



### Model Number

**M100/MV100-RT/76b/102/115**

Thru-beam sensor  
with 2 m fixed cable

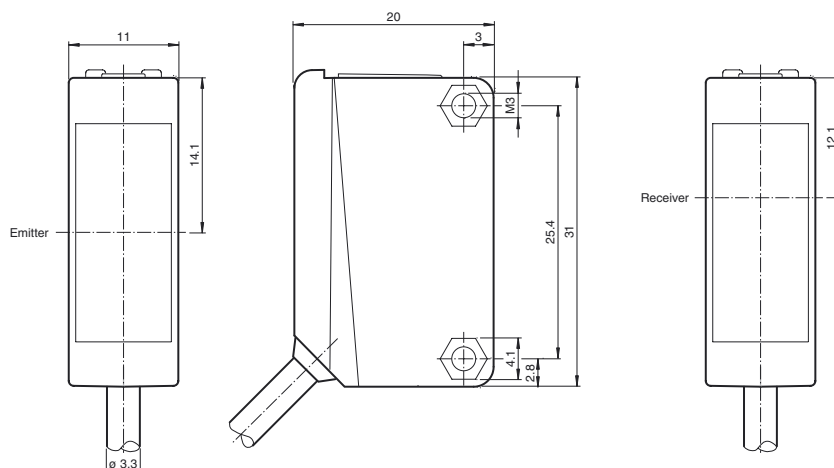
### Features

- 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

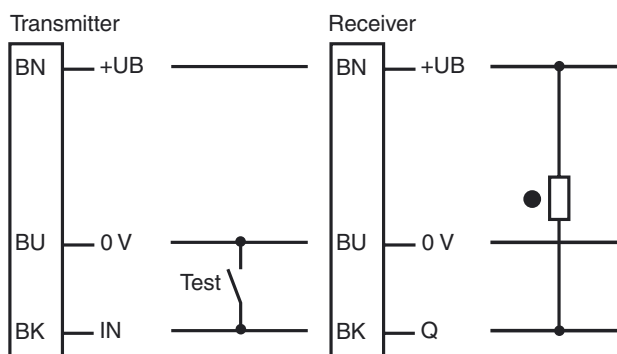
### Product information

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

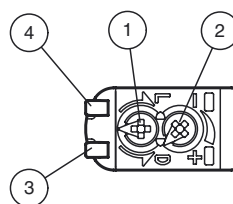


### Electrical connection



- = Light on
- = Dark on

### Indicators/operating means



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

## Technical data

### System components

|          |                  |
|----------|------------------|
| Emitter  | M100-RT/76b/115  |
| Receiver | MV100-RT/102/115 |

### 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/Dark switch   |

### Electrical specifications

|                        |                |                                      |
|------------------------|----------------|--------------------------------------|
| Operating voltage      | U <sub>B</sub> | 10 ... 30 V DC , class 2             |
| 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      | light/dark on, switchable   |            |
| 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

|                      |                                      |
|----------------------|--------------------------------------|
| Degree of protection | IP67                                 |
| Connection           | 2 m fixed cable                      |
| Material             |                                      |
| Housing              | PC (Polycarbonate)                   |
| Optical face         | PMMA                                 |
| Mass                 | approx. 100 g (emitter and receiver) |
| Cable length         | 2 m                                  |

### Compliance with standards and directives

|                           |              |
|---------------------------|--------------|
| Directive conformity      |              |
| EMC Directive 2004/108/EC | EN 60947-5-2 |
| Standard conformity       |              |
| Standards                 | UL 508       |

### Approvals and certificates

|              |  |
|--------------|--|
| UL approval  | cULus Listed, Class 2 Power Source, Type 1 enclosure                                       |
| CCC approval | CCC approval / marking not required for products rated ≤36 V                               |
| Approvals    | CE, cULus Listed 57M3 (Only in association with UL Class 2 power supply; Type 1 enclosure) |

## Accessories

### OMH-ML100-01

Mounting bracket

### OMH-ML100-02

Mounting bracket

### OMH-ML100-03

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

### OMH-ML100-04

Mounting bracket

### OMH-ML100-05

Mounting bracket

### OMH-ML100-08

Mounting aid

### OMH-F10-ML100

Mounting aid for ML100 series

### OMH-10

Mounting aid

### OMH-ML100-S1

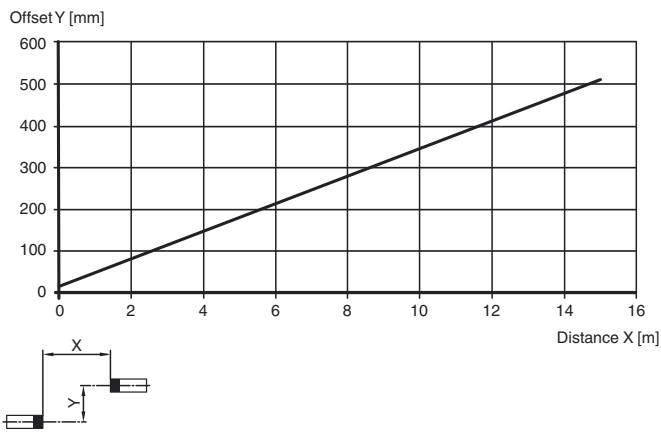
Mounting bracket

Additional accessories can be found in the Internet.



## Curves/Diagrams

## Characteristic response curve



## Relative received light strength

