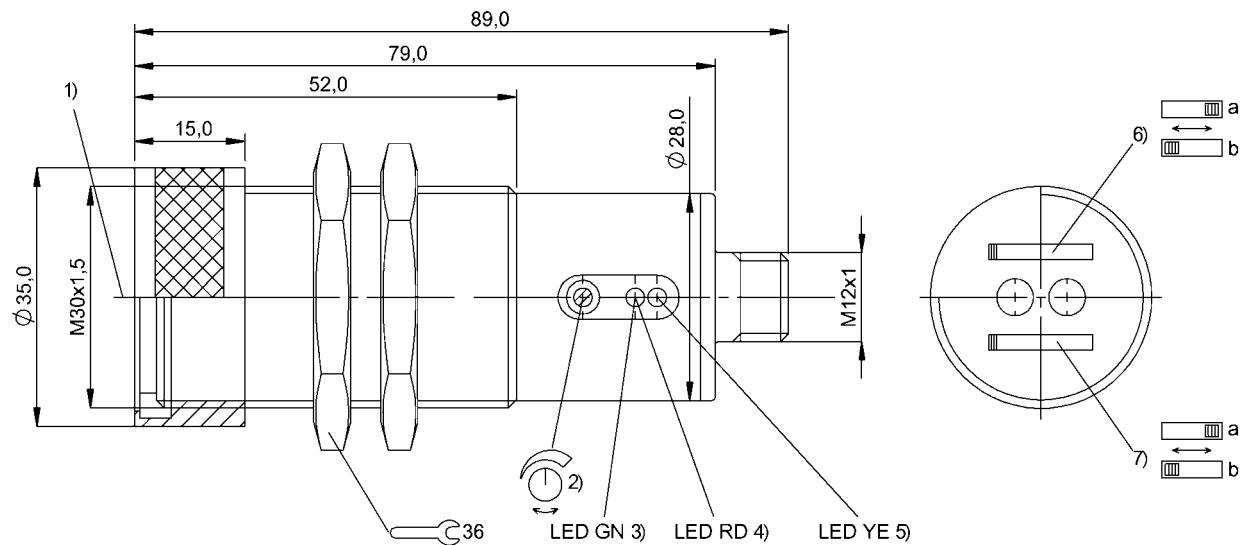


Photoelectric Sensors  
BOS 30M-GA-1PH-S4-C  
Order Code: BOS0134

**BALLUFF**



1) Optical axis, 2) Sn, 3) Operating voltage, 4) Error, 5) Light reception, 6) a= 1x Sn / b= 0.5x Sn, 7) a= Dark-on / b= Light-on



#### Basic features

|                        |  |
|------------------------|--|
| Additional features    | Base unit for fiber optics cable<br>BFO 18.. |
| Approval/Conformity    | CE<br>cULus<br>WEEE                          |
| Basic standard         | IEC 60947-5-2                                |
| Principle of operation | Photoelectric sensor                         |
| Series                 | 30M  |
| Style                  | Cylinder<br>Straight optics                  |

#### Display/Operation

|          |   |
|----------|---|
| Adjuster | 18-turn potentiometer   |
| Display  | LED green: Power<br>Error - LED red<br>LED yellow: Light received |
| Setting  | Rated switching distance (Sn)                                     |

#### Electrical connection

|                             |                              |
|-----------------------------|------------------------------|
| Connection                  | Connector, M12x1-Male, 4-pin |
| Polarity reversal protected | yes                          |
| Short-circuit protection    | yes                          |

#### Electrical data

|                                     |             |
|-------------------------------------|-------------|
| Load capacitance max. at $U_e$      | 1 $\mu$ F   |
| No-load current $I_0$ max. at $U_e$ | 50 mA       |
| Operating voltage $U_b$             | 11...30 VDC |
| Output resistance $R_a$             | 22.0 kOhm   |
| Rated operating current $I_e$       | 200 mA      |
| Rated operating voltage $U_e$ DC    | 24 V        |
| Ripple max. (% of $U_e$ )           | 10 %        |
| Switching frequency                 | 15 Hz       |
| Turn-off delay $t_{off}$ max.       | 33 ms       |
| Turn-on delay $t_{on}$ max.         | 33 ms       |
| Voltage drop $U_d$ max. at $I_e$    | 2.5 V       |

#### Environmental conditions

|                     |            |
|---------------------|------------|
| Ambient temperature | -5...55 °C |
| IP rating           | IP65       |

#### Functional safety

|              |     |
|--------------|-----|
| MTTF (40 °C) | 5 a |
|--------------|-----|

#### Interface

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

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Material

|                          |                      |
|--------------------------|----------------------|
| Housing material         | Brass, nickel-plated |
| Material sensing surface | Glass                |
| Surface protection       | nickel-plated        |

Mechanical data

|                        |              |
|------------------------|--------------|
| Dimension              | Ø 36 x 89 mm |
| Mounting part          | Nut M30x1.5  |
| Tightening torque max. | 40 Nm        |

Optical features

|                                |                           |
|--------------------------------|---------------------------|
| Ambient light max.             | 1000 Lux                  |
| Beam characteristic            | Divergent                 |
| Light type                     | Infrared                  |
| Principle of optical operation | Diffuse sensor, energetic |
| Switching function, optical    | Light/dark switching      |
| Wave length                    | 880 nm                    |

Range/Distance

|                                  |                |
|----------------------------------|----------------|
| Hysteresis H max. (% of Sr)      | 15.0 %         |
| Range                            | 200...2000 mm  |
| Rated operating distance Sn      | 2 m Adjustable |
| Temperature drift max. (% of Sr) | 10 %           |

Remarks

Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.

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

For additional information, refer to user's guide.

Order accessories separately.

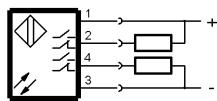
For more information about MTTF and B10d see MTTF / B10d Certificate

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



Opto Symbols

