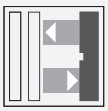


Triangulation sensor (BGE)

ML100-8-HW-350-RT/95/103



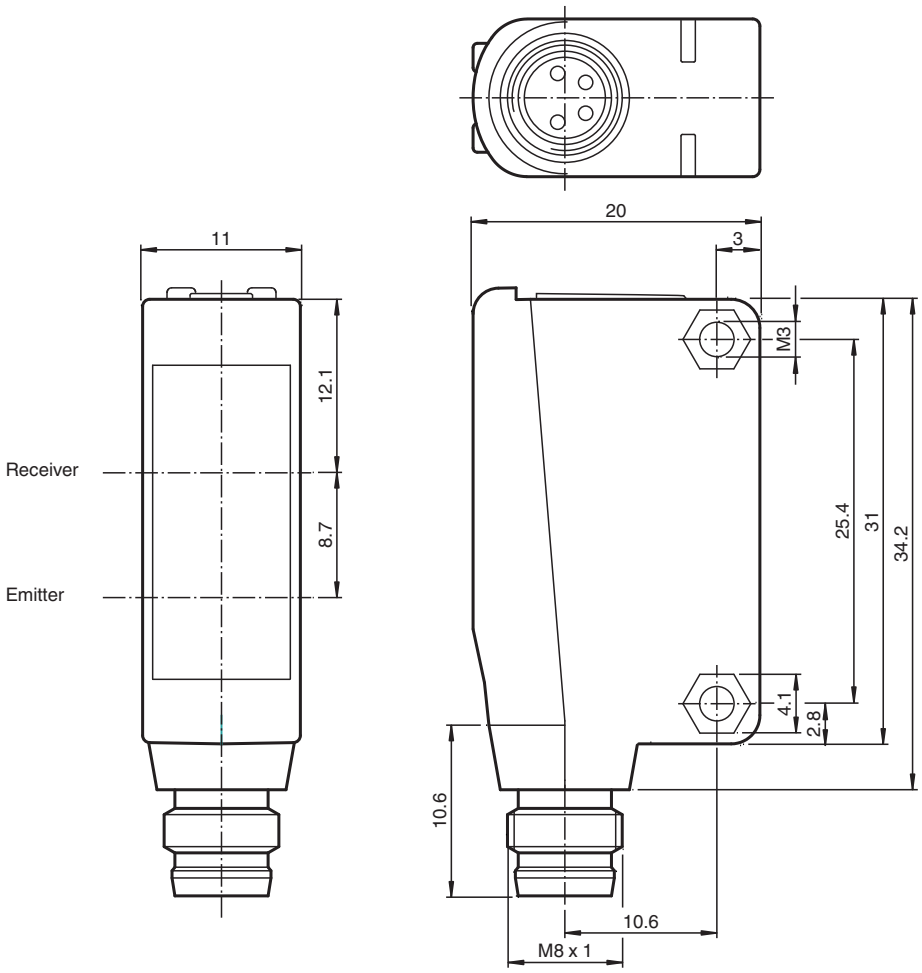
- User-friendliest photoelectric sensor series for standard applications
- Miniature design
- Background evaluation uses background as reference for detection of difficult targets
- Simplest alignment and commissioning thanks to ultrabright transmitter LED
- Clear and functional display concept for the operating modes
- Full metal thread mounting

Diffuse mode sensor for standard applications, miniature design, background evaluation, 350 mm detection range, red light, PNP output, M8 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



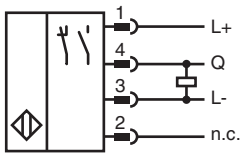
Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 249084_eng.pdf

Technical Data

General specifications		
Detection range		5 ... 350 mm
Adjustment range		30 ... 350 mm
Light source		LED
Light type		modulated visible red light
Diameter of the light spot		approx. 20 mm at a distance of 350 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 ON: sensor detects background
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	500 Hz
Response time		1 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		
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
Mass		approx. 10 g
Tightening torque, fastening screws		0.6 Nm

Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 249084_eng.pdf

Connection



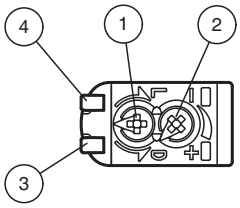
Connection Assignment



Wire colors in accordance with EN 60947-5-2

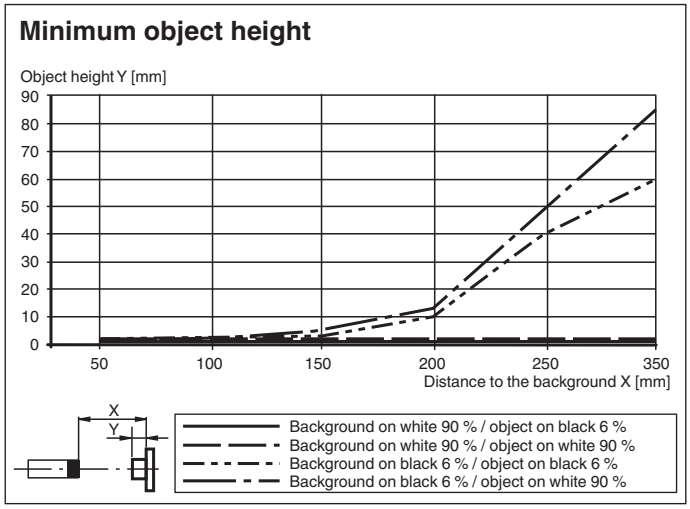
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Assembly



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

Characteristic Curve



Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 249084_eng.pdf

Accessories

	**OMH-ML100-09**	Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm
	**OMH-ML100-03**	Mounting aid for round steel ø 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
	**OMH-ML100-S1**	Mounting bracket

Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 249084_eng.pdf

Notes

1. Set up the sensor to the background object.
2. Rotate the detection range adjuster clockwise until the yellow LED turns ON.
3. Continue to rotate the detection range adjuster clockwise until the yellow LED turns OFF.
4. Now counter-clockwise rotate the detection range adjuster just until the yellow LED turns ON again.

Preferably the background should be light or white.
Object should move transversely to the sensor.
The background should not vary in height.

Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 249084_eng.pdf