

1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception



**Basic features**

Approval/Conformity	CE cULus WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Series	R020K
Style	Square Connection 60°

**Display/Operation**

Display	LED green: Power LED yellow: Light received
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**Electrical connection**

Cable diameter D	2.40 mm
Cable length L	0.2 m
Connection	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PVC
Polarity reversal protected	yes
Short-circuit protection	yes

**Electrical data**

No-load current $I_0$ max. at $U_e$	20 mA
Operating voltage $U_b$	10...30 VDC
Protection class	III
Rated insulation voltage $U_i$	50 V DC
Rated operating current $I_e$	50 mA
Rated operating voltage $U_e$ DC	24 V
Ripple max. (% of $U_e$ )	20 %
Switching frequency	800 Hz
Turn-off delay $t_{off}$ max.	0.63 ms
Turn-on delay $t_{on}$ max.	0.63 ms
Voltage drop $U_d$ max. at $I_e$	2.5 V

**Environmental conditions**

Ambient temperature	-25...50 °C
IP rating	IP67

**Functional safety**

MTTF (40 °C)	3487 a
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**Interface**

Switching output	PNP normally closed (NC)
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**Material**

Housing material	ABS
Material jacket	PVC
Material sensing surface	PMMA

Photoelectric Sensors  
**BOS R020K-PO-RF10-00,2-S49**  
Order Code: BOS021F

**BALLUFF**

**Mechanical data**

Dimension	7.7 x 26.8 x 13.5 mm
Mounting part	Screw M3

**Range/Distance**

Range	1...15 mm
Rated operating distance Sn	15 mm

**Optical features**

Ambient light max.	5000 Lux
Light spot size	Ø 2 mm at 8 mm
Light type	LED, red light
Principle of optical operation	Diffuse sensor, HGA fixed
Special optical feature	Background suppression
Switching function, optical	dark-on
Wave length	660 nm

**Remarks**

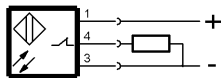
Order accessories separately.  
For additional information, refer to user's guide.  
Reference object (target): gray card, 100 x 100, 90 % remission, axial approach.  
The sensor is functional again after the overload has been eliminated.  
For more information about MTTf and B10d see MTTf / B10d Certificate

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.

**Connector Drawings**



**Wiring Diagrams**



**Opto Symbols**

