

1) Output function, 2) Operating voltage, 3) Teach-In button, 4) Optical axis emitter, 5) Optical axis receiver, 6) rotatable 270°



### Basic features

Application	Distance measurement
Approval/Conformity	CE cULus Ecolab WEEE
Basic standard	IEC 60947-5-2, IEC 60947-5-7
Principle of operation	Photoelectric distance sensor
Series	23K
Style	Square Connection can be rotated

### Display/Operation

Adjuster	button
Display	LED green: Power Switching state - LED yellow
Power indicator	yes
Setting	Switching output Q Switching output PNP/NPN Normally open/Normally closed Working range

### Electrical connection

Connection	Connector, M12x1-Male, 4-pin
Polarity reversal protected	yes
Short-circuit protection	yes

Photoelectric Sensors  
BOD 23K-LI01-S4  
Order Code: BOD0020

**BALLUFF**

Electrical data

No-load current I <sub>o</sub> max. at U <sub>e</sub>	60 mA
Operating voltage U <sub>b</sub>	18...30 VDC
Protection class	II
Rated operating current I <sub>e</sub>	100 mA
Rated operating voltage U <sub>e</sub> DC	24 V
Ready delay t <sub>v</sub> max.	5 s
Ripple max. (% of U <sub>e</sub> )	10 %
Switching frequency	500 Hz
Turn-off delay t <sub>off</sub> max.	1.2 ms
Turn-on delay t <sub>on</sub> max.	1.2 ms
Voltage drop U <sub>d</sub> max. at I <sub>e</sub>	2 V

Environmental conditions

Ambient temperature	-40...60 °C
Ambient temperature max.	60 °C UL: max. +45 °C
EN 60068-2-27, Shock	Half-sinus, 30 g <sub>n</sub> , 11 ms, 3x6
EN 60068-2-6, Vibration	55 Hz, amplitude 1 mm, 3x30 min
IP rating	IP67
IP rating per DIN 40050	IP69K

Functional safety

MTTF (40 °C)	188 a
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IO-Link

IO-Link Profil IDs	0x0001 SSP0
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Interface

Interface	IO-Link 1.1
Switching output	PNP/NPN/Auto-Detect normally open/normally closed (NO/NC)

Material

Housing material	ABS
Material sensing surface	PMMA

Mechanical data

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

Optical features

Ambient light max.	5000 Lux
Beam characteristic	Collimated
Laser class per IEC 60825-1	1
Light spot size	5.5 x 7 mm at 5 m
Light type	Laser red light
Principle of optical operation	Light time-of-flight
Pulse duration t max.	0.008 µs
Pulse frequency	45 kHz
Pulse power P <sub>p</sub> max.	930.0 mW
Switching function, optical	Light/dark switching
Wave length	655 nm

Range/Distance

Accuracy	±0.6 % FS
Hysteresis H max.	15 mm
Range	100...5000 mm
Rated operating distance S <sub>n</sub>	5 m Adjustable
Repeat accuracy	0.024 %FS
Resolution	≤ 5 mm

Remarks

For additional information, refer to user's guide.

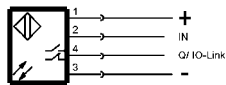
For more information about MTTF and B10d see MTTF / B10d Certificate

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



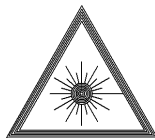
Wiring Diagrams



Opto Symbols



Warning Symbols



LASER CLASS 1 per IEC 60825-1