



GRTE18S-N1307S20

GR18

CYLINDRICAL PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

Type	Part no.
GRTE18S-N1307S20	1111632

Other models and accessories → [www.sick.com/GR18](http://www.sick.com/GR18)

## Detailed technical data

### Features

<b>Functional principle</b>	Photoelectric proximity sensor				
<b>Functional principle detail</b>	Energetic				
<b>Dimensions (W x H x D)</b>	18 mm x 18 mm x 38.1 mm				
<b>Housing design (light emission)</b>	Cylindrical				
<b>Thread diameter (housing)</b>	M18 x 1				
<b>Optical axis</b>	Axial				
<b>Sensing range max.</b>	5 mm ... 550 mm <sup>1)</sup>				
<b>Sensing range</b>	10 mm ... 400 mm <sup>1)</sup>				
<b>Type of light</b>	Infrared light				
<b>Light source</b>	LED <sup>2)</sup>				
<b>Light spot size (distance)</b>	Ø 9 mm (400 mm)				
<b>Wave length</b>	850 nm				
<b>Adjustment</b>	Potentiometer, 270 °				
<b>Indication</b>	<table border="0"> <tr> <td style="padding-right: 20px;">LED green</td> <td>Operating indicator Static on: power on</td> </tr> <tr> <td>LED yellow</td> <td>Status of received light beam Static on: object present Static off: object not present</td> </tr> </table>	LED green	Operating indicator Static on: power on	LED yellow	Status of received light beam Static on: object present Static off: object not present
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LED yellow	Status of received light beam Static on: object present Static off: object not present				
<b>Special features</b>	Sensing range preset to 300 mm based on objects to be sensed with 90 % reflectivity				

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).

<sup>2)</sup> Average service life: 100,000 h at T<sub>J</sub> = +25 °C.

Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	30 mA
<b>Switching output</b>	NPN
<b>Switching mode</b>	Light switching
<b>Signal voltage NPN HIGH/LOW</b>	Approx. V <sub>S</sub> / ≤ 3 V
<b>Output current I<sub>max.</sub></b>	≤ 100 mA <sup>3)</sup>
<b>Response time</b>	< 1,000 μs <sup>4)</sup>
<b>Switching frequency</b>	500 Hz <sup>5)</sup>
<b>Connection type</b>	Cable, 3-wire, 2 m <sup>6)</sup>
<b>Cable material</b>	PVC
<b>Circuit protection</b>	A <sup>7)</sup> B <sup>8)</sup> D <sup>9)</sup>
<b>Protection class</b>	III
<b>Housing material</b>	Plastic, ABS
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP67
<b>Items supplied</b>	Fastening nuts (2 x)
<b>Electromagnetic compatibility (EMC)</b>	EN 60947-5-2
<b>Ambient operating temperature</b>	-25 °C ... +55 °C <sup>10)</sup>
<b>Ambient temperature, storage</b>	-40 °C ... +70 °C
<b>UL File No.</b>	NRKH.E348498 & NRKH7.E348498

<sup>1)</sup> Limit values. Operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not exceed or fall below U<sub>v</sub> tolerances.

<sup>3)</sup> At U<sub>v</sub> > 24 V or ambient temperature > 49 °C, I<sub>A</sub> max. = 50 mA.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> Do not bend below 0 °C.

<sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>8)</sup> B = inputs and output reverse-polarity protected.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

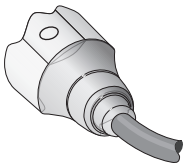
<sup>10)</sup> At U<sub>v</sub> ≤ 24V and I<sub>A</sub> < 50mA.

Classifications

<b>eCl@ss 5.0</b>	27270903
<b>eCl@ss 5.1.4</b>	27270903
<b>eCl@ss 6.0</b>	27270903
<b>eCl@ss 6.2</b>	27270903
<b>eCl@ss 7.0</b>	27270903
<b>eCl@ss 8.0</b>	27270903
<b>eCl@ss 8.1</b>	27270903
<b>eCl@ss 9.0</b>	27270903

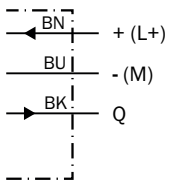
<b>eCl@ss 10.0</b>	27270904
<b>eCl@ss 11.0</b>	27270904
<b>eCl@ss 12.0</b>	27270903
<b>ETIM 5.0</b>	EC001821
<b>ETIM 6.0</b>	EC001821
<b>ETIM 7.0</b>	EC002719
<b>ETIM 8.0</b>	EC002719
<b>UNSPSC 16.0901</b>	39121528

## Connection type



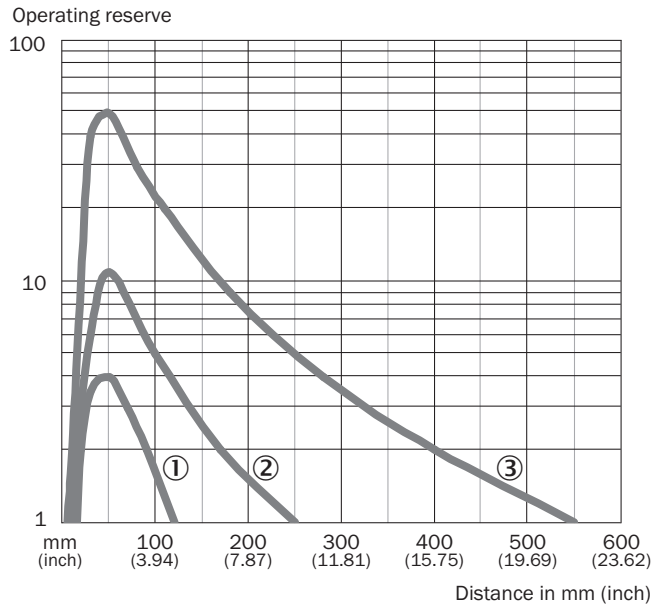
## Connection diagram

Cd-044



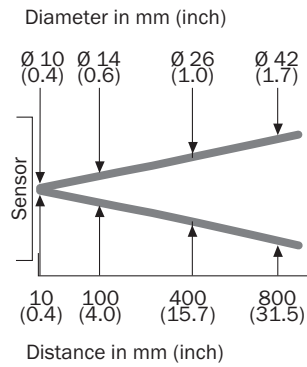
### Characteristic curve

GRTE18S, 400 mm

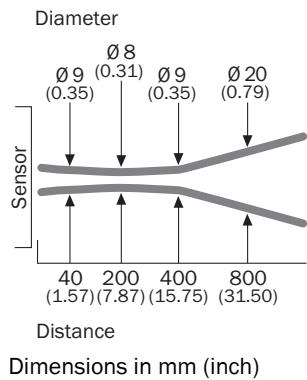


- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 20% remission
- ③ Sensing range on white, 90% remission

### Light spot size



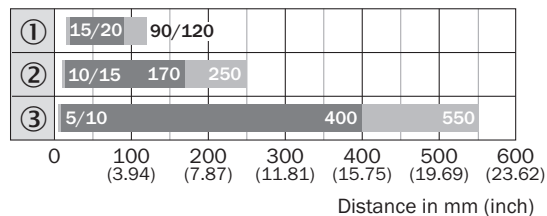
GRTE18S, 400 mm



Dimensions in mm (inch)

## Sensing range diagram

GRTE18S, 400 mm



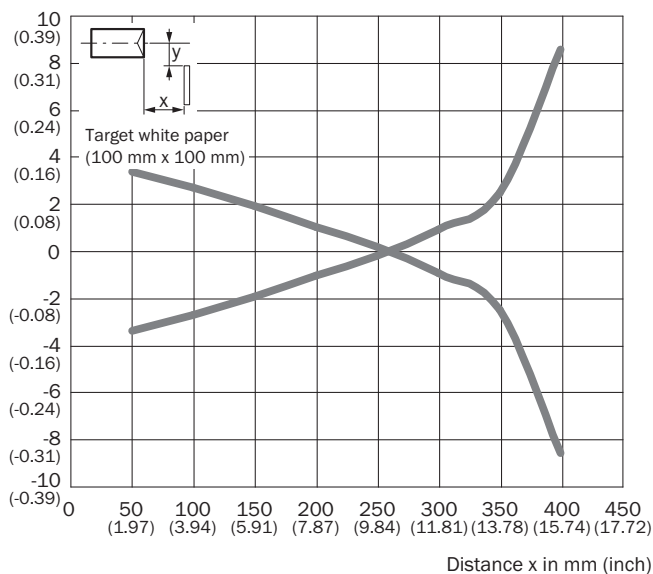
■ Sensing range    ■ Sensing range max.

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

## Response range

GRTE18S, 400 mm

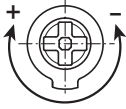
Parallel operating range y in mm (inch)



## Adjustments

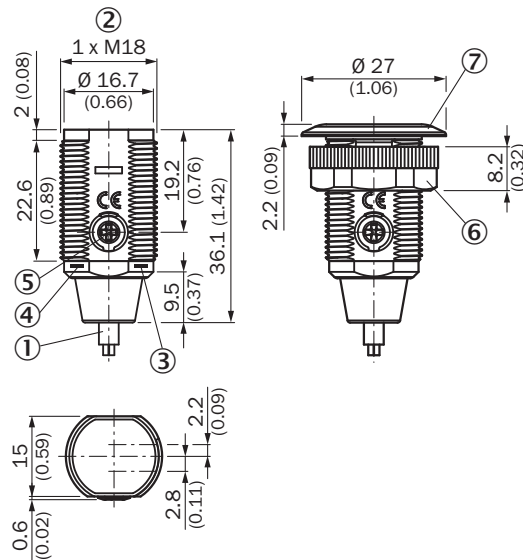
GRTB18(S), GRTE18(S), Sensing range setting: Potentiometer, 270°

Sensing range



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



GR18S, plastic, cable, straight, adjustable



- 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 nut; 22 mm hex, plastic
- ⑦ Mounting ring

Recommended accessories

Other models and accessories → [www.sick.com/GR18](http://www.sick.com/GR18)

	<b>Brief description</b>	<b>Type</b>	<b>Part no.</b>
<b>Mounting brackets and plates</b>			
	Mounting bracket for M18 sensors, steel, zinc coated, without mounting hardware	BEF-WN-M18	5308446
<b>Plug connectors and cables</b>			
	Head A: male connector, M8, 3-pin, straight Cable: unshielded	STE-0803-G	6037322



## 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:

Contacts and other locations –[www.sick.com](http://www.sick.com)