

# Q45VR3CV

## Photoelectric Sensor – Convergent Mode Sensor



### Technical data

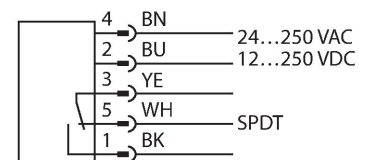
|                        |                                     |
|------------------------|-------------------------------------|
| Type                   | Q45VR3CV                            |
| ID no.                 | 3053972                             |
| <b>Optical data</b>    |                                     |
| Function               | Proximity switch                    |
| Operating mode         | Convergent                          |
| Light type             | Red                                 |
| Wavelength             | 680 nm                              |
| Focal distance         | 38 mm                               |
| Range                  | 38 mm                               |
| <b>Electrical data</b> |                                     |
| Operating voltage      | 12...250 VDC                        |
| Operating voltage      | 24...250 VAC                        |
| Output function        | Complementary contact, Relay output |
| Switching frequency    | ≤ 33 Hz                             |
| Readiness delay        | ≤ 100 ms                            |
| Response time typical  | < 15 ms                             |
| Setting option         | Potentiometer                       |
| <b>Mechanical data</b> |                                     |
| Design                 | Rectangular, Q45                    |
| Dimensions             | Ø 30 x 56.4 x 44.5 x 87.6 mm        |
| Housing material       | Plastic, Thermoplastic material     |
| Lens                   | plastic, Acrylic                    |
| Electrical connection  | Cable, 2 m, PVC                     |
| Number of cores        | 5                                   |
| Core cross-section     | 0.34 mm <sup>2</sup>                |
| Ambient temperature    | -25...+55 °C                        |
| Protection class       | IP67                                |



### Features

- Cable, PVC, 2 m
- Protection class IP67
- Sensitivity adjusted via potentiometer
- Operating voltage: 12...250 VDC or 24...250 VAC
- Relay output, changeover (SPDT)
- Light or dark operation, adjusted via selector switch

### 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

