



Model Number

ML4.2-8-H-20-RT/DS/25/95/136

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

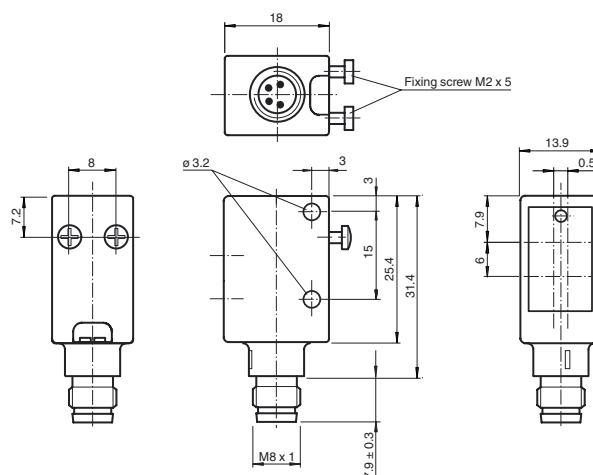
Features

- Dual sensor with two Light spots
- Light spot signals are directly connected to both independent switching outputs
- Very small black-white difference
- Short circuit and low voltage indicator
- Metal-reinforced fastening holes
- Tamper-proof version with no adjustments
- Push-pull outputs

Product information

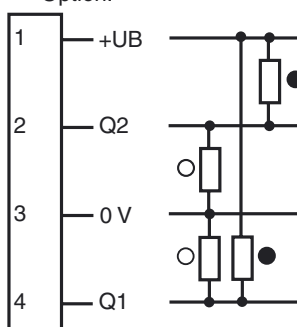
The ML4.2 series is characterized by a robust, powerful and standard design in a miniature housing. The housing offers IP67/ IP69K degree of protection, a scratch- and chemical-resistant lens, highly visible LEDs and robust all-metal bushings for mounting. Adjustable and tamper-proof sensors are available with a universal push-pull output and an electrical light ON/dark ON switch. The sensors have a high ambient light limit. Reflections from the background are suppressed. The unusually small, sharp light spot and the quick response time offer maximum switching precision on object edges.. Both red and infrared light sources are available. A high-performance fixed focus background suppressor is a useful feature. The sensors are suitable for precise object detection and open up a wide range of application fields.

Dimensions



Electrical connection

Option:

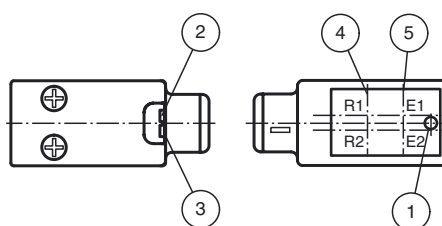


- = Light on
● = Dark on

Pinout



Indicators/operating means



1	operating display	green
2	indication of the switching state Q1	yellow
3	indication of the switching state Q2	yellow
4	receiver axis	
5	emitter axis	

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

Detection range	7 ... 20 mm
Detection range max.	2 ... 25 mm
Background suppression	starts from 25 mm
Light source	2 LEDs
Light type	660 nm visible red light
Black/White difference (6 %/90 %)	approx. 1 mm
Diameter of the light spot	2 light spots: size 2.5 mm distance 5 mm at 20 mm
Angle of divergence	approx. 5 °

Ambient light limit

Continuous light	40000 Lux
Modulated light	5000 Lux

Functional safety related parameters

MTTF _d	1940 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Operating display	LED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 4 Hz)
Function display	LEDs yellow: light up when object is detected

Electrical specifications

Operating voltage	U _B	10 ... 30 V DC
Ripple		10 %
No-load supply current	I ₀	< 20 mA

Output

Switching type	light on +UB dark on: 0 V	
Signal output	2 Push-pull outputs, short-circuit protected, reverse polarity protection	
Switching voltage	max. 30 V DC	
Switching current	max. 100 mA	
Voltage drop	U _d	≤ 2.5 V DC
Switching frequency	f	500 Hz
Response time	1 ms	

Ambient conditions

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

Mechanical specifications

Protection degree	IP67 / IP69K
Connection	M8 x 1 connector, 4-pin
Material	
Housing	ABS
Optical face	PMMA
Mass	approx. 10 g

Compliance with standards and directives

Standard conformity	
Product standard	EN 60947-5-2:2007 IEC 60947-5-2:2007
Shock and impact resistance	IEC / EN 60068. half-sine, 40 g in each X, Y and Z directions
Vibration resistance	IEC / EN 60068-2-6. Sinus. 10 -150 Hz, 5 g in each X, Y and Z directions

Approvals and certificates

CE conformity	yes
UL approval	cULus Listed
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.

Accessories**OMH-4.1**

Mounting Clamp

OMH-ML6

Mounting bracket

OMH-ML6-U

Mounting bracket

OMH-ML6-Z

Mounting bracket

V31-GM-2M-PVC

M8, 4-pin socket, PVC cable

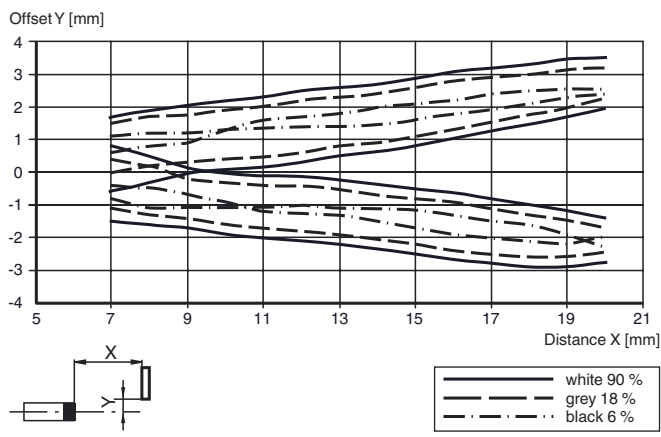
V31-WM-2M-PVC

M8, 4-pin socket, PVC cable

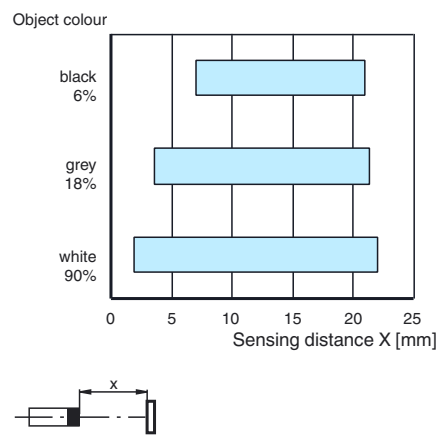
Other suitable accessories can be found at
www.pepperl-fuchs.com

Curves/Diagrams

Characteristic response curve



Detection ranges



Curves/Diagrams

Emitting characteristics

