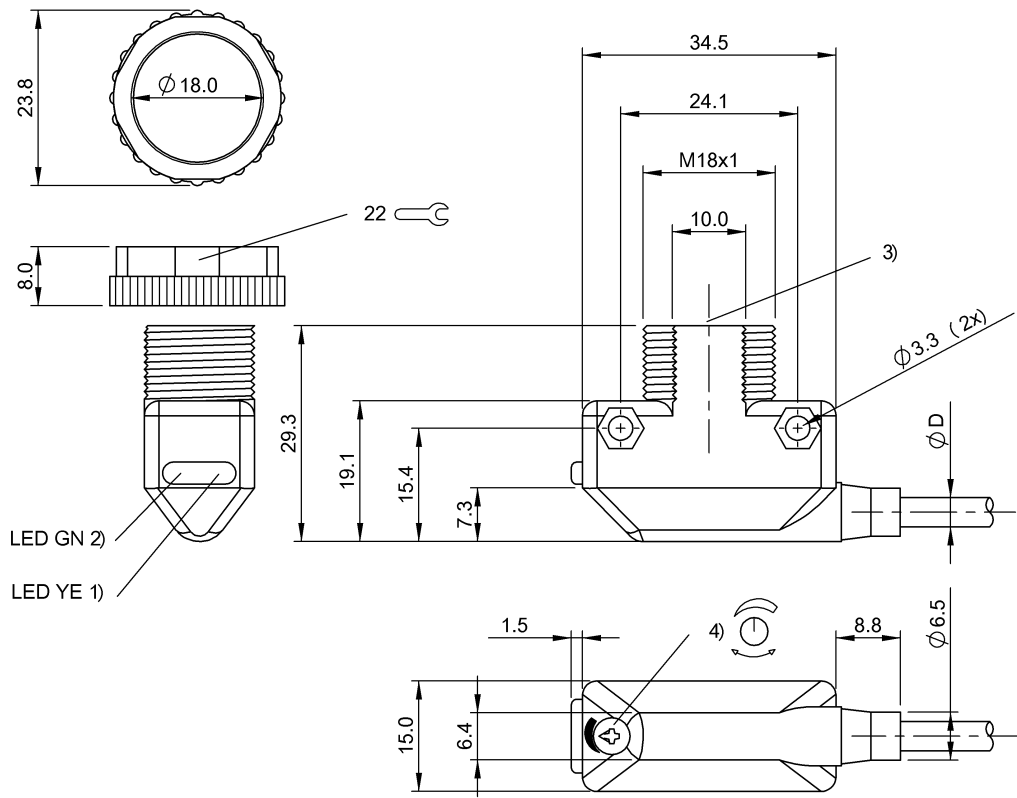




1) Output function, 2) Operating voltage, 3) Optical axis, 4) Sn



**Display/Operation**

|          |                                                 |
|----------|-------------------------------------------------|
| Adjuster | Potentiometer 270°                              |
| Display  | Output function- LED yellow<br>LED green: Power |
| Setting  | Sensitivity (Sn)                                |

**Electrical connection**

|                                   |                    |
|-----------------------------------|--------------------|
| Cable diameter D                  | 6.50 mm            |
| Cable length L                    | 2 m                |
| Conductor cross-section           | 0.13 mm²           |
| Connection                        | Cable, 2.00 m, PVC |
| Number of conductors              | 4                  |
| Polarity reversal protected       | yes                |
| Protection against device mix-ups | yes                |
| Short-circuit protection          | yes                |

**Electrical data**

|                                                       |             |
|-------------------------------------------------------|-------------|
| No-load current I <sub>0</sub> max. at U <sub>e</sub> | 25 mA       |
| Operating voltage U <sub>b</sub>                      | 10...30 VDC |
| Protection class                                      | II          |
| Rated insulation voltage U <sub>i</sub>               | 75 V DC     |
| 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.                       | 200 ms      |
| Residual current I <sub>r</sub> max.                  | 100 µA      |
| Ripple max. (% of U <sub>e</sub> )                    | 10 %        |
| Switching frequency                                   | 500 Hz      |
| Turn-off delay t <sub>off</sub> max.                  | 1 ms        |
| Turn-on delay t <sub>on</sub> max.                    | 1 ms        |
| Voltage drop U <sub>d</sub> max. at I <sub>e</sub>    | 2 V         |

Photoelectric Sensors  
**BOS 11K-NA-RR10-02**  
Order Code: BOS012N

**BALLUFF**

### Environmental conditions

|                         |                                      |
|-------------------------|--------------------------------------|
| Ambient temperature     | -20...55 °C                          |
| EN 60068-2-27, Shock    | Half-sinus, 30 gn, 11 ms, 3x6        |
| EN 60068-2-6, Vibration | 10...55 Hz, amplitude 1 mm, 3x30 min |
| IP rating               | IP67                                 |

### Functional safety

|              |       |
|--------------|-------|
| MTTF (40 °C) | 542 a |
|--------------|-------|

### General data

|                        |                            |
|------------------------|----------------------------|
| Approval/Conformity    | CE<br>cULus<br>EAC<br>WEEE |
| Basic standard         | IEC 60947-5-2              |
| Principle of operation | Photoelectric sensor       |
| Series                 | 11K                        |
| Style                  | Square<br>Connection 90°   |
| Trademark              | Global                     |

### Material

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

### Mechanical data

|           |                       |
|-----------|-----------------------|
| Dimension | 15 x 44.8 x 29.3 mm   |
| Mounting  | Screw M3<br>Nut M18x1 |

### Optical data

|                                |                        |
|--------------------------------|------------------------|
| Ambient light max.             | 10000 Lux              |
| Beam characteristic            | Divergent              |
| Blind zone                     | 50 mm                  |
| Light spot size                | 100 x 100 mm at 150 mm |
| Light type                     | Red light              |
| Polarizing filter              | no                     |
| Principle of optical operation | Retroreflective sensor |
| Switching function, optical    | Light-on<br>dark-on    |
| Wave length                    | 950 nm                 |

### Output/Interface

|                  |                                                    |
|------------------|----------------------------------------------------|
| Switching output | NPN normally open (NO)<br>NPN normally closed (NC) |
|------------------|----------------------------------------------------|

### Range/Distance

|                             |                  |
|-----------------------------|------------------|
| Range                       | 0...6.5 m        |
| Rated operating distance Sn | 6.5 m Adjustable |

### Remarks

Order accessories separately.

For additional information, refer to user's guide.

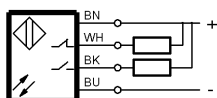
Actuation object (target): gray card, 200 x 200, 90 % remission, lateral approach, approach direction vertical to lens axis plane.

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

For further information about the 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



Opto Symbols

