Retroreflective sensor with polarization filter

ML100-55/102/115

Dimensions

Electrical connection

Indicators/operating means

Model Number
ML100-55/102/115
Retroreflective sensor with 2 m fixed cable

Features
• Miniature design
• Easy to use
• Clearly visible LEDs for Power ON, switching state and weak signal indication
• Very bright, highly visible light spot
• Full metal thread mounting
• 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.
### 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**: LED
- **Light type**: modulated visible red light
- **Polarization filter**: yes
- **Diameter of the light spot**: approx. 500 mm at a distance of 7 m
- **Angle of divergence**: approx. 4°
- **Optical face**: frontal

#### Functional safety related parameters
- **MTTFd**: 860 a
- **Mission Time (TM)**: 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

#### Electrical specifications
- **Operating voltage**: $U_B = 10 \ldots 30$ 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 NPN output, short-circuit protected, reverse polarity protected, open collector
- **Switching voltage**: $U_D > 1.5$ V DC
- **Switching current**: max. 100 mA, resistive load
- **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**: 2 m fixed cable
- **Material**: Housing: PC (Polycarbonate)
- **Optical face**: PMMA
- **Mass**: approx. 50 g
- **Cable length**: 2 m

#### Compliance with standards and directives
- **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-ML100-02**: 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**: Reflective tape 70 mm x 70 mm, diagonal mounting hole
- **OMH-ML100-08**: Mounting aid for ML100 series, Snap-in

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

Characteristic response curve

Offset Y [mm]

Distance X [m]

Relative received light strength (typical)

Distance X [m]

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