Online data sheet



# GRTE18S-P2412V

## GR18 Inox

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ

## Ordering information

| Type | Part no. |
|---|---|
| GRTE18S-P2412V | 1085676 |

Other models and accessories ➜ www.sick.com/GR18_Inox

## Detailed technical data

### Features

| | |
|---|---|
| **Sensor/ detection principle** | Photoelectric proximity sensor, energetic |
| **Housing design (light emission)** | Cylindrical, straight |
| **Housing length** | 55.9 mm |
| **Thread length** | 31.7 mm |
| **Thread diameter (housing)** | M18 x 1 |
| **Optical axis** | Axial |
| **Sensing range max.** | 3 mm ... 115 mm [1] |
| **Sensing range** | 5 mm ... 100 mm [1] |
| **Type of light** | Visible red light |
| **Light source** | PinPoint LED [2] |
| **Light spot size (distance)** | Ø 8 mm (100 mm) |
| **Wave length** | 650 nm |
| **Adjustment** | Potentiometer, 270 ° |

[1] Object with 90 % reflectance (referred to standard white, DIN 5033).
[2] Average service life: 100,000 h at $T_U$ = +25 °C.

## Mechanics/electronics

| | |
|---|---|
| **Supply voltage** | 10 V DC ... 30 V DC [1] |
| **Ripple** | ± 5 $V_{pp}$ [2] |
| **Power consumption** | ≤ 30 mA |
| **Switching output** | PNP |
| **Output function** | Complementary |
| **Switching mode** | Light/dark switching [3] |
| **Signal voltage PNP HIGH/LOW** | $V_S$ - (≤ 3 V) / approx. 0 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** | Stainless steel, 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) |
| **EMC** | EN 60947-5-2 |
| **Ambient operating temperature** | –25 °C ... +55 °C [12] |
| **Ambient storage temperature** | –30 °C ... +75 °C |
| **UL File No.** | NRKH.E348498 & NRKH7.E348498 |

[1] Limit values when operated in short-circuit protected network: max. 8 A.
[2] May not exceed or fall below $U_V$ 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

| | |
|---|---|
| **ECl@ss 5.0** | 27270903 |
| **ECl@ss 5.1.4** | 27270903 |
| **ECl@ss 6.0** | 27270903 |

| | |
|---|---|
| **ECl@ss 6.2** | 27270903 |
| **ECl@ss 7.0** | 27270903 |
| **ECl@ss 8.0** | 27270903 |
| **ECl@ss 8.1** | 27270903 |
| **ECl@ss 9.0** | 27270903 |
| **ETIM 5.0** | EC001821 |
| **ETIM 6.0** | EC001821 |
| **UNSPSC 16.0901** | 39121528 |

## Adjustments possible

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



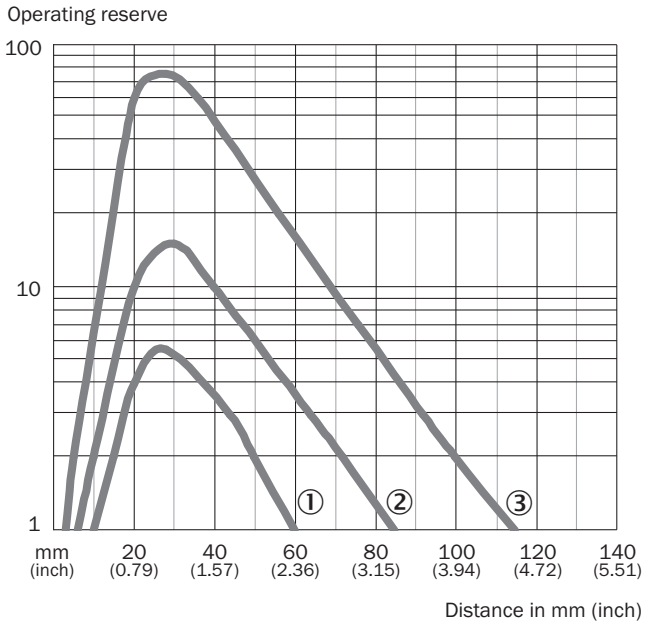

## Connection diagram

Cd-084



## Characteristic curve

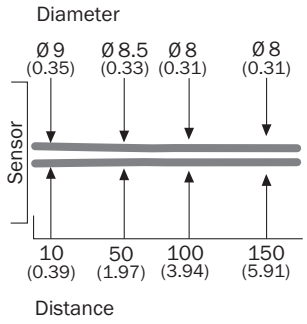
GRTE18S, 100 mm




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

## Light spot size

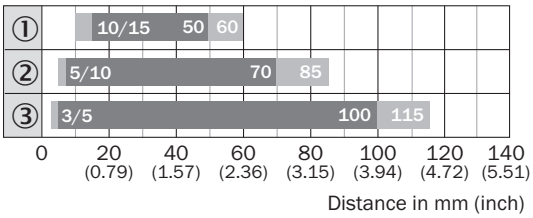
GRTE18S, 100 mm




Dimensions in mm (inch)

## Sensing range diagram

GRTE18S, 100 mm

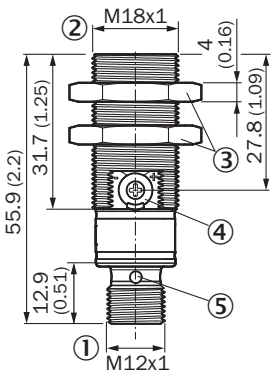


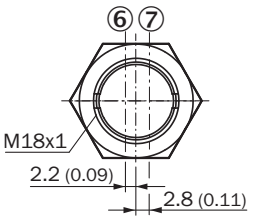

Sensing range  Sensing range max.

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

## 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

# 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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