



Model Number

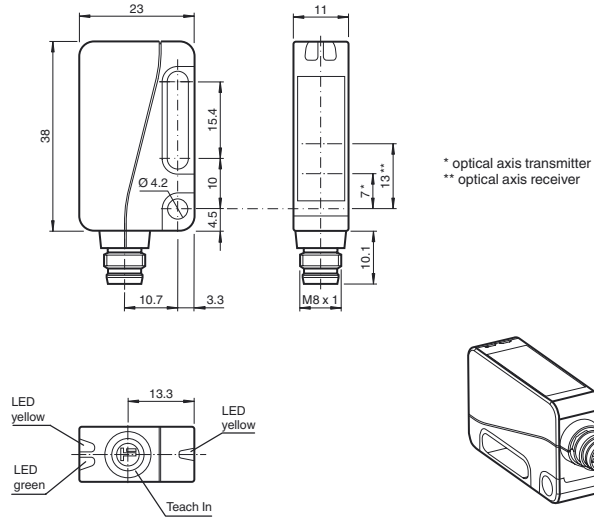
ML9-8-H-50/25/65b/103/123/143

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

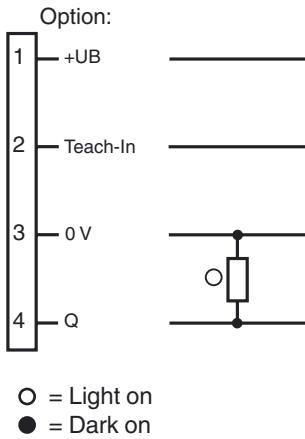
Features

- Ultra bright LEDs for power on and switching state
- Flashing power on LED in case of short-circuit
- TEACH-IN
- Not sensitive to ambient light, even with switched energy saving lamps
- Protected against mutual interference (no cross-talk)
- Protection class II

Dimensions



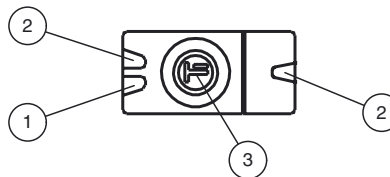
Electrical connection



Pinout



Indicators/operating means



1	LED green
2	LED yellow
3	Teach-In

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

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Technical data**General specifications**

Detection range	5 ... 50 mm
Detection range min.	10 ... 15 mm
Detection range max.	5 ... 50 mm
Adjustment range	15 ... 50 mm
Reference target	standard white, 100 mm x 100 mm
Light source	LED
Light type	modulated visible red light
Black/White difference (6%/90%)	< 10 %
Diameter of the light spot	approx. 5 mm at a distance of 50 mm
Angle of divergence	approx. 6 °
Ambient light limit	30000 Lux

Functional safety related parameters

MTTF _d	1080 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	Teach-In key

Electrical specifications

Operating voltage	U _B	10 ... 30 V DC , class 2
Ripple		max. 10 %
No-load supply current	I ₀	< 20 mA at 24 V

Input

Function input	Ext. Teach-In input (ET)
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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	≤ 2 V DC
Switching frequency	f	1000 Hz
Response time		0.5 ms

Ambient conditions

Ambient temperature	-25 ... 60 °C (-13 ... 140 °F)
Storage temperature	-40 ... 75 °C (-40 ... 167 °F)

Mechanical specifications

Degree of protection	IP67
Connection	M8 x 1 connector, 4-pin
Material	
Housing	PC (glass-fiber-reinforced Makrolon)
Optical face	glass
Connector	plastic
Mass	approx. 15 g

Compliance with standards and directives

Standard conformity	
Product standard	EN 60947-5-2:2007 IEC 60947-5-2:2007
Standards	EN 50178, UL 508

Approvals and certificates

Protection class	II, rated voltage ≤ 50 V AC with pollution degree 1-2 according to IEC 60664-1 functional insulation acc. to DIN EN 50178
UL approval	cULus
CCC approval	CCC approval / marking not required for products rated ≤36 V

Accessories**OMH-ML9**

Mounting bracket

OMH-ML9-01

Threaded bolt M3

V31-GM-2M-PVC

Female cordset, M8, 4-pin, PVC cable

V31-WM-2M-PVC

Female cordset, M8, 4-pin, PVC cable

V31-GM-5M-PUR

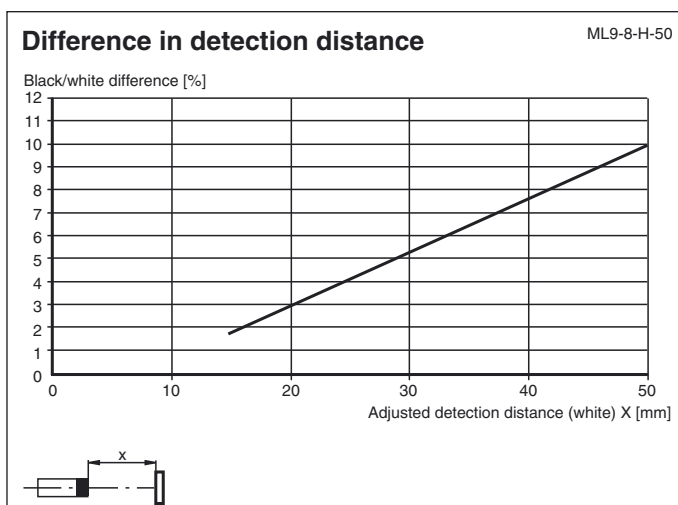
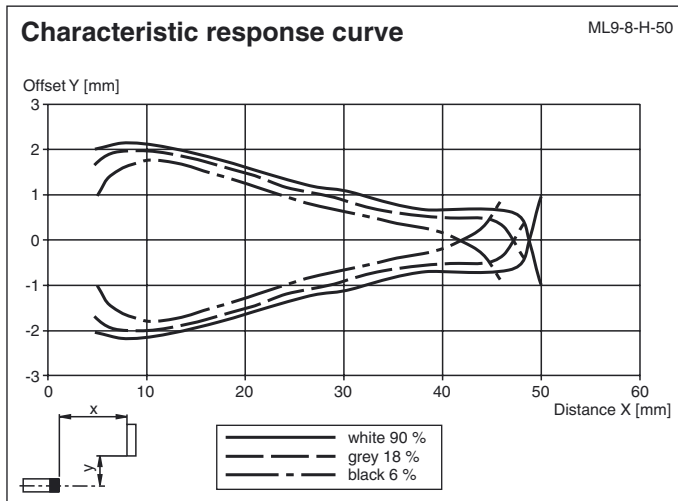
Female cordset, M8, 4-pin, PUR cable

V31-WM-5M-PUR

Female cordset, M8, 4-pin, PUR cable

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

Curves/Diagrams



Setting Instructions

Setting Instructions for Devices with TEACH-IN

After the operating voltage is applied, the green LED lights up. The sensor is automatically in max. detection range status (state as supplied) or in the status of the most recent TEACH-IN setting.

Mount a suitable reflector opposite the photoelectric sensor.

TEACH-IN with the TEACH key

- Remove the detected object from the light beam.
- Press the TEACH key. The green LED indicator light goes off briefly to confirm this.
- Hold down the TEACH key until the yellow and green indicator LEDs flash synchronously (about 2.5 Hz). Then release the Teach key
- During internal setup of the sensor, the green and yellow indicator LEDs flash alternately (about 2.5 Hz).
- TEACH-IN successful: Only the green indicator LEDs is lit. The device is ready for operation.
- TEACH-IN not successful: The green and yellow indicator LEDs flash quickly and alternately (about 8 Hz) for about 5 seconds. Then the sensor switches to the status with maximum detection range. After that, repeat the TEACH-IN procedure, starting with step 1.

TEACH-IN via external TEACH-IN input (ET)

TEACH-IN can also be initiated via the external TEACH-IN input (ET)

To do this, the ET must be open (or at 0 V) for at least 50 ms, after which +UB is applied for a duration of 50 to 80 ms.

TEACH-IN lasts for a maximum of 11 seconds (if not successful).

