

1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception/limit area



### Basic features

Approval/Conformity	CE cULus EAC WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Series	12M
Style	Cylinder Straight optics
Trademark	Global

### Display/Operation

Adjuster	no
Display	LED green: Power Limit range - LED yellow, flashing LED yellow: Light received

### Electrical connection

Cable diameter D	4.60 mm
Cable length L	2 m
Conductor cross-section	0.34 mm <sup>2</sup>
Connection	Cable, 2.00 m, PVC
Number of conductors	3
Polarity reversal protected	yes
Protection against device mix-ups	yes
Short-circuit protection	yes

### Electrical data

Load capacitance max. at U <sub>e</sub>	0.2 µF
No-load current I <sub>o</sub> max. at U <sub>e</sub>	20 mA
Operating voltage U <sub>b</sub>	10...30 VDC
Rated insulation voltage U <sub>i</sub>	75 V DC
Rated operating current I <sub>e</sub>	100 mA
Rated operating voltage U <sub>e</sub> DC	24 V
Ripple max. (% of U <sub>e</sub> )	15 %
Switching frequency	1000 Hz
Turn-off delay t <sub>off</sub> max.	0.5 ms
Turn-on delay t <sub>on</sub> max.	0.5 ms
Utilization category	DC -13
Voltage drop U <sub>d</sub> max. at I <sub>e</sub>	1.5 V

### Environmental conditions

Ambient temperature	-5...55 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 gn, 11 ms, 3x6
EN 60068-2-6, Vibration	10...55 Hz, amplitude 1 mm, 3x30 min
Protection degree	IP67

### Functional safety

MTTF (40 °C)	2349 a
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## Material

Housing material	Brass, nickel plated
Material jacket	PVC
Material sensing surface	PMMA
Surface protection	nickel plated

## Mechanical data

Dimension	Ø 12 x 60 mm
Mounting	Nut M12x1
Tightening torque max.	7 Nm 15 Nm

## Optical features

Ambient light max.	10000 Lux
Beam characteristic	Divergent
LED group per IEC 62471	Exempt Group
Light spot size	Ø 8 mm at 100 mm
Light type	Red light
Principle of optical operation	Diffuse sensor, energetic
Switching function, optical	Light-on
Wave length	650 nm

## Output/Interface

Switching output	PNP normally open (NO)
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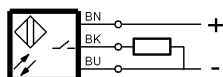
## Range/Distance

Hysteresis H max. (% of Sr)	10.0 %
Range	1...100 mm
Rated operating distance S <sub>n</sub>	100 mm
Temperature drift max. (% of Sr)	14 %

## Remarks

Order accessories separately.  
 For additional information, refer to user's guide.  
 Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.  
 The sensor is functional again after the overload has been eliminated.

## Wiring Diagrams



## Opto Symbols

