Model Number

ML8-8-HGU-220-RT/103/143

Convergent mode sensor
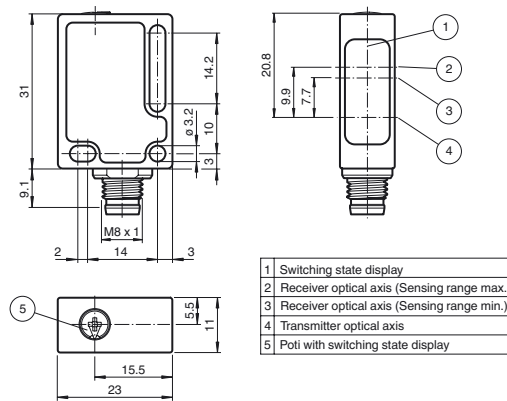with 4-pin, M8 x 1 connector

Features

- Miniature design
- Background interference suppression
- Mechanical adjustable detection range
- Not sensitive to ambient light, even with switched energy saving lamps
- Flexible mounting possibilities due to slotted hole

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.
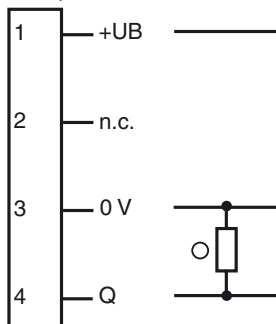
Dimensions

1	Switching state display
2	Receiver optical axis (Sensing range max.)
3	Receiver optical axis (Sensing range min.)
4	Transmitter optical axis
5	Poti with switching state display

Electrical connection

Option: 103

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

○ = Light on
● = Dark on

Pinout

2 4
1 3

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

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Technical data

General specifications

Detection range	5 ... 220 mm
Adjustment range	100 ... 220 mm
Reference target	standard white, 100 mm x 100 mm
Light source	LED , 645 nm
Light type	modulated visible red light
Diameter of the light spot	approx. 10 mm at detection range 220 mm
Angle of divergence	approx. 2.6 °
Ambient light limit	EN 60947-5-2

Functional safety related parameters

$MTTF_d$	830 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Function indicator	2 LEDs yellow, light up in case of detection
Control elements	Detection range adjuster

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC , class 2
Ripple		max. 10 %
No-load supply current	I_0	< 15 mA

Output

Switching type		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
Voltage drop	U_d	≤ 1.5 V DC
Switching frequency	f	500 Hz
Response time		≤ 1 ms

Ambient conditions

Ambient temperature	-30 ... 60 °C (-22 ... 140 °F)
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)

Mechanical specifications

Degree of protection	IP65/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

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 bracket

OMH-ML7-02
Mounting bracket
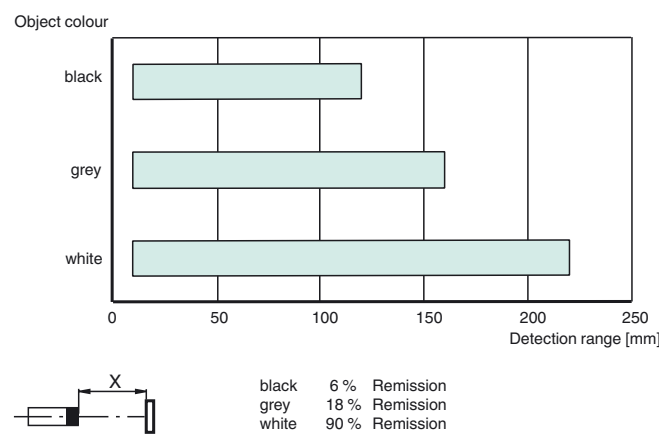
OMH-ML7-03
Fixing plate

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

Detection ranges

Object colour

Detection range [mm]

black	6 %	Remission
grey	18 %	Remission
white	90 %	Remission

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