



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)

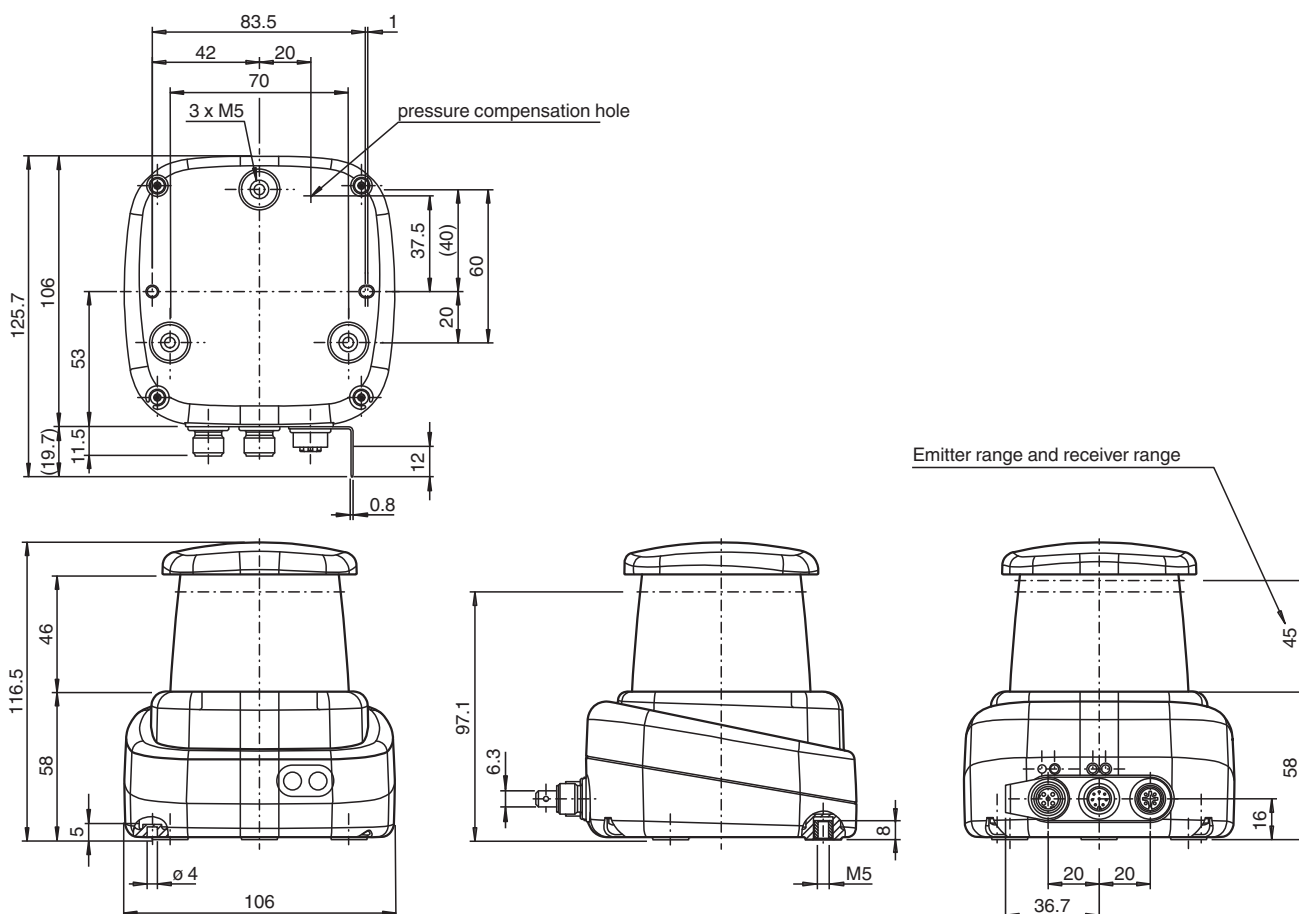
R2000 Detection, 2-D LiDAR sensor for precise field monitoring, measuring range to object up to 10 m



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.

Dimensions



Release date: 2024-09-17 Date of issue: 2024-09-17 Filename: 70112342_eng.pdf

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

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

PEPPERL+FUCHS

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 %

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

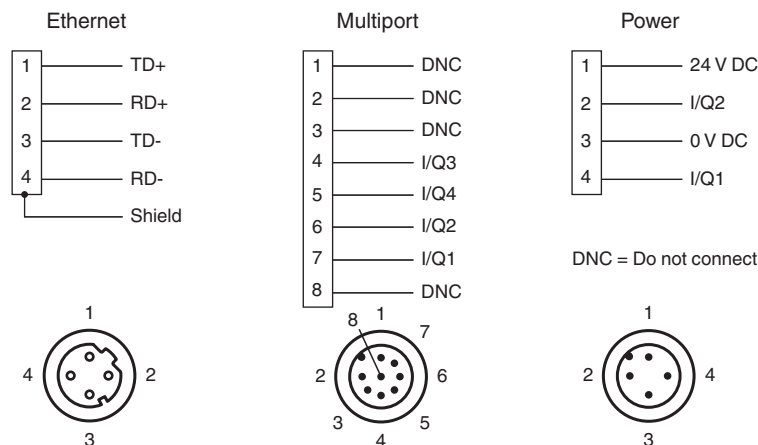
Switching threshold	low: U _a < 1 V, high: U _a > U _b - 2 V
Switching current	100 mA per output

Release date: 2024-09-17 Date of issue: 2024-09-17 Filename: 70112342_eng.pdf

Technical Data

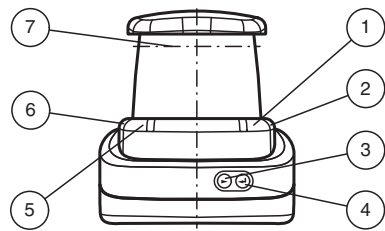
Conformity		
Laser safety		EN 60825-1:2014
Compliance with standards and directives		
Standard conformity		
Product standard		IEC 61000-6-2
Shock and impact resistance		EN 60068-2-6 EN 60068-2-27
Measurement accuracy		
Measuring speed		54000 measurements per second
Angle resolution		0,071°; 0,15°; 0,2°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

Connection Assignment



Release date: 2024-09-17 Date of issue: 2024-09-17 Filename: 70112342_eng.pdf

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



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.

Release date: 2024-09-17 Date of issue: 2024-09-17 Filename: 70112342_eng.pdf