



Retroreflective sensor for glass detection

ML100-55-G-8523/103



- 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

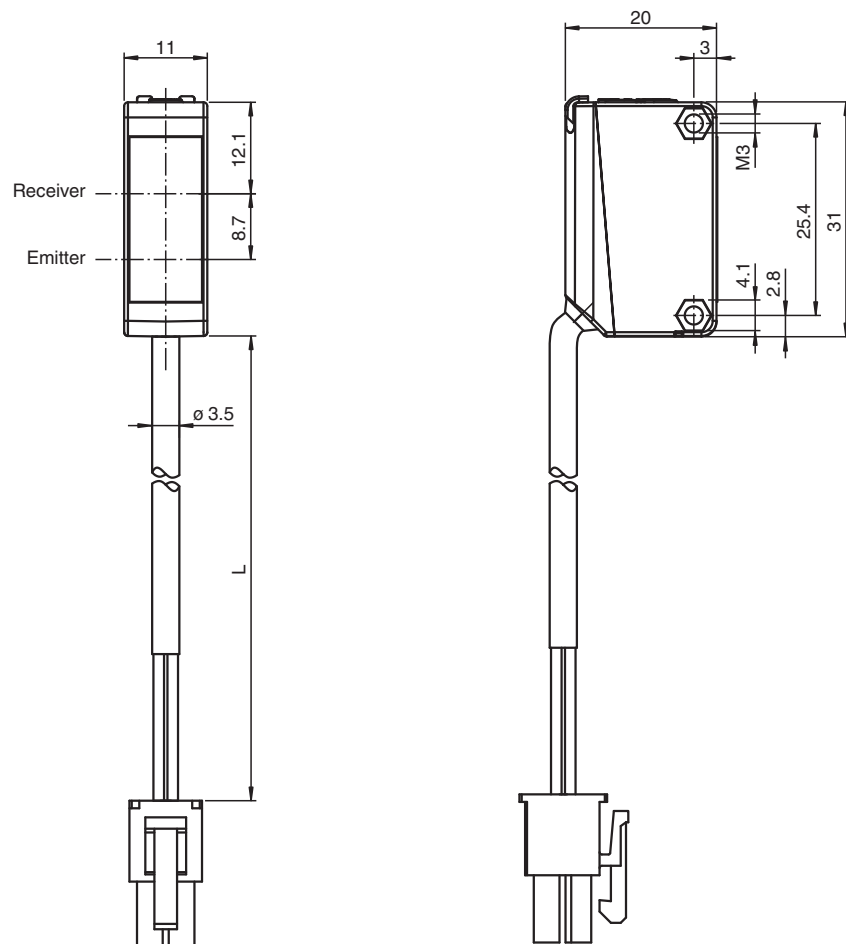
Retroreflective sensor for glass detection, plastic housing, detection range: 2.5 m, red light, teach-in, light/dark on, PNP output, cable with 4-pin Molex connector



Function

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



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
Angle of divergence	approx. 4 °
Optical face	frontal
Ambient light limit	EN 60947-5-2

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 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

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

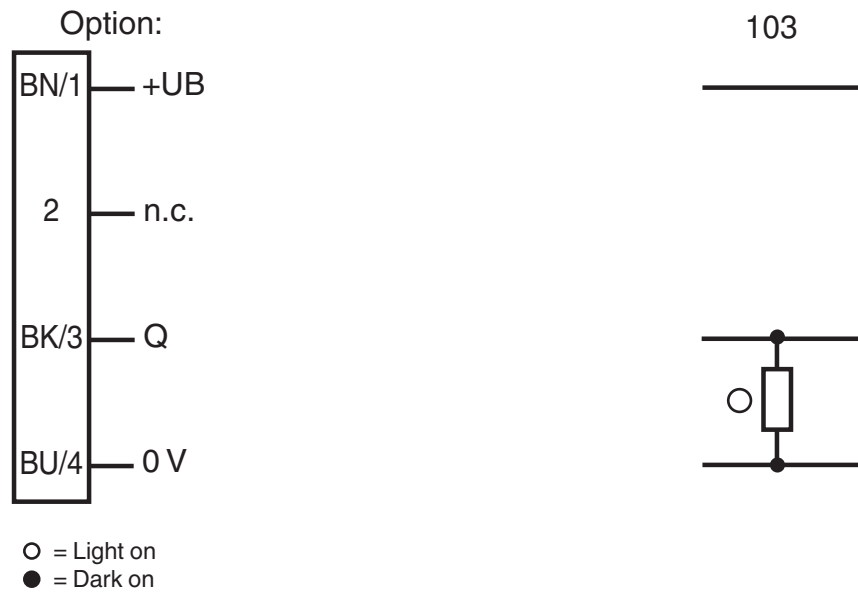
Housing width	11 mm
Housing height	31 mm
Housing depth	20 mm
Degree of protection	IP67
Connection	cable with 4-pin Molex connector
Material	

Release date: 2020-04-23 Date of issue: 2020-04-23 Filename: 70120357_eng.pdf

Technical Data

Housing	PC (Polycarbonate)	
Optical face		PMMA
Cable		
Length	L	150 mm
Mass	approx. 10 g	
Tightening torque, fastening screws	0.6 Nm	

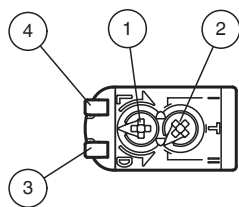
Connection Assignment



Connection



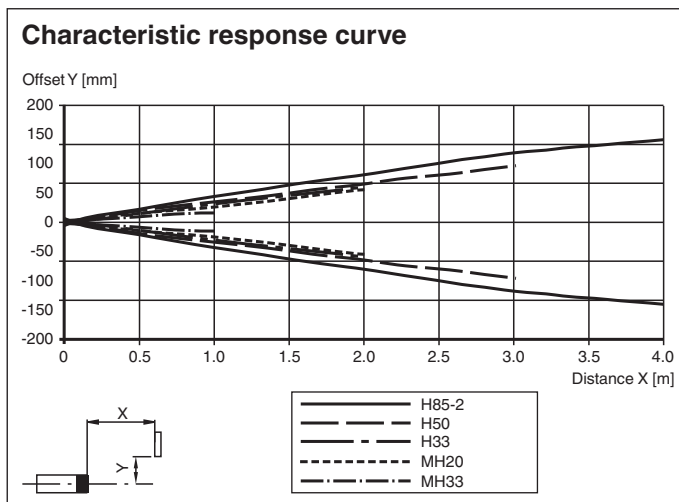
Assembly



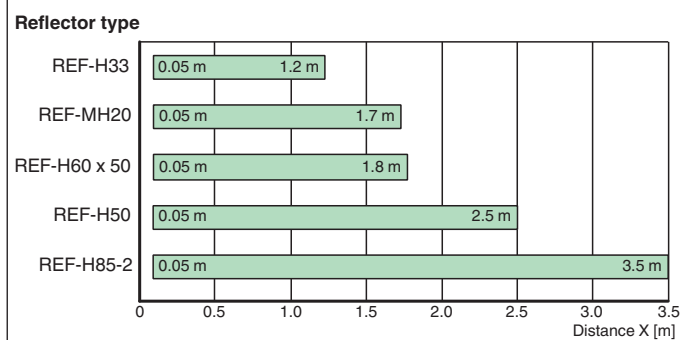
1	Light/dark changeover switch	
2	Teach-in and mode selection potentiometer	
	T Teach-in mode	
	I 18% contrast mode	
	II 40% contrast mode	
3	Signal indicator	yellow
4	Operating indicator	green

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