



GRTE18-N1147

GR18

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|--------------|----------|
| GRTE18-N1147 | 1066544 |

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

Detailed technical data

Features

| | |
|--|---|
| Sensor/ detection principle | Photoelectric proximity sensor, energetic |
| Housing design (light emission) | Cylindrical, straight |
| 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 | PotentiometerPotentiometer |

¹⁾ Object with 90 % reflectance (referred to standard white, DIN 5033).

²⁾ Average service life: 100,000 h at T_U = +25 °C.

Communication interface

| | |
|--------------------------------|---|
| Communication interface | - |
|--------------------------------|---|

Mechanics/electronics

| | |
|-----------------------|-----------------------------------|
| Supply voltage | 10 V DC ... 30 V DC ¹⁾ |
|-----------------------|-----------------------------------|

¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.

²⁾ May not exceed or fall below U_V tolerances.

³⁾ At U_V > 24 V or ambient temperature > 49 °C, I_A max. = 50 mA.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ Do not bend below 0 °C.

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⁾ At U_V ≤ 24V and I_A < 50mA.

| | |
|--|--|
| Ripple | $\pm 5 V_{pp}$ ²⁾ |
| Power consumption | $\leq 30 \text{ mA}$ |
| Output type | NPN |
| Output function | Complementary |
| Switching mode | Light/dark switching |
| Signal voltage NPN HIGH/LOW | Approx. $V_S / \leq 3 \text{ V}$ |
| Output current I_{max} | 100 mA ³⁾ |
| Response time | $< 1,000 \mu\text{s}$ ⁴⁾ |
| Switching frequency | 500 Hz ⁵⁾ |
| Connection type | Cable, 4-wire, 2 m ⁶⁾ |
| Cable material | PVC |
| Circuit protection | A ⁷⁾ B ⁸⁾ D ⁹⁾ |
| Protection class | III |
| Housing material | Plastic, ABS |
| Optics material | Plastic, PMMA |
| Enclosure rating | IP67 |
| Items supplied | Fastening nuts (2 x) |
| EMC | EN 60947-5-2 |
| Ambient operating temperature | $-25 \text{ }^\circ\text{C} \dots +55 \text{ }^\circ\text{C}$ ¹⁰⁾ |
| Ambient storage temperature | $-40 \text{ }^\circ\text{C} \dots +70 \text{ }^\circ\text{C}$ |
| UL File No. | E348498 |

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

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⁵⁾ With light/dark ratio 1:1.

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⁹⁾ D = outputs overcurrent and short-circuit protected.

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

Classifications

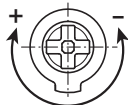
| | |
|---------------------|----------|
| ECl@ss 5.0 | 27270903 |
| ECl@ss 5.1.4 | 27270903 |
| ECl@ss 6.0 | 27270903 |
| ECl@ss 6.2 | 27270903 |
| ECl@ss 7.0 | 27270903 |
| ECl@ss 8.0 | 27270903 |
| ECl@ss 8.1 | 27270903 |
| ECl@ss 9.0 | 27270903 |
| ETIM 5.0 | EC001821 |

| | |
|-----------------------|----------|
| ETIM 6.0 | EC001821 |
| UNSPSC 16.0901 | 39121528 |

Adjustments possible

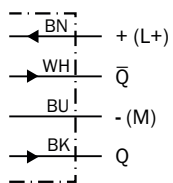
GRTB18(S), GRTE18(S), Sensing rang setting: Potentiometer, 270°

Sensing range



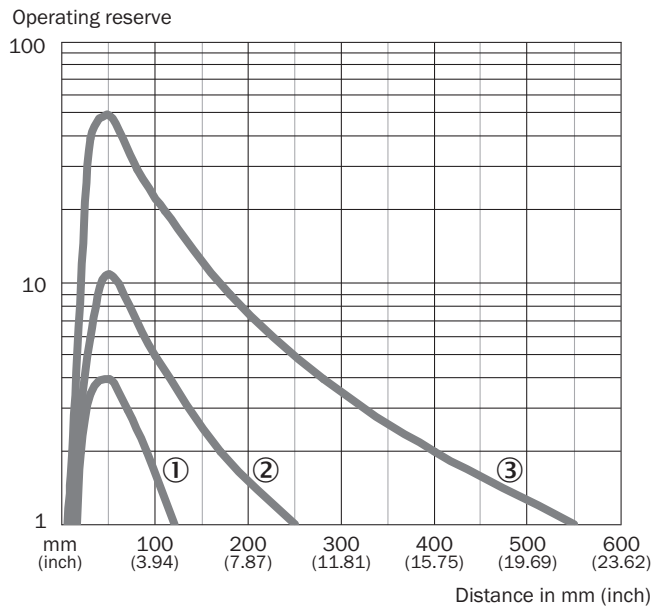
Connection diagram

Cd-094



Characteristic curve

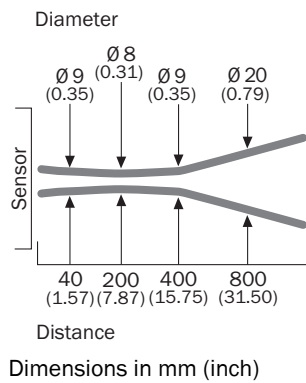
GRTE18S, 400 mm



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

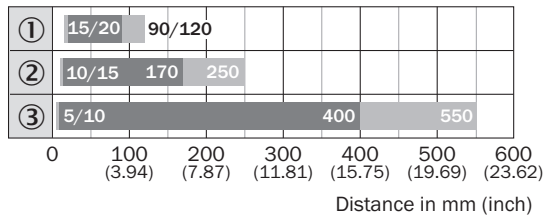
Light spot size

GRTE18S, 400 mm



Sensing range diagram

GRTE18S, 400 mm

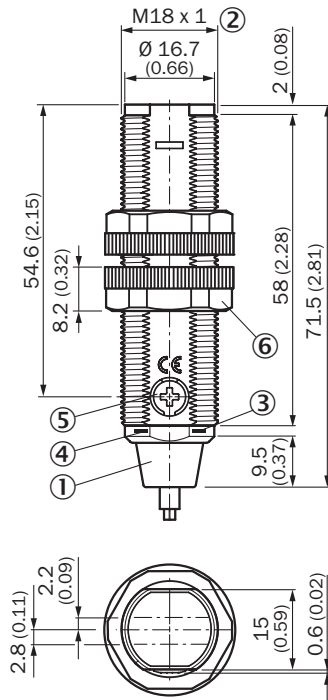


■ Sensing range ■ Sensing range max.

- ① Sensing range on black, 6% remission
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- ③ Sensing range on white, 90% remission

Dimensional drawing (Dimensions in mm (inch))








GRTE18, GRL18, GRSE18, plastic, 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 (2 x); width across 22, plastic

Recommended accessories

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

| | Brief description | Type | Part no. |
|---|---|-----------------|----------|
| Universal bar clamp systems | | | |
|  | Plate N06 for universal clamp bracket, M18, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware | BEF-KHS-N06 | 2051612 |
| Mounting brackets and plates | | | |
|  | Mounting plate for M18 sensors, steel, zinc coated, without mounting hardware | BEF-WG-M18 | 5321870 |
|  | Mounting bracket for M18 sensors, steel, zinc coated, without mounting hardware | BEF-WN-M18 | 5308446 |
| Terminal and alignment brackets | | | |
|  | Mounting bracket with ball-and-socket, Plastic, mounting hardware included | BEF-WN-M18-ST02 | 5312973 |
|  | Clamping block for round sensors M18, without fixed stop, plastic (PA12), glass-fiber reinforced, mounting hardware included | BEF-KH-M18 | 2051481 |
| | Clamping block for round sensors M18, with fixed stop, plastic (PA12), glass-fiber reinforced, mounting hardware included | BEF-KHF-M18 | 2051482 |
|  | Integrated adapter, Plastic (PA12) | BEF-WN-MH15-1 | 4039533 |
|  | Mounting ring, Stainless steel, without mounting hardware | BEF-WN-MH15-2V | 4053358 |

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:

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