



Background suppression sensor

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

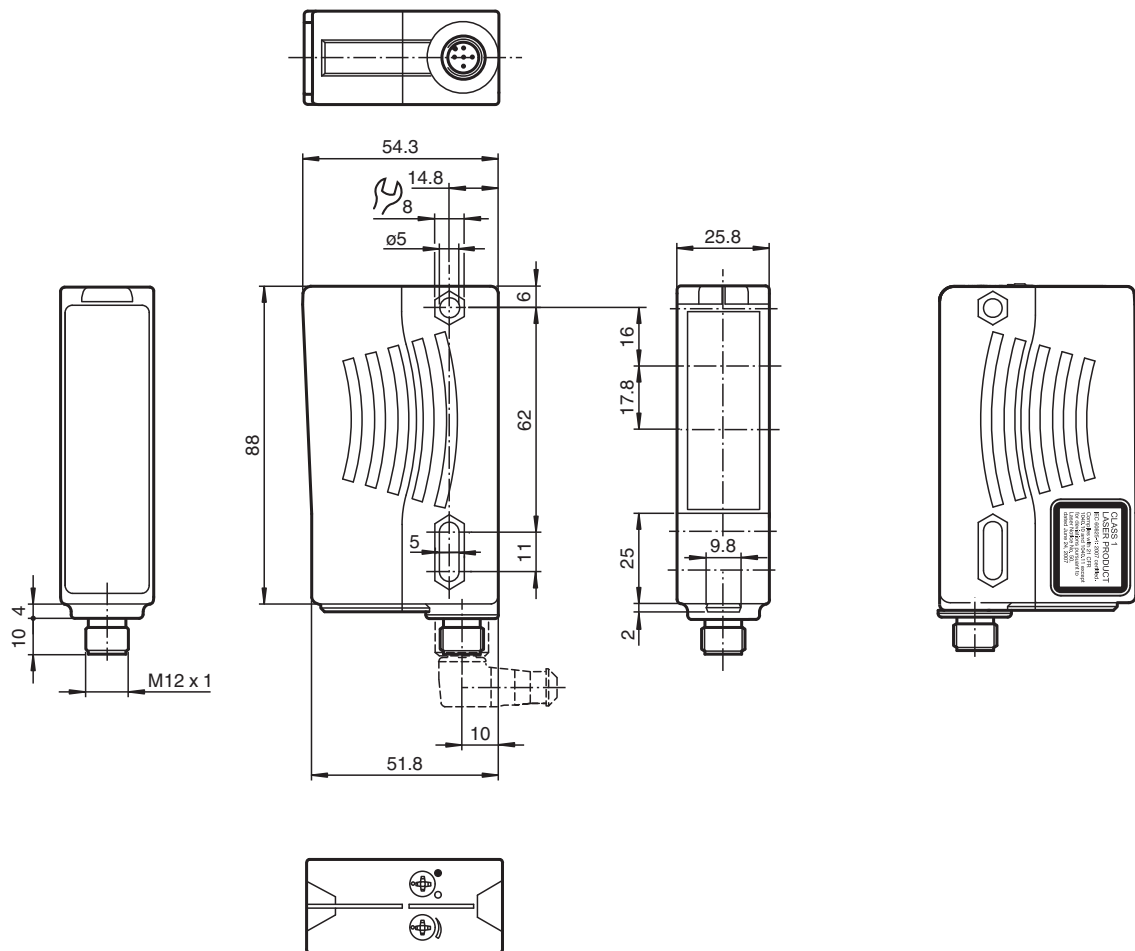


- Universal series with highly versatile fields of use
- Resistant against noise: reliable operation under all conditions
- Laser version for long ranges
- Small light beam diameter for detection of small parts

Background suppression sensor



Dimensions



Release date: 2023-04-04 Date of issue: 2023-04-04 Filename: 180708_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

PEPPERL+FUCHS

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 _d	590 a
Mission Time (T _M)	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 _B	10 ... 30 V DC
Ripple		10 %
No-load supply current	I ₀	≤ 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 _v	≤ 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

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

Ambient conditions

Ambient temperature	-10 ... 50 °C (14 ... 122 °F)
Storage temperature	-40 ... 60 °C (-40 ... 140 °F)

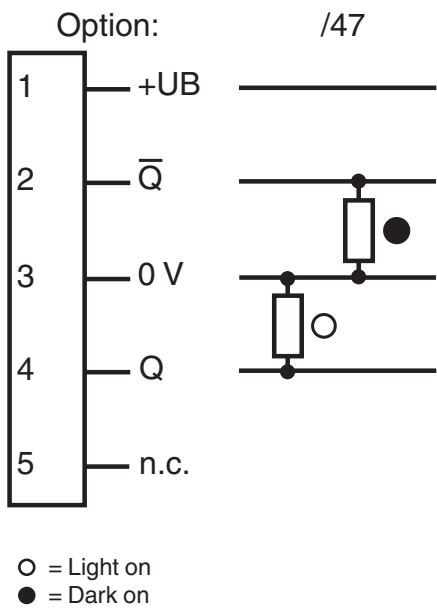
Mechanical specifications

Release date: 2023-04-04 Date of issue: 2023-04-04 Filename: 180708_eng.pdf

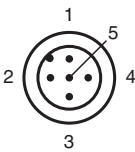
Technical Data

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 pane
Mass	approx. 70 g

Connection Assignment



Connection Assignment

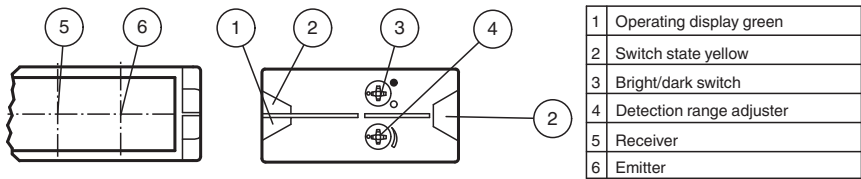


Wire colors in accordance with EN 60947-5-2

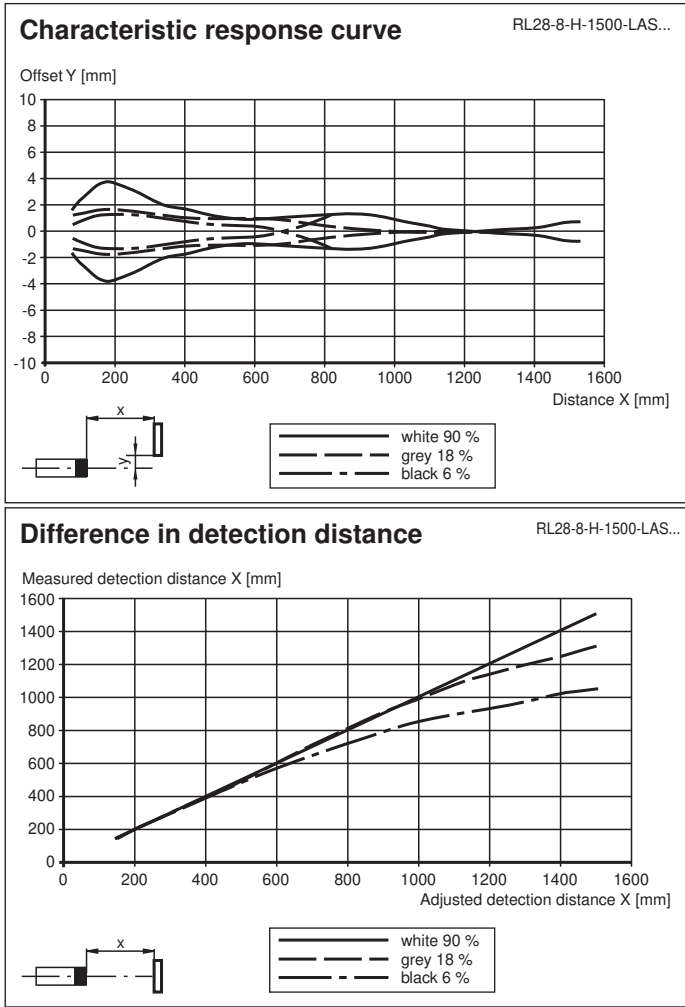
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

Release date: 2023-04-04 Date of issue: 2023-04-04 Filename: 180708_eng.pdf

Assembly



Characteristic Curve



Release date: 2023-04-04 Date of issue: 2023-04-04 Filename: 180708_eng.pdf

Application



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

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

Release date: 2023-04-04 Date of issue: 2023-04-04 Filename: 180708_eng.pdf