



Background suppression sensor

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

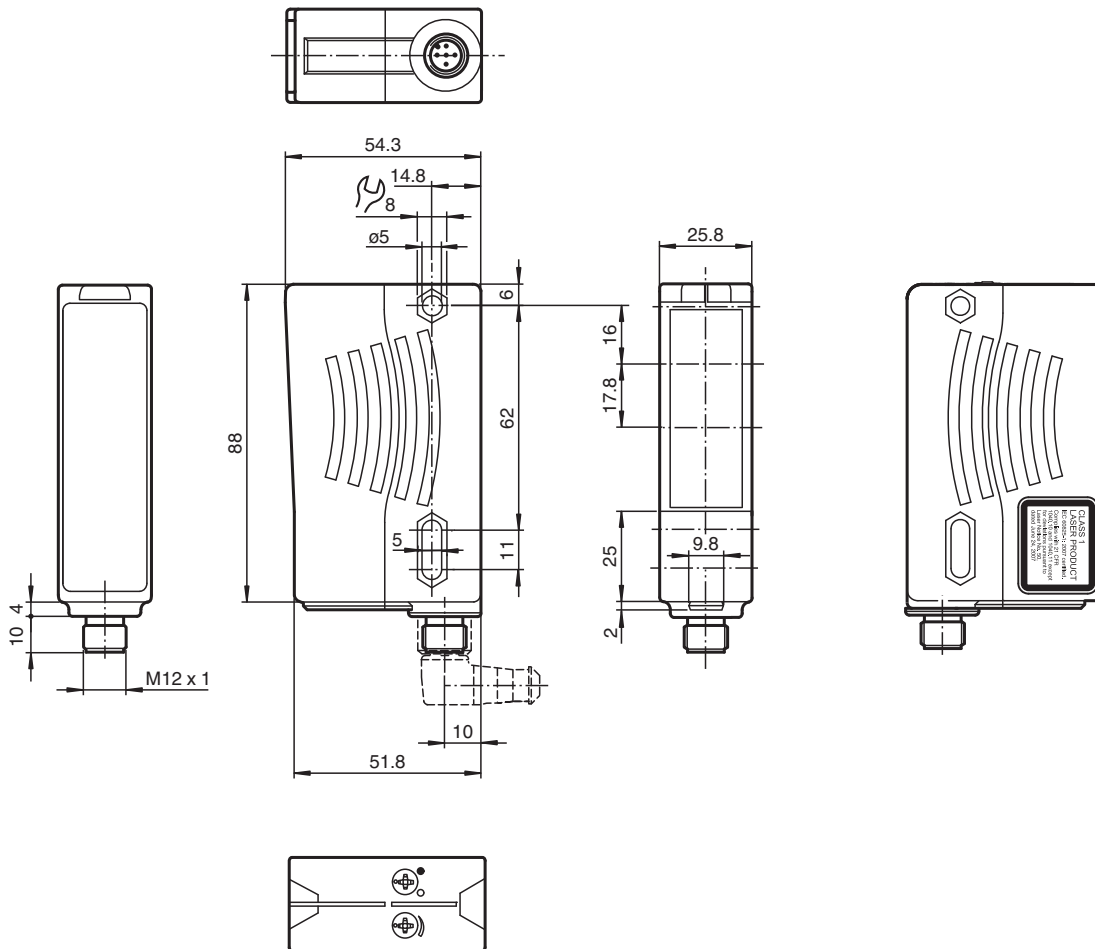


- Universal series with highly versatile fields of use
- Resistant against noise: reliable operation under all conditions
- Laser version for long ranges
- Small light beam diameter for detection of small parts

Background suppression sensor



Dimensions



Release date: 2025-03-31 Date of issue: 2025-03-31 Filename: 180708_eng.pdf

Technical Data

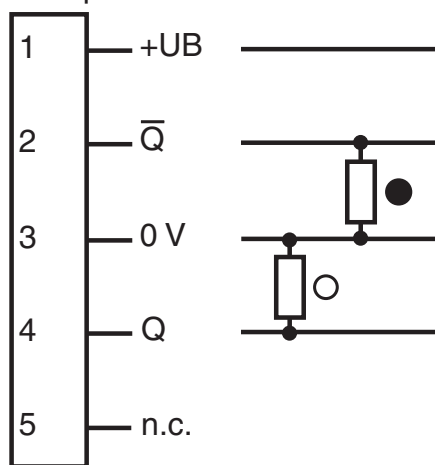
General specifications		
Detection range		100 ... 1500 mm
Detection range min.		50 ... 200 mm
Detection range max.		100 ... 1500 mm
Background suppression		max. + 10 % of the upper limit of the detection range
Light source		laser diode
Light type		modulated visible red light
Laser nominal ratings		
Note		LASER LIGHT , DO NOT STARE INTO BEAM
Laser class		1
Wave length		650 nm
Beam divergence		< 1.5 mrad
Pulse length		4.5 μ 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
Functional safety related parameters		
MTTF _d		590 a
Mission Time (T _M)		10 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	\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 _v	\leq 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		IEC 60825-1:2014
Approvals and certificates		
UL approval		E87056 , cULus Listed , class 2 power supply , type rating 1
FDA approval		IEC 60825-1:2014 Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3 as described in Laser Notice 56, dated May 8, 2019.
Ambient conditions		
Ambient temperature		-10 ... 50 °C (14 ... 122 °F)
Storage temperature		-40 ... 60 °C (-40 ... 140 °F)
Mechanical specifications		

Technical Data

Degree of protection	IP67
Connection	5-pin, M12 x 1 plastic connector
Material	
Housing	Plastic ABS
Optical face	Plastic pane
Mass	approx. 70 g
Dimensions	
Height	88 mm
Width	25.8 mm
Depth	54.3 mm

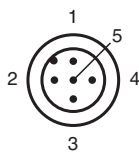
Connection Assignment

Option: /47



○ = Light on
● = Dark on

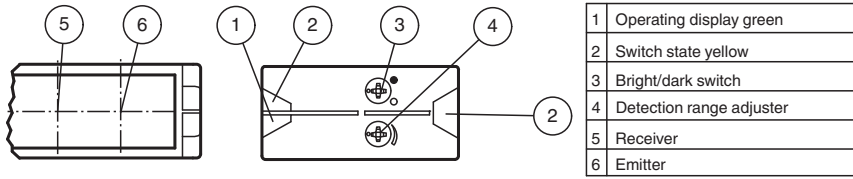
Connection Assignment



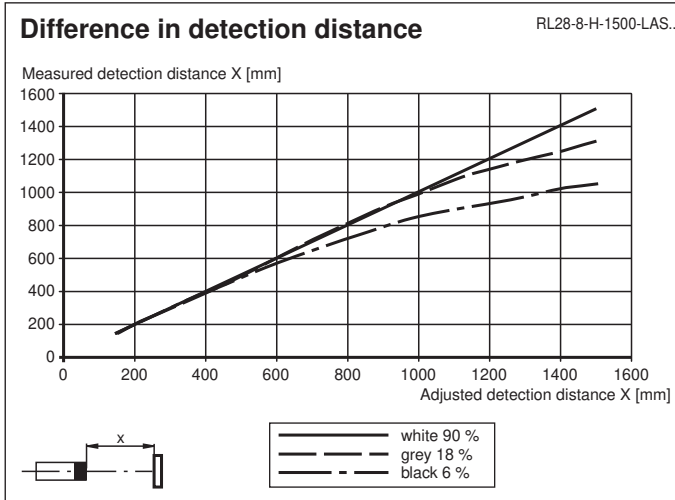
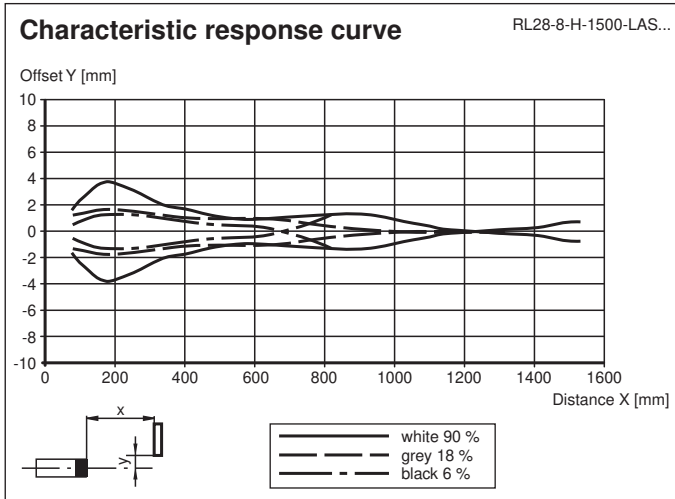
Wire colors in accordance with EN 60947-5-2

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

Assembly



Characteristic Curve



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