

1) Optical axis receiver, 2) Output function



Basic features

Approval/Conformity	cULus CE UKCA Ecolab WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Reference emitter	BOS R01E-X-KS20-..
Series	R01E
Style	Square Connection 90°

Electrical data

Load capacitance max. at Ue	0.05 µF
No-load current I_o max. at Ue	10 mA
Operating voltage U_b	10...30 VDC
Rated insulation voltage U_i	75 V DC
Rated operating current I_e	100 mA
Rated operating voltage U_e DC	24 V
Ready delay t_v max.	150 ms
Residual current I_r max.	50 µA
Switching frequency	500 Hz
Turn-off delay t_{off} max.	1 ms
Turn-on delay t_{on} max.	1 ms
Utilization category	DC -13
Voltage drop U_d max. at I_e	0.7 V

Display/Operation

Display	Limit range - LED yellow, flashing LED yellow: Light received
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Electrical connection

Cable diameter D	3.00 mm
Cable length L	2 m
Conductor cross-section	0.14 mm ²
Connection	Cable, 2.00 m, PUR
Number of conductors	3
Polarity reversal protected	yes
Protection against device mix-ups	yes
Short-circuit protection	yes

Environmental conditions

Ambient temperature	-5...55 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 g _n , 11 ms, 3x6 Half-sinus, 100 g _n , 2 ms, 3x8000
EN 60068-2-6, Vibration	10...55 Hz, amplitude 1 mm, 3x30 min 10...2000 Hz, amplitude 1 mm, 30 g _n , 3x5 h
IP rating	IP67
IP rating per DIN 40050	IP69K

Functional safety

MTTF (40 °C)	2536 a
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Photoelectric Sensors
BOS R01E-PS-KE20-02
Order Code: BOS021P

BALLUFF

Interface

Switching output PNP normally open (NO)

Material

Housing material 1.4404 stainless steel
Material jacket PUR
Material sensing surface PA

Mechanical data

Dimension 20 x 32 x 9 mm
Mounting part Screw M3

Remarks

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

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.

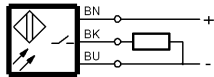
Optical features

Ambient light max. 5000 Lux
Light type LED, red light
Principle of optical operation Through-beam sensor
Smallest part typ. 0.4 mm at 1 m. R0 = 2 m
Switching function, optical dark-on

Range/Distance

Range 0...2.2 m
Rated operating distance Sn 2.2 m
Temperature drift max. (% of Sr) 10 %

Wiring Diagrams



Opto Symbols

