

Diffuse mode sensor

ML100-8-1000-RT/103/115b-1M



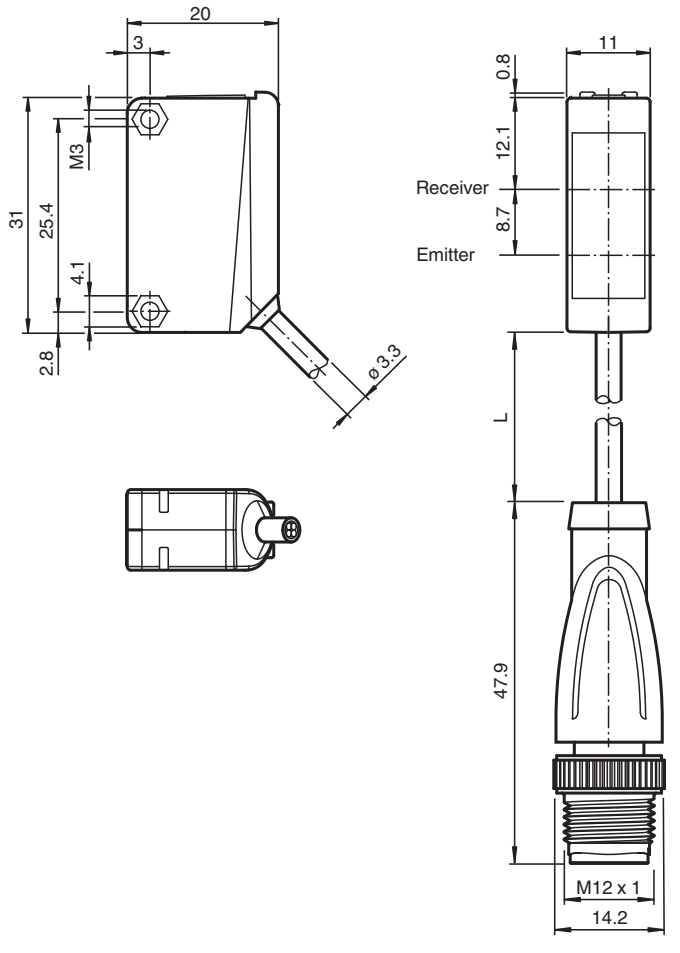
- Miniature design
- Easy to use
- Very bright, highly visible light spot
- Full metal thread mounting
- Highly visible LEDs for Power ON and switching state
- Not sensitive to ambient light

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



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Technical Data

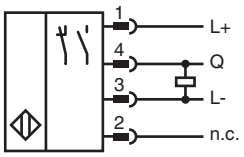
General specifications		
Detection range		0 ... 1000 mm
Adjustment range		100 ... 1000 mm
Reference target		standard white, 100 mm x 100 mm
Light source		LED
Light type		modulated visible red light
Polarization filter		no
Diameter of the light spot		approx. 75 mm at a distance of 1000 mm
Opening angle		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		fixed cable with 4-pin, M12 x 1 connector
Material		
Housing		PC (Polycarbonate)
Optical face		PMMA
Cable		
Length	L	1000 mm
Mass		approx. 50 g
Tightening torque, fastening screws		0.6 Nm
Dimensions		
Height		31 mm

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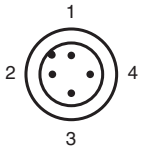
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Width		11 mm
Depth		20 mm
Cable length		0.3 m

Connection



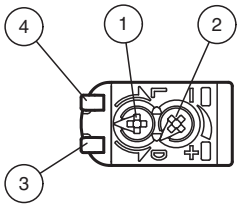
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

Assembly

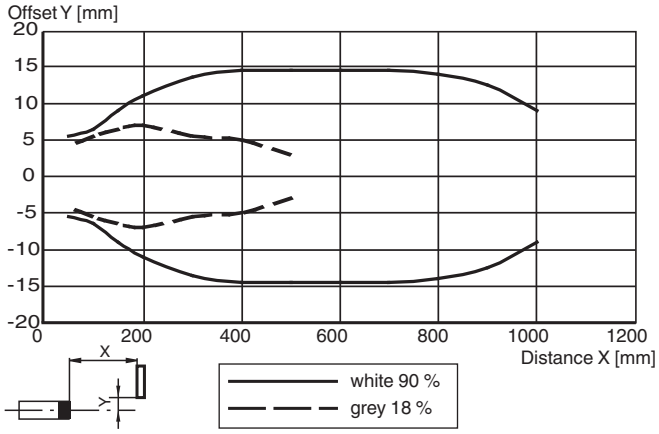


1	Light-Dark-switching	
2	Sensitivity adjuster	
3	Signal display	yellow
4	Operating display	green

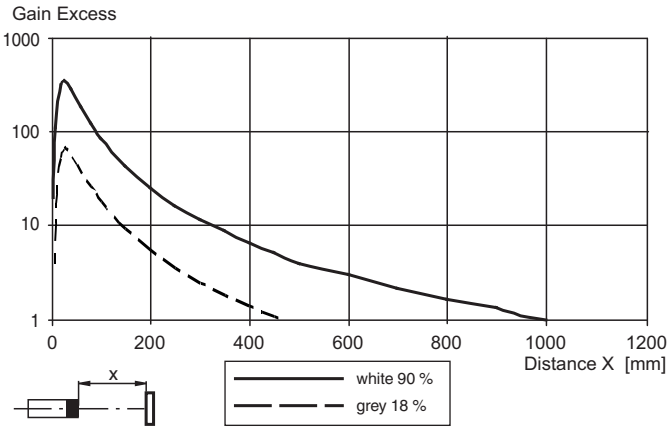
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Characteristic Curve

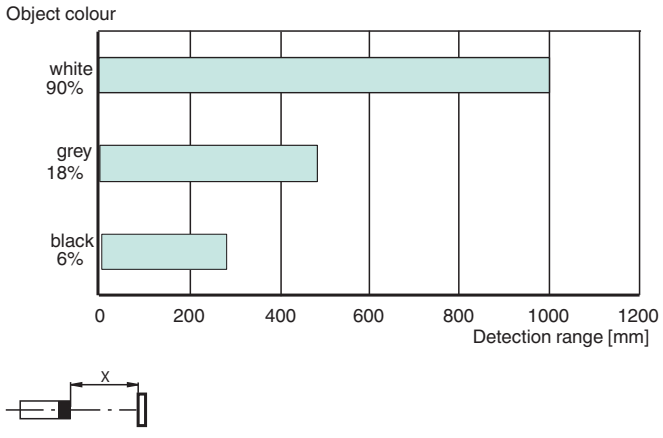
Characteristic response curve



Relative received light strength



Detection ranges



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