SICK.COM




DATA SHEET

# GRTE18S-P1342

GR18
Photoelectric sensors

SICK Sensor Intelligence




Illustration may differ

## PHOTOELECTRIC SENSORS

# GRTE18S-P1342

### ORDERING INFORMATION

| Type | part no. |
|---|---|
| GRTE18S-P1342 | 1058205 |

Further device versions and accessories at 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 38.1 mm |
| Housing design (light emission) | Cylindrical |
| 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° |
| Display | |
| 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 |

[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 | PNP |
| Switching mode | Light switching |
| Signal voltage PNP HIGH/LOW | $V_S$ - (≤ 3 V) / approx. 0 V |
| Output current $I_{max.}$ | ≤ 100 mA [3] |
| Response time | < 1,000 µs [4] |
| Switching frequency | 500 Hz [5] |
| Connection type | Cable, 3-wire, 2 m [6] |
| Cable material | Plastic, PVC |
| Circuit protection | A [7]<br>B [8]<br>D [9] |
| Protection class | III |
| Housing material | Metal, Nickel-plated brass and ABS |
| Optics material | Plastic, PMMA |
| Enclosure rating | IP67 |
| Items supplied | Fastening nuts (2 x) |
| Electromagnetic compatibility (EMC) | EN 60947-5-2 |
| Ambient operating temperature | –25 °C ... +55 °C [10] |
| Ambient temperature, storage | –40 °C ... +70 °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] 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] 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.

## SAFETY-RELATED PARAMETERS

| | |
|---|---|
| $MTTF_D$ | 1,930 years |
| $DC_{avg}$ | 0 % |

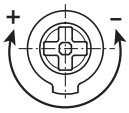
## CERTIFICATES

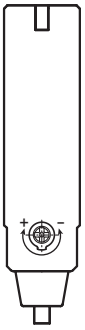
| | |
|---|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |

| | |
|---|---|
| China Compulsory Product Certification (CCC) exempt | ✓ |
| ECOLAB certificate | ✓ |
| cULus certificate | ✓ |
| Photobiological safety (DIN EN 62471) certificate | ✓ |

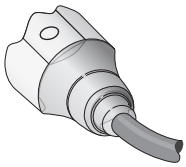
## ADJUSTMENTS GRTB18(S), GRTE18(S), SENSING RANGE SETTING: POTENTIOMETER, 270°

Sensing range

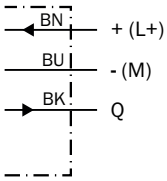


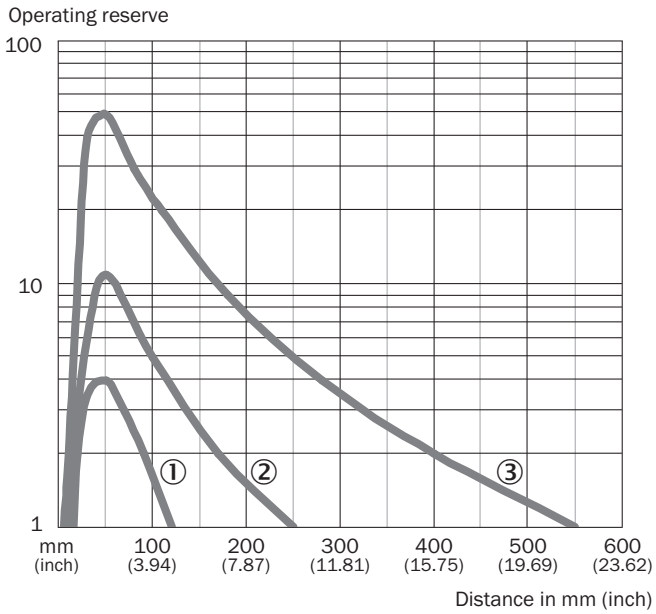
## CONNECTION TYPE



## CONNECTION DIAGRAM CD-044

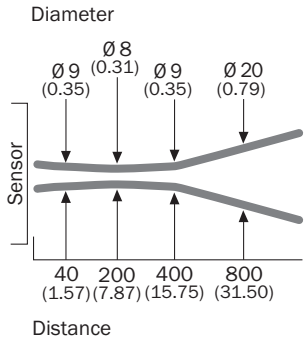


### CHARACTERISTIC CURVE GRTE18S, 400 MM



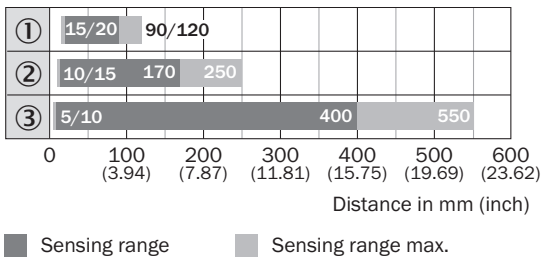

① Sensing range on black, 6% remission factor
② sensing range to gray, 20% remission factor
③ Sensing range on white, 90% remission factor

### LIGHT SPOT SIZE GRTE18S, 400 MM



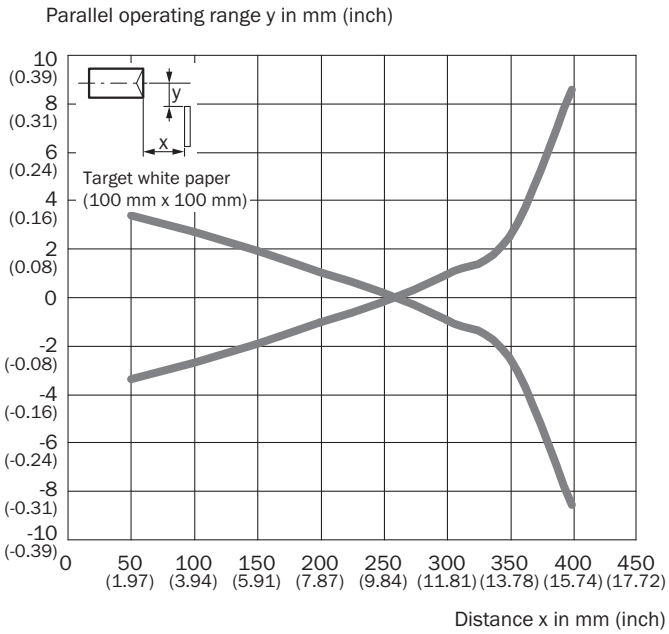

dimensions in mm (inch)

### SENSING RANGE DIAGRAM GRTE18S, 400 MM

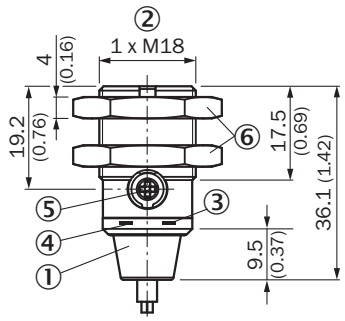


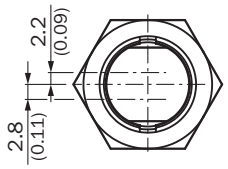

① Sensing range on black, 6% remission factor
② sensing range to gray, 20% remission factor
③ Sensing range on white, 90% remission factor

**RESPONSE RANGE GRTE18S, 400 MM**




**DIMENSIONAL DRAWING GR18S, METAL, CABLE, STRAIGHT, ADJUSTABLE**




Dimensions in mm (inch)
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

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/1058205

SICK AG
WALDKIRCH
GERMANY
SICK.COM

# SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

SICK

Sensor Intelligence