

# M12NFF25

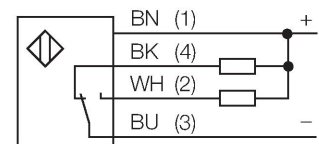
## Photoelectric Sensor – Diffuse Mode Sensor with Fixed-Field Background Suppression



### Features

- Cable, PVC, 2 m, 4-wire
- Protection classes IP67 / IP68
- Metal housing
- LED all-round visible
- Indication of insufficient excess gain
- Operating voltage: 10...30 VDC
- NPN switching output, changeover

### Wiring diagram



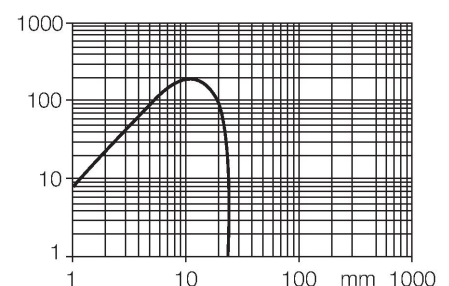
### Technical data

|                              |                                           |
|------------------------------|-------------------------------------------|
| Type                         | M12NFF25                                  |
| ID no.                       | 3077192                                   |
| <b>Optical data</b>          |                                           |
| Function                     | Proximity switch                          |
| Operating mode               | Background suppression, non-adjustable    |
| Light type                   | Red                                       |
| Wavelength                   | 680 nm                                    |
| Range                        | 0...25 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              | ≤ 20 mA                                   |
| Short-circuit protection     | yes                                       |
| Reverse polarity protection  | yes                                       |
| Output function              | Complementary contact, NPN                |
| Switching frequency          | ≤ 1000 Hz                                 |
| Readiness delay              | ≤ 100 ms                                  |
| Response time typical        | < 0.5 ms                                  |
| <b>Mechanical data</b>       |                                           |
| Design                       | Threaded barrel, M12                      |
| Dimensions                   | Ø 12 x 67.5 mm                            |
| Housing material             | Metal, Nickel-plated brass, Nickel-plated |
| Lens                         | plastic, PMMA                             |
| Electrical connection        | Cable, 2 m, PVC                           |
| Number of cores              | 4                                         |

### 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 of the receiving elements receives 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



Technical data

|                        |                                          |
|------------------------|------------------------------------------|
| Core cross-section     | 0.35 mm <sup>2</sup>                     |
| Ambient temperature    | -20...+60 °C                             |
| Protection class       | IP67<br>IP68                             |
| Special features       | Encapsulated<br>Wash down                |
| Power-on indication    | LED, Green                               |
| Switching state        | LED, Yellow                              |
| Error indication       | LED, green, Flashing                     |
| Excess gain indication | LED, yellow, flashing                    |
| Tests/approvals        |                                          |
| MTTF                   | 46 years acc. to SN 29500 (Ed. 99) 40 °C |
| Approvals              | CE                                       |

Accessories

SMB12FAM103011221

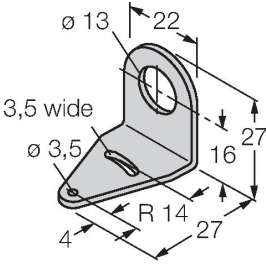


Mounting bracket, stainless steel, for M12, M10 x 1.5 thread

SMB12MM3027635

Mounting bracket, stainless steel, for M12

SMBQS12PD3059606



Mounting bracket; material VA 1.4401, for Q12 & M12 series