



# GRTE18S-F2432

GR18

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
GRTE18S-F2432	1094695

Other models and accessories → [www.sick.com/GR18](http://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.	3 mm ... 350 mm <sup>1)</sup>
Sensing range	3 mm ... 250 mm <sup>1)</sup>
Type of light	Infrared light
Light source	LED <sup>2)</sup>
Light spot size (distance)	Ø 150 mm (250 mm)
Wave length	850 nm
Adjustment	Potentiometer, 270°
Display	
LED green	Operating indicatorStatic on: power on
LED yellow	Status of received light beamStatic on: object presentStatic off: object not present

<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>U</sub> = +25 °C.

## Mechanics/electronics

<b>Supply voltage <math>U_B</math></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>	PNP
<b>Output function</b>	Selectable via L/D control cable
<b>Switching mode</b>	Light/dark switching
<b>Signal voltage PNP HIGH/LOW</b>	V <sub>S</sub> - (≤ 3 V) / approx. 0 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>	Male connector M12, 4-pin
<b>Circuit protection</b>	A <sup>6)</sup> B <sup>7)</sup> D <sup>8)</sup>
<b>Protection class</b>	III
<b>Housing material</b>	Metal, Nickel-plated brass and 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>9)</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 fall below or exceed U<sub>y</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> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>7)</sup> B = inputs and output reverse-polarity protected.

<sup>8)</sup> D = outputs overcurrent and short-circuit protected.

<sup>9)</sup> At U<sub>v</sub> ≤ 24V and I<sub>A</sub> ≤ 50mA.

## Certificates

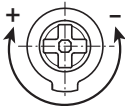
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>ECOLAB certificate</b>	✓
<b>cULus certificate</b>	✓
<b>Photobiological safety (DIN EN 62471) certificate</b>	✓

Classifications

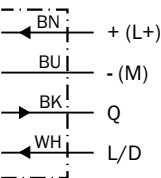
<b>ECLASS 5.0</b>	27270903
<b>ECLASS 5.1.4</b>	27270903
<b>ECLASS 6.0</b>	27270903
<b>ECLASS 6.2</b>	27270903
<b>ECLASS 7.0</b>	27270903
<b>ECLASS 8.0</b>	27270903
<b>ECLASS 8.1</b>	27270903
<b>ECLASS 9.0</b>	27270903
<b>ECLASS 10.0</b>	27270904
<b>ECLASS 11.0</b>	27270904
<b>ECLASS 12.0</b>	27270903
<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

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

Sensing range

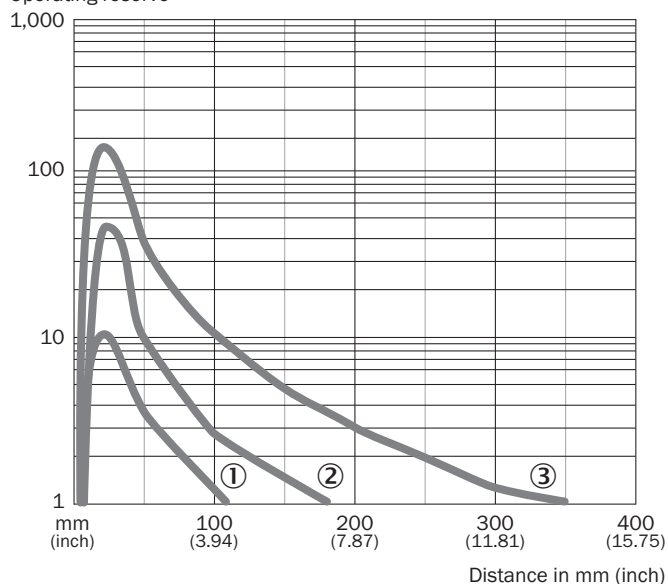


Connection diagram Cd-089



## Characteristic curve GRTE18, 250 mm

Operating reserve

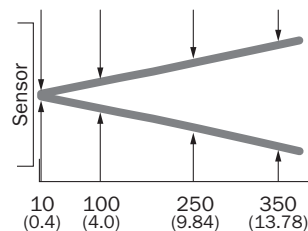


- ① Sensing range on black, 6% remission factor
- ② sensing range to gray, 20% remission factor
- ③ Sensing range on white, 90% remission factor

## Light spot size GRTE18, 250 mm

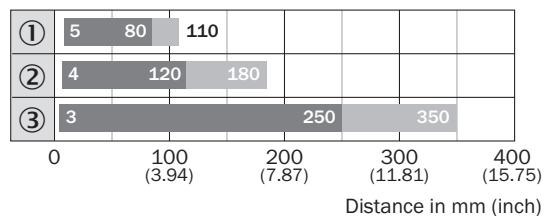
Diameter in mm (inch)

Ø 15 (0.59) Ø 64 (2.52) Ø 150 (5.91) Ø 200 (7.87)



Distance in mm (inch)

## Sensing range diagram GRTE18, 250 mm

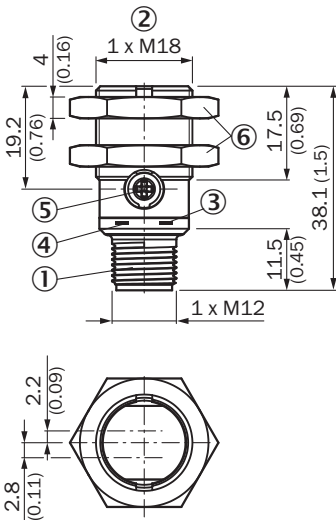


■ Sensing range    ■ Sensing range max.

- ① Sensing range on black, 6% remission factor
- ② sensing range to gray, 20% remission factor

③ Sensing range on white, 90% remission factor




Dimensional drawing GR18S, metal, connector, straight, adjustable



- Dimensions in mm (inch)
- ① Connector M12, 3-pin
  - 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

Recommended accessories

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

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"><li><b>Description:</b> Mounting bracket for M18 sensors</li><li><b>Material:</b> Steel</li><li><b>Details:</b> Steel, zinc coated</li><li><b>Items supplied:</b> Without mounting hardware</li><li><b>Suitable for:</b> GR18, V180-2, V18, W15, Z1, Z2</li></ul>	BEF-WN-M18	5308446
connectors and cables			
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li><li><b>Connection type head B:</b> Flying leads</li><li><b>Signal type:</b> Sensor/actuator cable</li><li><b>Cable:</b> 5 m, 4-wire, PVC</li><li><b>Description:</b> Sensor/actuator cable, unshielded</li><li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YF2A14-050VB3XLEAX	2096235
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, A-coded</li><li><b>Description:</b> Unshielded</li><li><b>Connection systems:</b> Screw-type terminals</li><li><b>Permitted cross-section:</b> ≤ 0.75 mm²</li></ul>	STE-1204-G	6009932

## 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)