



Diffuse mode sensor ML100-8-1000-RT/103/115b



- 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

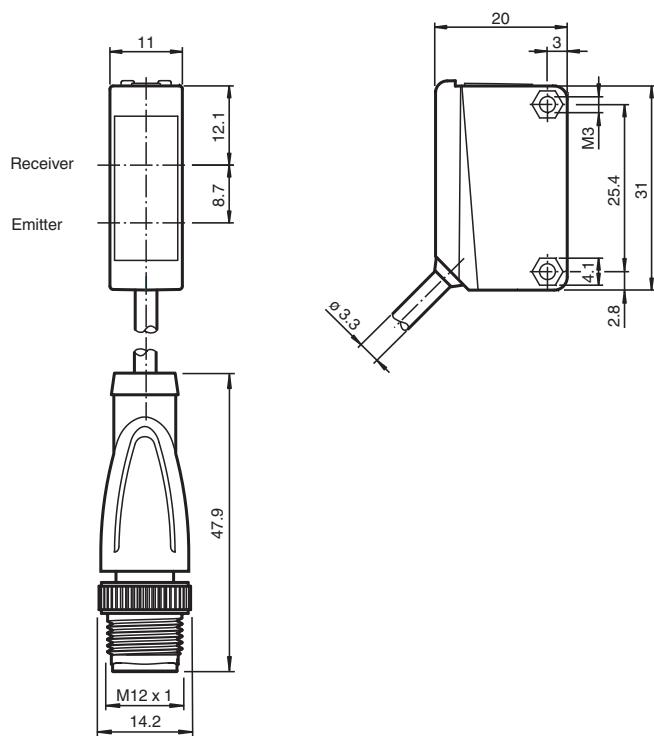
Diffuse mode sensor, plastic housing, 1000 mm adjustable detection range, red light, light/dark on, PNP output, fixed cable with M12 plug



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



Technical Data

General specifications

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Detection range	0 ... 1000 mm
Adjustment range	100 ... 1000 mm
Reference target	standard white, 100 mm x 100 mm

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

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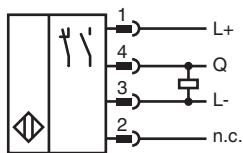
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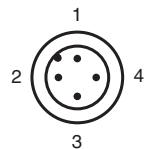
Technical Data

Light source	LED	
Light type	modulated visible red light	
Polarization filter	no	
Diameter of the light spot	approx. 75 mm at a distance of 1000 mm	
Opening angle	approx. 2 °	
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 up with receiver lit	
Control elements	sensitivity adjustment	
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	0.5 ms	
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		
Degree of protection	IP67	
Connection	300 mm fixed cable with 4-pin, M12 x 1 connector	
Material		
Housing	PC (Polycarbonate)	
Optical face	PMMA	
Mass	approx. 50 g	
Tightening torque, fastening screws	0.6 Nm	
Dimensions		
Height	31 mm	
Width	11 mm	
Depth	20 mm	
Cable length	0.3 m	

Connection



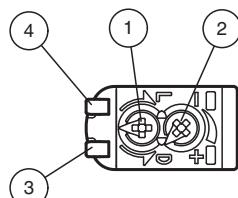
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

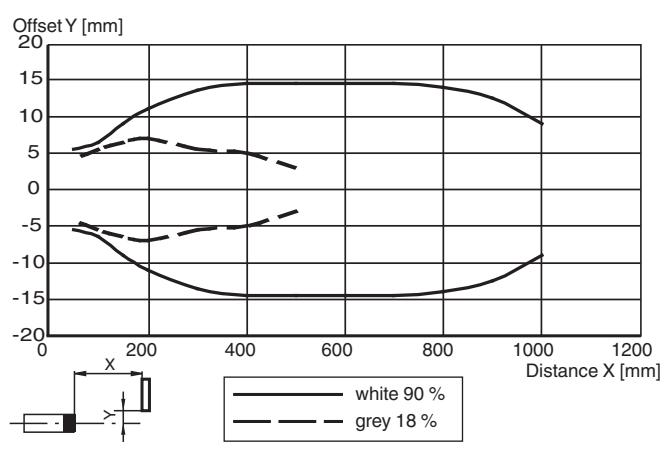
Assembly



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

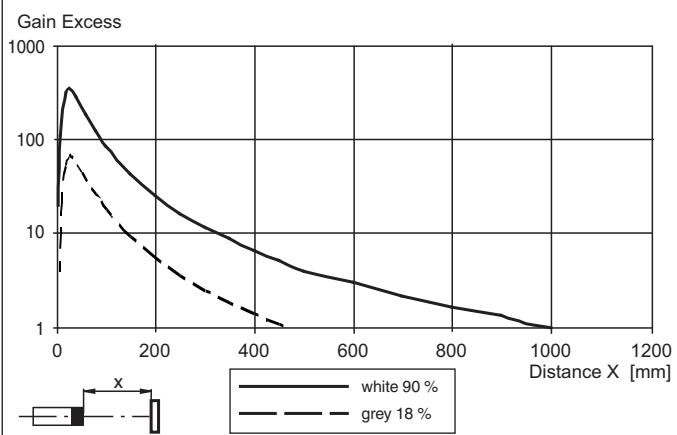
Characteristic Curve

Characteristic response curve



Characteristic Curve

Relative received light strength



Detection ranges

Object colour

