Model Number

ML100-6-IR/95/102

Retroreflective sensor
with 4-pin, M8 x 1 connector

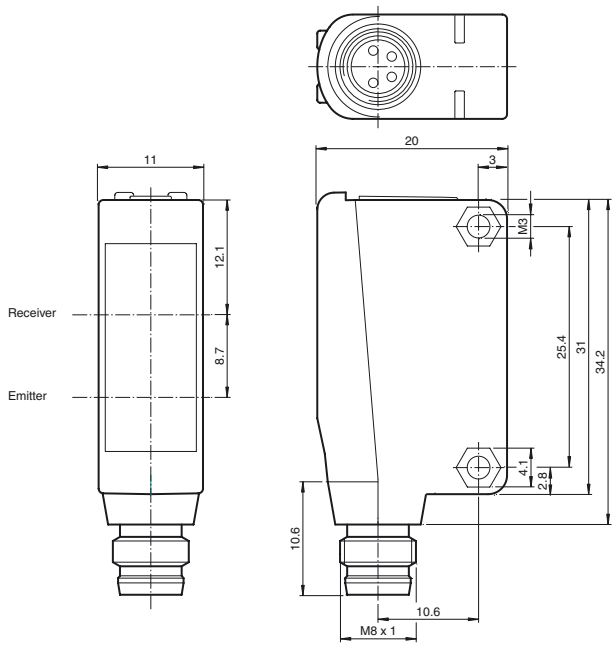
Features

- User-friendliest photoelectric sensor series for standard applications
- Miniature design
- Not sensitive to ambient light
- Metal-reinforced fastening holes
- Version with infrared light

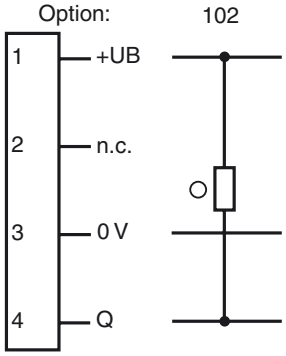
Product information

The ML100 series comprises a complete family of photoelectric sensors which are ideally suited for applications where long ranges and a high level of reliability are required. Due to their miniature design, the ML100 series sensors are also suitable for use in extremely confined areas. During operation, the ML 100 miniature sensors are characterized by a high performance Infrared-LED, extremely low power consumption and insensitivity to ambient lighting. The status LEDs, which are highly visible from all sides, provide clear information regarding reliable operation. Secure mounting is ensured by the threaded metal bushing. This means that the threading is more durable and enables maximum tightening torque.

Dimensions



Electrical connection



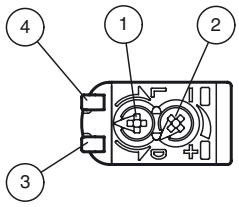
○ = Light on
● = Dark on

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		IRED
Light type		modulated infrared light
Polarization filter		no
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 NPN 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		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 60947-5-2:2007
Standard conformity		
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
UN/ECE Regulation No. 10 (E1)		Type-approval number: 047350

Accessories

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

OMH-F10-ML100
Mounting aid for ML100 series

OMH-10
Mounting aid

REF-H33
Reflector with screw fixing

V31-WM-2M-PUR
Female cordset, M8, 4-pin, PUR cable

V31-GM-2M-PUR
Female cordset, M8, 4-pin, PUR cable

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

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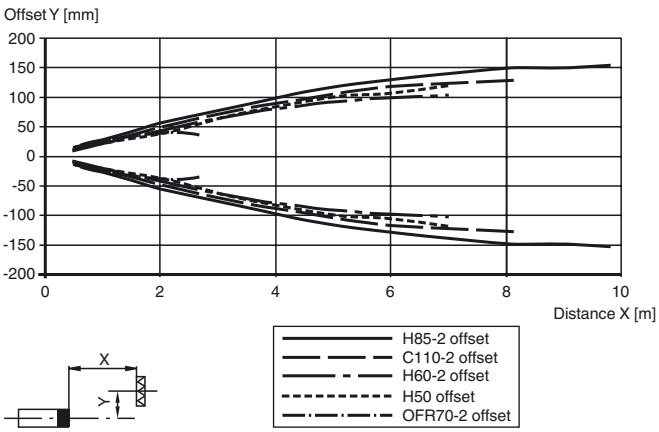
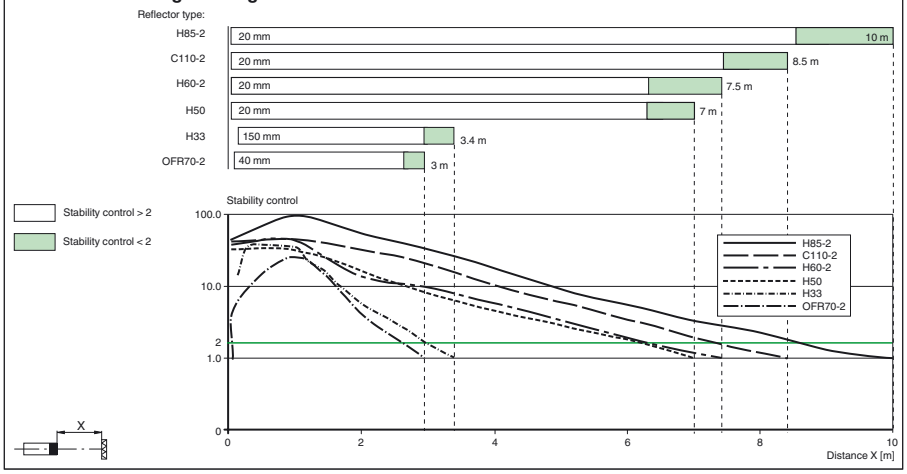
Curves/Diagrams

Characteristic response curve



Relative received light strength



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