

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-RD10-S4
Order Code: BOS01CJ

BALLUFF

Electrical data

Load capacitance max. at Ue	100 nF
No-load current I ₀ max. at Ue	30 mA
Operating voltage U _b	10...30 VDC
Protection class	II
Rated insulation voltage U _i	250 V AC
Rated operating current I _e	100 mA
Rated operating voltage U _e DC	24 V
Ready delay t _v max.	20 ms
Residual current I _r max.	10 µA
Ripple max. (% of U _e)	10 %
Switching frequency	800 Hz
Turn-off delay t _{off} max.	0.65 ms
Turn-on delay t _{on} max.	0.65 ms
Utilization category	DC -13
Voltage drop U _d max. at I _e	2.5 V

Environmental conditions

Ambient temperature	-5...55 °C
EN 60068-2-27, Shock	Half-sinus, 30 g _n , 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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Remarks

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 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.

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.	5000 Lux
Beam characteristic	Divergent
LED group per IEC 62471	Exempt Group
Light spot size	50 x 50 mm at 2 m
Light type	LED, red light
Principle of optical operation	Diffuse sensor, energetic
Switching function, optical	Light-on dark-on
Wave length	630 nm

Range/Distance

Hysteresis H max. (% of Sr)	10.0 %
Range	1...2000 mm
Rated operating distance S _n	2 m Adjustable
Repeat accuracy max. (% of Sr)	5.0 %
Temperature drift max. (% of Sr)	10 %

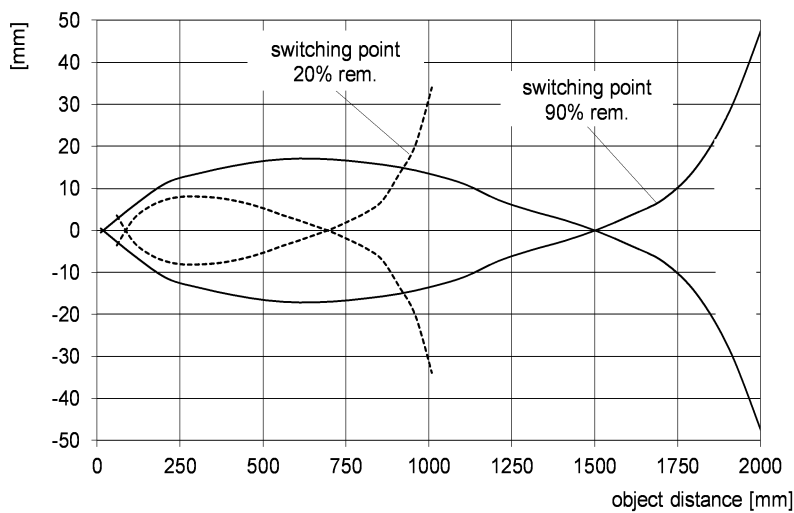
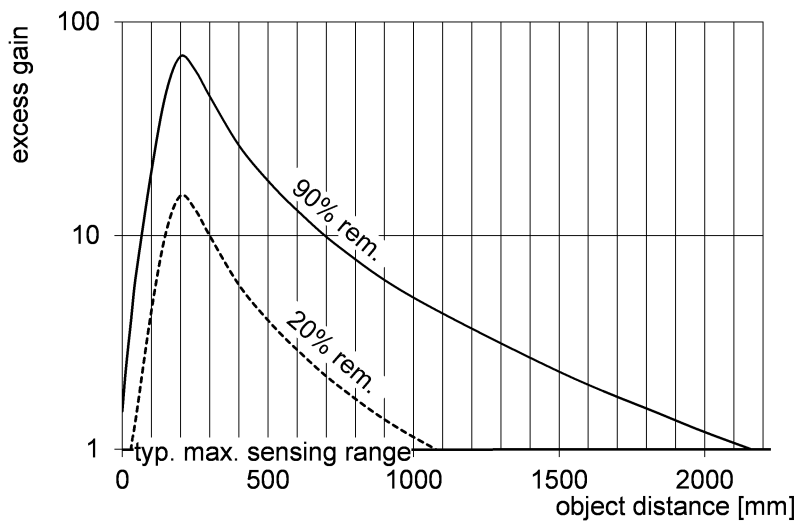
Connector Drawings



Wiring Diagrams



Technical Drawings



Opto Symbols

