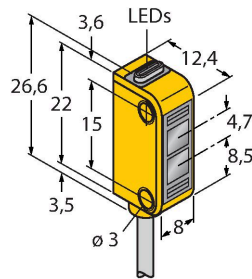


# Q12RB6FF50

## Photoelectric Sensor – Diffuse Mode Sensor with Fixed-Field Background Suppression Miniature Sensor



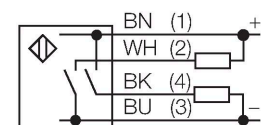
### Technical data

|                              |                                         |
|------------------------------|-----------------------------------------|
| Type                         | Q12RB6FF50                              |
| ID                           | 3072119                                 |
| <b>Optical data</b>          |                                         |
| Function                     | Proximity switch                        |
| Operating mode               | Background suppression, non-adjustable  |
| Light type                   | Red                                     |
| Wavelength                   | 640 nm                                  |
| Range                        | 3...50 mm                               |
| <b>Electrical data</b>       |                                         |
| Operating voltage            | 10...30 VDC                             |
| Residual ripple              | < 10 % U <sub>ss</sub>                  |
| DC rated operational current | ≤ 50 mA                                 |
| No-load current              | ≤ 20 mA                                 |
| Short-circuit protection     | yes                                     |
| Reverse polarity protection  | yes                                     |
| Output function              | NO contact, dark operation, PNP/NPN     |
| Switching frequency          | ≤ 700 Hz                                |
| Readiness delay              | ≤ 120 ms                                |
| Response time typical        | < 0.85 ms                               |
| <b>Mechanical data</b>       |                                         |
| Design                       | Rectangular, Q12                        |
| Dimensions                   | 12.4 x 8 x 26.6 mm                      |
| Housing material             | Plastic, Thermoplastic material, Yellow |
| Lens                         | plastic, Polycarbonate                  |

### Features

- Cable, PVC, 2 m
- Protection class IP67
- LED all-round visible
- Indication of insufficient excess gain
- Operating voltage: 10...30 VDC
- Switching output, bipolar, dark operation

### Wiring diagram



### Functional principle

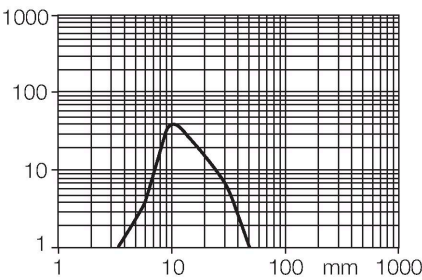
The emitter and receiver are incorporated in a single housing. The light reflection of the target is detected and triggers the sensor to switch. Thus the switching distance largely depends on the reflectivity of the target.

Excess gain curve

Excess gain in relation to the distance

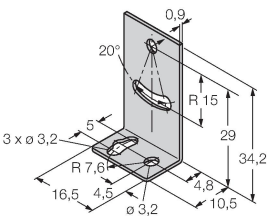
Technical data

|                        |                                           |
|------------------------|-------------------------------------------|
| Electrical connection  | Cable, 2 m, PVC                           |
| Number of cores        | 3                                         |
| Core cross-section     | 0.34 mm <sup>2</sup>                      |
| Ambient temperature    | -20...+55 °C                              |
| Protection class       | IP67                                      |
| Power-on indication    | LED, Green                                |
| Switching state        | LED, Yellow                               |
| Error indication       | LED, green                                |
| Excess gain indication | LED, yellow, flashing                     |
| Tests/approvals        |                                           |
| MTTF                   | 135 years acc. to SN 29500 (Ed. 99) 40 °C |
| Approvals              | CE, cURus                                 |



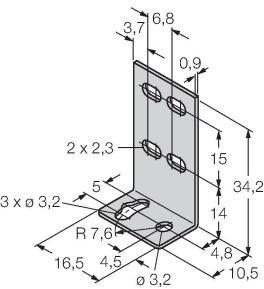
Accessories

SMBQ12A 3074341



Mounting bracket; material VA 1.4401, for photoelectric sensor, Q12 series

SMBQ12T 3073722



Mounting bracket; material VA 1.4401, for photoelectric sensor, Q12 series