Model Number

ML100-55/103/115a

Retroreflective sensor
with fixed cable and 4-pin, M8 connector

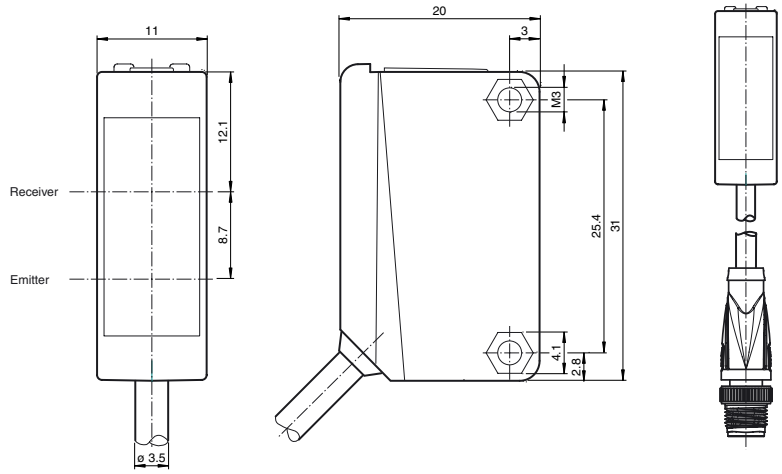
Features

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

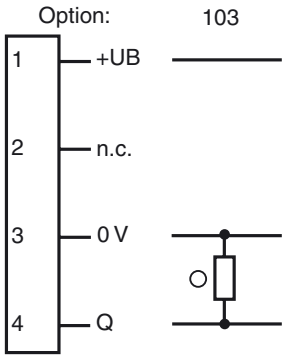
Product information

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



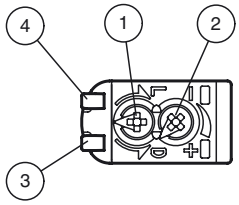
○ = Light on
● = Dark on

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	Sensitivity adjuster	
3	Signal display	yellow
4	Operating display	green

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Technical data

General specifications		
Effective detection range		0 ... 5 m
Reflector distance		0.01 ... 5 m
Threshold detection range		7 m
Reference target		H50 reflector
Light source		LED
Light type		modulated visible red light
Polarization filter		yes
Diameter of the light spot		approx. 500 mm at a distance of 7 m
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: lights up when receiving the light beam ; flashes when falling short of the stability control; OFF when light beam is interrupted
Control elements		sensitivity adjustment
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	1000 Hz
Response time		0.5 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		300 mm fixed cable with M8 connector, 4-pin
Material		
Housing		PC (Polycarbonate)
Optical face		PMMA
Mass		approx. 20 g
Tightening torque, fastening screws		0.6 Nm
Cable length		0.3 m
Compliance with standards and directives		
Directive conformity		
EMC Directive 2004/108/EC		EN 60947-5-2:2007+A1:2012
Standard conformity		
Product standard		EN 60947-5-2:2007+A1:2012 IEC 60947-5-2:2007 + A1:2012
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-F10-ML100
Mounting aid for ML100 series

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-10
Mounting aid

REF-H85-2
Reflector, rectangular 84.5 mm x 84.5 mm, mounting holes

REF-C110-2
Reflector, round ø 84 mm, central mounting hole

REF-H60-2
Reflector with mounting holes

REF-H50
Reflector, rectangular 51 mm x 61 mm, mounting holes, fixing strap

REF-H33
Reflector with screw fixing

OFR-70-2
Reflective tape 70 mm x 70 mm

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

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

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Refer to “General Notes Relating to Pepperl+Fuchs Product Information”.
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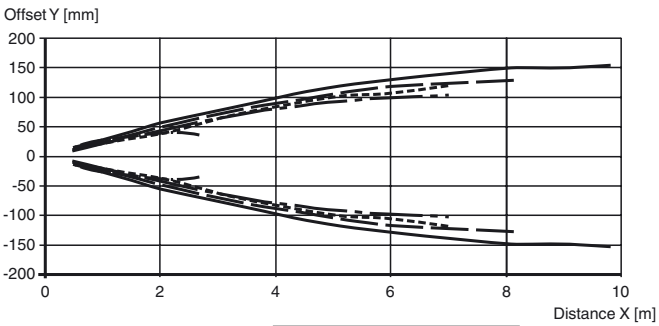
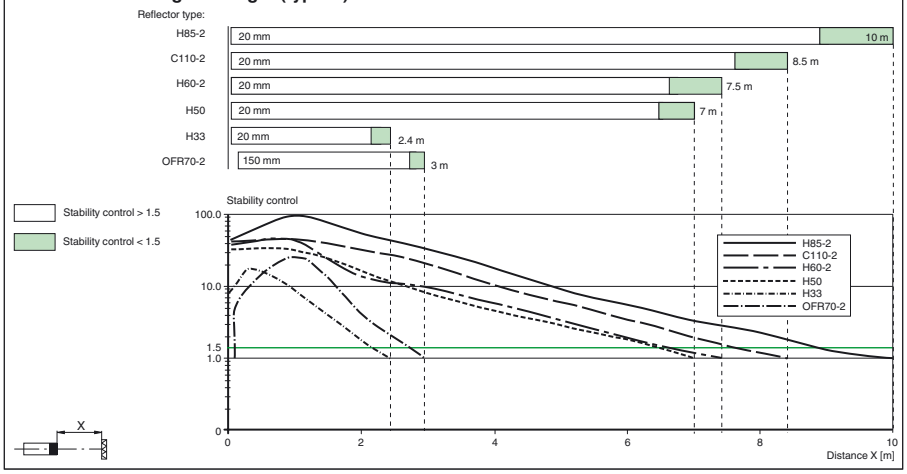
Curves/Diagrams

Characteristic response curve



Relative received light strength (typical)



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