

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 µF
No-load current I <sub>o</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</sub> DC	24 V
Ready delay t <sub>v</sub> max.	300 ms
Residual current I <sub>r</sub> max.	10 µA
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

Photoelectric Sensors  
**BOS 50K-PA-RH12-S4**  
**Order Code: BOS018P**



**Functional safety**

MTTF (40 °C) 219 a

**Interface**

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

**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/dark switching  
 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**

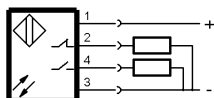
The sensor is functional again after the overload has been eliminated.  
 Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.  
 Only for applications per NFPA 79 (machines with a supply voltage of maximum 600 V). Use an R/C (CYJV2) cable with suitable properties for attaching the device.  
 For additional information, refer to user's guide.  
 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.

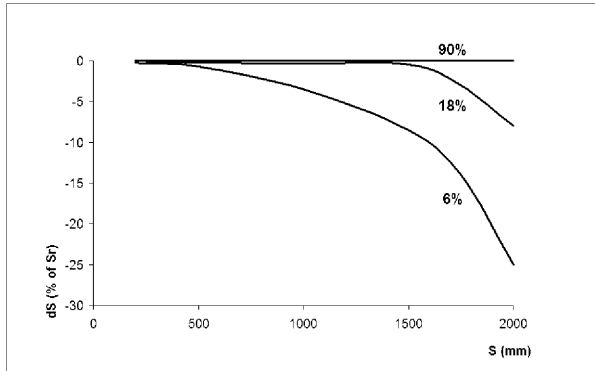
**Connector Drawings**



**Wiring Diagrams**



## Technical Drawings



## Opto Symbols

