 mA per output
<b>Conformity</b>		
Product standard		EN 60947-5-2
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Laser safety		EN 60825-1:2014
<b>Measurement accuracy</b>		
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
<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
FDA approval		IEC 60825-1:2014 Complies with 21 CFR 1040.10 and 1040.11 except for performance with IEC 60825-1 Ed. 3 as described in Laser Notice 56, dated May 8, 2019.
<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>		
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		

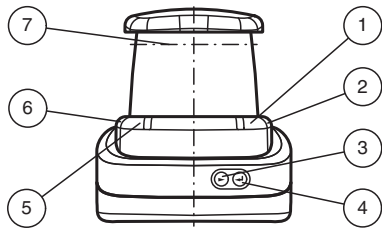
**Technical Data**

Housing	ABS + PC + Aluminum
Optical face	PMMA
Mass	approx. 0.8 kg
Dimensions	
Height	116.5 mm
Width	106 mm
Length	106 mm

**Connection Assignment**

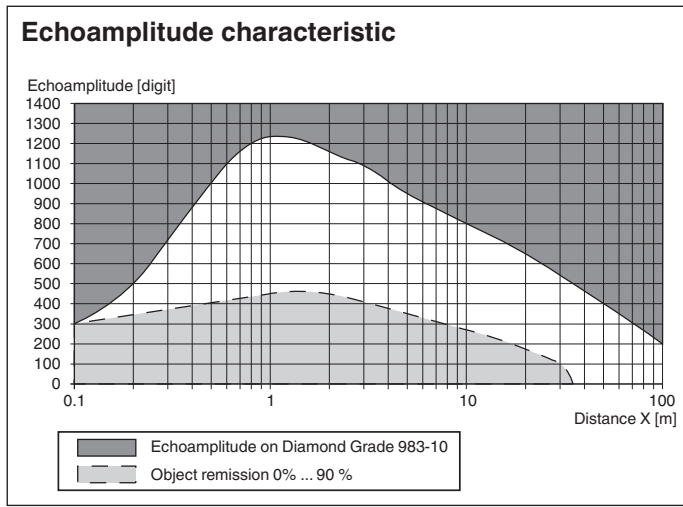


**Assembly**



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**



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