

1) Optical axis receiver, 2) Optical axis emitter



**Basic features**

<b>Approval/Conformity</b>	CE UKCA cULus Ecolab WEEE
<b>Basic standard</b>	IEC 60947-5-2
<b>Principle of operation</b>	Photoelectric sensor
<b>Series</b>	18E
<b>Style</b>	Cylinder Straight optics

**Electrical data**

<b>Load capacitance max. at Ue</b>	0.1 µF
<b>No-load current I<sub>o</sub> max. at Ue</b>	40 mA
<b>Operating voltage U<sub>b</sub></b>	10...30 VDC
<b>Rated insulation voltage U<sub>i</sub></b>	75 V DC
<b>Rated operating current I<sub>e</sub></b>	100 mA
<b>Rated operating voltage U<sub>e</sub> DC</b>	24 V
<b>Ripple max. (% of U<sub>e</sub>)</b>	15 %
<b>Switching frequency</b>	400 Hz
<b>Turn-off delay t<sub>off</sub> max.</b>	1.25 ms
<b>Turn-on delay t<sub>on</sub> max.</b>	1.25 ms
<b>Utilization category</b>	DC -13
<b>Voltage drop U<sub>d</sub> max. at I<sub>e</sub></b>	2.5 V

**Display/Operation**

<b>Adjuster</b>	no
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**Electrical connection**

<b>Connection</b>	Connector, M12x1-Male, 4-pin
<b>Contact, surface protection</b>	Gold plated
<b>Polarity reversal protected</b>	yes
<b>Protection against device mix-ups</b>	yes
<b>Short-circuit protection</b>	yes

**Environmental conditions**

<b>Ambient temperature</b>	-25...70 °C
<b>Contamination scale</b>	3
<b>EN 60068-2-27, Shock</b>	Half-sinus, 30 gn, 11 ms, 3x6 Half-sinus, 100 gn, 2 ms, 3x8000
<b>EN 60068-2-6, Vibration</b>	10...55 Hz, amplitude 1 mm, 3x30 min 10...2000 Hz, amplitude 1 mm, 30 gn, 3x5 h
<b>IP rating</b>	IP68/IP67
<b>IP rating per DIN 40050</b>	IPx9K

**Functional safety**

<b>MTTF (40 °C)</b>	537 a
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Photoelectric Sensors  
**BOS 18E-PA-RD20-S4**  
**Order Code: BOS01KE**



**Interface**

<b>Switching output</b>	PNP normally closed (NC) PNP normally open (NO) Pins 4-2
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**Material**

<b>Housing material</b>	1.4404 stainless steel
<b>Material sensing surface</b>	Glass

**Mechanical data**

<b>Dimension</b>	Ø 18 x 75 mm
<b>Mounting part</b>	Nut M18x1
<b>Tightening torque max.</b>	40 Nm

**Optical features**

<b>Ambient light max.</b>	10000 Lux
<b>Beam characteristic</b>	Divergent
<b>LED group per IEC 62471</b>	Exempt Group
<b>Light spot size</b>	Ø 50 mm at 600 mm
<b>Light type</b>	LED, red light
<b>Principle of optical operation</b>	Diffuse sensor, energetic
<b>Switching function, optical</b>	Light/dark switching
<b>Wave length</b>	640 nm

**Range/Distance**

<b>Hysteresis H max. (% of Sr)</b>	10.0 %
<b>Range</b>	500 mm
<b>Rated operating distance S<sub>n</sub></b>	500 mm
<b>Temperature drift max. (% of Sr)</b>	10 %

**Remarks**

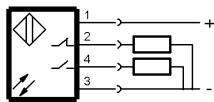
Order accessories separately.  
 For additional information, refer to user's guide.  
 The sensor is functional again after the overload has been eliminated.  
 Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.  
 For more information about MTTF and B10d see MTTF / B10d 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**

