

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**

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

**Electrical connection**

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

**Display/Operation**

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

## Electrical data

Border range energetic	1200 mm
Input function	Light-on/dark-on
No-load current I <sub>o max.</sub> at U <sub>e</sub>	30 mA
Operating voltage U <sub>b</sub>	10...30 VDC
Protection class	II
Rated insulation voltage U <sub>i</sub>	75 V DC
Rated operating current I <sub>e</sub>	100 mA
Rated operating voltage U <sub>e DC</sub>	24 V
Ready delay t <sub>v max.</sub>	300 ms
Residual current I <sub>r max.</sub>	50 µA
Ripple max. (% of U <sub>e</sub> )	10 %
Switching frequency	600 Hz
Turn-off delay t <sub>off max.</sub>	0.83 ms
Turn-on delay t <sub>on max.</sub>	0.83 ms
Utilization category	DC -13
Voltage drop U <sub>d max.</sub> at I <sub>e</sub>	2 V

## Environmental conditions

Ambient temperature	-20...60 °C
EN 60068-2-27, Shock	Half-sinus, 30 g <sub>n</sub> , 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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## Remarks

The sensor is functional again after the overload has been eliminated.  
 For additional information, refer to user's guide.  
 Order accessories separately.  
 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.

## Interface

Switching output	PNP 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

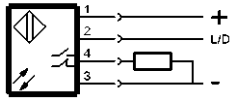
## Range/Distance

Distance deviation 18 % max. (% of Sr)	15 %
Hysteresis H max. (% of Sr)	4.0 %
Range	3...800 mm
Rated operating distance S <sub>n</sub>	800 mm, Adjustable

## Connector Drawings



## Wiring Diagrams (Schematic)



## Opto Symbols

