Model Number

OMD30M-R2000-B23-V1V1D-1L

2-D LiDAR Sensor
with three M12 x 1 connectors

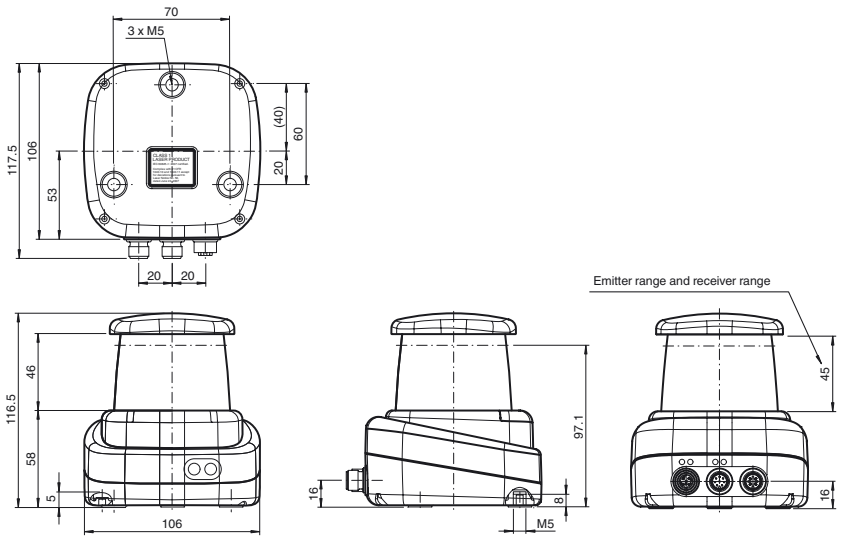
Features

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

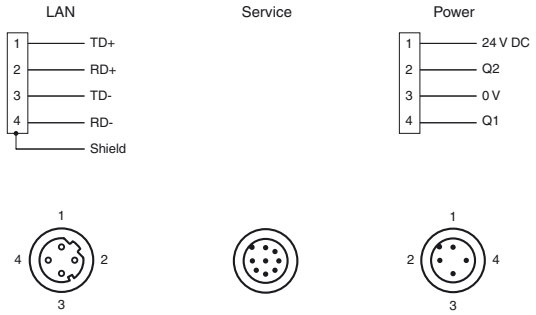
Product information

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.

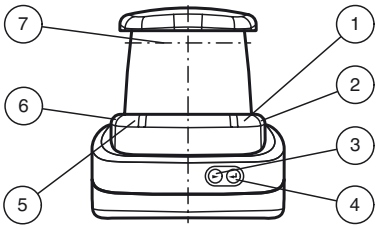
Dimensions



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	

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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 ... 100 s^{-1}
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		
$MTTF_d$		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 LED yellow: Q1 + Q2
Control elements		2 Button
Parameterization indicator		24 x 252 pixels , red
Electrical specifications		
Operating voltage	U_B	10 ... 30 V
Ripple		10 % within the supply tolerance
No-load supply current	I_0	≤ 600 mA / 24 V DC
Power consumption	P_0	< 15 W
Time delay before availability	t_v	< 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
Output		
Switching threshold		low: Ua < 1 V, high: Ua > Ub - 1 V
Switching current		100 mA per output
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		-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
Mass		approx. 0.8 kg
Compliance with standards and directives		

Laserlabel

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

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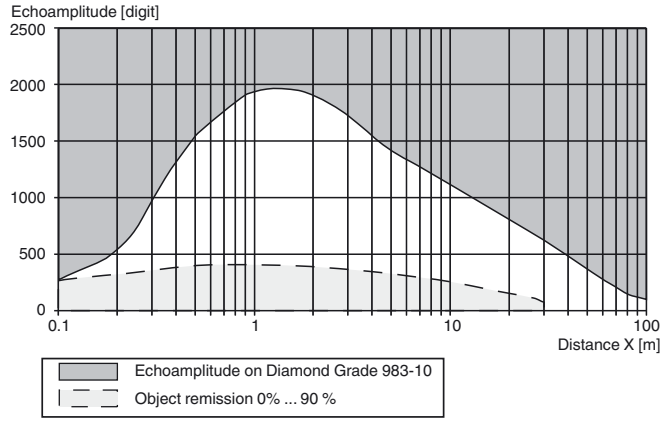
Directive conformity	
EMC Directive 2004/108/EC	EN 60947-5-2:2007
Standard conformity	
Product standard	EN 60947-5-2:2007 , IEC 60947-5-2:2007
Shock and impact resistance	EN 60068-2-27:1995
Vibration resistance	EN 60068-2-6; EN 60068-2-64
Laser class	IEC 60825-1:2007 EN 60825-1:2007

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

Echoamplitude characteristic



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.

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