



## 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

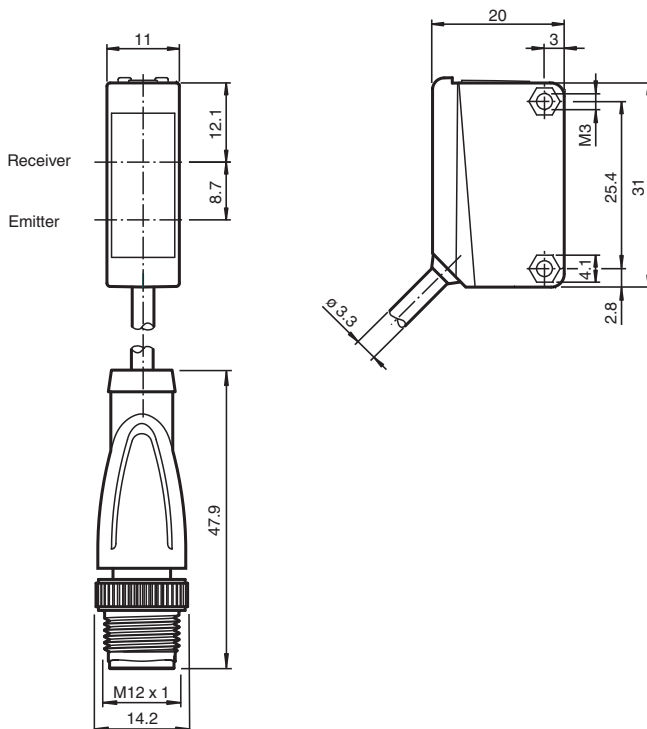
Diffuse mode sensor, plastic housing, 1000 mm adjustable detection range, red light, light/dark on, PNP output, fixed cable with M12 plug



### 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

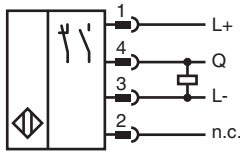
Detection range	0 ... 1000 mm
Adjustment range	100 ... 1000 mm
Reference target	standard white, 100 mm x 100 mm

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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
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>		860 a
Mission Time (T <sub>M</sub> )		20 a
Diagnostic Coverage (DC)		0 %
<b>Indicators/operating means</b>		
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
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I <sub>0</sub>	< 20 mA
<b>Output</b>		
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 <sub>d</sub>	≤ 1.5 V DC
Switching frequency	f	1000 Hz
Response time		0.5 ms
<b>Conformity</b>		
Product standard		EN 60947-5-2
<b>Approvals and certificates</b>		
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
<b>Ambient conditions</b>		
Ambient temperature		-30 ... 60 °C (-22 ... 140 °F)
Storage temperature		-40 ... 70 °C (-40 ... 158 °F)
<b>Mechanical specifications</b>		
Degree of protection		IP67
Connection		300 mm fixed cable with 4-pin, M12 x 1 connector
<b>Material</b>		
Housing		PC (Polycarbonate)
Optical face		PMMA
Mass		approx. 50 g
Tightening torque, fastening screws		0.6 Nm
<b>Dimensions</b>		
Height		31 mm
Width		11 mm
Depth		20 mm
Cable length		0.3 m

## Connection



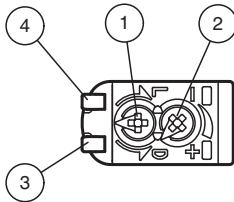
## Connection Assignment



Wire colors in accordance with EN 60947-5-2

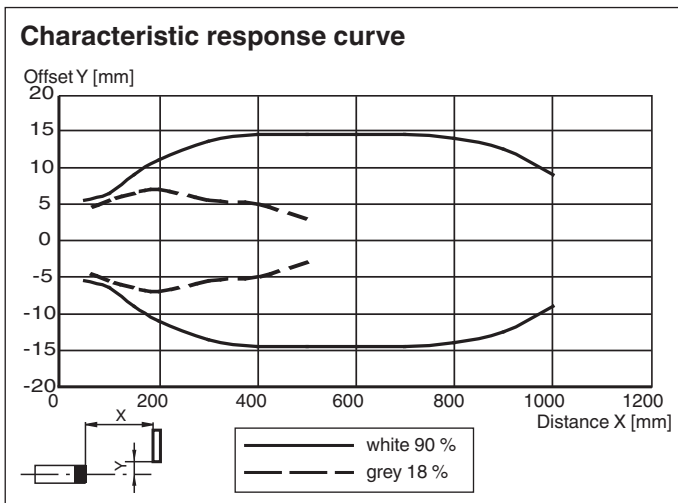
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

## Assembly



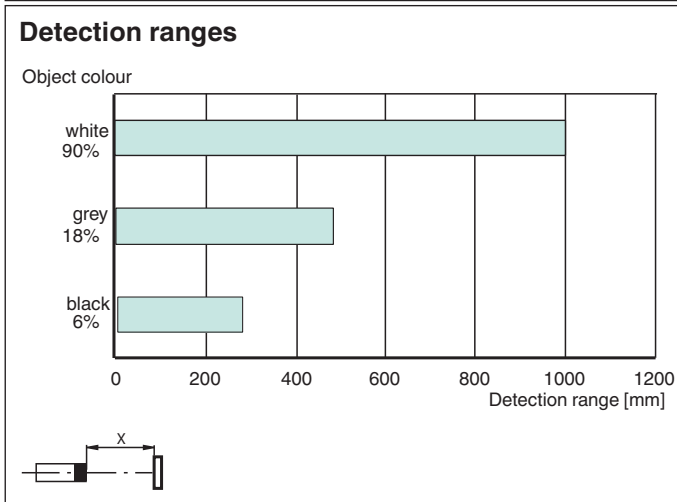
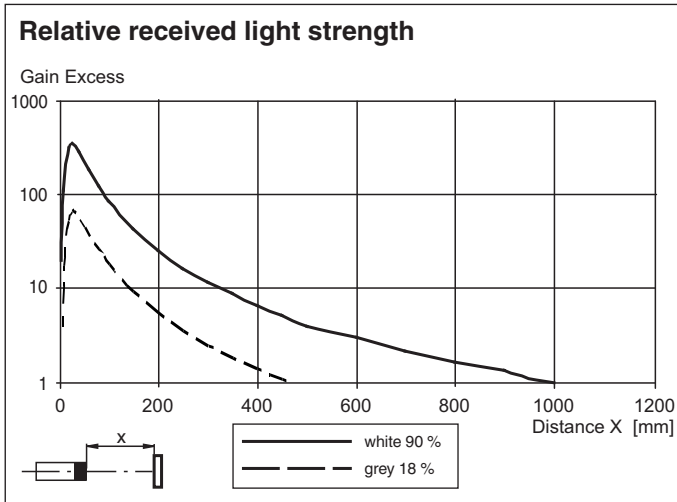
1	Light-Dark-switching	
2	Sensitivity adjuster	
3	Signal display	yellow
4	Operating display	green

## Characteristic Curve



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