

1) Optical axis emitter, 2) Optical axis receiver, 3) Output function



Basic features

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

Electrical data

Load capacitance max. at Ue	0.1 µF
No-load current I_o max. at Ue	20 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.	10 ms
Residual current I_r max.	50 µA
Ripple max. (% of U_e)	5 %
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, 100 gn, 2 ms, 3x8000 Half-sinus, 30 gn, 11 ms, 3x6
EN 60068-2-6, Vibration	10...2000 Hz, amplitude 1 mm, 30 gn, 3x5 h 10...55 Hz, amplitude 1 mm, 3x30 min
IP rating per DIN 40050	IP69K

Functional safety

MTTF (40 °C)	466 a
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Photoelectric Sensors
BOS R01E-PS-KF21-02
Order Code: BOS022N



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

Optical features

Ambient light max. 5000 Lux
Beam characteristic Divergent
LED group per IEC 62471 Exempt Group
Light spot size Ø 3.0 mm Light exit
Light type LED, red light
Principle of optical operation Diffuse sensor, triangulation
Special optical feature Fixed background suppression
Switching function, optical Light-on
Wave length 650 nm

Range/Distance

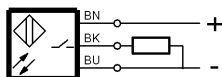
Hysteresis H max. (% of Sr) 8.0 %
Range 50 mm
Rated operating distance Sn 50 mm
Repeat accuracy max. (% of Sr) 2 %
Temperature drift max. (% of Sr) 10 %

Remarks

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.
 Actuation object (target): gray card, 200 x 200, 90 % remission, lateral approach, approach direction vertical to lens axis plane.
 The sensor is functional again after the overload has been eliminated.
 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.

Wiring Diagrams



Opto Symbols

