



Thru-beam sensor M100/MV100-6757/103/115



- Miniature design
- Slit aperture to shape the light in miniature sensors
- Easy to use
- Very bright, highly visible light spot
- Full metal thread mounting
- Highly visible LEDs for Power ON and switching state
- Not sensitive to ambient light

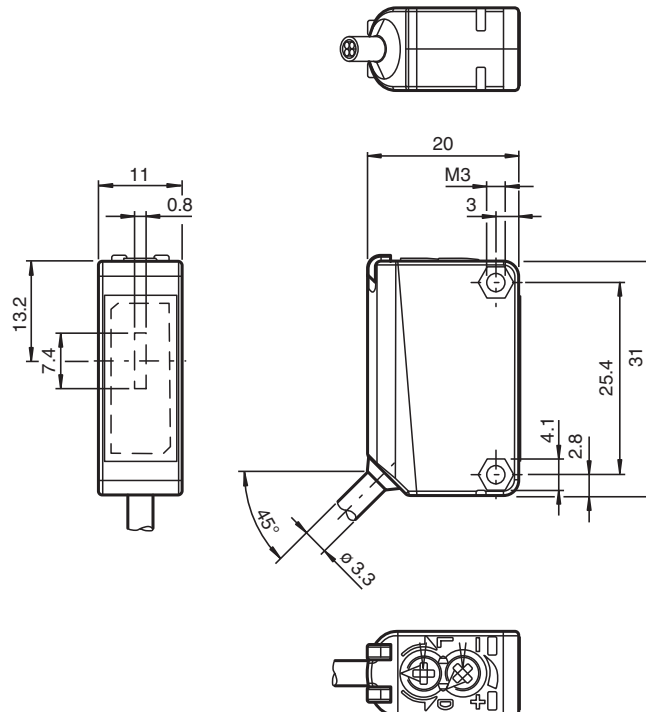
Thru-beam sensor



Function

The ML100 series is characterized by its miniature housing with integral, all-metal threaded bushings. All versions are equipped with a visible red transmitter LED. This greatly simplifies installation and commissioning. The switching states are easily visible from all directions thanks to the highly visible LEDs.

Dimensions



Technical Data

System components		
Emitter		M100-6757/76a/115
Receiver		MV100-6757/103/115
General specifications		
Effective detection range		0 ... 1.5 m
Threshold detection range		2 m
Light source		LED
Light type		modulated visible red light
Diameter of the light spot		approx. 0.14 m at a distance of 2 m
Angle of divergence		approx. 2 °
Optical face		frontal
Ambient light limit		EN 60947-5-2
Functional safety related parameters		
MTTF _d		860 a
Mission Time (T _M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operation indicator		LED green: power on
Function indicator		Receiver: LED yellow, lights up when light beam is free, flashes when falling short of the stability control ; OFF when light beam is interrupted
Control elements		sensitivity adjustment
Control elements		Light-on/dark-on changeover switch
Electrical specifications		
Operating voltage	U _B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I ₀	Emitter: ≤ 15 mA Receiver: ≤ 8 mA
Input		
Test input		emitter deactivation at +U _B
Output		
Switching type		The switching type of the sensor is adjustable. The default setting is: light-on
Signal output		1 PNP output, short-circuit protected, reverse polarity protected, open collector
Switching voltage		max. 30 V DC
Switching current		max. 100 mA , resistive load
Voltage drop	U _d	≤ 1.5 V DC
Switching frequency	f	1000 Hz
Response time		0.5 ms
Conformity		
Product standard		EN 60947-5-2
Approvals and certificates		
UL approval		cULus Listed, Class 2 Power Source or listed Power Supply with a limited voltage output with (maybe integrated) fuse (max. 3.3 A according UL248), Type 1 enclosure
CCC approval		CCC approval / marking not required for products rated ≤36 V
Ambient conditions		
Ambient temperature		-30 ... 60 °C (-22 ... 140 °F)
Storage temperature		-40 ... 70 °C (-40 ... 158 °F)
Mechanical specifications		
Housing width		11 mm
Housing height		31 mm
Housing depth		20 mm
Degree of protection		IP67
Connection		2 m fixed cable
Material		
Housing		PC (Polycarbonate)

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Optical face	PMMA
Mass	approx. 100 g (emitter and receiver)
Tightening torque, fastening screws	0.6 Nm
Cable length	2 m

The diagram illustrates a simple optical communication system consisting of a Transmitter and a Receiver.

Transmitter: A vertical box contains three components: BN (top), BU (middle), and BK (bottom). BN is connected to +UB, BU is connected to 0 V, and BK is connected to IN. To the right of the box, three horizontal lines represent the optical path. A switch labeled "Test" is connected between the top and bottom lines.

Receiver: A vertical box contains three components: BN (top), BU (middle), and BK (bottom). BN is connected to +UB, BU is connected to 0 V, and BK is connected to Q. To the right of the box, three horizontal lines represent the optical path. A photodiode symbol (a circle with a vertical rectangle inside) is connected between the top and bottom lines.

Legend:

- = Light on
- = Dark on

A diagram of a battery with four numbered labels: 1 points to the positive terminal (+), 2 points to the negative terminal (-), 3 points to the electrolyte level, and 4 points to the battery case.

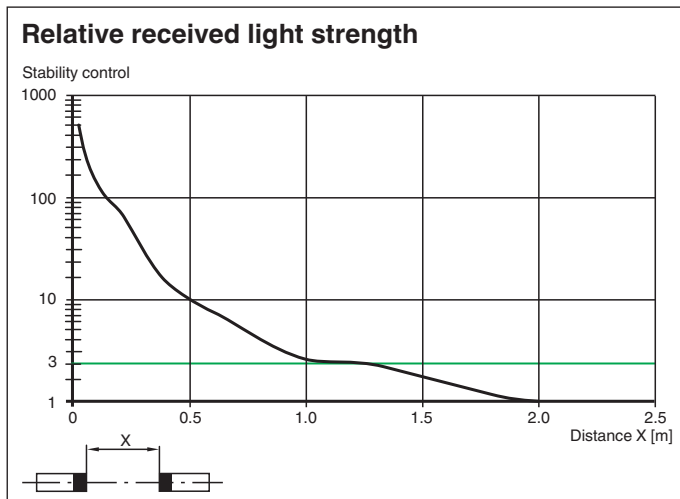
1	Light-Dark-switching	
2	Sensitivity adjuster	
3	Signal display	yellow
4	Operating display	green

Characteristic response curve











Offset Y [mm]

Distance X [m]	Offset Y [mm]
0.2	7
0.5	20
1.0	35
1.5	53
2.0	43

Distance X [m]



Accessories

	OMH-ML100-09	Mounting aid for round steel \varnothing 12 mm or sheet 1.5 mm ... 3 mm
	OMH-ML100-01	Mounting aid for ML100 series, mounting bracket
	OMH-ML100-02	Mounting aid for ML100 series, mounting bracket
	OMH-ML100-03	Mounting aid for round steel \varnothing 12 mm or sheet 1.5 mm ... 3 mm
	OMH-ML100-04	Mounting aid for ML100 series, mounting bracket
	OMH-ML100-05	Mounting aid for ML100 series, mounting bracket
	OMH-F10-ML100	Mounting aid for ML100 series
	OMH-10	Mounting aid
	OMH-ML100-S1	Mounting bracket
	OMH-ML100-S2	Mounting aid for ML100 series, mounting bracket

Accessories

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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