

# GRTE18-N2437

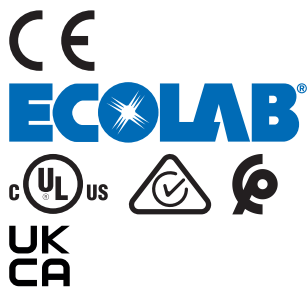
## GR18

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

| Type         | part no. |
|--------------|----------|
| GRTE18-N2437 | 1094782  |

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 73.5 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                                                                                |
| 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 |

<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>                      | NPN                                                   |
| <b>Output function</b>                       | Complementary                                         |
| <b>Switching mode</b>                        | Light/dark switching                                  |
| <b>Signal voltage NPN HIGH/LOW</b>           | Approx. $V_S / \leq 3 \text{ V}$                      |
| <b>Output current <math>I_{\max.}</math></b> | $\leq 100 \text{ mA}$ <sup>3)</sup>                   |
| <b>Response time</b>                         | < 1,000 $\mu\text{s}$ <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><br>B <sup>7)</sup><br>D <sup>8)</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>9)</sup>                       |
| <b>Ambient temperature, storage</b>          | -40 °C ... +70 °C                                     |
| <b>UL File No.</b>                           | E348498                                               |

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

<sup>2)</sup> May not fall below or exceed  $U_V$  tolerances.

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

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

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

<sup>6)</sup> A =  $V_S$  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  $U_V \leq 24 \text{ V}$  and  $I_A < 50 \text{ mA}$ .

## Certificates

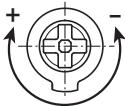
|                                                          |   |
|----------------------------------------------------------|---|
| <b>EU declaration of conformity</b>                      | ✓ |
| <b>UK declaration of conformity</b>                      | ✓ |
| <b>ACMA declaration of conformity</b>                    | ✓ |
| <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°

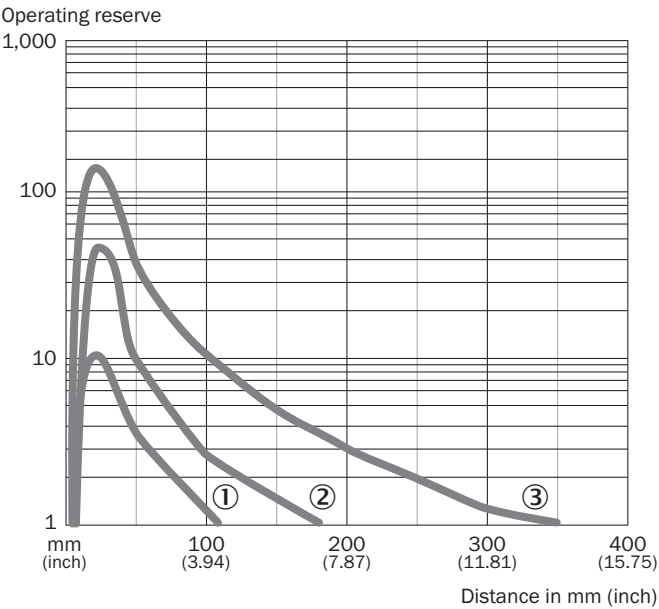
Sensing range



Connection diagram Cd-084

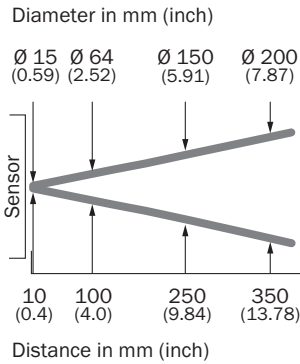


Characteristic curve GRTE18, 250 mm

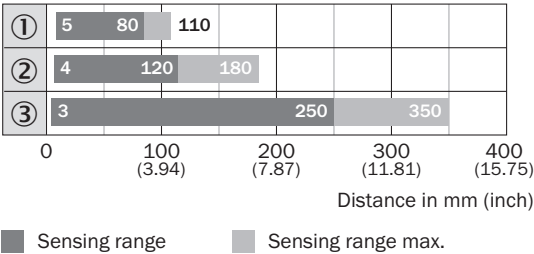


- ① Sensing range on black, 6% remission factor
- ② sensing range to gray, 20% remission factor
- ③ Sensing range on white, 90% remission factor

Light spot size GRTE18, 250 mm

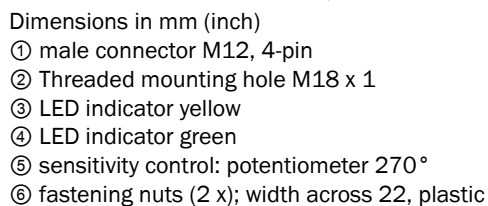


Sensing range diagram GRTE18, 250 mm



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

Dimensional drawing GRTE18, GRL18, GRSE18, plastic, connector, straight



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

6 PHOTOELECTRIC SENSORS | SICK

|                                                                                   | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Type               | part no. |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| 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  |
|                                                                                   | <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, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YF2A14-050UB3XLEAX | 2095608  |

## 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)