



**Model Number**

**ML6-8-H-150-RT/59/65a/115b/136**

Background suppression sensor with 300 mm fixed cable and 4-pin, M12 x 1 connector

**Features**

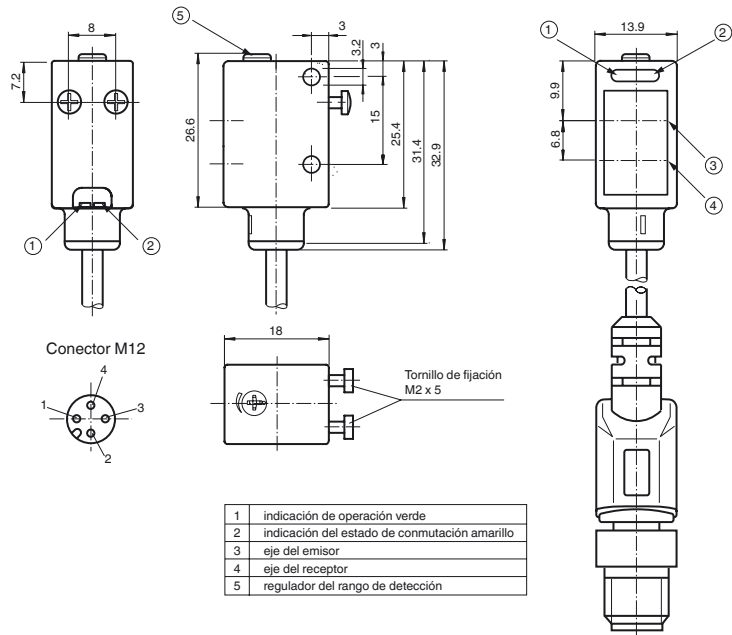
- Precise background suppression
- Adjustable background suppression
- Small, sharp light spot
- Very small black-white difference
- Highly visible LEDs for Power-On, switching status, short-circuit, and undervoltage
- Metal-reinforced fastening holes
- Push-pull output

**Product information**

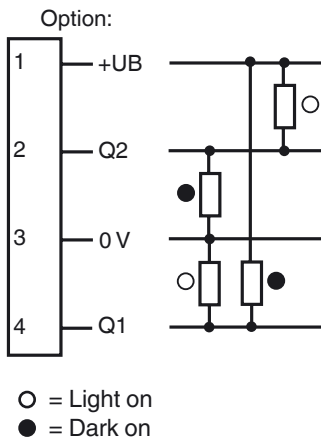
The ML6 series is characterized by a robust, powerful and standard design in a miniature housing. The housing offers IP67/IP69K degree of protection, a food-grade lens, highly visible LEDs and robust all-metal bushings for mounting. Adjustable and tamper-proof sensors with a double push-pull output are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

Release date: 2014-05-12 16:15 Date of issue: 2014-05-23 186537\_eng.xml

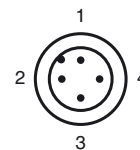
**Dimensions**



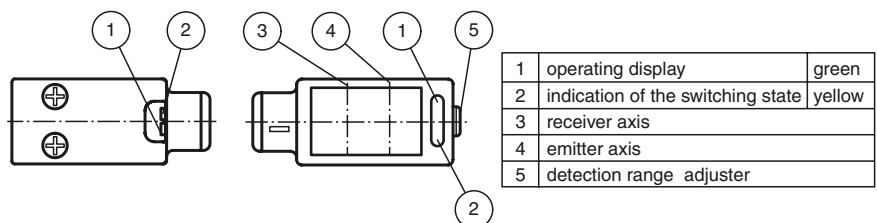
**Electrical connection**



**Pinout**



**Indicators/operating means**



**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	LED
Light type	modulated visible red light , 660 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 <sub>d</sub>	1940 a
Mission Time (T <sub>M</sub> )	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 <sub>B</sub>	10 ... 30 V DC , class 2
Ripple		max. 10 %
No-load supply current	I <sub>0</sub>	< 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 <sub>d</sub>	≤ 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	-20 ... 75 °C (-4 ... 167 °F)

**Mechanical specifications**

Degree of protection	IP67 / IP69K
Connection	300 mm fixed cable with M12 x 1, 4-pin connector
Material	
Housing	ABS
Optical face	PMMA
Cable	PUR
Mass	approx. 15 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

**V1-G-5M-PUR**

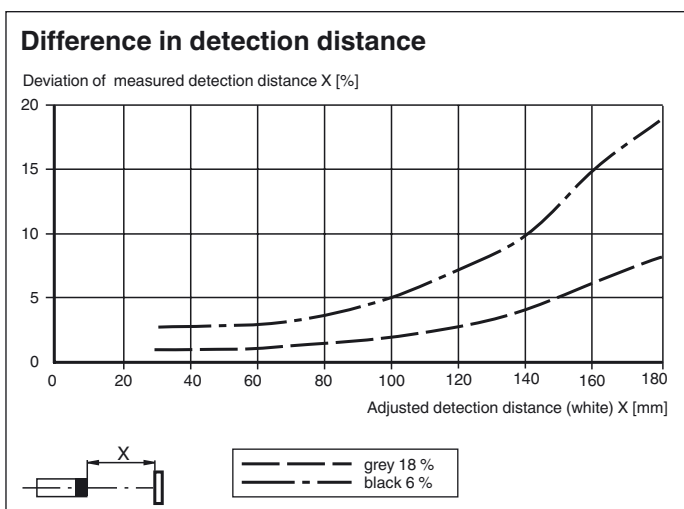
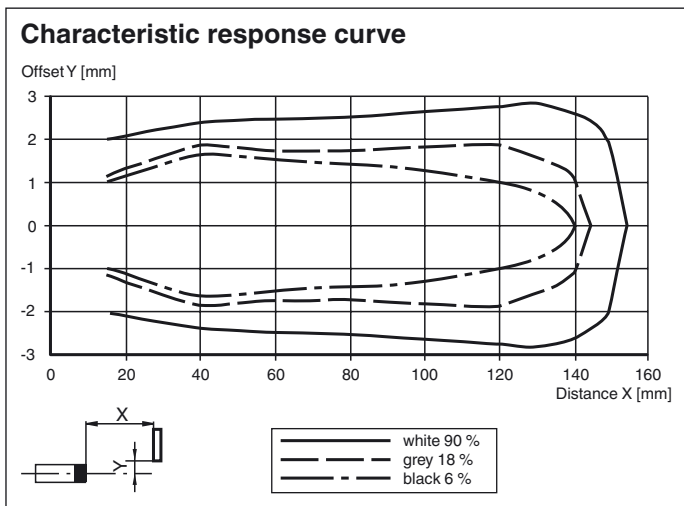
Female cordset, M12, 4-pin, PUR cable

**V1-W-5M-PUR**

Female cordset, M12, 4-pin, PUR cable

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

Curves/Diagrams



Release date: 2014-05-12 16:15 Date of issue: 2014-05-23 186537\_eng.xml

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

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 4411  
fa-info@de.pepperl-fuchs.com

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