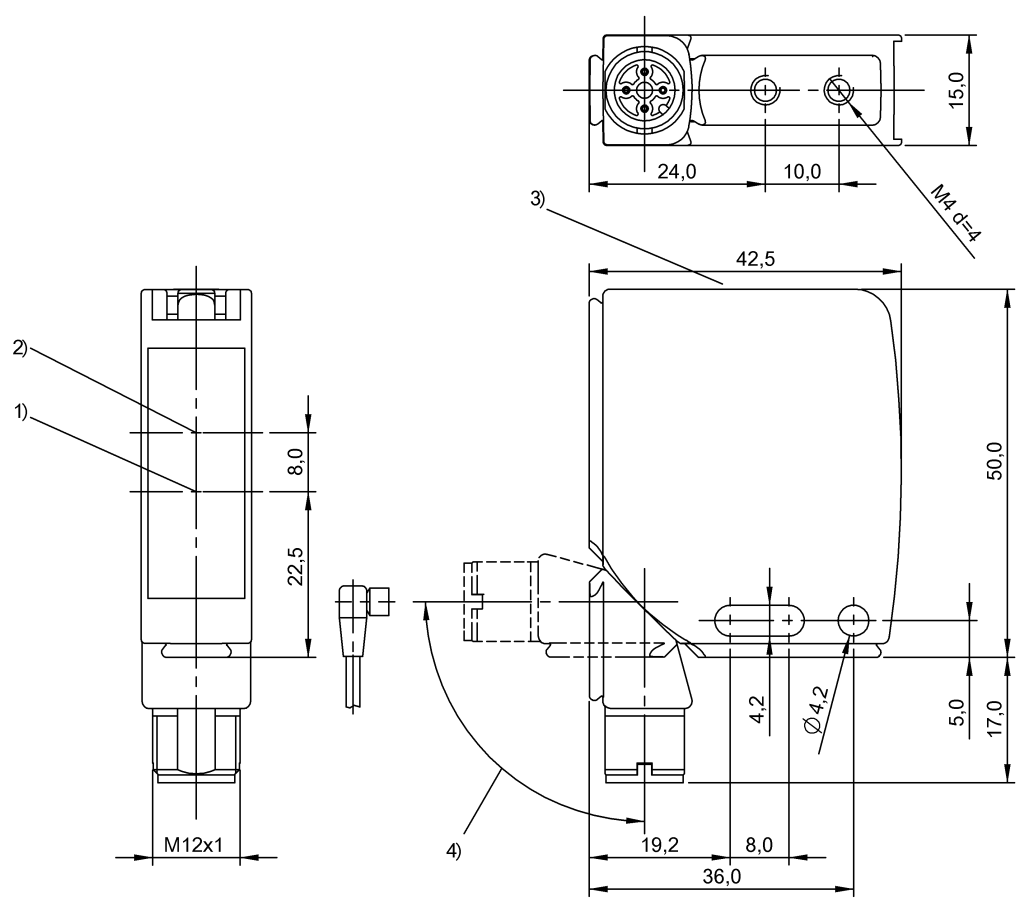


Photoelectric Sensors
BOS 21M-PA-ID10-S4
Order Code: BOS0031

BALLUFF



1) Optical axis emitter, 2) Optical axis receiver, 3) Display and control panel, 4) rotatable 270°



Basic features

| | |
|------------------------|-------------------------------------|
| Approval/Conformity | CE UKCA cULus WEEE |
| Basic standard | IEC 60947-5-2 |
| Principle of operation | Photoelectric sensor |
| Series | 21M |
| Style | Square Connection can be rotated |

Electrical connection

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

Display/Operation

| | |
|----------|--|
| Adjuster | Potentiometer 270° |
| Display | Output function- LED yellow Stability - LED green |
| Setting | Rated switching distance (Sn) |

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Electrical data

| | |
|--|-------------|
| Load capacitance max. at Ue | 1 µF |
| No-load current I _o max. at Ue | 35 mA |
| Operating voltage U _b | 10...30 VDC |
| Protection class | II |
| Rated insulation voltage U _i | 75 V DC |
| Rated operating current I _e | 100 mA |
| Rated operating voltage U _e DC | 24 V |
| Ready delay t _v max. | 200 ms |
| Residual current I _r max. | 10 µA |
| Ripple max. (% of U _e) | 8 % |
| Switching frequency | 500 Hz |
| Turn-off delay t _{off} max. | 1 ms |
| Turn-on delay t _{on} max. | 1 ms |
| Utilization category | DC -13 |
| Voltage drop U _d max. at I _e | 2 V |

Environmental conditions

| | |
|-------------------------|--|
| Ambient temperature | -25...55 °C |
| Contamination scale | 3 |
| EN 60068-2-27, Shock | Half-sinus, 30 g _n , 11 ms, 3x6 |
| EN 60068-2-6, Vibration | 10...55 Hz, amplitude 1 mm, 3x30 min |
| IP rating | IP67 |

Functional safety

| | |
|--------------|-------|
| MTTF (40 °C) | 594 a |
|--------------|-------|

Interface

| | |
|------------------|---|
| Switching output | PNP normally closed (NC) PNP normally open (NO) Pins 4-2 |
|------------------|---|

Material

| | |
|--------------------------|---|
| Housing material | Zinc, Die casting, Powder coated Aluminium |
| Material sensing surface | PMMA |
| Surface protection | Powder coated |

Mechanical data

| | |
|---------------|-------------------|
| Dimension | 15 x 50 x 42.5 mm |
| Mounting part | Screw M4 |

Optical features

| | |
|--------------------------------|---------------------------|
| Ambient light max. | 10000 Lux |
| Beam characteristic | Divergent |
| Light type | LED infrared |
| Principle of optical operation | Diffuse sensor, energetic |
| Switching function, optical | Light-on dark-on |
| Wave length | 880 nm |

Range/Distance

| | |
|---|----------------|
| Hysteresis H max. (% of Sr) | 20.0 % |
| Range | 50...2000 mm |
| Rated operating distance S _n | 2 m Adjustable |
| Repeat accuracy max. (% of Sr) | 1.0 % |

Remarks

Order accessories separately.
For additional information, refer to user's guide.
Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.
The sensor is functional again after the overload has been eliminated.
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 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.

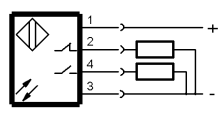
Connector Drawings



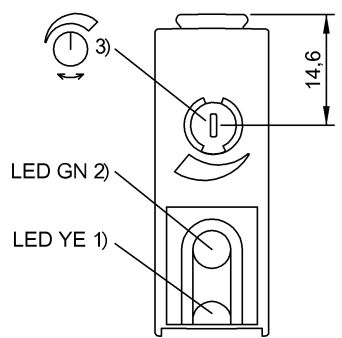
Photoelectric Sensors
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Wiring Diagrams



Help Views



- 1) Output function
- 2) Stability
- 3) Sensitivity

Opto Symbols

