

## Thru-beam sensor

M100/MV100-RT/76b/102/115a



- Miniature design
- 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

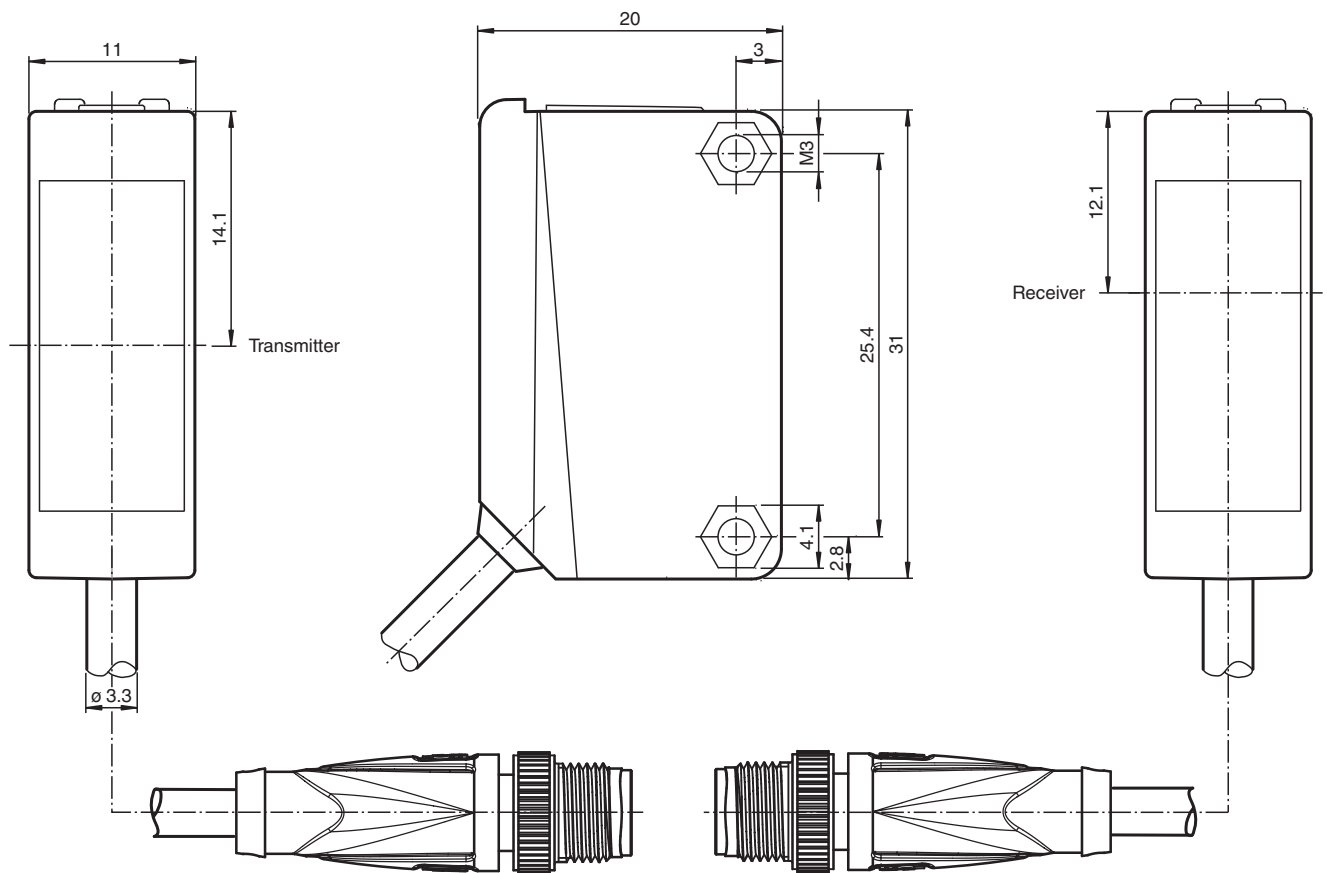
Thru-beam sensor, 10 m detection range, red light, light/dark on, DC version, NPN output, sensitivity adjuster, emitter switch-off, fixed cable with M8 plug



### 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



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

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## Technical Data

<b>System components</b>		
Emitter		M100-RT/76b/115a
Receiver		MV100-RT/102/115a
<b>General specifications</b>		
Effective detection range		0 ... 10 m
Threshold detection range		15 m
Light source		LED
Light type		modulated visible red light
Diameter of the light spot		approx. 1 m at a distance of 15 m
Angle of divergence		approx. 2 °
Optical face		frontal
Ambient light limit		EN 60947-5-2
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>		860 a
Mission Time (T <sub>M</sub> )		20 a
Diagnostic Coverage (DC)		0 %
<b>Indicators/operating means</b>		
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
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I <sub>0</sub>	Emitter: ≤ 15 mA Receiver: ≤ 8 mA
<b>Input</b>		
Test input		emitter deactivation at 0 V
<b>Output</b>		
Switching type		The switching type of the sensor is adjustable. The default setting is: light-on
Signal output		1 NPN 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 <sub>d</sub>	≤ 1.5 V DC
Switching frequency	f	1000 Hz
Response time		0.5 ms
<b>Conformity</b>		
Product standard		EN 60947-5-2
<b>Approvals and certificates</b>		
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
<b>Ambient conditions</b>		
Ambient temperature		-30 ... 60 °C (-22 ... 140 °F)
Storage temperature		-40 ... 70 °C (-40 ... 158 °F)
<b>Mechanical specifications</b>		
Housing width		11 mm
Housing height		31 mm
Housing depth		20 mm
Degree of protection		IP67
Connection		300 mm fixed cable with M8 connector, 4-pin
<b>Material</b>		
Housing		PC (Polycarbonate)

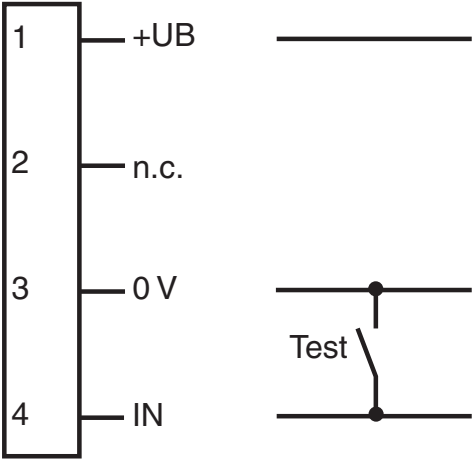
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Technical Data

Optical face	PMMA
Mass	approx. 40 g (emitter and receiver)
Tightening torque, fastening screws	0.6 Nm
Cable length	0.3 m

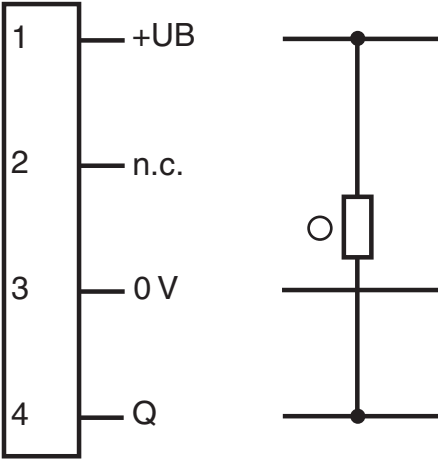
Connection Assignment

Transmitter



○ = Light on  
● = Dark on

Receiver



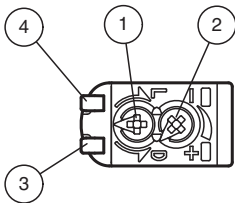
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

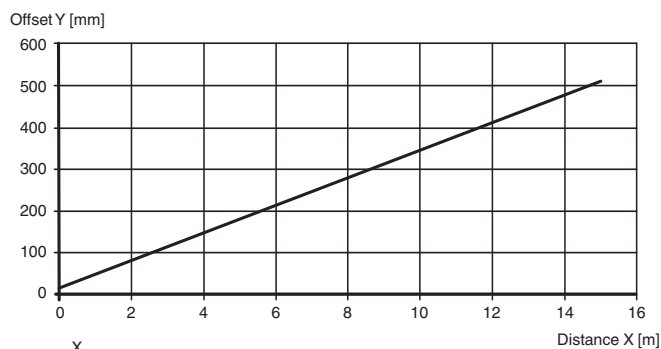
Assembly



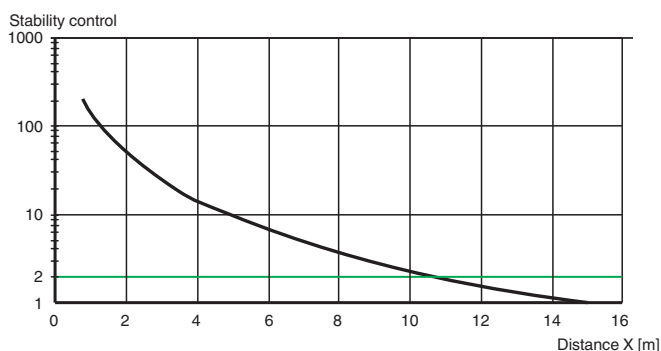
1	Light-Dark-switching	
2	Sensitivity adjuster	
3	Signal display	yellow
4	Operating display	green

## Characteristic Curve









### Characteristic response curve





### Relative received light strength



## Accessories

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

Accessories

	OMH-10	Mounting aid
	OMH-ML100-S1	Mounting bracket

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## Accessories

Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

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