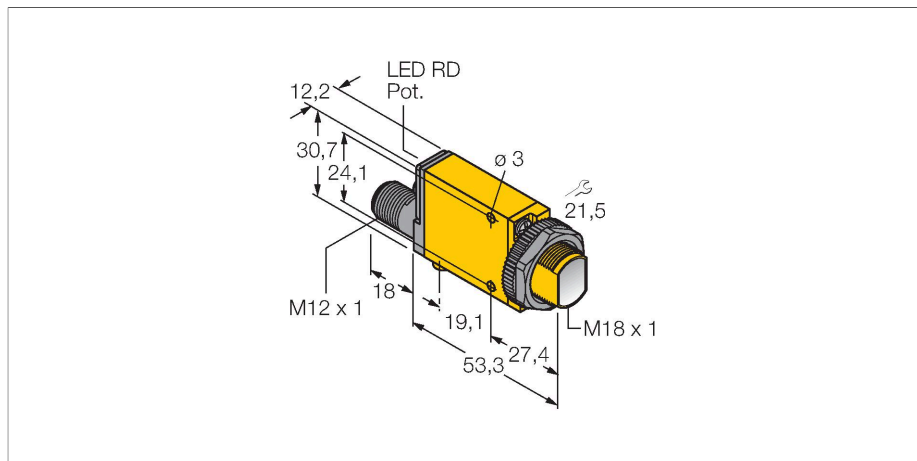


SM31RFQD

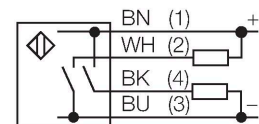
Photoelectric Sensor – Opposed Mode Sensor (Emitter/Receiver)



Features

- Male M12 × 1, 4-pin
- Protection class IP67
- Sensitivity adjustable via potentiometer
- Alignment indicator
- Operating voltage: 10...30 VDC
- Switching output, bipolar
- Light/dark operation

Wiring diagram



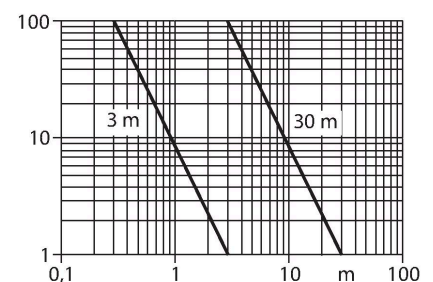
Technical data

Type	SM31RFQD
ID no.	3027720
Optical data	
Function	Opposed mode sensor
Operating mode	Receiver
Range	3000 mm
Electrical data	
Operating voltage	10...30 VDC
Residual ripple	< 10 % U _{ss}
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
Response time typical	< 1 ms
Overcurrent release	> 220 mA
Setting option	Potentiometer
Mechanical data	
Design	Rectangular with thread, Mini Beam
Dimensions	Ø 18 x 71.3 x 12.3 x 30.7 mm
Housing material	Plastic, Thermoplastic material, Yellow
Lens	plastic, Acrylic
Electrical connection	Connectors, M12 × 1, PVC
Number of cores	4
Ambient temperature	-20...+70 °C
Protection class	IP67

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

Switching state	LED, Red
Excess gain indication	LED, red, flashing
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			