

1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception/limit area, 5) Sn, 6) rotatable 270°



## Basic features

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

## 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

## Display/Operation

Adjuster	Potentiometer 270°
Display	LED green: Power LED green flashes: Short circuit or overload (PIN4) LED yellow: light reception function reserve > 1.5 LED yellow flashing: Light reception function reserve <= 1.5
Setting	Rated switching distance (Sn)

Photoelectric Sensors  
BOS 50K-PA-PR10-S4  
Order Code: BOS01CR

# BALLUFF

## Electrical data

Load capacitance max. at Ue	100 nF
No-load current I <sub>o</sub> max. at Ue	30 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</sub> DC	24 V
Ready delay t <sub>v</sub> max.	20 ms
Residual current I <sub>r</sub> max.	10 µA
Ripple max. (% of U <sub>e</sub> )	10 %
Switching frequency	800 Hz
Turn-off delay t <sub>off</sub> max.	0.65 ms
Turn-on delay t <sub>on</sub> max.	0.65 ms
Utilization category	DC -13
Voltage drop U <sub>d</sub> max. at I <sub>e</sub>	2.5 V

## Environmental conditions

Ambient temperature	-5...55 °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 1 mm, 3x30 min
IP rating	IP67

## Functional safety

MTTF (40 °C)	889 a
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## Interface

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

Housing material	PC ABS
Material sensing surface	Glass

## Mechanical data

Dimension	28.5 x 80.5 x 62 mm
Mounting part	Screw M5

## Optical features

Ambient light max.	10000 Lux
Beam characteristic	Divergent
LED group per IEC 62471	Exempt Group
Light spot size	200 x 200 mm at 10 m
Light type	LED, red light
Polarizing filter	yes
Principle of optical operation	Retroreflective sensor
Switching function, optical	Light-on dark-on
Wave length	630 nm

## Range/Distance

Range	0...18 m
Rated operating distance S <sub>n</sub>	18 m, Adjustable
Temperature drift max. (% of S <sub>r</sub> )	10 %

## Remarks

Order accessories separately.

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

For additional information, refer to user's guide.

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.

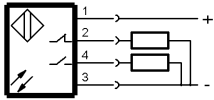
For more information about MTTF and B10d see MTTF / B10d Certificate

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.

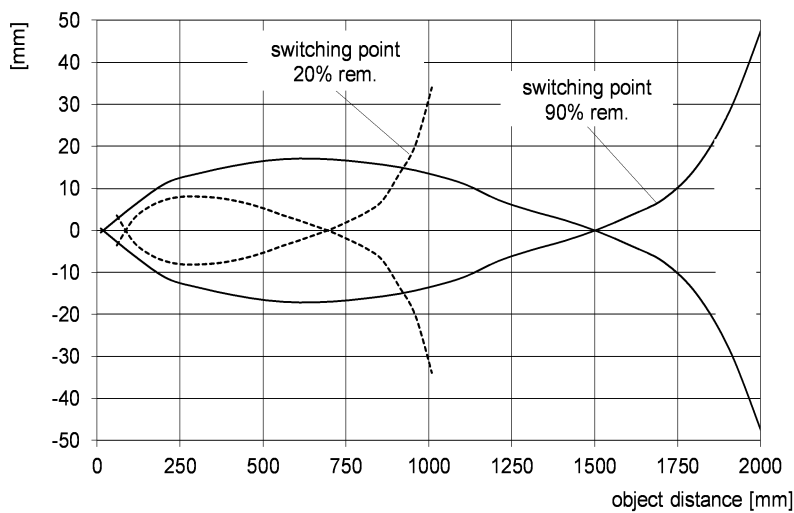
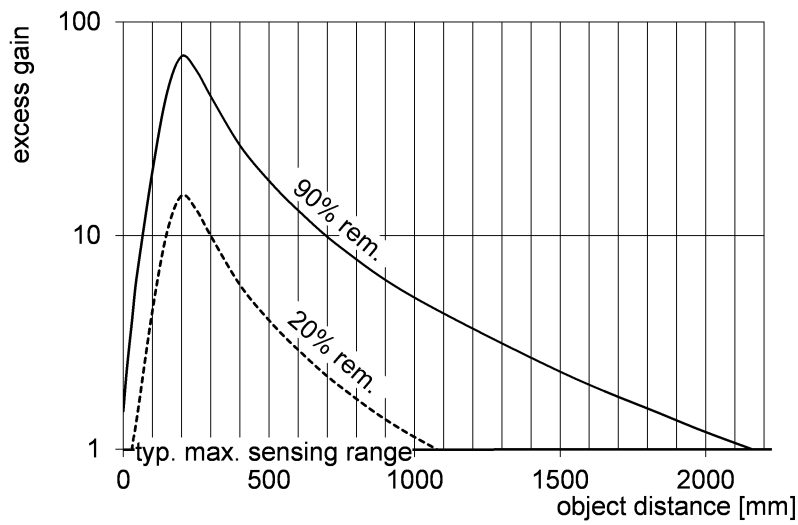
## Connector Drawings



## Wiring Diagrams (Schematic)



## Technical Drawings



## Opto Symbols

