

1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage/Error, 4) Light reception/limit area



Basic features

| | |
|-------------------------------|-----------------------------|
| Approval/Conformity | CE UKCA cULus WEEE |
| Basic standard | IEC 60947-5-2 |
| Principle of operation | Photoelectric sensor |
| Series | 12M |
| Style | Cylinder Straight optics |

Display/Operation

| | |
|-----------------|---|
| Adjuster | no |
| Display | LED green: Power Error - LED green, flashing Limit range - LED yellow, flashing LED yellow: Light received |

Electrical connection

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

Electrical data

| | |
|---|-------------|
| Load capacitance max. at Ue | 0.2 µF |
| No-load current I_o max. at Ue | 20 mA |
| Operating voltage U_b | 10...30 VDC |
| Rated operating current I_e | 100 mA |
| Rated operating voltage U_e DC | 24 V |
| Ripple max. (% of U_e) | 15 % |
| Switching frequency | 1000 Hz |
| Turn-off delay t_{off} max. | 0.5 ms |
| Turn-on delay t_{on} max. | 0.5 ms |
| Utilization category | DC -13 |
| Voltage drop U_d max. at I_e | 1.5 V |

Environmental conditions

| | |
|--------------------------------|---|
| Ambient temperature | -5...60 °C |
| Contamination scale | 3 |
| EN 60068-2-27, Shock | Half-sinus, 30 g _n , 11 ms, 3x6 Half-sinus, 100 g _n , 2 ms, 3x8000 |
| EN 60068-2-6, Vibration | 10...55 Hz, amplitude 1 mm, 3x30 min 10...2000 Hz, amplitude 1 mm, 30 g _n , 3x5 h |
| IP rating | IP67 |

Functional safety

| | |
|---------------------|--------|
| MTTF (40 °C) | 1561 a |
|---------------------|--------|

Photoelectric Sensors
BOS 12M-NA-RF10-S4
Order Code: BOS01UP



Interface

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

Material

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

Mechanical data

| | |
|--|---------------|
| Dimension | Ø 12 x 60 mm |
| Distance deviation 6 % max. (% of Sr) | 5.0 % |
| Mounting part | Nut M12x1 |
| Tightening torque max. | 7 Nm 15 Nm |

Optical features

| | |
|---------------------------------------|---|
| Ambient light max. | 50000 Lux |
| Beam characteristic | Focus, typical at 25 mm |
| LED group per IEC 62471 | Exempt Group |
| Light spot size | Ø 2 mm at 25 mm |
| Light type | Red light |
| Principle of optical operation | Diffuse sensor, triangulation |
| Smallest part typ. | Ø 0.05 mm wire |
| Special optical feature | Fixed focus Fixed background suppression |
| Switching function, optical | Light-on dark-on |
| Wave length | 650 nm |

Range/Distance

| | |
|---|-----------|
| Distance deviation 18 % max. (% of Sr) | 1 % |
| Hysteresis H max. (% of Sr) | 1.0 % |
| Range | 1...25 mm |
| Rated operating distance Sn | 25 mm |
| Repeat accuracy max. (% of Sr) | 1.0 % |
| Temperature drift max. (% of Sr) | 5 % |

Remarks

Order accessories separately.

For additional information, refer to user's guide.

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.

Reference object (target): gray card, 100 x 100, 90 % remission, axial approach.

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

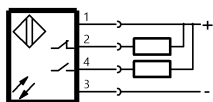
For more information about MTTF and B10d see MTTF / B10d Certificate

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

