

GRTE18-N2417 GR18

PHOTOELECTRIC SENSORS





Ordering information

Туре	part no.
GRTE18-N2417	1067971

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 73.5 mm
Housing design (light emission)		Cylindrical
Thread diameter (housing)		M18 x 1
Optical axis		Axial
Sensing range max.		3 mm 115 mm ¹⁾
Sensing range		5 mm 100 mm ¹⁾
Type of light		Visible red light
Light source		PinPoint LED ²⁾
Light spot size (distance)		Ø 8 mm (100 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 \mathbf{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
Signal voltage NPN HIGH/LOW	Approx. $V_S / \leq 3 V$
Output current I _{max.}	\leq 100 mA $^{3)}$
Response time	< 1,000 µs ⁴⁾
Switching frequency	500 Hz ⁵⁾
Connection type	Male connector M12, 4-pin
Circuit protection	A ⁶⁾ B ⁷⁾ D ⁸⁾
Protection class	III
Housing material	Plastic, 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 ⁹⁾
Ambient temperature, storage	-40 °C +70 °C
UL File No.	E348498

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

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	✓

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.

 $^{^{6)}}$ A = V_S connections reverse-polarity protected.

 $^{^{7)}}$ B = inputs and output reverse-polarity protected.

 $^{^{8)}}$ D = outputs overcurrent and short-circuit protected.

 $^{^{9)}}$ At $\rm U_{V}\,{<}{=}24V$ and $\rm I_{A}{<}50mA.$

Classifications

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

Sensing range

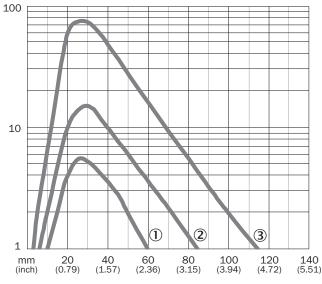




Connection diagram Cd-084

Characteristic curve GRTE18S, 100 mm

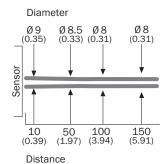




Distance in mm (inch)

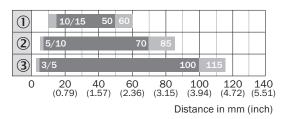
- ① Sensing range on black, 6% remission factor
- 2 sensing range to gray, 20% remission factor
- 3 Sensing range on white, 90% remission factor

Light spot size GRTE18S, 100 mm



dimensions in mm (inch)

Sensing range diagram GRTE18S, 100 mm



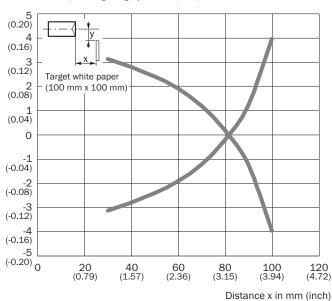
Sensing range Sensing range max.

① Sensing range on black, 6% remission factor

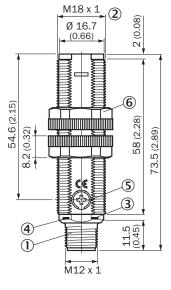
- ② sensing range to gray, 20% remission factor
- 3 Sensing range on white, 90% remission factor

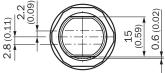
Response range GRTE18S, 100 mm

Parallel operating range y in mm (inch)



Dimensional drawing GRTE18, GRL18, GRSE18, plastic, connector, straight





Dimensions in mm (inch)

- 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 (2 x); width across 22, plastic

Recommended accessories

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

	Brief description	Туре	part no.			
Mounting systems						
40	 Description: Mounting bracket for M18 sensors Material: Steel Details: Steel, zinc coated Items supplied: Without mounting hardware Suitable for: GR18, V180-2, V18, W15, Z1, Z2 	BEF-WN-M18	5308446			
connectors and cables						
No.	 Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A14-050UB3XLEAX	2095608			
P	 Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YF2A14-050VB3XLEAX	2096235			
	 Connection type head A: Male connector, M12, 4-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² 	STE-1204-G	6009932			

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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.

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For us, that is "Sensor Intelligence."

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