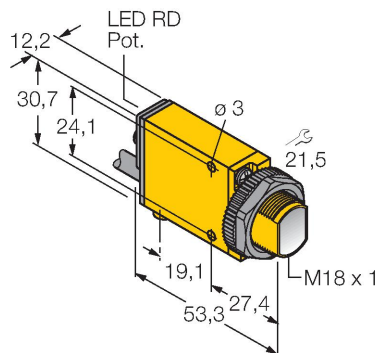


# SM31RMHS W/30'

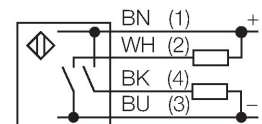
## Photoelectric Sensor – Opposed Mode Sensor (Emitter/Receiver)



### Features

- Cable, PVC, 2 m
- Protection class IP67
- Sensitivity adjustable via potentiometer
- Alignment indicator
- Operating voltage: 10...30 VDC
- Switching output, bipolar
- Light/dark operation

### Wiring diagram



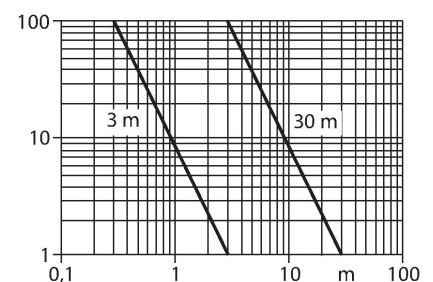
### Technical data

|                              |                        |
|------------------------------|------------------------|
| Type                         | SM31RMHS W/30'         |
| ID                           | 3031220                |
| <b>Optical data</b>          |                        |
| Function                     | Opposed mode sensor    |
| Operating mode               | Receiver               |
| <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               |
| Overcurrent release          | > 220 mA               |
| <b>Mechanical data</b>       |                        |
| Design                       | Rectangular, Mini Beam |
| Dimensions                   | 53.3 x 12.3 x 30.7 mm  |
| Housing material             | Plastic, PBT, Yellow   |
| Lens                         | plastic, Acrylic       |
| Electrical connection        | Cable, 2 m, PVC        |
| Number of cores              | 4                      |
| Core cross-section           | 0.5 mm <sup>2</sup>    |
| Ambient temperature          | -20...+70 °C           |
| Protection class             | IP67                   |
| Switching state              | LED, Red               |
| Excess gain indication       | LED, red, flashing     |

### Functional principle

Opposed mode sensors consist of an emitter and receiver. They are installed opposite each other so that the light from the emitter is aimed directly at the receiver. When an object interrupts or weakens the light beam, the sensor switches. Opposed mode sensors are the most reliable photoelectric sensors for detection of opaque targets. An excellent contrast between light and dark conditions and an extremely high excess gain are typical of this sensing mode, thus allowing operation over larger distances and under difficult conditions.

Excess gain curve  
Excess gain in relation to the distance



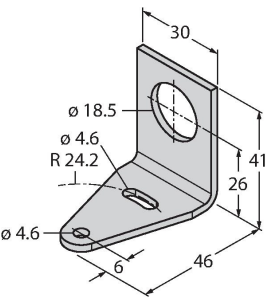
Technical data

| Tests/approvals |                                           |
|-----------------|-------------------------------------------|
| MTTF            | 777 years acc. to SN 29500 (Ed. 99) 40 °C |
| Approvals       | CE, cURus, CSA                            |

Accessories

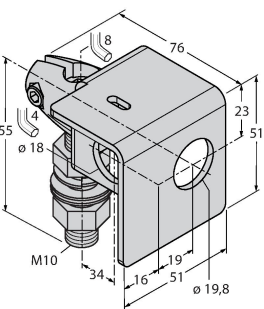
SMB18A 3033200

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



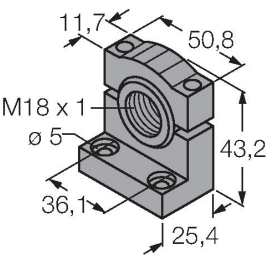
SMB18AFAM10 3012558

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



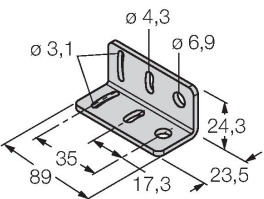
SMB18SF 3052519

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

