Retroreflective sensor with polarization filter

Model Number
RL29-55/25/73c/136
Retroreflective sensor with 4-pin, M12 x 1 plastic connector

Features
- Highly visible LED
- Powerful push-pull output
- Optimal price/power ratio
- Protection class II

Dimensions

Electrical connection

Option:

<table>
<thead>
<tr>
<th>1</th>
<th>+UB</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Q2</td>
</tr>
<tr>
<td>3</td>
<td>0 V</td>
</tr>
<tr>
<td>4</td>
<td>Q1</td>
</tr>
</tbody>
</table>

Wire colors in accordance with EN 60947-5-2
1 | BN (brown) |
2 | WH (white) |
3 | BU (blue)  |
4 | BK (black) |

Pinout

LED indicator: switching state

Emmiter

Receiver

Dovetail mount

LED indicator: switching state
## Technical data

### General specifications

- **Effective detection range**: 0.1 ... 7 m
- **Threshold detection range**: 10 m
- **Reference target**: H85 reflector
- **Light source**: LED, 660 nm
- **Light type**: modulated visible red light
- **Polarization filter**: yes
- **Diameter of the light spot**: approx. 150 mm at a distance of 7 m
- **Angle of divergence**:
  - Emitter: 1.2 °
  - Receiver: 2 °
- **Ambient light limit**: 80000 Lux

### Functional safety related parameters

- **MTTFd**: 1982.2 a
- **Mission Time (TM)**: 20 a
- **Diagnostic Coverage (DC)**: 0 %

### Indicators/operating means

- **Function indicator**: LED yellow, light with free light beam, flashes when falling short of the stability control

### Electrical specifications

- **Operating voltage** ($U_B$): 10 ... 30 V DC, class 2
- **Ripple**: 10 %
- **No-load supply current** ($I_0$): ≤ 30 mA

### Output

- **Switching type**: light on
- **Signal output**: 2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected
- **Switching voltage**: max. 30 V DC
- **Switching current**: max. 100 mA
- **Switching frequency** ($f$): 500 Hz
- **Response time**: 1 ms

### Ambient conditions

- **Ambient temperature**: -25 ... 60 °C (-13 ... 140 °F)
- **Storage temperature**: -40 ... 75 °C (-40 ... 167 °F)

### Mechanical specifications

- **Housing width**: 25.8 mm
- **Housing height**: 88 mm
- **Housing depth**: 54.3 mm
- **Degree of protection**: IP65
- **Connection**: Plastic connector M12 x 1, 4-pin

### Material

- **Housing**: Plastic ABS
- **Optical face**: plastic
- **Mass**: 70 g

### Compliance with standards and directives


### Approvals and certificates

- **UL approval**: cULus Listed, Class 2 Power Source, Type 1 enclosure
- **CCC approval**: CCC approval / marking not required for products rated ≤36 V
- **Approvals**: CE, cULus Listed 57M3 (Only in association with UL Class 2 power supply; Type 1 enclosure)

### Curves/Diagrams

**Characteristic response curve**

![Characteristic response curve](image-url)

### Accessories

**OMH-05**
Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

**OMH-07**
Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

**OMH-21**
Mounting bracket

**OMH-22**
Mounting bracket

**OMH-MLV11-K**
dove tail mounting clamp

**OMH-RLK29-HW**
Mounting bracket for rear wall mounting

**OMH-RL28-C**
Weld slag cover model

**V1-G-2M-PUR**
Female cordset, M12, 4-pin, PUR cable

**V1-W-2M-PUR**
Female cordset, M12, 4-pin, PUR cable

Suitable reflectors and cable sockets can be found in the Internet.
**Relative received light strength**

<table>
<thead>
<tr>
<th>Reflector type</th>
<th>H85</th>
<th>C110-2</th>
<th>H60</th>
<th>H160</th>
<th>OFR-100/100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability control &gt; 1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stability control &lt; 1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reflector type:
- H85
- C110-2
- H60
- H160
- OFR-100/100

Distance X [m]:
- 50 mm
- 50 mm
- 50 mm
- 50 mm
- 250 mm
- 10.0 m
- 9.5 m
- 3.5 m
- 4.5 m
- 7.0 m

Relative received light strength:
- H85
- C110-2
- H60
- H160
- OFR-100/100

Date of issue: 2017-09-04