



Model Number

ML100-54/95/103

Retroreflective sensor with polarization filter
with 4-pin, M8 x 1 connector

Features

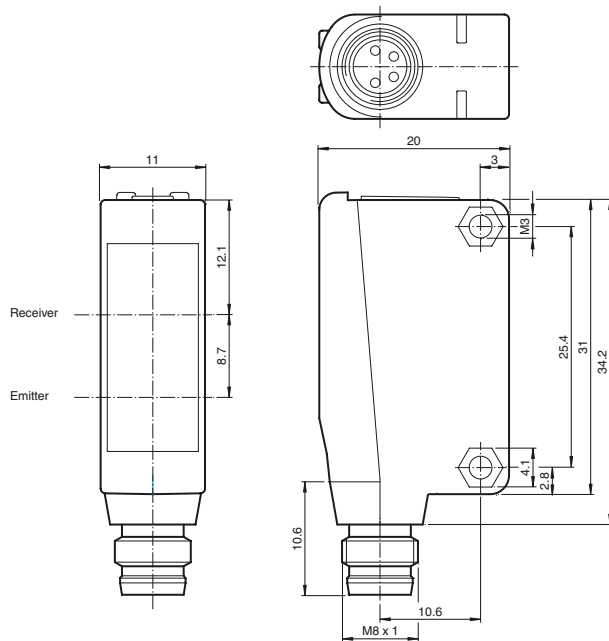
- Miniature design
- Easy to use
- Very bright, highly visible light spot
- Full metal thread mounting
- Clearly visible LEDs for Power ON, switching state and weak signal indication
- Not sensitive to ambient light

Product information

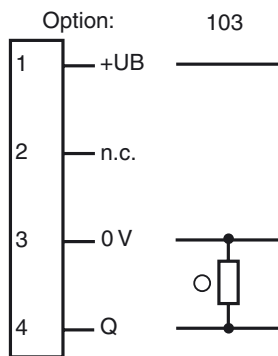
The ML100 series is characterized by its miniature housing with integral, all-metal threaded bushings. All versions are equipped with a visible red transmitter LED. This greatly simplifies installation and commissioning. The switching states are easily visible from all directions thanks to the highly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

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Dimensions

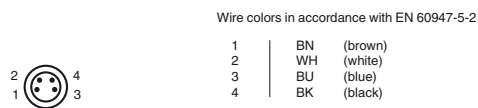


Electrical connection

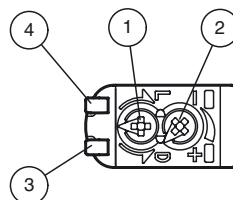


○ = Light on
● = Dark on

Pinout



Indicators/operating means



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

Technical data**General specifications**

| | |
|----------------------------|---------------------------------------|
| Effective detection range | 0 ... 3.5 m |
| Reflector distance | 0.01 ... 3.5 m |
| Threshold detection range | 4.5 m |
| Reference target | H50 reflector |
| Light source | LED |
| Light type | modulated visible red light |
| Polarization filter | yes |
| Diameter of the light spot | approx. 350 mm at a distance of 4.5 m |
| Angle of divergence | approx. 4 ° |
| Optical face | frontal |
| Ambient light limit | EN 60947-5-2:2007+A1:2012 |

Functional safety related parameters

| | |
|--------------------------------|-------|
| MTTF _d | 860 a |
| Mission Time (T _M) | 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 _B | 10 ... 30 V DC |
| Ripple | | max. 10 % |
| No-load supply current | I ₀ | < 20 mA |

Output

| | | |
|---------------------|---|------------------------------|
| Switching type | The switching type of the sensor is adjustable. The default setting is: light on | |
| Signal output | 1 PNP 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 _d | ≤ 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 | connector M8 x 1 , 4-pin |
| Material | |
| Housing | PC (Polycarbonate) |
| Optical face | PMMA |
| Mass | approx. 10 g |
| 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-F10-ML100**

Mounting aid for ML100 series

OMH-ML100-01

Mounting aid for ML100 series, Mounting bracket

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-10

Mounting aid

REF-H85-2

Reflector, rectangular 84.5 mm x 84.5 mm, mounting holes

REF-C110-2

Reflector, round ø 84 mm, central mounting hole

REF-H60-2

Reflector with mounting holes

REF-H50

Reflector, rectangular 51 mm x 61 mm, mounting holes, fixing strap

REF-H33

Reflector with screw fixing

OFR-70-2

Reflective tape 70 mm x 70 mm

REF-MH23-2

Reflector with Micro-structure, rectangular 23 mm x 14 mm, diagonal mounting hole

V31-WM-2M-PUR

Female cordset, M8, 4-pin, PUR cable

V31-GM-2M-PUR

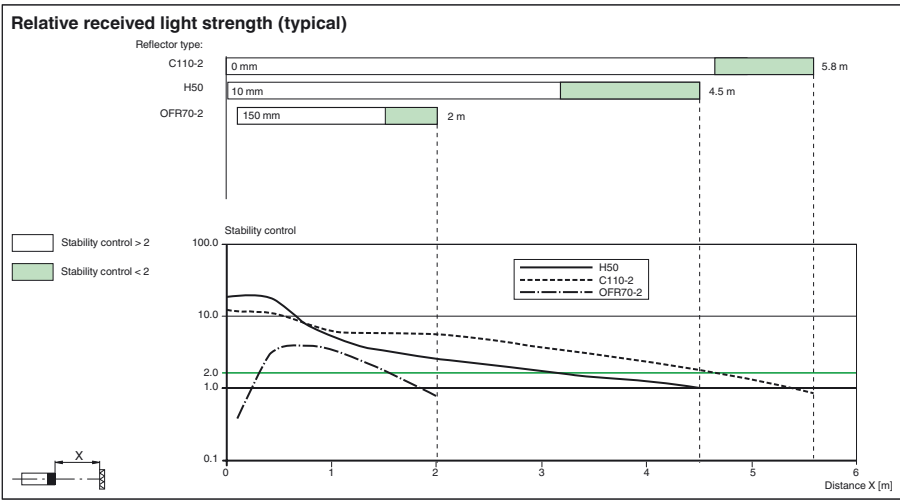
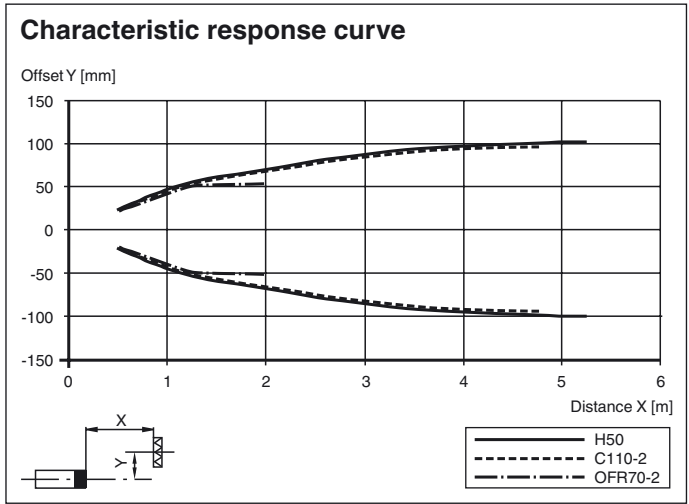
Female cordset, M8, 4-pin, PUR cable

OMH-ML100-08

Mounting aid for ML100 series, Snap-in

Other suitable accessories can be found at www.pepperl-fuchs.com

Curves/Diagrams



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

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