

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



#### Basic features

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

#### Display/Operation

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

Cable diameter D	2.40 mm
Cable length L	0.3 m
Connection	Cable with connector, M8x1-Male, 3-pin, 0.30 m, PVC
Polarity reversal protected	yes
Protection against device mix-ups	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 open (NO)
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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	Light-on
Wave length	660 nm

Remarks

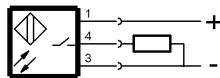
Reference object (target): gray card, 100 x 100, 90 % remission, axial approach.  
The sensor is functional again after the overload has been eliminated.  
Order accessories separately.  
For additional information, refer to user's guide.  
For more information about MTTF and B10d see MTTF / B10d Certificate

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 (Schematic)



Opto Symbols

