



Retroreflective sensor

RL28-55-LAS-2840/47/115b

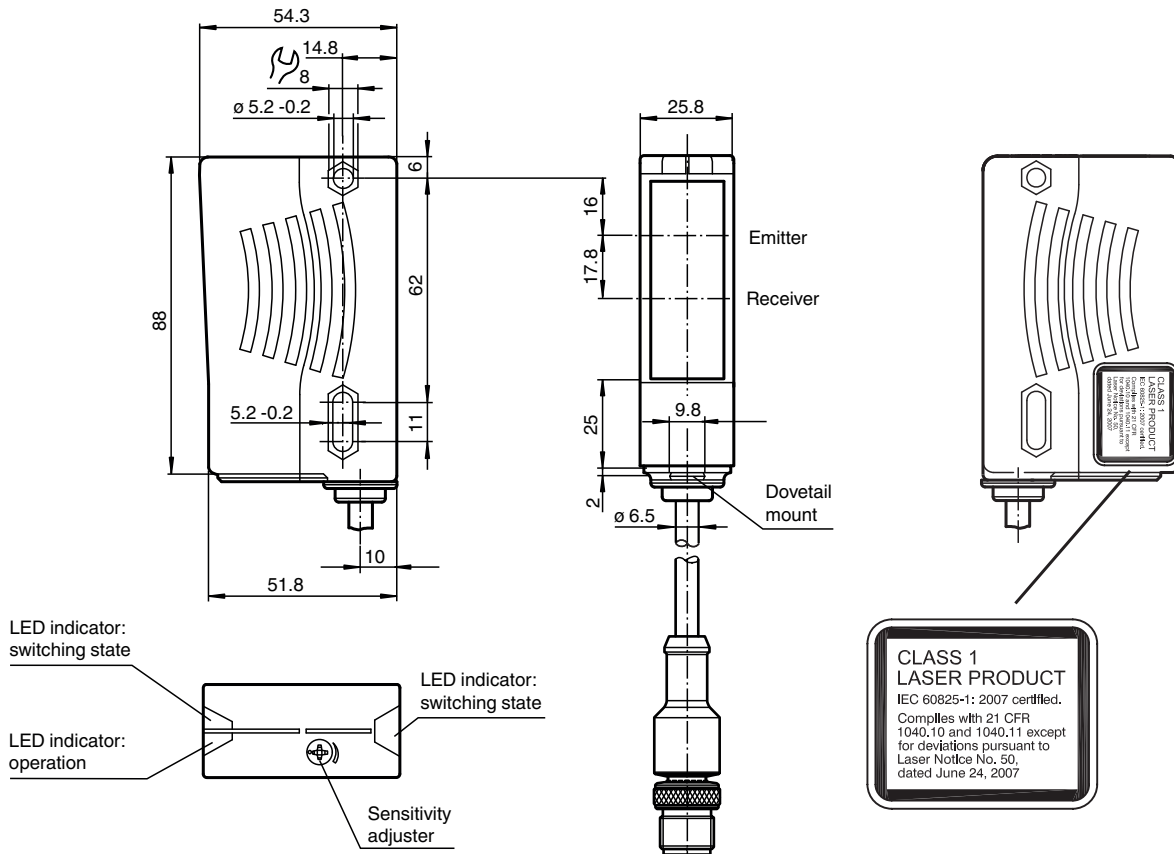


- Visible red light, pulsed LASER light
- High operating range
- Ultra bright LEDs for power on, weak signal indication and switching state
- Not sensitive to ambient light, even with switched energy saving lamps
- Protection class II

Retroreflective sensor with polarization filter



Dimensions



Release date: 2025-03-31 Date of issue: 2025-03-31 Filename: 181737_eng.pdf

Technical Data

General specifications

Effective detection range	0 ... 30 m
Reflector distance	0.3 ... 30 m
Threshold detection range	42 m
Reference target	MH82 reflector
Light source	laser diode

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

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Technical Data

Light type		modulated visible red light
Polarization filter		yes
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		approx. 4.5 µs
Repetition rate		approx. 6 kHz ... 20 kHz
max. pulse energy		4 nJ
Diameter of the light spot		approx. 45 mm at 30 m
Opening angle		Emitter: < 0.1 ° Receiver: < 2 °
Ambient light limit		50000 Lux
Functional safety related parameters		
MTTF _d		560 a
Mission Time (T _M)		10 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operation indicator		LED green
Function indicator		2 LEDs yellow, light up when light beam is free, flash when falling short of the operating reserve, are off when light beam is interrupted
Control elements		sensitivity adjustment (Adjustment to < 25% of the effective operating range)
Electrical specifications		
Operating voltage	U _B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I ₀	≤ 35 mA
Protection class		II, rated insulation voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1
Output		
Switching type		light-on
Signal output		2 PNP, complementary, short-circuit protected, reverse polarity protected , open collectors
Switching voltage		max. 30 V DC
Switching current		max. 200 mA
Voltage drop	U _d	≤ 2.5 V DC
Switching frequency	f	1000 Hz
Response time		0.5 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		
Degree of protection		IP67
Connection		fixed cable 230 mm with M12 x 1 male connector, 4-pin
Material		
Housing		Plastic ABS
Optical face		Plastic pane
Mass		80 g

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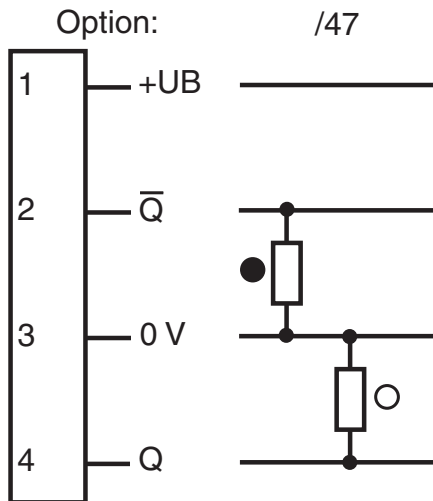
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Technical Data

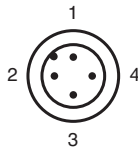
Dimensions	
Height	88 mm
Width	25.8 mm
Depth	54.3 mm

Connection



- = Light on
- = Dark on

Connection Assignment



Wire colors in accordance with EN 60947-5-2

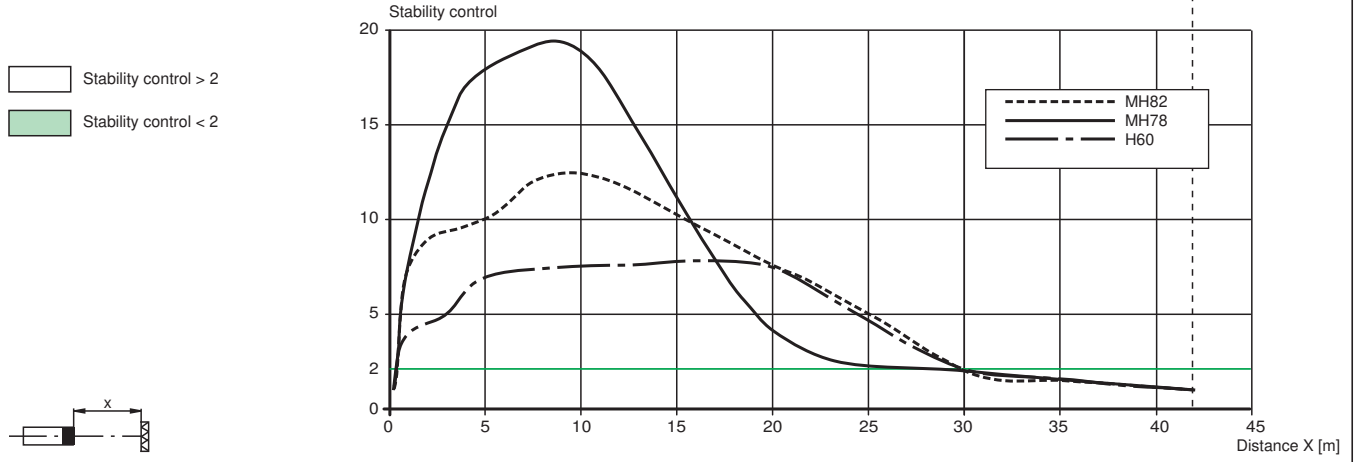
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Relative received light strength

RL(K)28-55-LAS...

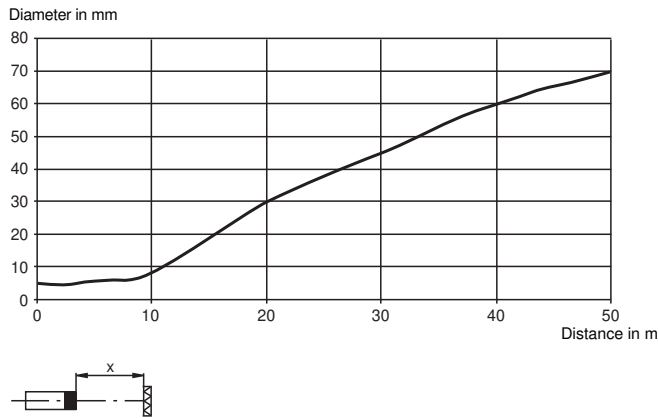
Reflector type:

MH82	0.3 m	42 m
MH78	0.3 m	42 m
H60	0.3 m	42 m



Light spot diameter = f (Distance)

RL(K)28-55-LAS



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