



2-D LiDAR Sensor OBD10M-R2000-4EP-V1V17



- 4 freely programmable monitoring fields
- 4 inputs/outputs (selectable)
- High angle resolution
- 360°-angle of measurement
- Measuring method PRT (Pulse Ranging Technology)

R2000 Detection, 2-D LiDAR sensor for precise field monitoring, measuring range to object up to 10 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.

Safety Information

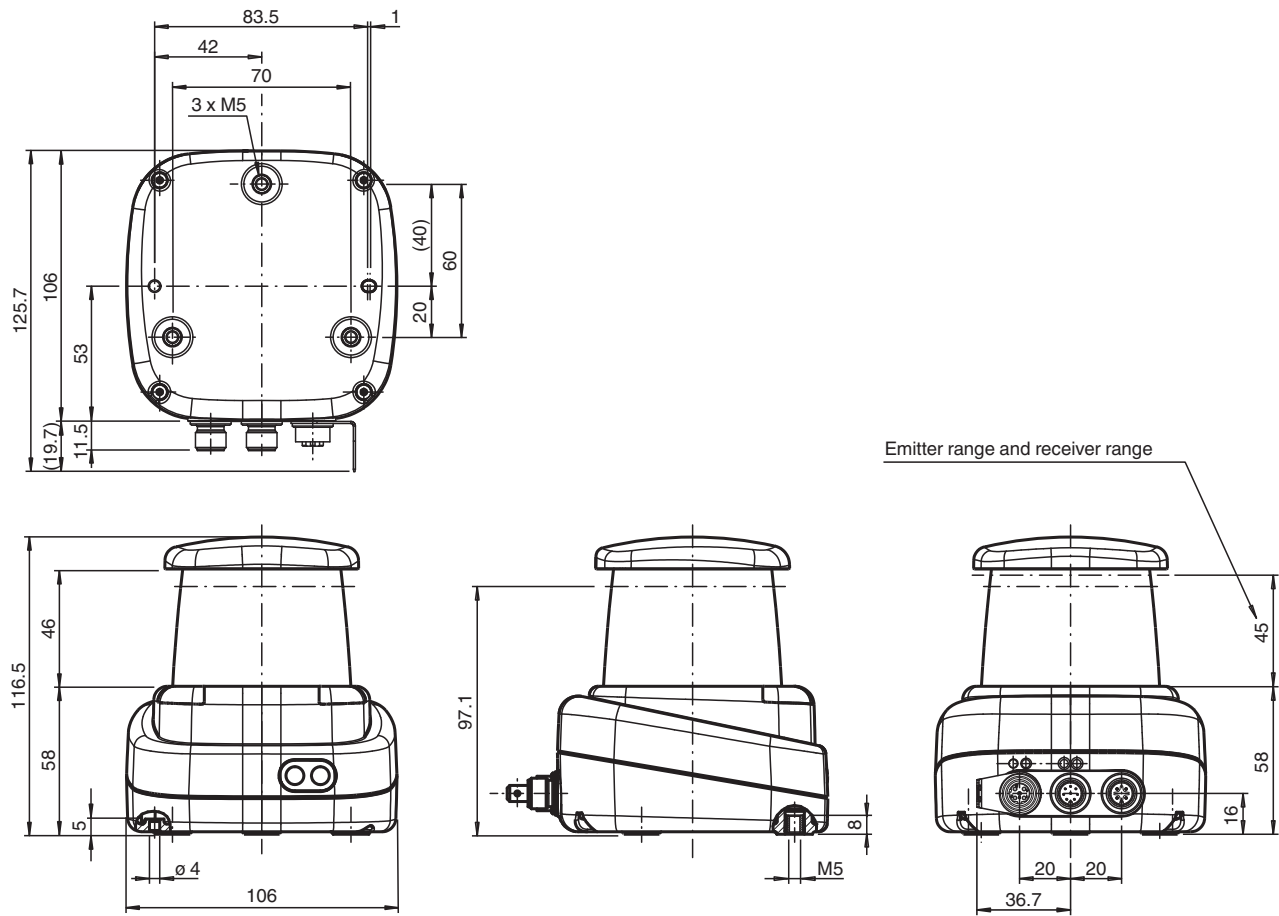


Safety Information

Laser Class 1 Information

- The irradiation can lead to irritation especially in a dark environment. Do not point at people!
- Maintenance and repairs should only be carried out by authorized service personnel!
- Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Dimensions



Technical Data

General specifications	
Measurement range	0.2 ... 3 m (bk 10%) 0.2 to 10 m (wh 90%) 0.2 to 30 m (reflector)
Light source	laser diode
Light type	modulated visible red light
Laser nominal ratings	
Note	LASER LIGHT , DO NOT STARE INTO BEAM
Laser class	1
Wave length	660 nm
Beam divergence	1 mrad
Pulse length	5 ns
Repetition rate	54 kHz
max. pulse energy	< 4 nJ
Measuring method	Pulse Ranging Technology (PRT)
Scan rate	10 Hz, 20 Hz, 30 Hz
Scanning angle	360°
Diameter of the light spot	< 20 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 %

Technical Data

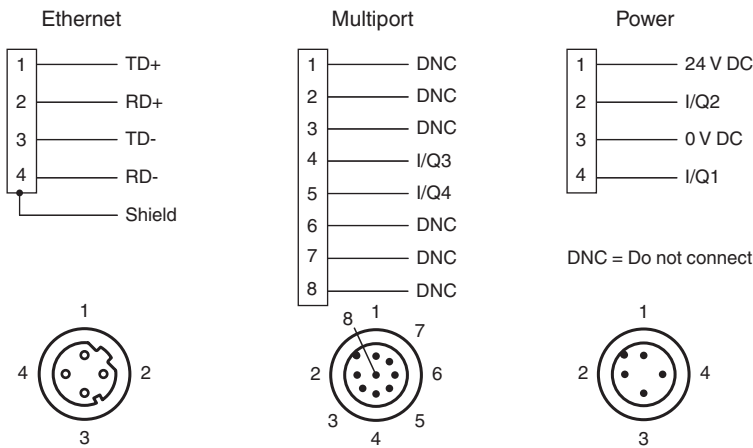
Indicators/operating means		
Operation indicator		LED green
Data flow indicator		LED yellow: active ethernet LED green: Ethernet link
Function indicator		LED red: fault Yellow LED: I/Q1 + I/Q2
Control elements		2 Button
Parameterization indicator		24 x 252 pixels , red
Electrical specifications		
Operating 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: $U_a > U_b - 1$ V
Switching current		100 mA per output
Conformity		
Laser safety		EN 60825-1:2014
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
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		
Housing width		106 mm
Housing height		116.5 mm
Degree of protection		IP65

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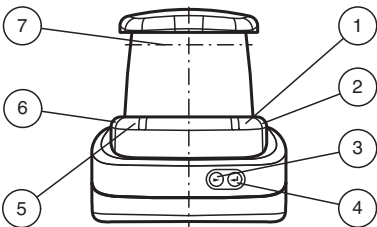
Technical Data

Connection	4-pin, M12x1 connector, A-coded (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	

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	