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Product data sheet



GRTE18S-P2452V

GR18

CYLINDRICAL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

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GRTE18S-P2452V | GR18

CYLINDRICAL PHOTOELECTRIC SENSORS



Illustration may differ

Ordering information

Type	Part no.
GRTE18S-P2452V	1097227

Other models and accessories → 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 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.	5 mm ... 550 mm [1]
Sensing range	10 mm ... 400 mm [1]
Type of light	Infrared light
Light source	LED [2]
Light spot size (distance)	Ø 26 mm (400 mm)
Wave length	850 nm
Adjustment	Potentiometer, 270°
Indication	
LED green	Operating indicator Static on: power on
LED yellow	Status of received light beam Static on: object present Static off: object not present
Special applications	Hygienic and washdown zones

[1] Object with 90% remission (based on standard white, DIN 5033).

[2] Average service life: 100,000 h at T_U = +25 °C.

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Mechanics/electronics

Supply voltage	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 - (≤ 3 V) / approx. 0 V
Output current $I_{max.}$	≤ 100 mA [4]
Response time	< 1,000 µs [5]
Switching frequency	500 Hz [6]
Connection type	Male connector M12, 4-pin
Circuit protection	A [7] B [8] D [9]
Protection class	III
Weight	45 g
Housing material	Stainless steel, 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 (2 x)
Electromagnetic compatibility (EMC)	EN 60947-5-2
Ambient operating temperature	–25 °C ... +55 °C [12]
Ambient temperature, storage	–30 °C ... +75 °C
UL File No.	NRKH.E348498 & NRKH7.E348498

[1] Limit values. Operated in short-circuit protected network: max. 8 A.
[2] May not exceed or fall below 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.

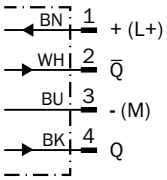
Classifications

eCl@ss 5.0	27270903
eCl@ss 5.1.4	27270903
eCl@ss 6.0	27270903

eCl@ss 6.2	27270903
eCl@ss 7.0	27270903
eCl@ss 8.0	27270903
eCl@ss 8.1	27270903
eCl@ss 9.0	27270903
eCl@ss 10.0	27270904
eCl@ss 11.0	27270904
eCl@ss 12.0	27270903
ETIM 5.0	EC001821
ETIM 6.0	EC001821
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Connection diagram

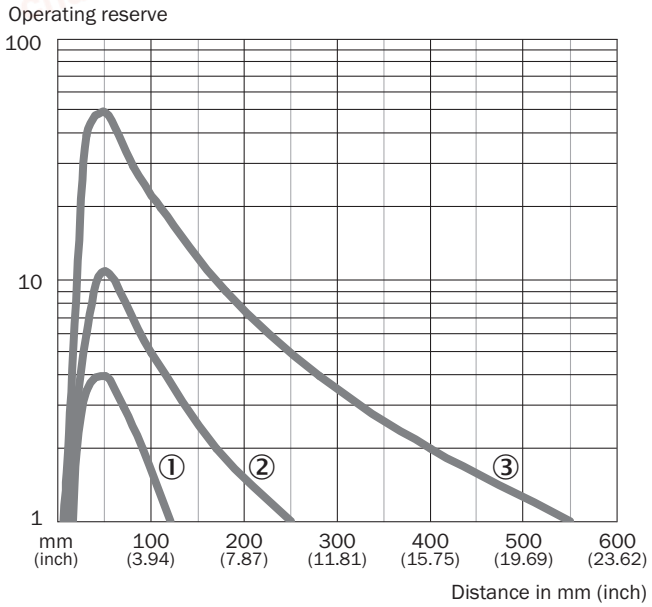
Cd-084



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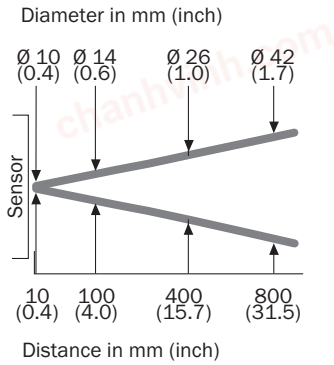
Characteristic curve

GRTE18S, 400 mm



① Sensing range on black, 6% remission
② Sensing range on gray, 20 % remission
③ Sensing range on white, 90% remission

Light spot size

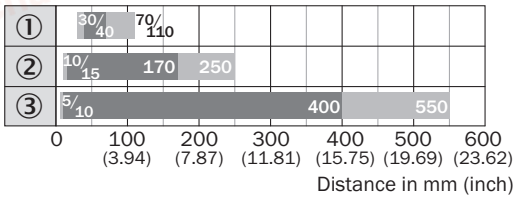


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Sensing range diagram

GRTE18(S) Inox, 400 mm



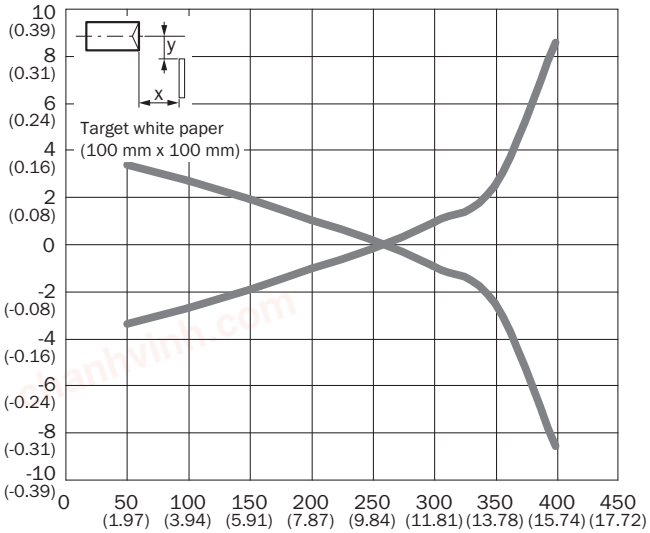
Sensing range Sensing range max.

① Sensing range on black, 6% remission
② Sensing range on gray, 20 % remission
③ Sensing range on white, 90% remission

Response range

GRTE18S, 400 mm

Parallel operating range y in mm (inch)



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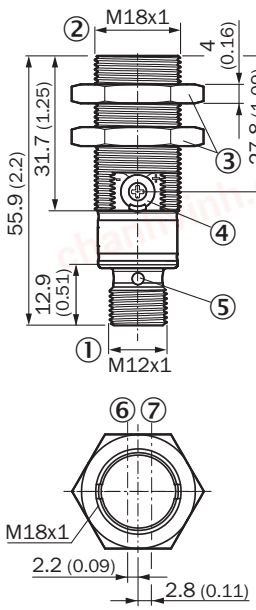
Adjustments

GRTB18(S) Inox, GRTE18(S) Inox, Sensing range setting: Potentiometer, 270°



Dimensional drawing (Dimensions in mm (inch))

GR18S Inox, connector, straight



① Connection
② Threaded mounting hole M18 x 1
③ Fastening nuts (2 x); width across 24, stainless steel
④ Potentiometer, 270°
⑤ LED indicator (4 x)
⑥ Optical axis, receiver
⑦ Optical axis, sender

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Recommended accessories

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

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket for M18 sensors, stainless steel, without mounting hardware	BEF-WN-M18N	5320947
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m 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)	DOL-1204-G05MNI	6052615

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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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