



### Model Number

**ML7-8-H-140-IR/59/65a/115b/136**

Background suppression sensor  
with fixed cable and M12 connector, 4-pin

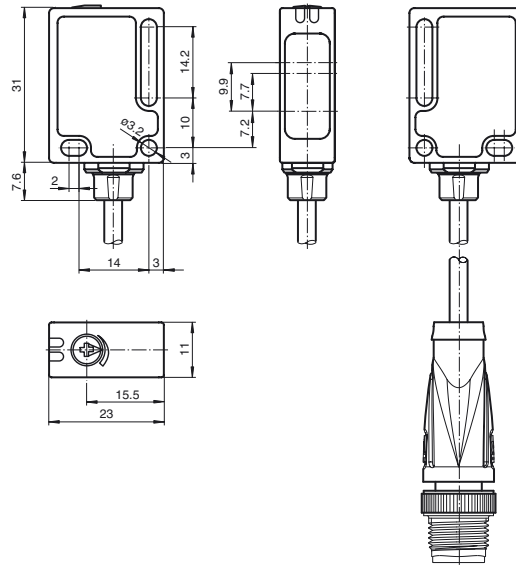
### Features

- 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

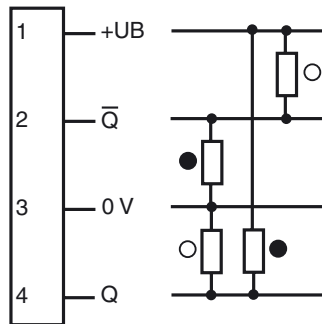
Small, robust, effective, and reliable - these are the properties of the ML7 sensor series. Due to their small size, number of versions, and two different lens positions, they are particularly suited for installation in tight spaces. The robust design and high quality of Pepperl+Fuchs mean they can also 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



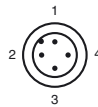
### Electrical connection

Option:



○ = Light on  
● = Dark on

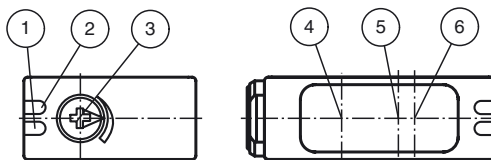
### Pinout



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.	

**Technical data****General specifications**

Detection range	4 ... 140 mm
Detection range min.	4 ... 25 mm
Detection range max.	12 ... 140 mm
Adjustment range	25 ... 140 mm
Reference target	standard white, 100 mm x 100 mm
Light source	IREd
Light type	modulated infrared light
Black/White difference (6 %/90 %)	< 6 %
Diameter of the light spot	approx. 5 mm at detection range 120 mm

**Functional safety related parameters**

MTTF <sub>d</sub>	1580 a
Mission Time (T <sub>M</sub> )	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 <sub>B</sub>	10 ... 30 V DC , class 2
Ripple		max. 10 %
No-load supply current	I <sub>0</sub>	< 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	1 kHz
Response time	500 μs	

**Conformity**

Product standard	EN 60947-5-2
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**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	fixed cable 200 mm with M12 connector, 4-pin
Material	
Housing	PC (glass-fiber-reinforced Makrolon)
Optical face	PMMA
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**

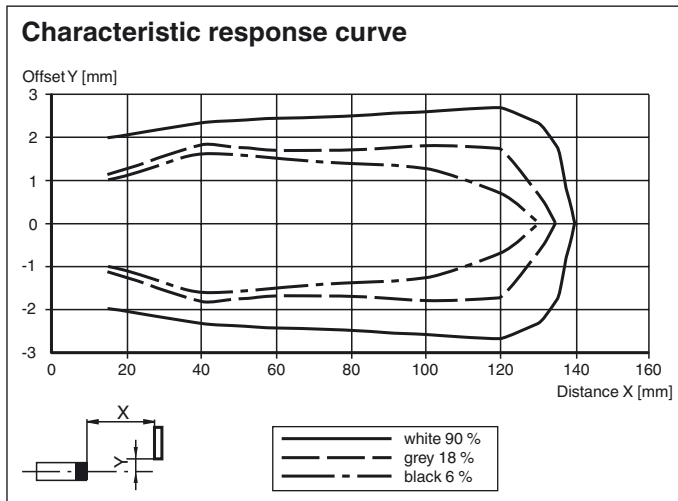
Mounting aid for ML7 and ML8 series, Mounting bracket

**OMH-ML7-03**

Mounting aid for ML7 and ML8 series, Fixing plate

Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

## Curves/Diagrams



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