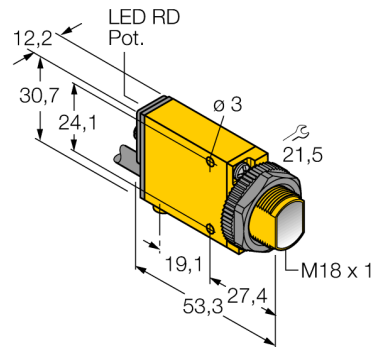


# Photoelectric Sensor

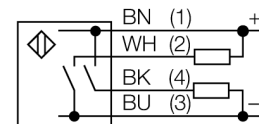
## Diffuse Mode Sensor

### SM312WMHS W/30



- 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



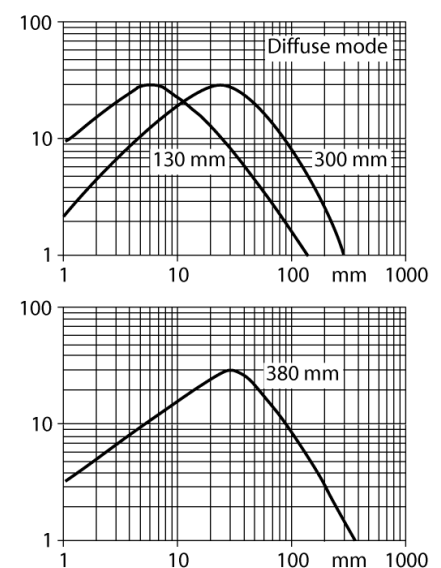
|                                  |                                         |
|----------------------------------|-----------------------------------------|
| Type                             | SM312WMHS W/30                          |
| ID                               | 3035664                                 |
| <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 $U_s$          | 10...30 VDC                             |
| Residual ripple                  | < 10 % $U_s$                            |
| DC rated operating current $I_s$ | ≤ 150 mA                                |
| No-load current $I_o$            | ≤ 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                  |
| Housing material                 | Plastic, Thermoplastic material, Yellow |
| Lens                             | plastic, Acrylic                        |
| Electrical connection            | Cable, 9 m, PVC                         |
| Number of cores                  | 4                                       |
| Core cross-section               | 0.5 mm <sup>2</sup>                     |
| Ambient temperature              | -20...+70 °C                            |
| Protection class                 | IP67                                    |
| <b>Special features</b>          |                                         |
| Switching state                  | LED, Red                                |
| Excess gain indication           | LED, red, flashing                      |
| <b>Tests/approvals</b>           |                                         |
| Approvals                        | CE, cURus, CSA                          |

#### Functional principle

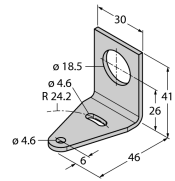
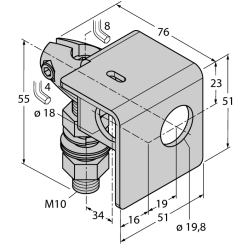
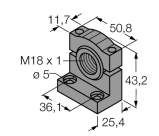
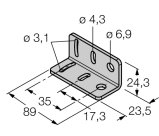
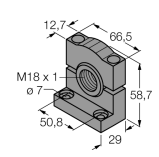
Diffuse mode sensors incorporate the emitter and receiver in a single housing. However, diffuse mode sensors do not detect the interruption of the light beam like opposed mode sensors, but the reflection of the target. A target is detected if it reflects a sufficient amount of light back to the receiver.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



## Accessories

| Type code   | Ident no. |                                                                                 | Dimension drawing                                                                     |
|-------------|-----------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| SMB18A      | 3033200   | Mounting bracket, rectangular, stainless steel, for sensors with 18 mm thread   |    |
| SMB18AFAM10 | 3012558   | Mounting bracket, material VA 1.4401, for M10 x 1.5 thread, thread length 18 mm |    |
| SMB18SF     | 3052519   | Mounting bracket, PBT black, for sensors with 18 mm thread, rotatable           |   |
| SMB312B     | 3025519   | Mounting bracket, stainless steel, for MINI-BEAM NAMUR                          |  |
| SMB3018SC   | 3053952   | Mounting bracket, PTB black, for sensors with 18 mm thread                      |  |