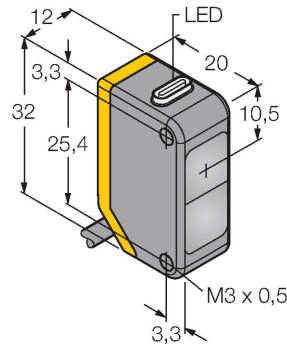


# Q20PFF50

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



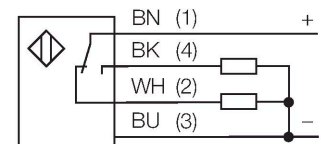
### Technical data

|                              |                                        |
|------------------------------|----------------------------------------|
| Type                         | Q20PFF50                               |
| ID                           | 3077769                                |
| <b>Optical data</b>          |                                        |
| Function                     | Proximity switch                       |
| Operating mode               | Background suppression, non-adjustable |
| Light type                   | Red                                    |
| Wavelength                   | 655 nm                                 |
| Range                        | 0...50 mm                              |
| <b>Electrical data</b>       |                                        |
| Operating voltage            | 10...30 VDC                            |
| Residual ripple              | < 10 % U <sub>ss</sub>                 |
| DC rated operational current | ≤ 100 mA                               |
| No-load current              | ≤ 18 mA                                |
| Reverse polarity protection  | yes                                    |
| Output function              | Complementary contact, PNP             |
| Switching frequency          | ≤ 600 Hz                               |
| Readiness delay              | ≤ 100 ms                               |
| Response time typical        | < 0.8 ms                               |
| <b>Mechanical data</b>       |                                        |
| Design                       | Rectangular, Q20                       |
| Dimensions                   | 20 x 12 x 32 mm                        |
| Housing material             | Plastic, Thermoplastic material        |
| Lens                         | plastic, Acrylic                       |
| Electrical connection        | Cable, 2 m, PVC                        |
| Number of cores              | 4                                      |
| Core cross-section           | 0.35 mm <sup>2</sup>                   |

### Features

- Cable, PVC, 2 m
- Protection class IP67
- LED all-round visible
- Operating voltage: 10...30 VDC
- PNP switching output, changeover

### Wiring diagram



### Functional principle

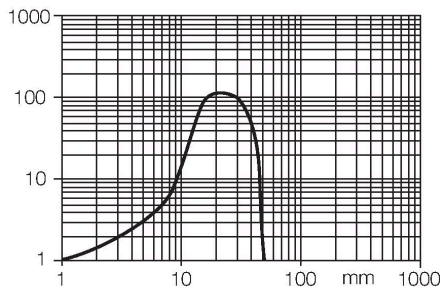
Diffuse mode sensors with background suppression operate with a single emitter and several receiver elements. The target position and the photoelectric structure of the sensor determine which receiver element gets the most light. The sensor electronics determine whether the reflecting object is within or outside the measuring range. These sensors come with a fixed cut-off point.

Excess gain curve  
Excess gain in relation to the distance

Technical data

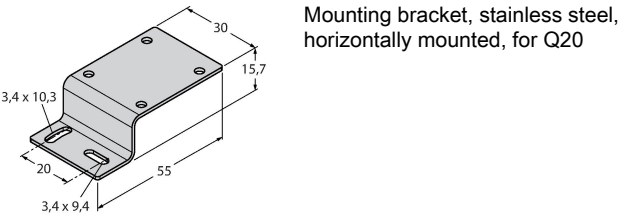
|                        |                       |
|------------------------|-----------------------|
| Ambient temperature    | -20...+60 °C          |
| Protection class       | IP67                  |
| Power-on indication    | LED, Green            |
| Switching state        | LED, Yellow           |
| Error indication       | LED, green, Flashing  |
| Excess gain indication | LED, yellow, flashing |
| Tests/approvals        |                       |
| Approvals              | CE                    |

Excess Gain Curve

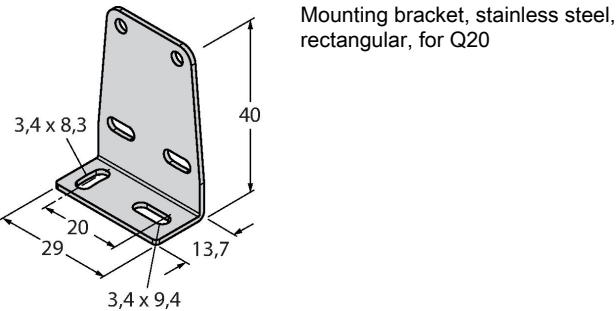


Accessories

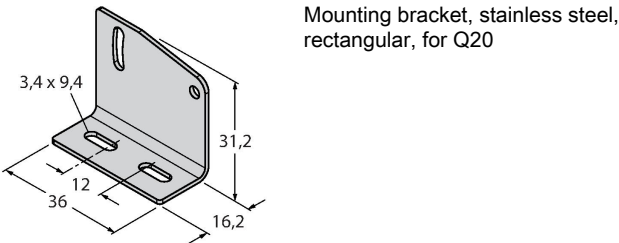
SMBQ20H 3079041



SMBQ20L 3079040



SMBQ20LV 3079042



SMBQ20U 3079043

