



## Distance sensor OMR150M-R1000-SSI-V1V1B



- Maximum measurement accuracy
- Switchable SSI/RS-422 interface
- Red laser as the light emitter
- Display and keypad for parameter settings
- Compact and space-saving design

Distance sensor for positioning tasks accurate to the millimeter, PRT, measuring range up to 150 m, SSI/RS-422 interface, M12 plug



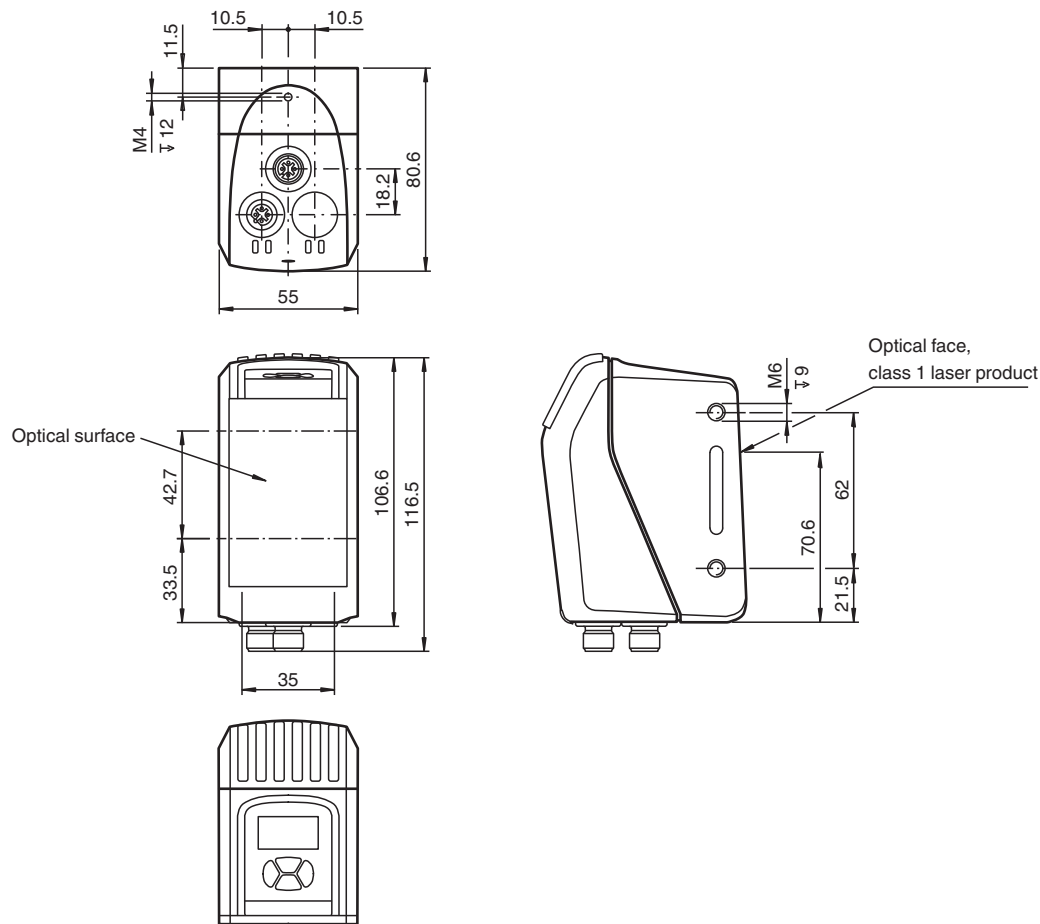
### Function

The R1000 family is based on pulse ranging technology (PRT) by Pepperl+Fuchs. For small and large ranges, these distance sensors are very precise which makes them ideally suitable for positioning tasks. The red laser diode is clearly visible, allowing direct alignment of the device for reliable operation.

### Application

- Precise positioning of stock feeders
- Precise and rapid positioning of moving carriages
- For use on gantry cranes and lifting equipment

## Dimensions



## Technical Data

### General specifications

|                                             |                                                                                                                 |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Measuring range                             | 0.3 ... 150 m                                                                                                   |
| Reference target                            | REF-500MMx500MM (Foil reflector 500 mm x 500 mm)<br>REF-250MMx250MM (Film reflector 250 mm x 250 mm) up to 75 m |
| 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                             | < 5 mrad                                                                                                        |
| Pulse length                                | 5 ns                                                                                                            |
| Repetition rate                             | 300 kHz                                                                                                         |
| max. pulse energy                           | < 2 nJ                                                                                                          |
| Measuring method                            | Pulse Ranging Technology (PRT)                                                                                  |
| Max. Motion velocity                        | 15 m/s                                                                                                          |
| Diameter of the light spot                  | < 75 cm at 150 m                                                                                                |
| Ambient light limit                         | > 80000 Lux                                                                                                     |
| Resolution                                  | 0.1 mm , adjustable                                                                                             |
| Temperature influence                       | 0.03 mm/K                                                                                                       |
| <b>Functional safety related parameters</b> |                                                                                                                 |
| MTTF <sub>d</sub>                           | > 100 a                                                                                                         |

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

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## Technical Data

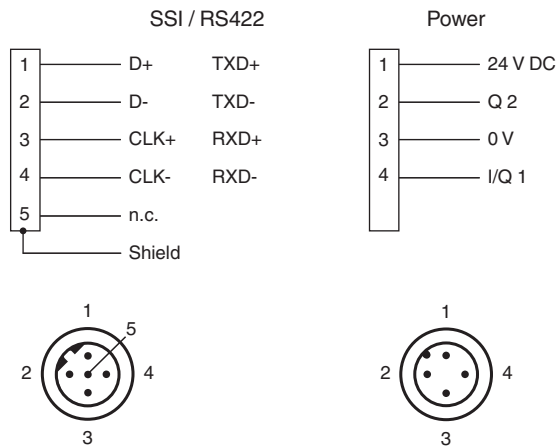
|                                   |                |                                                                                                                                                             |
|-----------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mission Time (T <sub>M</sub> )    |                | 10 a                                                                                                                                                        |
| Diagnostic Coverage (DC)          |                | 0 %                                                                                                                                                         |
| <b>Indicators/operating means</b> |                |                                                                                                                                                             |
| Function indicator                |                | 6 LEDs                                                                                                                                                      |
| Control elements                  |                | Control panel (4 membrane keys) for setting parameters                                                                                                      |
| Parameterization indicator        |                | Illuminated display for displaying measured values and parameterization                                                                                     |
| <b>Electrical specifications</b>  |                |                                                                                                                                                             |
| Operating voltage                 | U <sub>B</sub> | 10 ... 30 V DC                                                                                                                                              |
| No-load supply current            | I <sub>0</sub> | 625 mA (10 V) ... 250 mA (24 V) ... 220 mA (30 V)                                                                                                           |
| Protection class                  |                |                                                                                                                                                             |
| Time delay before availability    | t <sub>v</sub> | < 1 s                                                                                                                                                       |
| <b>Interface</b>                  |                |                                                                                                                                                             |
| Interface type                    |                | SSI                                                                                                                                                         |
| Monoflop time                     |                | 20 µs                                                                                                                                                       |
| Clock frequency                   |                | 0.1 ... 1 MHz                                                                                                                                               |
| <b>Interface 1</b>                |                |                                                                                                                                                             |
| Interface type                    |                | RS-422                                                                                                                                                      |
| Read out rate                     |                | 4.8 ... 115.2 kBit/s                                                                                                                                        |
| <b>Input/Output</b>               |                |                                                                                                                                                             |
| Input/output type                 |                | 2 inputs/outputs, independent configuration, short-circuit protected, reverse polarity protected                                                            |
| <b>Output</b>                     |                |                                                                                                                                                             |
| Switching voltage                 |                | max. 30 V DC                                                                                                                                                |
| Switching current                 |                | max. 100 mA , resistive load                                                                                                                                |
| Voltage drop                      | U <sub>d</sub> | ≤ 1.5 V DC                                                                                                                                                  |
| <b>Conformity</b>                 |                |                                                                                                                                                             |
| Product standard                  |                | EN 60947-5-2                                                                                                                                                |
| Laser safety                      |                | EN 60825-1:2014                                                                                                                                             |
| <b>Measurement accuracy</b>       |                |                                                                                                                                                             |
| Measured value output             |                | 1 ms                                                                                                                                                        |
| Average data age                  |                | 3 ms , 6 ms , 12 ms , 25 ms , adjustable                                                                                                                    |
| Absolute accuracy                 |                | typ. ± 2.5 mm                                                                                                                                               |
| Repeat accuracy                   |                | < 1 mm                                                                                                                                                      |
| <b>Approvals and certificates</b> |                |                                                                                                                                                             |
| Protection class                  |                | III (rated insulation voltage 50 V)                                                                                                                         |
| UL approval                       |                | cULus Listed, Class 2 Power Source, Type 1 enclosure                                                                                                        |
| 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               |                | -10 ... 60 °C (14 ... 140 °F)                                                                                                                               |
| Storage temperature               |                | -40 ... 75 °C (-40 ... 167 °F)                                                                                                                              |
| Relative humidity                 |                | 95 % , no moisture condensation                                                                                                                             |
| <b>Mechanical specifications</b>  |                |                                                                                                                                                             |
| Degree of protection              |                | IP67                                                                                                                                                        |
| Connection                        |                | 4-pin, M12x1 connector, A-coded (supply) ,<br>5-pin, M12x1 connector, B-coded (SSI)                                                                         |
| Material                          |                |                                                                                                                                                             |
| Housing                           |                | ABS / PC                                                                                                                                                    |
| Optical face                      |                | PMMA , hard coated                                                                                                                                          |
| Mass                              |                | approx. 300 g                                                                                                                                               |
| Dimensions                        |                |                                                                                                                                                             |
| Height                            |                | 106.6 mm                                                                                                                                                    |
| Width                             |                | 55 mm                                                                                                                                                       |

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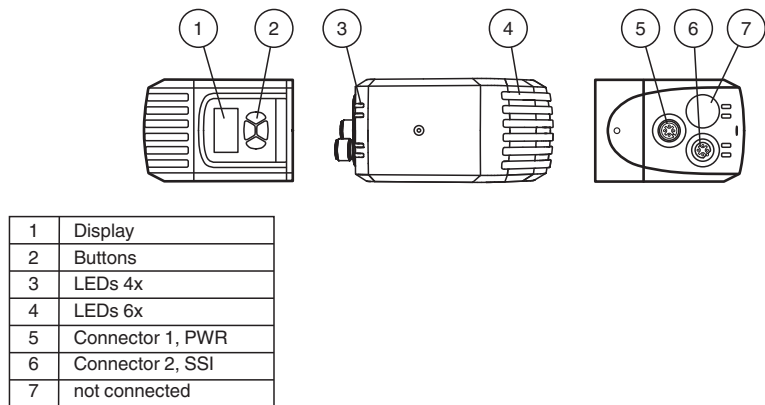
Technical Data

|       |         |
|-------|---------|
| Depth | 80.6 mm |
|-------|---------|

Connection Assignment



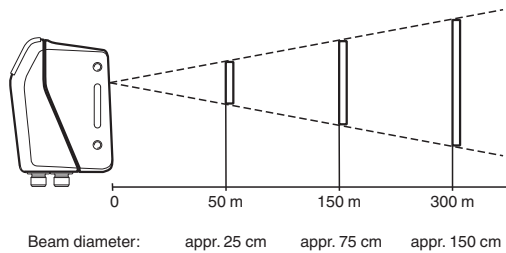
Assembly



Mounting

Beam divergence

R1000



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## Mounting

### Reflector arrangement

R1000

