Dimensions

Model Number

ML8-55/102/143

Retroreflective sensor

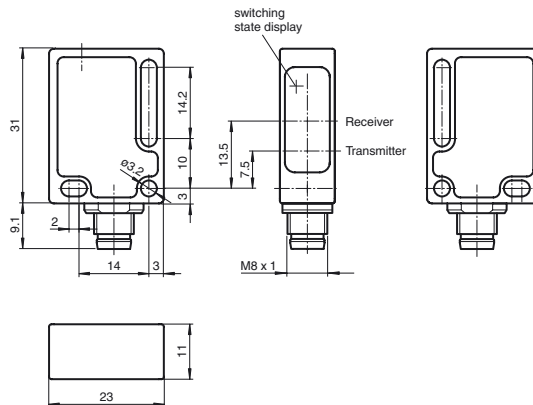with 4-pin, M8 x 1 connector

Features

- Cost-optimized series for standard tasks
- Miniature design
- Tamper-proof, no operating controls
- Yellow LED indicator behind the front panel
- Flexible use with versatile mounting opportunities
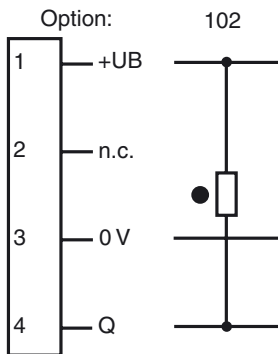
Product information

Small, robust and reliable, the ML8 series of miniature sensors is particularly suitable for non-contact detection of objects in confined spaces. The LED indicator is located behind the lens and provides reliable information on the sensor's operating status. The LED is always visible, even if the sensor is completely embedded. Flexible mounting options and fixed preset detection ranges simplify setup and operation.

Electrical connection

Option: 102

Pin	Signal
1	+UB
2	n.c.
3	0 V
4	Q

○ = 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)
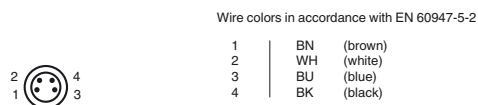
Indicators/operating means
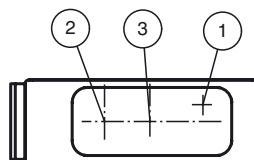
1	Switching state	yellow
2	Emitter	
3	Receiver	

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1

Technical data

General specifications

Effective detection range	0 ... 3 m
Reflector distance	0.02 ... 3 m
Threshold detection range	3.5 m
Reference target	H85-2 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 3.5 m
Angle of divergence	approx. 3 °
Ambient light limit	40000 Lux

Functional safety related parameters

$MTTF_d$	2340 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Function indicator	LED yellow: switching state

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC , class 2
Ripple		max. 10 %
No-load supply current	I_0	< 12 mA

Output

Switching type		dark 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
Voltage drop	U_d	≤ 1.5 V DC
Response time		1.8 ms

Ambient conditions

Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Storage temperature	-40 ... 75 °C (-40 ... 167 °F)

Mechanical specifications

Housing width	23 mm
Housing height	31 mm
Housing depth	11 mm
Degree of protection	IP67
Connection	M8 x 1 connector, 4-pin
Material	
Housing	PC (glass-fiber-reinforced Makrolon)
Optical face	PMMA
Connector	plastic
Mass	approx. 10 g
Tightening torque, fastening screws	≤ 0.4 Nm

Compliance with standards and directives

Directive conformity	EMC Directive 2004/108/EC
Standard conformity	
Product standard	EN 60947-5-2:2007
Degree of protection	EN 60529
Standards	EN 50178, UL 508

Approvals and certificates

Protection class	II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1
UL approval	cULus Listed, Class 2 Power Source, Type 1 enclosure
CCC approval	CCC approval / marking not required for products rated ≤36 V

Accessories

Montagekit OMH-ML7-01
Mounting set consisting of bracket OMH-ML-01 sheet OMH-ML7-03, and fastening material

Montagekit OMH-ML7-02
Mounting set consisting of bracket OMH-ML-02 sheet OMH-ML7-03, and fastening material

OMH-ML7-01
Mounting aid for ML7 and ML8 series, Mounting bracket

OMH-ML7-02
Mounting aid for ML7 and ML8 series, Mounting bracket

OMH-ML7-03
Mounting aid for ML7 and ML8 series, Fixing plate

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

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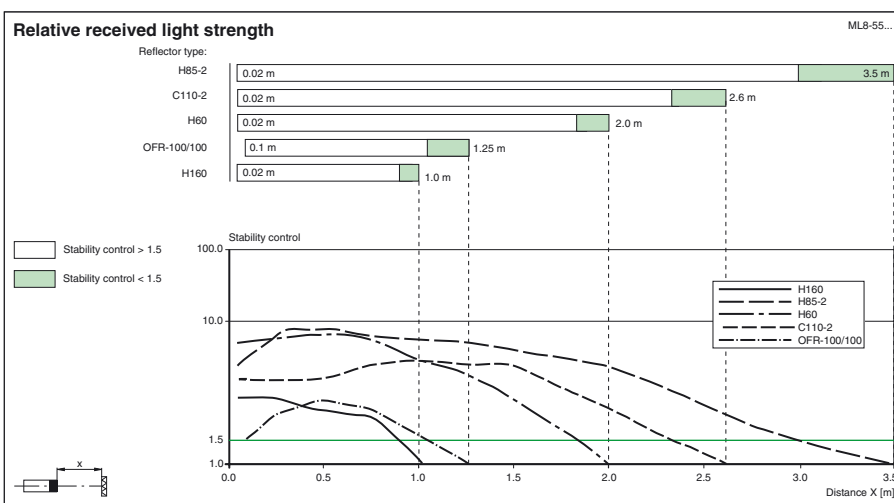Female cordset, M8, 4-pin, PVC cable

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

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

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

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

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Curves/Diagrams

Characteristic response curve   ML8-55

Offset Y [mm]

Distance X [m]

Legend:
- H85-2
- C110-2
- H60
- H160
- OFR-100/100

Relative received light strength   ML8-55...

Reflector type:

Reflector	Min	Max
H85-2	0.02 m	3.5 m
C110-2	0.02 m	2.6 m
H60	0.02 m	2.0 m
OFR-100/100	0.1 m	1.25 m
H160	0.02 m	1.0 m

Stability control > 1.5
Stability control < 1.5

Stability control

Legend:
- H160
- H85-2
- H60
- C110-2
- OFR-100/100

Distance X [m]

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