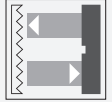




Retroreflective sensor MLV12-54-LAS/92/120

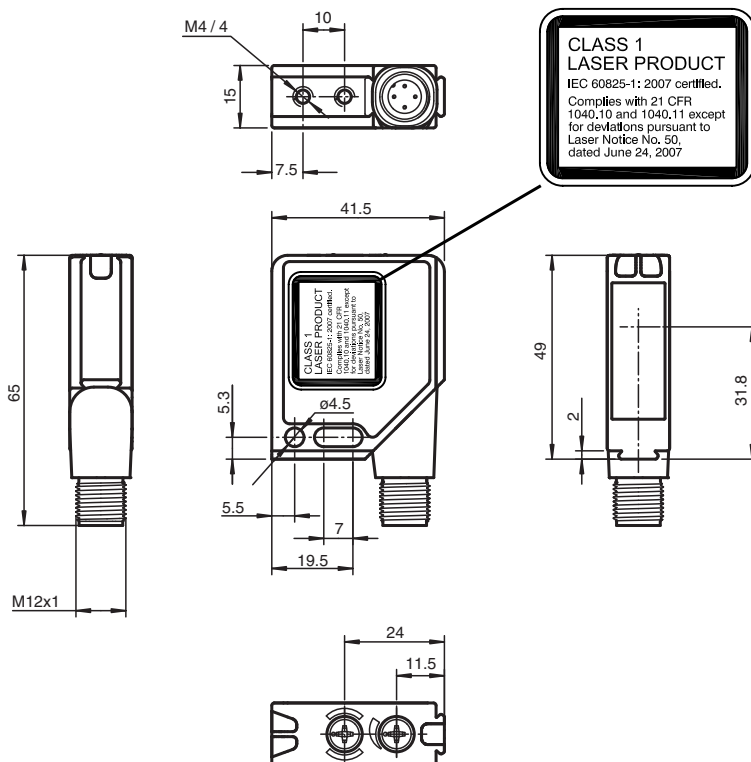


- Series of sensors in a widely used standard housing
- Visible red light, pulsed LASER light
- Precision: high degree of repeatability thanks to small light spot
- Objects can be reliably detected down to 0 mm: no blind zone
- Resistant against noise: reliable operation under all conditions
- High level of stability thanks to the metal housing frame

Laser retroreflective sensor, small design, polarization filter, 21 m detection range, laser red light, light/dark on, 2 PNP outputs, M12 plug



Dimensions



Technical Data

General specifications

Effective detection range	0 ... 12 m
Reflector distance	0 ... 12 m
Threshold detection range	17 m

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

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PEPPERL+FUCHS

Technical Data

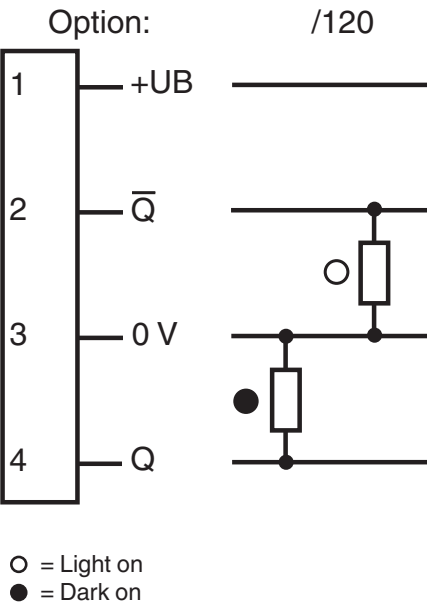
Reference target		MH82 reflector
Light source		laser diode
Light type		modulated visible red light
Polarization filter		yes
Laser nominal ratings		
Note		LASER LIGHT , DO NOT STARE INTO BEAM
Laser class		1
Wave length		650 nm
Beam divergence		< 1.5 mrad
Pulse length		1.8 µs
Repetition rate		17.86 kHz
max. pulse energy		6.7 nJ
Diameter of the light spot		approx. 5 mm x 12 mm at 15 m detection range
Opening angle		0.02 °
Ambient light limit		
Continuous light		50000 Lux
Modulated light		5000 Lux
Functional safety related parameters		
MTTF _d		930 a
Mission Time (T _M)		10 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operation indicator		LED green, flashes in case of short-circuit
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		rotary switch for light/dark, sensitivity adjuster
Electrical specifications		
Operating voltage	U _B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I ₀	max. 40 mA
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. 0.1 A
Voltage drop	U _d	≤ 2.5 V DC
Switching frequency	f	2500 Hz
Response time		0.2 ms
Conformity		
Product standard		EN 60947-5-2
Laser safety		IEC 60825-1:2014
Compliance with standards and directives		
Standard conformity		
Shock and impact resistance		IEC / EN 60068. half-sine, 40 g in each X, Y and Z directions
Vibration resistance		IEC / EN 60068-2-6. Sinus. 10 -150 Hz, 5 g in each X, Y and Z directions
Laser class		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
Approvals and certificates		
Protection class		II, rated voltage ≤ 300 V AC with pollution degree 1-2 according to IEC 60664-1
UL approval		E87056 , cULus Listed 57M3 , Class 2 power source , Type 1 enclosure
CCC approval		CCC approval / marking not required for products rated ≤36 V
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.

Release date: 2026-08-19 Date of issue: 2026-08-19 Filename: 128108_eng.pdf

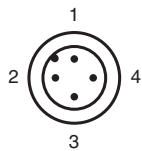
Technical Data

Ambient conditions		
Ambient temperature		-10 ... 50 °C (14 ... 122 °F)
Storage temperature		-20 ... 65 °C (-4 ... 149 °F)
Mechanical specifications		
Degree of protection		IP67
Connection		4-pin, M12 metal connector, 90° rotatable
Material		
Housing		Frame: nickel plated, die cast zinc, Laterals: glass-fiber reinforced plastic PC
Optical face		Plastic pane
Mass		60 g
Dimensions		
Height		49 mm
Width		41.5 mm
Depth		15 mm

Connection



Connection Assignment

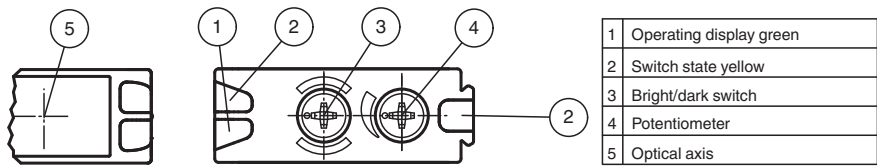


Wire colors in accordance with EN 60947-5-2

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

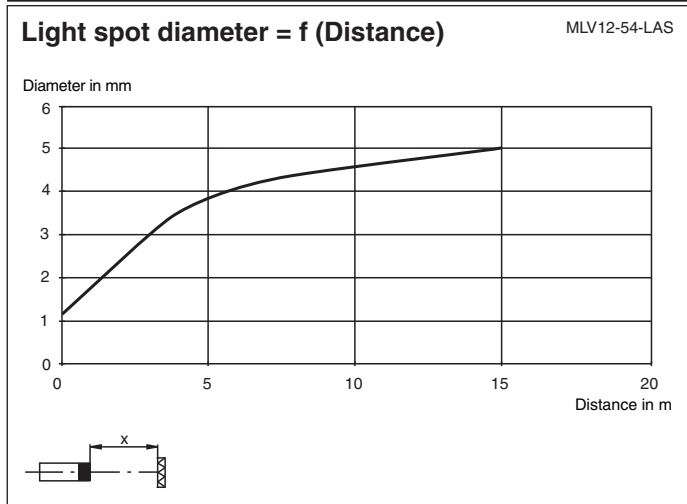
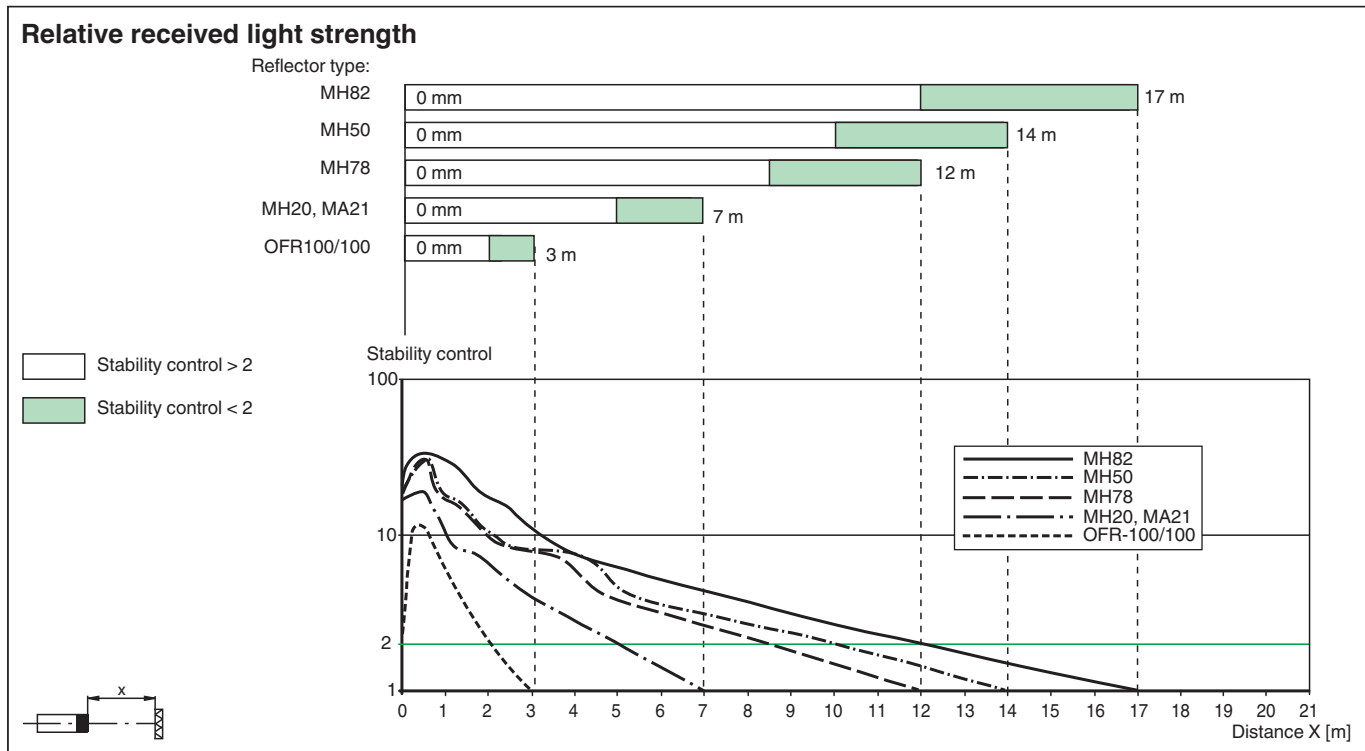
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Assembly



Installation

Mounting
The sensors can be secured directly using thru-holes or using a mounting bracket or mounting clamp. Mounting brackets and clamping elements are available as accessories.
Ensure that the background is level to prevent the housing from becoming distorted when the fittings are tightened.
Secure the nut and screw with spring disks to prevent the sensor from becoming misaligned.



System Description

System Description
The retro-reflective sensor contains both an emitter and a receiver in a single housing. A reflector reflects the light from emitter back to the receiver. If an object interrupts the light beam, the switching function is initiated.

Commissioning

Aligning the sensor: Apply the operating voltage to the sensor. The operating indicator lights up green.

Mount a suitable reflector opposite the light barrier. Roughly align the sensor (without an object) with the reflector. Next, adjust the sensor to the reflector by swiveling the sensor horizontally and vertically so that the yellow signal indicator lights up continuously. In the event of misalignment, the yellow signal indicator flashes.

Commissioning

Checking object detection: Follow the steps below to check that the sensor detects objects as required.

Position the object in the beam path of the sensor.

When the object is detected, the yellow signal indicator goes out. If the yellow signal indicator remains lit, reduce the sensitivity of the potentiometer until the yellow signal indicator goes out.

When the object disappears from the beam path of the sensor, the yellow signal indicator lights up again continuously.

Maintenance

Maintenance

Cleaning: If the transmission reception deteriorates, e.g., due to dirt, the yellow signal indicator on the receiver flashes. Clean the optical interfaces of the sensor (e.g., lenses) at regular intervals.

Maintenance: Check the mounting fittings and the electrical connections regularly.