Data sheet

GRSE18S-N2421V

GR18

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
GRSE18S-N2421V	1085766

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 °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	NPN
Output function	Complementary
Switching mode	Light/dark switching [3]
Signal voltage NPN HIGH/LOW	Approx. V_S / ≤ 3 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 2091200 GRE18S-N2411V

[1] Limit values. Operated in short-circuit protected network: max. 8 A.
[2] May not fall below or exceed U_V tolerances.
[3] Q = light switching; $\bar{Q}$ = 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] A = V_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] According to ISO 20653:2013-03.
[12] At U_V <=24V and I_A<50mA.

Certificates

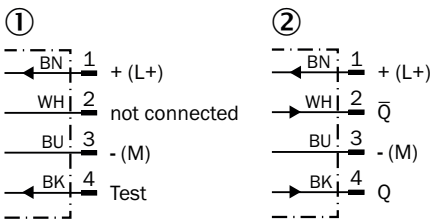
EU declaration of conformity	✓

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

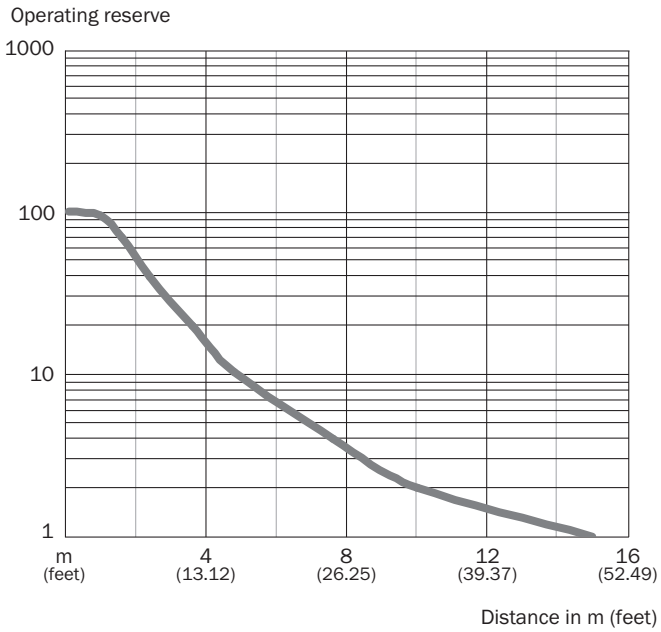
ECLASS 5.0	27270901
ECLASS 5.1.4	27270901
ECLASS 6.0	27270901
ECLASS 6.2	27270901
ECLASS 7.0	27270901
ECLASS 8.0	27270901
ECLASS 8.1	27270901
ECLASS 9.0	27270901
ECLASS 10.0	27270901
ECLASS 11.0	27270901
ECLASS 12.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC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

Connection diagram Cd-072

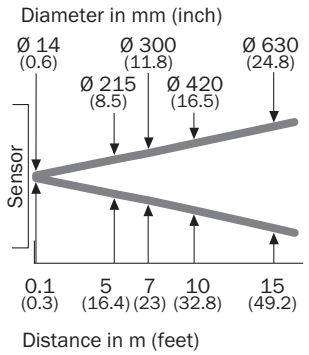


① sender
② receiver

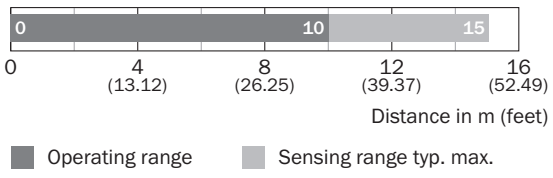
Characteristic curve GRSE18S



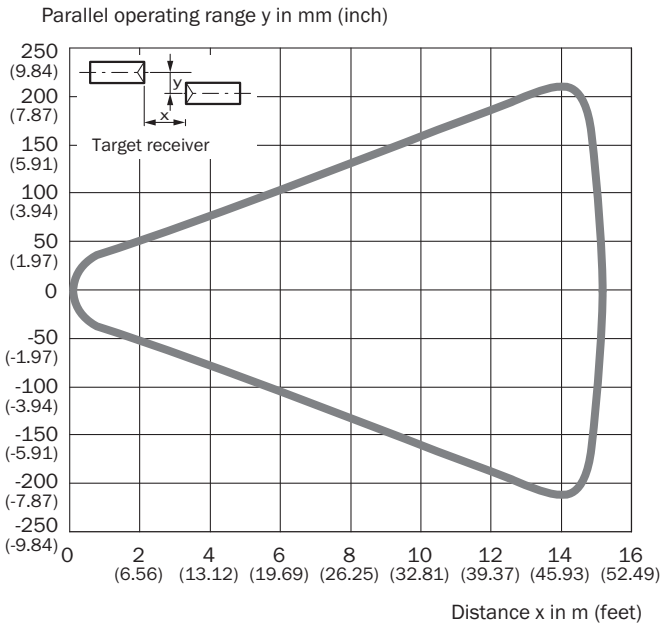
Light spot size GRSE18, infrared light



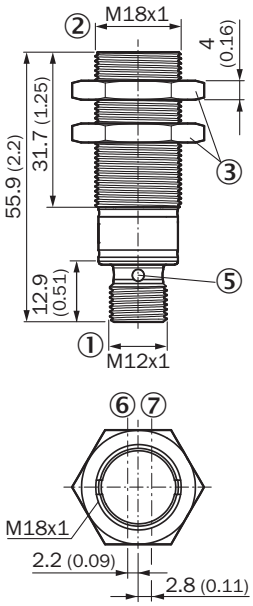
Sensing range diagram GRSE18S



Response range GRSE18S



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	Type	part no.
Mounting systems			
	• **Description:** Mounting bracket for M18 sensors • **Material:** Stainless steel • **Details:** Stainless steel • **Items supplied:** Without mounting hardware	BEF-WN-M18N	5320947
connectors and 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

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.”

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