## Dimensions

LED yellow    LED green

35
7.15
5    ø 4.5    5
6
34.35    24
36    50    62
8
6

Color coding for operating principle (see table)

18

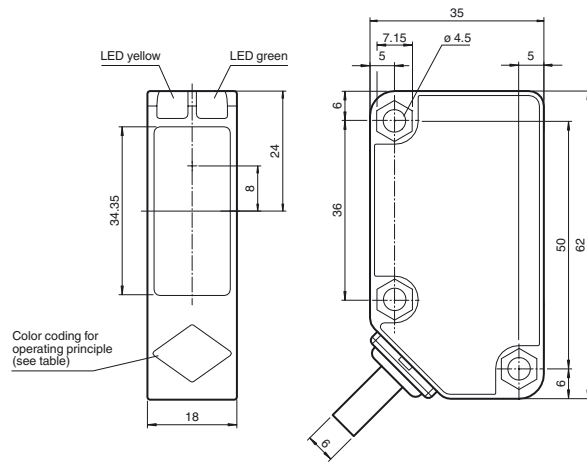| Operating principle | color |
|---|---|
| Retroreflective sensor with polarisation filter | green |
| Retroreflective sensor | blue |
| Diffusive mode sensor | white |
| Thru-beam sensor | grey |
| Diffusive mode sensor with background suppression | red |

## Model Number

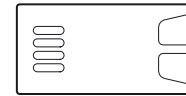**LD31/LV31/25/38/115**

Thru-beam sensor
with 2 m fixed cable

## Features

- Operating voltage DC
- Highly visible LED
- Protection class II
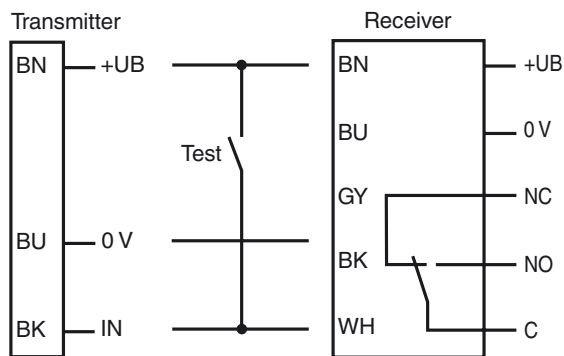- Relay output
- Compact and stable housing

## Electrical connection

| Transmitter | | Receiver | |
|---|---|---|---|
| BN | +UB | BN | +UB |
| | | BU | 0 V |
| | Test | GY | NC |
| BU | 0 V | BK | NO |
| BK | IN | WH | C |

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

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## Technical data

### System components
| | |
|---|---|
| Emitter | LD31/76a/115 |
| Receiver | LV31/25/38/115 |

### General specifications
| | |
|---|---|
| Effective detection range | 0 ... 30 m |
| Threshold detection range | 43 m |
| Light source | LED |
| Light type | modulated visible red light , 630 nm |
| Alignment aid | LED yellow:<br>1. LED illuminates: Sufficient light signal received, emitter and receiver alignment is correct<br>2. LED flashes: Reaching switching point<br>3. LED off: Light beam is interrupted or the alignment is out |
| Diameter of the light spot | approx. 800 mm at a distance of 30 m |
| Angle of divergence | Emitter: 0.5 ° , Receiver: 1.5 ° |
| Ambient light limit | 50000 Lux ; according EN 60947-5-2 |

### Functional safety related parameters
| | |
|---|---|
| $MTTF_d$ | 620 a |
| Mission Time ($T_M$) | 20 a |
| Diagnostic Coverage (DC) | 0 % |

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

### Electrical specifications
| | | |
|---|---|---|
| Operating voltage | $U_B$ | 12 ... 30 V DC |
| No-load supply current | $I_0$ | Emitter: ≤ 18 mA<br>Receiver: ≤ 20 mA |

### Input
| | |
|---|---|
| Test input | emitter deactivation at $+U_B$ |

### Output
| | | |
|---|---|---|
| Switching type | | light on |
| Signal output | | Relay, 1 alternator |
| Switching voltage | | max. 30 V DC |
| Switching current | | max. 1 A |
| Switching frequency | f | ≤ 20 Hz |
| Response time | | ≤ 25 ms |

### Conformity
| | |
|---|---|
| Product standard | EN 60947-5-2 |

### Ambient conditions
| | |
|---|---|
| Ambient temperature | -25 ... 55 °C (-13 ... 131 °F) |
| Storage temperature | -40 ... 70 °C (-40 ... 158 °F) |

### Mechanical specifications
| | |
|---|---|
| Housing width | 18 mm |
| Housing height | 62 mm |
| Housing depth | 35 mm |
| Degree of protection | IP67 |
| Connection | Emitter: 2 m fixed cable , 3-wire<br>Receiver: 2 m fixed cable , 5-wire |
| Material | |
| Housing | Polycarbonate |
| Optical face | PMMA |
| Mass | Emitter: 116 g<br>Receiver: 131 g |

### Compliance with standards and directives
| | |
|---|---|
| Standard conformity | |
| Standards | EN 62103 |

### Approvals and certificates
| | |
|---|---|
| Protection class | II , rated 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 |
| 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**
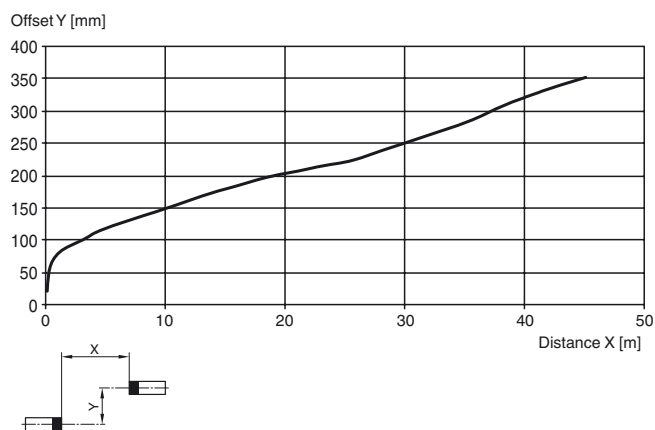Mounting bracket for mounting on flat surfaces with 2 M4 screws

**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

**PEPPERL+FUCHS**

## Curves/Diagrams

### Characteristic response curve

Offset Y [mm]



Distance X [m]

### Relative received light strength

Stability control



Distance X [m]

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

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