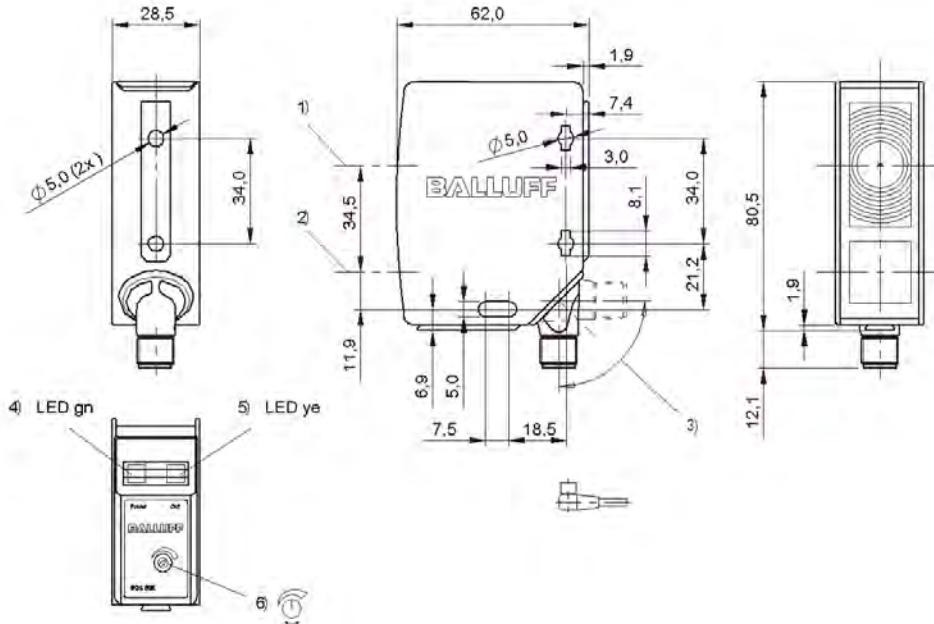
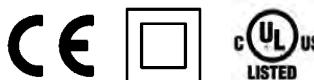


Photoelectric Sensors  
BOS 50K-PSV-RH12-S4  
Order Code: BOS0156

**BALLUFF**



1) Optical axis receiver, 2) Optical axis emitter, 3) rotatable 270°, 4) Power/short-circuit, 5) Output function/Error, 6) Sn



## Basic features

Approval/Conformity	CE UKCA cULus WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Series	50K
Style	Square Connection can be rotated

## Display/Operation

Adjuster	10-turn potentiometer
Display	Output function- LED yellow LED green: Power Error - LED yellow, flashing Short circuit - LED green, flashing
Setting	Rated switching distance (Sn)

## Electrical connection

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

## Electrical data

Load capacitance max. at Ue	0.1 $\mu$ F
No-load current I <sub>0</sub> max. at Ue	50 mA
Operating voltage U <sub>b</sub>	10...30 VDC
Protection class	II
Rated insulation voltage U <sub>i</sub>	250 V AC
Rated operating current I <sub>e</sub>	100 mA
Rated operating voltage U <sub>e DC</sub>	24 V
Ready delay t <sub>v</sub> max.	300 ms
Residual current I <sub>r</sub> max.	10 $\mu$ A
Ripple max. (% of U <sub>e</sub> )	10 %
Switching frequency	500 Hz
Turn-off delay t <sub>off</sub> max.	1 ms
Turn-on delay t <sub>on</sub> max.	1 ms
Utilization category	DC -13
Voltage drop U <sub>d</sub> max. at I <sub>e</sub>	2.5 V

## Environmental conditions

Ambient temperature	-10...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	IP67

Functional safety

MTTF (40 °C) 219 a

Interface

Supplementary output Error output PNP  
Switch function, supplementary output Normally closed (NC)  
Switching output PNP normally open (NO)

Material

Housing material PC  
ABS  
Material sensing surface Glass

Mechanical data

Dimension 28.5 x 80.5 x 62 mm  
Distance deviation 6 % max. (% of Sr) 25.0 %  
Mounting part Screw M5

Optical features

Ambient light max. 10000 Lux  
Beam characteristic Divergent  
LED group per IEC 62471 Exempt Group  
Light spot size 60 x 60 mm at Sr  
Light type LED, red light  
Principle of optical operation Diffuse sensor, triangulation  
Special optical feature Background suppression  
Switching function, optical Light-on  
Wave length 630 nm

Range/Distance

Distance deviation 18 % max. (% of Sr) 8 %  
Hysteresis H max. (% of Sr) 5.0 %  
Range 200...2000 mm  
Rated operating distance Sn 2 m Adjustable  
Repeat accuracy max. (% of Sr) 5.0 %  
Temperature drift max. (% of Sr) 10 %

Remarks

Only for applications per NFPA 79 (machines with a supply voltage of maximum 600 V). Use an R/C (CYJV2) cable with suitable properties for attaching the device.

For additional information, refer to user's guide.

The sensor is functional again after the overload has been eliminated.

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

Order accessories separately.

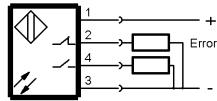
For more information about MTTF and B10d see MTTF / B10d Certificate

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



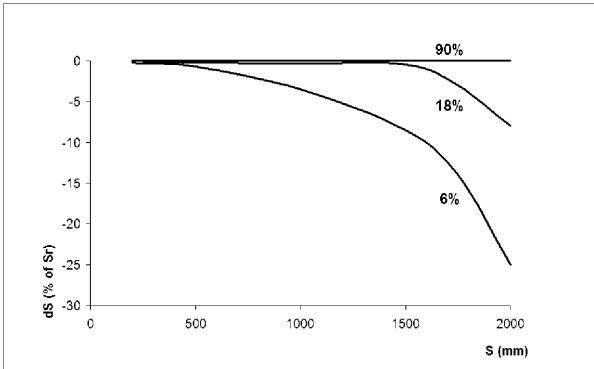
Wiring Diagrams



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**BALLUFF**

### Technical Drawings



### Opto Symbols

