



GRTE18-P2462V

GR18

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
GRTE18-P2462V	1085704

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				
Housing length	73.5 mm				
Thread length	49.3 mm				
Thread diameter (housing)	M18 x 1				
Optical axis	Axial				
Sensing range max.	5 mm ... 1,000 mm ¹⁾				
Sensing range	10 mm ... 800 mm ¹⁾				
Type of light	Visible red light				
Light source	LED ²⁾				
Light spot size (distance)	Ø 45 mm (800 mm)				
Wave length	650 nm				
Adjustment	Potentiometer, 270°				
Display	<table><tr><td>LED green</td><td>Operating indicatorStatic on: power on</td></tr><tr><td>LED yellow</td><td>Status of received light beamStatic on: object presentStatic off: object not present</td></tr></table>	LED green	Operating indicatorStatic on: power on	LED yellow	Status of received light beamStatic on: object presentStatic off: object not present
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LED yellow	Status of received light beamStatic on: object presentStatic 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.

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 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	65 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 (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.	E348498

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 U_V > 24 V or ambient temperature > 49 °C, I_A 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.

Safety-related parameters

MTTF_D	1,408 years
DC_{avg}	0%
T_M (mission time)	20 years

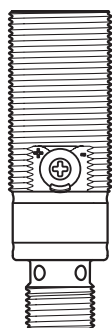
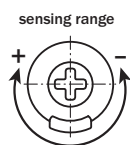
Certificates

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	✓

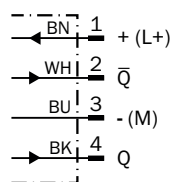
Classifications

ECLASS 5.0	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

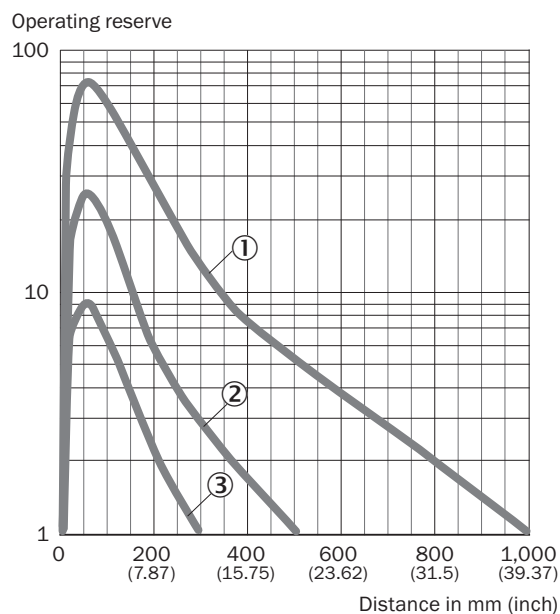
Adjustments GRTB18(S) Inox, GRTE18(S) Inox, Sensing range setting: Potentiometer, 270°



Connection diagram Cd-084



Characteristic curve GRTE18, 800 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

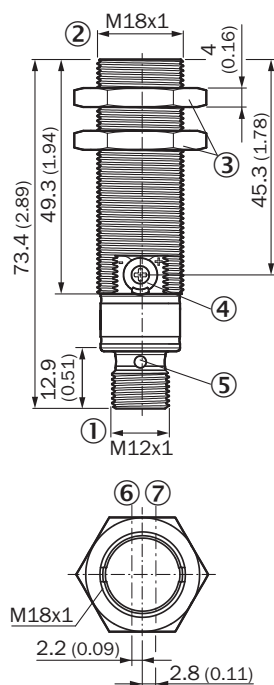
①	$\frac{15}{20}$	200	300																	
②	$\frac{10}{15}$		360	500																
③	$\frac{5}{10}$								800											1,000

0 200 400 600 800 1,000
 (7.87) (15.75) (23.62) (31.5) (39.37)
 Distance in mm (inch)

- Response range GRTE18, 800 mm



Dimensional drawing GR18 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
- ④ Potentiometer, 270°
- 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

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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.”

WORLDWIDE PRESENCE:

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