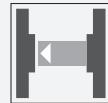




Thru-beam sensor (pair) M100/MV100-IR/76b/95/102



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

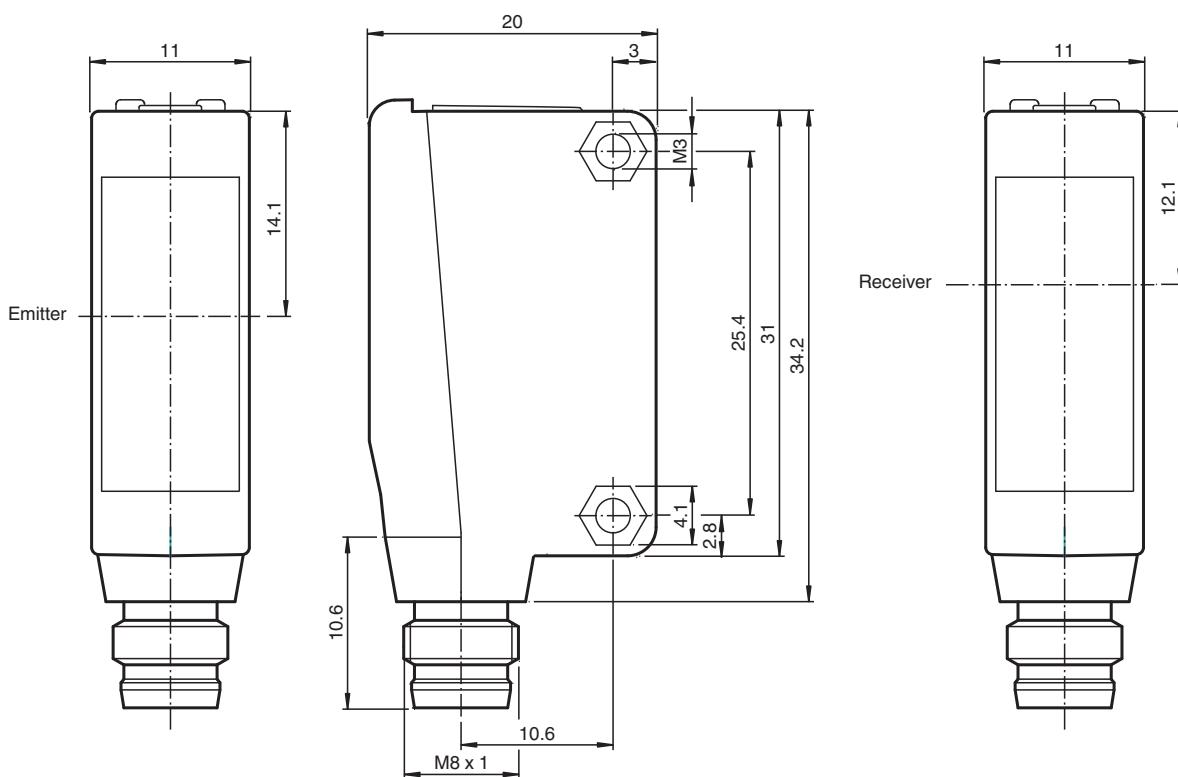
Thru-beam sensor, 15 m detection range, infrared light, light/dark on, DC version, NPN output, sensitivity adjuster, emitter switch-off, M8 plug



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



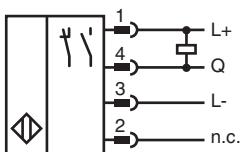
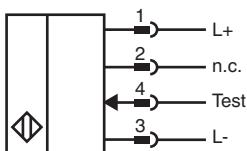
Technical Data

System components		
Emitter	M100-IR/76b/95	
Receiver	MV100-IR/95/102	
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 0 V	
Output		
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 _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	M8 x 1 connector, 4-pin	
Material		
Housing	PC (Polycarbonate)	

Technical Data

Optical face	PMMA
Mass	approx. 20 g (emitter and receiver)
Tightening torque, fastening screws	0.6 Nm

Connection



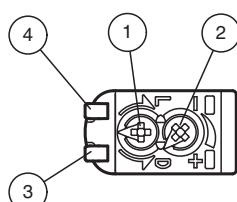
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

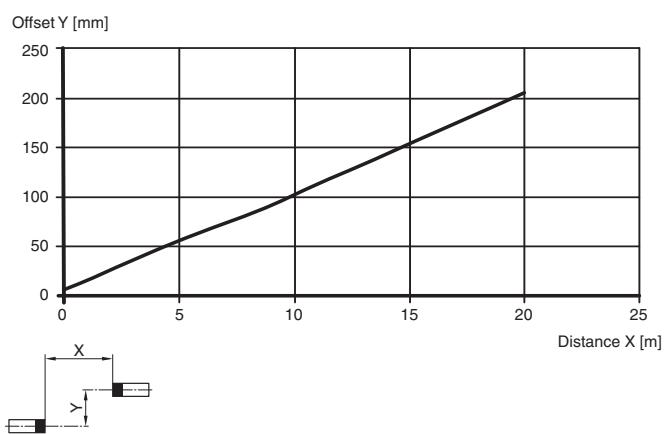
Assembly



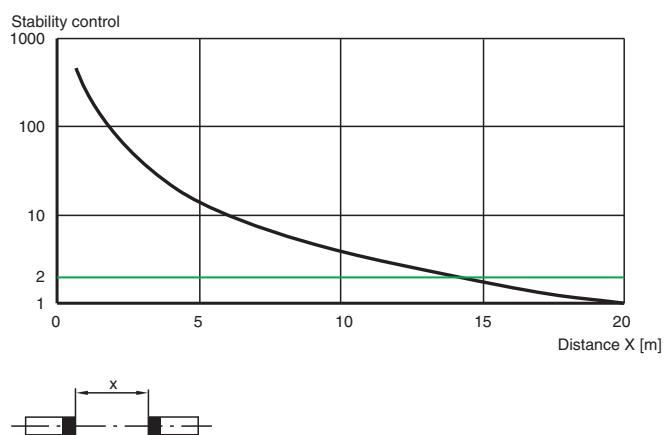
1	Light-Dark-switching	
2	Sensitivity adjuster	
3	Signal display	yellow
4	Operating display	green

Characteristic Curve

Characteristic response curve



Relative received light strength



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