Retroreflective sensor with polarization filter

Model Number
RL31-54/115/136
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

Option:
BN +UB
WH 0
BU 0 V
BK 0

= Light on
= Dark on

Indicators/operating means

1 Operating display green
2 Signal display yellow
3 Emitter
4 Receiver
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**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 (T_M): 20 a
- Diagnostic Coverage (DC): 0 %

**Indicators/operating means**
- Operation indicator: LED green: power on
- Function 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 ... 30 V DC
- Ripple: 10 %
- No-load supply current: I_0 ≤ 20 mA

**Output**
- Switching type: dark 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 ≤ 1.5 V
- Switching frequency: f ≤ 500 Hz
- Response time: ≤ 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: 2 m fixed cable
- Material: Housing: plastic
- Optical face: PMMA
- Mass: 133 g

**Compliance with standards and directives**
  IEC 60947-5-2:2007

**Approvals and certificates**
- Protection class: II , rated insulation voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 Output circuit basis insulation of input circuit according to EN 50178, rated insulation voltage 240 V AC
- UL approval: cULus Listed, Class 2 Power Source, Type 1 enclosure
- CCC approval: CCC approval / marking not required for products rated ≤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

Other suitable accessories can be found at www.pepperl-fuchs.com
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Curve/Diagram

Characteristic response curve

Offset Y [mm]

Distance X [m]

Relative received light strength

Gain Excess

Distance X [m]

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