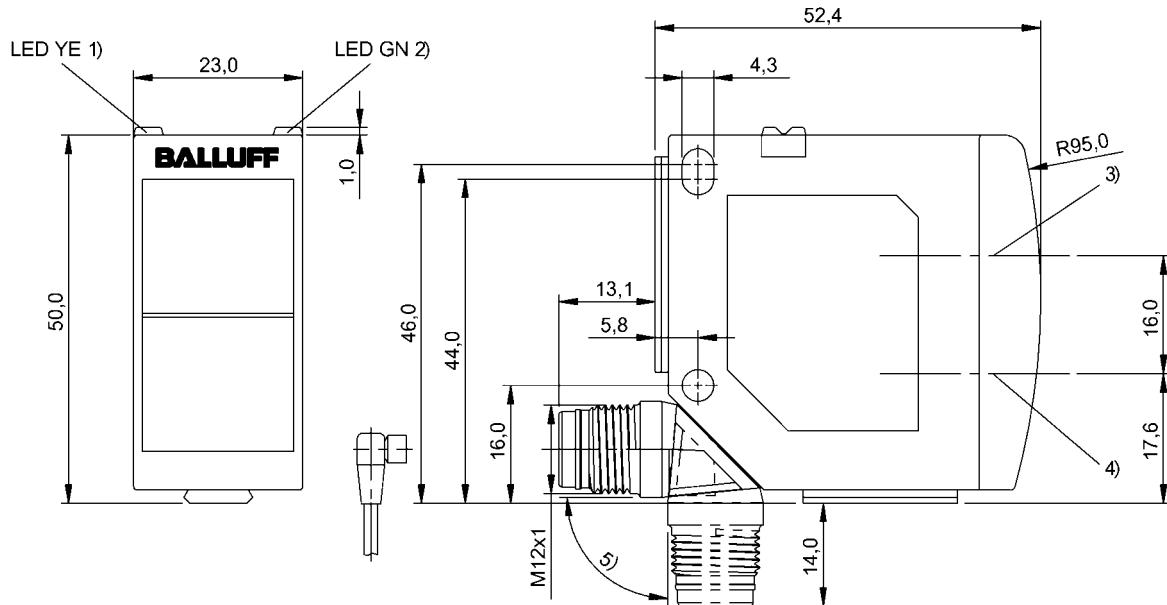


Photoelectric Sensors  
BOS 23K-PA-RR10-SA1-S4S  
Order Code: BOS01FW

**BALLUFF**



1) Output function/Error, 2) Operating voltage, 3) Optical axis receiver, 4) Optical axis emitter, 5) rotatable 270°



#### Basic features

Approval/Conformity	Ecolab CE cULus WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Series	23K
Style	Square Connection can be rotated

#### Display/Operation

Display	Output function- LED yellow LED green: Power Error - LED yellow, flashing
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#### Electrical data

No-load current $Io$ max. at $Ue$	30 mA
Operating voltage $Ub$	10...30 VDC
Protection class	II
Rated insulation voltage $Ui$	75 V DC
Rated operating current $le$	100 mA
Rated operating voltage $Ue$ DC	24 V
Ready delay $tv$ max.	300 ms
Residual current $Ir$ max.	50 $\mu$ A
Ripple max. (% of $Ue$ )	10 %
Switching frequency	600 Hz
Turn-off delay $toff$ max.	0.83 ms
Turn-on delay $ton$ max.	0.83 ms
Utilization category	DC-13
Voltage drop $Ud$ max. at $le$	2 V

#### Electrical connection

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

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Environmental conditions

Ambient temperature	-20...60 °C
EN 60068-2-27, Shock	Half-sinus, 30 g <sub>n</sub> , 11 ms, 3x6
EN 60068-2-6, Vibration	10...55 Hz, amplitude 0.5 mm, 3x30 min
IP rating	IP6x
IP rating per DIN 40050	IPx9K

Functional safety

MTTF (40 °C)	421 a
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Interface

Switching output	PNP normally closed (NC) PNP normally open (NO) Pins 2-4
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Material

Housing material	PC ABS
Material sensing surface	PMMA

Remarks

The sensor is functional again after the overload has been eliminated.  
Actuation object (target): gray card, 200 x 200, 90 % remission, lateral approach, approach direction vertical to lens axis plane.  
Teach-in also possible when object is in motion.  
For additional information, refer to user's guide.  
Order accessories separately.  
Do not press key using a pointed tool.  
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.

Mechanical data

Dimension	23 x 51 x 52.4 mm
Mounting part	Screw M4
Tightening torque max.	1.5 Nm

Optical features

Ambient light max.	5000 Lux
Beam characteristic	Divergent
Blind zone	300 mm
LED group per IEC 62471	Exempt Group
Light spot size	300 x 300 mm at 12 m
Light type	LED, red light
Polarizing filter	yes
Principle of optical operation	Retroreflective sensor
Switching function, optical	Light-on dark-on
Wave length	640 nm

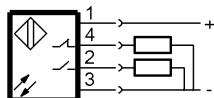
Range/Distance

Range	0...14 m
Rated operating distance Sn	14 m

Connector Drawings



Wiring Diagrams



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Opto Symbols

