

1) Output function/Error, 2) Operating voltage, 3) Sn, 4) Bar display for switching distance, 5) Optical axis receiver, 6) Optical axis emitter, 7) rotatable 270°



**Basic features**

<b>Approval/Conformity</b>	Ecolab CE cULus WEEE
<b>Basic standard</b>	IEC 60947-5-2
<b>Principle of operation</b>	Photoelectric sensor
<b>Series</b>	23K
<b>Style</b>	Square Connection can be rotated

**Electrical connection**

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

**Display/Operation**

<b>Adjuster</b>	Adjusting screw
<b>Display</b>	Output function- LED yellow LED green: Power Error - LED yellow, flashing Switching distance - bar display
<b>Setting</b>	Rated switching distance (Sn)

Photoelectric Sensors  
**BOS 23K-NU-RH10-S4**  
Order Code: BOS0179

**BALLUFF**

### Electrical data

Border range energetic	1200 mm
Input function	Light-on/dark-on
No-load current $I_0$ max. at $U_e$	30 mA
Operating voltage $U_b$	10...30 VDC
Protection class	II
Rated insulation voltage $U_i$	75 V DC
Rated operating current $I_e$	100 mA
Rated operating voltage $U_e$ DC	24 V
Ready delay $t_v$ max.	300 ms
Residual current $I_r$ max.	50 $\mu$ A
Ripple max. (% of $U_e$ )	10 %
Switching frequency	600 Hz
Turn-off delay $t_{off}$ max.	0.83 ms
Turn-on delay $t_{on}$ max.	0.83 ms
Utilization category	DC -13
Voltage drop $U_d$ max. at $I_e$	2 V

### Environmental conditions

Ambient temperature	-20...60 °C
EN 60068-2-27, Shock	Half-sinus, 30 $g_n$ , 11 ms, 3x6
EN 60068-2-6, Vibration	10...55 Hz, amplitude 0.5 mm, 3x30 min
IP rating	IP6x
IP rating per DIN 40050	IPx9K

### Functional safety

MTTF (40 °C)	466 a
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### Interface

Switching output	NPN normally open/normally closed (NO/NC)
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### Material

Housing material	PC ABS
Material sensing surface	PMMA

### Mechanical data

Dimension	23 x 51 x 52.4 mm
Mounting part	Screw M4
Tightening torque max.	1.5 Nm

### Optical features

Ambient light max.	5000 Lux
Beam characteristic	Focus, typical at 500 mm
LED group per IEC 62471	Exempt Group
Light spot size	15 x 15 mm at focal point
Light type	LED, red light
Principle of optical operation	Diffuse sensor, triangulation
Special optical feature	Background suppression
Switching function, optical	Light/dark switching
Wave length	640 nm

### Range/Distance

Distance deviation 18 % max. (% of Sr)	15 %
Hysteresis H max. (% of Sr)	4.0 %
Range	3...800 mm
Rated operating distance $S_n$	800 mm Adjustable

### Remarks

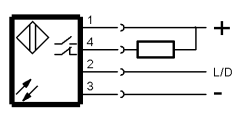
The sensor is functional again after the overload has been eliminated.  
Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.  
For additional information, refer to user's guide.  
Order accessories separately.  
For more information about MTTF and B10d see MTTF / B10d Certificate

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.

### Connector Drawings



## Wiring Diagrams



## Opto Symbols

