



## Photoelectric sensors GR18S, Photoelectric proximity sensor, energetic

GRTE18S-N231Z



**Model Name** > GRTE18S-N231Z  
**Part No.** > 1059432



*Illustration may differ*

#### At a glance

- Low-cost cylindrical M18 sensor with extra short housing
- Five different housing styles
- Variety of plastic and metal housing styles, with straight or right angle optics
- Bright and highly visible PinPoint-LED
- Special flush type, one-piece metal housing
- Highly visible signal indicator LED
- IP 67 rating

#### Your benefits

- Space-saving solution due to short housing
- Flexible mounting options due to versatile housing styles
- Easy installation and precise detection due to PinPoint LED
- Reduced maintenance costs due to high tightening torque of single piece flush metal housing
- Rugged and reliable with proven SICK technology
- Highly visible signal indicator LED saves maintenance and commissioning time



#### Features

|                                  |                                              |
|----------------------------------|----------------------------------------------|
| Sensor/detection principle:      | Photoelectric proximity sensor, energetic    |
| Housing design (light emission): | Cylindrical, straight, fully flush, straight |
| Optical axis:                    | Axial, Fully flush                           |
| Sensing range max.:              | 3 mm ... 115 mm <sup>1)</sup>                |
| Sensing range:                   | 5 mm ... 100 mm <sup>2)</sup>                |
| Type of light:                   | Visible red light                            |
| Light source:                    | PinPoint LED <sup>3)</sup>                   |
| Wave length:                     | 650 nm                                       |
| Adjustment:                      | Potentiometer, Potentiometer, 270°           |
| Light spot size (distance):      | Ø 8 mm (100 mm)                              |

<sup>1) 2)</sup> Object with 90 % reflectance (referred to standard white DIN 5033) <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

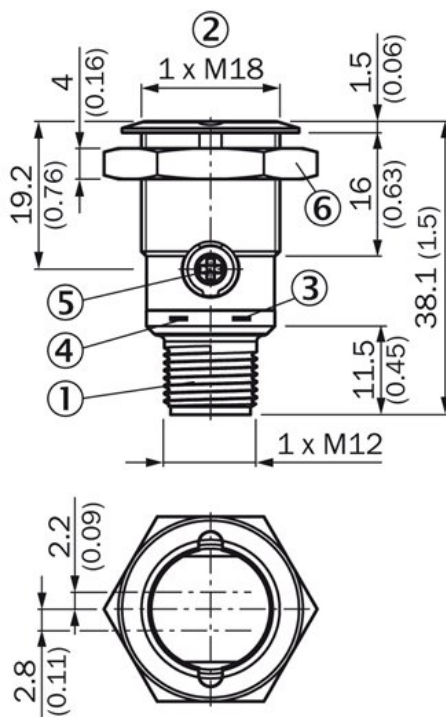
#### Mechanics/electronics

|                    |                                   |
|--------------------|-----------------------------------|
| Supply voltage:    | 10 V DC ... 30 V DC <sup>1)</sup> |
| Ripple:            | ± 5 Vpp <sup>2)</sup>             |
| Power consumption: | ≤ 30 mA                           |
| Output type:       | NPN                               |

|                                   |                                                   |
|-----------------------------------|---------------------------------------------------|
| Switching mode:                   | Light switching                                   |
| Output current I <sub>max</sub> : | 100 mA <sup>3)</sup>                              |
| Response time:                    | < 1,000 µs <sup>4)</sup>                          |
| Switching frequency:              | 500 Hz                                            |
| Connection type:                  | Connector M12, 3-pin                              |
| Circuit protection:::             | A, B, D <sup>5)</sup> <sup>6)</sup> <sup>7)</sup> |
| Protection class:                 | III                                               |
| Housing material:                 | Metal                                             |
| Enclosure rating:                 | IP 67                                             |
| Ambient operating temperature:    | -25 °C ... 55 °C <sup>8)</sup>                    |
| Ambient storage temperature:      | -40 °C ... 70 °C                                  |

<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of V<sub>S</sub> tolerances <sup>3)</sup> At V<sub>S</sub> > 24 V or ambient temperature > 49 °C, I<sub>A</sub> max = 50 mA <sup>4)</sup> Signal transit time with resistive load <sup>5)</sup> A = V<sub>S</sub> connections reverse-polarity protected <sup>6)</sup> B = inputs and output reverse-polarity protected <sup>7)</sup> D = outputs overcurrent and short-circuit protected <sup>8)</sup> At U<sub>V</sub> ≤ 24V and I<sub>A</sub>

## Dimensional drawing

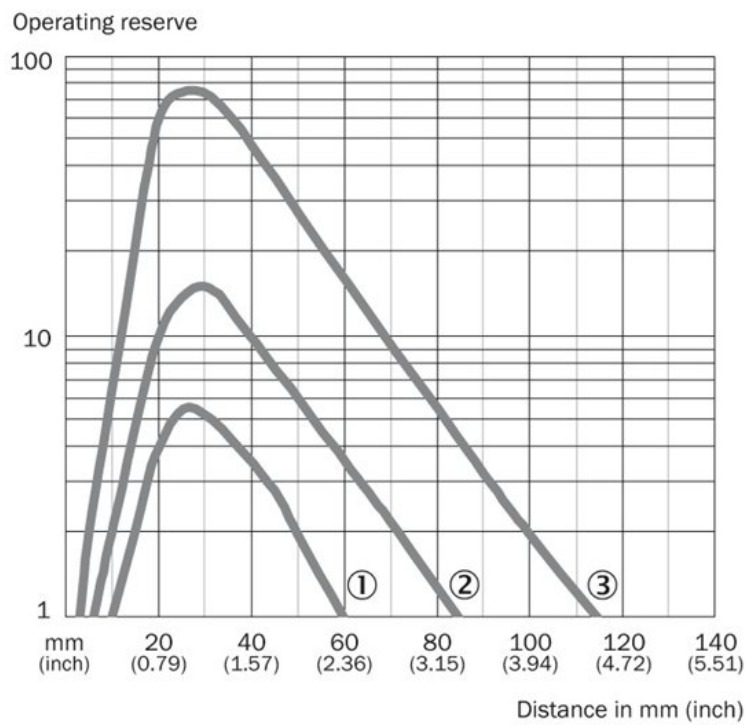


- [1] Connector M12, 3-pin
- [2] Threaded mounting hole M18 x 1
- [3] LED indicator yellow
- [4] LED indicator green
- [5] Sensitivity control; Potentiometer 270°
- [6] fastening nut; 24 mm hex, metal

Connection diagram

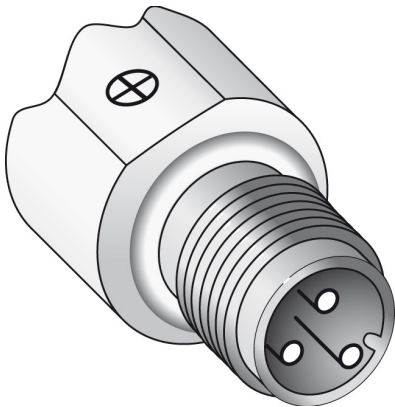


Characteristic curve

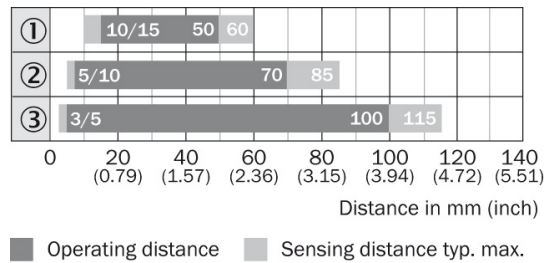


- |1| Sensing range on black, 6 % remission
- |2| Sensing range on gray, 20 % remission
- |3| Sensing range on white, 90 % remission

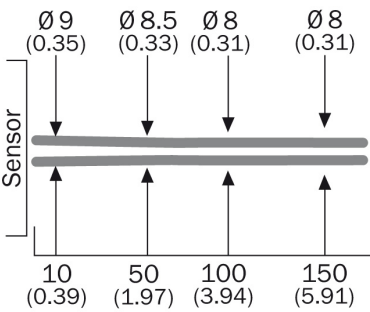
Connection type



Sensing range diagram



Light spot size



Distance

All dimensions in mm (inch)

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