



# GRSE18-P2422

GR18

CYLINDRICAL PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	Part no.
GRSE18-P2422	1068336

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

Illustration may differ



## Detailed technical data

### Features

<b>Functional principle</b>	Through-beam photoelectric sensor
<b>Dimensions (W x H x D)</b>	18 mm x 18 mm x 73.5 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>	0 m ... 15 m
<b>Sensing range</b>	0 m ... 10 m
<b>Type of light</b>	Infrared light
<b>Light source</b>	LED <sup>1)</sup>
<b>Light spot size (distance)</b>	Ø 420 mm (10 m)
<b>Wave length</b>	850 nm
<b>Adjustment</b>	Potentiometer
<b>Indication</b>	
	LED green
	LED yellow
	Operating indicator Static on: power on
	Status of received light beam Static on: object not present Static off: object present

<sup>1)</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>	PNP
<b>Output function</b>	Complementary
<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>	< 500 μs <sup>4)</sup>
<b>Switching frequency</b>	1,000 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 (4 x)
<b>Electromagnetic compatibility (EMC)</b>	EN 60947-5-2
<b>Test input</b>	Sender OFF at "Test" 0 V
<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
<b>Part number of individual components</b>	2074065 GRS18-D2421 2074074 GRE18-P2412

<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> 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.

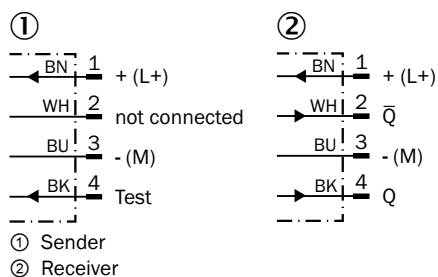
## Classifications

<b>eCl@ss 5.0</b>	27270901
<b>eCl@ss 5.1.4</b>	27270901
<b>eCl@ss 6.0</b>	27270901
<b>eCl@ss 6.2</b>	27270901
<b>eCl@ss 7.0</b>	27270901
<b>eCl@ss 8.0</b>	27270901
<b>eCl@ss 8.1</b>	27270901

<b>eCl@ss 9.0</b>	27270901
<b>eCl@ss 10.0</b>	27270901
<b>eCl@ss 11.0</b>	27270901
<b>eCl@ss 12.0</b>	27270901
<b>ETIM 5.0</b>	EC002716
<b>ETIM 6.0</b>	EC002716
<b>ETIM 7.0</b>	EC002716
<b>ETIM 8.0</b>	EC002716
<b>UNSPSC 16.0901</b>	39121528

### Connection diagram

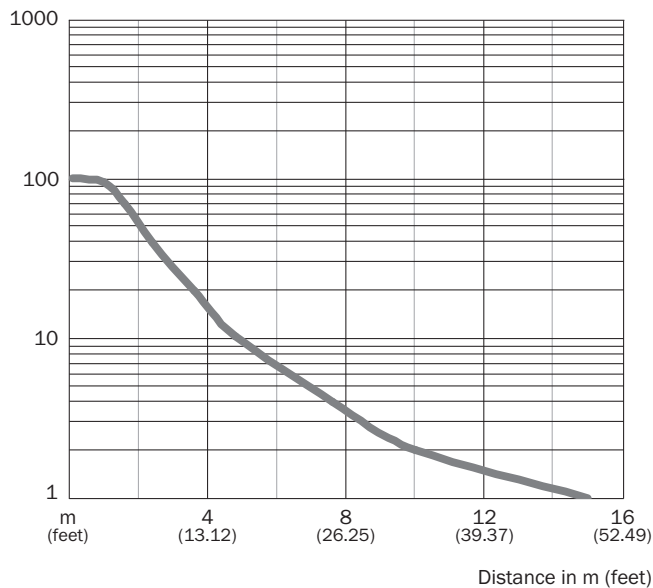
Cd-072



### Characteristic curve

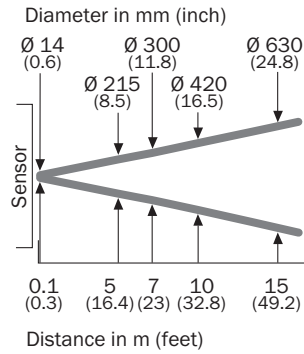
GRSE18S

Operating reserve



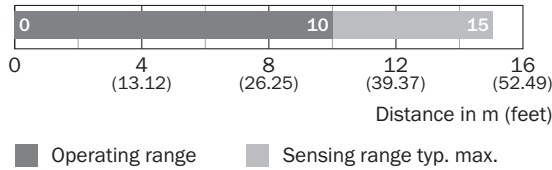
### Light spot size

GRSE18, infrared light



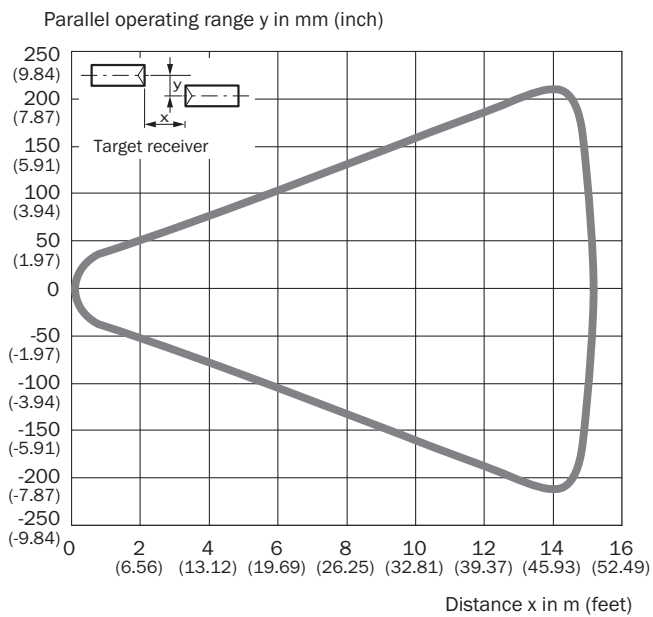
### Sensing range diagram

GRSE18S



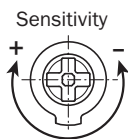
### Response range

GRSE18S



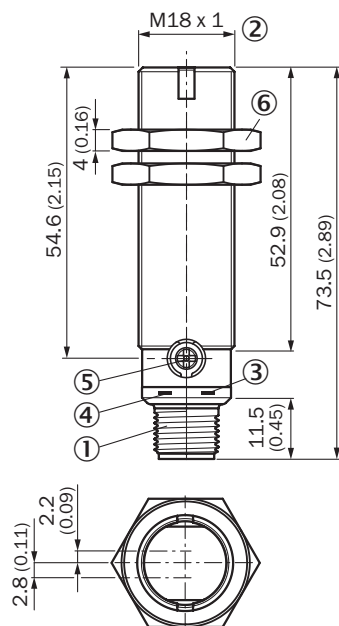
## Adjustments

GRL18(S), GRSE18(S), Sensitivity setting: Potentiometer, 270°



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




GRTE18, GRL18, GRSE18, metal, connector, straight



- 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 (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.
<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: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235
	Head A: male connector, M12, 4-pin, straight Cable: unshielded	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)