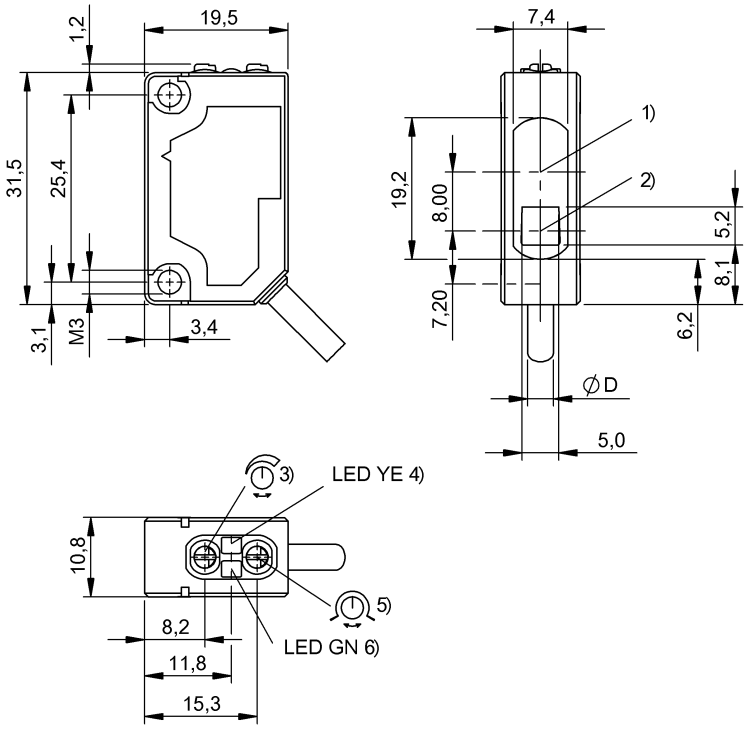
Photoelectric Sensors

BOS 5K-NU-LR10-02
Order Code: BOS01JR



1) Optical axis receiver, 2) Optical axis emitter, 3) Sensitivity, 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
Reference reflector	BOS R-22
Series	5K
Style	Square Connection 45°
Trademark	Global

Display/Operation

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

Electrical connection

Cable diameter D	3.50 mm
Cable length L	2 m
Conductor cross-section	0.20 mm²
Connection	Cable, 2.00 m, PVC
Number of conductors	3
Polarity reversal protected	yes
Short-circuit protection	yes

Electrical data

No-load current Io max. at Ue	35 mA
Operating voltage Ub	10...30 VDC
Rated operating current Ie	100 mA
Rated operating voltage Ue DC	24 V
Ripple max. (% of Ue)	10 %
Switching frequency	2000 Hz
Turn-off delay toff max.	0.25 ms
Turn-on delay ton max.	0.25 ms
Voltage drop Ud max. at Ie	1.5 V

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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

Interface

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

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 Po max.	390 µW
Beam characteristic	Divergent
Blind zone	300 mm
Laser class per IEC 60825-1	1
Light spot size	Ø 5 mm at 3 m
Light type	Laser red light
Polarizing filter	yes
Principle of optical operation	Retroreflective sensor
Pulse duration t max.	1.4 µs
Pulse frequency	20 kHz
Pulse power Pp max.	4.5 mW
Switching function, optical	dark-on/light-on
Wave length	650 nm

Range/Distance

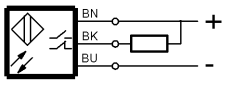
Range	0...10 m
Rated operating distance Sn	10 m Adjustable

Remarks

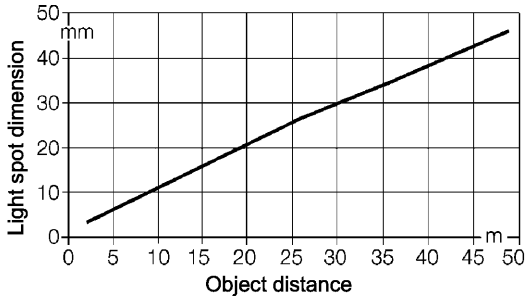
Order accessories separately.
Polarizing filters prevent spurious switching due to reflecting and shiny parts.
For additional information, refer to user's guide.
Actuation object (target): gray card, 200 x 200, 90 % remission, lateral approach, approach direction vertical to lens axis plane.
The sensor is functional again after the overload has been eliminated.
When using as a UL product the ambient temperature Ta 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

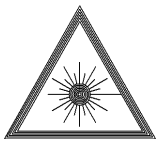


Technical Drawings



Opto Symbols

Warning Symbols



LASER CLASS 1 per IEC 60825-1