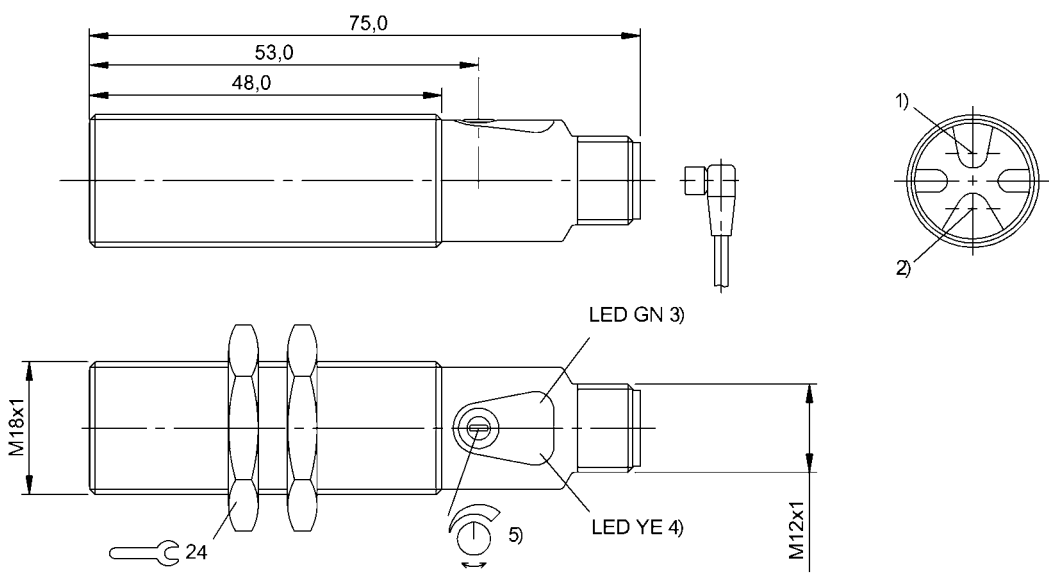


Photoelectric Sensors  
BFB M18M-001-P-S4  
Order Code: BFB0009



1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception/limit area, 5) Sn



Basic features

|                        |                             |
|------------------------|-----------------------------|
| Approval/Conformity    | CE<br>UKCA<br>cULus<br>WEEE |
| Basic standard         | IEC 60947-5-2               |
| Principle of operation | Photoelectric sensor        |
| Series                 | 18M                         |
| Style                  | Cylinder, straight optics   |

Display/Operation

|          |                                                                                                                     |
|----------|---------------------------------------------------------------------------------------------------------------------|
| Adjuster | Potentiometer 270°                                                                                                  |
| Display  | LED green: Power<br>LED yellow: Light received<br>Error - LED green, flashing<br>Limit range - LED yellow, flashing |
| Setting  | Sensitivity (Sn)                                                                                                    |

Electrical connection

|                             |                       |
|-----------------------------|-----------------------|
| Connection                  | Connector-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 <sub>o</sub> max. at Ue          | 30 mA       |
| Operating voltage U <sub>b</sub>                   | 10...30 VDC |
| 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          | 24.0 V      |
| Ready delay t <sub>v</sub> max.                    | 19 ms       |
| Ripple max. (% of U <sub>e</sub> )                 | 15 %        |
| Switching frequency                                | 1000 Hz     |
| Turn-off delay t <sub>off</sub> max.               | 0.5 ms      |
| Turn-on delay t <sub>on</sub> max.                 | 0.5 ms      |
| Utilization category                               | DC -13      |
| Voltage drop U <sub>d</sub> max. at I <sub>e</sub> | 1.5 V       |

Environmental conditions

|                          |                                                                                             |
|--------------------------|---------------------------------------------------------------------------------------------|
| Ambient temperature      | -5...55 °C                                                                                  |
| Ambient temperature max. | 55 °C 65 °C for operating by small U <sub>b</sub>                                           |
| EN 60068-2-27, Shock     | Half-sinus, 30 g <sub>n</sub> , 11 ms, 3x6<br>Half-sinus, 100 g <sub>n</sub> , 2 ms, 3x8000 |
| EN 60068-2-6, Vibration  | 55 Hz, amplitude 1 mm, 3x30 min<br>10...2000 Hz, amplitude 1 mm, 30 g <sub>n</sub> , 3x5 h  |
| IP rating                | IP67                                                                                        |

Functional safety

|              |      |
|--------------|------|
| MTTF (40 °C) | 82 a |
|--------------|------|

Interface

|                  |                                              |
|------------------|----------------------------------------------|
| Switching output | 2x PNP normally open/normally closed (NO/NC) |
|------------------|----------------------------------------------|

Material

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

Mechanical data

|                        |                |
|------------------------|----------------|
| Dimension              | Ø 18 x 75 mm   |
| Mounting part          | Nut M18x1      |
| Tightening torque max. | 15 Nm<br>30 Nm |

Optical features

|                                |                         |
|--------------------------------|-------------------------|
| Ambient light max.             | 10000 Lux               |
| LED group per IEC 62471        | Exempt Group            |
| Light type                     | LED, red light          |
| Principle of optical operation | depends on fiber optics |
| Switching function, optical    | Light/dark switching    |
| Wave length                    | 626 nm                  |

Range/Distance

|                                  |                         |
|----------------------------------|-------------------------|
| Hysteresis H max. (% of Sr)      | 10 %                    |
| Range                            | depends on fiber optics |
| Temperature drift max. (% of Sr) | 5 %                     |

Remarks

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

For additional information, refer to user's guide.

Order accessories separately.

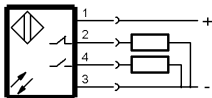
For more information about MTTF and B10d see MTTF / B10d Certificate

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



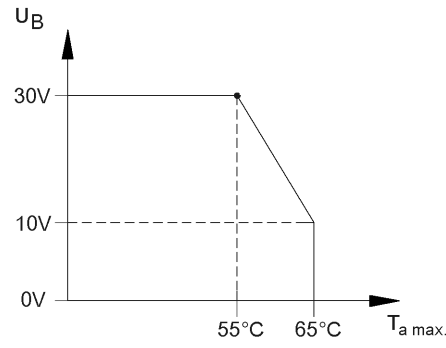
Wiring Diagrams



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Technical Drawings



Opto Symbols

