



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

GRL18S-E1351



**Model Name** > [GRL18S-E1351](#)  
**Part No.** > [1064153](#)



*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, straight                                  |
| Optical axis:                    | axial                                                  |
| 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

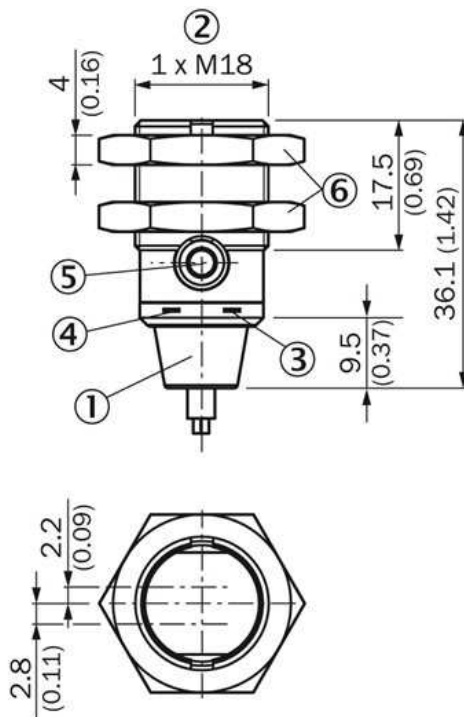
#### Mechanics/electronics

|                    |                                   |
|--------------------|-----------------------------------|
| Supply voltage:    | 10 V DC ... 30 V DC <sup>1)</sup> |
| Ripple:            | ± 5 Vpp <sup>2)</sup>             |
| Power consumption: | ≤ 30 mA                           |
| Output type:       | NPN                               |
| 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> <sup>7)</sup> <sup>8)</sup> |
| Protection class:                   | III                                               |
| Polarisation filter:                | ✓                                                 |
| Enclosure rating:                   | IP 67                                             |
| Items supplied:                     | Fastening nuts (2 x), Reflector P250              |
| Ambient temperature operation:      | -25 °C ... +55 °C <sup>9)</sup>                   |
| Ambient storage temperature:        | -40 °C ... +70 °C                                 |
| UL File No.:                        | NRKH.E348498 & NRKH7.E348498                      |
| Signal voltage NPN HIGH/LOW:        | Approx. V <sub>S</sub> /≤ 3 V                     |
| Housing material:                   | Metal                                             |

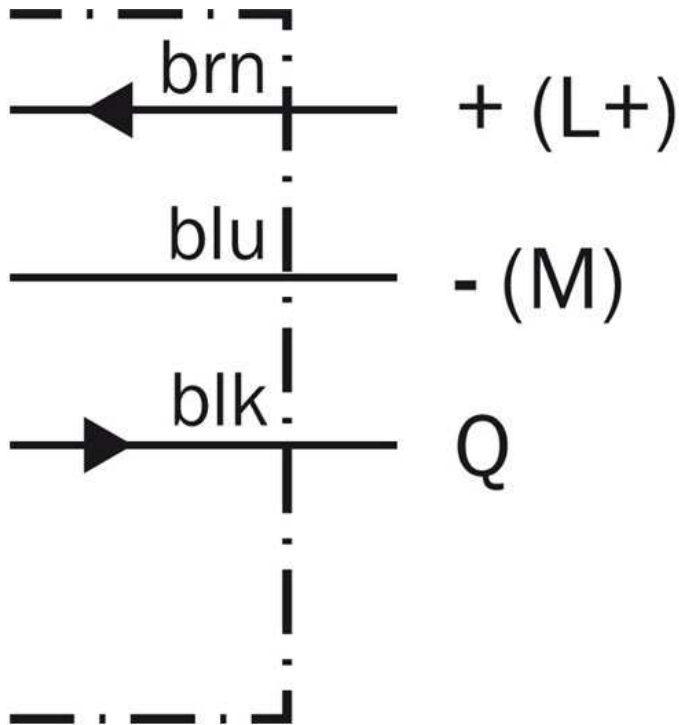
1) Limit values, operation in short-circuit protected network max. 8 A 2) May not exceed or fall short of V<sub>S</sub> tolerances <sup>3)</sup> At V<sub>S</sub> > 24 V or ambient temperature > 49 °C, I<sub>A</sub> max = 50 mA <sup>4)</sup> Signal transit time with resistive load <sup>5)</sup> Do not 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



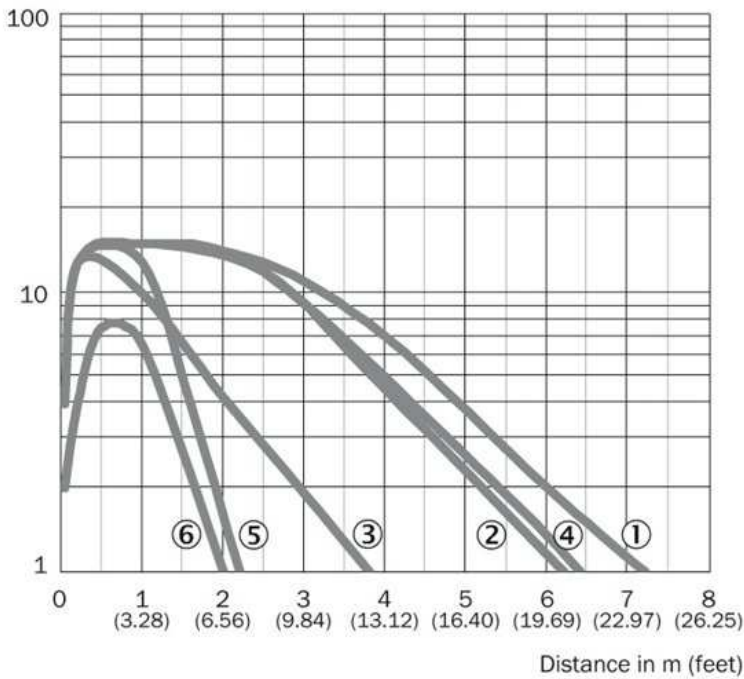
- [1] Connection cable 2 m
- [2] Threaded mounting hole M18 x 1
- [3] LED indicator yellow
- [4] LED indicator green
- [5] Dummy plug
- [6] fastening nuts (2 x); 24 mm hex, metal

Connection diagram



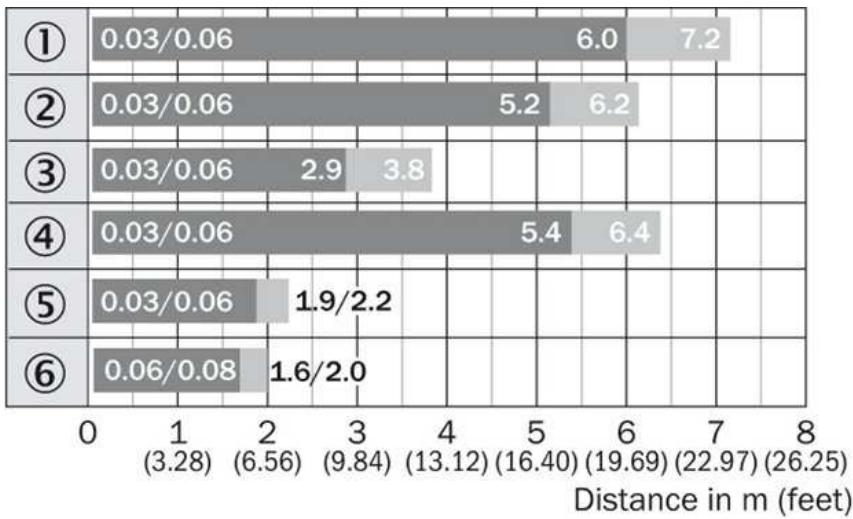
Characteristic curve

Operating reserve



- |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

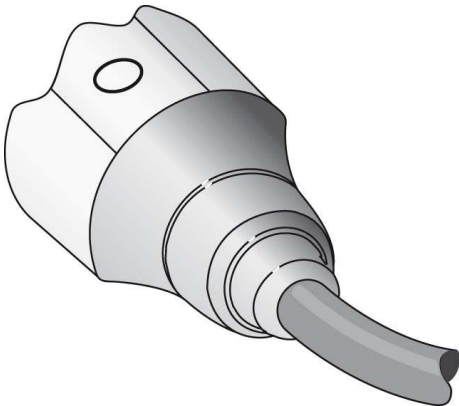
## Sensing range diagram



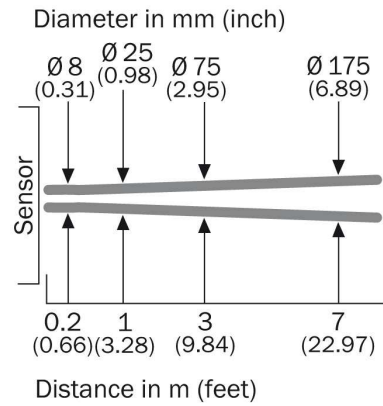
- |1| Reflector type PL80A
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- |4| Reflector type P205
- |5| Reflector type PL22-2
- |6| Reflective tape REF-Plus 3436

■ Sensing range      ■ Sensing range max.

## Connection type



## Light spot size



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