

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	2 m
Conductor cross-section	0.09 mm <sup>2</sup>
Connection	Cable, 2.00 m, PVC
Number of conductors	3
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)	3378 a
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### Interface

Switching output	NPN normally closed (NC)
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### Material

Housing material	ABS
Material jacket	PVC
Material sensing surface	PMMA

## 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

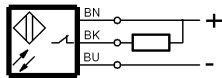
Ambient light max.	5000 Lux
Light spot size	Ø 2 mm at 8 mm
Light type	LED, red light
Principle of optical operation	Diffuse sensor, HGA fixed
Special optical feature	Background suppression
Switching function, optical	dark-on
Wave length	660 nm

## Remarks

The sensor is functional again after the overload has been eliminated.  
Reference object (target): gray card, 100 x 100, 90 % remission, axial approach.  
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.

## Wiring Diagrams



## Opto Symbols

