Model Number

MLV12-54/49/124

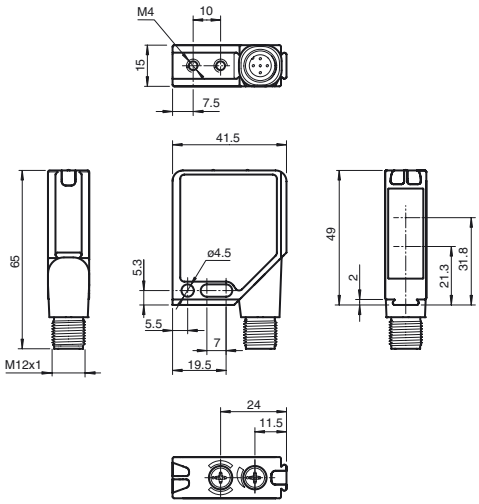
Retroreflective sensor

with metal connector M12; 5-pin, 90° convertible

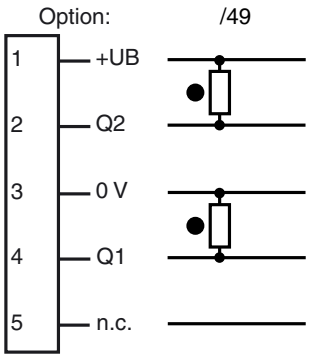
Features

- Robust photoelectric sensor series in a widely used standard housing
- Resistant against noise: reliable operation under all conditions
- Clear and functional display concept for the operating modes
- High level of stability thanks to the metal housing frame
- Tightly sealed thanks to welded plastic components
- Suitable for operation at low temperatures down to -40 °C

Dimensions

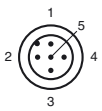


Electrical connection



○ = Light on
● = Dark on

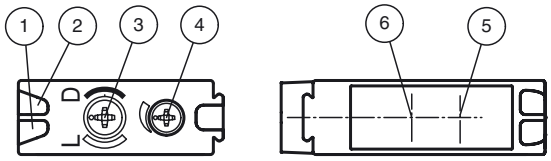
Pinout



Wire colors in accordance with EN 60947-5-2

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

Indicators/operating means



1	Operating display	green
2	Switch state	yellow
3	Light/dark switch	
4	Sensitivity adjuster	
5	Optical axis emitter	
6	Optical axis receiver	

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Technical data

General specifications		
Effective detection range		0 ... 6.5 m
Reflector distance		0.01 ... 6.5 m
Threshold detection range		9 m
Reference target		H85-2 reflector
Light source		LED
Light type		modulated visible red light , 660 nm
Polarization filter		yes
Diameter of the light spot		approx. 170 mm at detection range 6.5 m
Angle of divergence		1.5 °
Ambient light limit		
Continuous light		50000 Lux
Modulated light		5000 Lux
Functional safety related parameters		
$MTTF_d$		1000 a
Mission Time (T_M)		20 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 stability control, 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		1 NPN and 1 PNP output, direct switching, short-circuit protected, reverse polarity protected, open collector
Switching voltage		max. 30 V DC
Switching current		max. 0.2 A
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
Ambient conditions		
Ambient temperature		-40 ... 60 °C (-40 ... 140 °F)
Storage temperature		-40 ... 75 °C (-40 ... 167 °F)
Mechanical specifications		
Housing width		41.5 mm
Housing height		49 mm
Housing depth		15 mm
Degree of protection		IP67
Connection		Metal connector, M12, 5-pin, 90° rotatable
Material		
Housing		Frame: nickel plated, die cast zinc, Laterals: glass-fiber reinforced plastic PC
Optical face		Plastic pane
Mass		60 g
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
Approvals and certificates		
Protection class		II, rated voltage ≤ 300 V AC with pollution degree 1-2 according to IEC 60664-1
UL approval		cULus
CCC approval		CCC approval / marking not required for products rated ≤36 V

Accessories

OMH-MLV12-HWG
Mounting bracket for series MLV12 sensors

OMH-MLV12-HWK
Mounting bracket for series MLV12 sensors

OMH-K01
dove tail mounting clamp

OMH-K02
dove tail mounting clamp

OMH-K03
dove tail mounting clamp

OMH-06
Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

Other suitable accessories can be found at www.pepperl-fuchs.com

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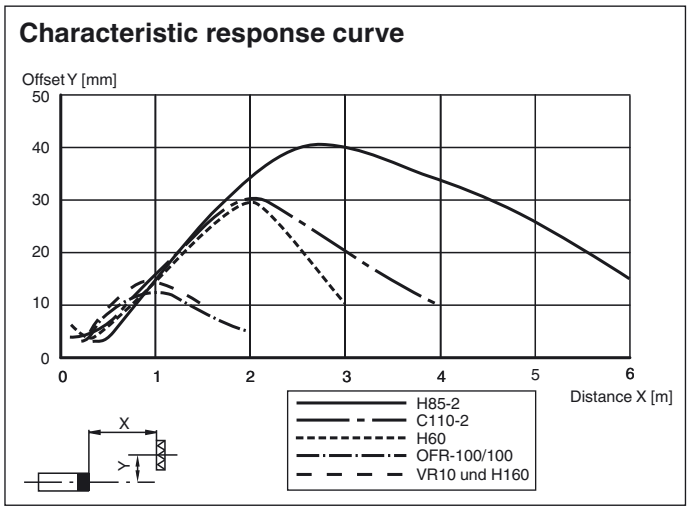
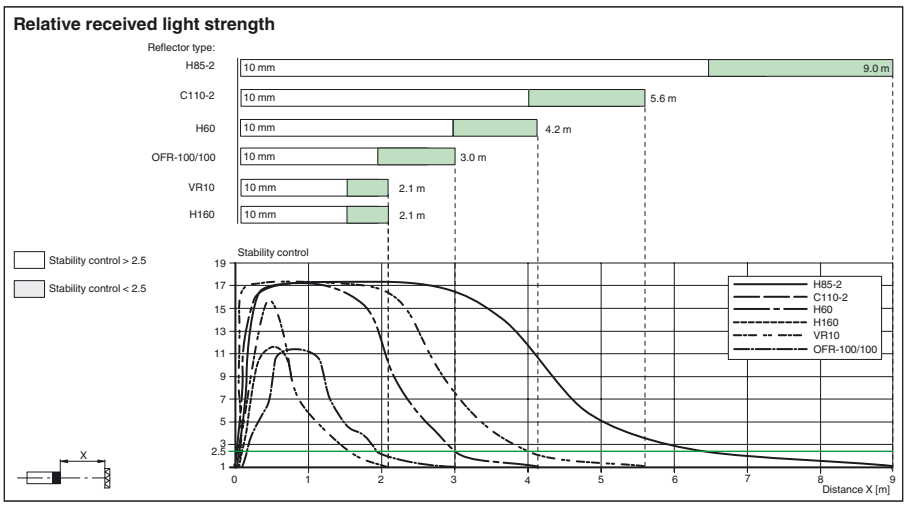
Curves/Diagrams





Additional Information

Conventional use

The reflex light beam switch contains the emitter and receiver in a single housing. The light from transmitter is beamed back from a reflector to the receiver. If an object interrupts the light beam the switching function is initiated.

Mounting instructions

The sensor can be fastened over the through-holes directly or with a support angle or clamping components (this are not contained in the scope of supply).

The base surface must be flat to avoid distorting the housing during mounting. It is advisable to secure the bolts and screws with washers to prevent misalignment.

Adjustment instructions

Connect the sensor to operating voltage, the LED green lights up constantly.

Mount suitable reflector opposite light beam switch and align roughly.

The exact adjustment takes by swivelling the sensor horizontally and vertically. With optimum light reception the yellow LED lights up constantly. They flash if setting is inexact.

Object detection check

Move the object into the light beam. If the object is recorded, the yellow LED switch off. If it does not switch off, reduce the sensitivity with the potentiometer until the switches off. It should lights up constantly on again when the object is removed.

Lustration

The yellow LED flashes if reception deteriorates (e.g. soiled lenses.)

We recommend that you clean the optical interfaces and check the plug- and screw connections at regular intervals.

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