

# Q45VR2D

## Photoelectric Sensor – Diffuse Mode Sensor



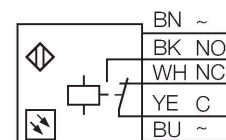
### Technical data

Type	Q45VR2D
ID	3000343
<b>Optical data</b>	
Function	Proximity switch
Operating mode	Diffuse
Light type	IR
Wavelength	880 nm
Range	0...450 mm
<b>Electrical data</b>	
Operating voltage	90...250 VAC
No-load current	$\leq 50$ mA
Output function	Complementary contact, Relay output
Readiness delay	$\leq 100$ ms
<b>Mechanical data</b>	
Design	Rectangular, Q45
Dimensions	56.4 x 44.5 x 87.6 mm
Housing material	Plastic, PBT
Lens	plastic, Acrylic
Electrical connection	Cable, 2 m, PVC
Number of cores	4
Core cross-section	0.34 mm <sup>2</sup>
Ambient temperature	-40...+70 °C
Protection class	IP67
Power-on indication	LED, Green
Switching state	LED, Yellow
Error indication	LED, green
Excess gain indication	LED, red

### Features

- Cable, PVC, 2 m
- Protection class IP67
- Sensitivity adjusted via potentiometer
- Operating voltage: 90...250 VAC
- Relay output, changeover (SPDT)
- Light or dark operation, adjusted via selector switch

### Wiring diagram



### Functional principle

Like retroreflective sensors, diffuse mode sensors also contain emitter and receiver circuitry in the same housing. However, diffuse mode sensors do not detect the interruption of the light beam but the reflection of the object. An object is detected if it reflects sufficient light back to the receiver. The switching distance of diffuse mode sensors thus largely depends on the object's reflectivity. This type of sensor is especially suited for detection of transparent objects (diffuse mode sensor with or without background suppression or convergent mode sensors).

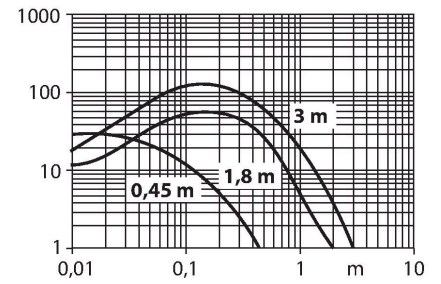
Excess gain curve  
Excess gain in relation to distance

## Technical data

### Tests/approvals

MTTF 67 years acc. to SN 29500 (Ed. 99) 40 °C

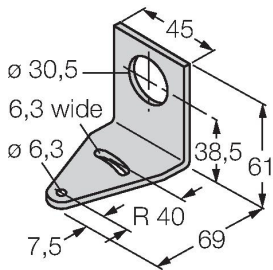
Approvals CE, cURus, CSA



## Accessories

SMB30A

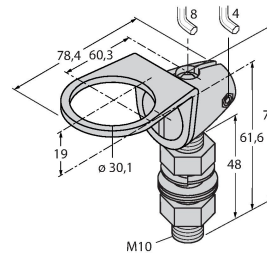
3032723



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

SMB30FAM10

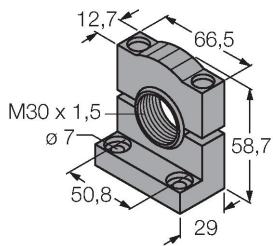
3011185



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