



2-D LiDAR Sensor

OMD12M-R2000-B23-V1V1D-HD-1L



- Middle operating range
- High angle resolution
- Infrared light
- Measuring method PRT (Pulse Ranging Technology)

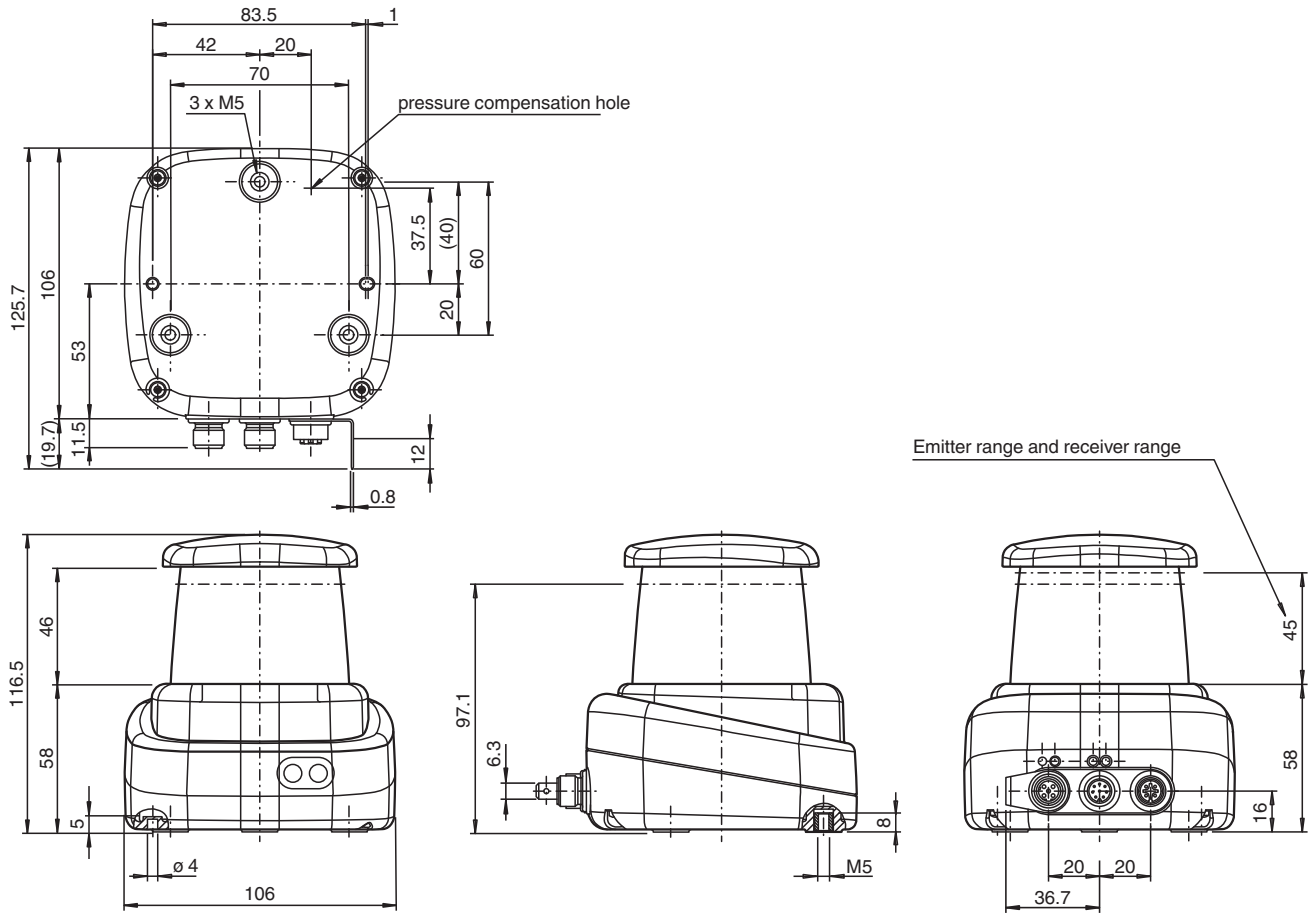
R2000 HD, 2-D LiDAR sensor for simple measurement tasks and positioning, measuring range to object up to 12 m, Ethernet



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



Technical Data

General specifications

| | |
|---|---|
| Measuring range | 0.2 ... 10 m (black 10%) 0.2 ... 12 m (white 90 %) 0.3 ... 12 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 | 84 kHz |
| max. pulse energy | < 94 nJ |
| Measuring method | Pulse Ranging Technology (PRT) |
| Scan rate | 10 ... 50 s ⁻¹ |
| Scanning angle | 360° |
| Diameter of the light spot | 25 mm x 105 mm at 10 m |
| Ambient light limit | 80000 Lux |
| Resolution | 1 mm |
| Functional safety related parameters | |
| MTTF _d | 75 a |

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Technical Data

| | | |
|-----------------------------------|----------------|---|
| Mission Time (T _M) | | 10 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 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 |
| Interface | | |
| Interface type | | Fast Ethernet |
| Protocol | | HTTP , TCP/IP and UDP/IP |
| Conformity | | |
| Product standard | | EN 60947-5-2 |
| Shock resistance | | EN 60068-2-27 |
| Vibration resistance | | EN 60068-2-6 |
| Laser safety | | EN 60825-1:2014 |
| Measurement accuracy | | |
| Measuring speed | | 84000 measurements per second |
| Measured value noise | | typ. ± 20 mm (1 sigma) |
| Angle resolution | | 0.042 ° |
| Absolute accuracy | | typ. ± 40 mm |
| Repeat accuracy | | < 12 mm |
| Approvals and certificates | | |
| Protection class | | III |
| 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. |
| 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 |

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

Pepperl+Fuchs Group
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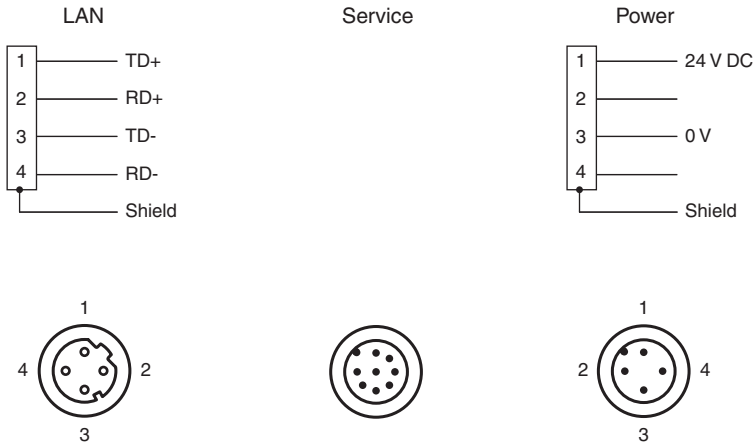
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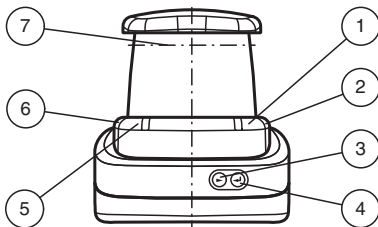
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Connection Assignment

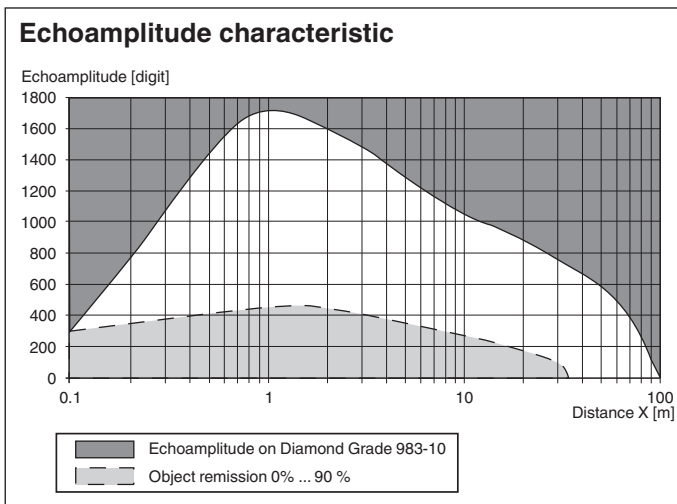


Assembly



| | | |
|---|---------------------|--------|
| 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 | |

Characteristic Curve



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