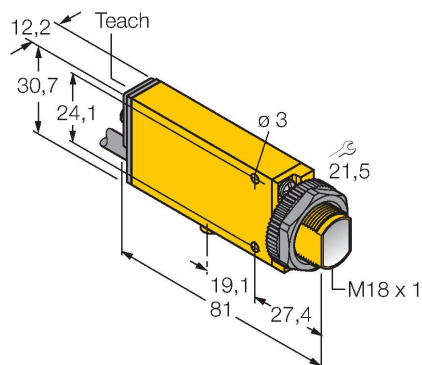


# SM2A31RPDQDP

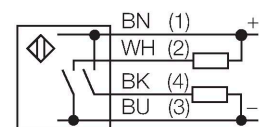
## Photoelectric Sensor – Opposed Mode Sensor (Emitter/Receiver)



### Features

- 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



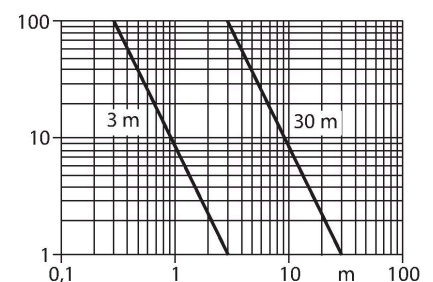
### Technical data

Type	SM2A31RPDQDP
ID no.	3029565
<b>Optical data</b>	
Function	Opposed mode sensor
Operating mode	Receiver
Wavelength	650 nm
Range	300 mm
<b>Electrical data</b>	
Operating voltage	24...240 VAC
Output function	Relay output
Readiness delay	≤ 300 ms
Response time typical	< 2 ms
Setting option	Potentiometer
<b>Mechanical data</b>	
Design	Rectangular with thread, Mini Beam
Dimensions	Ø 18 mm
Housing material	Plastic, Thermoplastic material, Yellow
Lens	plastic, Acrylic
Electrical connection	Cable with connector, 1/2", 0.15 m, PVC
Number of cores	3
Ambient temperature	-20...+70 °C
Protection class	IP67
Special features	Clear object detection Encapsulated
Excess gain indication	LED

### 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

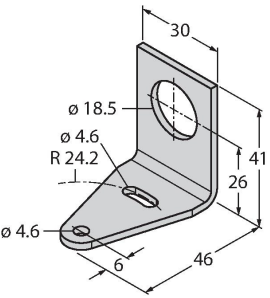


Technical data

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

Accessories

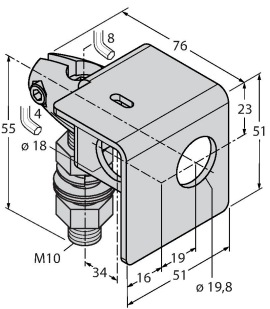
SMB18A 3033200



Technical drawing of the SMB18A mounting bracket. It is a rectangular bracket made of stainless steel for sensors with 18 mm thread. Dimensions include a top width of 30 mm, a vertical height of 41 mm, a base width of 46 mm, and a base thickness of 6 mm. A circular hole with a diameter of 18.5 mm is located on the vertical part, and a smaller hole with a diameter of 4.6 mm is on the base. A fillet with a radius of R 24.2 connects the two parts.

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

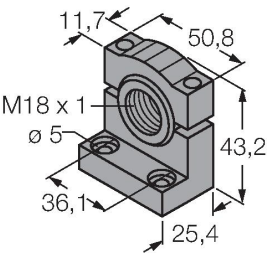
SMB18AFAM10 3012558



Technical drawing of the SMB18AFAM10 mounting bracket. It is a rectangular bracket made of material VA 1.4401 for M10 x 1.5 thread, with a thread length of 18 mm. Dimensions include a top width of 76 mm, a vertical height of 51 mm, a base width of 51 mm, and a base thickness of 16 mm. A circular hole with a diameter of 19.8 mm is located on the vertical part, and a smaller hole with a diameter of 4 mm is on the base. A thread of M10 is shown on the front.

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

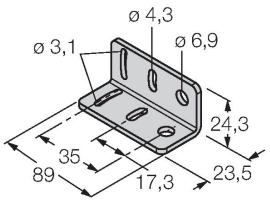
SMB18SF 3052519



Technical drawing of the SMB18SF mounting bracket. It is a rectangular bracket made of PBT black for sensors with 18 mm thread, rotatable. Dimensions include a top width of 50.8 mm, a vertical height of 43.2 mm, a base width of 36.1 mm, and a base thickness of 25.4 mm. A circular hole with a diameter of 18 mm is located on the vertical part, and a smaller hole with a diameter of 5 mm is on the base. A thread of M18 x 1 is shown on the front.

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

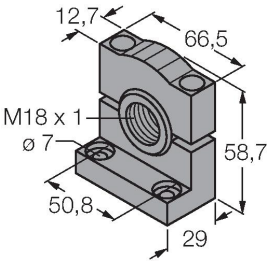
SMB312B 3025519



Technical drawing of the SMB312B mounting bracket. It is a rectangular bracket made of stainless steel for MINI-BEAM NAMUR. Dimensions include a top width of 89 mm, a vertical height of 24.3 mm, a base width of 17.3 mm, and a base thickness of 23.5 mm. A circular hole with a diameter of 4.3 mm is located on the vertical part, and a smaller hole with a diameter of 3.1 mm is on the base.

Mounting bracket, stainless steel, for MINI-BEAM NAMUR

SMB3018SC 3053952



Technical drawing of the SMB3018SC mounting bracket. It is a rectangular bracket made of PTB black for sensors with 18 mm thread. Dimensions include a top width of 66.5 mm, a vertical height of 58.7 mm, a base width of 50.8 mm, and a base thickness of 29 mm. A circular hole with a diameter of 18 mm is located on the vertical part, and a smaller hole with a diameter of 7 mm is on the base. A thread of M18 x 1 is shown on the front.

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