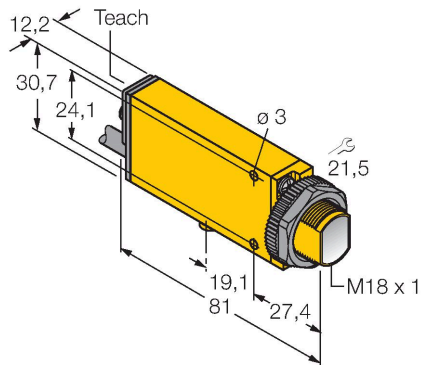


# SM2A31RLQDP

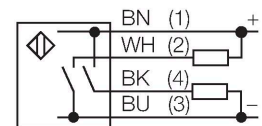
## Photoelectric Sensor – Opposed Mode Sensor (Emitter/Receiver)



### 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



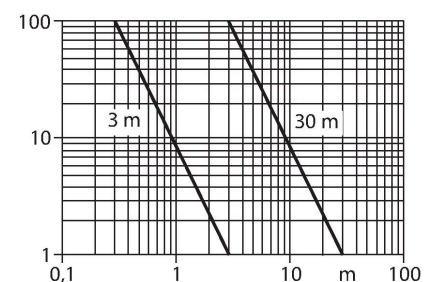
### Technical data

Type	SM2A31RLQDP
ID no.	3029555
<b>Optical data</b>	
Function	Opposed mode sensor
Operating mode	Receiver
Range	30000 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	Encapsulated
Excess gain indication	LED
<b>Tests/approvals</b>	
MTTF	777 years acc. to SN 29500 (Ed. 99) 40 °C

### 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

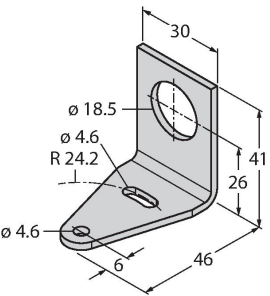


Technical data

Approvals	CE, cURus, CSA
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Accessories

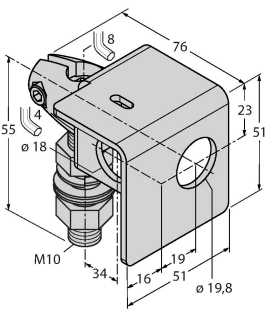
SMB18A	3033200
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Technical drawing of the SMB18A mounting bracket. It is a rectangular bracket made of stainless steel for sensors with 18 mm thread. Dimensions include a top width of 30 mm, a vertical height of 41 mm, a base width of 46 mm, and a base thickness of 6 mm. The mounting hole has a diameter of 18.5 mm, and there are two smaller holes with a diameter of 4.6 mm. A radius of R 24.2 is indicated for the base.

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

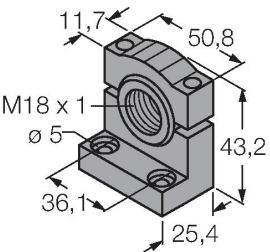
SMB18AFAM10	3012558
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Technical drawing of the SMB18AFAM10 mounting bracket. It is made of material VA 1.4401 for M10 x 1.5 thread, with a thread length of 18 mm. Dimensions include a top width of 76 mm, a vertical height of 51 mm, and a base width of 19.8 mm. The mounting hole has a diameter of 18 mm, and there are two smaller holes with a diameter of 4.6 mm. A radius of R 24.2 is indicated for the base.

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

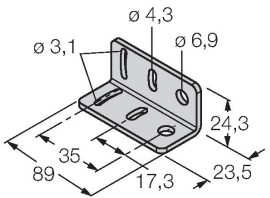
SMB18SF	3052519
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Technical drawing of the SMB18SF mounting bracket. It is made of PBT black for sensors with 18 mm thread, and is rotatable. Dimensions include a top width of 50.8 mm, a vertical height of 43.2 mm, and a base width of 36.1 mm. The mounting hole has a diameter of 18 mm, and there are two smaller holes with a diameter of 5 mm. A radius of R 24.2 is indicated for the base.

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

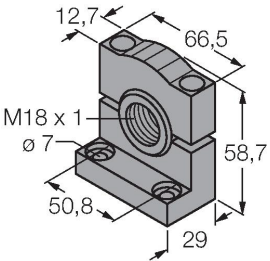
SMB312B	3025519
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Technical drawing of the SMB312B mounting bracket. It is made of stainless steel for MINI-BEAM NAMUR. Dimensions include a top width of 89 mm, a vertical height of 23.5 mm, and a base width of 17.3 mm. The mounting hole has a diameter of 18 mm, and there are two smaller holes with a diameter of 3.1 mm. A radius of R 24.2 is indicated for the base.

Mounting bracket, stainless steel, for MINI-BEAM NAMUR

SMB3018SC	3053952
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Technical drawing of the SMB3018SC mounting bracket. It is 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, and a base width of 50.8 mm. The mounting hole has a diameter of 18 mm, and there are two smaller holes with a diameter of 7 mm. A radius of R 24.2 is indicated for the base.

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