Model Number
ML6-54-F/25/95/136
Retroreflective sensor with 4-pin, M8 x 1 connector

Features
- Precision sensor for standard applications
- Miniature design with very robust and versatile mounting options
- Objects can be reliably detected down to 0 mm: no blind zone
- Small, sharp light spot
- Rear mounting option for easy mounting without mounting bracket
- Tamper-proof version with no adjustments

Dimensions

Electrical connection

Option:

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<th>Pin</th>
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Pinout

Indicators/operating means

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<tr>
<th>Pin</th>
<th>Description</th>
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<td>Operating display</td>
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<td>2</td>
<td>Signal display</td>
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<td>Optical axis</td>
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### Technical data

#### General specifications
- **Effective detection range**: 0 ... 5 m
- **Reflector distance**: 0 ... 5 m
- **Threshold detection range**: 6 m
- **Reference target**: H85-2 reflector
- **Light source**: LED
- **Light type**: modulated visible red light, 660 nm
- **Polarization filter**: yes
- **Angle deviation**: max. ± 1°
- **Diameter of the light spot**: approx. 40 mm at detection range 1 m
- **Angle of divergence**: 1.7°
- **Ambient light limit**: Continuous light 40000 Lux, Modulated light 5000 Lux

#### Functional safety related parameters
- **MTTFd**: 980 a
- **Mission Time (TM)**: 20 a
- **Diagnostic Coverage (DC)**: 0 %

#### Indicators/operating means
- **Operation indicator**: LED green, statically lit Power on, Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz), short-circuit: LED green flashing (approx. 4 Hz)
- **Function indicator**: LED yellow: switching state; Stability control

#### Electrical specifications
- **Operating voltage**: $U_{B} = 10 \ldots 30$ V DC
- **Ripple**: max. 10 %
- **No-load supply current**: $I_{0} < 20$ mA at 24 V DC
- **Switching type**: light/dark on, programmable
- **Signal output**: 2 push-pull (4 in 1) outputs, complementary, short-circuit proof, reverse polarity protected
- **Switching voltage**: max. 30 V DC
- **Switching current**: max. 100 mA
- **Voltage drop**: $U_{d} \leq 2.5$ V DC
- **Switching frequency**: $f = 1$ kHz
- **Response time**: 500 µs

#### Ambient conditions
- **Ambient temperature**: -20 ... 60 °C (-4 ... 140 °F)
- **Storage temperature**: -20 ... 75 °C (-4 ... 167 °F)

#### Mechanical specifications
- **Degree of protection**: IP67 / IP69K
- **Connection**: M8 x 1 connector, 4-pin
- **Material**: Housing ABS, Optical face PMMA
- **Mass**: 10 g

#### Compliance with standards and directives
- **Shock and impact resistance**: IEC / EN 60068, half-sine, 40 g in each X, Y and Z directions
- **Vibration resistance**: IEC / EN 60068-2-6. Sinus. 10 -2000 Hz, 10 g in each X, Y and Z directions

#### Approvals and certificates
- **UL approval**: cULus Listed
- **CCC approval**: CCC approval / marking not required for products rated ≤36 V

### Accessories
- **OMH-4.1**: Mounting Clamp
- **OMH-ML6-Z**: Mounting bracket
- **OMH-ML6-U**: Mounting bracket
- **OMH-ML6**: Mounting bracket
- **OMH-11-02 Aperture-V-H 0.5 mm**: Slit diaphragm can be affixed for detecting very small parts
- **OMH-11-04 Aperture-V-H 1.0 mm**: Slit diaphragm can be affixed for detecting very small parts
- **OMH-11-06 Aperture-V-H 1.5 mm**: Slit diaphragm can be affixed for detecting very small parts
- **OMH-11-08 Aperture-V-H 2.0 mm**: Slit diaphragm can be affixed for detecting very small parts
- **V31-GM-5M-PUR**: Female cordset, M8, 4-pin, PUR cable
- **V31-WM-5M-PUR**: Female cordset, M8, 4-pin, PUR cable
- **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**: Reflector, rectangular 40.5 mm x 60 mm, mounting holes
- **REF-VR10**: Reflector, rectangular 60 mm x 19 mm, mounting holes
- **OFR-100/100**: Reflective tape 100 mm x 100 mm
- **REF-A17**: Reflector, round ø 20.5 mm, self-adhesive

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

Characteristic response curve

Relative received light strength

Light spot diameter

Aperture alignment
When attaching the aperture, make sure that the sensor lens is aligned exactly with the black aperture.