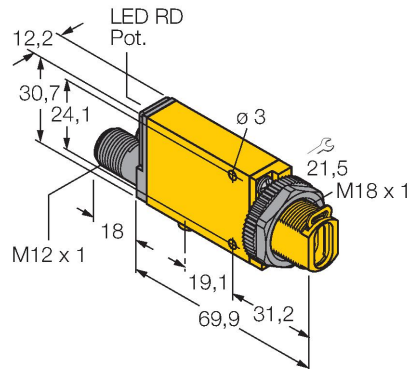


# SM312FP1HQD

## Photoelectric Sensor – Photoelectric Sensor for Plastic Fibers



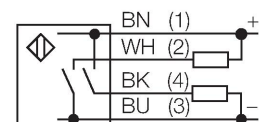
### Technical data

|                              |                                         |
|------------------------------|-----------------------------------------|
| Type                         | SM312FP1HQD                             |
| ID                           | 3060907                                 |
| <b>Optical data</b>          |                                         |
| Function                     | Fiber optic sensor                      |
| Operating mode               | Plastic fiber                           |
| Fiber-optic type             | plastic                                 |
| Light type                   | Red                                     |
| Wavelength                   | 650 nm                                  |
| <b>Electrical data</b>       |                                         |
| Operating voltage            | 10...30 VDC                             |
| Residual ripple              | < 10 % U <sub>ss</sub>                  |
| DC rated operational current | ≤ 150 mA                                |
| No-load current              | ≤ 25 mA                                 |
| Output function              | NO contact, PNP/NPN                     |
| Switching frequency          | ≤ 500 Hz                                |
| Readiness delay              | ≤ 100 ms                                |
| Response time typical        | < 1 ms                                  |
| Overcurrent release          | > 220 mA                                |
| Setting option               | Potentiometer                           |
| <b>Mechanical data</b>       |                                         |
| Design                       | Rectangular, Mini Beam                  |
| Dimensions                   | 71.3 x 12.3 x 30.7 mm                   |
| Housing material             | Plastic, Thermoplastic material, Yellow |
| Electrical connection        | Connector, M12 × 1, PVC                 |
| Number of cores              | 4                                       |
| Ambient temperature          | -20...+70 °C                            |
| Relative humidity            | 0...90 %                                |

### Features

- Male M12 × 1, 4-pin
- Protection class IP67
- Sensitivity adjusted via potentiometer
- Alignment indicator
- Operating voltage: 10...30 VDC
- Switching output, bipolar
- Light/dark operation

### Wiring diagram



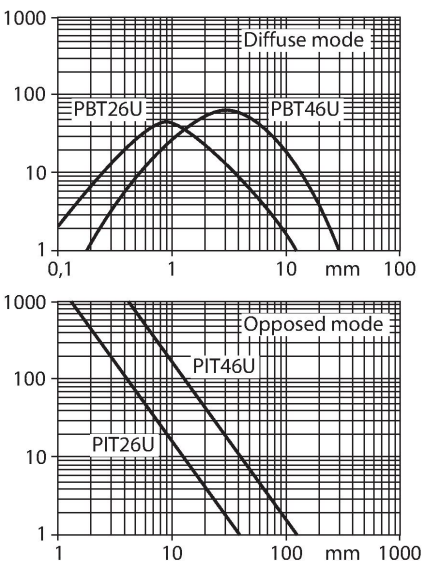
### Functional principle

Glass or plastic fibers are the optimum choice for high-temperature applications and limited spaces. Optical fibers transfer the light from the sensor to a remote object. Individual fibers are used for opposed sensing mode, whereas bifurcated fibers are suited for diffuse sensing mode.

Excess gain curve  
Excess gain in relation to distance

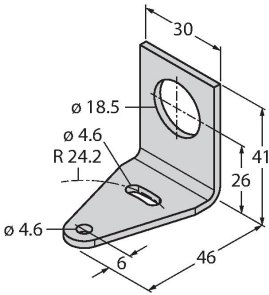
Technical data

|                        |                    |
|------------------------|--------------------|
| Protection class       | IP67               |
| Special features       | Wash down          |
| Switching state        | LED, Red           |
| Excess gain indication | LED, red, flashing |
| Tests/approvals        |                    |
| Approvals              | CE, cURus, CSA     |



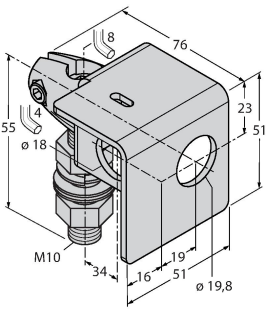
Accessories

SMB18A 3033200



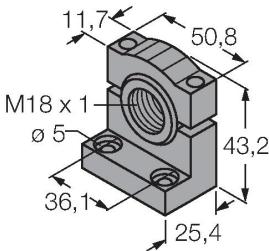
Mounting bracket, rectangular, stainless steel, for sensors with 18 mm thread

SMB18AFAM10 3012558



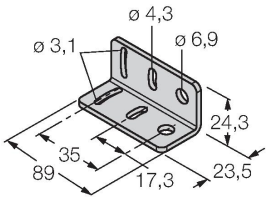
Mounting bracket, material VA 1.4401, for M10 x 1.5 thread, thread length 18 mm

SMB18SF 3052519



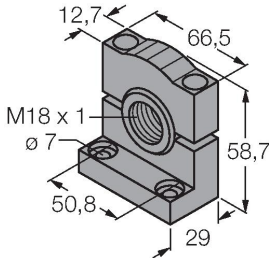
Mounting bracket, PBT black, for sensors with 18 mm thread, rotatable

SMB312B 3025519



Mounting bracket, stainless steel, for MINI-BEAM NAMUR

SMB3018SC 3053952



Mounting bracket, PTB black, for sensors with 18 mm thread