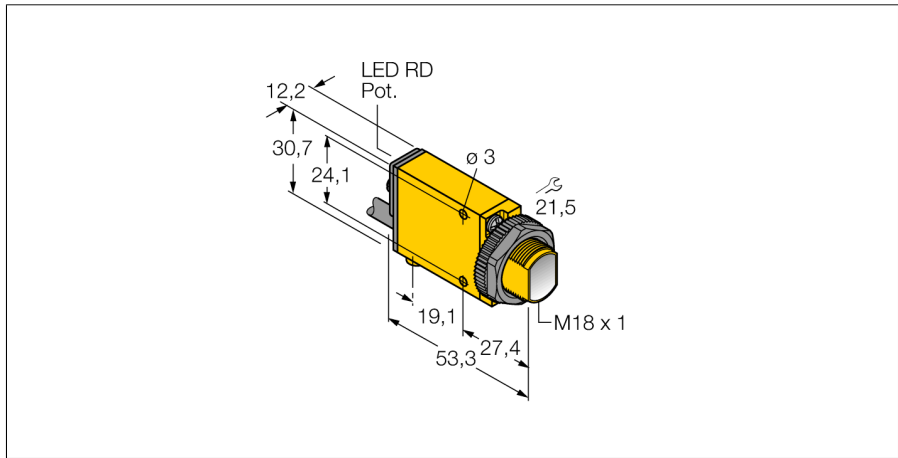
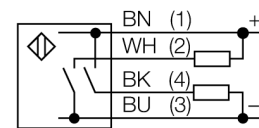


**Photoelectric sensor
convergent mode sensor
SM312CV**



- 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



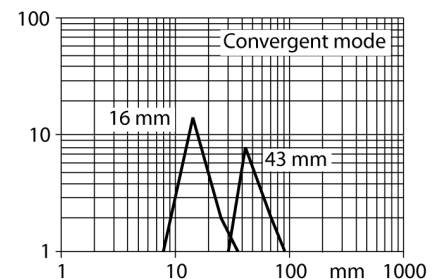
Type code	SM312CV
Ident no.	3025621
<hr/>	
Operating mode	convergent mode sensor
Light type	red
Wavelength	650 nm
Focal distance	16 mm
Ambient temperature	-20...+70 °C
<hr/>	
Operating voltage	10...30VDC
Residual ripple	< 10 % U _s
DC rated operational current	≤ 150 mA
No-load current I ₀	≤ 25 mA
Output function	NO contact, PNP/NPN
Switching frequency	≤ 500 Hz
Readiness delay	≤ 100 ms
Overcurrent release	> 220 mA
<hr/>	
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	4 x 0.5 mm ²
Protection class	IP67
<hr/>	
Switching state	LED red
Excess gain indication	LED red flashing

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

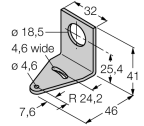
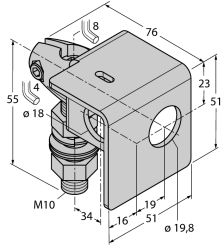
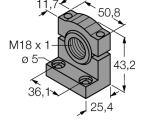
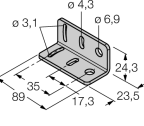
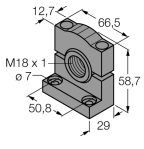


Photoelectric sensor
convergent mode sensor
SM312CV

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, bottom hole diameter $\phi 4.6$, hole offset 25.4, bottom hole diameter 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 4, hole offset 8, total height 23, bottom hole diameter $\phi 19.8$, bottom hole offset 19, bottom hole diameter 16, and bottom hole offset 34. The thread is 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 4, hole offset 5, bottom hole diameter $\phi 19.8$, bottom hole offset 36.1, and bottom hole diameter 25.4. The thread is 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, and bottom hole diameter 23.5.</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 7, hole offset 50.8, bottom hole diameter $\phi 19.8$, bottom hole offset 29, and bottom hole diameter 58.7. The thread is M18 x 1.</p>