

GRTE18S-E231Z

GR18

PHOTOELECTRIC SENSORS





Ordering information

Туре	part no.
GRTE18S-E231Z	1059409

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

Illustration may differ



Detailed technical data

Features

Functional principle	nctional principle Photoelectric proximity sensor	
Functional principle detail		Energetic
Dimensions (W x H x D)		18 mm x 18 mm x 38.1 mm
Housing design (light emission)		Cylindrical
Thread diameter (housing)		M18 x 1
Optical axis		Axial, fully flush
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, 270°
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	NPN
Switching mode	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	Connector M12, 3-pin
Circuit protection	A ⁶⁾ B ⁷⁾ D ⁸⁾
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 ⁹⁾
Ambient temperature, storage	-40 °C +70 °C
UL File No.	NRKH.E348498 & NRKH7.E348498

 $^{^{1)}\,\}mathrm{Limit}$ 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	✓

 $^{^{2)}\,\}text{May}$ 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 U_v <=24V and I_A<50mA.

Classifications

ECLASS 5.0	27270903
ECLASS 5.1.4	27270903
ECLASS 6.0	27270903
ECLASS 6.2	27270903
ECLASS 7.0	27270903
ECLASS 8.0	27270903
ECLASS 8.1	27270903
ECLASS 9.0	27270903
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC001821
ETIM 6.0	EC001821
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

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

Sensing range





Connection type

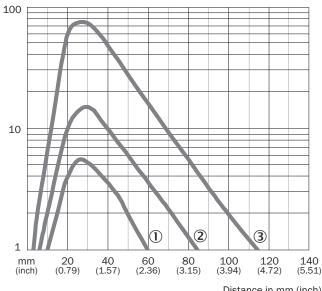


Connection diagram Cd-045



Characteristic curve GRTE18S, 100 mm

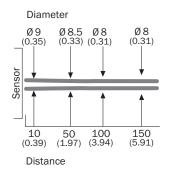
Operating reserve



Distance in mm (inch)

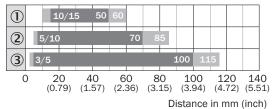
- ① Sensing range on black, 6% remission factor
- 2 sensing range to gray, 20% remission factor
- 3 Sensing range on white, 90% remission factor

Light spot size GRTE18S, 100 mm



dimensions in mm (inch)

Sensing range diagram GRTE18S, 100 mm

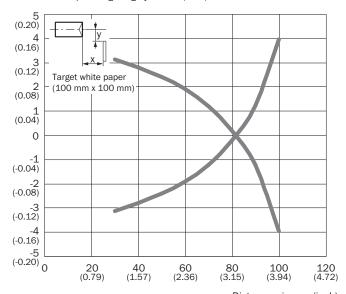


2.000...00

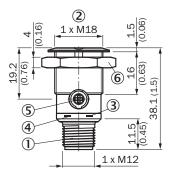
- Sensing range
- Sensing range max.
- ① Sensing range on black, 6% remission factor
- ② sensing range to gray, 20% remission factor
- 3 Sensing range on white, 90% remission factor

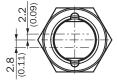
Response range GRTE18S, 100 mm

Parallel operating range y in mm (inch)



Dimensional drawing GR18S, metal, connector, straight, fully flush, adjustable





Dimensions in mm (inch)

- ① Connector M12, 3-pin
- ② Threaded mounting hole M18 x 1
- 3 LED indicator yellow
- 4 LED indicator green
- ⑤ sensitivity control: potentiometer 270°
- 6 fastening nut; 24 mm hex, metal

Recommended accessories

Other models and accessories \rightarrow www.sick.com/GR18

	Brief description	Туре	part no.			
Mounting syst	ems					
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			
Œ()	 Description: Mounting tool for "fully flush" variants Usable for: GR18 Suitable for: GR18S, radial, fully flush 	BEF-TO-GR18S	4072132			
connectors and cables						
No.	Connection type head A: Female connector, M12, 3-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF2A13-050UB1XLEAX	2095605			

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For us, that is "Sensor Intelligence."

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