



**Model Number**

**M100/MV100-RT/76b/98/102**

Thru-beam sensor  
with 3-pin, M8 x 1 connector

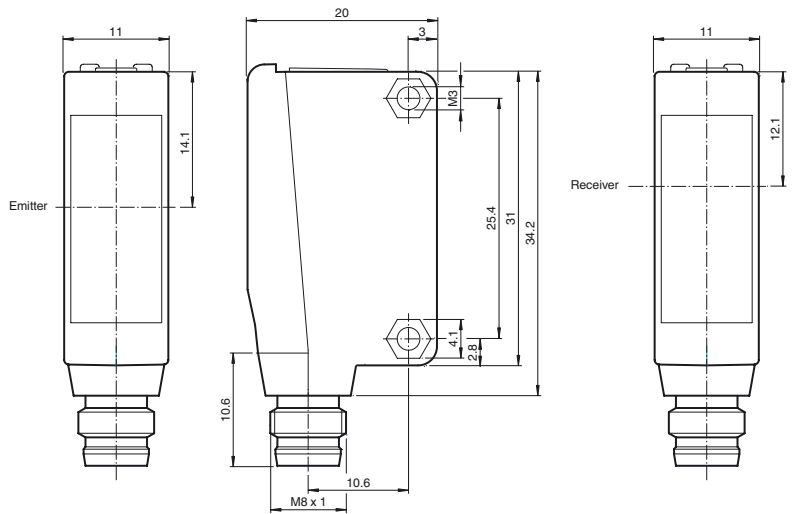
**Features**

- Miniature design
- Easy to use
- Very bright, highly visible light spot
- Full metal thread mounting
- Highly visible LEDs for Power ON and switching state
- Not sensitive to ambient light

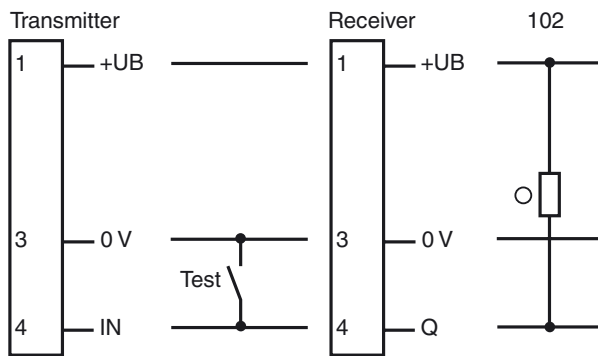
**Product information**

The ML100 series is characterized by its miniature housing with integral, all-metal threaded bushings. All versions are equipped with a visible red transmitter LED. This greatly simplifies installation and commissioning. The switching states are easily visible from all directions thanks to the highly visible LEDs.

**Dimensions**



**Electrical connection**



- = Light on
- = Dark on

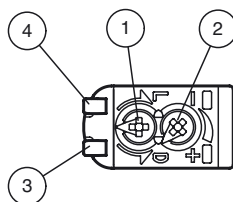
**Pinout**



Wire colors in accordance with EN 60947-5-2

- 1 | BN (brown)
- 3 | BU (blue)
- 4 | BK (black)

**Indicators/operating means**



|   |                      |        |
|---|----------------------|--------|
| 1 | Light-Dark-switching |        |
| 2 | Sensitivity adjuster |        |
| 3 | Signal display       | yellow |
| 4 | Operating display    | green  |

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**Technical data****System components**

|          |                 |
|----------|-----------------|
| Emitter  | M100-RT/76b/98  |
| Receiver | MV100-RT/98/102 |

**General specifications**

|                            |                                   |
|----------------------------|-----------------------------------|
| Effective detection range  | 0 ... 10 m                        |
| Threshold detection range  | 15 m                              |
| Light source               | LED                               |
| Light type                 | modulated visible red light       |
| Diameter of the light spot | approx. 1 m at a distance of 15 m |
| Angle of divergence        | approx. 2 °                       |
| Optical face               | frontal                           |
| Ambient light limit        | EN 60947-5-2                      |

**Functional safety related parameters**

|                                |       |
|--------------------------------|-------|
| MTTF <sub>d</sub>              | 860 a |
| Mission Time (T <sub>M</sub> ) | 20 a  |
| Diagnostic Coverage (DC)       | 0 %   |

**Indicators/operating means**

|                     |   |
|---------------------|---|
| Operation indicator | LED green: power on   |
| Function indicator  | Receiver: LED yellow, lights up when light beam is free, flashes when falling short of the stability control ; OFF when light beam is interrupted |
| Control elements    | sensitivity adjustment  |
| Control elements    | Light-on/dark-on changeover switch  |

**Electrical specifications**

|                        |                |                                      |
|------------------------|----------------|--------------------------------------|
| Operating voltage      | U <sub>B</sub> | 10 ... 30 V DC                       |
| Ripple                 |                | max. 10 %                            |
| No-load supply current | I <sub>0</sub> | Emitter: ≤ 15 mA<br>Receiver: ≤ 8 mA |

**Input**

|            |                             |
|------------|-----------------------------|
| Test input | emitter deactivation at 0 V |
|------------|-----------------------------|

**Output**

|                     |   |            |
|---------------------|---|------------|
| Switching type      | The switching type of the sensor is adjustable. The default setting is: light on  |            |
| Signal output       | 1 NPN output, short-circuit protected, reverse polarity protected, open collector |            |
| Switching voltage   | max. 30 V DC  |            |
| Switching current   | max. 100 mA , resistive load  |            |
| Voltage drop        | U <sub>d</sub>  | ≤ 1.5 V DC |
| Switching frequency | f   | 1000 Hz    |
| Response time       |   | 0.5 ms     |

**Ambient conditions**

|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -30 ... 60 °C (-22 ... 140 °F) |
| Storage temperature | -40 ... 70 °C (-40 ... 158 °F) |

**Mechanical specifications**

|                                     |                                     |
|-------------------------------------|-------------------------------------|
| Housing width                       | 11 mm                               |
| Housing height                      | 31 mm                               |
| Housing depth                       | 20 mm                               |
| Degree of protection                | IP67                                |
| Connection                          | M8 x 1 connector, 3-pin             |
| Material                            |                                     |
| Housing                             | PC (Polycarbonate)                  |
| Optical face                        | PMMA                                |
| Mass                                | approx. 20 g (emitter and receiver) |
| Tightening torque, fastening screws | 0.6 Nm                              |

**Compliance with standards and directives**

|                           |                           |
|---------------------------|---------------------------|
| Directive conformity      |                           |
| EMC Directive 2004/108/EC | EN 60947-5-2:2007+A1:2012 |
| Standard conformity       |                           |
| Standards                 | UL 60947-5-2              |

**Approvals and certificates**

|              |   |
|--------------|---|
| UL approval  | cULus Listed, Class 2 Power Source or listed Power Supply with a limited voltage output with (maybe integrated) fuse (max. 3.3 A according UL248), Type 1 enclosure |
| CCC approval | CCC approval / marking not required for products rated ≤36 V  |

**Accessories****OMH-ML100-03**

Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

**OMH-ML100-04**

Mounting aid for ML100 series, Mounting bracket

**OMH-ML100-05**

Mounting aid for ML100 series, Mounting bracket

**OMH-ML100-08**

Mounting aid for ML100 series, Snap-in

**OMH-F10-ML100**

Mounting aid for ML100 series

**OMH-10**

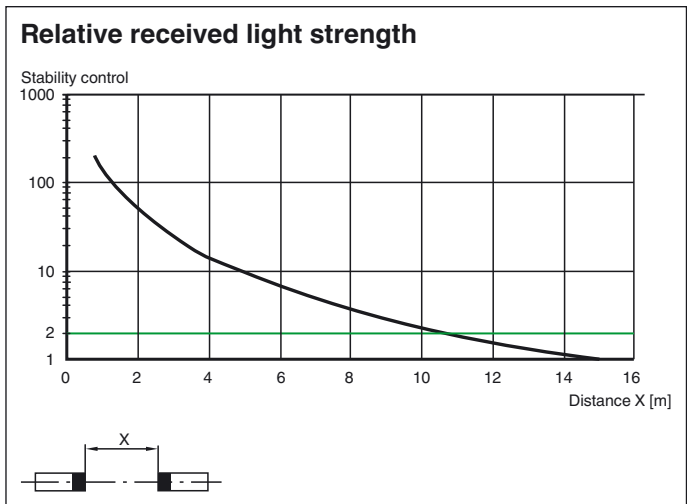
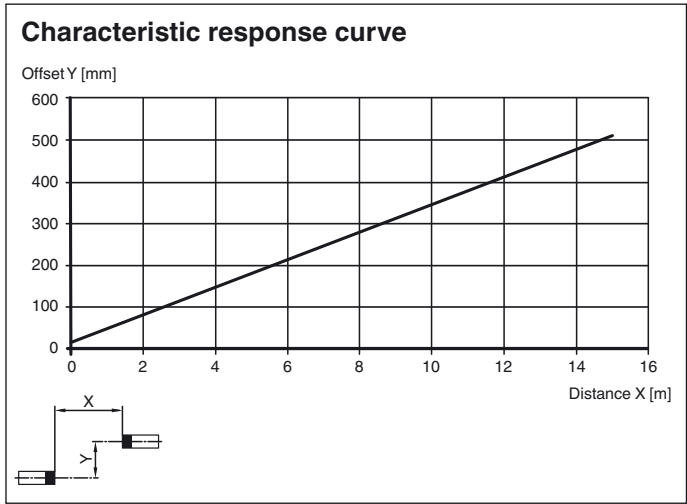
Mounting aid

**V3-WM-2M-PUR**

Cable socket, M8, 3-pin, PUR cable

Additional accessories can be found in the Internet.

**Curves/Diagrams**



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

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