

1) Emitter, 2) Optical axis, 3) Receiver, 4) Sensitivity, 5) Output function, 6) Light-on/dark-on, 7) stability, 8) Operating voltage



**Basic features**

<b>Approval/Conformity</b>	cULus CE WEEE UKCA
<b>Basic standard</b>	IEC 60947-5-2
<b>Principle of operation</b>	Photoelectric sensor
<b>Series</b>	5K
<b>Style</b>	Square Connection 45°
<b>Trademark</b>	Global

**Electrical connection**

<b>Cable diameter D</b>	3.50 mm
<b>Cable length L</b>	2 m
<b>Conductor cross-section</b>	0.20 mm <sup>2</sup>
<b>Connection</b>	Cable, 2.00 m, PVC
<b>Number of conductors</b>	3
<b>Polarity reversal protected</b>	yes
<b>Short-circuit protection</b>	yes

**Display/Operation**

<b>Adjuster</b>	Potentiometer 270° (2x)
<b>Display</b>	Output function- LED yellow LED green: Power Stability - LED green
<b>Setting</b>	Light-on/dark-on Sensitivity (Sn)

Photoelectric Sensors  
**BOS 5K-NU-LX10-02**  
**Order Code: BOS01JL**

**BALLUFF**

**Electrical data**

No-load current $I_0$ max. at $U_e$	45 mA
Operating voltage $U_b$	10...30 VDC
Rated operating current $I_e$	100 mA
Rated operating voltage $U_e$ DC	24 V
Ripple max. (% of $U_e$ )	10 %
Switching frequency	2000 Hz
Turn-off delay $t_{off}$ max.	0.25 ms
Turn-on delay $t_{on}$ max.	0.25 ms
Voltage drop $U_d$ max. at $I_e$	1.5 V

**Environmental conditions**

Ambient temperature	-10...55 °C
EN 60068-2-27, Shock	Half-sinus, 50 g <sub>n</sub> , 11 ms, 3x10
EN 60068-2-6, Vibration	10...55 Hz, amplitude 1.5 mm, 3x2 h
IP rating	IP67

**Functional safety**

MTTF (40 °C)	3 a
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**Interface**

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

Housing material	PC
	PBT
Material jacket	PVC
Material sensing surface	PMMA

**Mechanical data**

Dimension	10.8 x 32.7 x 19.5 mm
Mounting part	Screw M3
Tightening torque max.	0.5 Nm

**Optical features**

Ambient light max.	5000 Lux
Average power $P_o$ max.	390 µW
Beam characteristic	Divergent
Laser class per IEC 60825-1	1
Light spot size	Ø 5 mm at 3 m
Light type	Laser red light
Principle of optical operation	Through-beam sensor
Pulse duration $t$ max.	1.4 µs
Pulse frequency	20 kHz
Pulse power $P_p$ max.	4.5 mW
Switching function, optical	dark-on/light-on
Wave length	650 nm

**Range/Distance**

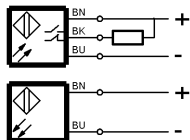
Range	0...30 m
Rated operating distance $S_n$	30 m Adjustable

**Remarks**

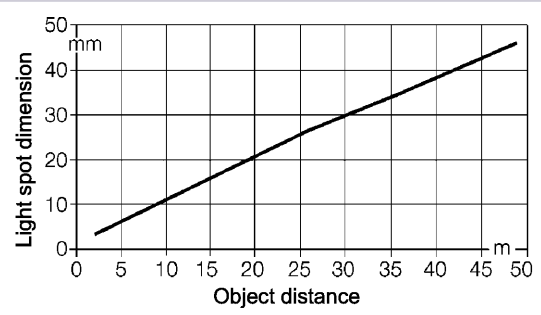
Order accessories separately.  
 For additional information, refer to user's guide.  
 Actuation object (target): gray card, 200 x 200, lateral approach.  
 When using as a UL product the ambient temperature  $T_a$  max. must not exceed 50°C.  
 To meet the EMC requirements of EN 60947-5-2 the mounting bracket must not be grounded.  
 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.

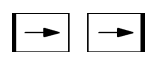
**Wiring Diagrams**



## Technical Drawings



## Opto Symbols



## Warning Symbols



LASER CLASS 1 per IEC 60825-1