



**Model Number**

**ML100-54/95/103**

Retroreflective sensor  
with 4-pin, M8 x 1 connector

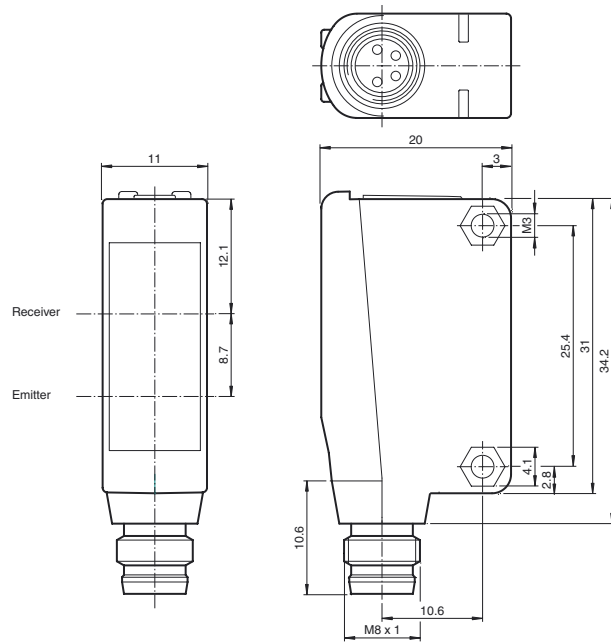
**Features**

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

**Product information**

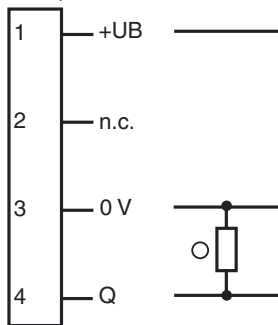
The ML100 series is characterized by its miniature housing with integral, all-metal threaded bushings. All versions are equipped with a visible red transmitter LED. This greatly simplifies installation and commissioning. The switching states are easily visible from all directions thanks to the highly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

**Dimensions**



**Electrical connection**

Option: 103

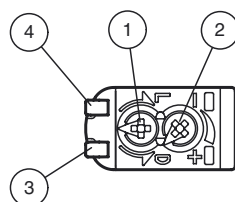


○ = Light on  
● = Dark on

**Pinout**



**Indicators/operating means**



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

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

**Technical data****General specifications**

Effective detection range	0 ... 3.5 m
Reflector distance	0.01 ... 3.5 m
Threshold detection range	4.5 m
Reference target	H50 reflector
Light source	LED
Light type	modulated visible red light
Polarization filter	yes
Diameter of the light spot	approx. 350 mm at a distance of 4.5 m
Angle of divergence	approx. 4 °
Optical face	frontal
Ambient light limit	EN 60947-5-2

**Functional safety related parameters**

MTTF <sub>d</sub>	860 a
Mission Time (T <sub>M</sub> )	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/Dark switch

**Electrical specifications**

Operating voltage	U <sub>B</sub>	10 ... 30 V DC , class 2
Ripple		max. 10 %
No-load supply current	I <sub>0</sub>	< 20 mA

**Output**

Switching type	light/dark on, switchable	
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 <sub>d</sub>	≤ 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	connector M8 x 1 , 4-pin
Material	
Housing	PC (Polycarbonate)
Optical face	PMMA
Mass	approx. 10 g
Tightening torque, fastening screws	0.6 Nm

**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
Approvals	CE, cULus Listed 57M3 (Only in association with UL Class 2 power supply; Type 1 enclosure)

**Accessories****OMH-F10-ML100**

Mounting aid for ML100 series

**OMH-ML100-01**

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

**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

**REF-MH23-2**

Reflector with Micro-structure, rectangular 23 mm x 14 mm, diagonal mounting hole

**V31-WM-2M-PUR**

Female cordset, M8, 4-pin, PUR cable

**V31-GM-2M-PUR**

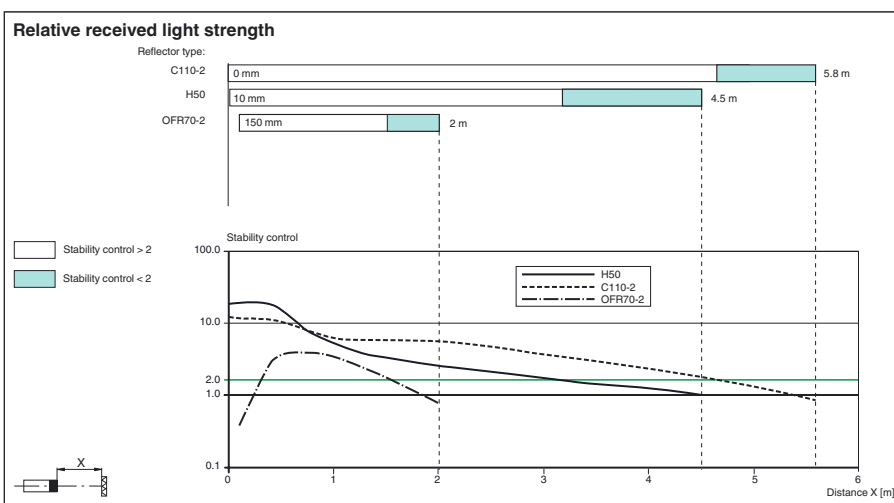
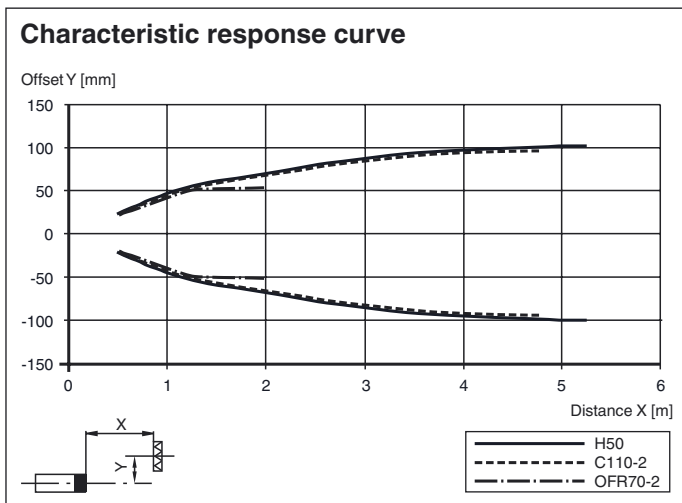
Female cordset, M8, 4-pin, PUR cable

**OMH-ML100-08**

Mounting aid

Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

Curves/Diagrams



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