



## Background suppression sensor

### RL28-8-H-1500-LAS/47/115b

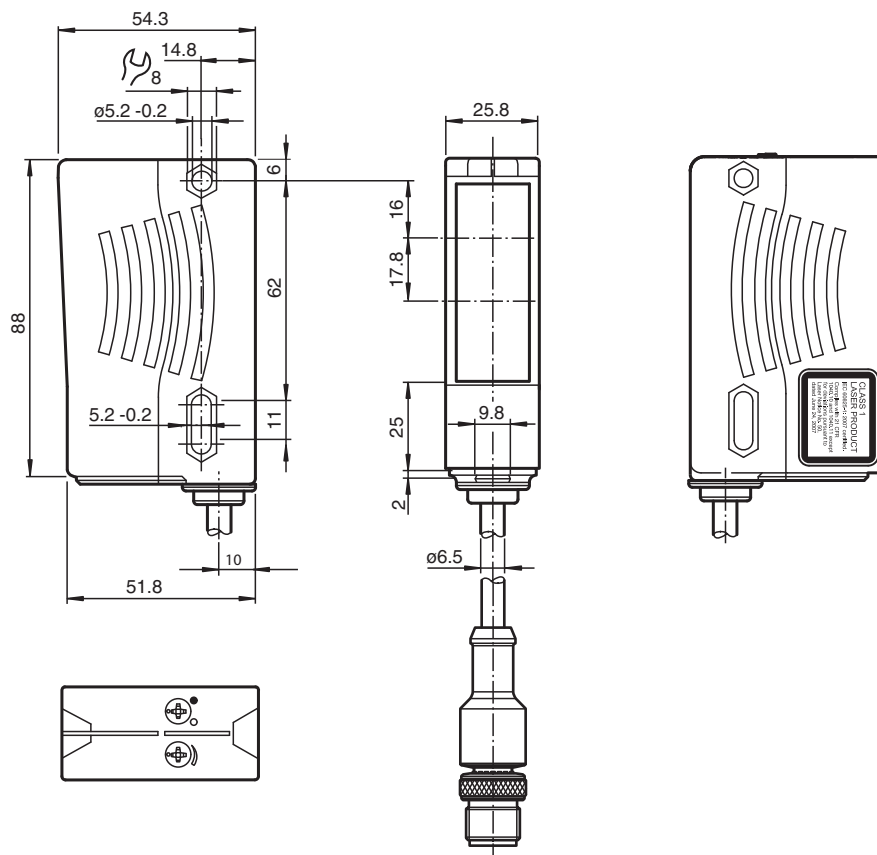
- Universal series with highly versatile fields of use
- Resistant against noise: reliable operation under all conditions
- Laser version for long ranges
- Small light beam diameter for detection of small parts



Background suppression sensor



## Dimensions



## Technical Data

### General specifications

Detection range	100 ... 1500 mm
Detection range min.	50 ... 200 mm

Release date: 2023-04-04 Date of issue: 2023-04-04 Filename: 194926\_eng.pdf

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

**PF** PEPPERL+FUCHS

## Technical Data

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
<b>Laser nominal ratings</b>		
Note		LASER LIGHT , DO NOT STARE INTO BEAM
Laser class		1
Wave length		650 nm
Beam divergence		< 1.5 mrad
Pulse length		4.5 $\mu$ s
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 %)		$\leq$ 40 %
Ambient light limit		50000 Lux
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>		590 a
Mission Time (T <sub>M</sub> )		20 a
Diagnostic Coverage (DC)		0 %
<b>Indicators/operating means</b>		
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
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	10 ... 30 V DC
Ripple		10 %
No-load supply current	I <sub>0</sub>	$\leq$ 40 mA
Protection class		II, rated insulation voltage $\leq$ 250 V AC with pollution degree 1-2 according to IEC 60664-1
Time delay before availability	t <sub>v</sub>	$\leq$ 2 s
<b>Output</b>		
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
<b>Conformity</b>		
Product standard		EN 60947-5-2
Laser safety		EN 60825-1
<b>Approvals and certificates</b>		
Protection class		II, rated voltage $\leq$ 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
<b>Ambient conditions</b>		
Ambient temperature		-10 ... 50 °C (14 ... 122 °F)
Storage temperature		-40 ... 60 °C (-40 ... 140 °F)
<b>Mechanical specifications</b>		
Housing width		25.8 mm
Housing height		88 mm
Housing depth		54.3 mm

Release date: 2023-04-04 Date of issue: 2023-04-04 Filename: 194926\_eng.pdf

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

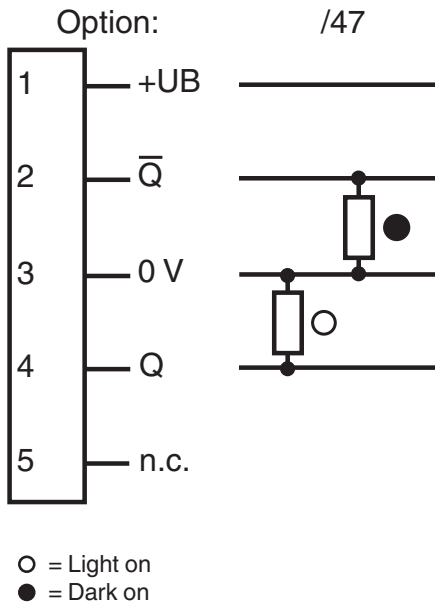
Pepperl+Fuchs Group  
www.pepperl-fuchs.comUSA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.comGermany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.comSingapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

**PEPPERL+FUCHS**

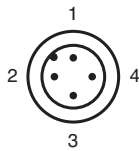
## Technical Data

Degree of protection	IP67
Connection	0.2 m fixed cable with 4-pin, M12 connector
Material	
Housing	Plastic ABS
Optical face	Plastic pane
Mass	approx. 70 g

## Connection Assignment



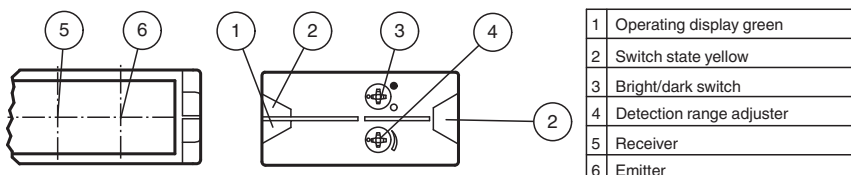
## Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

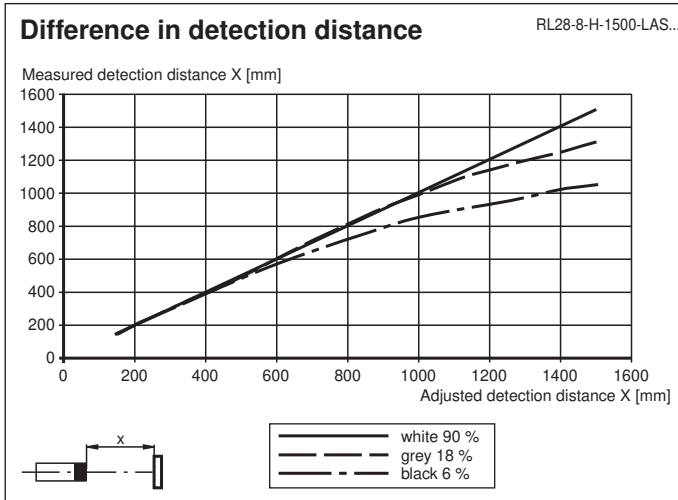
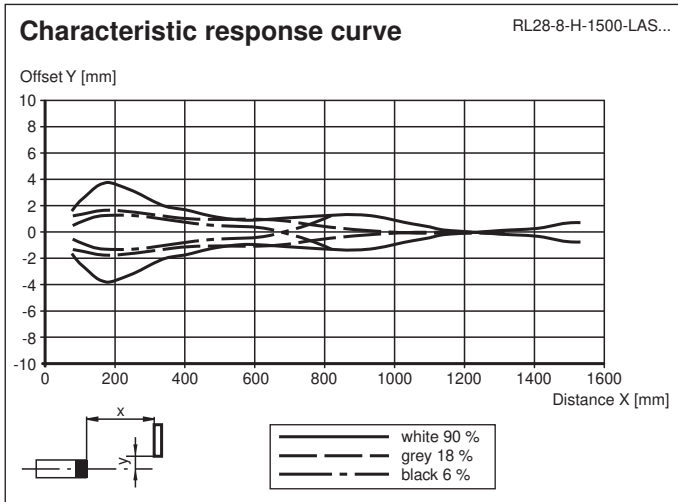
## Assembly



Release date: 2023-04-04 Date of issue: 2023-04-04 Filename: 194926\_eng.pdf

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

**Characteristic Curve**



**Application**

Release date: 2023-04-04 Date of issue: 2023-04-04 Filename: 194926\_eng.pdf



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

## Safety Information



## Safety Information

### Laser Class 1 Information






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.

## Accessories

	<b>OMH-05</b>	Mounting aid for round steel $\varnothing$ 12 mm or sheet 1.5 mm ... 3 mm
	<b>OMH-21</b>	Mounting bracket: mounting aid for sensors in the RL* series
	<b>OMH-22</b>	Mounting aid for RL* series
	<b>OMH-RLK29-HW</b>	Mounting bracket for rear wall mounting
	<b>OMH-RL28-C</b>	Weld slag cover model