Model Number

RL31-54/25/73c/136
Retroreflective sensor with 4-pin, M12 x 1 connector

Features
- Compact and stable housing
- Glare protected with polarization filter
- Highly visible LED
- Powerful push-pull output
- Protection class II

Dimensions

Electrical connection

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

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. Operating display green
2. Signal display yellow
3. Emitter
4. Receiver
Technical data

General specifications
- Effective detection range: 0 ... 9000 mm
- Reflector distance: 20 ... 9000 mm
- Threshold detection range: 12 m
- Reference target: reflector C110-2
- Light source: LED
- Light type: modulated visible red light, 630 nm
- Polarization filter: yes
- Diameter of the light spot: approx. 200 mm at a distance of 6 m
- Angle of divergence: 3°
- Ambient light limit: 50000 Lux, according EN 60947-5-2

Functional safety related parameters
- MTTFd: 920 a
- Mission Time (TM): 20 a
- Diagnostic Coverage (DC): 0%

Indicators/operating means
- Operation indicator: LED yellow:
  1. LED lit constantly: signal > 2 x switching point (function reserve)
  2. LED flashes: signal between 1 x switching point and 2 x switching point
  3. LED off: signal < switching point

Electrical specifications
- Operating voltage: $U_B = 10 \ldots 30$ V DC
- Ripple: 10%
- No-load supply current: $I_0 = \leq 20$ 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
- Voltage drop: $U_d = \leq 1.5$ V
- Switching frequency: $f = \leq 500$ Hz
- Response time: $\leq 1$ ms

Ambient conditions
- Ambient temperature: -30 ... 55 °C (-22 ... 131 °F)
- Storage temperature: -40 ... 70 °C (-40 ... 158 °F)

Mechanical specifications
- Degree of protection: IP67
- Connection: 4-pin, M12 x 1 connector
- Material:
  - Housing: plastic
  - Optical face: PMMA
- Mass: 24 g

Compliance with standards and directives
- Standard conformity:

Approvals and certificates
- EAC conformity: TR CU 020/2011
- Protection class: II, rated insulation voltage $\leq 250$ V AC with pollution degree 1
- UL approval: cULus Listed, Class 2 Power Source, Type 1 enclosure
- CCC approval: CCC approval / marking not required for products rated $\leq 36$ V

Accessories
- OMH-RL31-01: Mounting bracket
- OMH-RL31-02: Mounting bracket narrow
- OMH-RL31-03: Mounting bracket narrow
- OMH-RL31-04: Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm
- OMH-RL31-05: Mounting bracket with M10 threaded rod
- OMH-RL31-06: Stainless steel mounting bracket with adjustable half clamp on the side
  - V1-G-2M-PUR: Female cordset, M12, 4-pin, PUR cable
  - V1-W-2M-PUR: Female cordset, M12, 4-pin, PUR cable

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

**Characteristic response curve**

- Offset Y [mm]
- Distance X [m]
- Gain Excess
- Relative received light strength

**RL31-54/25/73c/136**

**H85**
- C110-2
- ORR-50
- GP-RR8

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

Retroreflective sensor with polarization filter RL31-54/25/73c/136