Background suppression sensor

MLV41-8-H-350-RT/59/92/136

- Rugged series in corrosion-resistant metal housing
- Reliable detection of all surfaces, independent of color and structure
- Minimal black-white difference
- Precision background suppression, adjustable
- Extremely high switching frequency
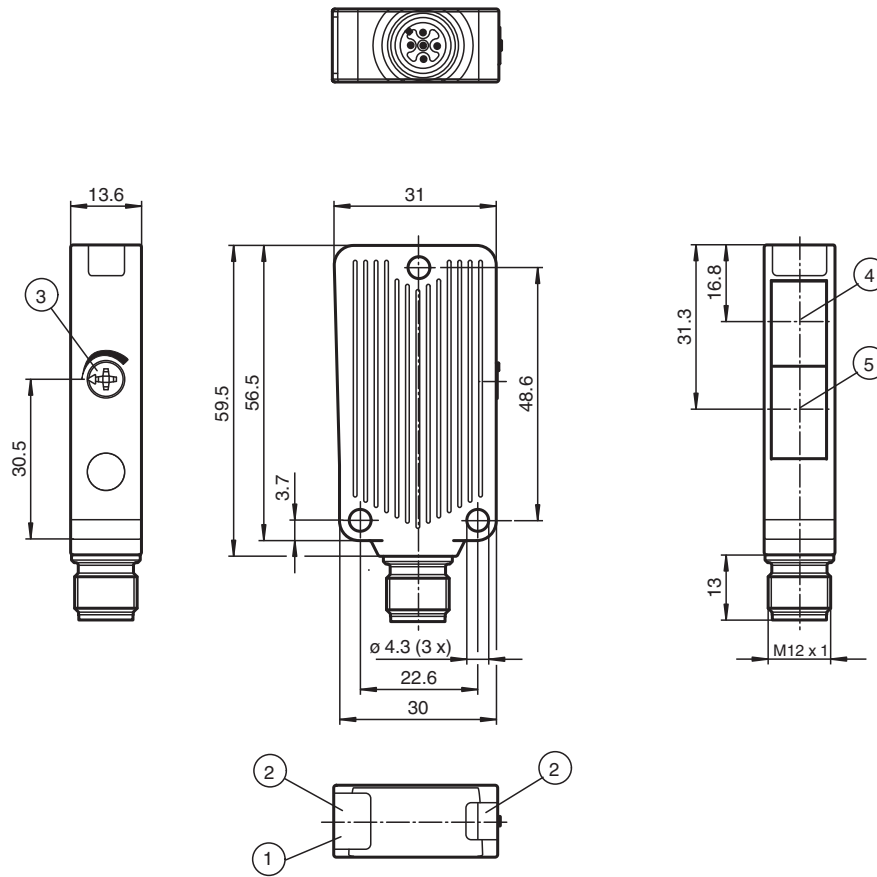- Clear and functional display concept for the operating modes

Background suppression sensor in corrosion-resistant metal housing, 350 mm adjustable detection range, red light, 2 push-pull outputs, M12 plug

CE ☐ c(UL)us UKCA

Function

The unique and extremely popular design of the MLV41 series enables it be mounted correctly in confined areas and offers all the functions that are normally only found on larger phototelectric sensors. The MLV41 series comes with a range of functions. For example, highly visible status LEDs on the front and back, resistance to ambient light, crosstalk protection and universally applicable output stages that permit every possible switching logic and polarity to be realized. The enhanced resistance to ambient light ensures reliable operation even where modern energy-saving lamps with electronic ballasts are in use. The same applies where multiple devices are present, i.e. the use of a number of sensors in the same vicinity causes no problems.

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Dimensions

Technical Data

General specifications

Detection range	50 ... 350 mm , adjustable
Detection range min.	10 ... 50 mm
Detection range max.	30 ... 350 mm
Adjustment range	50 ... 350 mm
Background suppression	+ 10 % of the upper limit of the detection range
Light source	LED
Light type	modulated visible red light , 660 nm
Black-white difference (6 %/90 %)	< 15 % at 350 mm
Diameter of the light spot	approx. 8 mm at 350 mm sensor range
Opening angle	1.5 °
Ambient light limit	40000 Lux

Functional safety related parameters

$MTTF_d$	1260 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %

**Indicators/operating means**

Operation indicator	LED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 4 Hz)
Function indicator	2 LEDs yellow ON: object inside the scanning range OFF: object outside the scanning range
Control elements	Sensing range adjuster

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Technical Data

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I_0	max. 25 mA

Output

Signal output		2 push-pull (4 in 1) outputs, complementary, short-circuit proof, reverse polarity protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
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

Approvals and certificates

Protection class	II, rated voltage ≤ 50 V AC with pollution degree 1-2 according to IEC 60664-1 , functional insulation acc. to DIN EN 50178
UL approval	cULus Listed 57M3 (Only in association with UL Class 2 power supply; Type 1 enclosure)
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	31 mm
Housing height	56.5 mm
Housing depth	13.6 mm
Degree of protection	IP67
Connection	4-pin, M12 x 1 connector
Material	
Housing	Aluminum , Delta-Seal coated
Optical face	glass pane
Connector	metal
Mass	50 g

Connection

Option:
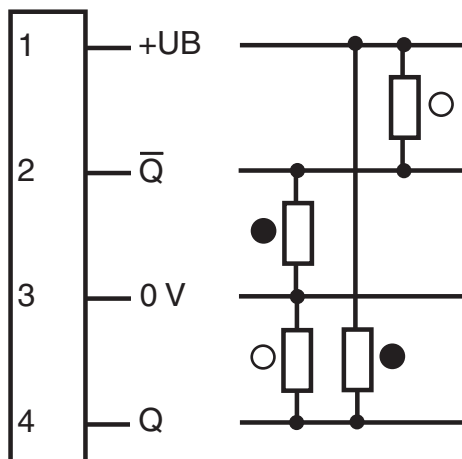
1 +UB
2 $\overline{Q}$
3 0 V
4 Q

○ = Light on
● = Dark on

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Connection Assignment
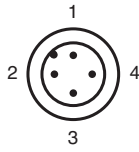
Wire colors in accordance with EN 60947-5-2

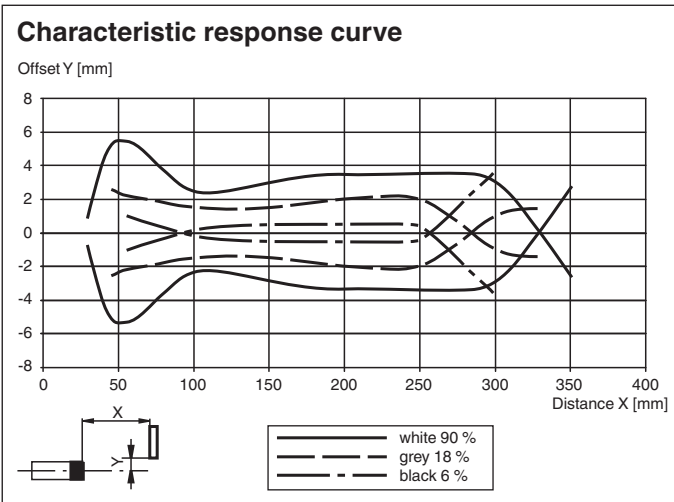| 1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Assembly
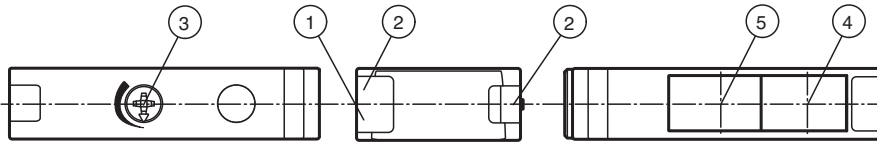
1	Operating display green	3	Sensing range adjuster	5	Optical axis receiver
2	Function display yellow	4	Optical axis transmitter		

Characteristic Curve

Characteristic response curve

Offset Y [mm]

Distance X [mm]

white 90 %
grey 18 %
black 6 %

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Characteristic Curve

Difference in detection distance

Measured detection distance Y [mm]


```
400
350
300
250
200
150
100
 50
  0
    0    50   100   150   200   250   300   350
           Adjusted detection distance X [mm]
```

—— white 90 %
– – – grey 18 %
–·–·– black 6 %
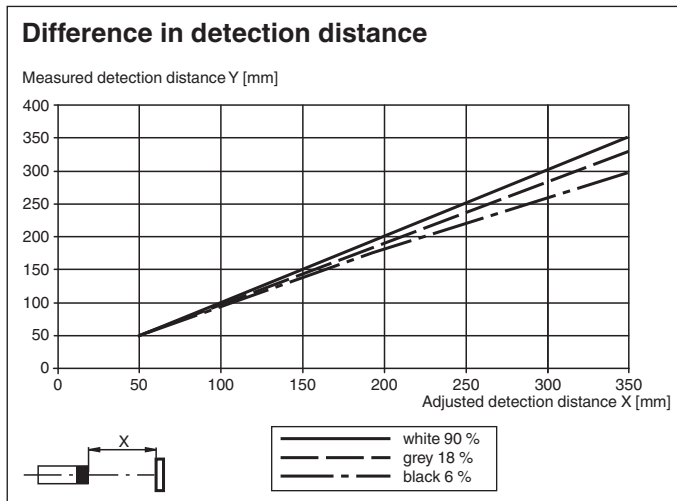
Accessories

	OMH-40	Mounting bracket
	OMH-09	Mounting bracket for Sensors series MLV41 for M12 rod mounting
	V1-G-2M-PUR	Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable grey
	V1-W-2M-PUR	Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey

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