

1) Optical axis receiver, 2) Optical axis emitter, 3) Sn, 4) Output function, 5) stability



## Basic features

Approval/Conformity	cULus CE EAC WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Reference reflector	BOS R-9
Series	5K
Style	Square Connection 45°
Trademark	Global

## Electrical connection

Cable diameter D	3.50 mm
Cable length L	2 m
Conductor cross-section	0.20 mm <sup>2</sup>
Connection	Cable, 2.00 m, PVC
Number of conductors	3
Polarity reversal protected	yes
Short-circuit protection	yes

## Display/Operation

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

## Electrical data

No-load current $I_0$ max. at $U_e$	30 mA
Operating voltage $U_b$	10...30 VDC
Rated operating current $I_e$	100 mA
Rated operating voltage $U_e$ DC	24 V
Ready delay $t_v$ max.	100 ms
Ripple max. (% of $U_e$ )	10 %
Switching frequency	500 Hz
Turn-off delay $t_{off}$ max.	1 ms
Turn-on delay $t_{on}$ max.	1 ms
Voltage drop $U_d$ max. at $I_e$	2 V

## Environmental conditions

Ambient temperature	-25...55 °C
EN 60068-2-27, Shock	Half-sinus, 50 $g_n$ , 11 ms, 3x10
EN 60068-2-6, Vibration	10...55 Hz, amplitude 0.75 mm, 3x20 min
IP rating	IP67

## Functional safety

MTTF (40 °C)	39 a
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## Material

Housing material	PC PBT
Jacket material	PVC
Material sensing surface	PMMA

## 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.

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.

## Mechanical data

Dimension	10.8 x 32.7 x 19.5 mm
Mounting	Screw M3

## Optical features

Ambient light max.	5000 Lux
Beam characteristic	Divergent
Blind zone	100 mm
Light spot size	Ø 160 mm at 2 m
Light type	LED, red light
Polarizing filter	yes
Principle of optical operation	Retroreflective sensor
Switching function, optical	dark-on
Wave length	660 nm

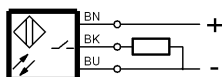
## Output/Interface

Switching output	PNP normally open (NO)
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## Range/Distance

Range	0...4 m
Rated operating distance $S_n$	4 m Adjustable

## Wiring Diagrams



Photoelectric Sensors  
BOS 5K-PS-RR10-02  
Order Code: BOS012C

**BALLUFF**

Opto Symbols

