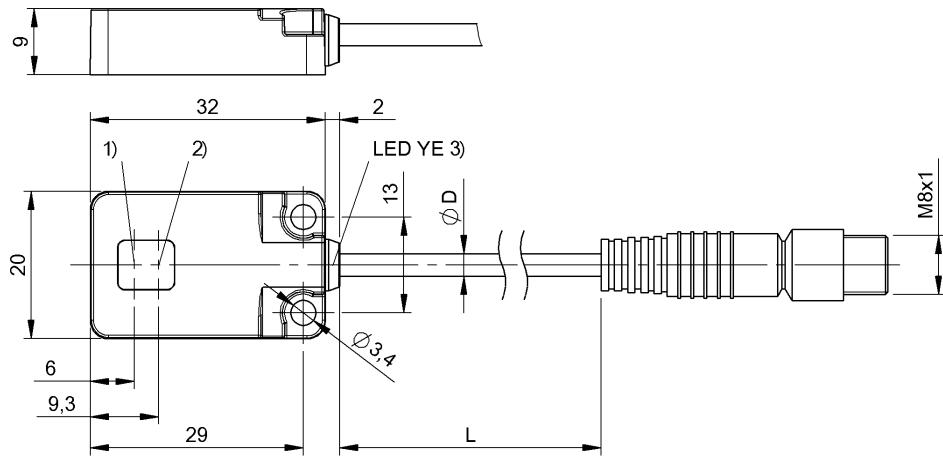


Photoelectric Sensors  
BOS R01E-PS-KD20-00,2-S49  
Order Code: BOS021J

**BALLUFF**



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

**CE** **ECOLAB®**



**UK**  
**CA**

#### 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°

#### 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	0.2 m
Connection	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR
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	0.05 µF
No-load current I <sub>0</sub> max. at Ue	10 mA
Operating voltage U <sub>b</sub>	10...30 VDC
Rated insulation voltage U <sub>i</sub>	75 V DC
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.	150 ms
Residual current I <sub>r</sub> max.	50 µA
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>	0.7 V

#### Environmental conditions

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

#### Interface

Switching output	PNP normally open (NO)
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#### 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, energetic
Switching function, optical	Light-on
Wave length	650 nm

#### Range/Distance

Hysteresis H max. (% of Sr)	8.0 %
Range	1...100 mm
Rated operating distance Sn	100 mm
Repeat accuracy max. (% of Sr)	0.2 %
Temperature drift max. (% of Sr)	10 %

#### Remarks

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

Actuation object (target): gray card, 200 x 200, 90 % remission, lateral approach, approach direction vertical to lens axis plane.

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.

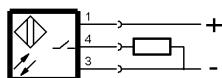
For additional information, refer to user's guide.

Order accessories separately.

#### Connector Drawings



#### Wiring Diagrams



#### Opto Symbols

