

# Q45VR3CV4

## Photoelectric Sensor – Convergent Mode Sensor



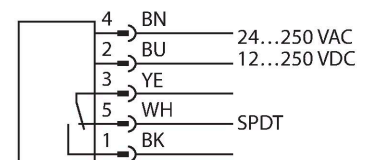
### Technical data

Type	Q45VR3CV4
ID	3053973
<b>Optical data</b>	
Function	Proximity switch
Operating mode	Convergent
Light type	Red
Wavelength	680 nm
Focal distance	100 mm
Range	100 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



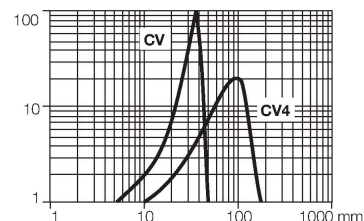
### Functional principle

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

## Technical data

Special features	keep/defer
Power-on indication	LED, Green
Switching state	LED, Yellow
Error indication	LED, green
Excess gain indication	LED, red
<b>Tests/approvals</b>	
MTTF	67 years acc. to SN 29500 (Ed. 99) 40 °C
Approvals	CE, cURus, CSA



## Accessories

**SMB30A** 3032723

Mounting bracket, rectangular, stainless steel, for sensors with 30mm thread

**SMB30FAM10** 3011185

Mounting bracket, stainless steel, for M10 x 1.5 thread, thread length 30 mm

**SMB30SC** 3052521

Mounting bracket, PBT black, for sensors with 30 mm thread, rotatable