Dimensions

Model Number

ML100-8-H-250-BU/103/115

Background suppression sensor
with 2 m fixed cable

Features

- Miniature design
- Easy to use
- Full metal thread mounting
- Highly visible LEDs for Power ON and switching state
- Not sensitive to ambient light
- Very bright, highly visible blue light spot

Product information

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

The sensor is particularly suitable for detection of blue solar wafers, even those with anti-reflection coating.
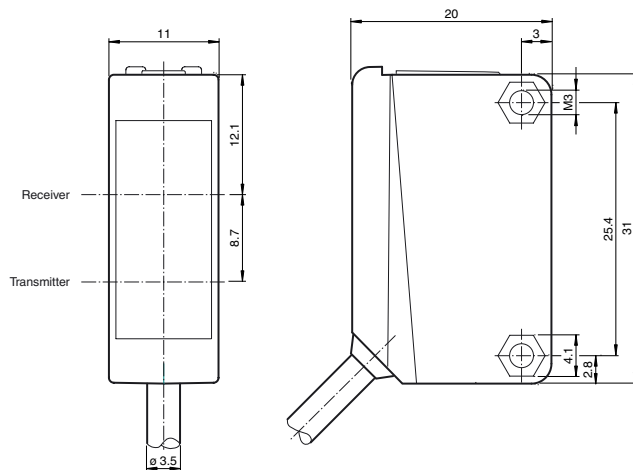
Electrical connection

Option: 103
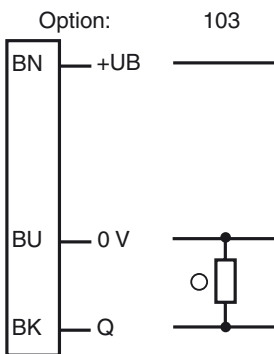
○ = Light on
● = Dark on

Indicators/operating means
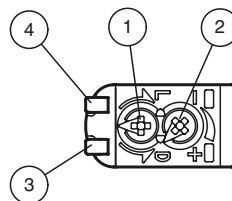
1	Light-Dark-switching	
2	Sensitivity adjuster	
3	Signal display	yellow
4	Operating display	green

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

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www.pepperl-fuchs.com   fa-info@us.pepperl-fuchs.com   fa-info@de.pepperl-fuchs.com   fa-info@sg.pepperl-fuchs.com

Technical data

General specifications

Detection range	5 ... 250 mm
Detection range min.	5 ... 30 mm
Detection range max.	5 ... 250 mm
Adjustment range	30 ... 250 mm
Reference target	standard white, 100 mm x 100 mm
Light source	LED
Light type	modulated visible blue light
Polarization filter	no
Black/White difference (6 %/90 %)	<30% at 250 mm, <20% at 200 mm, <10% at 150 mm
Diameter of the light spot	approx. 14 mm at a distance of 250 mm
Angle of divergence	approx. 4 °
Optical face	frontal
Ambient light limit	EN 60947-5-2

Functional safety related parameters

$MTTF_d$		840 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %

Indicators/operating means

Operation indicator	LED green: power on
Function indicator	LED yellow: lights when object is detected
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

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	2 m fixed cable
Material	
Housing	PC (Polycarbonate)
Optical face	PMMA
Mass	approx. 50 g
Tightening torque, fastening screws	0.6 Nm
Cable length	2 m

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-ML100-09
Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

OMH-ML100-01
Mounting aid for ML100 series, mounting bracket

OMH-ML100-02
Mounting aid for ML100 series, mounting bracket

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

OMH-ML100-S1
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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Curves/Diagrams

Characteristic response curve

Offset Y [mm]

Distance X [mm]

——	white 90 %
– –	grey 18 %
–·–	black 6 %
·····	blue solar wafer 0.35%
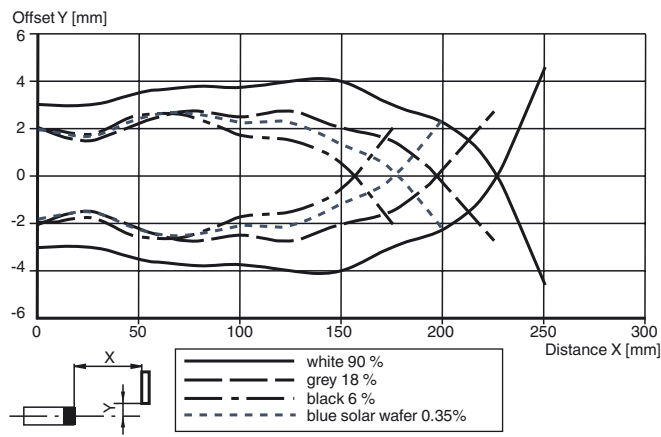
Detection range of blue solar wafer

Adjusted distances on white 90% Y [mm]

Detection distance X [mm]

□ white 90%

■ blue solar wafer 0.35% reflectivity
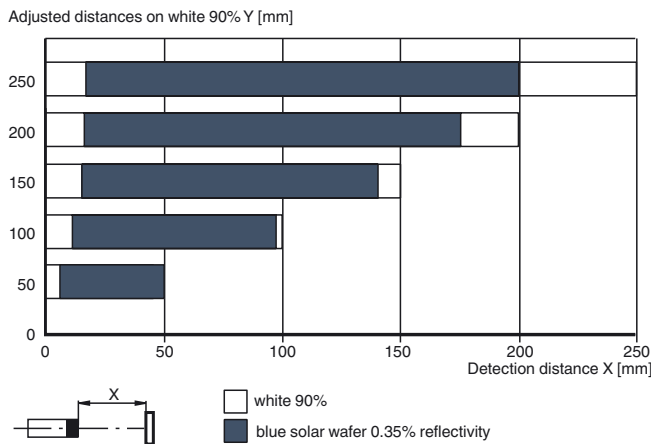
Difference in detection distance

Deviation of measured detection distance Y [%]

Adjusted detection distance to white 90% X [mm]

——	black / white
– –	blue solar wafer / white
·····	grey / white

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