Dimensions

Model Number

ML6-8-H-150-IR/59/65a/95/136

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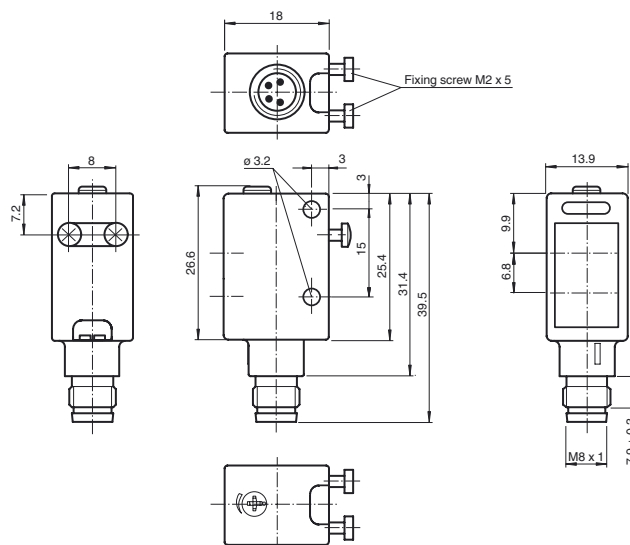with 4-pin, M8 x 1 connector

Features

- Precise background suppression
- Adjustable background suppression
- Small, sharp light spot
- Very small black-white difference
- Highly visible LEDs for Power-On, switching status, short-circuit, and un-dervoltage
- Metal-reinforced fastening holes
- Push-pull output

Electrical connection

Option:

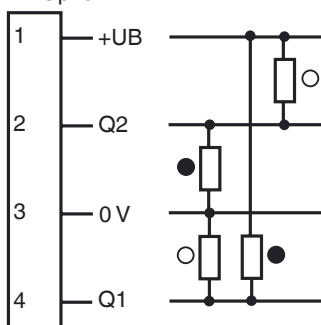○ = Light on
● = Dark on

Product information

The ML6 series is characterized by a robust, powerful and standard design in a miniature housing. The housing offers IP67/IP69K degree of protection, a food-grade lens, highly visible LEDs and robust all-metal bushings for mounting. Adjustable and tam-per-proof sensors with a double push-pull output are available. The sensors have a high ambient light limit. Reflections from the back-ground are suppressed. The unusually small, sharp light spot and the quick response time offer maximum switching precision on object edges. Clearly visible red light sources facili-tates alignment. A high-performance fixed focus background suppressor is a useful fea-ture. The sensors are suitable for precise object detection and open up a wide range of application fields.
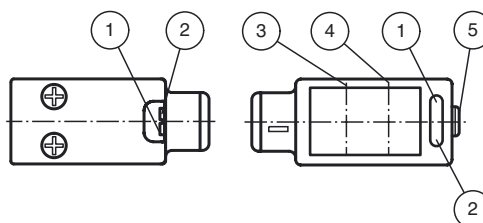
Pinout

Indicators/operating means

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

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

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Technical data

General specifications

Detection range	15 ... 150 mm
Detection range min.	10 ... 30 mm
Detection range max.	18 ... 150 mm
Adjustment range	30 ... 150 mm
Reference target	standard white, 100 mm x 100 mm
Light source	IRED
Light type	modulated infrared light , 880 nm
Black/White difference (6 %/90 %)	< 15 %
Diameter of the light spot	approx. 6 mm at detection range 150 mm
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
Control elements	Detection range adjuster

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC , class 2
Ripple		max. 10 %
No-load supply current	I_0	< 25 mA

Output

Switching type		light/dark on, programmable
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
Voltage drop	U_d	≤ 2.5 V DC
Switching frequency	f	1000 Hz
Response time		500 µs

Ambient conditions

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

Mechanical specifications

Degree of protection	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

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-5M-PUR
Female cordset, M8, 4-pin, PUR cable
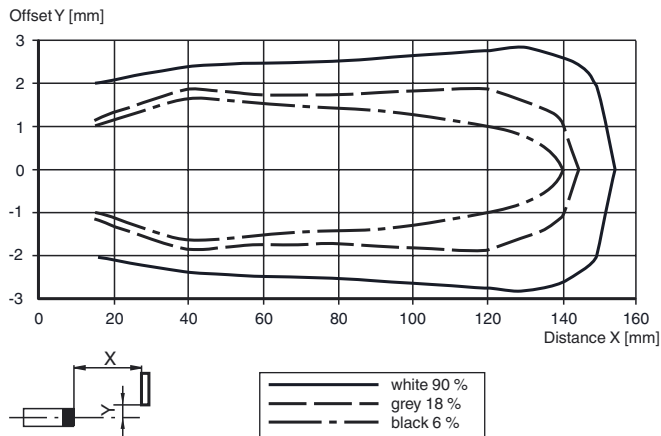
V31-WM-5M-PUR
Female cordset, M8, 4-pin, PUR cable

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

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

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Curves/Diagrams

Characteristic response curve

Offset Y [mm]

Distance X [mm]

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

Difference in detection distance

Deviation of measured detection distance X [%]

Adjusted detection distance (white) X [mm]

—·—·—	grey 18 %
—··—··—	black 6 %

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

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