



Photoelectric sensors  
GR18S, Photoelectric retro-reflective sensor,  
Standard optics

GRL18S-F1338



**Model Name** > [GRL18S-F1338](#)  
**Part No.** > [1059535](#)



*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 retro-reflective sensor, Standard optics |
| Housing design (light emission): | Cylindrical, angled                                    |
| Optical axis:                    | Radial                                                 |
| Sensing range max.:              | 0.03 m ... 7.2 m <sup>1)</sup>                         |
| Sensing range:                   | 0.06 m ... 6 m <sup>2)</sup>                           |
| Type of light:                   | Visible red light                                      |
| Light source:                    | PinPoint LED <sup>3)</sup>                             |
| Wave length:                     | 650 nm                                                 |
| Light spot size (distance):      | Ø 175 mm (7 m)                                         |

<sup>1) 2)</sup> PL80A <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

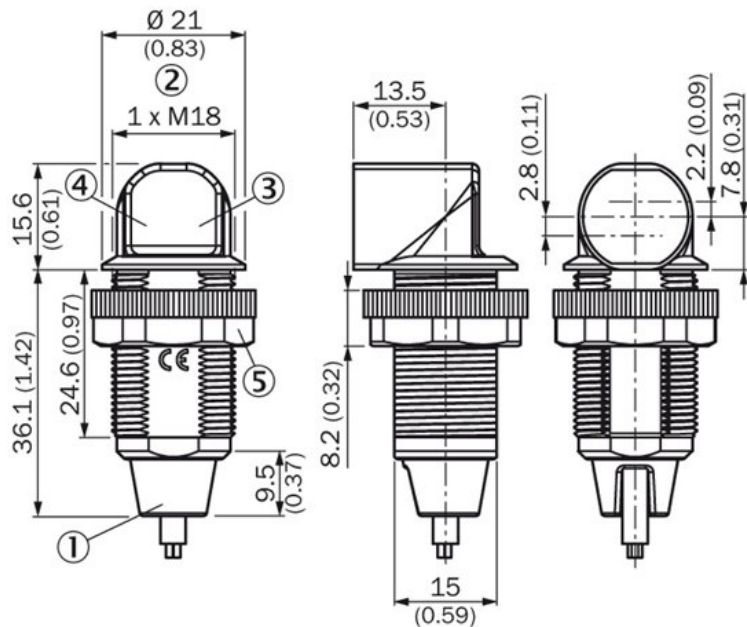
#### Mechanics/electronics

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

|                                   |                                    |
|-----------------------------------|------------------------------------|
| Output current I <sub>max</sub> : | 100 mA <sup>3)</sup>               |
| Response time:                    | < 500 µs <sup>4)</sup>             |
| Switching frequency:              | 1,000 Hz                           |
| Connection type:                  | Cable, 3-wire, 2 m <sup>5)</sup>   |
| Cable material:                   | PVC                                |
| Circuit protection:::             | A, B, D <sup>6)</sup> 7) 8)        |
| Protection class:                 | III                                |
| Polarisation filter:              | ✓                                  |
| Housing material:                 | Plastic                            |
| Enclosure rating:                 | IP 67                              |
| Items supplied:                   | Fastening nuts (2 x) <sup>9)</sup> |
| Ambient operating temperature:    | -25 °C ... 55 °C                   |
| 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> Do not bend below 0 °C <sup>6)</sup> A = V<sub>S</sub> connections reverse-polarity protected <sup>7)</sup> B = inputs and output reverse-polarity protected <sup>8)</sup> D = outputs overcurrent and short-circuit protected <sup>9)</sup> At U<sub>V</sub> ≤ 24V and I<sub>A</sub>

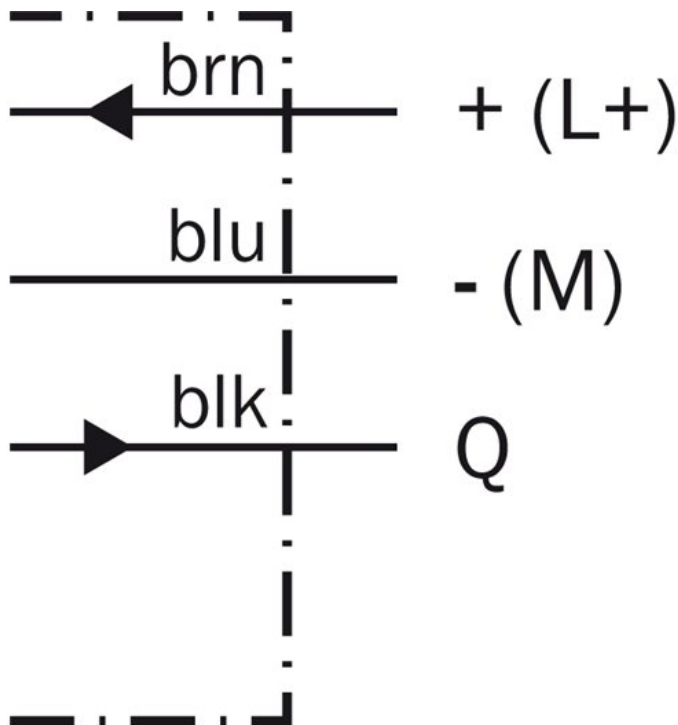
## Dimensional drawing



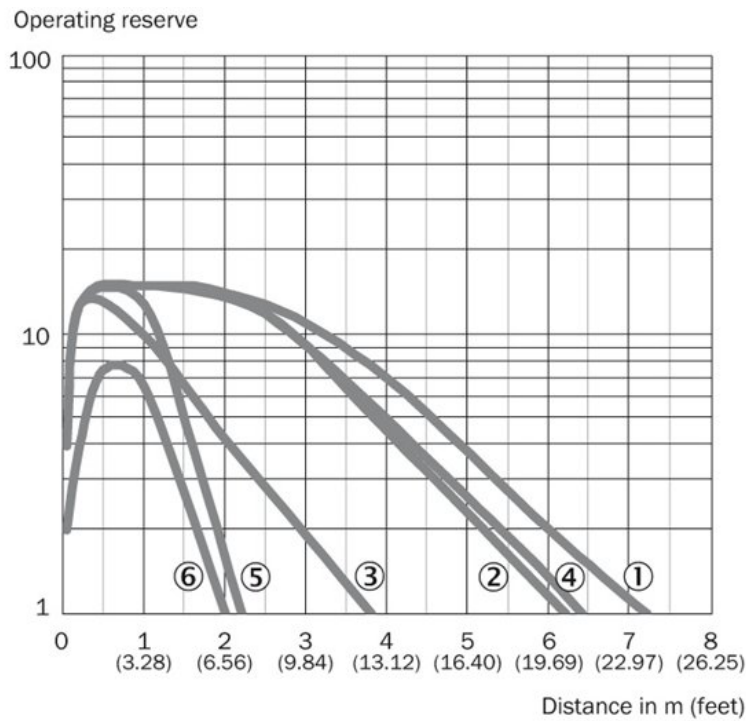
- [1] Connection cable 2 m
- [2] Threaded mounting hole M18 x 1
- [3] LED indicator yellow
- [4] LED indicator green
- [5] fastening nut; 22 mm hex, plastic

All dimensions in mm (inch)

Connection diagram

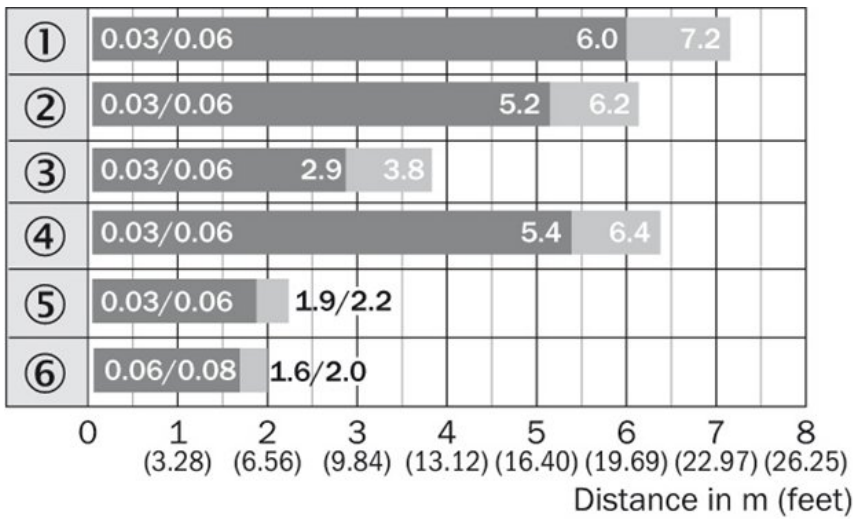


Characteristic curve



- |1| Reflector type PL80A
- |2| Reflector type PL40A
- |3| Reflector type PL20A
- |4| Reflector type P205
- |5| Reflector type PL22-2
- |6| Reflective tape REF-Plus 3436

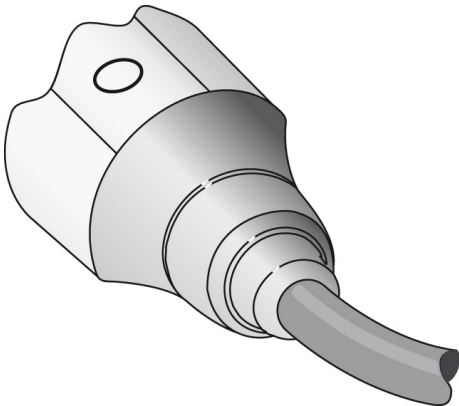
## Sensing range diagram



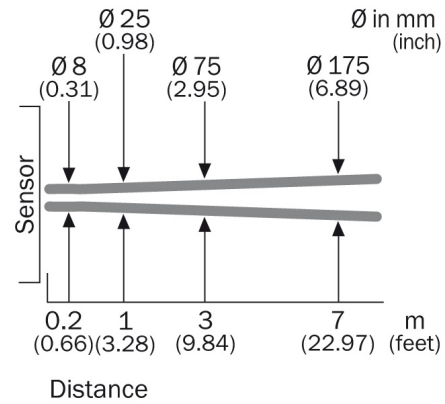
- 1] Reflector type PL80A
- 2] Reflector type PL40A
- 3] Reflector type PL20A
- 4] Reflector type P205
- 5] Reflector type PL22-2
- 6] Reflective tape REF-Plus 3436

■ Sensing range      ■ Sensing range max.

## Connection type



## Light spot size



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