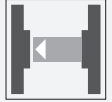




Thru-beam sensor (pair) M100/MV100-IR/76a/103/115b



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

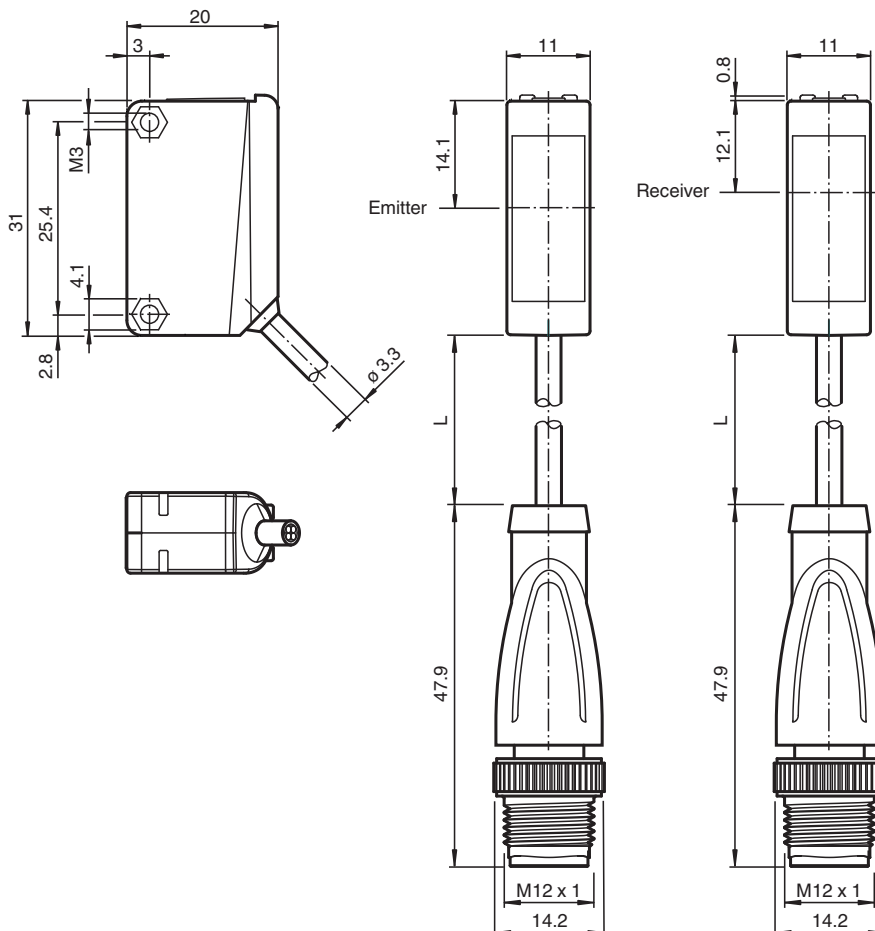
Thru-beam sensor, 15 m detection range, infrared light, light/dark on, DC version, PNP output, sensitivity adjuster, emitter switch-off, fixed cable with M12 plug



Function

The optical sensors of this series are suitable for both standard and demanding applications. The series features a miniature housing design, two M3 metal-threaded mounting holes and a highly visible LED status indicator. Each device is equipped with a sensitivity adjuster and a light-on/dark-on changeover switch for increased flexibility. A wide variety of versions are available in both infrared light and red light with PowerBeam for easy alignment. Special versions with BlueBeam are suitable for challenging applications like those in the solar and battery industries.

Dimensions



Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 70117528_eng.pdf

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

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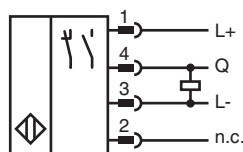
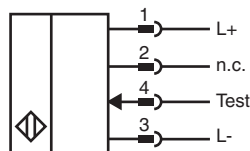
Technical Data

System components			
Emitter		M100-IR/76a/115b	
Receiver		MV100-IR/103/115b	
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	
Opening angle		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 operating reserve ; 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	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	
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			
Housing		PC (Polycarbonate)	

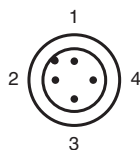
Technical Data

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

Connection



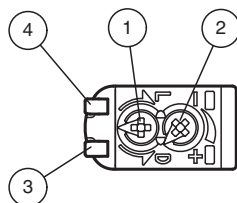
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

Assembly

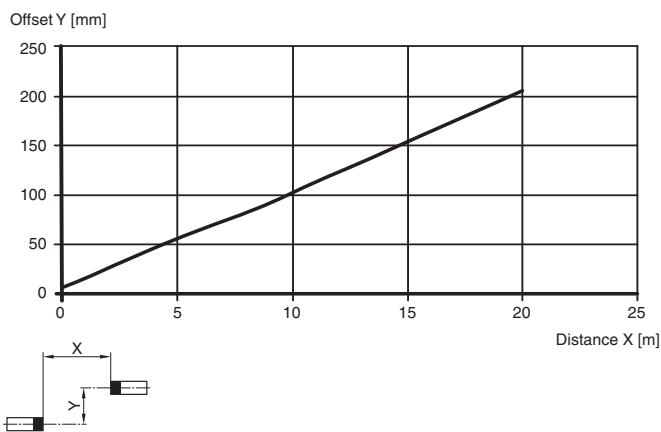


1	Light-Dark-switching	
2	Sensitivity adjuster	
3	Signal display	yellow
4	Operating display	green

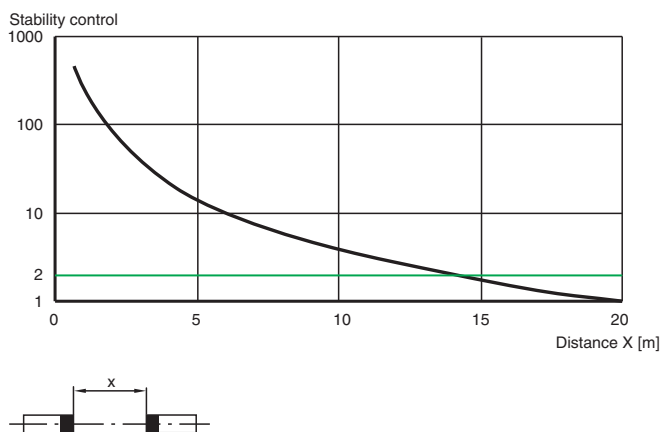
Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 70117528_eng.pdf

Characteristic Curve

Characteristic response curve



Relative received light strength



Accessories

	OMH-ML100-09	Mounting aid for round steel $\varnothing$ 12 mm or sheet 1.5 mm ... 3 mm
	OMH-ML100-S2	Mounting aid for ML100 series, mounting bracket
	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

Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 70117528_eng.pdf

Accessories

	OMH-10	Mounting aid for ML100 series
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Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 70117528_eng.pdf