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DATA SHEET

GRTE18-P1142

GR18
Photoelectric sensors

SICK Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

GRTE18-P1142

ORDERING INFORMATION

Type	part no.
GRTE18-P1142	1066548

Further device versions and accessories at 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 71.5 mm
Housing design (light emission)	Cylindrical
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	Visible red light
Light source	PinPoint LED [2]
Light spot size (distance)	Ø 9 mm (400 mm)
Wave length	650 nm
Adjustment	Potentiometer
Display	
LED green	Operating indicator Static on: power on
LED yellow	Status of received light beam Static on: object present Static off: object not present

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

[2] 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	PNP
Output function	Complementary
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	V_S - (≤ 3 V) / approx. 0 V
Output current $I_{max.}$	≤ 100 mA [3]
Response time	< 1,000 µs [4]
Switching frequency	500 Hz [5]
Connection type	Cable, 4-wire, 2 m [6]
Cable material	Plastic, PVC
Circuit protection	A [7] B [8] D [9]
Protection class	III
Housing material	Metal, Nickel-plated brass and ABS
Optics material	Plastic, PMMA
Enclosure rating	IP67
Items supplied	Fastening nuts (2 x)
Electromagnetic compatibility (EMC)	EN 60947-5-2
Ambient operating temperature	–25 °C ... +55 °C [10]
Ambient temperature, storage	–40 °C ... +70 °C
UL File No.	E348498

[1] Limit values. Operated in short-circuit protected network: max. 8 A.

[2] May not fall below or exceed U_v tolerances.

[3] At Uv > 24 V or ambient temperature > 49 °C, IA max. = 50 mA.

[4] Signal transit time with resistive load.

[5] With light/dark ratio 1:1.

[6] Do not bend below 0 °C.

[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] At U_v <=24V and I_A<50mA.

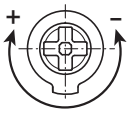
CERTIFICATES

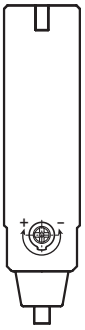
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
ECOLAB certificate	✓
cULus certificate	✓

Photobiological safety (DIN EN 62471) certificate	✓

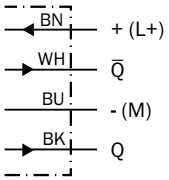
ADJUSTMENTS GRTB18(S), GRTE18(S), SENSING RANGE SETTING: POTENTIOMETER, 270°

Sensing range

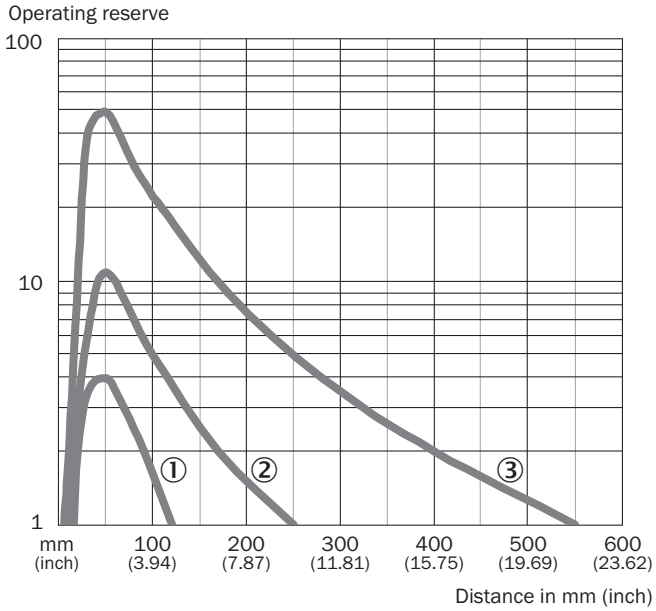




CONNECTION DIAGRAM CD-094

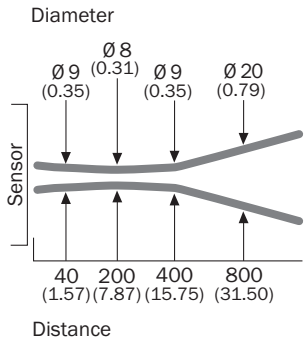


CHARACTERISTIC CURVE GRTE18S, 400 MM



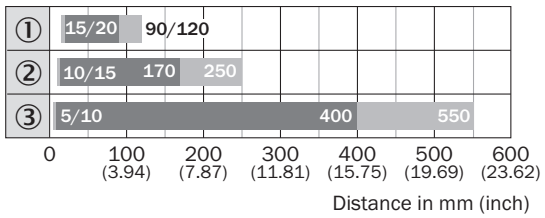
① Sensing range on black, 6% remission factor
② sensing range to gray, 20% remission factor
③ Sensing range on white, 90% remission factor

LIGHT SPOT SIZE GRTE18S, 400 MM



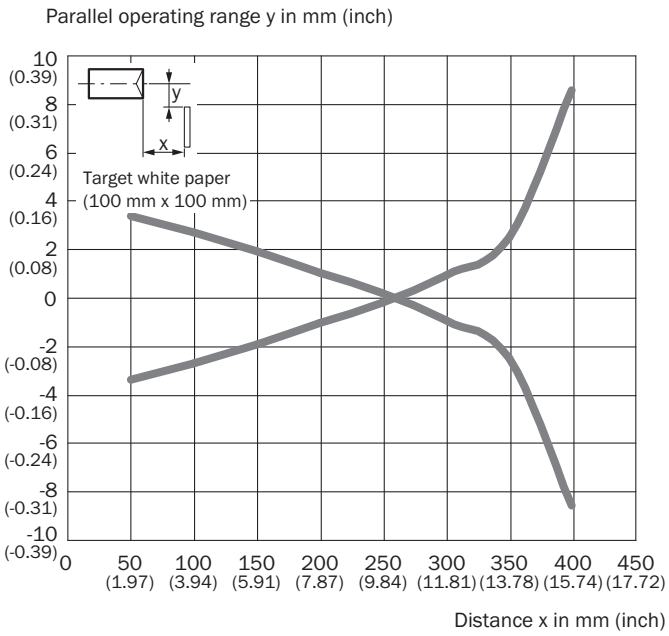
dimensions in mm (inch)

SENSING RANGE DIAGRAM GRTE18S, 400 MM

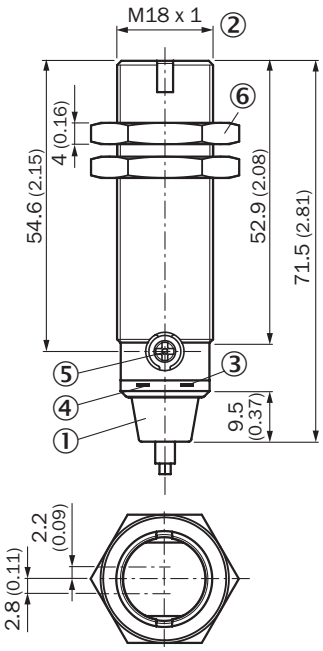


① Sensing range on black, 6% remission factor
② sensing range to gray, 20% remission factor
③ Sensing range on white, 90% remission factor

RESPONSE RANGE GRTE18S, 400 MM



DIMENSIONAL DRAWING GRTE18, GRL18, GRSE18, METAL, CABLE, STRAIGHT



Dimensions in mm (inch)
① Connection cable 2 m
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

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1066548

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