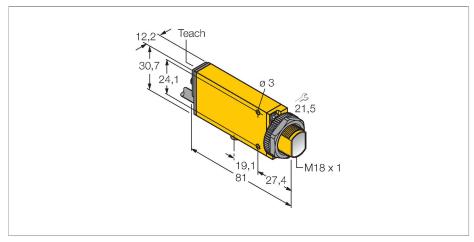
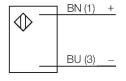
SMU31EL Photoelectric Sensor – Opposed Mode Sensor (Emitter)



Features

- Cable, PVC, 2 m
- ■Protection class IP67
- Operating voltage: 24...240 VDC or 24... 240 VAC

Wiring diagram



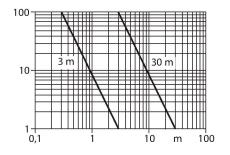
Technical data

ID no. 3055898	Туре	SMU31EL
Function Opposed mode sensor Operating mode Emitter Light type IR Wavelength 880 nm Range 030000 mm Electrical data Operating voltage 24240 VDC Operating voltage 24240 VAC Readiness delay ≤ 0 ms Response time typical < 20 ms Setting option Potentiometer Mechanical data Design Rectangular with thread, Mini Beam Dimensions Ø 18 x 81 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 mm² Ambient temperature -20+55 °C Protection class IP67 Special features Encapsulated	ID no.	3055898
Operating mode Emitter Light type IR Wavelength 880 nm Range 030000 mm Electrical data 030000 mm Operating voltage 24240 VDC Operating voltage 24240 VAC Readiness delay ≤ 0 ms Response time typical < 20 ms	Optical data	
Light type Light type Range O30000 mm Electrical data Operating voltage Operating voltage 24240 VDC Operating voltage 24240 VAC Readiness delay Response time typical Setting option Potentiometer Mechanical data Design Rectangular with thread, Mini Beam Dimensions Ø 18 x 81 x 12.3 x 30.7 mm Housing material Lens Plastic, Thermoplastic material, Yellow Lens plastic, Acrylic Electrical connection Cable, 2 m, PVC Number of cores 2 Core cross-section Ambient temperature -20+55 °C Protection class IP67 Special features Encapsulated	Function	Opposed mode sensor
Wavelength 880 nm Range 030000 mm Electrical data 0perating voltage Operating voltage 24240 VAC Readiness delay ≤ 0 ms Response time typical < 20 ms	Operating mode	Emitter
Range 030000 mm Electrical data Operating voltage 24240 VDC Operating voltage 24240 VAC Readiness delay ≤ 0 ms Response time typical < 20 ms Setting option Potentiometer Mechanical data Design Rectangular with thread, Mini Beam Dimensions Ø 18 x 81 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 mm² Ambient temperature -20+55 °C Protection class IP67 Special features Encapsulated	Light type	IR
Electrical data Operating voltage 24240 VDC Operating voltage 24240 VAC Readiness delay ≤ 0 ms Response time typical < 20 ms Setting option Potentiometer Mechanical data Design Rectangular with thread, Mini Beam Dimensions Ø 18 x 81 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 mm² Ambient temperature -20+55 °C Protection class IP67 Special features Encapsulated	Wavelength	880 nm
Operating voltage 24240 VDC Operating voltage 24240 VAC Readiness delay ≤ 0 ms Response time typical < 20 ms	Range	030000 mm
Operating voltage 24240 VAC Readiness delay ≤ 0 ms Response time typical < 20 ms	Electrical data	
Readiness delay ≤ 0 ms Response time typical < 20 ms	Operating voltage	24240 VDC
Response time typical < 20 ms Setting option Potentiometer Mechanical data Design Rectangular with thread, Mini Beam Dimensions Ø 18 x 81 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 mm² Ambient temperature -20+55 °C Protection class IP67 Special features Encapsulated	Operating voltage	24240 VAC
Setting option Mechanical data Design Rectangular with thread, Mini Beam Dimensions Ø 18 x 81 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 mm² Ambient temperature -20+55 °C Protection class IP67 Special features Encapsulated	Readiness delay	≤ 0 ms
Mechanical dataDesignRectangular with thread, Mini BeamDimensionsØ 18 x 81 x 12.3 x 30.7 mmHousing materialPlastic, Thermoplastic material, YellowLensplastic, AcrylicElectrical connectionCable, 2 m, PVCNumber of cores2Core cross-section0.5 mm²Ambient temperature-20+55 °CProtection classIP67Special featuresEncapsulated	Response time typical	< 20 ms
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Housing material Plastic, Thermoplastic material, Yellow Lens plastic, Acrylic Electrical connection Cable, 2 m, PVC Number of cores 2 Core cross-section 0.5 mm² Ambient temperature -20+55 °C Protection class IP67 Special features Encapsulated		Potentiometer
Lens plastic, Acrylic Electrical connection Cable, 2 m, PVC Number of cores 2 Core cross-section 0.5 mm² Ambient temperature -20+55 °C Protection class IP67 Special features Encapsulated	Mechanical data	
Electrical connection Cable, 2 m, PVC Number of cores 2 Core cross-section 0.5 mm² Ambient temperature -20+55 °C Protection class IP67 Special features Encapsulated	Mechanical data Design	Rectangular with thread, Mini Beam
Number of cores 2 Core cross-section 0.5 mm² Ambient temperature -20+55 °C Protection class IP67 Special features Encapsulated	Mechanical data Design Dimensions	Rectangular with thread, Mini Beam Ø 18 x 81 x 12.3 x 30.7 mm
Core cross-section 0.5 mm² Ambient temperature -20+55 °C Protection class IP67 Special features Encapsulated	Mechanical data Design Dimensions Housing material	Rectangular with thread, Mini Beam Ø 18 x 81 x 12.3 x 30.7 mm Plastic, Thermoplastic material, Yellow
Ambient temperature -20+55 °C Protection class IP67 Special features Encapsulated	Mechanical data Design Dimensions Housing material Lens	Rectangular with thread, Mini Beam Ø 18 x 81 x 12.3 x 30.7 mm Plastic, Thermoplastic material, Yellow plastic, Acrylic
Protection class IP67 Special features Encapsulated	Mechanical data Design Dimensions Housing material Lens Electrical connection	Rectangular with thread, Mini Beam Ø 18 x 81 x 12.3 x 30.7 mm Plastic, Thermoplastic material, Yellow plastic, Acrylic Cable, 2 m, PVC
Special features Encapsulated	Mechanical data Design Dimensions Housing material Lens Electrical connection Number of cores	Rectangular with thread, Mini Beam Ø 18 x 81 x 12.3 x 30.7 mm Plastic, Thermoplastic material, Yellow plastic, Acrylic Cable, 2 m, PVC
	Mechanical data Design Dimensions Housing material Lens Electrical connection Number of cores Core cross-section	Rectangular with thread, Mini Beam Ø 18 x 81 x 12.3 x 30.7 mm Plastic, Thermoplastic material, Yellow plastic, Acrylic Cable, 2 m, PVC 2 0.5 mm²
Excess gain indication LED	Mechanical data Design Dimensions Housing material Lens Electrical connection Number of cores Core cross-section Ambient temperature	Rectangular with thread, Mini Beam Ø 18 x 81 x 12.3 x 30.7 mm Plastic, Thermoplastic material, Yellow plastic, Acrylic Cable, 2 m, PVC 2 0.5 mm² -20+55 °C
	Mechanical data Design Dimensions Housing material Lens Electrical connection Number of cores Core cross-section Ambient temperature Protection class	Rectangular with thread, Mini Beam Ø 18 x 81 x 12.3 x 30.7 mm Plastic, Thermoplastic material, Yellow plastic, Acrylic Cable, 2 m, PVC 2 0.5 mm² -20+55 °C 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 extremly 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

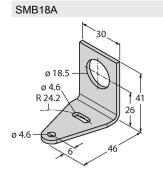




Technical data

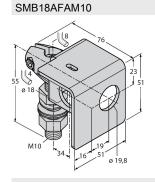
Tests/approvals	
MTTF	853 years acc. to SN 29500 (Ed. 99) 40 °C
Approvals	CE, cURus, CSA

Accessories

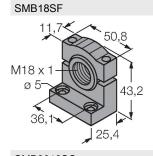


Mounting bracket, rectangular, stainless steel, for sensors with 18 mm thread

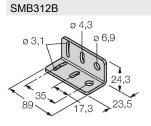
3033200



3012558 Mounting bracket, material VA 1.4401, for M10 x 1.5 thread, thread length 18 mm

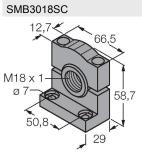


3052519 Mounting bracket, PBT black, for sensors with 18 mm thread, rotatable



Mounting bracket, stainless steel, for MINI-BEAM NAMUR

3025519



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

3053952