Thru-beam sensor
M100/MV100-RT/76a/103/115b

- Miniature design
- Easy to use
- Full metal thread mounting
- Highly visible LEDs for Power ON and switching state
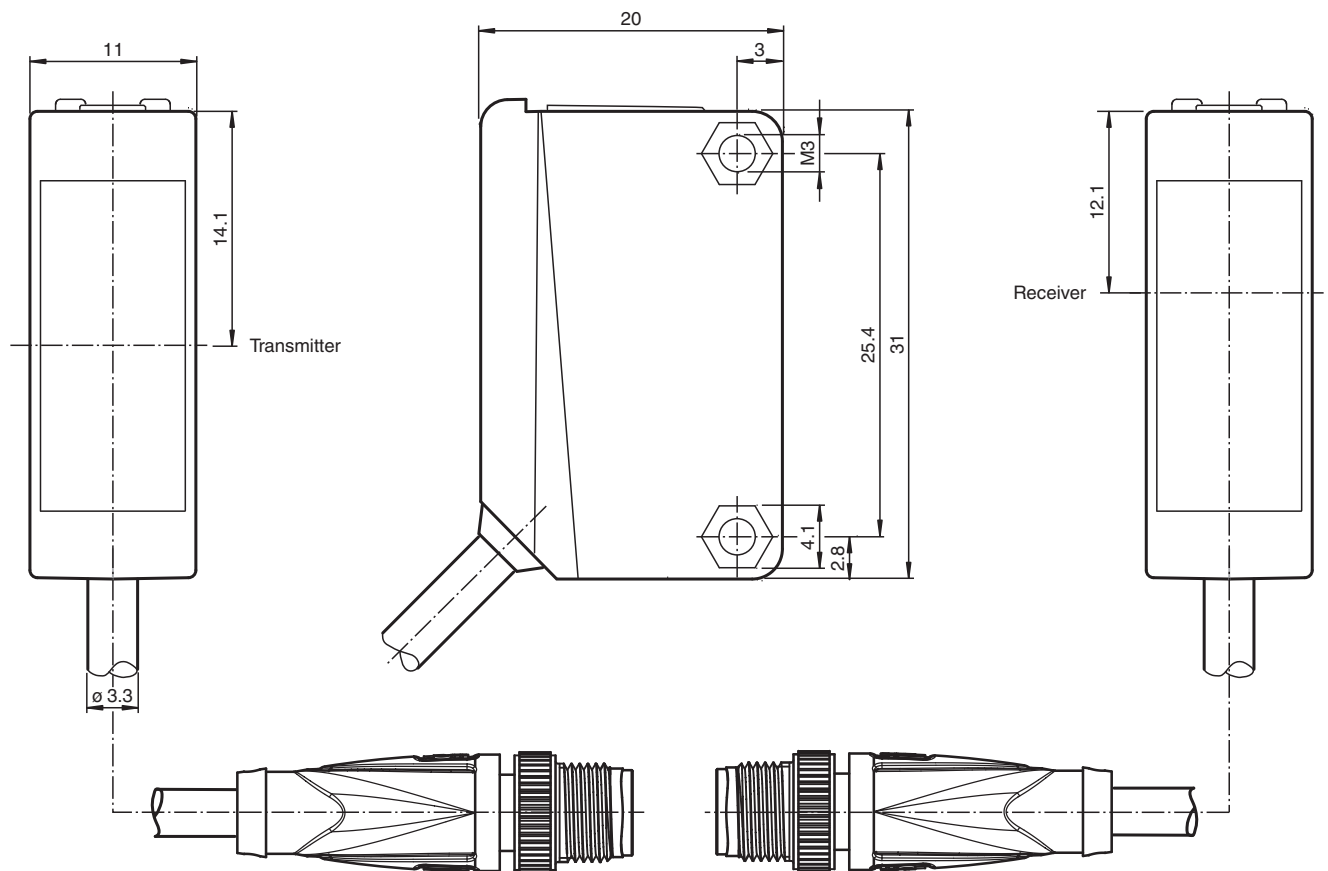- Not sensitive to ambient light

Thru-beam sensor, 10 m detection range, red light, light/dark on, DC version, PNP output, sensitivity adjuster, emitter switch-off, fixed cable with M12 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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Technical Data

System components

Emitter	M100-RT/76a/115b
Receiver	MV100-RT/103/115b

General specifications

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

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

EAC conformity	TR CU 020/2011
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	300 mm fixed cable with M12 connector, 4-pin
Material	

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

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www.pepperl-fuchs.com	fa-info@us.pepperl-fuchs.com	fa-info@de.pepperl-fuchs.com	fa-info@sg.pepperl-fuchs.com	PEPPERL+FUCHS

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Technical Data

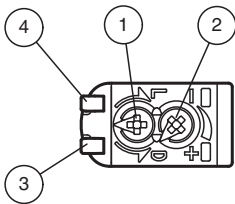| Housing	PC (Polycarbonate)
Optical face	PMMA
Mass	approx. 40 g (emitter and receiver)
Tightening torque, fastening screws	0.6 Nm
Cable length	0.3 m

Connection Assignment

Transmitter

1	+UB
2	n.c.
3	0 V
4	IN

Test

Receiver   103

1	+UB
2	n.c.
3	0 V
4	Q

○ = Light on
● = Dark on

Connection Assignment

```
        1
   2  (  · · )  4
        3
```
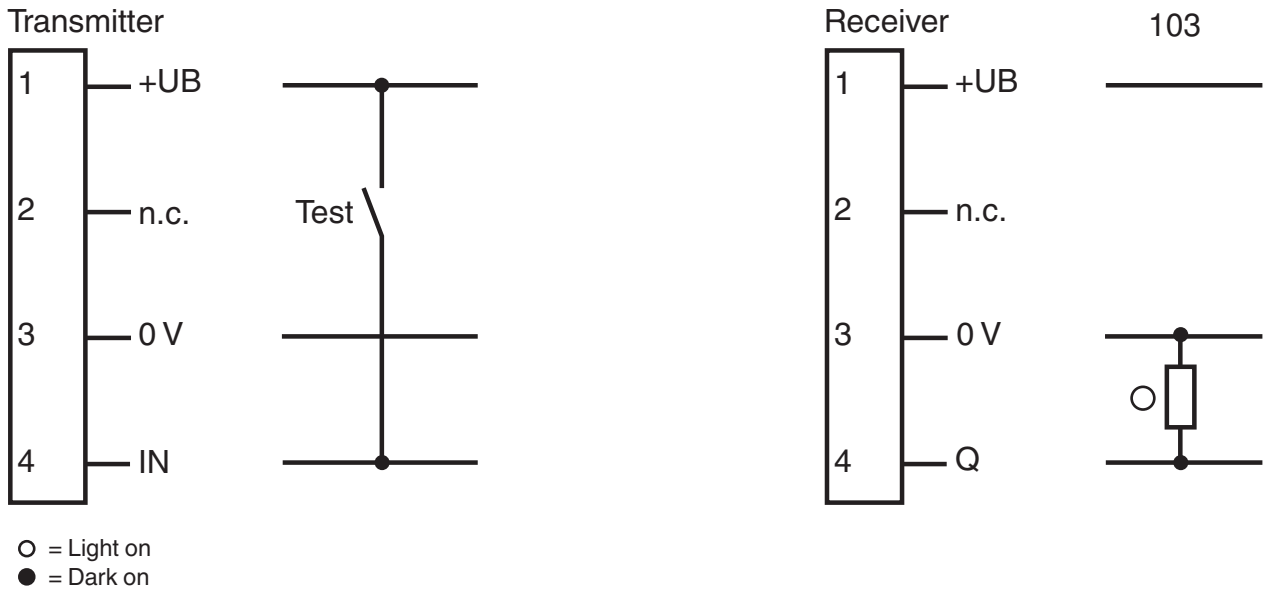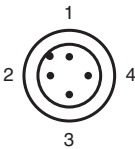
Wire colors in accordance with EN 60947-5-2

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

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Characteristic Curve

Characteristic response curve

Offset Y [mm]

Distance X [m]
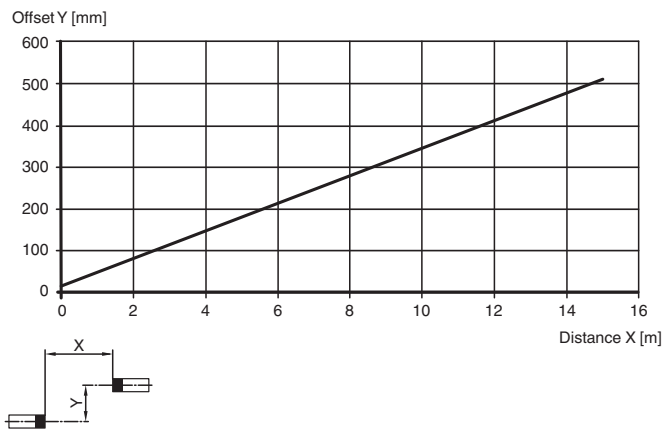
Relative received light strength

Stability control

Distance X [m]
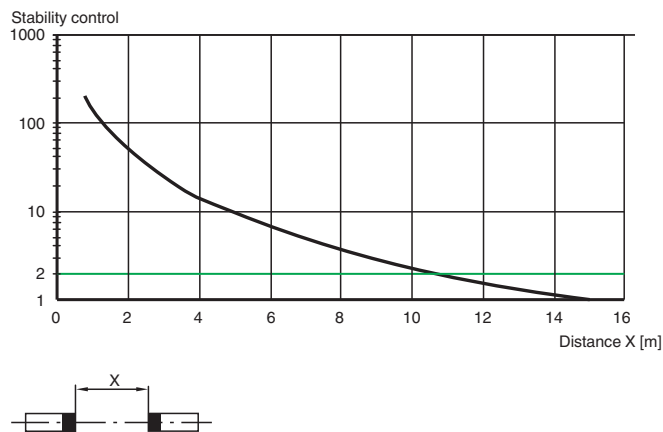
Accessories

	OMH-ML100-09	Mounting aid for round steel ø 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 ø 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

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Accessories

	OMH-ML100-S1	Mounting bracket
	OMH-ML100-S1	Mounting bracket
	OMH-ML100-S2	Mounting aid for ML100 series, mounting bracket

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Accessories

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

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