

1) Optical axis, 2) Sn, 3) Output function, 4) Operating voltage



**Basic features**

<b>Approval/Conformity</b>	CE cULus WEEE
<b>Basic standard</b>	IEC 60947-5-2
<b>Principle of operation</b>	Photoelectric sensor
<b>Reference reflector</b>	BOS R-1
<b>Series</b>	18MR
<b>Style</b>	Cylinder Optics 90°

**Display/Operation**

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

**Electrical connection**

<b>Connection</b>	Connector, M12x1-Male, 4-pin
<b>Polarity reversal protected</b>	yes
<b>Short-circuit protection</b>	yes

**Electrical data**

<b>No-load current <math>I_0</math> max. at <math>U_e</math></b>	35 mA
<b>Operating voltage <math>U_b</math></b>	10...30 VDC
<b>Protection class</b>	II
<b>Rated insulation voltage <math>U_i</math></b>	75 V DC
<b>Rated operating current <math>I_e</math></b>	100 mA
<b>Rated operating voltage <math>U_e</math> DC</b>	24 V
<b>Ripple max. (% of <math>U_e</math>)</b>	8 %
<b>Switching frequency</b>	1500 Hz
<b>Turn-off delay <math>t_{off}</math> max.</b>	0.33 ms
<b>Turn-on delay <math>t_{on}</math> max.</b>	0.33 ms
<b>Voltage drop <math>U_d</math> max. at <math>I_e</math></b>	2 V

**Environmental conditions**

<b>Ambient temperature</b>	-10...50 °C
<b>EN 60068-2-27, Shock</b>	Half-sinus, 50 gn, 500 ms, 3x3
<b>EN 60068-2-6, Vibration</b>	10...55 Hz, amplitude 0.5 mm, 3x30 min
<b>IP rating</b>	IP67

**Functional safety**

<b>MTTF (40 °C)</b>	739 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 18MR-PA-LR10-S4**  
Order Code: BOS0146

# BALLUFF

## Material

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

## Mechanical data

Dimension	Ø 18 x 93.5 mm
Mounting part	Nut M18x1
Tightening torque max.	22 Nm

## Optical features

Ambient light max.	3000 Lux
Average power Po max.	390 µW
Blind zone	100 mm
Laser class per IEC 60825-1	1
Light type	Laser red light
Polarizing filter	yes
Principle of optical operation	Retroreflective sensor
Pulse duration t max.	6.0 µs
Pulse frequency	25 kHz
Switching function, optical	dark-on
Wave length	650 nm

## Range/Distance

Range	0...9 m
Rated operating distance Sn	9 m Adjustable

## Remarks

Order accessories separately.

For additional information, refer to user's guide.

Polarizing filters prevent spurious switching due to reflecting and shiny parts.

Actuation object (target): gray card, 200 x 200, 90 % remission, lateral approach, approach direction vertical to lens axis plane.

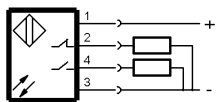
For more information about MTTf and B10d see MTTf / B10d Certificate

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



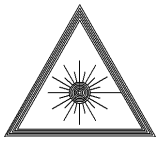
## Wiring Diagrams



## Opto Symbols



## Warning Symbols



LASER CLASS 1 per IEC 60825-1