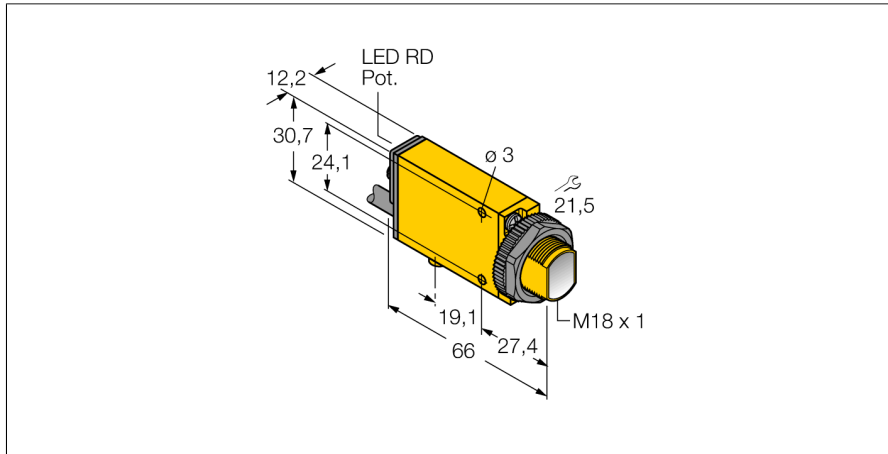


# Photoelectric Sensor

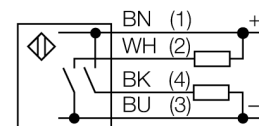
## Opposed Mode Sensor (Emitter/Receiver)

### SM2A31RF



- Cable, PVC, 2 m
- Protection class IP67
- Sensitivity adjustable via potentiometer
- Alignment indicator
- Operating voltage: 24...240 VAC
- Switching output, bipolar
- Light/dark operation

#### Wiring Diagram



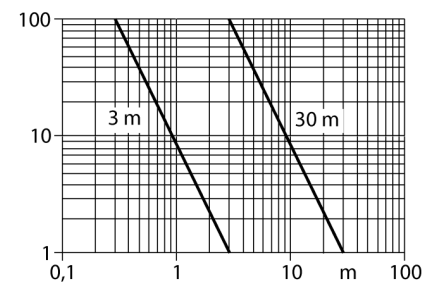
|                         |                                           |
|-------------------------|-------------------------------------------|
| Type                    | SM2A31RF                                  |
| ID                      | 3027896                                   |
| <b>Optical data</b>     |                                           |
| Function                | Opposed mode sensor                       |
| Operating mode          | Receiver                                  |
| <b>Electrical data</b>  |                                           |
| Operating voltage $U_a$ | 24...240VAC                               |
| <b>Mechanical data</b>  |                                           |
| Design                  | Rectangular with thread, Mini Beam        |
| Housing material        | Plastic, PBT, Yellow                      |
| Lens                    | plastic, Acrylic                          |
| Electrical connection   | Cable                                     |
| Ambient temperature     | -20...+70 °C                              |
| Protection class        | IP67                                      |
| <b>Tests/approvals</b>  |                                           |
| MTTF                    | 777 years acc. to SN 29500 (Ed. 99) 40 °C |
| Approvals               | CE, cURus, CSA                            |

#### Functional principle

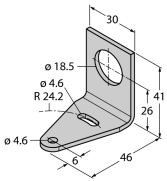
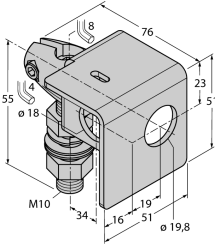
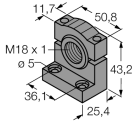
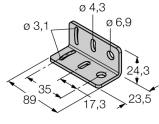
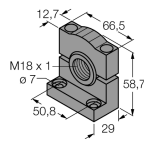
Opposed mode sensors consist of an emitter and receiver. They are installed opposite each other so that the light from the emitter is aimed directly at the receiver. When an object interrupts or weakens the light beam, the sensor switches. Opposed mode sensors are the most reliable photoelectric sensors 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



## Accessories

| Type code   | Ident no. |                                                                                 | Dimension drawing                                                                     |
|-------------|-----------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 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                      |  |