Model Number

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

Triangulation sensor (BGE)
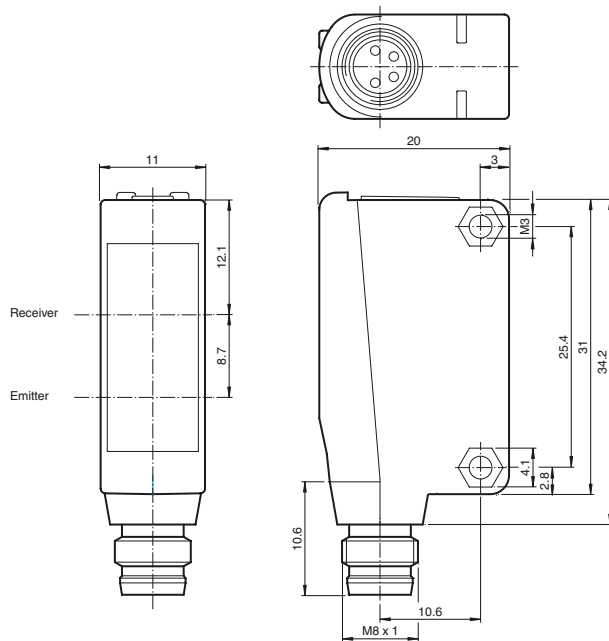
with 4-pin, M8 x 1 connector

Features

- 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

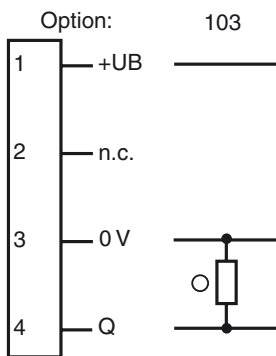- Full metal thread mounting

Product information

The ML100 series is characterized by its miniature housing with integral, all-metal threaded bushings. All versions are equipped with a visible red transmitter LED. This greatly simplifies installation and commissioning. The switching states are easily visible from all directions thanks to the highly visible LEDs.

Dimensions

Electrical connection

Option: 103

1	+UB
2	n.c.
3	0 V
4	Q

○ = Light on
● = Dark on

Pinout

Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
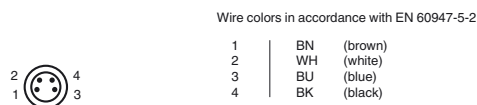
Indicators/operating means
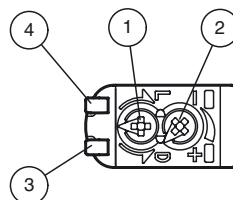
1	Light-Dark-switching	
2	Detection range adjuster	
3	Signal display	yellow
4	Operating display	green

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

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1

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
Angle of divergence	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

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	connector M8 x 1 , 4-pin
Material	
Housing	PC (Polycarbonate)
Optical face	PMMA
Mass	approx. 10 g
Tightening torque, fastening screws	0.6 Nm

Compliance with standards and directives

Directive conformity	
EMC Directive 2004/108/EC	EN 60947-5-2:2007+A1:2012
Standard conformity	
Standards	UL 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

Accessories

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

V31-GM-2M-PUR
Female cordset, M8, 4-pin, PUR cable

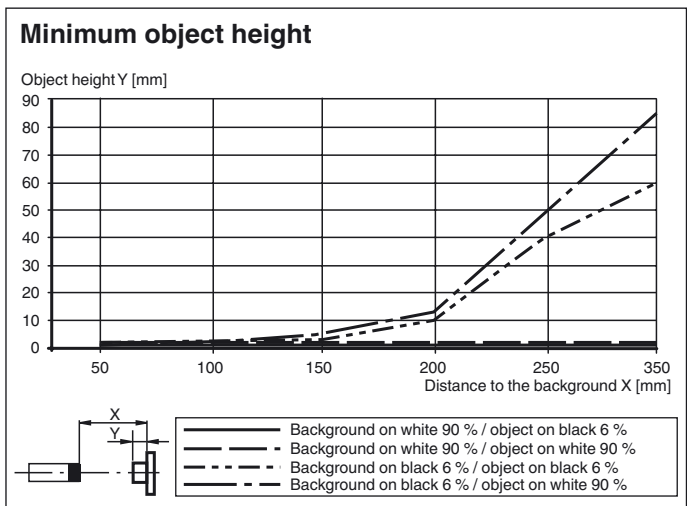**V31-WM-2M-PUR**
Female cordset, M8, 4-pin, PUR cable

OMH-ML100-S1
Mounting bracket

OMH-ML100-08
Mounting aid for ML100 series, Snap-in

Other suitable accessories can be found at www.pepperl-fuchs.com

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

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Curves/Diagrams

Minimum object height

Object height Y [mm]

Distance to the background X [mm]

——	Background on white 90 % / object on black 6 %
— —	Background on white 90 % / object on white 90 %
—·—·	Background on black 6 % / object on black 6 %
—··—··	Background on black 6 % / object on white 90 %

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.

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