Retroreflective sensor with polarization filter

**Model Number**
ML8-55/102/143
Retroreflective sensor with 4-pin, M8 x 1 connector

**Features**
- Cost-optimized series for standard tasks
- Miniature design
- Tamper-proof, no operating controls
- Yellow LED indicator behind the front panel
- Flexible use with versatile mounting opportunities

**Product information**
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

![Dimensions diagram]

### Electrical connection

Option: 102

<table>
<thead>
<tr>
<th>Pin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+UB</td>
</tr>
<tr>
<td>2</td>
<td>n.c.</td>
</tr>
<tr>
<td>3</td>
<td>0 V</td>
</tr>
<tr>
<td>4</td>
<td>Q</td>
</tr>
</tbody>
</table>

○ = Light on
● = Dark on

### Pinout

Wire colors in accordance with EN 60947-5-2

1. **BN** (brown)
2. **WH** (white)
3. **BU** (blue)
4. **BK** (black)

### Indicators/operating means

1. Switching state: yellow
2. Emitter
3. Receiver
Retroreflective sensor with polarization filter
ML8-55/102/143

Technical data

**General specifications**
- Effective detection range: 0 ... 3 m
- Reflector distance: 0.02 ... 3 m
- Threshold detection range: 3.5 m
- Reference target: H85-2 reflector
- Light source: LED
- Light type: modulated visible red light
- Polarization filter: yes
- Diameter of the light spot: approx. 180 mm at a distance of 3.5 m
- Angle of divergence: approx. 3 °
- Ambient light limit: 40000 Lux

**Functional safety related parameters**
- MTTFd: 2340 a
- Mission Time (TM): 20 a
- Diagnostic Coverage (DC): 0 %

**Indicators/operating means**
- Function indicator: LED yellow: switching state

**Electrical specifications**
- Operating voltage: $U_B = 10 ... 30$ V DC, class 2
- Ripple: max. 10 %
- No-load supply current: $I_0 < 12$ mA
- Switching type: dark 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
- Voltage drop: $U_d \leq 1.5$ V DC
- Response time: 1.8 ms

**Ambient conditions**
- Ambient temperature: -20 ... 60 °C (-4 ... 140 °F)
- Storage temperature: -40 ... 75 °C (-40 ... 167 °F)

**Mechanical specifications**
- Housing width: 23 mm
- Housing height: 31 mm
- Housing depth: 11 mm
- Degree of protection: IP67
- Connection: M8 x 1 connector, 4-pin
- Housing: PC (glass-fiber-reinforced Makrolon)
- Optical face: PMMA
- Connector: plastic
- Mass: approx. 10 g
- Tightening torque, fastening screws: ≤ 0.4 Nm

**Compliance with standards and directives**
- Degree of protection: EN 60529
- Standards: EN 50178, UL 508

**Approvals and certificates**
- Protection class: II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1
- UL approval: cULus Listed, Class 2 Power Source, Type 1 enclosure
- CCC approval: CCC approval / marking not required for products rated ≤36 V

**Accessories**

**Montagekit OMH-ML7-01**
Mounting set consisting of bracket OMH-ML7-01 sheet OMH-ML7-03, and fastening material

**Montagekit OMH-ML7-02**
Mounting set consisting of bracket OMH-ML7-02 sheet OMH-ML7-03, and fastening material

**OMH-ML7-01**
Mounting aid for ML7 and ML8 series, Mounting bracket

**OMH-ML7-02**
Mounting aid for ML7 and ML8 series, Mounting bracket

**OMH-ML7-03**
Mounting aid for ML7 and ML8 series, Fixing plate

**V31-WM-2M-PUR**
Female cordset, M8, 4-pin, PUR cable

**V31-WM-2M-PVC**
Female cordset, M8, 4-pin, PVC cable

**V31-GM-2M-PVC**
Female cordset, M8, 4-pin, PVC cable

**V31-GM-2M-PUR**
Female cordset, M8, 4-pin, PUR cable

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

Characteristic response curve

Relative received light strength

Refer to “General Notes Relating to Pepperl+Fuchs Product Information”