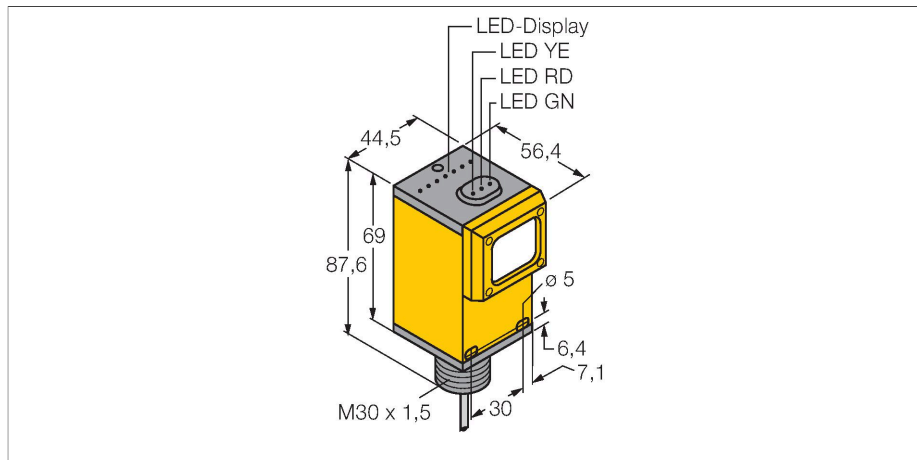


# Q45VR3DL

## Photoelectric Sensor – Diffuse Mode Sensor



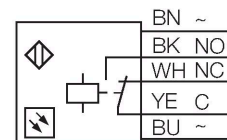
### Technical data

|                              |                                     |
|------------------------------|-------------------------------------|
| Type                         | Q45VR3DL                            |
| ID                           | 3053975                             |
| <b>Optical data</b>          |                                     |
| Function                     | Proximity switch                    |
| Operating mode               | Diffuse                             |
| Light type                   | IR                                  |
| Wavelength                   | 880 nm                              |
| Range                        | 0...1800 mm                         |
| <b>Electrical data</b>       |                                     |
| Operating voltage            | 12...250 VDC                        |
| Operating voltage            | 24...250 VAC                        |
| DC rated operational current | ≤ 5000 mA                           |
| Output function              | Complementary contact, Relay output |
| Switching frequency          | 0.033 kHz                           |
| Switching frequency          | ≤ 33 Hz                             |
| Readiness delay              | ≤ 100 ms                            |
| Response time typical        | < 15 ms                             |
| Max. DC switching capacity   | 1 W                                 |
| Setting option               | Potentiometer                       |
| <b>Mechanical data</b>       |                                     |
| Design                       | Rectangular, Q45                    |
| Dimensions                   | Ø 30 x 87.6 x 56.4 x 44.5 mm        |
| Housing material             | Plastic, Thermoplastic material     |
| Lens                         | acrylic, Acrylic                    |
| Electrical connection        | Cable, 2 m, PVC                     |
| Number of cores              | 5                                   |
| Core cross-section           | 0.34 mm <sup>2</sup>                |

### 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



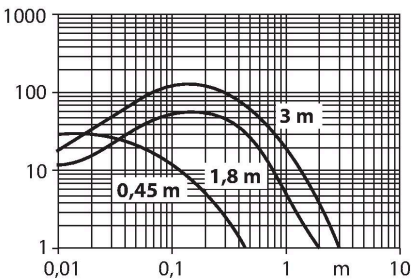
### Functional principle

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

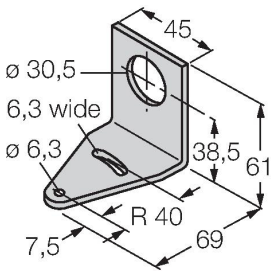
Technical data

|                        |                                          |
|------------------------|------------------------------------------|
| Ambient temperature    | -40...+70 °C                             |
| Protection class       | IP67                                     |
| Special features       | keep/defer                               |
| Power-on indication    | LED, Green                               |
| Switching state        | LED, Yellow                              |
| Error indication       | LED, green                               |
| Excess gain indication | LED, red                                 |
| Tests/approvals        |                                          |
| MTTF                   | 67 years acc. to SN 29500 (Ed. 99) 40 °C |
| Approvals              | CE, cURus, CSA                           |



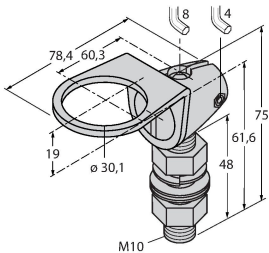
Accessories

SMB30A 3032723



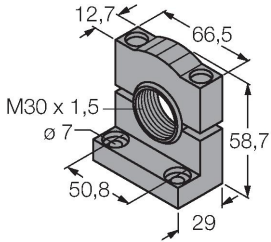
Mounting bracket, rectangular, stainless steel, for sensors with 30mm thread

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