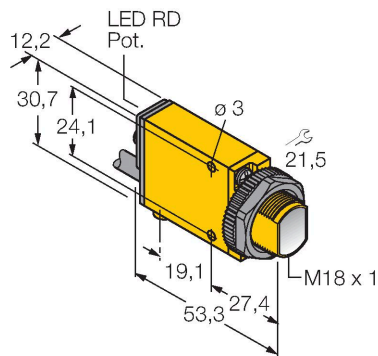


# SM312CV

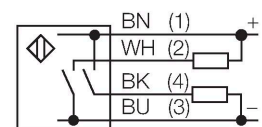
## Photoelectric Sensor – Convergent Mode Sensor



### Features

- Cable, PVC, 2 m
- Protection class IP67
- Sensitivity adjustable via potentiometer
- Alignment indicator
- Operating voltage: 10...30 VDC
- Switching output, bipolar
- Light/dark operation

### Wiring diagram



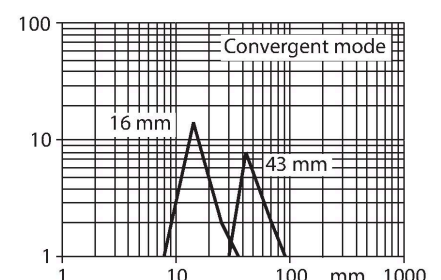
### Technical data

Type	SM312CV
ID	3025621
<b>Optical data</b>	
Function	Proximity switch
Operating mode	Convergent
Light type	Red
Wavelength	650 nm
Focal distance	16 mm
Range	16 mm
<b>Electrical data</b>	
Operating voltage	10...30 VDC
Residual ripple	< 10 % U <sub>ss</sub>
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
<b>Mechanical data</b>	
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	4

### Functional principle

Convergent mode sensors are equipped with a lens in front of the emitter diode that produces a small and intense focal point at a defined distance from the sensor. Similar to diffuse mode sensors, the light reflected by the target is evaluated. Convergent mode sensors are ideal for detection of small targets or colour marks and edge guiding or positioning control of transparent materials. The targets must always be within the focal depth of the sensors. The focal depth is defined as the area in front of or behind the focal point within which the object can be detected. Based on the intense light concentration in the focal point, convergent mode sensors are capable of detecting targets with a low reflectivity.

Excess gain curve  
Excess gain in relation to the distance



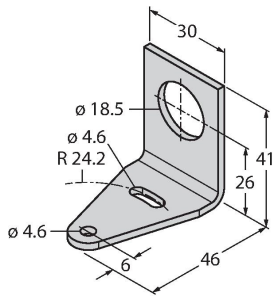
## Technical data

Core cross-section	0.5 mm <sup>2</sup>
Ambient temperature	-20...+70 °C
Protection class	IP67
Special features	Encapsulated
Switching state	LED, Red
Excess gain indication	LED, red, flashing
<b>Tests/approvals</b>	
Approvals	CE, cURus, CSA

## Accessories

SMB18A

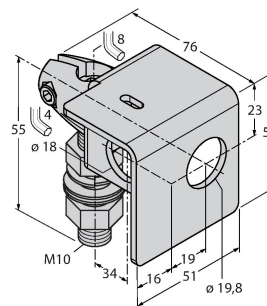
3033200



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

SMB18AFAM10

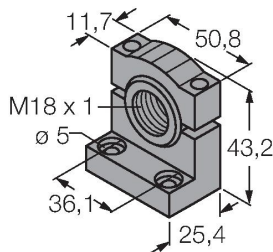
3012558



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

SMB18SF

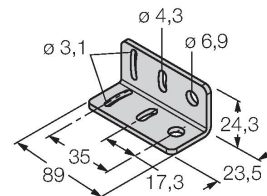
3052519



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

SMB312B

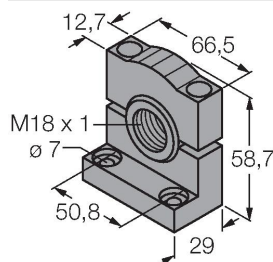
3025519



Mounting bracket, stainless steel, for  
MINI-BEAM NAMUR

SMB3018SC

3053952



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