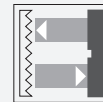




## Retroreflective sensor ML100-6-IR/33/102/115



- User-friendliest photoelectric sensor series for standard applications
- Miniature design
- Not sensitive to ambient light
- Metal-reinforced fastening holes
- Version with infrared light

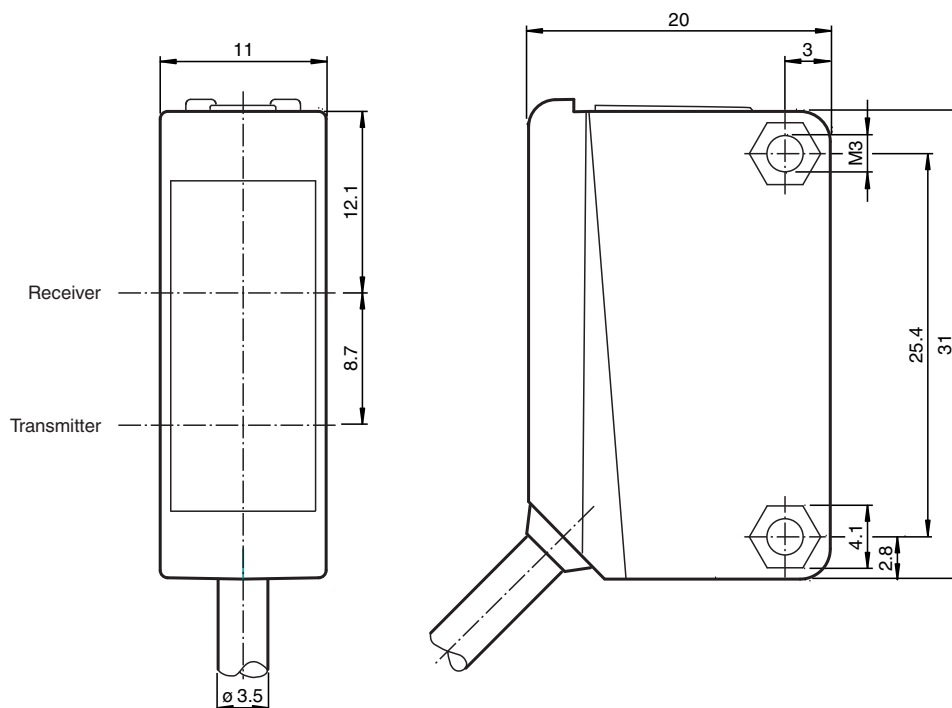
Retroreflective sensor without polarization filter, plastic housing, 5 m detection range, infrared light, sensitivity adjuster, light/dark on, DC version, NPN output, fixed cable



### Function

Small, robust and reliable, the ML8 series of miniature sensors is particularly suitable for non-contact detection of objects in confined spaces. The LED indicator is located behind the lens and provides reliable information on the sensor's operating status. The LED is always visible, even if the sensor is completely embedded. Flexible mounting options and fixed preset detection ranges simplify setup and operation.

### Dimensions



## Technical Data

### General specifications

|                            |                                     |
|----------------------------|-------------------------------------|
| Effective detection range  | 0 ... 5 m                           |
| Reflector distance         | 0.01 ... 5 m                        |
| Threshold detection range  | 7 m                                 |
| Reference target           | H50 reflector                       |
| Light source               | IREd                                |
| Light type                 | modulated infrared light            |
| Polarization filter        | no                                  |
| Diameter of the light spot | approx. 500 mm at a distance of 7 m |
| Angle of divergence        | approx. 4 °                         |
| Optical face               | frontal                             |
| Ambient light limit        | EN 60947-5-2:2007+A1:2012           |

### 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  | LED yellow: lights up when receiving the light beam ; 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> | < 20 mA        |

### 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                                                                            |

### Conformity

|                  |              |
|------------------|--------------|
| Product standard | EN 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                                                                                                        |
| UN/ECE Regulation No. 10 (E1) | Type-approval number: 047350                                                                                                                                        |

### Ambient conditions

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

### Mechanical specifications

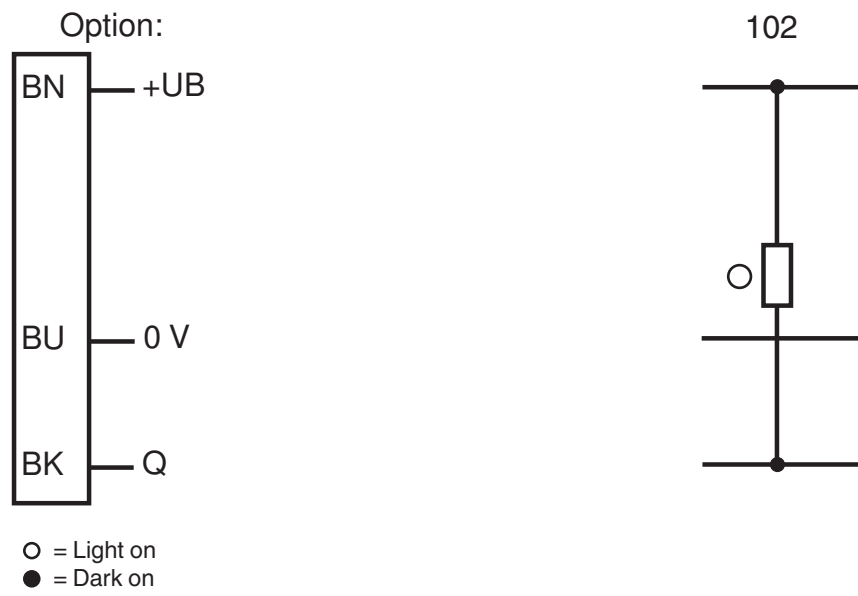
|                      |                    |
|----------------------|--------------------|
| Housing width        | 11 mm              |
| Housing height       | 31 mm              |
| Housing depth        | 20 mm              |
| Degree of protection | IP67               |
| Connection           | fixed cable        |
| Material             |                    |
| Housing              | PC (Polycarbonate) |
| Optical face         | PMMA               |
| Mass                 | approx. 50 g       |

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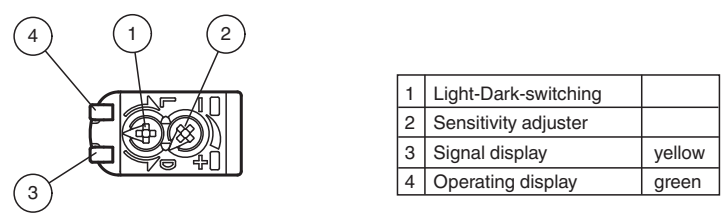
Technical Data

|                                     |        |
|-------------------------------------|--------|
| Tightening torque, fastening screws | 0.6 Nm |
| Cable length                        | 3 m    |

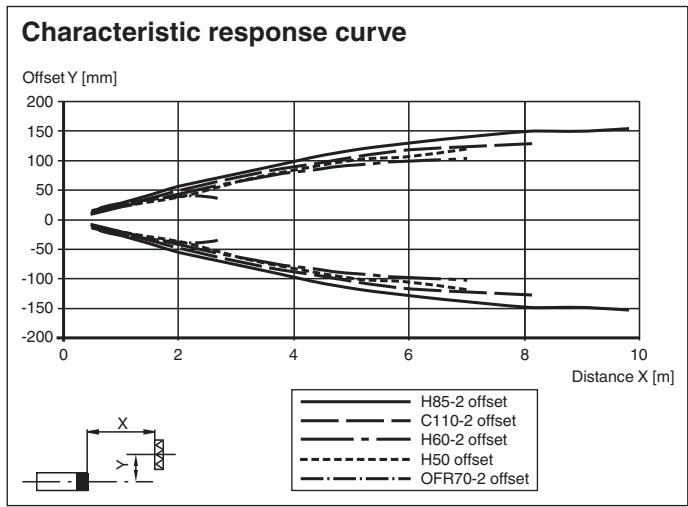
Connection Assignment



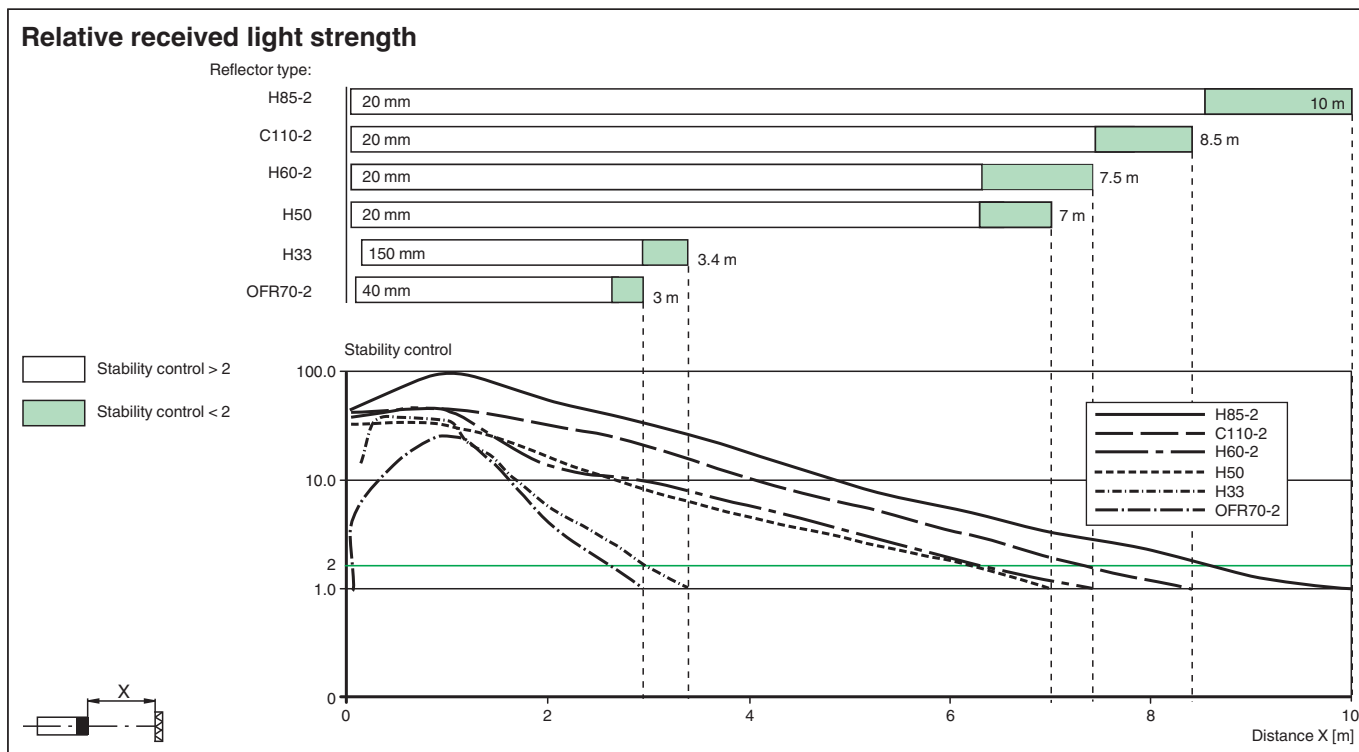
Assembly



Characteristic Curve



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## Application



## Accessories

|  |                     |                                                               |
|--|---------------------|---------------------------------------------------------------|
|  | <b>OMH-ML100-01</b> | Mounting aid for ML100 series, mounting bracket               |
|  | <b>OMH-ML100-09</b> | Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm |
|  | <b>OMH-ML100-02</b> | Mounting aid for ML100 series, mounting bracket               |
|  | <b>OMH-ML100-04</b> | Mounting aid for ML100 series, mounting bracket               |
|  | <b>OMH-ML100-05</b> | Mounting aid for ML100 series, mounting bracket               |

**Accessories**

|                                                                                   |                      |                                                               |
|-----------------------------------------------------------------------------------|----------------------|---------------------------------------------------------------|
|  | <b>OMH-F10-ML100</b> | Mounting aid for ML100 series                                 |
|  | <b>OMH-10</b>        | Mounting aid                                                  |
|  | <b>OMH-ML100-03</b>  | Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm |
|  | <b>REF-H33</b>       | Reflector with screw fixing                                   |

## Accessories

Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

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

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