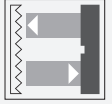




Retroreflective sensor MLV12-54/49/124

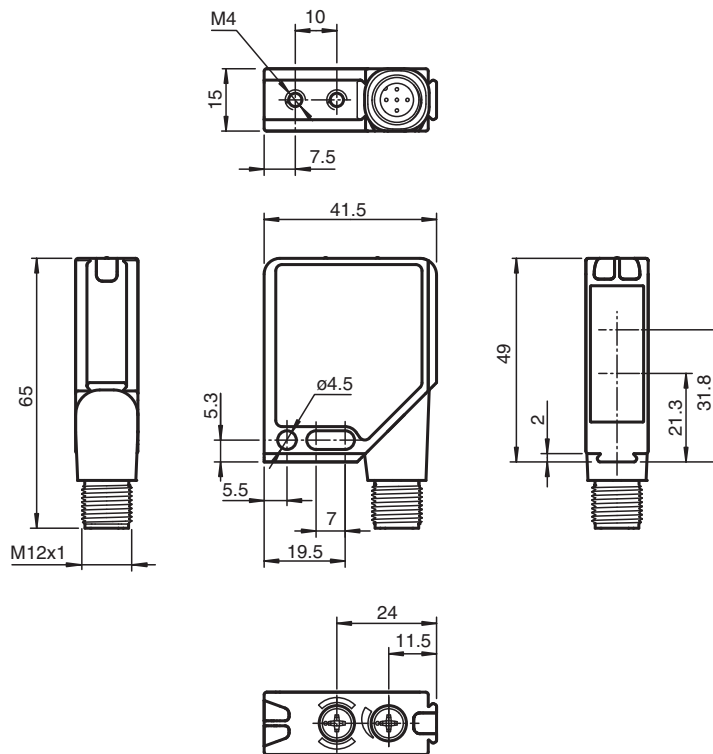


- Robust photoelectric sensor series in a widely used standard housing
- Resistant against noise: reliable operation under all conditions
- Clear and functional display concept for the operating modes
- High level of stability thanks to the metal housing frame
- Tightly sealed thanks to welded plastic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

Robust retroreflective sensor for complex applications, small design, polarization filter, 9 m detection range, red light, light/dark on, 1 PNP output/1 NPN output, M12 plug



Dimensions



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
Opening angle	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
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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

Ambient conditions

Ambient temperature	-40 ... 60 °C (-40 ... 140 °F)
Storage temperature	-40 ... 75 °C (-40 ... 167 °F)

Mechanical specifications

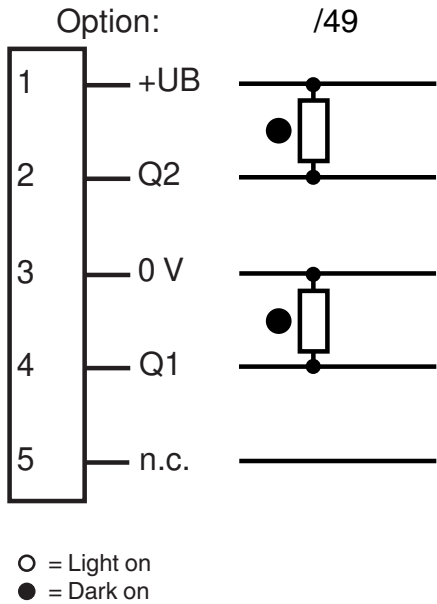
Housing width	41.5 mm
Housing height	49 mm
Housing depth	15 mm
Degree of protection	IP67

Release date: 2023-04-04 Date of issue: 2023-04-04 Filename: 115228_eng.pdf

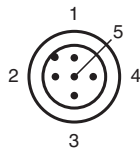
Technical Data

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	

Connection



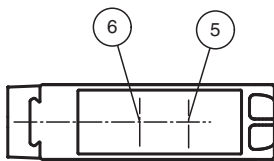
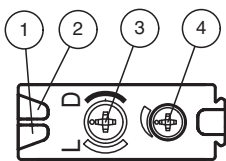
Connection Assignment



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



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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Installation

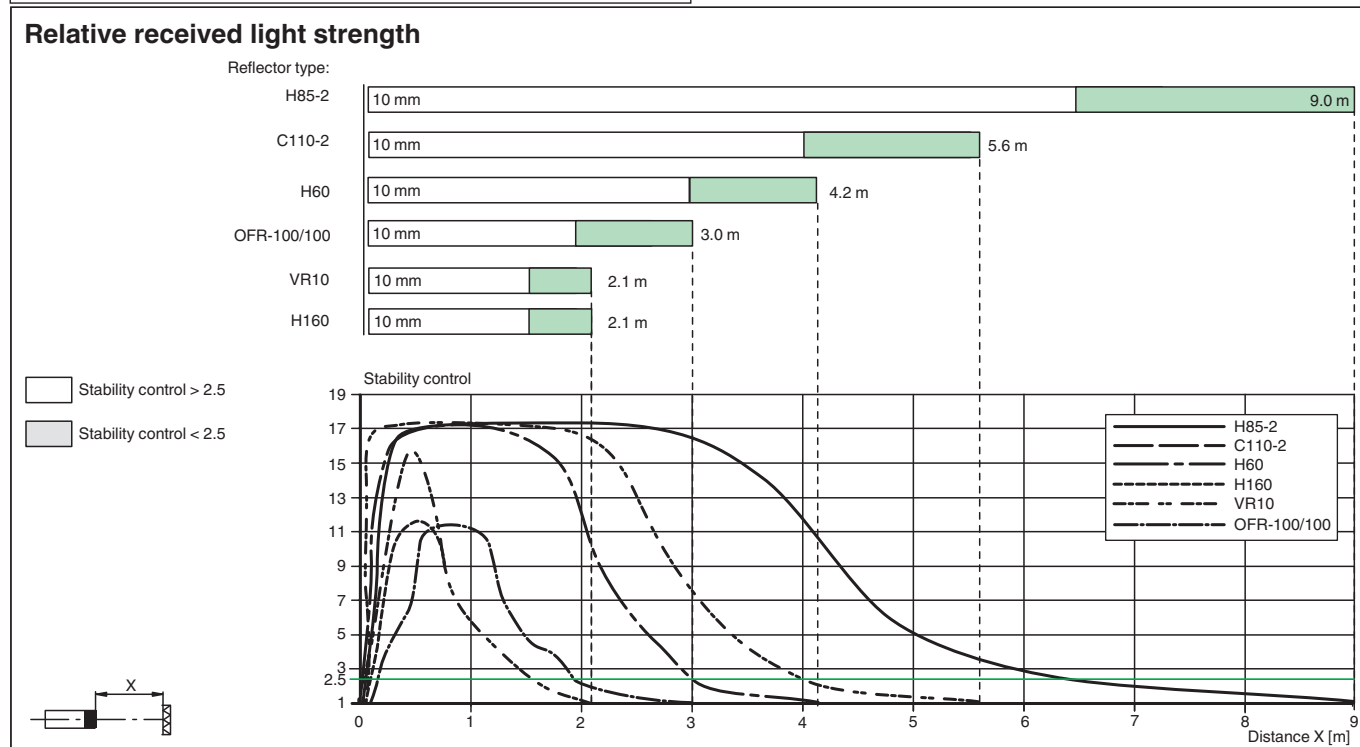
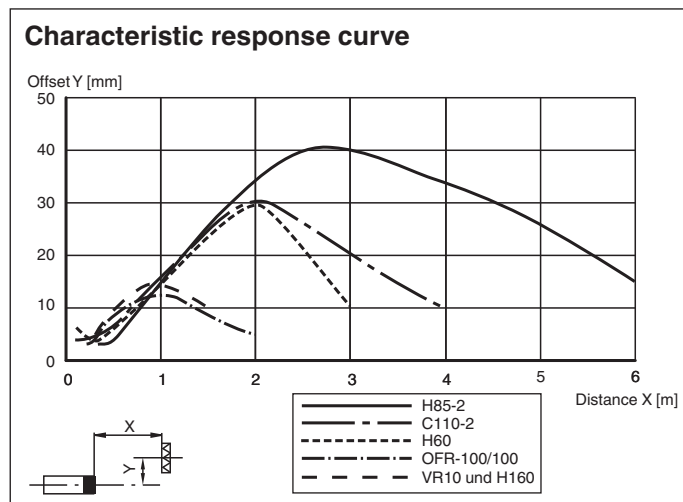
Mounting

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.

Characteristic Curve



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.

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