

1) Optical axis



### 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 receiver</b>	BOS 12M-...-LE10-..
<b>Series</b>	12M
<b>Style</b>	Cylinder Straight optics

### 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

### Electrical data

<b>Input function</b>	Test (Emitter off)
<b>No-load current I<sub>o</sub> max. at U<sub>e</sub></b>	10 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 voltage U<sub>e</sub> DC</b>	24 V
<b>Ripple max. (% of U<sub>e</sub>)</b>	10 %

### 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>	593 a
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### Material

<b>Housing material</b>	Brass, nickel-plated
<b>Material sensing surface</b>	Glass
<b>Surface protection</b>	nickel-plated

### Mechanical data

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

Photoelectric Sensors  
**BOS 12M-XT-LS12-S4**  
**Order Code: BOS00WN**



**Optical features**

<b>Average power Po max.</b>	60 µW
<b>Beam characteristic</b>	Collimated
<b>Laser class per IEC 60825-1</b>	1
<b>Light spot size</b>	Ø 2.5 mm Light exit
<b>Light type</b>	Laser red light
<b>Principle of optical operation</b>	Through-beam sensor (Emitter)
<b>Pulse duration t max.</b>	2.5 µs

<b>Pulse frequency</b>	19.7 kHz
<b>Pulse power Pp max.</b>	1.5 mW
<b>Smallest part typ.</b>	200 µm at 2 m. R0 = 6 m
<b>Wave length</b>	650 nm

**Range/Distance**

<b>Range</b>	0...30 m
<b>Rated operating distance Sn</b>	30 m Adjustable

**Remarks**

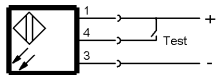
Order accessories separately.  
 For additional information, refer to user's guide.  
 For more information about MTTF and B10d see MTTF / B10d Certificate

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**



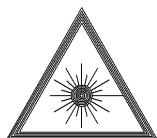
**Wiring Diagrams**



**Opto Symbols**



**Warning Symbols**



LASER CLASS 1 per IEC 60825-1