

1) Optical axis receiver, 2) Optical axis emitter, 3) Sn, 4) Output function, 5) Light-on/dark-on, 6) stability



Basic features

Approval/Conformity	cULus CE WEEE UKCA
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Series	5K
Style	Square Connection 90°
Trademark	Global

Display/Operation

Adjuster	Potentiometer 270° 6-turn potentiometer
Display	Output function- LED yellow Stability - LED green
Setting	Rated switching distance (Sn) Light-on/dark-on

Electrical connection

Connection	Connector, M8x1-Male, 4-pin
Polarity reversal protected	yes
Short-circuit protection	yes

Electrical data

No-load current I_0 max. at U_e	35 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

Photoelectric Sensors
BOS 5K-NU-LH12-S75
Order Code: BOS01K0

BALLUFF

Environmental conditions

Ambient temperature	-10...55 °C
EN 60068-2-27, Shock	Half-sinus, 50 g _n , 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 sensing surface	PMMA

Mechanical data

Dimension	10.8 x 43.5 x 19.5 mm
Mounting part	Screw M3
Tightening torque max.	0.5 Nm

Optical features

Ambient light max.	5000 Lux
Average power Po max.	390 µW
Beam characteristic	Focus, typical at 260 mm
Laser class per IEC 60825-1	1
Light spot size	0.2 x 0.3 mm at focal point
Light type	Laser red light
Principle of optical operation	Diffuse sensor, triangulation
Pulse duration t max.	1.4 µs
Pulse frequency	20 kHz
Pulse power Pp max.	4.5 mW
Smallest part typ.	0.2 mm at 170 mm
Special optical feature	Background suppression
Switching function, optical	Light/dark switching
Wave length	650 nm

Range/Distance

Distance deviation 18 % max. (% of Sr)	8 %
Hysteresis H max. (% of Sr)	10.0 %
Range	20...300 mm
Rated operating distance Sn	300 mm Adjustable

Remarks

When using as a UL product the ambient temperature Ta max. must not exceed 50°C.

Reference object (target): gray card, 100 x 100, 90 % remission, axial approach.

The sensor is functional again after the overload has been eliminated.

Only for applications per NFPA 79 (machines with a supply voltage of maximum 600 V). Use an R/C (CYJV2) cable with suitable properties for attaching the device.

For additional information, refer to user's guide.

Order accessories separately.

To meet the EMC requirements of EN 60947-5-2 the mounting bracket must not be grounded.

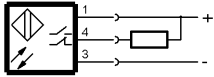
For more information about MTTF and B10d see MTTF / B10d Certificate

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.

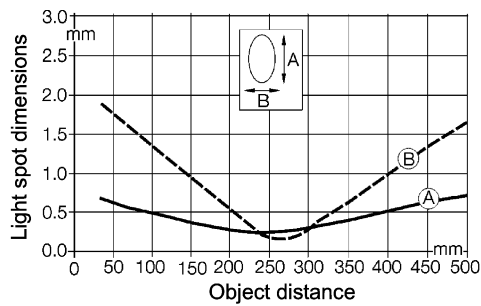
Connector Drawings



Wiring Diagrams



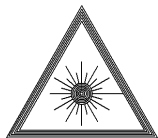
Technical Drawings



Opto Symbols



Warning Symbols



LASER CLASS 1 per IEC 60825-1