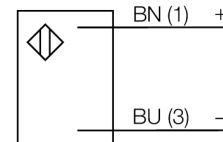


**Photoelectric sensor
opposed mode sensor (emitter)
SM31EL**

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

Wiring diagram

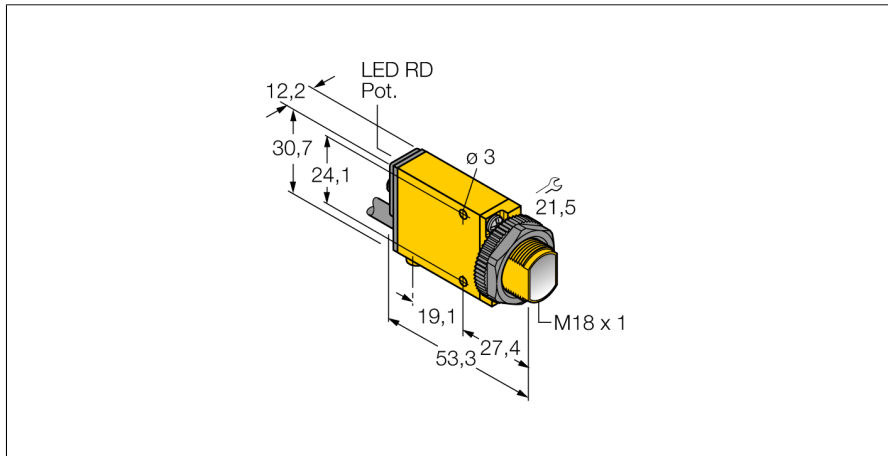
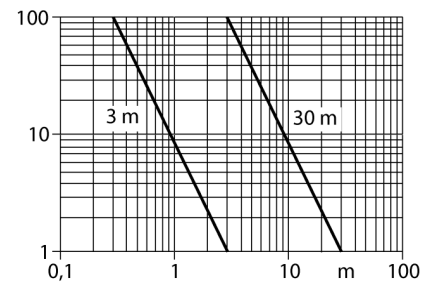


Functional principle

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



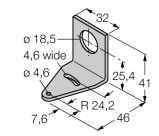
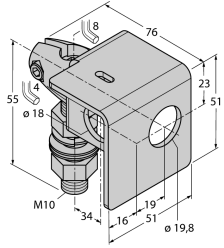
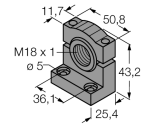
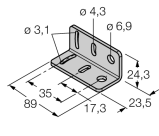
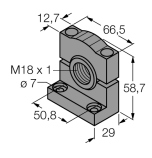
Type code	SM31EL
Ident no.	3025724
Operating mode	opposed mode sensor (emitter)
Light type	IR
Wavelength	880 nm
Range	0...30000 mm
Ambient temperature	-20...+70 °C
Operating voltage	10...30VDC
Residual ripple	< 10 % U _s
No-load current I ₀	≤ 25 mA
Design	rectangular, Mini Beam
Dimensions	53.3 x 12.3 x 30.7 mm
Housing material	plastic, PBT, yellow
Lens	plastic, acrylic
Connection	cable, PVC
Cable length	2 m
Cable cross section	2 x 0.5 mm ²
Protection class	IP67
MTTF	853 years acc. to SN 29500 (Ed. 99) 40 °C

Photoelectric sensor
opposed mode sensor (emitter)
SM31EL

TURCK

Industrial
Automation

Accessories

Type code	Ident no.	Description	Dimension drawing
SMB18A	3033200	Mounting bracket, stainless steel, for sensors with 18 mm thread	 <p>Technical drawing of the SMB18A mounting bracket. Dimensions include: top width 32, hole diameter $\phi 18.5$, hole offset 4.6, hole diameter $\phi 4.6$, hole offset 25.4, hole diameter $\phi 4.6$, hole offset 7.6, radius R 24.2, and total width 46.</p>
SMB18AFAM10	3012558	Mounting bracket, material VA 1.4401, for M10 x 1.5 thread, thread length 18 mm	 <p>Technical drawing of the SMB18AFAM10 mounting bracket. Dimensions include: top width 76, hole diameter $\phi 18$, hole offset 55, hole diameter $\phi 18$, hole offset 4, hole diameter $\phi 18$, hole offset 8, hole diameter $\phi 18$, hole offset 51, hole diameter $\phi 18$, hole offset 19, hole diameter $\phi 18$, hole offset 16, hole diameter $\phi 18$, hole offset 51, hole diameter $\phi 18$, hole offset 19.8, and thread M10.</p>
SMB18SF	3052519	Mounting bracket, PTB black steel, for sensors with 18 mm thread	 <p>Technical drawing of the SMB18SF mounting bracket. Dimensions include: top width 50.8, hole diameter $\phi 18$, hole offset 11.7, hole diameter $\phi 18$, hole offset 43.2, hole diameter $\phi 18$, hole offset 36.1, hole diameter $\phi 18$, hole offset 25.4, and thread M18 x 1.</p>
SMB312B	3025519	Mounting bracket, stainless steel, for MINI-BEAM NAMUR	 <p>Technical drawing of the SMB312B mounting bracket. Dimensions include: top width 89, hole diameter $\phi 3.1$, hole offset 35, hole diameter $\phi 4.3$, hole offset 17.3, hole diameter $\phi 6.9$, hole offset 24.3, hole diameter $\phi 6.9$, hole offset 23.5, and thread M18 x 1.</p>
SMB3018SC	3053952	Mounting bracket, PTB black, for sensors with 18 mm thread	 <p>Technical drawing of the SMB3018SC mounting bracket. Dimensions include: top width 66.5, hole diameter $\phi 18$, hole offset 12.7, hole diameter $\phi 18$, hole offset 58.7, hole diameter $\phi 18$, hole offset 50.8, hole diameter $\phi 18$, hole offset 29, and thread M18 x 1.</p>