Product data sheet

# GRTE18S-N2442VS16

## GR18

CYLINDRICAL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

## Ordering information

| Type | Part no. |
|---|---|
| GRTE18S-N2442VS16 | 1102422 |

Other models and accessories ➜ www.sick.com/GR18

## Detailed technical data

### Features

| | |
|---|---|
| **Functional principle** | Photoelectric proximity sensor |
| **Functional principle detail** | Energetic |
| **Dimensions (W x H x D)** | 18 mm x 18 mm x 55.9 mm |
| **Housing design (light emission)** | Cylindrical |
| **Housing length** | 55.9 mm |
| **Thread length** | 31.7 mm |
| **Thread diameter (housing)** | M18 x 1 |
| **Optical axis** | Axial |
| **Sensing range max.** | 5 mm ... 550 mm [1] |
| **Sensing range** | 10 mm ... 400 mm [1] |
| **Type of light** | Visible red light |
| **Light source** | PinPoint LED [2] |
| **Light spot size (distance)** | Ø 9 mm (400 mm) |
| **Wave length** | 650 nm |
| **Adjustment** | Potentiometer, 270° |
| **Indication** | |
| LED green | Operating indicator<br>Static on: power on |
| LED yellow | Status of received light beam<br>Static on: object present<br>Static off: object not present |
| **Special applications** | Hygienic and washdown zones |
| **Special features** | Active pull-up resistance |

[1] Object with 90% remission (based on standard white, DIN 5033).

[2] 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 [3] |
| **Signal voltage NPN HIGH/LOW** | Approx. $V_S$ / ≤ 3 V |
| **Output current $I_{max.}$** | ≤ 100 mA [4] |
| **Response time** | < 1,000 µs [5] |
| **Switching frequency** | 500 Hz [6] |
| **Connection type** | Male connector M12, 4-pin |
| **Circuit protection** | A [7]<br>B [8]<br>D [9] |
| **Protection class** | III |
| **Weight** | 45 g |
| **Housing material** | Metal, Stainless steel V4A (1.4404, 316L) |
| **Optics material** | Plastic, PMMA |
| **Tightening torque, max.** | 90 Nm |
| **Enclosure rating** | IP67<br>IP68 [10]<br>IP69K [11] |
| **Items supplied** | Fastening nuts (2 x) |
| **Electromagnetic compatibility (EMC)** | EN 60947-5-2 |
| **Ambient operating temperature** | –25 °C ... +55 °C [12] |
| **Ambient temperature, storage** | –30 °C ... +75 °C |
| **UL File No.** | NRKH.E348498 & NRKH7.E348498 |

[1] Limit values. Operated in short-circuit protected network: max. 8 A.
[2] May not fall below or exceed $U_V$ tolerances.
[3] Q = light switching; $\bar{Q}$ = dark switching.
[4] At Uv > 24 V or ambient temperature > 49 °C, IA max. = 50 mA.
[5] Signal transit time with resistive load.
[6] With light/dark ratio 1:1.
[7] A = $V_S$ connections reverse-polarity protected.
[8] B = inputs and output reverse-polarity protected.
[9] D = outputs overcurrent and short-circuit protected.
[10] According to EN 60529 (10 m water depth / 24 h).
[11] According to ISO 20653:2013-03.
[12] At $U_V$ <=24V and $I_A$<50mA.

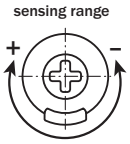
## Classifications

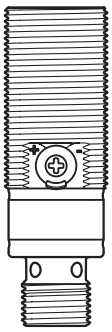
| | |
|---|---|
| **ECLASS 5.0** | 27270903 |
| **ECLASS 5.1.4** | 27270903 |
| **ECLASS 6.0** | 27270903 |

| | |
|---|---|
| **ECLASS 6.2** | 27270903 |
| **ECLASS 7.0** | 27270903 |
| **ECLASS 8.0** | 27270903 |
| **ECLASS 8.1** | 27270903 |
| **ECLASS 9.0** | 27270903 |
| **ECLASS 10.0** | 27270904 |
| **ECLASS 11.0** | 27270904 |
| **ECLASS 12.0** | 27270903 |
| **ETIM 5.0** | EC001821 |
| **ETIM 6.0** | EC001821 |
| **ETIM 7.0** | EC002719 |
| **ETIM 8.0** | EC002719 |
| **UNSPSC 16.0901** | 39121528 |

## Adjustments

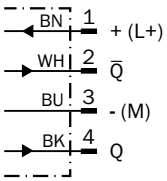
GRTB18(S) Inox, GRTE18(S) Inox, Sensing range setting: Potentiometer, 270°



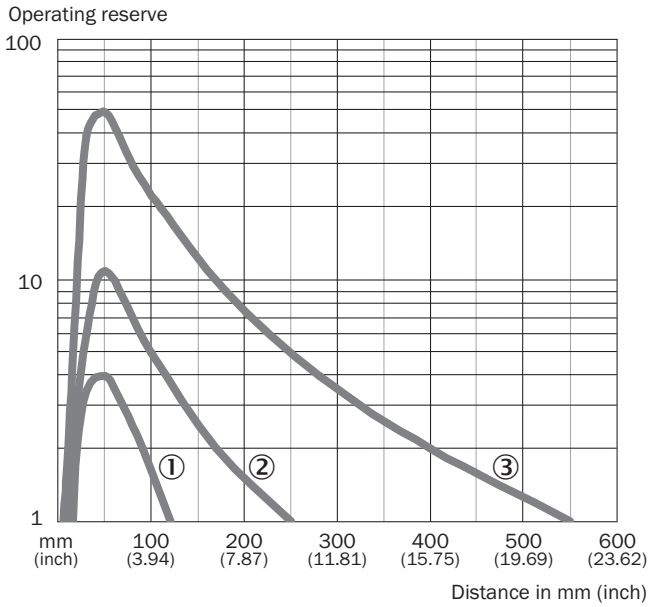
## Connection diagram

Cd-084



## Characteristic curve

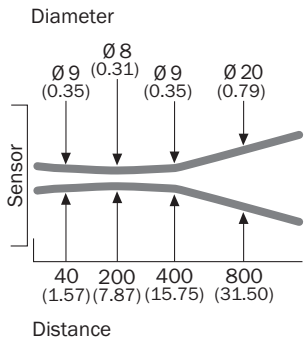
GRTE18S, 400 mm




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

## Light spot size

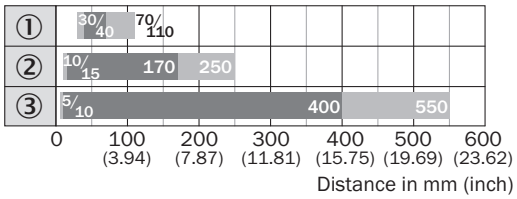
GRTE18S, 400 mm




Dimensions in mm (inch)

## Sensing range diagram

GRTE18(S) Inox, 400 mm

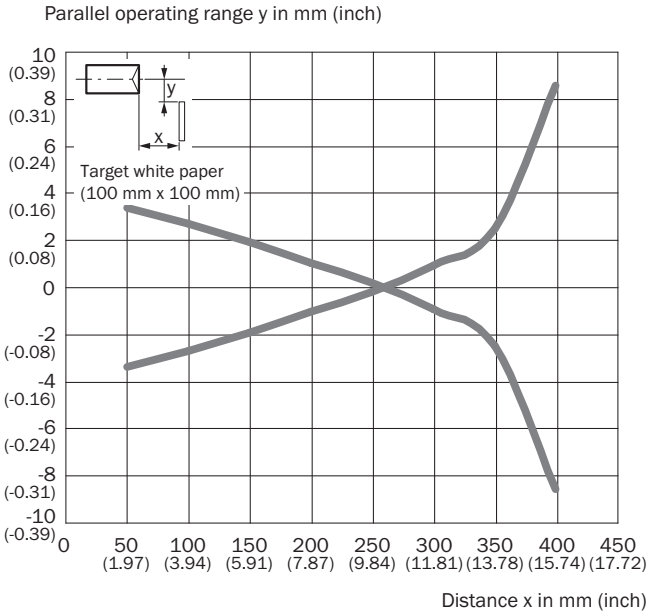



Sensing range  Sensing range max.

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

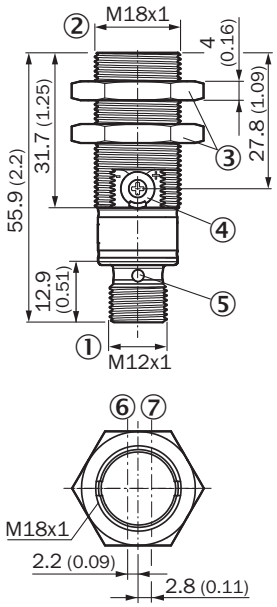
## Response range

GRTE18S, 400 mm



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

GR18S Inox, connector, straight







① Connection
② Threaded mounting hole M18 x 1
③ Fastening nuts (2 x); width across 24, stainless steel
④ Potentiometer, 270°
⑤ LED indicator (4 x)
⑥ Optical axis, receiver
⑦ Optical axis, sender

## Recommended accessories

Other models and accessories ➜ www.sick.com/GR18

| | Brief description | Type | Part no. |
|---|---|---|---|
| Mounting brackets and plates | | | |
|  | Mounting bracket for M18 sensors, stainless steel, without mounting hardware | BEF-WN-M18N | 5320947 |
| Others | | | |
|  | • **Connection type head A:** Female connector, M12, 4-pin, straight<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Connection systems:** Flying leads<br>• **Note:** This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2)<br>• **Application:** Hygienic and washdown zones | DOL-1204-G05MNI | 6052615 |

# 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.”**

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