Model Number

ML100-8-HW-5652

Background evaluation sensor
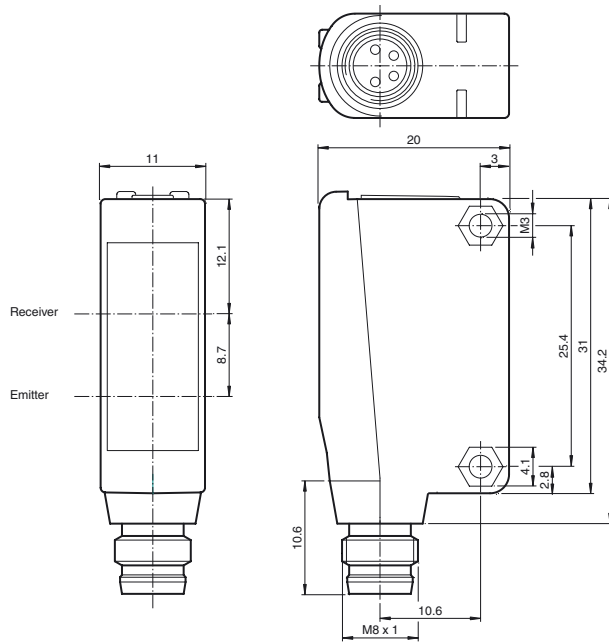with 4-pin, M8 x 1 connector

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
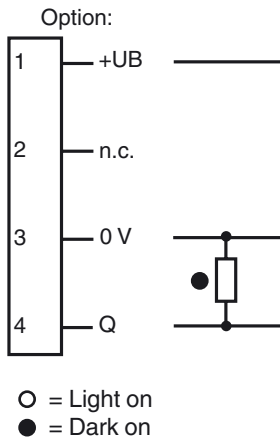
Product information

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

Receiver
Emitter

Electrical connection

Option:

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

○ = Light on
● = Dark on

Pinout

Indicators/operating means
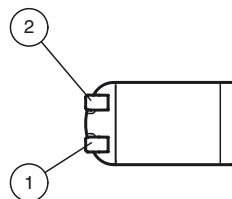
1	Signal display	yellow
2	Operating display	green

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776-4411
fa-info@pepperl-fuchs.com

Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

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Technical data

General specifications

Detection range	0 ... 80 mm
Light source	LED
Light type	modulated visible red light
Approvals	CE, cULus Listed 57M3 (Only in association with UL Class 2 power supply; Type 1 enclosure)
Diameter of the light spot	approx. 10 mm at a distance of 80 mm
Angle of divergence	approx. 4 °
Optical face	frontal
Ambient light limit	EN 60947-5-2

Functional safety related parameters

$MTTF_d$	860 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Operating display	LED green: power on
Function display	LED yellow ON: sensor detects background

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC , class 2
Ripple		max. 10 %
No-load supply current	I_0	< 20 mA

Output

Switching type		dark 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

|	
Protection degree	IP67
Connection	connector M8 x 1 , 4-pin
Material	
Housing	PC (Polycarbonate)
Optical face	PMMA
Mass	approx. 10 g

Compliance with standards and directives

Directive conformity	
EMC Directive 2004/108/EC	EN 60947-5-2
Standard conformity	
Standards	UL 508

Approvals and certificates

UL approval	cULus Listed, Class 2 Power Source, Type 1 enclosure
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.

Curves/Diagrams

Detection ranges

Object colour

Distance X [mm]

Background
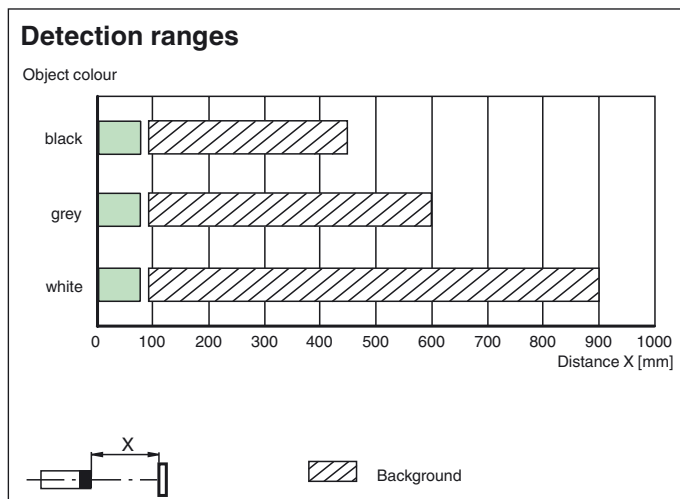
Accessories

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

OMH-ML100-04
Mounting bracket

OMH-ML100-05
Mounting bracket

OMH-F10-ML100
Mounting aid for ML100 series

OMH-10
Mounting aid

V31-GM-2M-PUR
4-pin, M8 socket, PUR cable

V31-WM-2M-PUR
4-pin, M8 socket, PUR cable

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

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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Pepperl+Fuchs Group　　　USA: +1 330 486 0001　　Germany: +49 621 776-4411　　Singapore: +65 6779 9091
www.pepperl-fuchs.com　　fa-info@us.pepperl-fuchs.com　　fa-info@pepperl-fuchs.com　　fa-info@sg.pepperl-fuchs.com

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