



**Model Number**

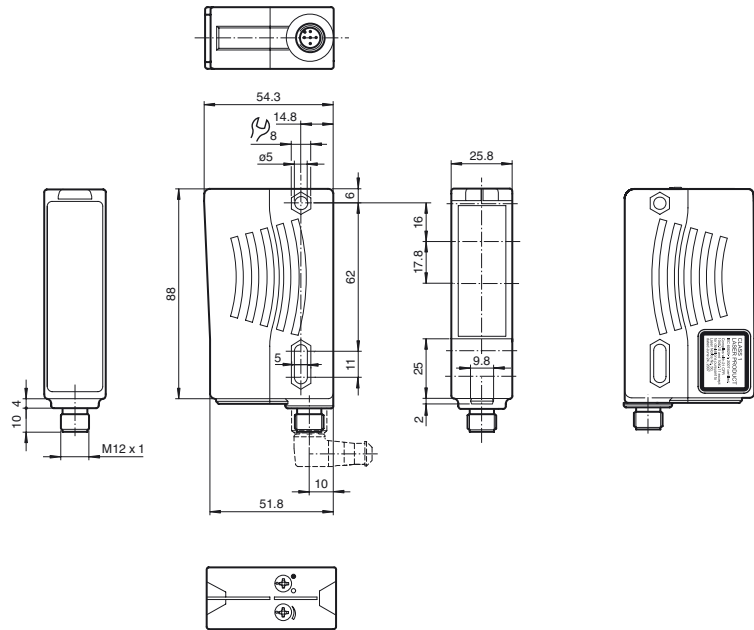
**RL28-8-H-1500-LAS/47/105**

Background suppression sensor with 5-pin, M12 x 1 plastic connector

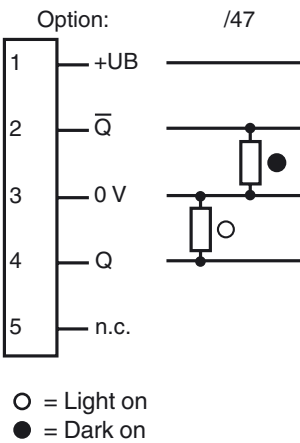
**Features**

- Universal series with highly versatile fields of use
- Resistant against noise: reliable operation under all conditions
- Laser version for long ranges
- Small light beam diameter for detection of small parts

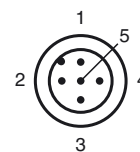
**Dimensions**



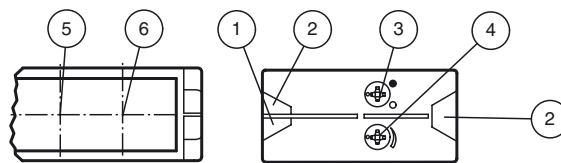
**Electrical connection**



**Pinout**



**Indicators/operating means**



|   |                          |
|---|--------------------------|
| 1 | Operating display green  |
| 2 | Switch state yellow      |
| 3 | Bright/dark switch       |
| 4 | Detection range adjuster |
| 5 | Receiver                 |
| 6 | Emitter                  |

Release date: 2015-10-28 14:39 Date of issue: 2015-10-28 180708\_eng.xml

**Technical data****General specifications**

|                                   |  |
|-----------------------------------|--|
| Detection range                   | 100 ... 1500 mm  |
| Detection range min.              | 50 ... 200 mm  |
| Detection range max.              | 100 ... 1500 mm  |
| Background suppression            | max. + 10 % of the upper limit of the detection range    |
| Light source                      | laser diode  |
| Light type                        | modulated visible red light                              |
| Laser nominal ratings             |  |
| Note                              | LASER LIGHT , DO NOT STARE INTO BEAM                     |
| Laser class                       | 1  |
| Wave length                       | 650 nm   |
| Beam divergence                   | < 1.5 mrad   |
| Pulse length                      | 4.5 µs   |
| Repetition rate                   | approx. 1.5 kHz  |
| max. pulse energy                 | 17 nJ  |
| Light spot representation         | max. 1.5 mm x 4 mm , light spot perpendicular to housing |
| Black/White difference (6 %/90 %) | ≤ 40 %   |
| Ambient light limit               | 50000 Lux  |

**Functional safety related parameters**

|                                |       |
|--------------------------------|-------|
| MTTF <sub>d</sub>              | 590 a |
| Mission Time (T <sub>M</sub> ) | 20 a  |
| Diagnostic Coverage (DC)       | 0 %   |

**Indicators/operating means**

|                     |   |
|---------------------|---|
| Operation indicator | LED green   |
| Function indicator  | 2 LEDs yellow<br>ON: object inside the scanning range<br>OFF: object outside the scanning range |
| Control elements    | Detection range adjuster , Light/Dark switch  |

**Electrical specifications**

|                                |                |  |
|--------------------------------|----------------|--|
| Operating voltage              | U <sub>B</sub> | 10 ... 30 V DC   |
| Ripple                         |                | 10 %   |
| No-load supply current         | I <sub>0</sub> | ≤ 40 mA  |
| Protection class               |                | II, rated insulation voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 |
| Time delay before availability | t <sub>v</sub> | ≤ 2 s  |

**Output**

|                     |   |        |
|---------------------|---|--------|
| Switching type      | light/dark on, switchable   |        |
| Signal output       | 2 PNP outputs, complementary, short-circuit protected, reverse polarity protected, open collector |        |
| Switching voltage   | max. 30 V DC  |        |
| Switching current   | max. 200 mA   |        |
| Switching frequency | f   | 140 Hz |
| Response time       |   | 3.5 ms |

**Ambient conditions**

|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -10 ... 50 °C (14 ... 122 °F)  |
| Storage temperature | -25 ... 75 °C (-13 ... 167 °F) |

**Mechanical specifications**

|                      |                                  |
|----------------------|----------------------------------|
| Degree of protection | IP67                             |
| Connection           | 5-pin, M12 x 1 plastic connector |
| Material             |                                  |
| Housing              | Plastic ABS                      |
| Optical face         | Plastic pane                     |
| Mass                 | approx. 70 g                     |

**Compliance with standards and directives**

|                           |  |
|---------------------------|--|
| Directive conformity      |  |
| EMC Directive 2004/108/EC | EN 60947-5-2:2007 + A1:2012  |
| Standard conformity       |  |
| Product standard          | EN 60947-5-2:2007 + A1:2012<br>IEC 60947-5-2:2007 + A1:2012  |
| Laser class               | IEC 60825-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007 |
| Standards                 | UL 60947-5-2: 2014<br>IEC 60825-1:2007<br>EN 60825-1:2007  |

**Approvals and certificates**

|                  |   |
|------------------|---|
| Protection class | II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 |
| UL approval      | E87056 , cULus Listed , class 2 power supply , type rating 1                    |

**Laserlabel****CLASS 1  
LASER PRODUCT**

IEC 60825-1: 2007 certified.

Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

**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**

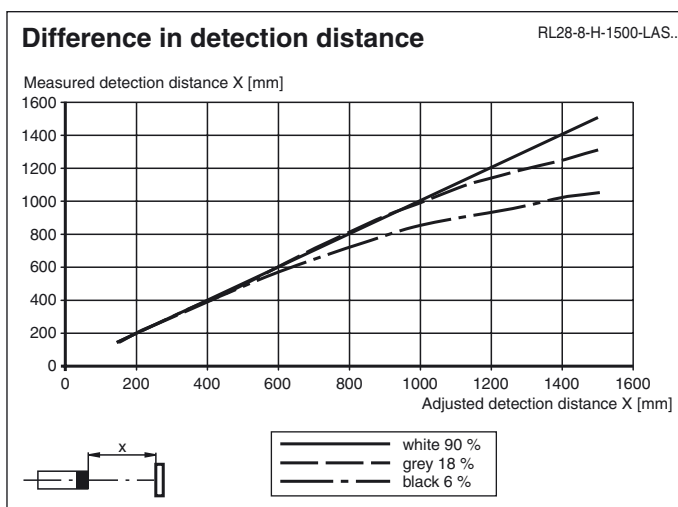
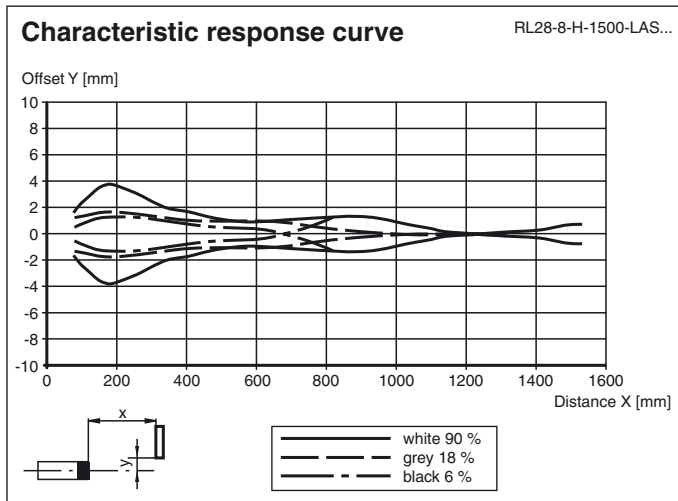
Mounting bracket for rear wall mounting

**OMH-RL28-C**

Weld slag cover model

Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

## Curves/Diagrams



## Laser notice laser class 1

- The irradiation can lead to irritation especially in a dark environment. Do not point at people!
- Maintenance and repairs should only be carried out by authorized service personnel!
- Attach the device so that the warning is clearly visible and readable.
- Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.