CE cULus VISO⊕

Model Number

ML4.2-8-H-20-RT/40b/95/110/130

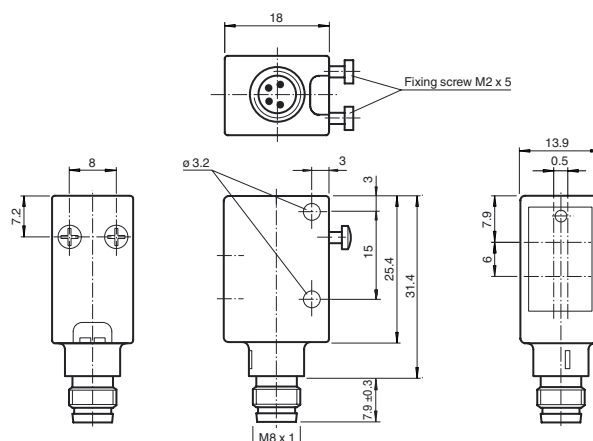Background suppression sensor
with 4-pin, M8 x 1 connector

Features

- Precise background suppression
- Very small black-white difference
- Small, sharp light spot
- Metal-reinforced fastening holes
- Tamper-proof version with no adjust-ments
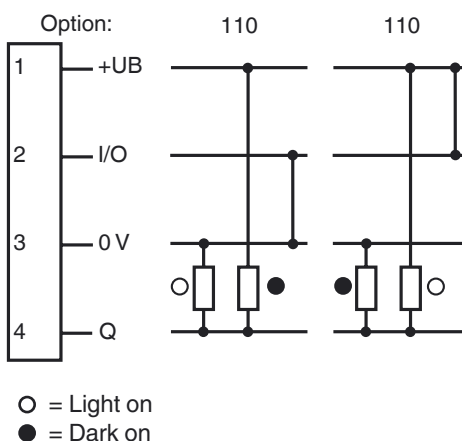- Short response time
- Push-pull output

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 sup-pressed. The unusually small, sharp light spot and the quick response time offer maxi-mum switching precision on object edges.. Both red and infrared light sources are avai-lable. A high-performance fixed focus back-ground suppressor is a useful feature. The sensors are suitable for precise object detec-tion and open up a wide range of application fields.
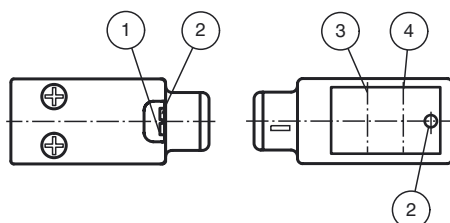
Dimensions

18
Fixing screw M2 x 5
8
ø 3.2
3
13.9
0.5
7.2
3
7.9
15
6
25.4
31.4
7.9 ±0.3
M8 x 1

Electrical connection

Option: 110   110

1 — +UB
2 — I/O
3 — 0 V
4 — Q

○ = Light on
● = Dark on

Pinout

2 4
1 3

Indicators/operating means

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

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

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Technical data

General specifications

Detection range	7 ... 20 mm
Detection range max.	5 ... 25 mm
Background suppression	starts from 25 mm
Light source	LED
Light type	modulated visible red light , 660 nm
Black/White difference (6 %/90 %)	approx. 1 mm
Diameter of the light spot	approx. 1.5 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

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

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC
Ripple		10 %
No-load supply current	I_0	< 25 mA

Output

Switching type		light/dark on electrically switchable
Signal output		Push-pull output, short-circuit protected, reverse polarity protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Voltage drop	U_d	≤ 2.5 V DC
Switching frequency	f	2000 Hz
Response time		250 µs

Ambient conditions

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

Mechanical specifications

Degree of protection	IP67 / IP69K
Connection	M8 x 1 connector, 4-pin
Material	
Housing	ABS
Optical face	glass pane
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	CCC approval / marking not required for products rated ≤36 V

Accessories

OMH-4.1
Mounting Clamp

OMH-ML6
Mounting bracket

OMH-ML6-U
Mounting bracket

OMH-ML6-Z
Mounting bracket

V31-GM-2M-PVC
Female cordset, M8, 4-pin, PVC cable

V31-WM-2M-PVC
Female cordset, M8, 4-pin, PVC cable

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

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Curves/Diagrams

Characteristic response curve

ML4.2-8-H-20-RT...

Offset Y [mm]

Distance X [mm]

————	white 90 %
— — —	grey 18 %
—·—·—	black 6 %

Detection ranges

ML4.2-8-H-20-RT...

Object colour

black

grey

white

Detection range [mm]

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

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