Model Number

ML6-8-H-20-RT/DS/25/95/136

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

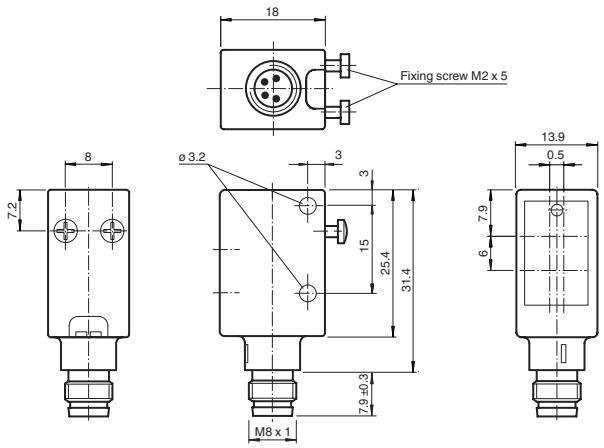
Features

- 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 output

Product information

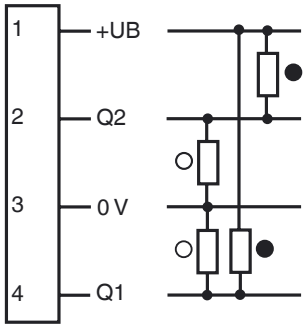
The ML6 series is characterized by a robust, powerful and standard design in a miniature housing. The housing offers IP67/IP69K degree of protection, a food-grade lens, highly visible LEDs and robust all-metal bushings for mounting. Adjustable and tamper-proof sensors with a double push-pull output are available. 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. Clearly visible red light sources facilitates alignment. 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

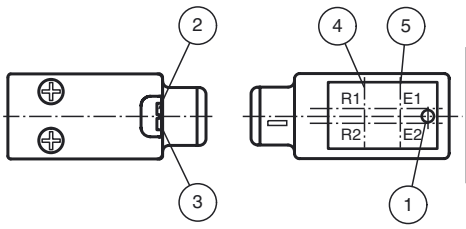
Option:



○ = 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	

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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		
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		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 (4 in 1) outputs, 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	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		
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-2M-PUR
Female cordset, M8, 4-pin, PUR cable

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

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

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Refer to “General Notes Relating to Pepperl+Fuchs Product Information”.
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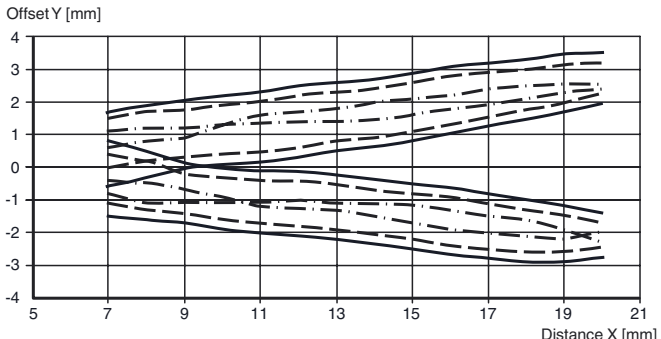
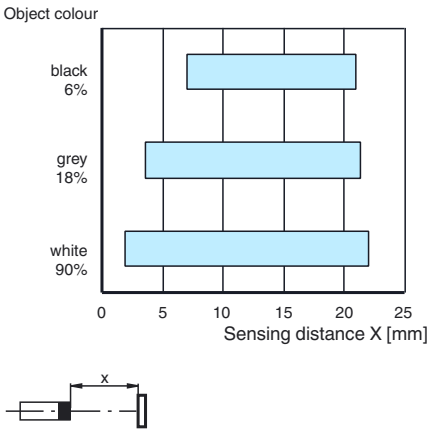
Curves/Diagrams

Characteristic response curve

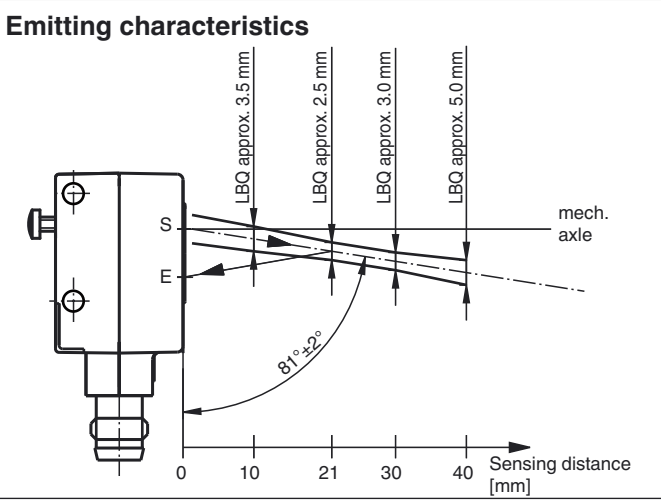


Detection ranges



Curves/Diagrams

Emitting characteristics



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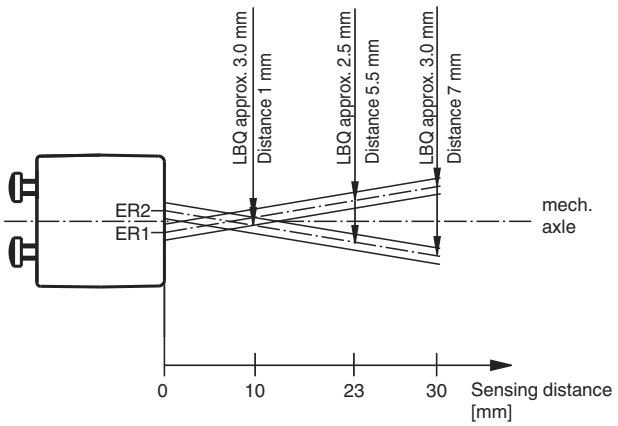
Emitting characteristics



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