AbN
automation

GRTE18S-P3037S23
GR18

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

GRTE18S-P3037S23 | GR18
PHOTOELECTRIC SENSORS

Ordering information

Type	part no.
GRTE18S-P3037S23	1147794

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

Illustration may differ

CE

ECOLAB®

c UL us

UK CA
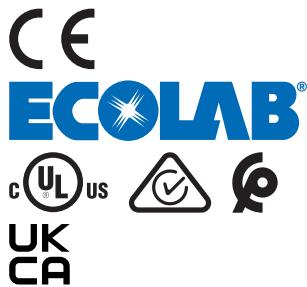
Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Energetic
Dimensions (W x H x D)	18 mm x 18 mm x 38.1 mm
Housing design (light emission)	Cylindrical
Thread diameter (housing)	M18 x 1
Optical axis	Axial
Sensing range max.	3 mm ... 350 mm [1]
Sensing range	3 mm ... 250 mm [1]
Type of light	Infrared light
Light source	LED [2]
Light spot size (distance)	Ø 150 mm (250 mm)
Wave length	850 nm
Adjustment	Potentiometer, 270°
Display	
LED green	Operating indicatorStatic on: power on
LED yellow	Status of received light beamStatic on: object presentStatic 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
Switching mode	Light 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 with connector M8, 3-pin, with knurled nut, 563 mm [6]
Cable material	Plastic, PVC
Circuit protection	A [7] B [8] D [9]
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 [10]
Ambient temperature, storage	–40 °C … +70 °C
UL File No.	NRKH.E348498 & NRKH7.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	✓
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

Dimensional drawing, connection
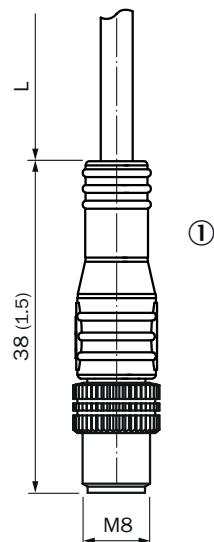
Dimensions in mm (inch)
For length of cable (L), see technical data
① Cable with connector M8, with knurled nut

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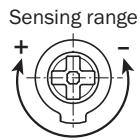
Sensing range

Connection type Connector M8, 3-pin
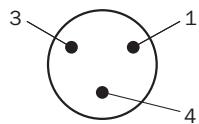
Connection diagram Cd-044

|	
BN	+ (L+)
BU	- (M)
BK	Q

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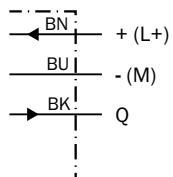
Characteristic curve GRTE18, 250 mm
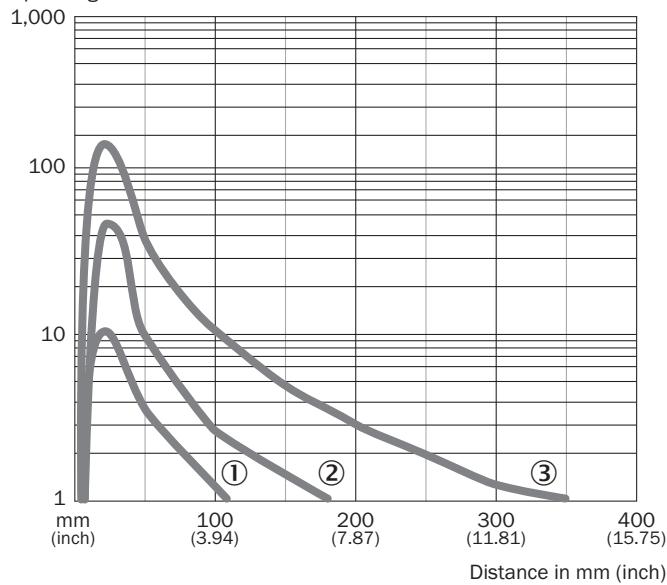
① Sensing range on black, 6% remission factor
② sensing range to gray, 20% remission factor
③ Sensing range on white, 90% remission factor

Light spot size GRTE18, 250 mm
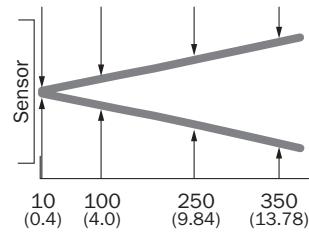
Sensing range diagram GRTE18, 250 mm

①	5	80	110		
②	4	120	180		
③	3		250	350	
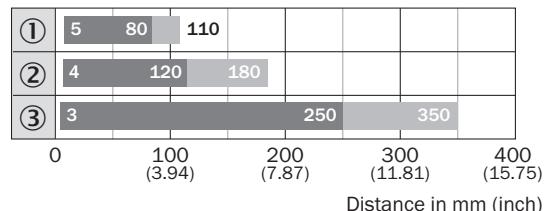
Sensing range   Sensing range max.

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

③ Sensing range on white, 90% remission factor

Dimensional drawing GR18S, plastic, cable, straight, adjustable
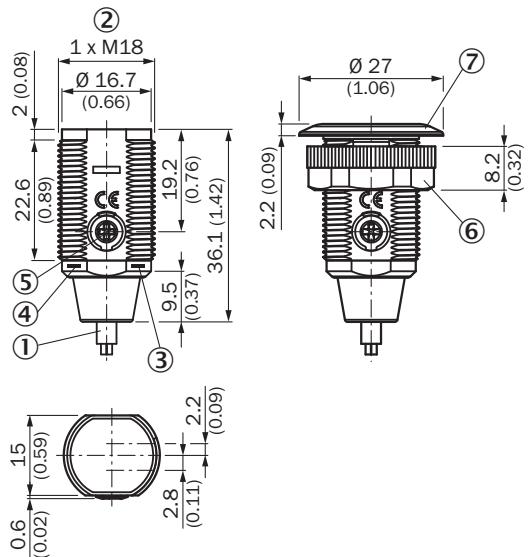
Dimensions in mm (inch)
① Cable with connector M8, 3-pin
② Threaded mounting hole M18 x 1
③ LED indicator yellow
④ LED indicator green
⑤ sensitivity control: potentiometer 270°
⑥ fastening nut; 22 mm hex, plastic
⑦ Mounting ring

Recommended accessories

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

	Brief description	Type	part no.
Mounting systems			
	• **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

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."

WORLDWIDE PRESENCE:

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