Thru-beam sensor
M100/MV100-IR/95/120/154

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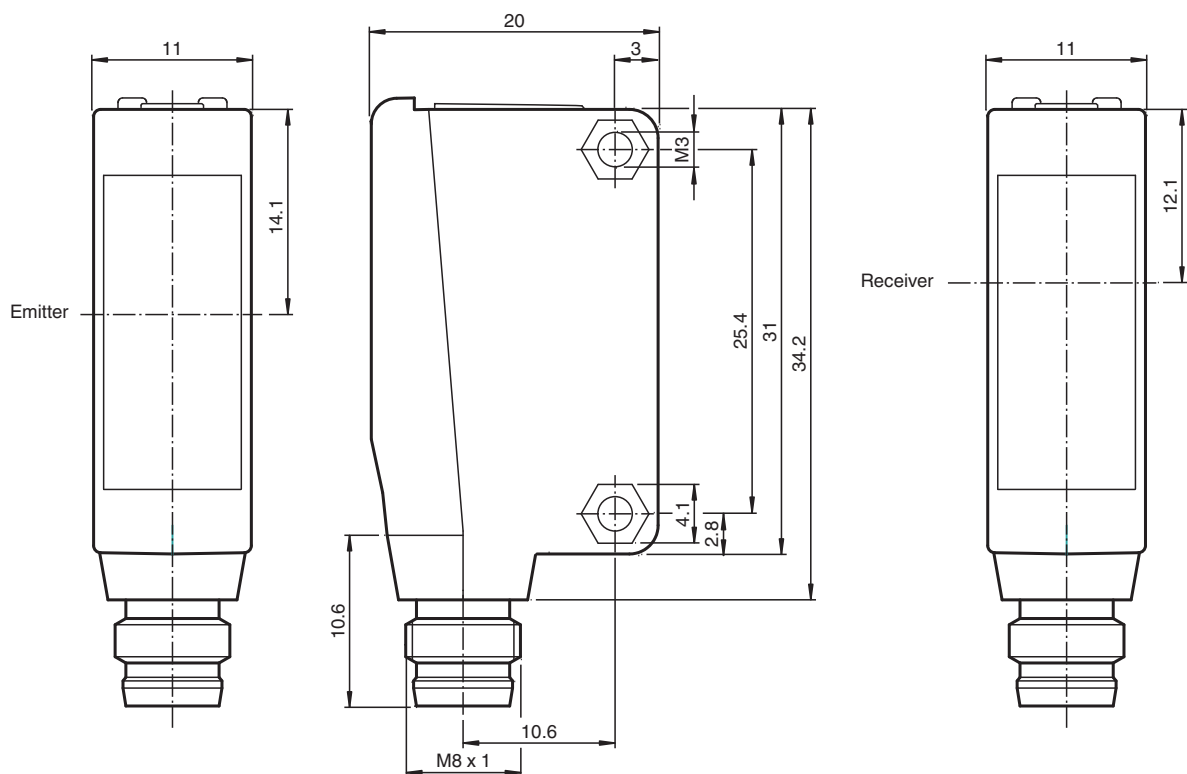- Not sensitive to ambient light

Thru-beam sensor, 15 m detection range, infrared light, light/dark on, DC version, PNP output, sensitivity adjuster, emitter switch-off, 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

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

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Technical Data

System components		
Emitter		M100-IR/95
Receiver		MV100-IR/95/120/154
General specifications		
Effective detection range		0 ... 15 m
Threshold detection range		20 m
Light source		IRED
Light type		modulated infrared light
Diameter of the light spot		approx. 1.5 m at a distance of 20 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
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
Output		
Switching type		The default setting is: /Q - pin2: light on Q - pin4: dark on
Signal output		2 PNP outputs, complementary, 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	250 Hz
Response time		2 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
UN/ECE Regulation No. 10 (E1)		Type-approval number: 047350
Ambient conditions		
Ambient temperature		-40 ... 60 °C (-40 ... 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		M8 x 1 connector, 4-pin
Material		
Housing		PC (Polycarbonate)
Optical face		PMMA
Mass		approx. 20 g (emitter and receiver)

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Pepperl+Fuchs Group	USA: +1 330 486 0001	Germany: +49 621 776 1111	Singapore: +65 6779 9091
www.pepperl-fuchs.com	fa-info@us.pepperl-fuchs.com	fa-info@de.pepperl-fuchs.com	fa-info@sg.pepperl-fuchs.com

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Technical Data

Tightening torque, fastening screws	0.6 Nm

Connection Assignment

Emitter

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

Receiver

1	+UB
2	$\overline{Q}$
3	0 V
4	Q

/120

○ = Light on
● = Dark on

Connection Assignment

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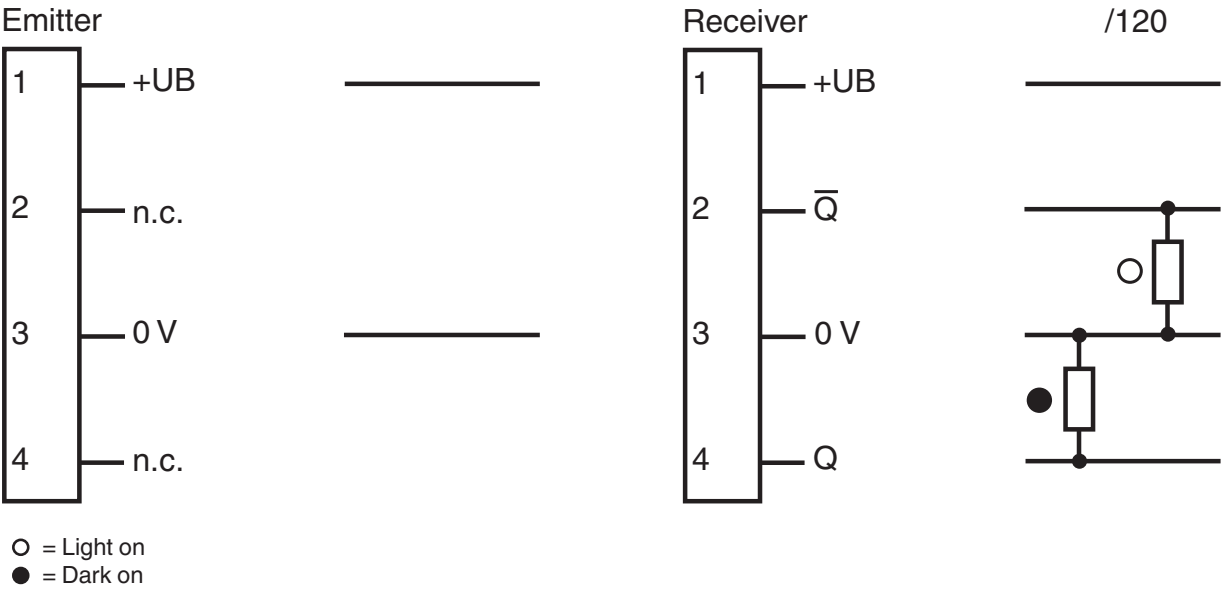
Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	n.c.	
3	BU	(blue)
4	n.c.	

Assembly
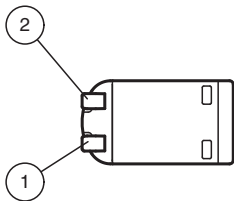
1	Signal display	yellow
2	Operating display	green

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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   3

Characteristic Curve

Characteristic response curve

Offset Y [mm]

Distance X [m]
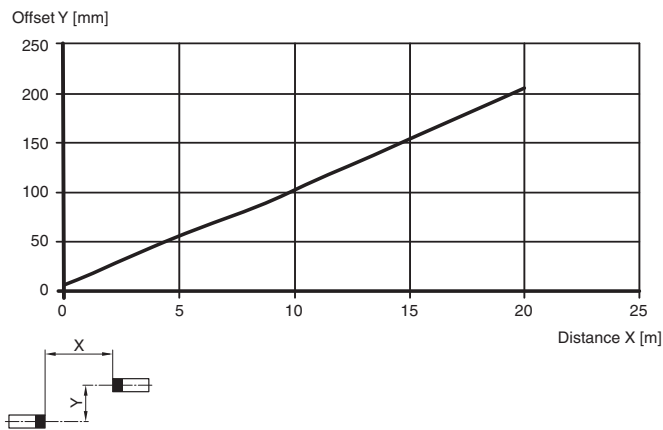
Relative received light strength

Stability control

Distance X [m]
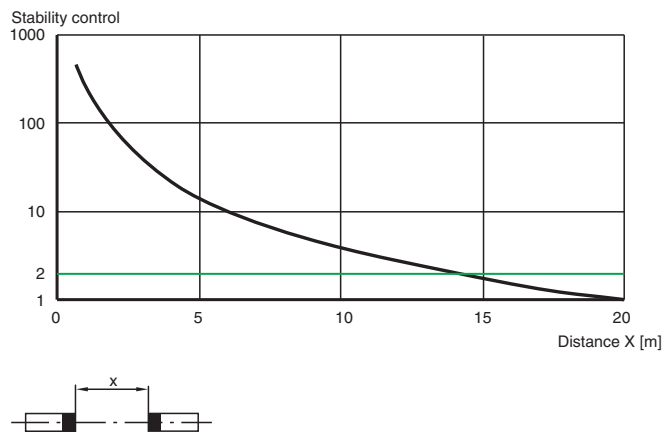
Accessories

	OMH-ML100-09	Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm
	OMH-ML100-03	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
	V31-WM-2M-PUR	Female cordset single-ended, M8, 4-pin, PUR cable
	V31-GM-2M-PUR	Female cordset single-ended, M8, 4-pin, PUR cable

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Pepperl+Fuchs Group
www.pepperl-fuchs.com

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fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com

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

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Accessories

Additional accessories can be found in the Internet.

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