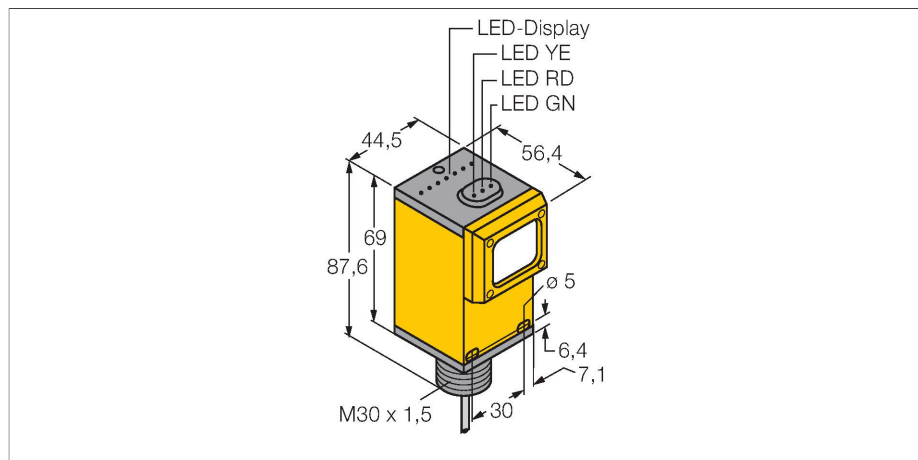


# Q45BB6D W/30

## Photoelectric Sensor – Diffuse Mode Sensor



### Technical data

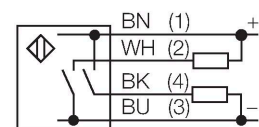
|                             |                                 |
|-----------------------------|---------------------------------|
| Type                        | Q45BB6D W/30                    |
| ID no.                      | 3038468                         |
| <b>Optical data</b>         |                                 |
| Function                    | Proximity switch                |
| Operating mode              | Diffuse                         |
| Light type                  | IR                              |
| Wavelength                  | 880 nm                          |
| Range                       | 0...450 mm                      |
| <b>Electrical data</b>      |                                 |
| Operating voltage           | 10...30 VDC                     |
| Residual ripple             | < 10 % U <sub>ss</sub>          |
| No-load current             | ≤ 50 mA                         |
| Short-circuit protection    | yes                             |
| Reverse polarity protection | yes                             |
| Output function             | NO contact, PNP/NPN             |
| Switching frequency         | ≤ 250 Hz                        |
| Readiness delay             | ≤ 100 ms                        |
| Response time typical       | < 2 ms                          |
| Overcurrent release         | > 220 mA                        |
| 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, 9 m, PVC                 |
| Number of cores             | 4                               |



### Features

- Cable, PVC, 2 m
- Protection class IP67
- Sensitivity adjusted via potentiometer
- Operating voltage: 10...30 VDC
- Switching output, bipolar
- Light or dark operation, adjusted via switch

### Wiring diagram



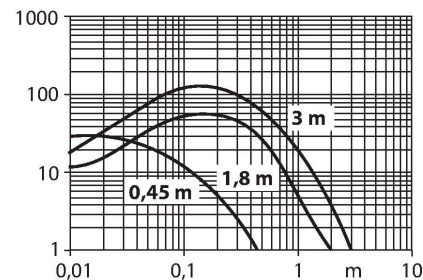
### Functional principle

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

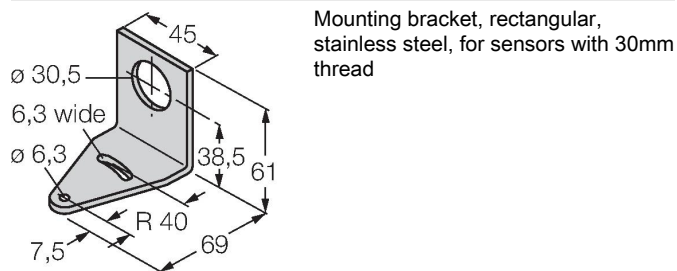
## Technical data

|                        |                                          |
|------------------------|------------------------------------------|
| Core cross-section     | 0.34 mm <sup>2</sup>                     |
| 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, Flashing                     |
| Excess gain indication | LED, red                                 |
| <b>Tests/approvals</b> |                                          |
| MTTF                   | 67 years acc. to SN 29500 (Ed. 99) 40 °C |
| Approvals              | CE, cURus, CSA                           |

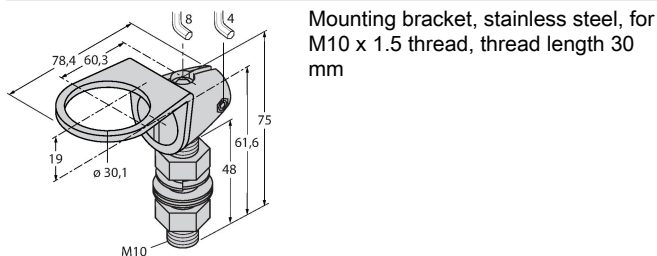


## Accessories

### SMB30A 3032723



### SMB30FAM10 3011185



### SMB30SC 3052521

