Model Number

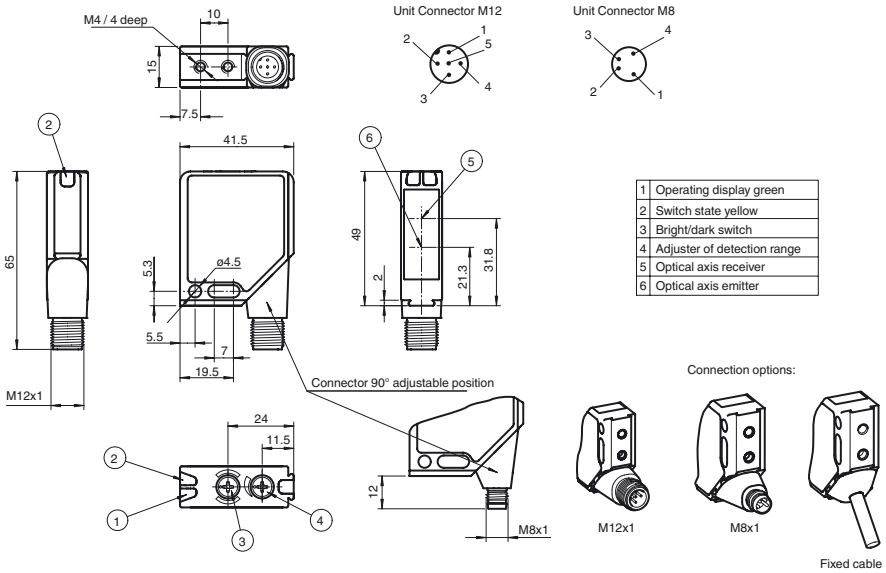
MLV12-8-H-250-RT-2572

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

Features

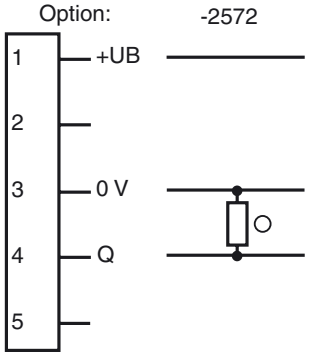
- Reliable detection of all surfaces, independent of color and structure
- Minimal black/white difference
- Ultra bright LEDs for power on and switching state
- Flashing power on LED in case of short-circuit
- Not sensitive to ambient light, even with switched energy saving lamps
- Multiple device installation possible, no mutual interference
- Protection class II

Dimensions



1	Operating display green
2	Switch state yellow
3	Bright/dark switch
4	Adjuster of detection range
5	Optical axis receiver
6	Optical axis emitter

Electrical connection



○ = Light on
● = Dark on

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Technical data

General specifications		
Detection range		20 ... 250 mm , adjustable
Detection range min.		20 ... 50 mm
Detection range max.		20 ... 250 mm
Adjustment range		50 ... 250 mm
Light source		LED
Light type		modulated visible red light , 660 nm
Black/White difference (6 %/90 %)		10 % at 250 mm
Diameter of the light spot		8 mm at Tw 250 mm
Angle of divergence		1.5 °
Ambient light limit		
Continuous light		30000 Lux
Modulated light		5000 Lux
Functional safety related parameters		
$MTTF_d$		650 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operating display		LED green, flashes in case of short-circuit
Function display		2 LEDs yellow ON: object inside the scanning range OFF: object outside the scanning range
Controls		potentiometer for light/dark, detection range adjustment
Electrical specifications		
Operating voltage	U_B	20 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I_0	≤ 55 mA
Output		
Switching type		light/dark on switchable
Signal output		1 PNP output, short-circuit protected, protected from reverse polarity, open collector
Switching voltage		max. 30 V DC
Switching current		max. 0.25 A
Voltage drop	U_d	≤ 2.5 V DC
Switch-on delay	t_{on}	1000 ms
Switching frequency	f	500 Hz
Response time		1 ms
Ambient conditions		
Ambient temperature		-40 ... 50 °C (-40 ... 122 °F)
Storage temperature		-40 ... 75 °C (-40 ... 167 °F)
Mechanical specifications		
Protection degree		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		
Product standard		EN 60947-5-2:2007 IEC 60947-5-2:2007
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	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.

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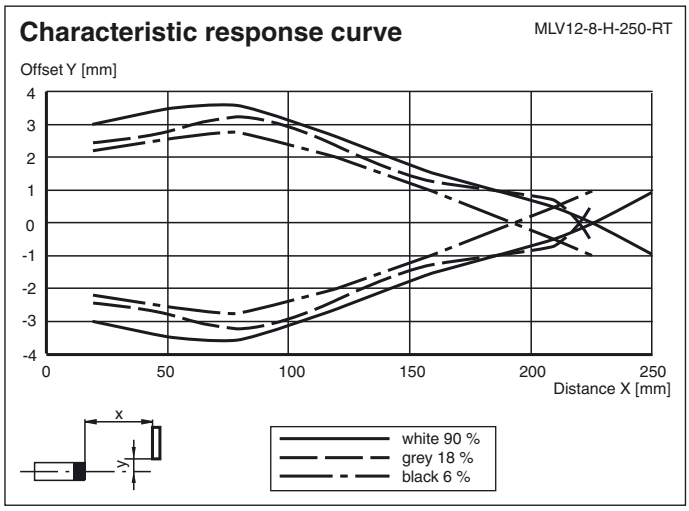
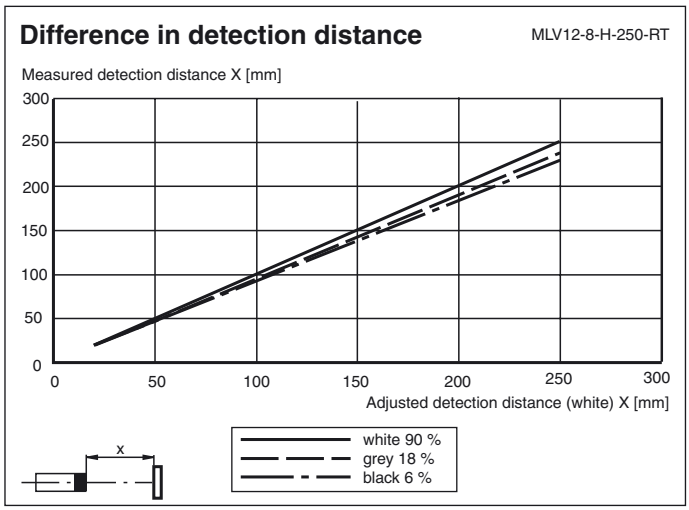
Curves/Diagrams



Curves/Diagrams



Additional information

Intended use:

The transmitter and receiver are located in the same housing for direct detection sensors with background masking. Marking of objects outside the detection range is achieved by arranging the angle between the transmitter and receiver (2 receiver elements).

Objects are detected independently of their surface structures, brightness and colour, as well as the brightness of the background.

Mounting instructions:

The sensors can be fastened directly with fixing screws or with a support bracket (not included with delivery).

The surface underneath must be flat to prevent the housing from moving when it is tightened into position. We recommend securing the nut and screw in place with spring washers to prevent the sensor from going out of adjustment.

Adjustment:

After the operating voltage is applied, the LED is lit green.

Align the sensor to the object. If the object is within the detection range, the yellow LED lights up.

Object motion direction:

For a rliable detektion, the objects motion direction must be either towards the sensor or away from it.
In case of transversal motion, the motion direction must be transversal to the emitter/receiver orientation.

Maintenance:

We recommend cleaning the optical surface and checking the fixation/alignment and electrical connections at regular intervals.

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