

1) Optical axis, 2) Sn, 3) Output function



**Basic features**

<b>Approval/Conformity</b>	CE UKCA cULus WEEE
<b>Basic standard</b>	IEC 60947-5-2
<b>Principle of operation</b>	Photoelectric sensor
<b>Reference emitter</b>	BOS 12M-XT-LS12-..
<b>Series</b>	12M
<b>Style</b>	Cylinder Straight optics

**Display/Operation**

<b>Adjuster</b>	Potentiometer 270°
<b>Display</b>	Output function- LED yellow
<b>Setting</b>	Sensitivity (Sn)

**Electrical connection**

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

**Electrical data**

<b>Load capacitance max. at Ue</b>	0.1 µF
<b>No-load current I<sub>o</sub> max. at Ue</b>	15 mA
<b>Operating voltage U<sub>b</sub></b>	10...30 VDC
<b>Rated insulation voltage U<sub>i</sub></b>	75 V DC
<b>Rated operating current I<sub>e</sub></b>	200 mA
<b>Rated operating voltage U<sub>e</sub> DC</b>	24 V
<b>Ready delay t<sub>v</sub> max.</b>	20 ms
<b>Ripple max. (% of U<sub>e</sub>)</b>	10 %
<b>Switching frequency</b>	1000 Hz
<b>Turn-off delay t<sub>off</sub> max.</b>	0.5 ms
<b>Turn-on delay t<sub>on</sub> max.</b>	0.5 ms
<b>Utilization category</b>	DC -13
<b>Voltage drop U<sub>d</sub> max. at I<sub>e</sub></b>	2.5 V

**Environmental conditions**

<b>Ambient temperature</b>	-10...50 °C
<b>Contamination scale</b>	3
<b>EN 60068-2-27, Shock</b>	Half-sinus, 30 g <sub>n</sub> , 11 ms, 3x6
<b>EN 60068-2-6, Vibration</b>	10...55 Hz, amplitude 1 mm, 3x30 min
<b>IP rating</b>	IP67

**Functional safety**

<b>MTTF (40 °C)</b>	251 a
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**Interface**

<b>Switching output</b>	PNP normally closed (NC) PNP normally open (NO) Pins 4-2
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Photoelectric Sensors  
**BOS 12M-PA-LE10-S4**  
Order Code: BOS00WF

**BALLUFF**

**Material**

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

**Mechanical data**

Dimension	Ø 12 x 70 mm
Minimum gap, typ.	0.5mm at 3m, R0= 6m (LS12)
Mounting part	Nut M12x1
Tightening torque max.	15 Nm

**Optical features**

Ambient light max.	5000 Lux
Light type	Laser red light
Principle of optical operation	Through-beam sensor (receiver)
Smallest part typ.	50 µm at focal point, R0 = 3 m (LS11)
Switching function, optical	Light-on dark-on

**Range/Distance**

Range	0...30 m
Rated operating distance Sn	3 m Adjustable depends on emitter
Temperature drift max. (% of Sr)	compensated

**Remarks**

Order accessories separately.

The sensor is functional again after the overload has been eliminated.

Actuation object (target): gray card, 200 x 200, lateral approach.

For additional information, refer to user's guide.

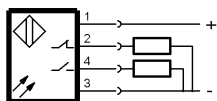
For more information about MTTF and B10d see MTTF / B10d Certificate

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**

