Model Number

M100/MV100-RT/35/76a/95/103

Thru-beam sensor
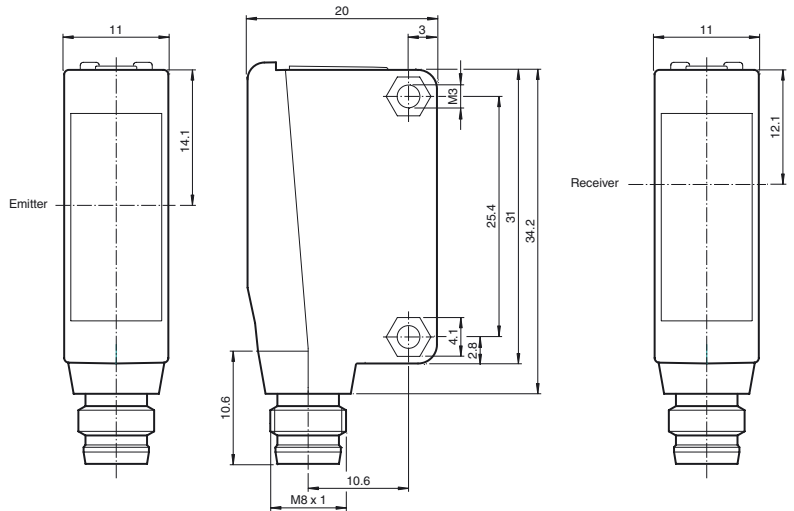
with 4-pin, M8 x 1 connector

Features

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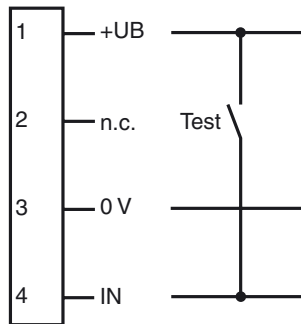- Not sensitive to ambient light

Product information

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.
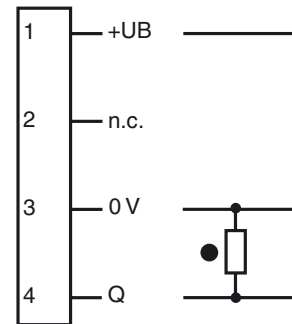
Dimensions

Emitter · Receiver

Electrical connection
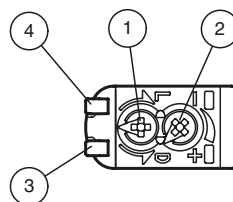
Transmitter

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

Receiver

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

○ = Light on
● = Dark on

Pinout

Indicators/operating means

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

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

Pepperl+Fuchs Group | USA: +1 330 486 0001 | Germany: +49 621 776 4411 | 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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1

Technical data

System components

Emitter	M100-RT/35/76a/95
Receiver	MV100-RT/35/95/103

General specifications

Effective detection range	0 ... 20 m
Threshold detection range	30 m
Light source	LED
Light type	modulated visible red light
Diameter of the light spot	approx. 2 m at a distance of 30 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/Dark switch

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC , class 2
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		light/dark on, switchable
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	250 Hz
Response time		2 ms

Ambient conditions

Ambient temperature	-30 ... 60 °C (-22 ... 140 °F)
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)

Mechanical specifications

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)

Compliance with standards and directives

Directive conformity	
EMC Directive 2004/108/EC	EN 60947-5-2
Standard conformity	
Standards	UL 508

Approvals and certificates

UL approval	cULus Listed, Class 2 Power Source, Type 1 enclosure
CCC approval	CCC approval / marking not required for products rated ≤36 V
Approvals	CE, cULus Listed 57M3 (Only in association with UL Class 2 power supply; Type 1 enclosure)

Accessories

OMH-ML100-03
Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

OMH-ML100-04
Mounting bracket

OMH-ML100-05
Mounting bracket

OMH-F10-ML100
Mounting aid for ML100 series

OMH-10
Mounting aid

V31-WM-2M-PUR
Female cordset, M8, 4-pin, PUR cable

V31-GM-2M-PUR
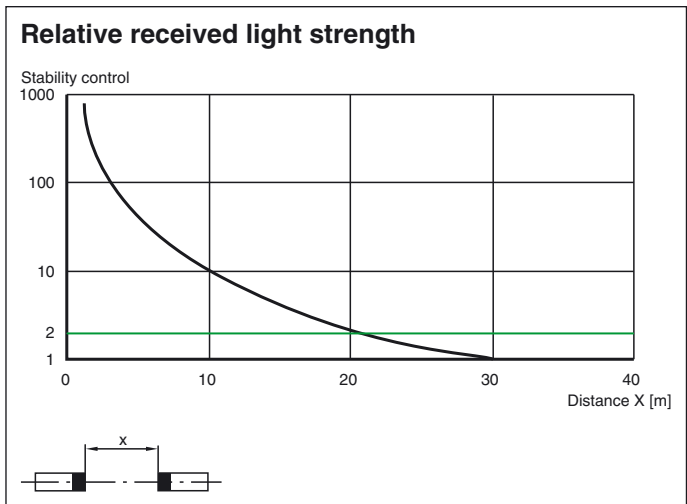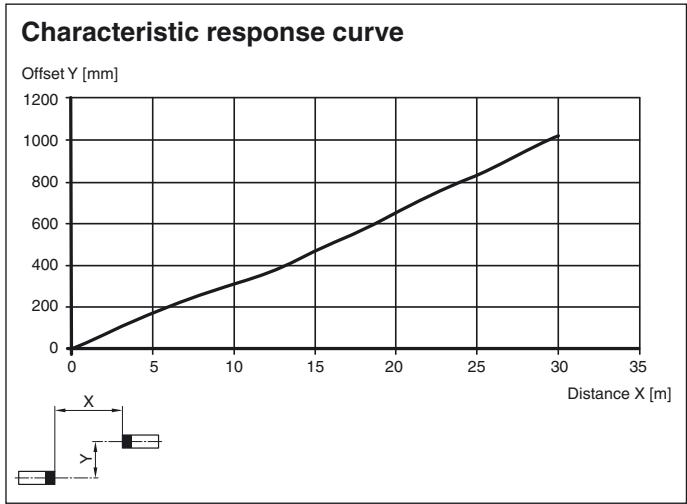Female cordset, M8, 4-pin, PUR cable

OMH-ML100-S1
Mounting bracket

OMH-ML100-08
Mounting aid

Additional accessories can be found in the Internet.

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Curves/Diagrams

Characteristic response curve

Offset Y [mm]

Distance X [m]

Relative received light strength

Stability control

Distance X [m]

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