

# SM312WMHS

## Photoelectric Sensor – Diffuse Mode Sensor



### Features

- Cable, PVC, 2 m
- Protection class IP67
- Sensitivity adjustable via potentiometer
- Alignment indicator
- Operating voltage: 10...30 VDC
- Switching output, bipolar
- Light/dark operation

### Wiring diagram



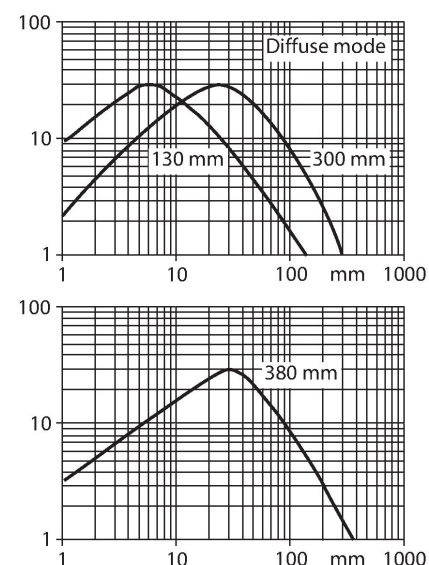
### Technical data

|                              |                                         |
|------------------------------|-----------------------------------------|
| Type                         | SM312WMHS                               |
| ID                           | 3027079                                 |
| <b>Optical data</b>          |                                         |
| Function                     | Proximity switch                        |
| Operating mode               | Divergent                               |
| Light type                   | IR                                      |
| Wavelength                   | 880 nm                                  |
| Range                        | 0...130 mm                              |
| <b>Electrical data</b>       |                                         |
| Operating voltage            | 10...30 VDC                             |
| Residual ripple              | < 10 % U <sub>ss</sub>                  |
| DC rated operational current | ≤ 150 mA                                |
| No-load current              | ≤ 25 mA                                 |
| Output function              | NO contact, PNP/NPN                     |
| Switching frequency          | ≤ 500 Hz                                |
| Readiness delay              | ≤ 100 ms                                |
| Response time typical        | < 0.3 ms                                |
| Overcurrent release          | > 220 mA                                |
| Setting option               | Potentiometer                           |
| <b>Mechanical data</b>       |                                         |
| Design                       | Rectangular, Mini Beam                  |
| Dimensions                   | 53.3 x 12.3 x 30.7 mm                   |
| Housing material             | Plastic, Thermoplastic material, Yellow |
| Lens                         | plastic, Acrylic                        |
| Electrical connection        | Cable, 2 m, PVC                         |
| Number of cores              | 4                                       |
| Core cross-section           | 0.5 mm <sup>2</sup>                     |

### Functional principle

Diffuse mode sensors incorporate the emitter and receiver in a single housing. However, diffuse mode sensors do not detect the interruption of the light beam like opposed mode sensors, but the reflection of the target. A target is detected if it reflects a sufficient amount of light back to the receiver. The switching distance of diffuse mode sensors thus largely depends on the reflectivity of the target.

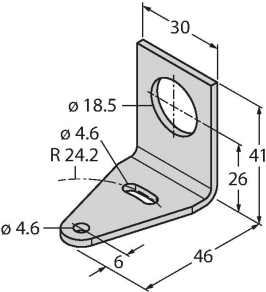
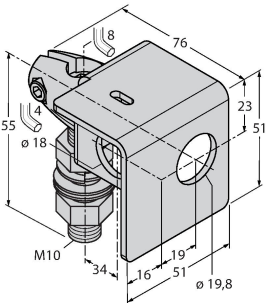
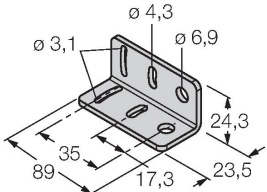
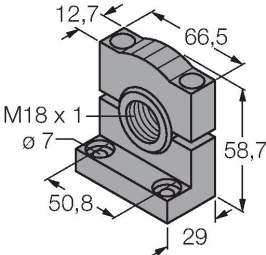
Excess gain curve  
Excess gain in relation to the distance



## Technical data

|                        |                    |
|------------------------|--------------------|
| Ambient temperature    | -20...+70 °C       |
| Protection class       | IP67               |
| Special features       | Encapsulated       |
| Switching state        | LED, Red           |
| Excess gain indication | LED, red, flashing |
| <b>Tests/approvals</b> |                    |
| Approvals              | CE, cURus, CSA     |

## Accessories

|                                                                                                         |                                                                                                 |                                                                                                           |                                                                                                   |
|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>SMB18A</b><br>     | <b>3033200</b><br>Mounting bracket, rectangular, stainless steel, for sensors with 18 mm thread | <b>SMB18AFAM10</b><br> | <b>3012558</b><br>Mounting bracket, material VA 1.4401, for M10 x 1.5 thread, thread length 18 mm |
| <b>SMB18SF</b><br>   | <b>3052519</b><br>Mounting bracket, PBT black, for sensors with 18 mm thread, rotatable         | <b>SMB312B</b><br>    | <b>3025519</b><br>Mounting bracket, stainless steel, for MINI-BEAM NAMUR                          |
| <b>SMB3018SC</b><br> | <b>3053952</b><br>Mounting bracket, PTB black, for sensors with 18 mm thread                    |                                                                                                           |                                                                                                   |