



## 2-D LiDAR Sensor OBD60M-R2000-4EP-V1V17-T-1L



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

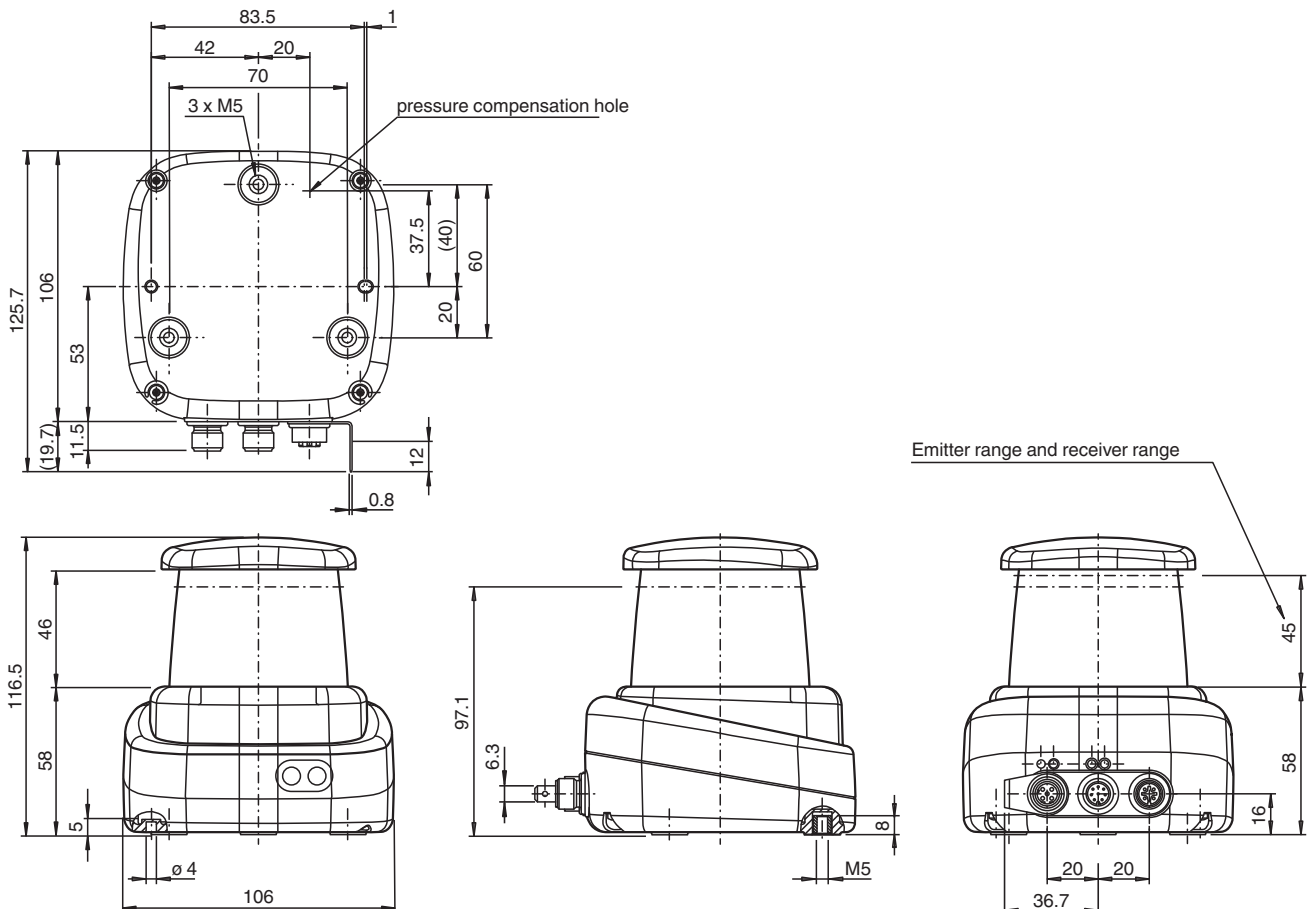
R2000 Detection, 2-D LiDAR sensor for precise field monitoring, measuring range to object up to 60 m



### 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: 2025-02-03 Date of issue: 2025-02-03 Filename: 70137274\_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

**PF** PEPPERL+FUCHS

## Technical Data

General specifications		
Measuring range		0.1 ... 20 m (black 10 %) 0.1 ... 60 m (white 90 %) 0.1 ... 60 m (reflector) Min. reflectivity 1.8 %
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 2 mrad , longitudinal 10 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		25 mm x 105 mm at 10 m
Ambient light limit		50000 Lux
Functional safety related parameters		
MTTF <sub>d</sub>		75 a
Mission Time (T <sub>M</sub> )		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 <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
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 <sub>e</sub> < 5 V, high: U <sub>e</sub> > 10 V
Output		
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

Release date: 2025-02-03 Date of issue: 2025-02-03 Filename: 70137274\_eng.pdf

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

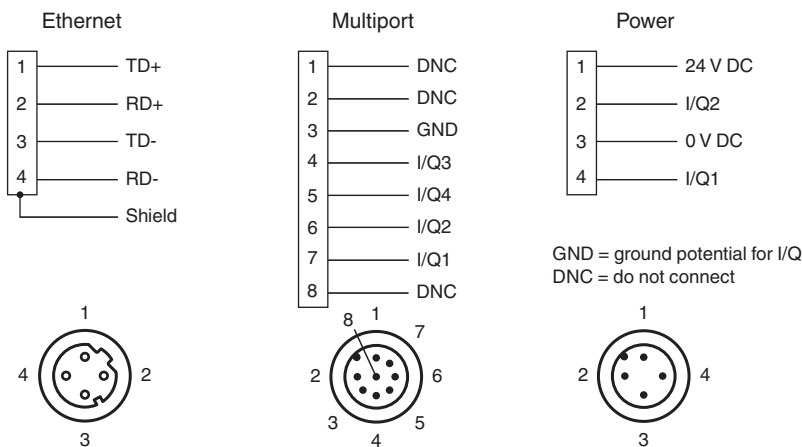
Pepperl+Fuchs Group  
www.pepperl-fuchs.comUSA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.comGermany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.comSingapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

**PEPPERL+FUCHS**

**Technical Data**

<b>Conformity</b>	
Product standard	IEC 61000-6-2
Shock resistance	EN 60068-2-27
Vibration resistance	EN 60068-2-6
Laser safety	EN 60825-1:2014
<b>Measurement accuracy</b>	
Measuring speed	54000 measurements per second
Angle resolution	0,071°; 0,15°; 0,2°
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 conformance with IEC 60825-1 Ed. 3 as described in Laser Notice 56, dated May 8, 2019.
<b>Ambient conditions</b>	
Ambient temperature	-30 ... 50 °C (-22 ... 122 °F)
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)
Relative humidity	95 % , no moisture condensation
<b>Mechanical specifications</b>	
Degree of protection	IP67
Connection	4-pin, M12x1 connector, standard (supply) , 8-pin, M12x1 connector, A-coded (MultiPort) , 4-pin, M12x1 socket, D-coded (LAN)
<b>Material</b>	
Housing	ABS + PC + Aluminum
Optical face	PMMA
Mass	approx. 0.8 kg
<b>Dimensions</b>	
Height	116.5 mm
Width	106 mm
Length	106 mm

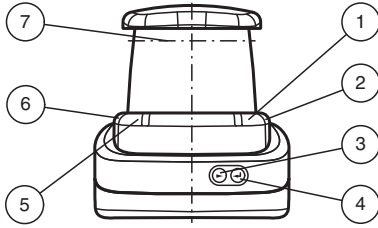
**Connection Assignment**



Release date: 2025-02-03 Date of issue: 2025-02-03 Filename: 70137274\_eng.pdf

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

**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	

Release date: 2025-02-03 Date of issue: 2025-02-03 Filename: 70137274\_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