Background suppression sensor
ML6-8-H-40-RT/59/95/136

- Precise background suppression
- Very small black-white difference
- Small, sharp light spot
- Highly visible LEDs for Power-On, switching status, short-circuit, and undervoltage
- Metal-reinforced fastening holes
- Tamper-proof version with no adjustments
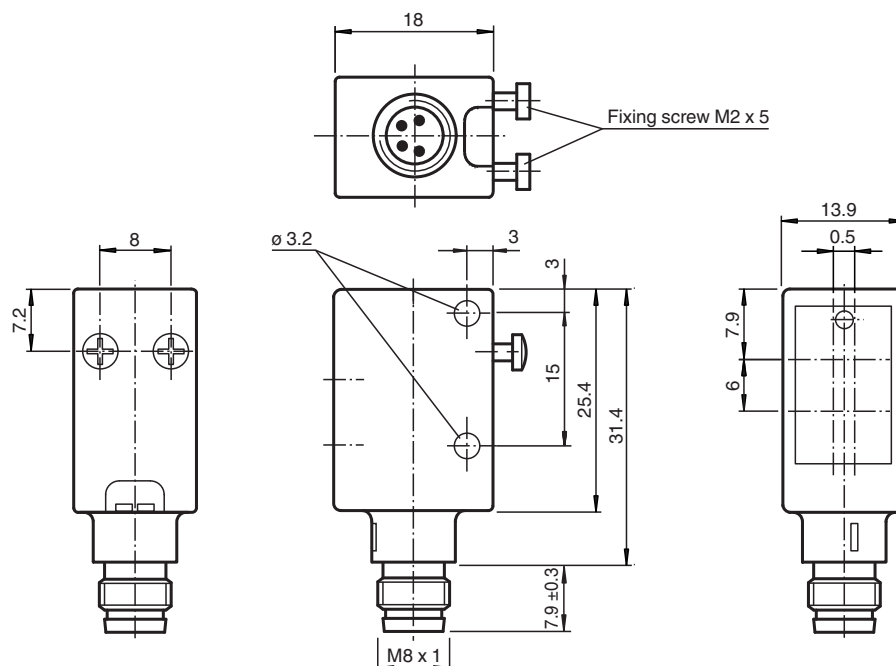- Push-pull output

Triangulation sensor with background suppression for standard applications, miniature design, 40 mm adjustable detection range, light/dark on, red light, two push-pull outputs, M8 plug

Function

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.

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

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Dimensions

Technical Data

General specifications

Detection range	10 ... 40 mm
Detection range max.	10 ... 50 mm
Background suppression	starts from 50 mm
Light source	LED
Light type	modulated visible red light , 660 nm
Black-white difference (6 %/90 %)	approx. 3 mm
Diameter of the light spot	approx. 3 mm at 40 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 %

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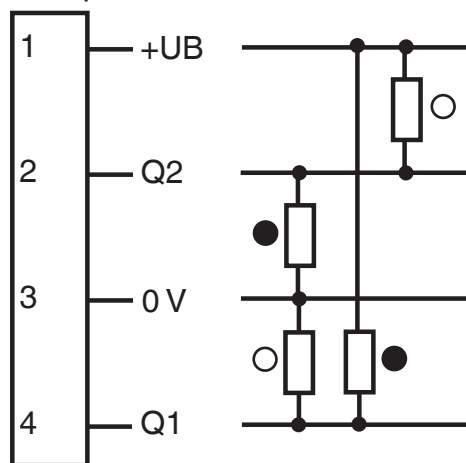Singapore: +65 6779 9091
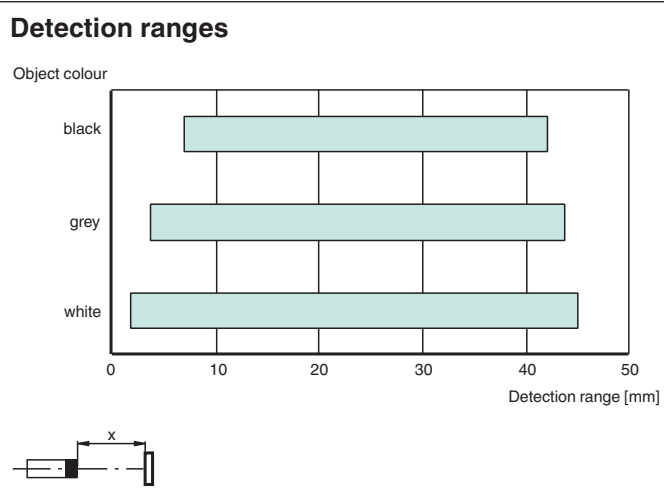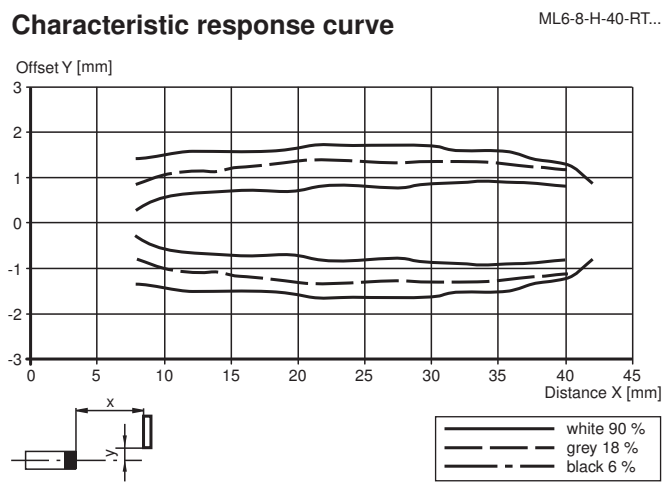fa-info@sg.pepperl-fuchs.com

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Technical Data

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		0.5 ms
Conformity		
Product standard		EN 60947-5-2
Compliance with standards and directives		
Standard conformity		
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
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Storage temperature		-20 ... 75 °C (-4 ... 167 °F)
Mechanical specifications		
Housing width		13.9 mm
Housing height		31.4 mm
Housing depth		18 mm
Degree of protection		IP67 / IP69K
Connection		M8 x 1 connector, 4-pin
Material		
Housing		ABS
Optical face		PMMA
Mass		approx. 10 g

Connection Assignment

Option:

○ = Light on
● = Dark on

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

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Connection Assignment

Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Assembly

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

Characteristic response curve

ML6-8-H-40-RT...

Offset Y [mm]

Distance X [mm]

white 90 %
grey 18 %
black 6 %

Detection ranges

Object colour

black

grey

white

Detection range [mm]

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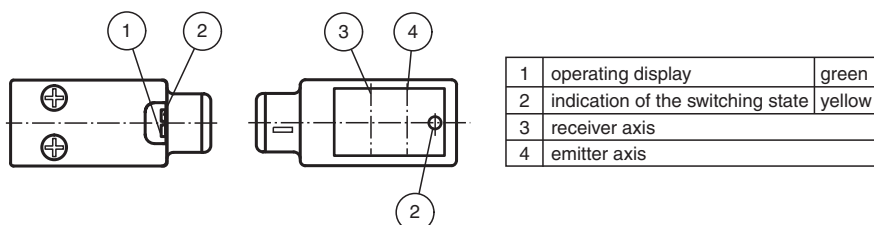fa-info@sg.pepperl-fuchs.com

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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 single-ended M8 straight A-coded, 4-pin, PUR cable grey
	V31-WM-2M-PUR	Female cordset single-ended M8 angled A-coded, 4-pin, PUR cable grey

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