

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



### Basic features

Approval/Conformity	CE UKCA cULus 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

Connection	Connector, M12x1-Male, 4-pin
Contact, surface protection	Gold plated
Polarity reversal protected	yes
Protection against device mix-ups	yes
Short-circuit protection	yes

### Electrical data

Load capacitance max. at $U_e$	0.2 $\mu$ F
Operating voltage $U_b$	10...30 VDC
Rated insulation voltage $U_i$	75 V DC
Rated operating current $I_e$	100 mA
Rated operating voltage $U_e$ DC	24 V
Ripple max. (% of $U_e$ )	15 %
Switching frequency	1000 Hz
Turn-off delay $t_{off}$ max.	0.5 ms
Turn-on delay $t_{on}$ max.	0.5 ms
Utilization category	DC -13
Voltage drop $U_d$ max. at $I_e$	1.5 V

### Environmental conditions

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

### Functional safety

MTTF (40 °C)	2349 a
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### Interface

Switching output	PNP normally open (NO) Pin 4
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Photoelectric Sensors  
**BOS 12M-PS-RD11-S4**  
**Order Code: BOS01TN**



**Material**

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

**Mechanical data**

Dimension	Ø 12 x 60 mm
Mounting part	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	LED, red light
Principle of optical operation	Diffuse sensor, energetic
Switching function, optical	Light-on
Wave length	650 nm

**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**

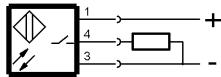
Order accessories separately.  
 For additional information, refer to user's guide.  
 Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.  
 The sensor is functional again after the overload has been eliminated.  
 For more information about MTTF and B10d see MTTF / B10d Certificate

Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

**Connector Drawings**



**Wiring Diagrams**



**Opto Symbols**

