Model Number

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

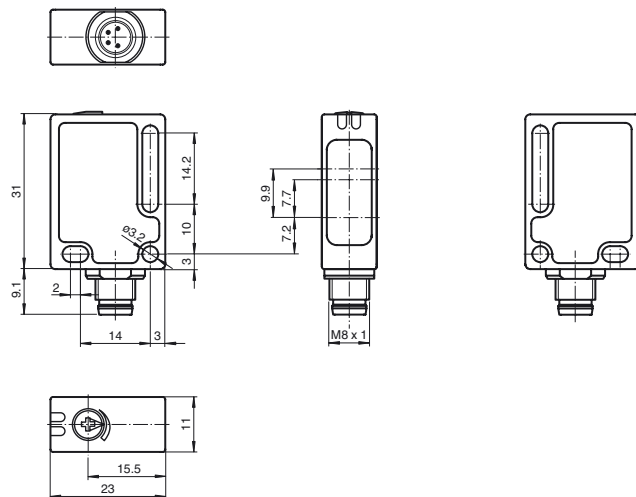Background suppression sensor
with 4-pin, M8 x 1 connector

Features

- Miniature design
- Reliable detection of all surfaces, independent 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
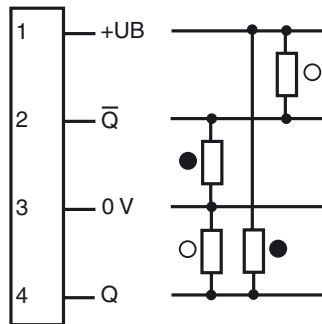
Product information

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 particularly suited for installation in tight spaces. The robust design and high quality of Pepperl+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.

Dimensions

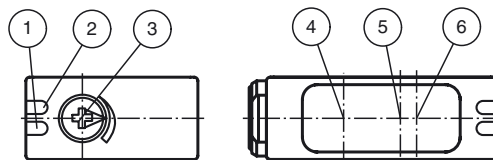## Electrical connection

Option:

○ = 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	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	Sensing 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

Conformity

Product standard	EN 60947-5-2

Ambient conditions

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

Mechanical specifications

Housing width	11 mm
Housing height	31 mm
Housing depth	23 mm
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

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 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 single-ended, M8, 4-pin, PUR cable

V31-GM-2M-PUR
Female cordset single-ended, 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

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 %

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