



# GRSE18-N1122

GR18

CYLINDRICAL PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

| Type         | Part no. |
|--------------|----------|
| GRSE18-N1122 | 1068334  |

Other models and accessories → [www.sick.com/GR18](http://www.sick.com/GR18)

Illustration may differ



### Detailed technical data

#### Features

|                                        |                                   |
|----------------------------------------|-----------------------------------|
| <b>Sensor/ detection principle</b>     | Through-beam photoelectric sensor |
| <b>Dimensions (W x H x D)</b>          | 18 mm x 18 mm x 71.5 mm           |
| <b>Housing design (light emission)</b> | Cylindrical                       |
| <b>Thread diameter (housing)</b>       | M18 x 1                           |
| <b>Optical axis</b>                    | Axial                             |
| <b>Sensing range max.</b>              | 0 m ... 15 m                      |
| <b>Sensing range</b>                   | 0 m ... 10 m                      |
| <b>Type of light</b>                   | Infrared light                    |
| <b>Light source</b>                    | LED <sup>1)</sup>                 |
| <b>Light spot size (distance)</b>      | Ø 420 mm (10 m)                   |
| <b>Wave length</b>                     | 850 nm                            |
| <b>Adjustment</b>                      | Potentiometer                     |

<sup>1)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

#### Mechanics/electronics

|                            |                                   |
|----------------------------|-----------------------------------|
| <b>Supply voltage</b>      | 10 V DC ... 30 V DC <sup>1)</sup> |
| <b>Ripple</b>              | ± 5 V <sub>pp</sub> <sup>2)</sup> |
| <b>Current consumption</b> | 30 mA                             |

<sup>1)</sup> Limit values. Operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not exceed or fall below U<sub>v</sub> tolerances.

<sup>3)</sup> At U<sub>v</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> With light/dark ratio 1:1.

<sup>6)</sup> Do not bend below 0 °C.

<sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>8)</sup> B = inputs and output reverse-polarity protected.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

<sup>10)</sup> At U<sub>v</sub> ≤ 24V and I<sub>A</sub> ≤ 50mA.

|                                                   |                                                       |
|---------------------------------------------------|-------------------------------------------------------|
| <b>Switching output</b>                           | NPN                                                   |
| <b>Output function</b>                            | Complementary                                         |
| <b>Switching mode</b>                             | Light/dark switching                                  |
| <b>Signal voltage NPN HIGH/LOW</b>                | Approx. $V_S / \leq 3 \text{ V}$                      |
| <b>Output current <math>I_{\text{max}}</math></b> | 100 mA <sup>3)</sup>                                  |
| <b>Response time</b>                              | < 500 $\mu\text{s}$ <sup>4)</sup>                     |
| <b>Switching frequency</b>                        | 1,000 Hz <sup>5)</sup>                                |
| <b>Connection type</b>                            | Cable, 4-wire, 2 m <sup>6)</sup>                      |
| <b>Cable material</b>                             | PVC                                                   |
| <b>Circuit protection</b>                         | A <sup>7)</sup><br>B <sup>8)</sup><br>D <sup>9)</sup> |
| <b>Protection class</b>                           | III                                                   |
| <b>Housing material</b>                           | Metal, Nickel-plated brass and ABS                    |
| <b>Optics material</b>                            | Plastic, PMMA                                         |
| <b>Enclosure rating</b>                           | IP67                                                  |
| <b>Items supplied</b>                             | Fastening nuts (4 x)                                  |
| <b>EMC</b>                                        | EN 60947-5-2                                          |
| <b>Test input</b>                                 | Sender OFF at "Test" 0 V                              |
| <b>Ambient operating temperature</b>              | -25 °C ... +55 °C <sup>10)</sup>                      |
| <b>Ambient storage temperature</b>                | -40 °C ... +70 °C                                     |
| <b>UL File No.</b>                                | E348498                                               |
| <b>Part number of individual components</b>       | 2074064 GRS18-D1321 2074072 GRE18-N1112               |

<sup>1)</sup> Limit values. Operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not exceed or fall below  $U_V$  tolerances.

<sup>3)</sup> At  $U_V > 24 \text{ V}$  or ambient temperature > 49 °C,  $I_A$  max. = 50 mA.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> Do not bend below 0 °C.

<sup>7)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>8)</sup> B = inputs and output reverse-polarity protected.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

<sup>10)</sup> At  $U_V \leq 24 \text{ V}$  and  $I_A < 50 \text{ mA}$ .

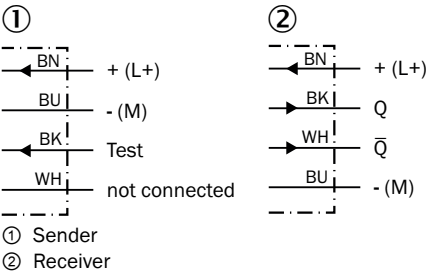
## Classifications

|                     |          |
|---------------------|----------|
| <b>ECI@ss 5.0</b>   | 27270901 |
| <b>ECI@ss 5.1.4</b> | 27270901 |
| <b>ECI@ss 6.0</b>   | 27270901 |
| <b>ECI@ss 6.2</b>   | 27270901 |
| <b>ECI@ss 7.0</b>   | 27270901 |
| <b>ECI@ss 8.0</b>   | 27270901 |
| <b>ECI@ss 8.1</b>   | 27270901 |
| <b>ECI@ss 9.0</b>   | 27270901 |
| <b>ECI@ss 10.0</b>  | 27270901 |

|                |          |
|----------------|----------|
| ECI@ss 11.0    | 27270901 |
| ETIM 5.0       | EC002716 |
| ETIM 6.0       | EC002716 |
| ETIM 7.0       | EC002716 |
| UNSPSC 16.0901 | 39121528 |

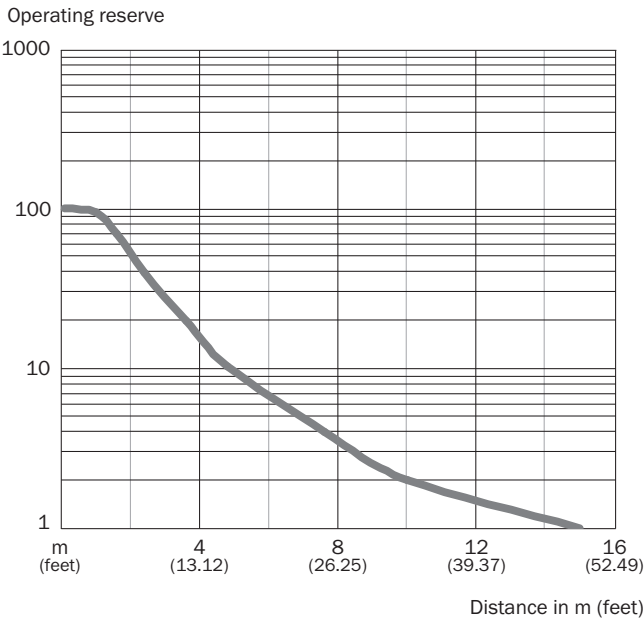
Connection diagram

Cd-088



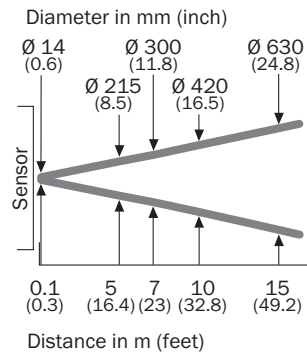
Characteristic curve

GRSE18S



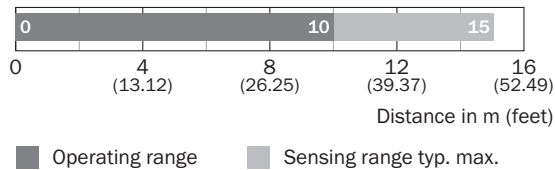
## Light spot size

GRSE18, infrared light



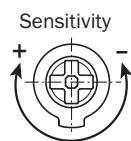
## Sensing range diagram

GRSE18S



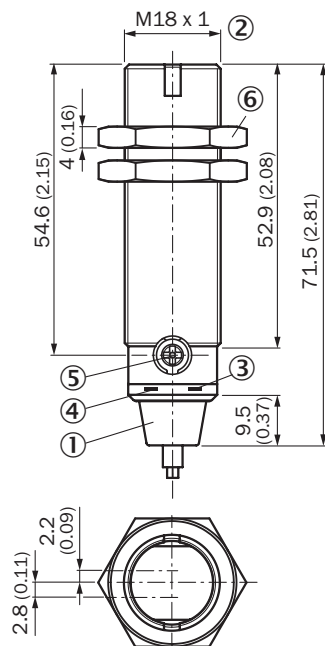
## Adjustments

GRL18(S), GRSE18(S), Sensitivity setting: Potentiometer, 270°



### Dimensional drawing (Dimensions in mm (inch))

GRTE18, GRL18, GRSE18, metal, cable, straight



- ① Connection cable 2 m
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Sensitivity control: potentiometer 270°
- ⑥ Fastening nuts (2x); width across 24, metal

### Recommended accessories

Other models and accessories → [www.sick.com/GR18](http://www.sick.com/GR18)

|                                                                                     | Brief description                                                               | Type       | Part no. |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------|----------|
| Mounting brackets and plates                                                        |                                                                                 |            |          |
|  | Mounting bracket for M18 sensors, steel, zinc coated, without mounting hardware | BEF-WN-M18 | 5308446  |
| Plug connectors and cables                                                          |                                                                                 |            |          |
|  | Head A: male connector, M12, 4-pin, straight<br>Head B: -<br>Cable: unshielded  | STE-1204-G | 6009932  |

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**For us, that is “Sensor Intelligence.”**

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)