



Background suppression sensor

ML100-8-H-250-RT/95/103



- Miniature design
- Easy to use
- Very bright, highly visible light spot
- Full metal thread mounting
- Highly visible LEDs for Power ON and switching state
- Not sensitive to ambient light

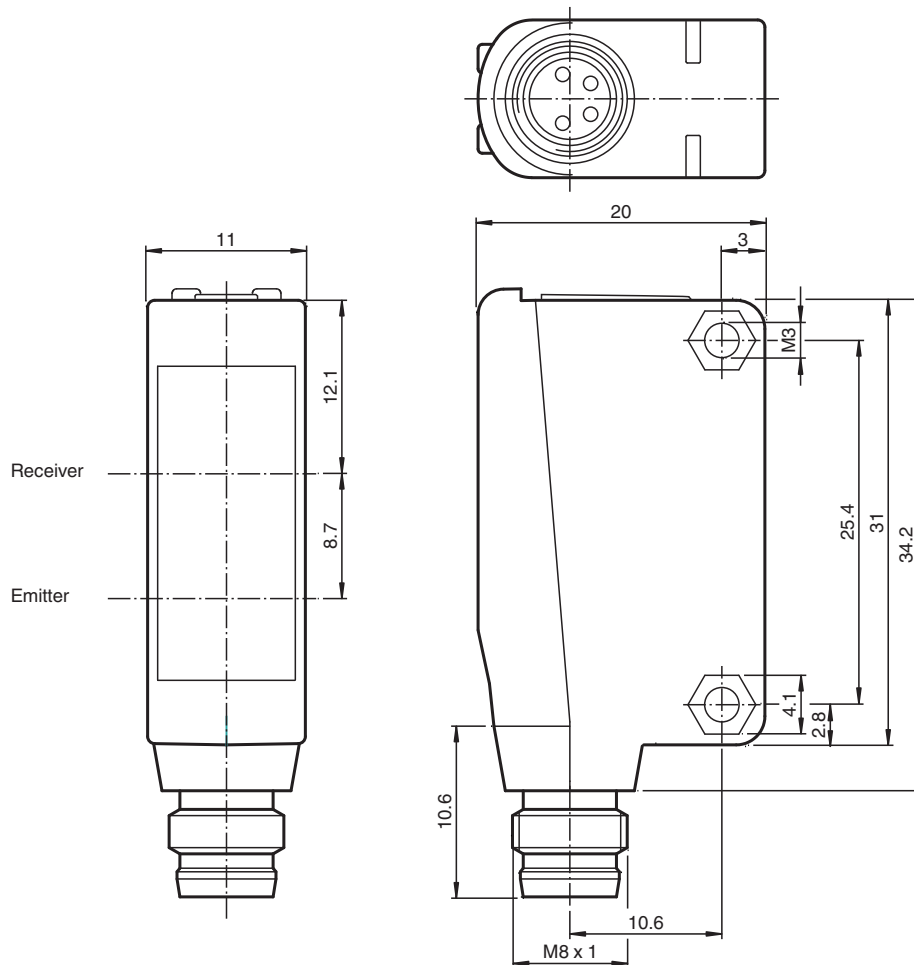
Triangulation sensor with background suppression, 250 mm adjustable sensing range, red light, light/dark on, PNP output, M8 4-pin plug



Function

The optical sensors of this series are suitable for both standard and demanding applications. The series features a miniature housing design, two M3 metal-threaded mounting holes and a highly visible LED status indicator. Each device is equipped with a sensitivity adjuster and a light-on/dark-on changeover switch for increased flexibility. A wide variety of versions are available in both infrared light and red light with PowerBeam for easy alignment. Special versions with BlueBeam are suitable for challenging applications like those in the solar and battery industries.

Dimensions



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

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Technical Data

General specifications			
Detection range			5 ... 250 mm
Detection range min.			5 ... 30 mm
Detection range max.			5 ... 250 mm
Adjustment range			30 ... 250 mm
Reference target			standard white, 100 mm x 100 mm
Light source			LED
Light type			modulated visible red light
Polarization filter			no
Black-white difference (6%/90%)			< 15 % at 250 mm
Diameter of the light spot			approx. 15 mm at a distance of 250 mm
Opening angle			approx. 4 °
Optical face			frontal
Ambient light limit			EN 60947-5-2:2007+A1:2012
Functional safety related parameters			
MTTF _d			860 a
Mission Time (T _M)			20 a
Diagnostic Coverage (DC)			0 %
Indicators/operating means			
Operation indicator			LED green: power on
Function indicator			LED yellow: lights when object is detected
Control elements			Sensing range adjuster
Control elements			Light-on/dark-on changeover switch
Electrical specifications			
Operating voltage	U _B		10 ... 30 V DC
Ripple			max. 10 %
No-load supply current	I ₀		< 20 mA
Output			
Switching type			The switching type of the sensor is adjustable. The default setting is: light-on
Signal output			1 PNP output, short-circuit protected, reverse polarity protected, open collector
Switching voltage			max. 30 V DC
Switching current			max. 100 mA , resistive load
Voltage drop	U _d		≤ 1.5 V DC
Switching frequency	f		1000 Hz
Response time			500 μs
Conformity			
Product standard			EN 60947-5-2
Approvals and certificates			
UL approval			cULus Listed, Class 2 Power Source or listed Power Supply with a limited voltage output with (maybe integrated) fuse (max. 3.3 A according UL248), Type 1 enclosure
CCC approval			CCC approval / marking not required for products rated ≤36 V
Ambient conditions			
Ambient temperature			-30 ... 60 °C (-22 ... 140 °F)
Storage temperature			-40 ... 70 °C (-40 ... 158 °F)
Mechanical specifications			
Housing width			11 mm
Housing height			31 mm
Housing depth			20 mm
Degree of protection			IP67
Connection			Connector M8 x 1 , 4-pin
Material			
Housing			PC (Polycarbonate)
Optical face			PMMA

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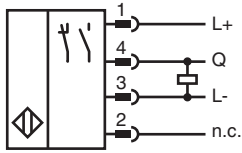
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Technical Data

Mass	approx. 10 g
Tightening torque, fastening screws	0.6 Nm

Connection



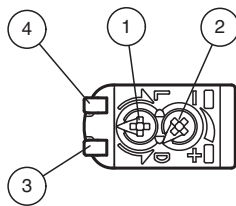
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

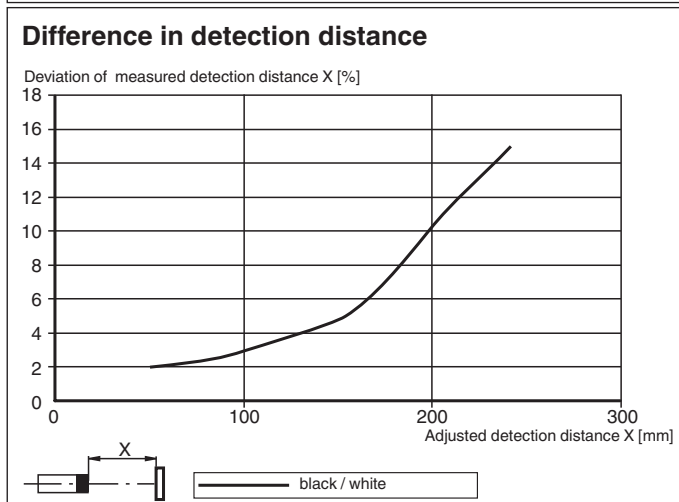
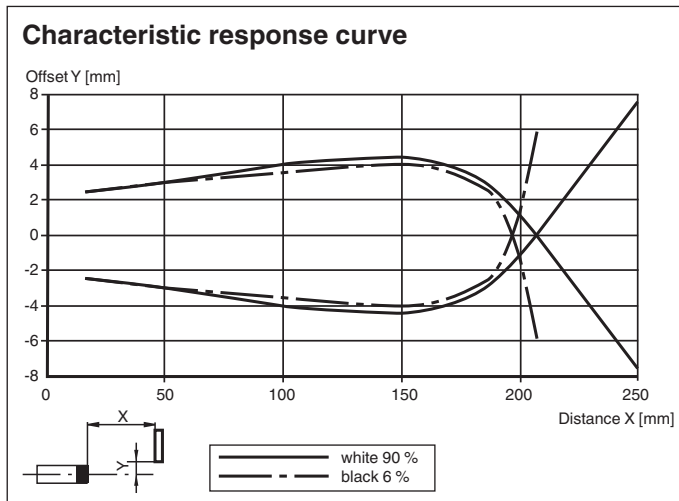
Assembly



1	Light-Dark-switching	
2	Sensitivity adjuster	
3	Signal display	yellow
4	Operating display	green

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Characteristic Curve



Accessories

	OMH-ML100-09	Mounting aid for round steel \varnothing 12 mm or sheet 1.5 mm ... 3 mm
	OMH-ML100-03	Mounting aid for round steel \varnothing 12 mm or sheet 1.5 mm ... 3 mm
	OMH-ML100-04	Mounting aid for ML100 series, mounting bracket
	OMH-ML100-05	Mounting aid for ML100 series, mounting bracket
	OMH-F10-ML100	Mounting aid for ML100 series
	OMH-10	Mounting aid for ML100 series
	V31-GM-2M-PUR	Female cordset single-ended M8 straight A-coded, 4-pin, PUR cable grey
	V31-WM-2M-PUR	Female cordset single-ended M8 angled A-coded, 4-pin, PUR cable grey

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Accessories

	OMH-ML100-S1	Mounting bracket
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