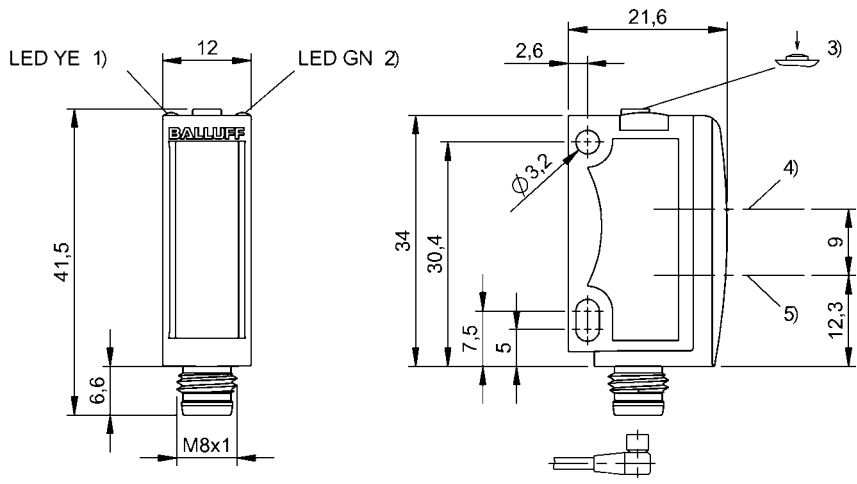


Photoelectric Sensors  
BOS 6K-NU-LH10-S75  
Order Code: BOS01LF



1) Output function, 2) Operating voltage, 3) Sn, light/dark, 4) Optical axis receiver, 5) Optical axis emitter



Basic features

|                        |                          |
|------------------------|--------------------------|
| Approval/Conformity    | CE<br>cULus<br>WEEE      |
| Basic standard         | IEC 60947-5-2            |
| Principle of operation | Photoelectric sensor     |
| Series                 | 6K                       |
| Style                  | Square<br>Connection 90° |

Display/Operation

|          |                                                                                  |
|----------|----------------------------------------------------------------------------------|
| Adjuster | button                                                                           |
| Display  | Output function- LED yellow<br>LED green: Power                                  |
| Setting  | Rated switching distance (Sn)<br>Light-on/dark-on<br>Teach mode Stand./Dyn./Obj. |

Electrical connection

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

Electrical data

|                                     |                                               |
|-------------------------------------|-----------------------------------------------|
| Input function                      | Same function as button<br>Key disable on/off |
| No-load current $I_o$ max. at $U_e$ | 30 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 $U_e$ )           | 12 %                                          |
| Switching frequency                 | 1000 Hz                                       |
| Turn-off delay $t_{off}$ max.       | 0.5 ms                                        |
| Turn-on delay $t_{on}$ max.         | 0.5 ms                                        |
| Voltage drop $U_d$ max. at $I_e$    | 2.4 V                                         |

Environmental conditions

|                         |                                        |
|-------------------------|----------------------------------------|
| Ambient temperature     | -20...60 °C                            |
| EN 60068-2-27, Shock    | Half-sinus, 30 $g_n$ , 11 ms, 3x6      |
| EN 60068-2-6, Vibration | 10...55 Hz, amplitude 0.5 mm, 3x30 min |
| IP rating               | IP67                                   |
| IP rating per DIN 40050 | IP69K                                  |

Functional safety

|              |       |
|--------------|-------|
| MTTF (40 °C) | 432 a |
|--------------|-------|

Interface

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

Photoelectric Sensors  
BOS 6K-NU-LH10-S75  
Order Code: BOS01LF



Material

|                          |      |
|--------------------------|------|
| Housing material         | ABS  |
| Material sensing surface | PMMA |

Mechanical data

|               |                     |
|---------------|---------------------|
| Dimension     | 12 x 41.5 x 21.6 mm |
| Mounting part | Screw M3            |

Optical features

|                                |                               |
|--------------------------------|-------------------------------|
| Ambient light max.             | 5000 Lux                      |
| Average power Po max.          | 390 µW                        |
| Beam characteristic            | Focused                       |
| Laser class per IEC 60825-1    | 1                             |
| Light spot size                | Ø 1.2 mm at 120 mm            |
| Light type                     | Laser red light               |
| Principle of optical operation | Diffuse sensor, triangulation |
| Pulse duration t max.          | 3000 µs                       |
| Pulse frequency                | 5 kHz                         |
| Pulse power Pp max.            | 3.5 mW                        |
| Special optical feature        | Background suppression        |
| Switching function, optical    | Light/dark switching          |
| Wave length                    | 650 nm                        |

Range/Distance

|                                        |                   |
|----------------------------------------|-------------------|
| Distance deviation 18 % max. (% of Sr) | 7 % to 90 % rem.  |
| Range                                  | 4...120 mm        |
| Rated operating distance Sn            | 120 mm Adjustable |

Remarks

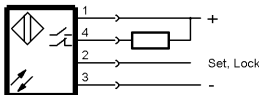
The sensor is functional again after the overload has been eliminated.  
When using as a UL product the ambient temperature Ta max. must not exceed 50°C.  
Only for applications per NFPA 79 (machines with a supply voltage of maximum 600 V). Use an R/C (CYJV2) cable with suitable properties for attaching the device.  
For additional information, refer to user's guide.  
Order accessories separately.  
Do not press key using a pointed tool.  
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.

Connector Drawings



Wiring Diagrams



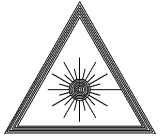
Photoelectric Sensors  
BOS 6K-NU-LH10-S75  
Order Code: BOS01LF



Opto Symbols



Warning Symbols



LASER CLASS 1 per IEC 60825-1