

GRSE18-N2447 GR18

**PHOTOELECTRIC SENSORS** 





## Ordering information

Туре	part no.
GRSE18-N2447	1067983

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





#### Detailed technical data

#### **Features**

Functional principle	Through-beam photoelectric sensor
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.	0 m 15 m
Sensing range	0 m 10 m
Type of light	Visible red light
Light source	PinPoint LED <sup>1)</sup>
Light spot size (distance)	Ø 250 mm (10 m)
Wave length	650 nm
Adjustment	Potentiometer
Display	
LED g	reen Operating indicator Static on: power on
LED ye	Status of received light beam Static on: object not present Static off: object present

 $<sup>^{1)}</sup>$  Average service life: 100,000 h at  $\rm T_U$  = +25  $^{\circ}\rm C.$ 

## Mechanics/electronics

Supply voltage U <sub>B</sub>	10 V DC 30 V DC <sup>1)</sup>
Ripple	< 5 V <sub>pp</sub> <sup>2)</sup>
Current consumption	30 mA
Switching output	NPN
Output function	Complementary
Switching mode	Light/dark switching
Signal voltage NPN HIGH/LOW	Approx. $V_S / \leq 3 V$
Output current I <sub>max.</sub>	$\leq$ 100 mA $^{3)}$
Response time	< 500 μs <sup>4)</sup>
Switching frequency	1,000 Hz <sup>5)</sup>
Connection type	Male connector M12, 4-pin
Circuit protection	A <sup>6)</sup> B <sup>7)</sup> D <sup>8)</sup>
Protection class	III
Housing material	Plastic, ABS
Optics material	Plastic, PMMA
Enclosure rating	IP67
Items supplied	Fastening nuts (4 x)
Electromagnetic compatibility (EMC)	EN 60947-5-2
Test input	Sender OFF at "Test" 0 V
Ambient operating temperature	-25 °C +55 °C <sup>9)</sup>
Ambient temperature, storage	-40 °C +70 °C
UL File No.	E348498
Part number of individual components	2070569 GRS18-D2446 2073764 GRE18-N2437

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

#### Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
ECOLAB certificate	✓
cULus certificate	✓

 $<sup>^{2)}</sup>$  May not fall below or exceed  $\mathrm{U}_{\mathrm{V}}$  tolerances.

 $<sup>^{3)}</sup>$  At Uv > 24 V or ambient temperature > 49 °C, IA max. = 50 mA.

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

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

 $<sup>^{6)}</sup>$  A = V<sub>S</sub> connections reverse-polarity protected.

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

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

 $<sup>^{9)}</sup>$  At  $\rm U_{v}$  <=24V and  $\rm I_{A}{<}50mA.$ 

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## PHOTOELECTRIC SENSORS

Photobiological safety (DIN EN 62471) certificate   ✓
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## Classifications

ECLASS 5.0	27270901
ECLASS 5.1.4	27270901
ECLASS 6.0	27270901
ECLASS 6.2	27270901
ECLASS 7.0	27270901
ECLASS 8.0	27270901
ECLASS 8.1	27270901
ECLASS 9.0	27270901
ECLASS 10.0	27270901
ECLASS 11.0	27270901
ECLASS 12.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC 16.0901	39121528

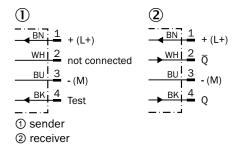
# Adjustments GRL18(S), GRSE18(S), Sensitivity setting: Potentiometer, 270 $^\circ$

#### Sensitivity

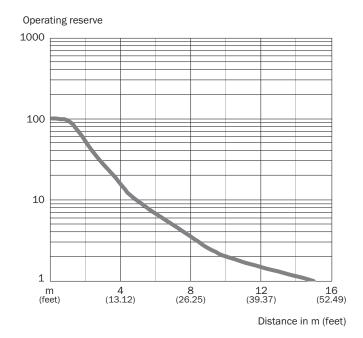




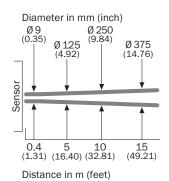
## Connection diagram Cd-072



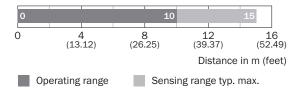
#### Characteristic curve GRSE18S



## Light spot size GRSE18, red light

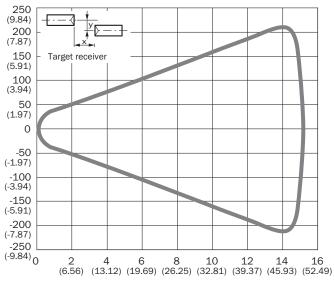


## Sensing range diagram GRSE18S



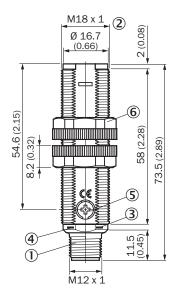
#### Response range GRSE18S

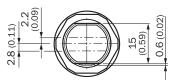
#### Parallel operating range y in mm (inch)



Distance x in m (feet)

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





Dimensions in mm (inch)

- ① male connector M12, 4-pin
- 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  $\rightarrow$  www.sick.com/GR18

	Brief description	Туре	part no.
Mounting syst	ems		
40	<ul> <li>Description: Mounting bracket for M18 sensors</li> <li>Material: Steel</li> <li>Details: Steel, zinc coated</li> <li>Items supplied: Without mounting hardware</li> <li>Suitable for: GR18, V180-2, V18, W15, Z1, Z2</li> </ul>	BEF-WN-M18	5308446

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	Brief description	Туре	part no.
connectors and cables			
	Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF2A14-050UB3XLEAX	2095608
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 4-wire, PVC</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A14-050VB3XLEAX	2096235
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, A-coded</li> <li>Description: Unshielded</li> <li>Connection systems: Screw-type terminals</li> <li>Permitted cross-section: ≤ 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

