



Retroreflective sensor MLV12-54-G/76b/95/128

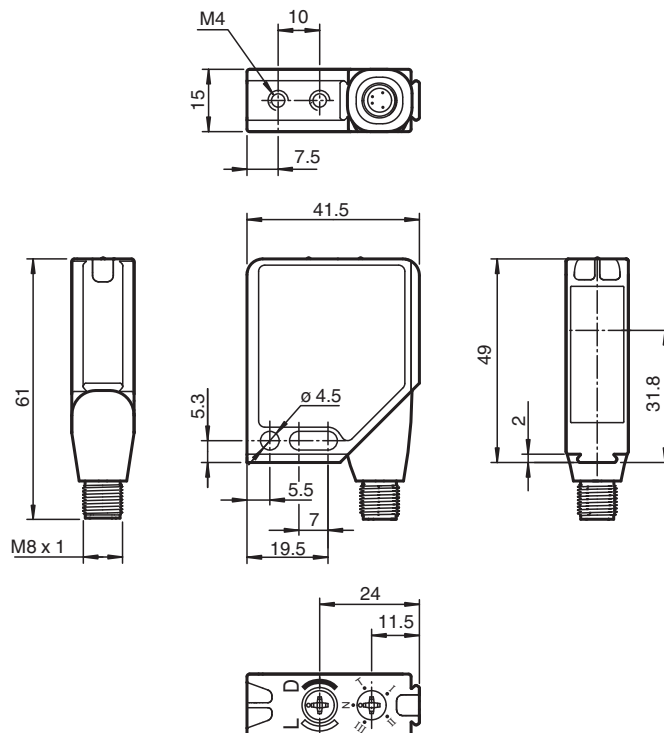


- Series of sensors in a widely used standard housing
- Reliable recognition of reflective objects and clear glass
- TEACH-IN switch for setting the contrast detection levels
- Automatic adjustment in case of soiling in contrast detection mode
- High level of stability thanks to the metal housing frame
- Resistant against noise: reliable operation under all conditions

Retroreflective sensor for glass detection, small design, 5.6 m detection range, red light, light/dark on, push-pull output, test input, M8 plug



Dimensions



Technical Data

General specifications

Effective detection range	0 ... 4.2 m
Reflector distance	0 ... 4.2 m
Threshold detection range	5.6 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. 110 mm at detection range 4.2 m
Opening angle	1.5 °
Ambient light limit	
Continuous light	40000 Lux
Modulated light	5000 Lux

Functional safety related parameters

MTTF _d	1000 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	90 %

Indicators/operating means

Operation indicator	LED green, flashes in case of short-circuit
Function indicator	2 LEDs yellow for switching state, stability control, TEACH-IN and contrast detection mode
Control elements	rotary switch for light/dark, 5-step switch for contrast recognition adjustment
Contrast detection levels	10 % - clean, water filled PET bottles 18 % - clear glass bottles 40 % - colored glass or opaque materials adjustable by Teach-In key or external wire

Electrical specifications

Operating voltage	U _B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I ₀	max. 55 mA

Input

Test input	emitter deactivation at 0 V (I _{max} < 4mA at UB+ = 30 VDC)
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Output

Switching type	light/dark on switchable	
Signal output		1 push-pull (4 in 1) output, short-circuit protected, reverse polarity protected
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

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)

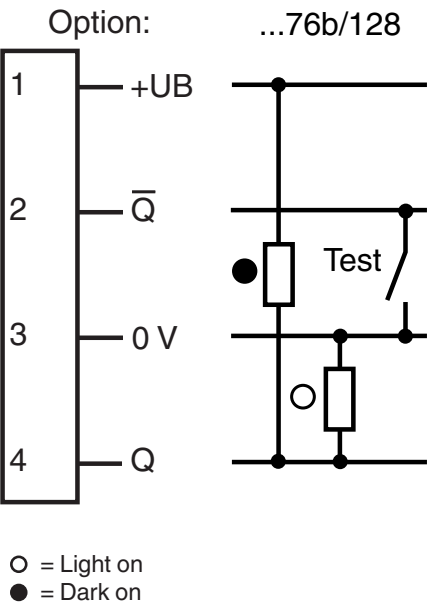
Mechanical specifications

Housing width	41.5 mm
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Technical Data

Housing height	49 mm
Housing depth	15 mm
Degree of protection	IP67
Connection	4-pin M8 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

Connection Assignment



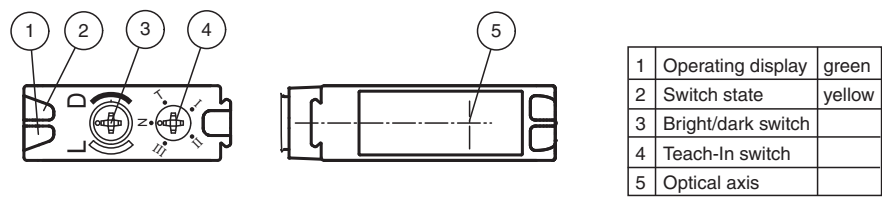
Connection Assignment



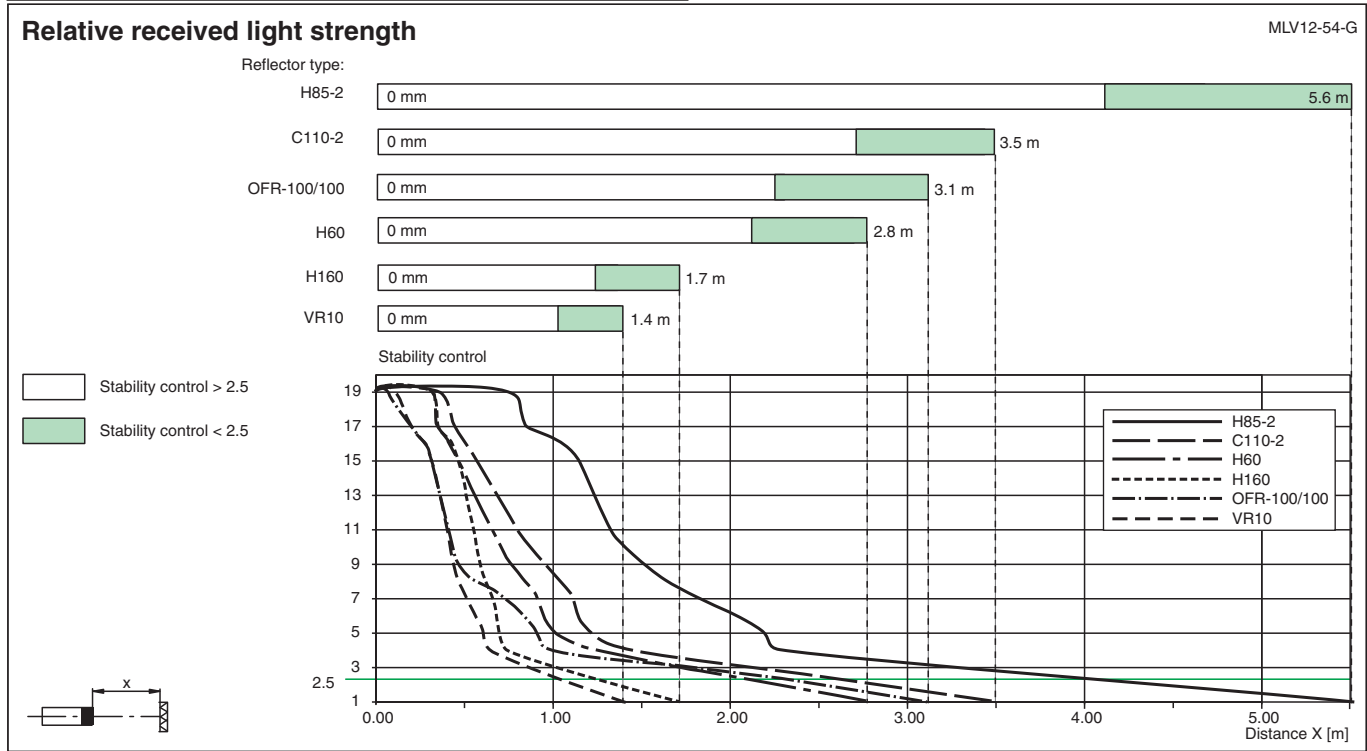
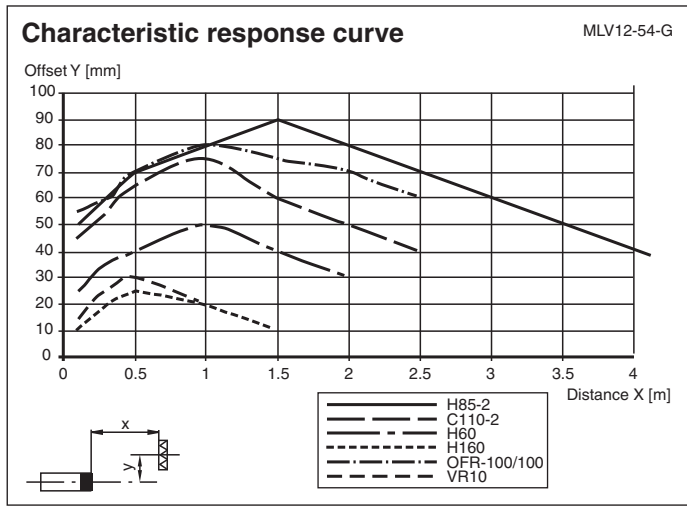
Wire colors in accordance with EN 60947-5-2

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

Assembly



Characteristic Curve



Accessories

	OMH-MLV12-HWG	Mounting bracket for series MLV12 sensors
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Accessories

	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
	ORR50G	Reflector, rectangular 50.9 mm x 60.9 mm, mounting holes, fixing strap and polarization filter

Teach-In

Switch position "N" (standard operation):

LEDs yellow are lit when the light beam is unobstructed, they flash when the value falls short of the function reserve and they go out when the beam is interrupted.

Switch position "T" (Teach-in mode):

After 1 s, the yellow LED flashes slowly (approx. 1.5 Hz). The sensor is now ready to be set for a specific contrast detection value by the mechanical switch (pos. I, II or III).

Switch positions "I", "II" and "III" (contrast detection mode):

Contrast recognition values: I for 10 %, II for 18 %, III for 40 %

1. LED yellow permanently lit: light path unobstructed
2. LED yellow off: element to be sensed detected
3. LED yellow flashes rapidly: detection failure, excessive soiling, function reserve too low.

Warm-up period:

Any warm-up period can be shortened by repeating the learn (teach) process.

