Background suppression sensor
ML100-8-H-3704

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

Triangulation sensor with background suppression, 350 mm adjustable detection range, red light, light/dark on, pnp output, fixed cable with Stocko plug

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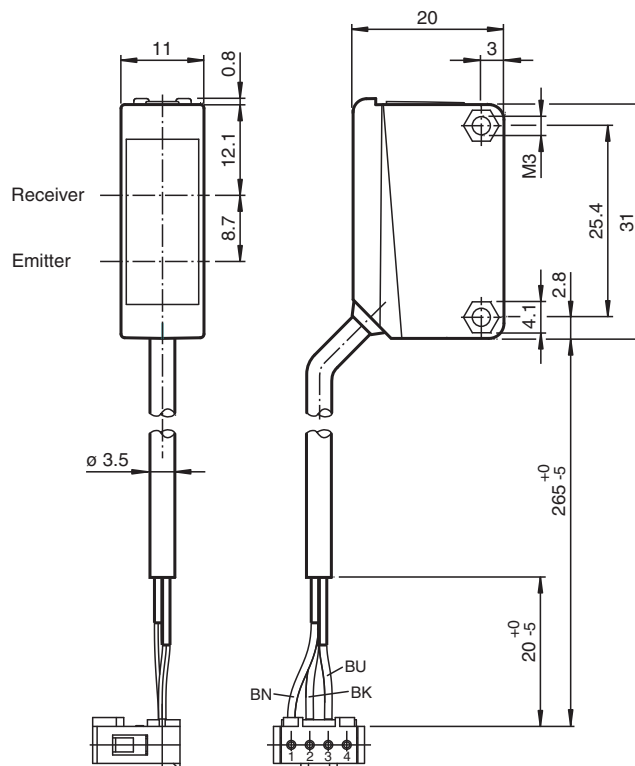
Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Technical Data

General specifications

Detection range	5 ... 350 mm
Detection range min.	5 ... 30 mm
Detection range max.	5 ... 350 mm
Adjustment range	30 ... 350 mm
Reference target	standard white, 100 mm x 100 mm
Light source	LED
Light type	modulated visible red light
Polarization filter	no
Black-white difference (6 %/90 %)	< 18 % at 350 mm
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: 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

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	fixed cable 265 mm with Stocko plug , 4-pin
Material	
Housing	PC (Polycarbonate)
Optical face	PMMA

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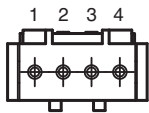
Technical Data

Mass	approx. 50 g
Tightening torque, fastening screws	0.6 Nm
Cable length	0.265 m

Connection
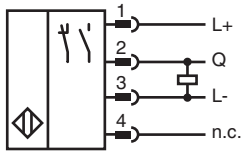
Connection Assignment

Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	BK	(black)
3	BU	(blue)
4	n.c.	

Assembly
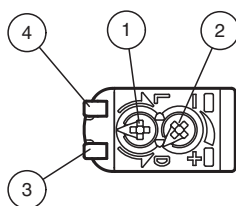
1	Light-Dark-switching	
2	Sensitivity adjuster	
3	Signal display	yellow
4	Operating display	green

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Characteristic Curve

Characteristic response curve

Offset Y [mm]

| white 90 % |
| grey 18 % |
| black 6 % |

Distance X [mm]

Difference in detection distance

Deviation of measured detection distance X [%]

Adjusted detection distance X [mm]

| black / white |
| grey / white |
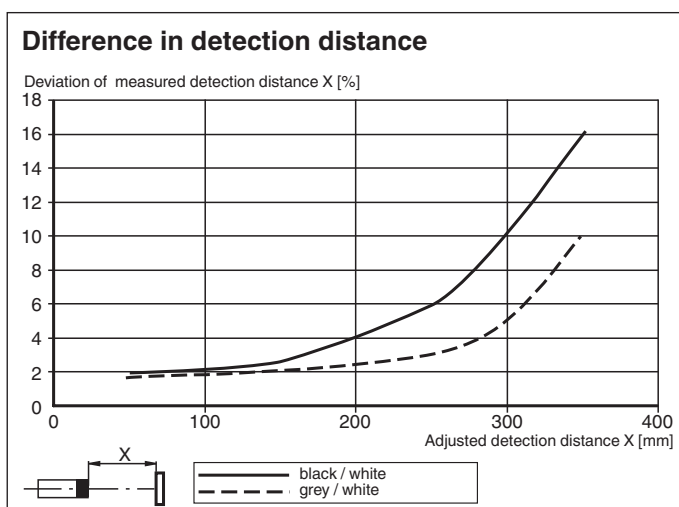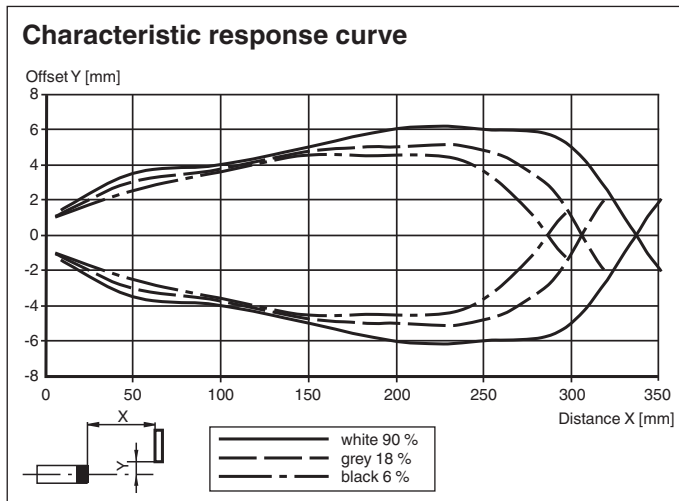
Accessories

	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 for ML100 series

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