



**Model Number**

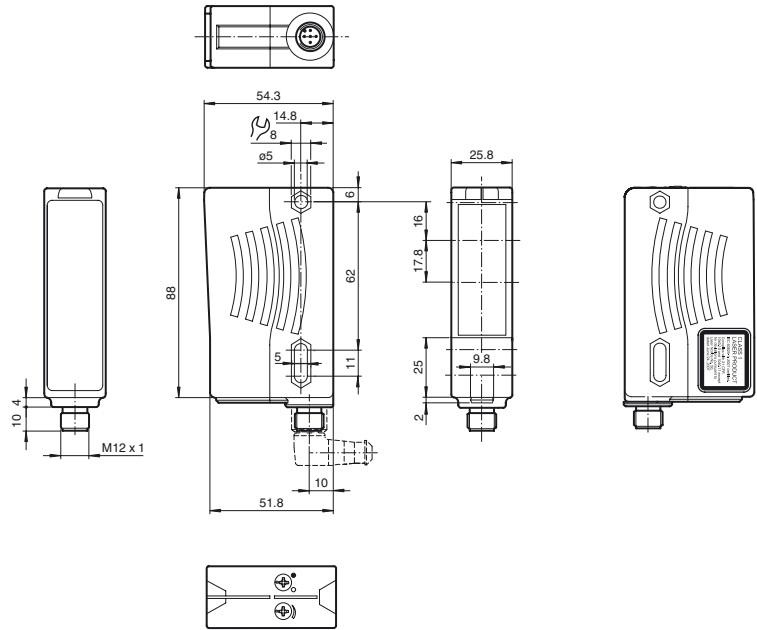
**RL28-8-H-1500-LAS-4301/47/105**

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

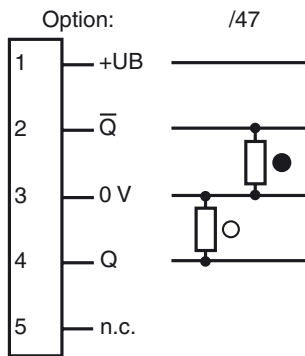
**Features**

- 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**

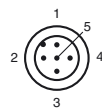


**Electrical connection**



○ = Light on  
● = Dark on

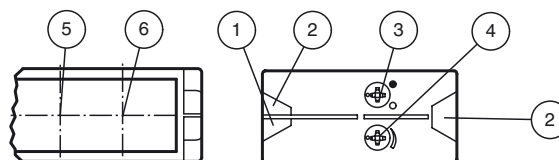
**Pinout**



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

**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: 2018-03-26 09:54 Date of issue: 2018-03-26 21:3582\_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 ON: object inside the scanning range OFF: object outside the scanning range
Control elements	Sensing range adjuster , Light-on/dark-on changeover 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

**Conformity**

Product standard	EN 60947-5-2
Laser safety	EN 60825-1

**Ambient conditions**

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

**Mechanical specifications**

Housing width	25.8 mm
Housing height	88 mm
Housing depth	54.3 mm
Degree of protection	IP67
Connection	5-pin, M12 x 1 plastic connector
Material	
Housing	Plastic ABS
Optical face	plastic , darkened underneath the laser diode to minimize reflections
Mass	approx. 70 g

**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
FDA approval	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

**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**

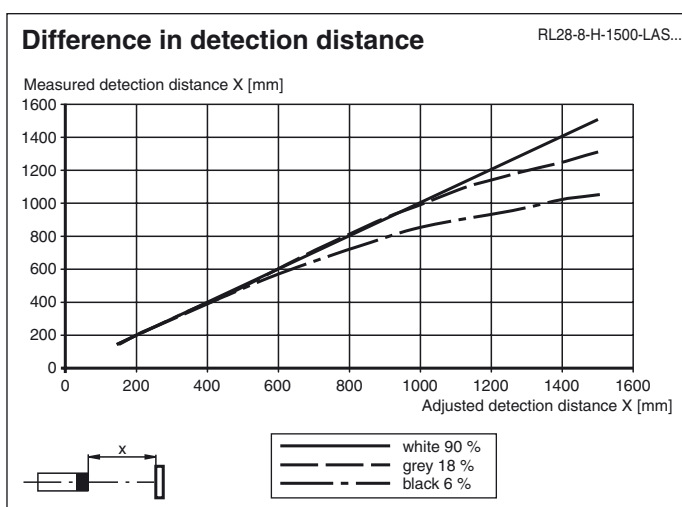
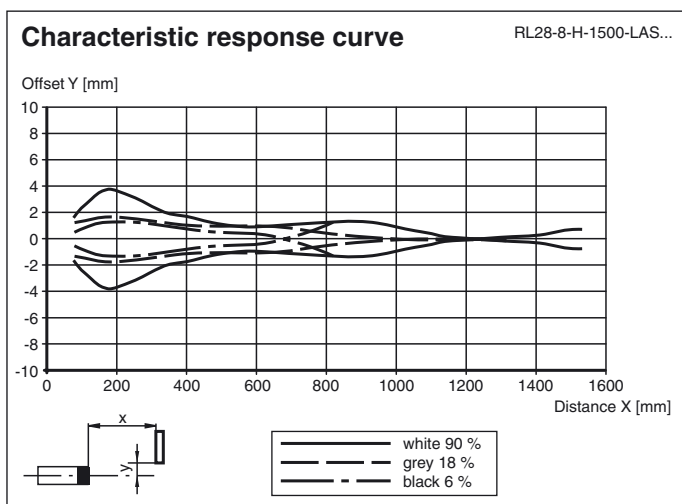
Mounting bracket for rear wall mounting

**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.