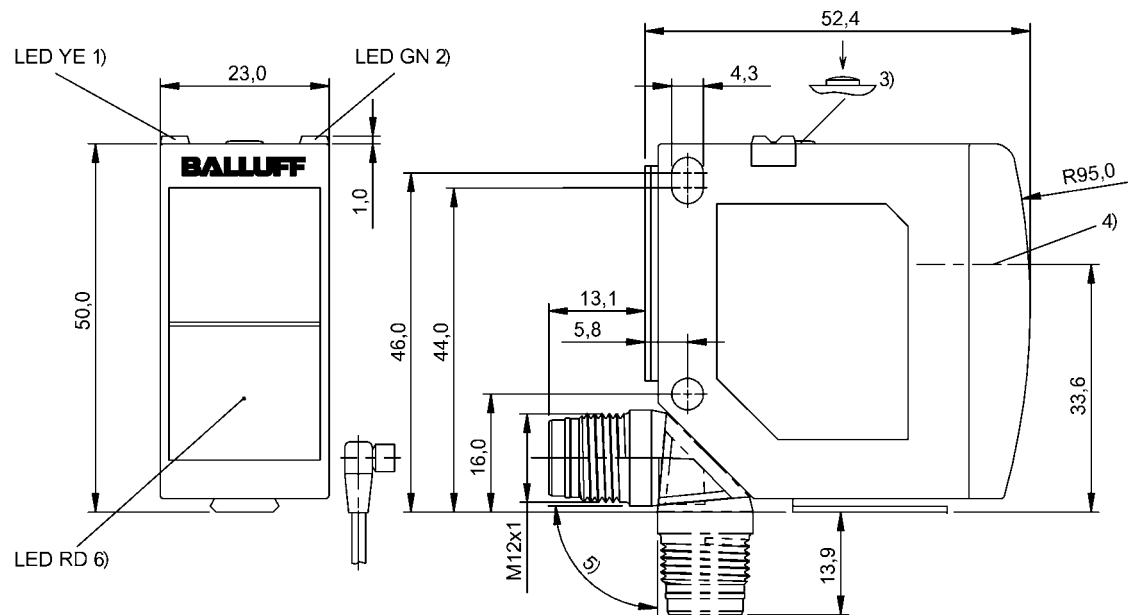


Photoelectric Sensors  
BOS 23K-PU-RE10-S4  
Order Code: BOS016F

**BALLUFF**



1) Output function/Error, 2) Power/setting mode, 3) Sn, light/dark, 4) Optical axis, 5) rotatable 270°, 6) Alignment good/limit area



### Basic features

|                        |                                     |
|------------------------|-------------------------------------|
| Approval/Conformity    | CE<br>Ecolab<br>cULus<br>WEEE       |
| Basic standard         | IEC 60947-5-2                       |
| Principle of operation | Photoelectric sensor                |
| Reference emitter      | BOS 23K-XT-RS11-S4                  |
| Series                 | 23K                                 |
| Style                  | Square<br>Connection can be rotated |

### Display/Operation

|          |                                                                                                                                                                                                                           |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Adjuster | button                                                                                                                                                                                                                    |
| Display  | Output function- LED yellow<br>Orientation good - LED red<br>LED green: Power<br>Teach - LED yellow+green, alt.<br>Setting NO/NC - LED green, flashing<br>Error - LED yellow, flashing<br>Limit range - LED red, flashing |
| Setting  | Light-on/dark-on<br>Rated switching distance (Sn)                                                                                                                                                                         |

### Electrical connection

|                                   |                              |
|-----------------------------------|------------------------------|
| Connection                        | Connector, M12x1-Male, 4-pin |
| Polarity reversal protected       | yes                          |
| Protection against device mix-ups | yes                          |
| Short-circuit protection          | yes                          |

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Electrical data

|                                                       |                                               |
|-------------------------------------------------------|-----------------------------------------------|
| Input function                                        | Same function as button<br>Key disable on/off |
| No-load current I <sub>o</sub> max. at U <sub>e</sub> | 30 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.                       | 300 ms                                        |
| Residual current I <sub>r</sub> max.                  | 50 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                                          |
| Utilization category                                  | DC -13                                        |
| Voltage drop U <sub>d</sub> max. at I <sub>e</sub>    | 2 V                                           |

Environmental conditions

|                         |                                            |
|-------------------------|--------------------------------------------|
| Ambient temperature     | -20...60 °C                                |
| EN 60068-2-27, Shock    | Half-sinus, 30 g <sub>n</sub> , 11 ms, 3x6 |
| EN 60068-2-6, Vibration | 10...55 Hz, amplitude 0.5 mm,<br>3x30 min  |
| IP rating               | IP6x                                       |
| IP rating per DIN 40050 | IPx9K                                      |

Functional safety

|              |       |
|--------------|-------|
| MTTF (40 °C) | 494 a |
|--------------|-------|

Interface

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

Material

|                          |           |
|--------------------------|-----------|
| Housing material         | PC<br>ABS |
| Material sensing surface | PMMA      |

Mechanical data

|                        |                   |
|------------------------|-------------------|
| Dimension              | 23 x 51 x 52.4 mm |
| Mounting part          | Screw M4          |
| Tightening torque max. | 1.5 Nm            |

Optical features

|                                |                                |
|--------------------------------|--------------------------------|
| Ambient light max.             | 5000 Lux                       |
| Light type                     | LED, red light                 |
| Principle of optical operation | Through-beam sensor (receiver) |
| Switching function, optical    | dark-on/light-on               |

Range/Distance

|                                         |                 |
|-----------------------------------------|-----------------|
| Range                                   | 0...25 m        |
| Rated operating distance S <sub>n</sub> | 25 m Adjustable |

Remarks

Order accessories separately.  
For additional information, refer to user's guide.  
Do not press key using a pointed tool.  
The sensor is functional again after the overload has been eliminated.  
Teach-in also possible when object is in motion.  
Actuation object (target): gray card, 200 x 200, 90 % remission, lateral 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.

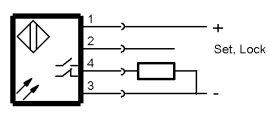
Connector Drawings



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Wiring Diagrams



Opto Symbols

