

GRSE18S-P2421V

GR18

PHOTOELECTRIC SENSORS







Туре	part no.
GRSE18S-P2421V	1085765

Illustration may differ

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 55.9 mm
Housing design (light emission)	Cylindrical
Housing length	55.9 mm
Thread length	31.7 mm
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	Infrared light
Light source	LED ¹⁾
Light spot size (distance)	Ø 420 mm (10 m)
Wave length	850 nm
Adjustment	None
Display	
LED green	Operating indicator Static on: power on
LED yellow	Status of received light beam Static on: object not present Static off: object present
Special applications	Hygienic and washdown zones

 $^{^{1)}}$ Average service life: 100,000 h at T_{U} = +25 $^{\circ}\text{C}.$

Mechanics/electronics

Supply voltage U _B	10 V DC 30 V DC ¹⁾
Ripple	< 5 V _{pp} ²⁾
Current consumption	30 mA
Switching output	PNP
Output function	Complementary
Switching mode	Light/dark switching ³⁾
Signal voltage PNP HIGH/LOW	V_S - ($\leq 3 V$) / approx. $0 V$
Output current I _{max.}	≤ 100 mA ⁴⁾
Response time	< 500 μs ⁵⁾
Switching frequency	1,000 Hz ⁶⁾
Connection type	Male connector M12, 4-pin
Circuit protection	A ⁷⁾ B ⁸⁾ D ⁹⁾
Protection class	III
Weight	85 g
Housing material	Metal, Stainless steel V4A (1.4404, 316L)
Optics material	Plastic, PMMA
Tightening torque, max.	90 Nm
Enclosure rating	IP67 IP68 ¹⁰⁾ IP69K ¹¹⁾
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 ¹²⁾
Ambient temperature, storage	-30 °C +75 °C
UL File No.	NRKH.E348498 & NRKH7.E348498
Part number of individual components	2091197 GRS18S-D2421V 2091193 GRE18S-P2411V

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

Certificates

EU declaration of conformity	✓
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 $^{^{2)}\,\}mbox{May}$ not fall below or exceed $\mbox{U}_{\mbox{\sc V}}$ tolerances.

 $^{^{3)}}$ Q = light switching; $\bar{\rm Q}$ = dark switching.

 $^{^{4)}}$ At Uv > 24 V or ambient temperature > 49 °C, IA max. = 50 mA.

⁵⁾ Signal transit time with resistive load.

⁶⁾ With light/dark ratio 1:1.

 $^{^{7)}\,\}mathrm{A}=\mathrm{V}_{\mathrm{S}}$ connections reverse-polarity protected.

 $^{^{8)}}$ B = inputs and output reverse-polarity protected.

⁹⁾ D = outputs overcurrent and short-circuit protected.

 $^{^{10)}}$ According to EN 60529 (10 m water depth / 24 h).

 $^{^{11)}\,\}mathrm{According}$ to ISO 20653:2013-03.

 $^{^{12)}}$ At U_{V} <=24V and $\text{I}_{\text{A}}\!\!<\!\!50\text{mA}.$

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PHOTOELECTRIC SENSORS

UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
ECOLAB certificate	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

Classifications

ECLASS 5.0 27270901 ECLASS 6.0 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 9.0 27270901 ECLASS 10.0 27270901 ECLASS 11.0 27270901 ECLASS 11.0 27270901 ECLASS 12.0 27270901 ECLASS 12.0 27270901 ETIM 5.0 EC002716 ETIM 6.0 EC002716 ETIM 7.0 EC002716		
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UNSPSC 16.0901 39121528	UNSPSC 16.0901	39121528

Connection diagram Cd-072

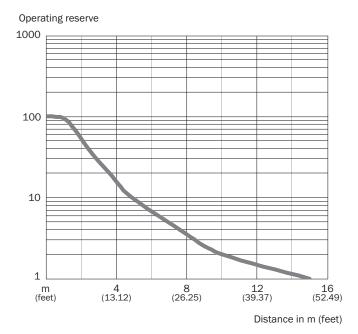
① ②
$$\frac{BN \cdot 1}{BN \cdot 1} + (L+)$$

$$\frac{BN \cdot 1}{BN \cdot 2} \text{ not connected}$$

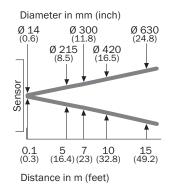
$$\frac{BU \cdot 3}{A} - (M)$$

$$\frac{BK \cdot 4}{A} \text{ Test}$$
① sender
② receiver

Characteristic curve GRSE18S



Light spot size GRSE18, infrared light

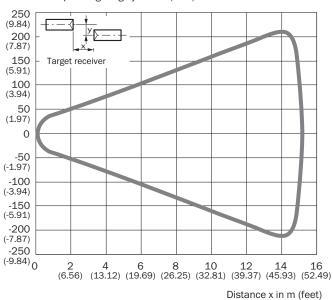


Sensing range diagram GRSE18S

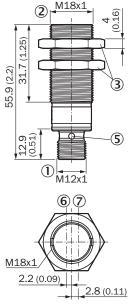


Response range GRSE18S

Parallel operating range y in mm (inch)



Dimensional drawing GR18S Inox, connector, straight



Dimensions in mm (inch)

- ① Connection
- ② Threaded mounting hole M18 x 1
- 3 fastening nuts (2 x); width across 24, stainless steel
- ⑤ LED indicator (4 x)
- 6 optical axis, receiver
- ⑦ optical axis, sender

Recommended accessories

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

	Brief description	Туре	part no.	
Mounting syst	Mounting systems			
40	Description: Mounting bracket for M18 sensors Material: Stainless steel Details: Stainless steel Items supplied: Without mounting hardware	BEF-WN-M18N	5320947	
connectors ar	nd cables			
	Connection type head A: Female connector, M12, 4-pin, straight Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Connection systems: Flying leads Note: This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2) Application: Hygienic and washdown zones	DOL-1204-G05MNI	6052615	
	Connection type head A: Female connector, M12, 4-pin, straight Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PP Description: Sensor/actuator cable, unshielded Connection systems: Flying leads Note: This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2) Application: Hygienic and washdown zones, Drag chain operation	DOL-1204-G05MRN	6058476	

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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."

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