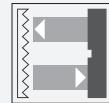




## Retroreflective sensor

### ML100-55/103/115b



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

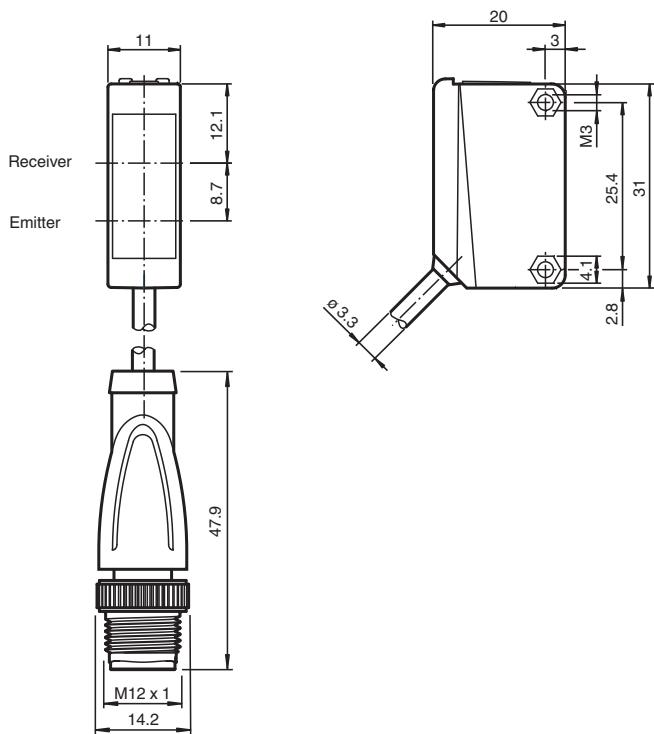
Retroreflective sensor with polarization filter, plastic housing, 5 m detection range, red light, sensitivity adjuster, light/dark on, DC version, PNP output, fixed cable with M12 plug



## 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



## Technical Data

### General specifications

Release date: 2024-10-24 Date of issue: 2024-10-24 Filename: 221827\_eng.pdf

Effective detection range	0 ... 5 m
Reflector distance	0.02 ... 5 m
Threshold detection range	7 m

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

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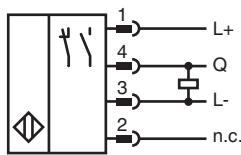
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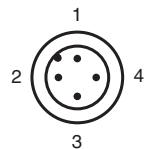
## Technical Data

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	
Opening angle	approx. 4 °	
Optical face	frontal	
Ambient light limit	EN 60947-5-2:2007+A1:2012	
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>	860 a	
Mission Time (T <sub>M</sub> )	20 a	
Diagnostic Coverage (DC)	0 %	
<b>Indicators/operating means</b>		
Operation indicator	LED green: power on	
Function indicator	LED yellow: lights up when receiving the light beam ; flashes when falling short of the operating reserve; OFF when light beam is interrupted	
Control elements	sensitivity adjustment	
Control elements	Light-on/dark-on changeover switch	
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I <sub>0</sub>	< 20 mA
<b>Output</b>		
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 <sub>d</sub>	≤ 1.5 V DC
Switching frequency	f	1000 Hz
Response time		0.5 ms
<b>Conformity</b>		
Product standard	EN 60947-5-2	
<b>Approvals and certificates</b>		
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	
<b>Ambient conditions</b>		
Ambient temperature	-30 ... 60 °C (-22 ... 140 °F)	
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)	
<b>Mechanical specifications</b>		
Degree of protection	IP67	
Connection	300 mm fixed cable with 4-pin, M12 x 1 connector	
Material		
Housing	PC (Polycarbonate)	
Optical face	PMMA	
Mass	approx. 20 g	
Tightening torque, fastening screws	0.6 Nm	
Dimensions		
Height	31 mm	
Width	11 mm	
Depth	20 mm	
Cable length	0.3 m	

## Connection



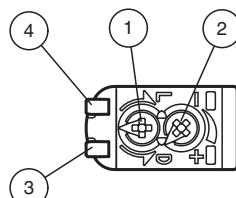
## Connection Assignment



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

## Assembly

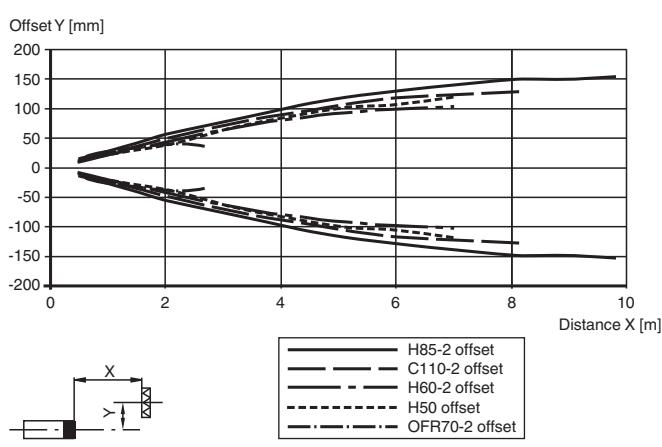


1	Light-Dark-switching	
2	Sensitivity adjuster	
3	Signal display	yellow
4	Operating display	green

## Characteristic Curve

### Characteristic response curve

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## Characteristic Curve

