

SM31EF

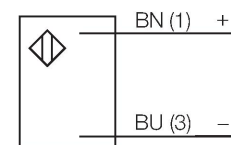
Photoelectric Sensor – Opposed Mode Sensor (Emitter)



Features

- Cable, PVC, 2 m
- Protection class IP67
- Operating voltage: 10...30 VDC

Wiring diagram



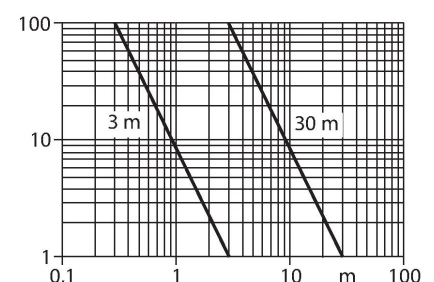
Technical data

Type	SM31EF
ID	3026654
Optical data	
Function	Opposed mode sensor
Operating mode	Emitter
Light type	IR
Wavelength	880 nm
Range	0...3000 mm
Electrical data	
Operating voltage	10...30 VDC
Residual ripple	< 10 % U _{ss}
No-load current	≤ 25 mA
Readiness delay	≤ 100 ms
Response time typical	< 1 ms
Setting option	Potentiometer
Mechanical data	
Design	Rectangular with thread, Mini Beam
Dimensions	Ø 18 x 53.3 x 12.3 x 30.7 mm
Housing material	Plastic, Thermoplastic material, Yellow
Lens	plastic, Acrylic
Electrical connection	Cable, 2 m, PVC
Number of cores	2
Core cross-section	0.5 mm ²
Ambient temperature	-20...+70 °C
Protection class	IP67
Special features	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



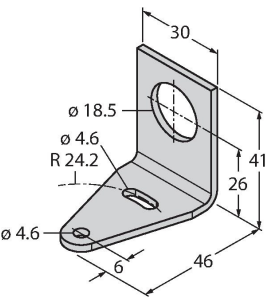
Technical data

Tests/approvals	
MTTF	853 years acc. to SN 29500 (Ed. 99) 40 °C
Approvals	CE, cURus, CSA

Accessories

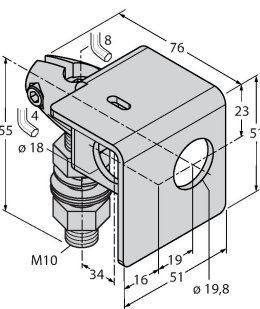
SMB18A 3033200

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



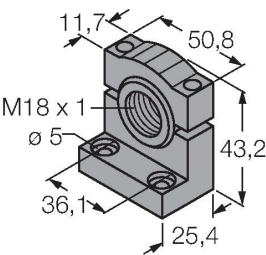
SMB18AFAM10 3012558

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



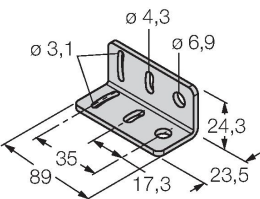
SMB18SF 3052519

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

