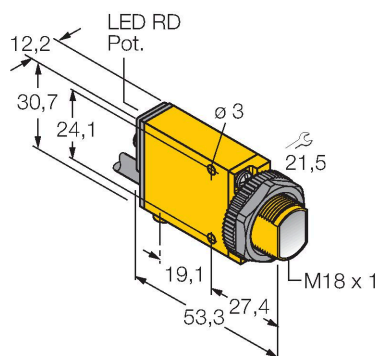


# SM312LVMHS

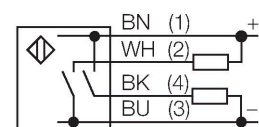
## Photoelectric Sensor – Retroreflective Sensor



### Features

- Cable, PVC, 2 m
- Protection class IP67
- Connection cable, 2 m
- Max. range 300 mm
- Reduced response time 0.3 ms
- Operating voltage: 10...30 VDC
- Switching output, bipolar
- Light/dark operation

### Wiring diagram



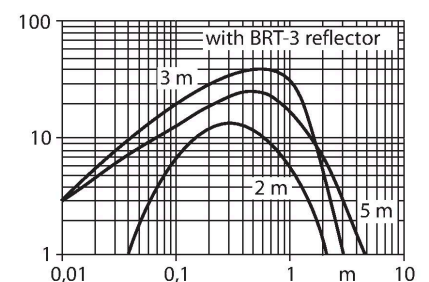
### Technical data

|                                |                                         |
|--------------------------------|-----------------------------------------|
| Type                           | SM312LVMHS                              |
| ID                             | 3026200                                 |
| <b>Optical data</b>            |                                         |
| Function                       | Retroreflective Sensor                  |
| Operating mode                 | Unpolarized                             |
| Reflector included in delivery | no                                      |
| Light type                     | Red                                     |
| Wavelength                     | 650 nm                                  |
| Range                          | 0...5000 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 with thread, Mini Beam      |
| Dimensions                     | Ø 18 x 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                                       |

### Functional principle

Retro-reflective sensors incorporate emitter and receiver in a single compact housing. The light beam of the emitter is directed towards a reflector which returns the light back to the receiver. An object is detected when it interrupts this beam. Retro-reflective sensors incorporate some of the advantages of opposed mode sensors (good contrast and high excess gain). Further it is merely required to install and wire a single device. A smaller sensing range and susceptibility of devices without polarisation filter can be of disadvantage when shiny objects have to be detected.

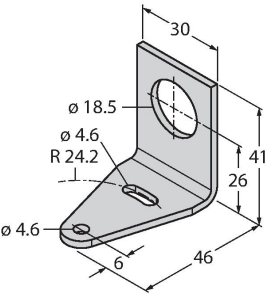
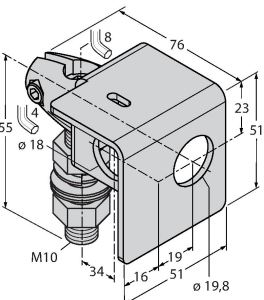
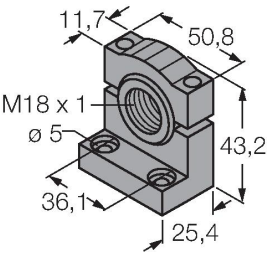
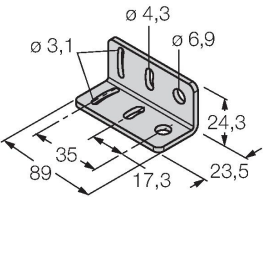
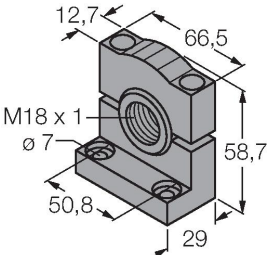
Excess gain curve  
Excess gain in relation to the distance (type LV)



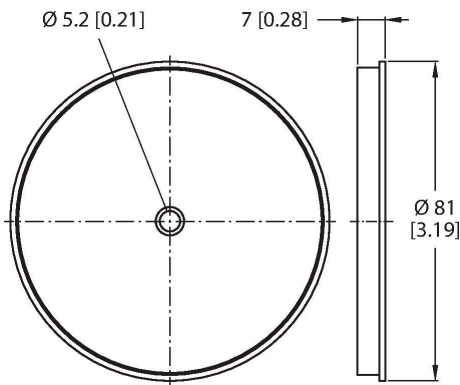
## Technical data

|                        |                     |
|------------------------|---------------------|
| Core cross-section     | 0.5 mm <sup>2</sup> |
| 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

|                                                                                     |         |                                                                               |                                                                                      |         |                                                                                 |
|-------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------|
| 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                    |                                                                                      |         |                                                                                 |
|  |         |                                                                               |                                                                                      |         |                                                                                 |

Accessories

| Dimension drawing                                                                 | Type  | ID      |                                                                                                 |
|-----------------------------------------------------------------------------------|-------|---------|-------------------------------------------------------------------------------------------------|
|  | BRT-3 | 3016164 | Round reflector, reflection coefficient 1.0, material acrylic, ambient temperature -20...+60 °C |