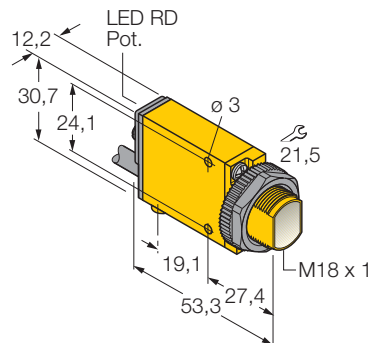


**photoelectric sensor**  
**convergent mode sensor**  
**SM312CV**

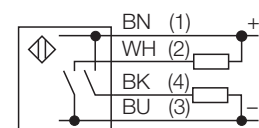
**TURCK**

Industrial  
Automation



- compact housing style
- reverse polarity and short-circuit protection
- connection cable, 2 m
- Light/dark operation
- sensitivity adjustable via potentiometer
- alignment indication

**Wiring diagram**

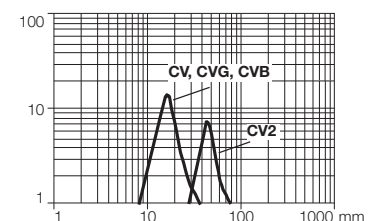


**Functional principle**

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



|                              |                        |
|------------------------------|------------------------|
| <b>Type</b>                  | SM312CV                |
| Ident-No.                    | 3025621                |
| <b>Operating mode</b>        | convergent mode sensor |
| Light type                   | red                    |
| Wavelength                   | 650 nm                 |
| Focal distance               | 16 mm                  |
| Ambient temperature          | -20...+ 70°C           |
| <b>Operating voltage</b>     | 10... 30 VDC           |
| DC rated operational current | ≤ 150 mA               |
| No-load current $I_0$        | ≤ 25 mA                |
| Output function              | NO contact, pnp/npn    |
| Switching frequency          | ≤ 500Hz                |
| Readiness delay              | ≤ 100 ms               |
| Overcurrent release          | >220 mA                |
| <b>Housing</b>               | rectangular, Mini Beam |
| Dimensions                   | 53.3x 12.3x 30.7mm     |
| Housing material             | Plastic, PBT           |
| Lens                         | plastic, acrylic       |
| Electrical connection        | cables                 |
| Cable length                 | 2 m                    |
| Cable cross section:         | 4 x 0.5mm <sup>2</sup> |
| Protection class             | IP67                   |
| <b>Switching state</b>       | LED red                |
| Excess gain indication       | LED red flashing       |