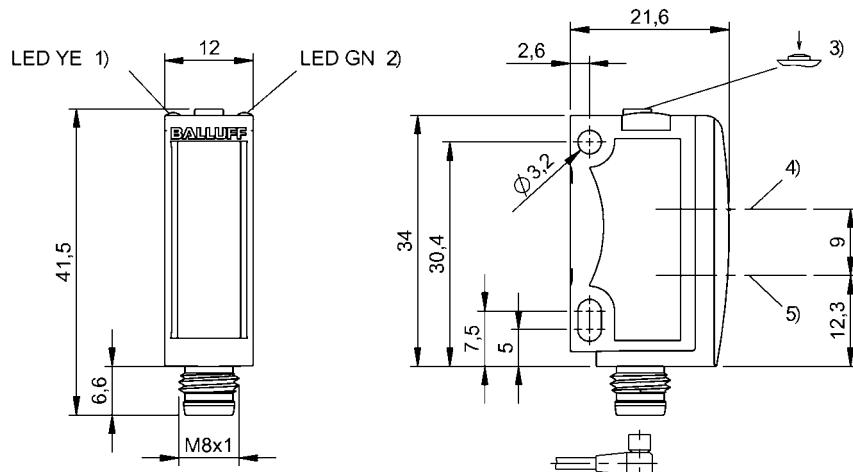


Photoelectric Sensors
BOD 6K-RA04-S75
Order Code: BOD001Z

BALLUFF



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



Basic features

| | |
|------------------------|-------------------------------|
| Application | Distance measurement |
| Approval/Conformity | CE cULus Ecolab WEEE |
| Basic standard | IEC 60947-5-2, IEC 60947-5-7 |
| Principle of operation | Photoelectric distance sensor |
| Series | 6K |
| Style | Square Connection 90° |

Display/Operation

| | |
|----------|--|
| Adjuster | button |
| Display | Output function- LED yellow LED green: Power |
| Setting | Light-on/dark-on Factory setting (Reset) Switching distance, 2 values Output curve rising / falling Switching output Q Measuring range QA |
| | |

Electrical connection

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

Electrical data

| | |
|--|--------------|
| Load capacitance max. at Ue | 0.01 μ F |
| No-load current I ₀ max. at Ue | 30 mA |
| Operating voltage U _b | 13...30 VDC |
| Protection class | II |
| Rated operating current I _e | 100 mA |
| Rated operating voltage U _e DC | 24 V |
| Ready delay t _v max. | 300 ms |
| Ripple max. (% of U _e) | 10 % |
| 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) | 395 a |
|--------------|-------|

Interface

| | |
|-----------------------|---|
| Analog output | Analog, voltage 1...10 V |
| Output characteristic | linear rising/falling |
| Switching output | PNP normally open/normally closed (NO/NC) |

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 |
| Beam characteristic | Divergent |
| Light spot size | Ø 5 mm at 50 mm |
| Light type | LED, red light |
| Principle of optical operation | Triangulation |
| Switching function, optical | Light/dark switching |
| Wave length | 632 nm |

Range/Distance

| | |
|--|------------------|
| Accuracy | ±0.8 % FS |
| Distance deviation 18 % max. (% of Sr) | 7 % |
| Range | 10...85 mm |
| Rated operating distance Sn | 85 mm Adjustable |
| Repeat accuracy | 0.59 %FS |
| Resolution | ≤ 0.15 mm |

Remarks

For additional information, refer to user's guide.

Order accessories separately.

Do not press key using a pointed tool.

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.

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

Reference object (target): gray card, 200 x 200, 18 % remission, axial approach.

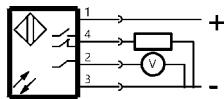
For more information about MTTF and B10d see MTTF / B10d Certificate

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



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Opto Symbols

