



Model Number

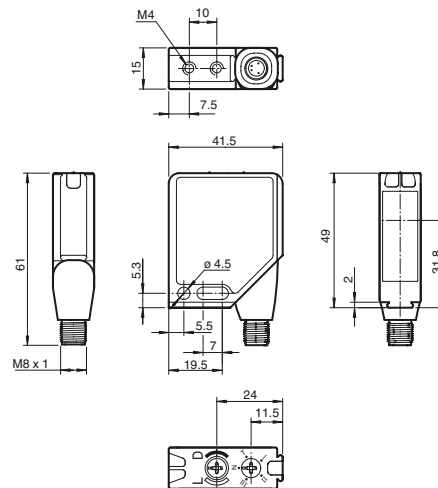
MLV12-54-G/76b/95/128

Retroreflective sensor
with 4-pin M8 connector, 90° adjustable
position

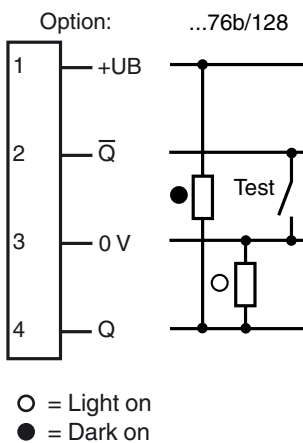
Features

- 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

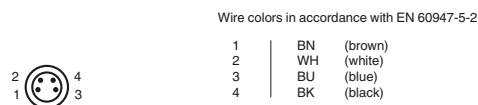
Dimensions



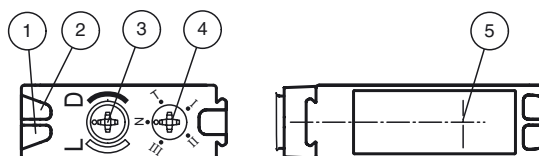
Electrical connection



Pinout



Indicators/operating means



1	Operating display	green
2	Switch state	yellow
3	Bright/dark switch	
4	Teach-In switch	
5	Optical axis	

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
Angle of divergence	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 U _B + = 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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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	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

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

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

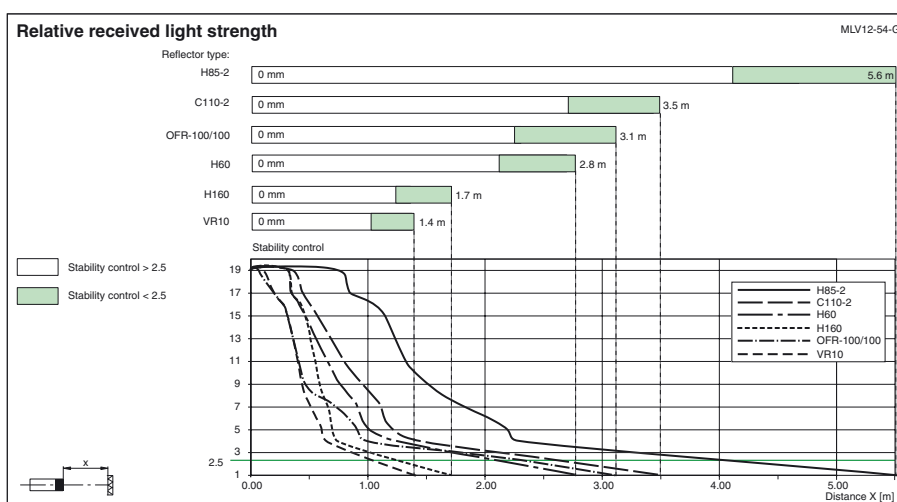
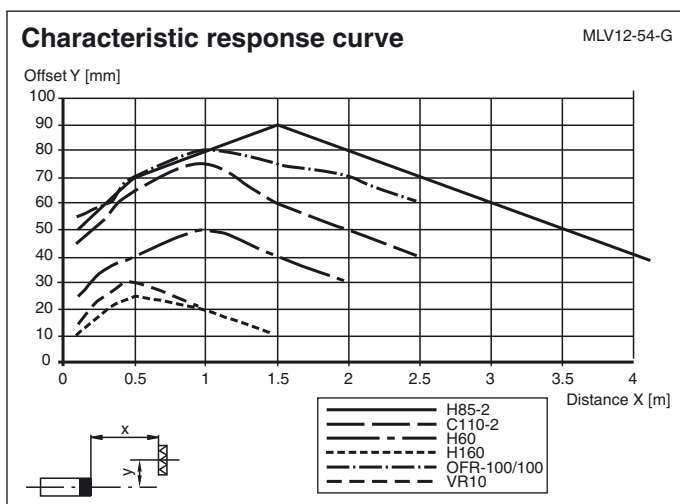
Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

ORR50G

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

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

Curves/Diagrams



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.

