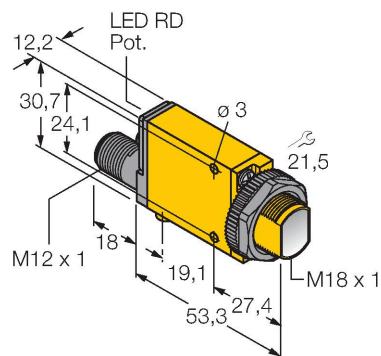


# SM312CV2MHSQD

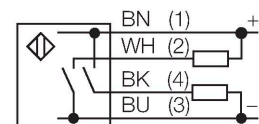
## Photoelectric Sensor – Convergent Mode Sensor



### Features

- Male M12 × 1, 4-pin
- Protection class IP67
- 1.6 kHz switching frequency
- Operating voltage: 10...30 VDC
- Switching output, bipolar
- Light/dark operation

### Wiring diagram



### Technical data

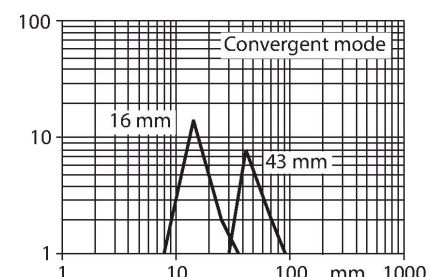
Type	SM312CV2MHSQD
ID no.	3027606
<b>Optical data</b>	
Function	Proximity switch
Operating mode	Convergent
Light type	Red
Wavelength	650 nm
Focal distance	43 mm
Range	43 mm
<b>Electrical data</b>	
Operating voltage	10...30 VDC
Residual ripple	< 10 % U <sub>ss</sub>
DC rated operational current	≤ 150 mA
No-load current	≤ 25 mA
Output function	NO contact, PNP/NPN
Switching frequency	1.6 kHz
Switching frequency	≤ 500 Hz
Readiness delay	≤ 100 ms
Response time typical	< 0.3 ms
Overcurrent release	> 220 mA
Setting option	Potentiometer
<b>Mechanical data</b>	
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

### 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

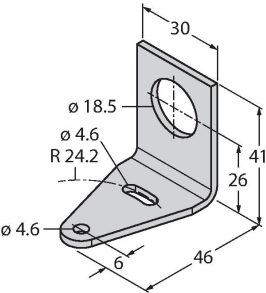
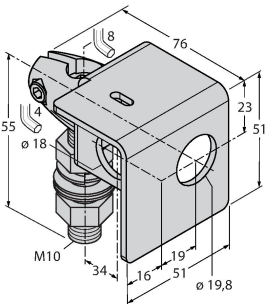
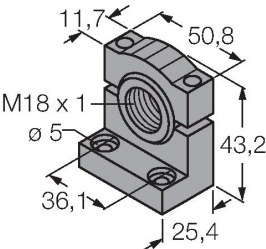
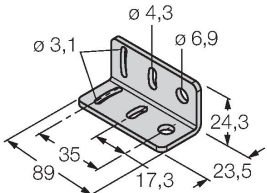
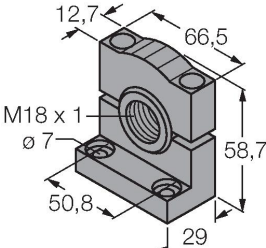
Excess gain in relation to the distance



## Technical data

Number of cores	4
Ambient temperature	-20...+70 °C
Protection class	IP67
Switching state	LED, Red
Excess gain indication	LED, red, flashing
<b>Tests/approvals</b>	
Approvals	CE, cURus, CSA

## Accessories

<b>SMB18A</b> 	<b>3033200</b> Mounting bracket, rectangular, stainless steel, for sensors with 18 mm thread	<b>SMB18AFAM10</b> 	<b>3012558</b> Mounting bracket, material VA 1.4401, for M10 x 1.5 thread, thread length 18 mm
<b>SMB18SF</b> 	<b>3052519</b> Mounting bracket, PBT black, for sensors with 18 mm thread, rotatable	<b>SMB312B</b> 	<b>3025519</b> Mounting bracket, stainless steel, for MINI-BEAM NAMUR
<b>SMB3018SC</b> 	<b>3053952</b> Mounting bracket, PTB black, for sensors with 18 mm thread		