## Dimensions



| | |
|---|---|
| 1 | Switching state display |
| 2 | Receiver optical axis |
| 3 | Transmitter optical axis |

## Model Number

**ML8-8-H-50-RT/102/115/162**
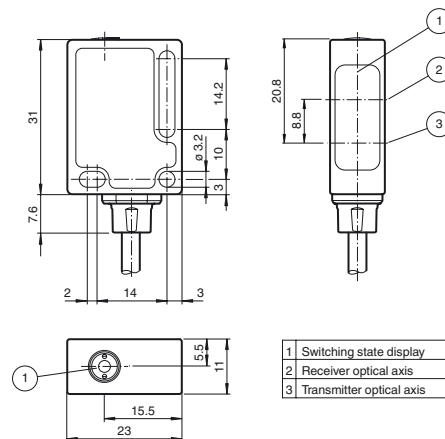
Background suppression sensor
with 2 m fixed cable

## Features

- Diffuse mode sensor with multiple light spots
- Specially designed for detecting critical objects such as PCBs
- Detects objects in front of a close background through precise background suppression
- Precision object detection, almost irrespective of the color
- Tamper-proof, no operating controls
- Plug and Play
- Not sensitive to ambient light, even with switched energy saving lamps
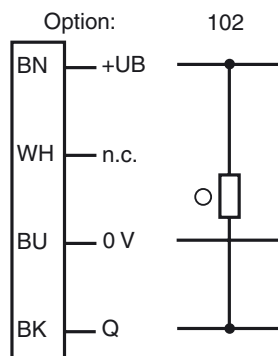
## Product information

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.

## Electrical connection

Option:     102

| | |
|---|---|
| BN | +UB |
| WH | n.c. |
| BU | 0 V |
| BK | Q |

○ = Light on
● = Dark on

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

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

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## Technical data

### General specifications

| | |
|---|---|
| Detection range | 20 ... 50 mm |
| Reference target | standard black, 100 mm x 100 mm |
| Light source | LED |
| Light type | modulated visible red light , 640 nm |
| Black/White difference (6 %/90 %) | < 10 % |
| Diameter of the light spot | 2 light spots, 11 mm apart, spotsize 4 mm at a distance of 50 mm |
| Ambient light limit | EN 60947-5-2 |

### Functional safety related parameters

| | |
|---|---|
| $MTTF_d$ | 794 a |
| Mission Time ($T_M$) | 20 a |
| Diagnostic Coverage (DC) | 0 % |

### Indicators/operating means

| | |
|---|---|
| Function indicator | 2 LEDs yellow, light up in case of detection |

### Electrical specifications

| | | |
|---|---|---|
| Operating voltage | $U_B$ | 10 ... 30 V DC , class 2 |
| Ripple | | max. 10 % |
| No-load supply current | $I_0$ | < 15 mA |

### Output

| | | |
|---|---|---|
| Switching type | | light 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 | $U_d$ | ≤ 1.5 V DC |
| Switching frequency | f | 500 Hz |
| Response time | | 1 ms |

### Conformity

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

### Ambient conditions

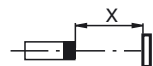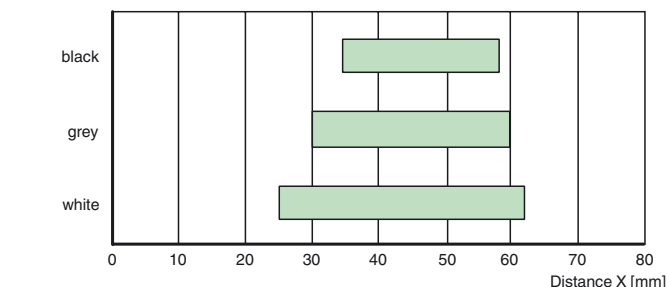| | |
|---|---|
| Ambient temperature | -20 ... 60 °C (-4 ... 140 °F) |
| Storage temperature | -40 ... 70 °C (-40 ... 158 °F) |

### Mechanical specifications

| | |
|---|---|
| Housing width | 23 mm |
| Housing height | 31 mm |
| Housing depth | 11 mm |
| Degree of protection | IP67 |
| Connection | 2 m fixed cable |
| Material | |
| Housing | PC (glass-fiber-reinforced Makrolon) |
| Optical face | PMMA |
| Mass | approx. 50 g |

### 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 |

### Detection ranges

Object colour



Distance X [mm]

## Accessories

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

**Montagekit OMH-ML7-02**
Mounting set consisting of bracket OMH-ML-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

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

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**2** Pepperl+Fuchs Group
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fa-info@sg.pepperl-fuchs.com

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