Dimensions

Model Number

ML100-8-H-100-5986

Background suppression sensor

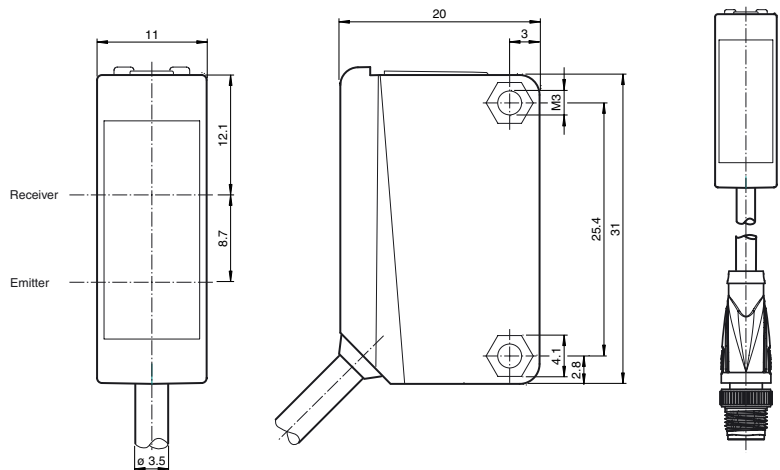With fixed cable and M8 device plug, 3-pin

Features

- Diffuse mode sensor with multiple light spots
- Specially designed for detecting critical objects such as PCBs
- Miniature design
- Detects objects in front of a close background through precise background suppression
- Can be adapted to the application in question thanks to the adjustable detection range
- Precision object detection, almost irrespective of the color
- Not sensitive to ambient light, even with switched energy saving lamps

Electrical connection

○ = Light on
● = Dark on

Indicators/operating means

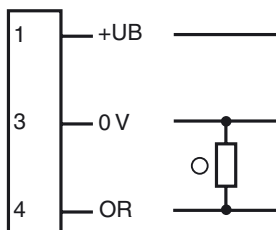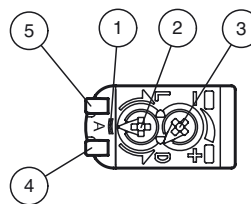| 1	Alignment Mode	
2	Light-Dark-switching	
3	Sensitivity adjuster	
4	Signal display	yellow
5	Operating display	green

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.

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

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Technical data

General specifications

Detection range	20 ... 100 mm
Detection range min.	10 ... 25 mm
Detection range max.	25 ... 100 mm
Adjustment range	25 ... 100 mm
Reference target	standard white, 100 mm x 100 mm
Light source	LED
Light type	modulated visible red light
Black/White difference (6 %/90 %)	< 20 %
Approvals	CE, cULus Listed 57M3 (Only in association with UL Class 2 power supply; Type 1 enclosure)
Diameter of the light spot	3 light spots, spotsize 4 mm at a distance of 50 mm, spots are 8 mm apart; spotsize 2.5 mm at a distance of 80 mm, spots are 12 mm apart; spotsize 4 mm at a distance of 100 mm, spots are 15 mm apart
Optical face	frontal
Ambient light limit	EN 60947-5-2

Functional safety related parameters

$MTTF_d$		1100 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %

Indicators/operating means

Operating display	LED green: power on
Function display	LED yellow: lights when object is detected , flashes when in adjustment mode
Controls	Detection range adjuster
Controls	Light/Dark switch

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC , class 2
Ripple		max. 10 %
No-load supply current	I_0	< 15 mA

Output

Switching type		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

Protection degree	IP67
Connection	400 mm pigtail with M8 connector, 3-pin
Material	
Housing	PC (glass-fiber-reinforced Makrolon)
Optical face	PMMA
Mass	approx. 50 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	CCC approval / marking not required for products rated ≤36 V

Accessories
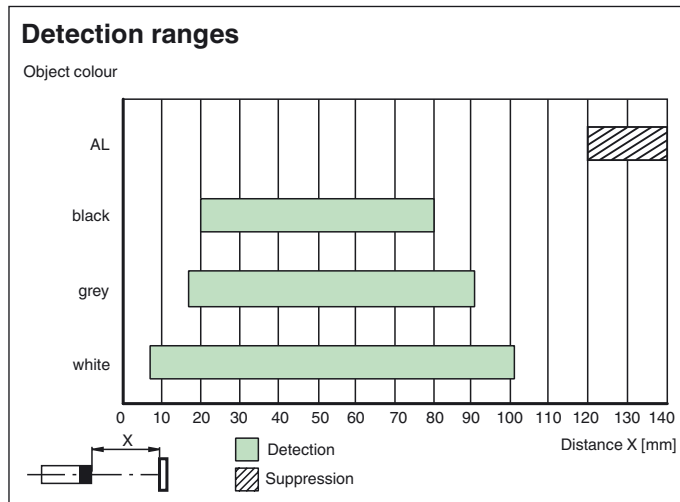
OMH-ML100-01
Mounting bracket

OMH-ML100-02
Mounting bracket

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

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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Detection ranges

Object colour

Distance X [mm]

Detection
Suppression

Configuration Information

Setting mode (A-Mode):

A-Mode is an additional switch position that is integrated into the light ON/dark ON switch. A-Mode is located between position L and position D. A-Mode is a help mode which enables you to detect whether all three light spots are directed onto the object.

If A-Mode is selected, the yellow signal indicator LED flashes; the number of times that the LED flashes equates to the number of detected light spots.

The following scenarios exist:
- No flashing/LED off: No light spots detected
- Fast flashing (8 Hz): One light spot detected
- Slow flashing (4 Hz): Two light spots detected
- Static illumination/LED on: Three light spots detected

As soon as you exit A-Mode, the yellow LEDs light up in the standard manner again.

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