Dimensions

Model Number

ML7-8-H-350-IR/59/65a/136/143

Background suppression sensor
with 4-pin, M8 x 1 connector

Features

- Miniature design
- Reliable detection of all surfaces, in-dependent of color and structure
- Minimal black-white difference
- Precision background suppression, adjustable
- Clearly visible function indicators
- Short circuit and low voltage indicator
- Certified by ECOLAB

Product information

Small, robust, effective, and reliable - these are the properties of the ML7 sensor series. Due to their small size, number of versions, and two different lens positions, they are par-ticularly suited for installation in tight spaces. The robust design and high quality of Pep-perl+Fuchs mean they can also be used under harsh environmental conditions. The efficient technology, switching frequencies up to 1000 Hz, high resistance to ambient light, and 4-in-1 output make the series suitable for non-contact object detection.
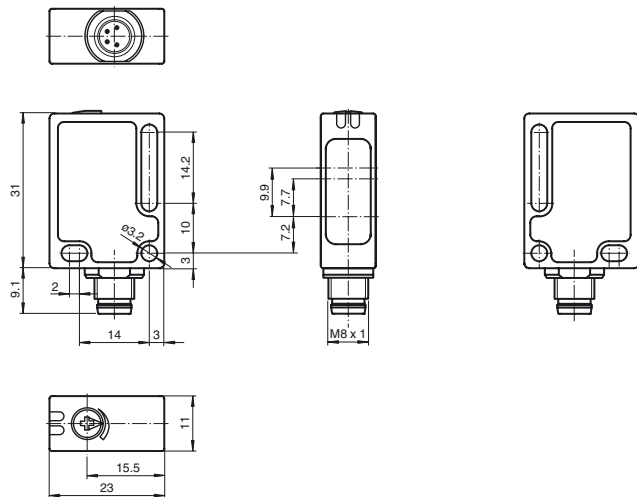
Electrical connection

Option:

○ = Light on
● = Dark on
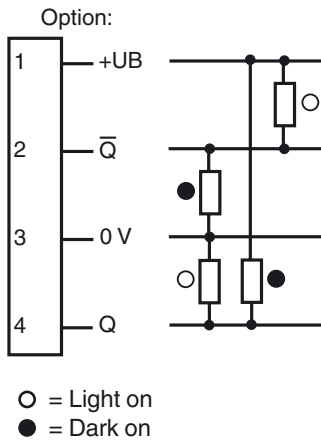
Pinout

Indicators/operating means
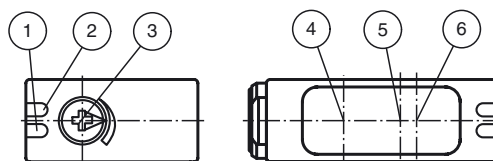
1	Operating display	green
2	Signal display	yellow
3	Sensing range adjuster	
4	Emitter	
5	Receiver TW min.	
6	Receiver TW max.	

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

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Technical data

General specifications

Detection range	5 ... 350 mm
Detection range min.	4 ... 25 mm
Detection range max.	10 ... 350 mm
Adjustment range	25 ... 350 mm
Reference target	standard white, 100 mm x 100 mm
Light source	IRED
Light type	modulated infrared light
Black/White difference (6 %/90 %)	< 17 %
Diameter of the light spot	approx. 15 mm at detection range 350 mm

Functional safety related parameters

$MTTF_d$	1580 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Operation indicator	LED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 4 Hz)
Function indicator	LED yellow: lights when object is detected
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	< 20 mA

Output

Switching type		light/dark on
Signal output		2 push-pull (4 in 1) outputs, complementary, short-circuit proof, reverse polarity protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Switching frequency	f	250 Hz
Response time		2 ms

Ambient conditions

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

Mechanical specifications

Degree of protection	IP67 / IP69K
Connection	M8 x 1 connector, 4-pin
Material	
Housing	PC (glass-fiber-reinforced Makrolon)
Optical face	PMMA
Connector	plastic
Mass	approx. 10 g

Compliance with standards and directives

Standard conformity	
Product standard	EN 60947-5-2:2007 IEC 60947-5-2:2007

Approvals and certificates

Protection class	II, rated voltage ≤ 50 V AC with pollution degree 1-2 according to IEC 60664-1
UL approval	cULus
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

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Curves/Diagrams

Difference in detection distance

ML7-8-H-350-IR...

Deviation of measured detection distance X [%]

Adjusted detection distance (white) X [mm]

- — — grey 18 %
- — · — black 6 %

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

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