

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



**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>Series</b>	12M
<b>Style</b>	Cylinder Straight optics
<b>Trademark</b>	Global

**Display/Operation**

<b>Adjuster</b>	no
<b>Display</b>	LED green: Power Limit range - LED yellow, flashing LED yellow: Light received

**Electrical connection**

<b>Cable diameter D</b>	4.60 mm
<b>Cable length L</b>	2 m
<b>Conductor cross-section</b>	0.34 mm <sup>2</sup>
<b>Connection</b>	Cable, 2.00 m, PVC
<b>Number of conductors</b>	3
<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>	0.2 µF
<b>No-load current I<sub>o</sub> max. at Ue</b>	20 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>	100 mA
<b>Rated operating voltage U<sub>e</sub> DC</b>	24 V
<b>Ripple max. (% of U<sub>e</sub>)</b>	15 %
<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>	1.5 V

**Environmental conditions**

<b>Ambient temperature</b>	-5...55 °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>	2349 a
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**Interface**

<b>Switching output</b>	PNP normally open (NO)
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Photoelectric Sensors  
**BOS 12M-PS-RD11-02**  
Order Code: BOS01Y0

# BALLUFF

## 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 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	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.

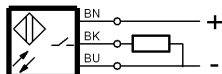
Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.

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.

## Wiring Diagrams



## Opto Symbols

