



2-D LiDAR Sensor OBD30M-R2000-1L-Y70112344



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

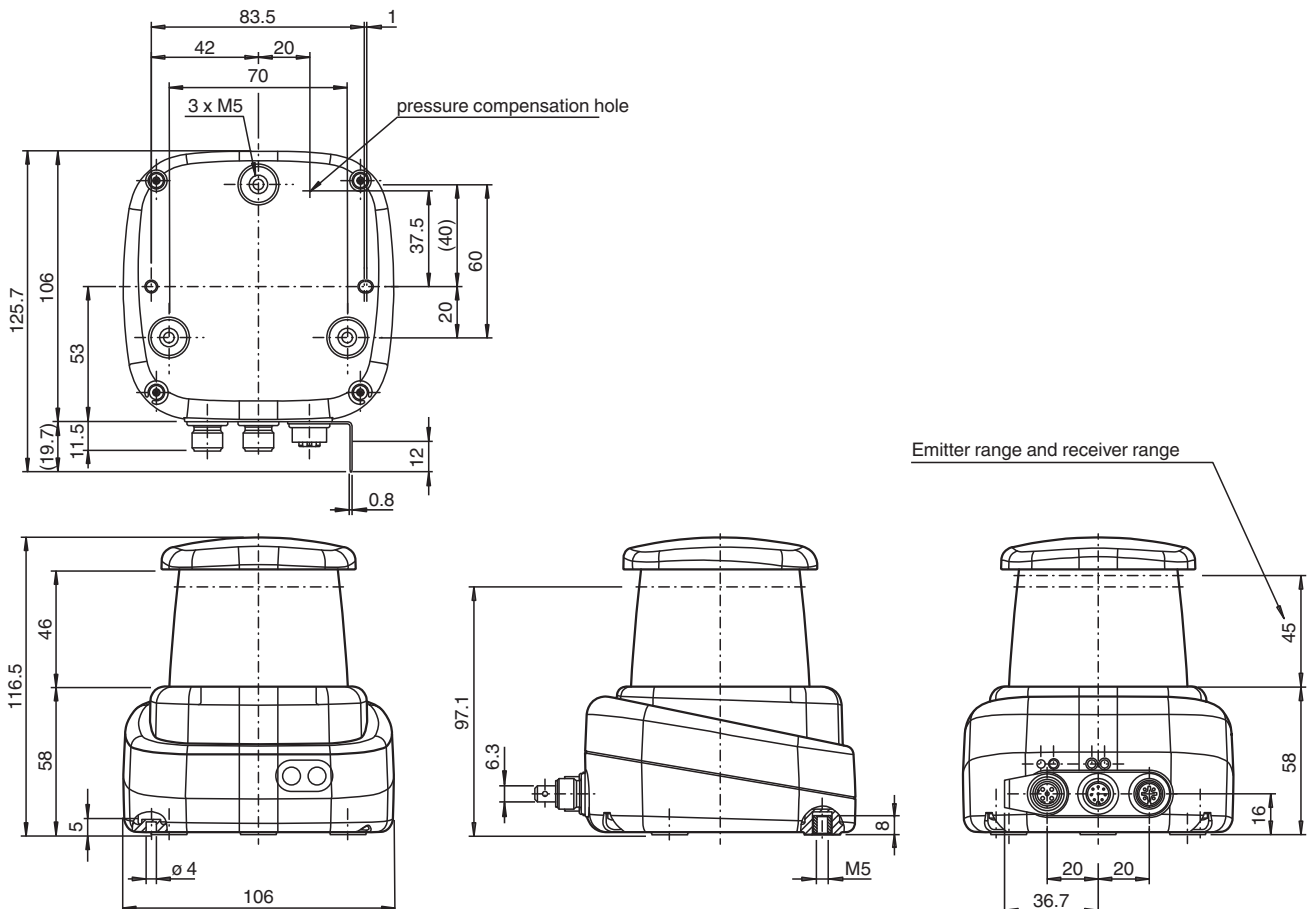
R2000 Detection, 2-D LiDAR sensor for precise field monitoring, measuring range to object up to 30 m



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



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

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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
Lasers nominal ratings		
Note		LASER RADIATION , DO NOT STARE INTO BEAM
Laser class		1
Wave length		905 nm
Beam divergence		transversal 10 mrad , longitudinal 2 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		105 mm x 25 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)
Input/Output		
Input/output type		4 Inputs/Outputs , Independently configurable , short circuit/reverse polarity protected
Input		
Switching threshold		low: U _e < 5 V, high: U _e > 10 V
Output		
Switching threshold		low: U _a < 1 V, high: U _a > U _b - 2 V
Switching current		100 mA per output

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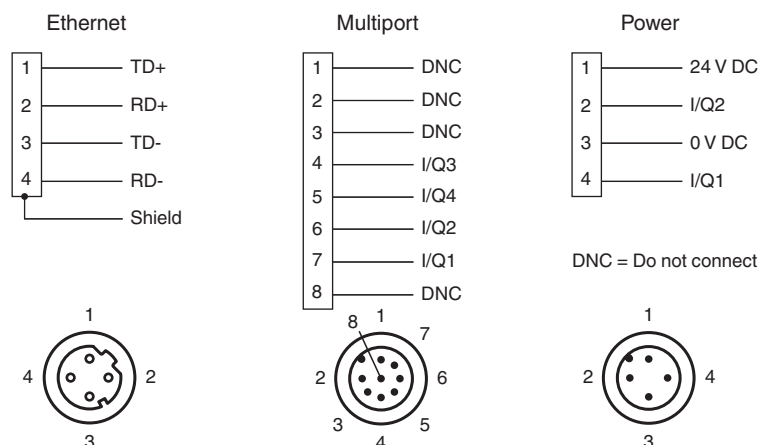
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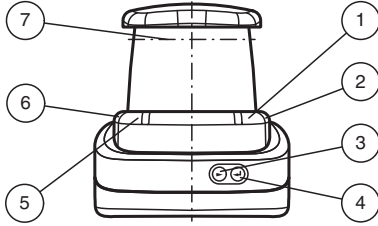
Conformity	
Laser safety	EN 60825-1:2014
Compliance with standards and directives	
Standard conformity	
Product standard	IEC 61000-6-2
Shock and impact resistance	EN 60068-2-6 EN 60068-2-27
Measurement accuracy	
Measuring speed	54000 measurements per second
Angle resolution	0,071°; 0,15°; 0,2°
Repeat accuracy	< 12 mm
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
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	
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
Dimensions	
Height	116.5 mm
Width	106 mm
Length	106 mm

Connection Assignment



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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	

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.

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