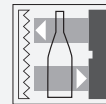




Retroreflective sensor for glass detection

ML100-55-G/95/102



- Miniature design
- Detects transparent materials
- TEACH-IN switch for setting the contrast detection levels
- Automatic adjustment in case of soiling in contrast detection mode
- Very bright, highly visible light spot
- Full metal thread mounting

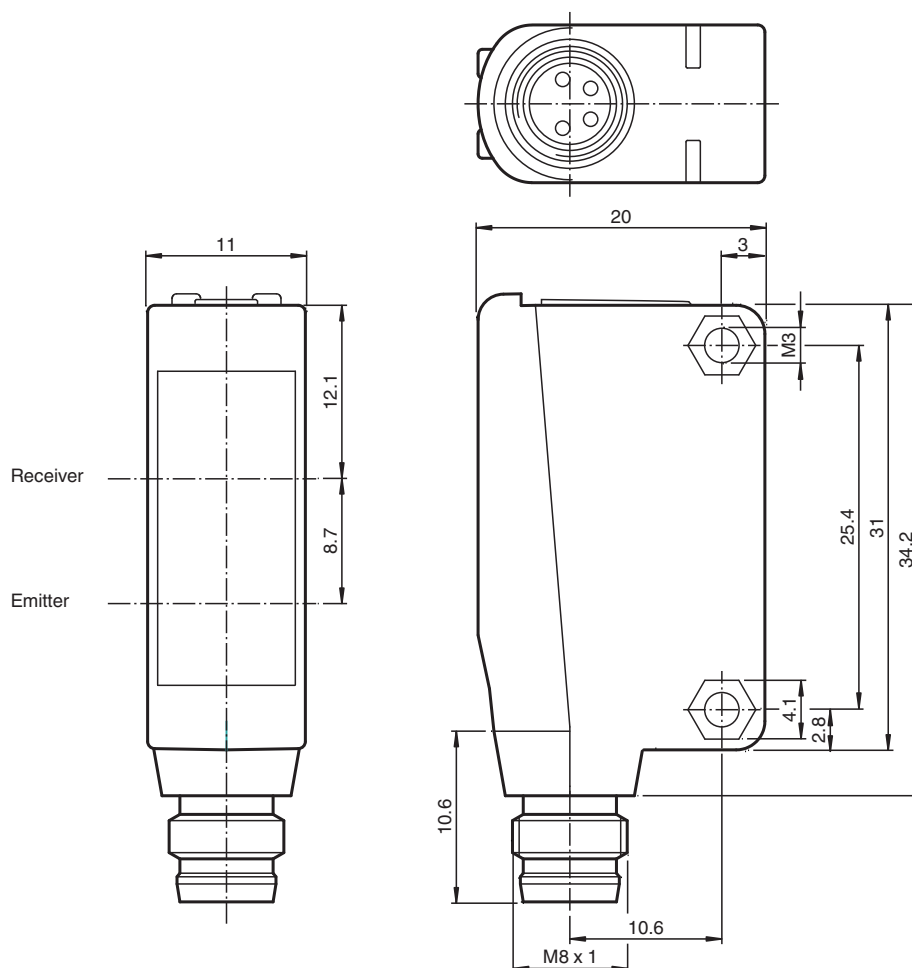
Retroreflective sensor for glass detection, plastic housing, detection range: 2.5 m, red light, teach-in, light/dark on, NPN output, M8 plug



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



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

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PEPPERL+FUCHS

Technical Data

General specifications

Effective detection range	0 ... 2.5 m
Reflector distance	0.05 ... 2.5 m
Threshold detection range	2.5 m
Reference target	H50 reflector
Light source	LED
Light type	modulated visible red light
Polarization filter	yes
Diameter of the light spot	approx. 180 mm at a distance of 2.5 m
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 Teach-In : LED yellow/green; equiphase flashing; 2,5 Hz Teach Error: LED green/yellow non equiphase flashing; 8.0 Hz
Function indicator	LED yellow: lights up when receiving the light beam OFF when light beam is interrupted
Control elements	Teach-In rotary switch
Control elements	Light-on/dark-on changeover switch preset to light-on
Contrast detection levels	18 % - clear glass bottles 40 % - colored glass or opaque materials adjustable due to Teach-In 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

Conformity

Product standard	EN 60947-5-2
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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

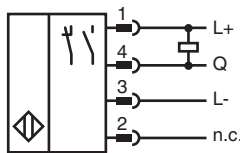
Housing width	11 mm
Housing height	31 mm
Housing depth	20 mm
Degree of protection	IP67
Connection	Connector M8 x 1 , 4-pin
Material	

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Technical Data

Housing	PC (Polycarbonate)
Optical face	PMMA
Mass	approx. 10 g
Tightening torque, fastening screws	0.6 Nm

Connection



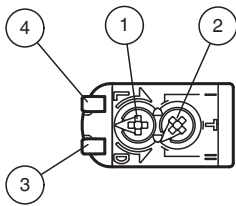
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

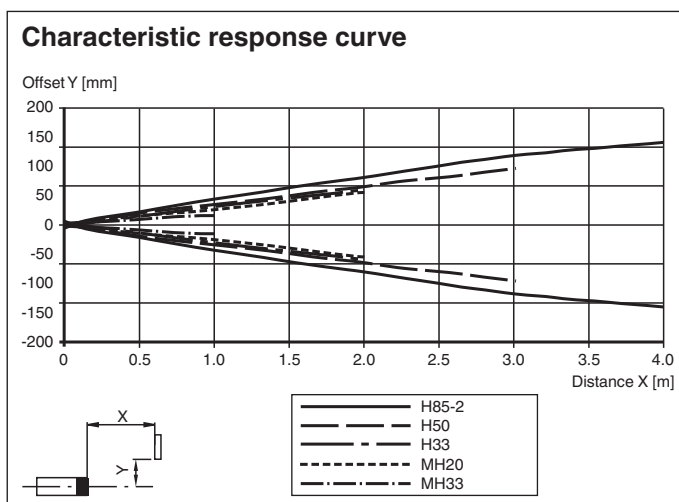
Assembly



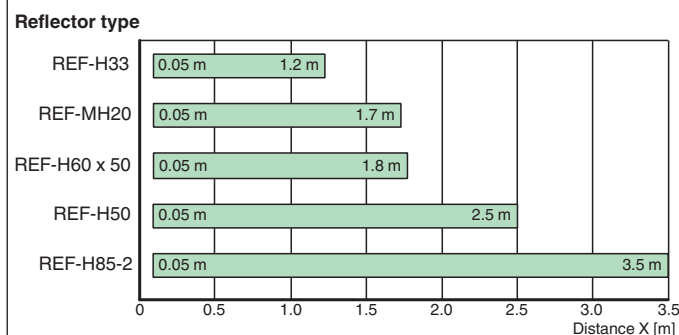
1	Light/dark changeover switch	
2	Teach-in and mode selection potentiometer	
	T Teach-in mode	
	I 18% contrast mode	
	II 40% contrast mode	
3	Signal indicator	yellow
4	Operating indicator	green

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

Characteristic Curve







Reflector-dependent effective operating distances, typical



Accessories

	OMH-ML100-09	Mounting aid for round steel \varnothing 12 mm or sheet 1.5 mm ... 3 mm
	OMH-ML100-01	Mounting aid for ML100 series, mounting bracket
	OMH-ML100-03	Mounting aid for round steel \varnothing 12 mm or sheet 1.5 mm ... 3 mm
	OMH-ML100-04	Mounting aid for ML100 series, mounting bracket
	REF-C110-2	Reflector, round \varnothing 84 mm, central mounting hole
	REF-H33	Reflector with screw fixing
	OFR-70-2	Reflective tape 70 mm x 70 mm
	REF-H85-2	Reflector, rectangular 84.5 mm x 84.5 mm, mounting holes

Accessories

	REF-H50	Reflector, rectangular 51 mm x 61 mm, mounting holes, fixing strap
	OFR-100/100	Reflective tape 100 mm x 100 mm
	V31-GM-2M-PUR	Female cordset single-ended M8 straight A-coded, 4-pin, PUR cable grey
	V31-WM-2M-PUR	Female cordset single-ended M8 angled A-coded, 4-pin, PUR cable grey