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DATA SHEET

# GRSE18-N2442

GR18
Photoelectric sensors

SICK
Sensor Intelligence



Illustration may differ

## PHOTOELECTRIC SENSORS

# GRSE18-N2442

### ORDERING INFORMATION

| Type | part no. |
|---|---|
| GRSE18-N2442 | 1067985 |

Further device versions and accessories at www.sick.com/GR18

## DETAILED TECHNICAL DATA

### FEATURES

| | |
|---|---|
| Functional principle | Through-beam photoelectric sensor |
| Dimensions (W x H x D) | 18 mm x 18 mm x 73.5 mm |
| Housing design (light emission) | Cylindrical |
| Thread diameter (housing) | M18 x 1 |
| Optical axis | Axial |
| Sensing range max. | 0 m ... 15 m |
| Sensing range | 0 m ... 10 m |
| Type of light | Visible red light |
| Light source | PinPoint LED [1] |
| Light spot size (distance) | Ø 250 mm (10 m) |
| Wave length | 650 nm |
| Adjustment | Potentiometer |
| Display | |
| LED green | Operating indicator<br>Static on: power on |
| LED yellow | Status of received light beam<br>Static on: object not present<br>Static off: object present |

[1] Average service life: 100,000 h at $T_U$ = +25 °C.

## MECHANICS/ELECTRONICS

| | |
|---|---|
| Supply voltage $U_B$ | 10 V DC ... 30 V DC [1] |
| Ripple | < 5 $V_{pp}$ [2] |
| Current consumption | 30 mA |
| Switching output | NPN |
| Output function | Complementary |
| Switching mode | Light/dark switching |
| Signal voltage NPN HIGH/LOW | Approx. $V_S$ / ≤ 3 V |
| Output current $I_{max.}$ | ≤ 100 mA [3] |
| Response time | < 500 µs [4] |
| Switching frequency | 1,000 Hz [5] |
| Connection type | Male connector M12, 4-pin |
| Circuit protection | A [6]<br>B [7]<br>D [8] |
| Protection class | III |
| Housing material | Metal, Nickel-plated brass and ABS |
| Optics material | Plastic, PMMA |
| Enclosure rating | IP67 |
| Items supplied | Fastening nuts (4 x) |
| Electromagnetic compatibility (EMC) | EN 60947-5-2 |
| Test input | Sender OFF at "Test" 0 V |
| Ambient operating temperature | –25 °C ... +55 °C [9] |
| Ambient temperature, storage | –40 °C ... +70 °C |
| UL File No. | E348498 |
| Part number of individual components | 2072237 GRS18-D2441 2073766 GRE18-N2432 |

[1] Limit values. Operated in short-circuit protected network: max. 8 A.

[2] May not fall below or exceed $U_v$ tolerances.

[3] At Uv > 24 V or ambient temperature > 49 °C, IA max. = 50 mA.

[4] Signal transit time with resistive load.

[5] With light/dark ratio 1:1.

[6] A = $V_S$ connections reverse-polarity protected.

[7] B = inputs and output reverse-polarity protected.

[8] D = outputs overcurrent and short-circuit protected.

[9] At $U_v$ <=24V and $I_A$<50mA.

## CERTIFICATES

| | |
|---|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |
| China Compulsory Product Certification (CCC) ex-empt | ✓ |
| ECOLAB certificate | ✓ |
| cULus certificate | ✓ |

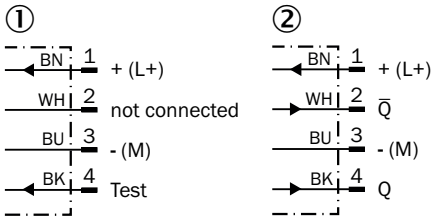
| | |
|---|---|
| Photobiological safety (DIN EN 62471) certificate | ✓ |

### ADJUSTMENTS GRL18(S), GRSE18(S), SENSITIVITY SETTING: POTENTIOMETER, 270°



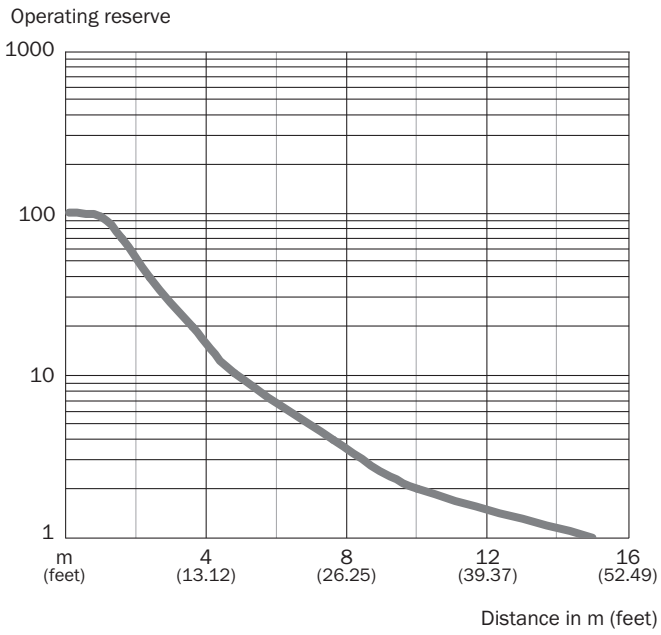



### CONNECTION DIAGRAM CD-072

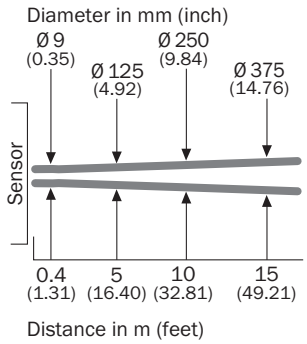



① sender
② receiver

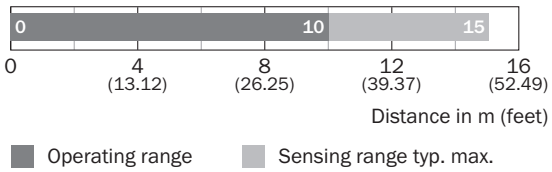
### CHARACTERISTIC CURVE GRSE18S



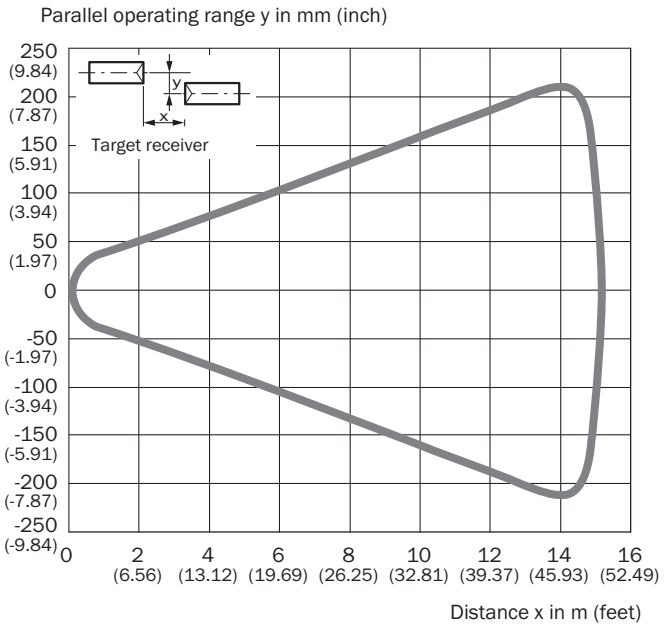
### LIGHT SPOT SIZE GRSE18, RED LIGHT



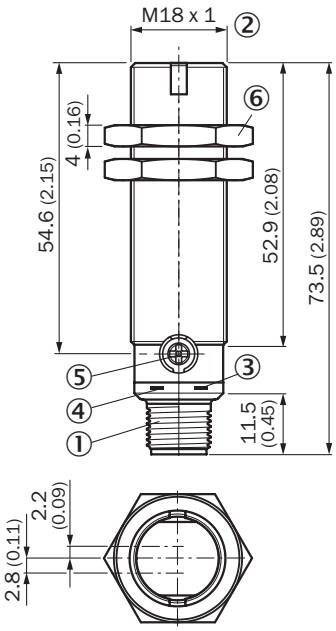

### SENSING RANGE DIAGRAM GRSE18S




### RESPONSE RANGE GRSE18S



**DIMENSIONAL DRAWING GRTE18, GRL18, GRSE18, METAL, CONNECTOR, STRAIGHT**







Dimensions in mm (inch)
① male connector M12, 4-pin
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

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1067985

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# SICK AT A GLANCE

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