

Technical Data

General specifications

Detection range	100 ... 1500 mm
Detection range min.	50 ... 200 mm
Detection range max.	100 ... 1500 mm
Background suppression	max. + 10 % of the upper limit of the detection range
Light source	laser diode
Light type	modulated visible red light
Laser nominal ratings	
Note	LASER LIGHT , DO NOT STARE INTO BEAM
Laser class	1
Wave length	650 nm
Beam divergence	< 1.5 mrad
Pulse length	4.5 µs
Repetition rate	approx. 1.5 kHz
max. pulse energy	17 nJ
Light spot representation	max. 1.5 mm x 4 mm , light spot perpendicular to housing
Black-white difference (6 %/90 %)	≤ 40 %
Ambient light limit	50000 Lux

Functional safety related parameters

MTTF _d	590 a
Mission Time (T _M)	10 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Operation indicator	LED green
Function indicator	2 LEDs yellow ON: object inside the scanning range OFF: object outside the scanning range
Control elements	Sensing range adjuster , Light-on/dark-on changeover switch

Electrical specifications

Operating voltage	U _B	10 ... 30 V DC
Ripple		10 %
No-load supply current	I ₀	≤ 40 mA
Protection class		II, rated insulation voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1
Time delay before availability	t _v	≤ 2 s

Output

Switching type	light/dark on, switchable	
Signal output		1 push-pull (4 in 1) output, short-circuit protected, reverse polarity protected
Switching voltage	max. 30 V DC	
Switching current		max. 100 mA
Switching frequency	f	140 Hz
Response time		3.5 ms

Conformity

Product standard	EN 60947-5-2
Laser safety	IEC 60825-1:2014

Approvals and certificates

UL approval	E87056 , cULus Listed , class 2 power supply , type rating 1
FDA approval	IEC 60825-1:2014 Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3 as described in Laser Notice 56, dated May 8, 2019.

Ambient conditions

Ambient temperature	-10 ... 50 °C (14 ... 122 °F)
Storage temperature	-40 ... 60 °C (-40 ... 140 °F)

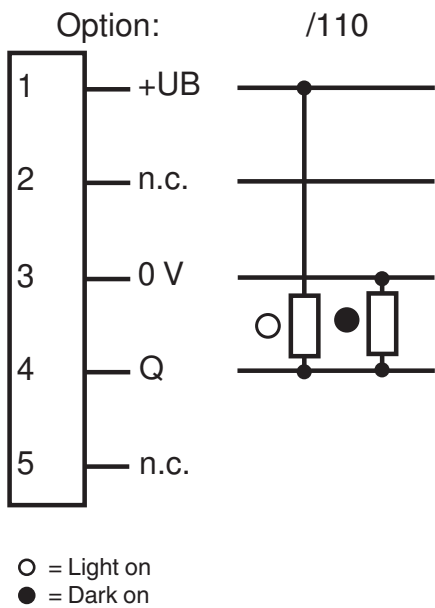
Mechanical specifications

Degree of protection	IP67
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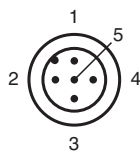
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Connection	5-pin, M12 x 1 plastic connector
Material	
Housing	plastic
Optical face	Plastic pane
Mass	approx. 70 g
Dimensions	
Height	88 mm
Width	25.8 mm
Depth	54.3 mm

Connection Assignment



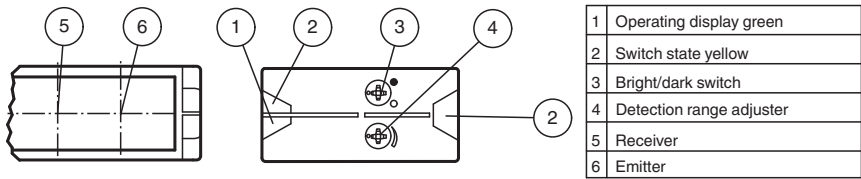
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

Assembly



Characteristic Curve

