



Retroreflective sensor ML100-55-8943/120/115b-0,1M



- Miniature design
- Easy to use
- Full metal thread mounting
- Clearly visible LEDs for Power ON, switching state and weak signal indication
- Not sensitive to ambient light

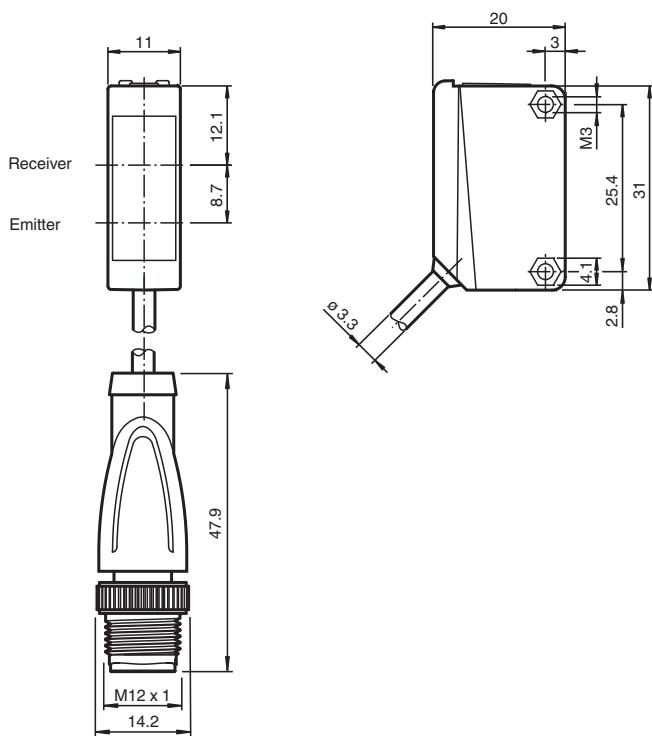
Retroreflective sensor with polarization filter, plastic housing, 5 m detection range, red light, sensitivity adjuster, light/dark on, DC version, 2 PNP outputs, fixed cable with M12 plug



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



Technical Data

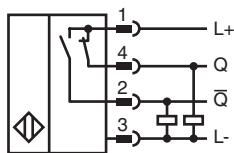
General specifications

Effective detection range	0 ... 5 m
Reflector distance	0.02 ... 5 m
Threshold detection range	7 m

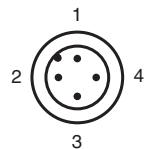
Technical Data

Reference target	H50 reflector	
Light source	LED	
Light type	modulated visible red light	
Polarization filter	yes	
Diameter of the light spot	approx. 500 mm at a distance of 7 m	
Opening angle	approx. 4 °	
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	LED yellow: lights up when receiving the light beam ; 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	< 20 mA
Output		
Switching type	The switching type of the sensor is adjustable. The default setting is: Q - Pin4: PNP normally closed / light-on /Q - Pin2: PNP normally open / 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	1000 Hz
Response time		0.5 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		
Degree of protection	IP67	
Connection	100 mm fixed cable with 4-pin, M12 x 1 connector	
Material		
Housing	PC (Polycarbonate)	
Optical face	PMMA	
Mass	approx. 20 g	
Tightening torque, fastening screws	0.6 Nm	
Dimensions		
Height	31 mm	
Width	11 mm	
Depth	20 mm	
Cable length	0.1 m	

Connection



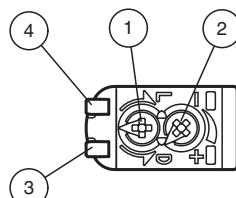
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

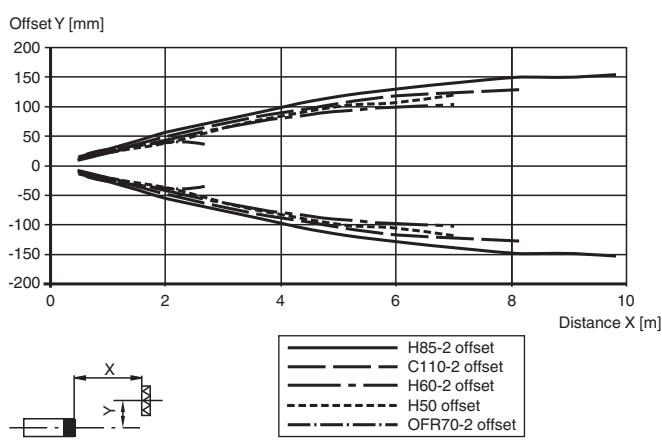
Assembly



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

Characteristic Curve

Characteristic response curve



Characteristic Curve

