

GRL18SG-F1337 GR18

PHOTOELECTRIC SENSORS





Ordering information

Туре	part no.
GRL18SG-F1337	1062231

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

Illustration may differ



Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	With minimum distance to reflector (dual lens system)
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.	0.03 m 7.2 m ¹⁾
Sensing range	0.06 m 6 m ¹⁾
Type of light	Visible red light
Light source	PinPoint LED ²⁾
Light spot size (distance)	Ø 175 mm (7 m)
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 not present Static off: object present
Special feature	Detecting transparent objects
Special applications	Detecting transparent objects

¹⁾ Reflector PL80A.

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	Dark switching
Signal voltage PNP HIGH/LOW	V_S - ($\leq 3 \text{ V}$) / approx. 0 V
Output current I _{max.}	\leq 100 mA $^{3)}$
Response time	< 500 µs ⁴⁾
Switching frequency	1,000 Hz ⁵⁾
Connection type	Cable, 3-wire, 2 m
Cable material	Plastic, PVC
Circuit protection	A ⁶⁾ B ⁷⁾ D ⁸⁾
Protection class	III
Polarisation filter	✓
Housing material	Plastic, ABS
Optics material	Plastic, PMMA
Enclosure rating	IP67
Items supplied	Fastening nuts (2 x)
Special feature	Detecting transparent objects
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

 $^{^{1)}}$ 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	✓

 $^{^{2)}\,\}text{May}$ 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.

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

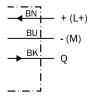
 $^{^{9)}}$ Temperature stability following adjustment +/-10 $^{\circ}\text{C}.$

Photobiological safety (DIN EN 62471) cer-	✓
tificate	

Classifications

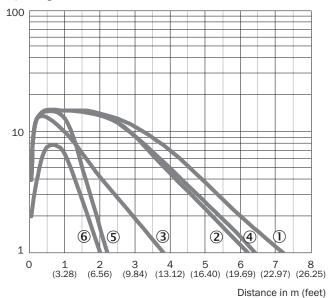
ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Connection diagram Cd-044



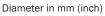
Characteristic curve GRL18S

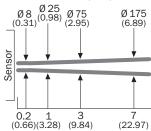




- ① Reflector PL80A
- ② Reflector PL40A
- 3 Reflector PL20A
- 4 Reflector P250
- ⑤ Reflector PL22
- ® Reflective tape REF-Plus 3436

Light spot size GRL18S





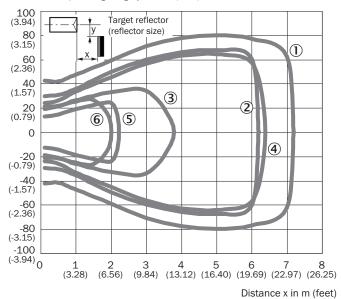
Sensing range diagram GRL18S

1	0.03/0.06	6.0	7.2
2	0.03/0.06	5.2 6.2	
3	0.03/0.06 2.9 3.8		
4	0.03/0.06	5.4 6.4	
<u>(5)</u>	0.03/0.06 1.9/2.2		
6	0.06/0.08 1.6/2.0		
(O 1 2 3 4 (3.28) (6.56) (9.84) (13.1		7 8 (22.97) (26.25) ce in m (feet

- Sensing range
- Sensing range max.
- 1) Reflector PL80A
- ② Reflector PL40A
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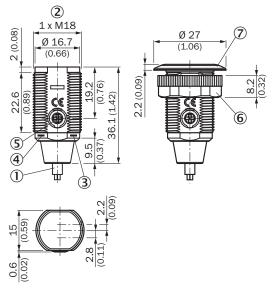
Response range GRL18S

Parallel operating range y in mm (inch)



- ① Reflector PL80A
- 2 Reflector PL40A
- 3 Reflector PL20A
- 4 Reflector P250
- ⑤ Reflector PL22
- ® Reflective tape REF-Plus 3436

Dimensional drawing GR18S, plastic, cable, straight, adjustable



Dimensions in mm (inch)

- ① Connection cable 2 m
- ② Threaded mounting hole M18 x 1
- 3 LED indicator yellow
- 4 LED indicator green
- 6 fastening nut; 22 mm hex, plastic
- ⑦ Mounting ring

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		
2 A 10	 Description: Universal mounting bracket for reflectors Dimensions (W x H x L): 85 mm x 90 mm x 35 mm Material: Steel Details: Steel, zinc coated Suitable for: C110A, P250, PL20, PL30A, PL40A, PL80A 	BEF-WN-REFX	2064574		
reflectors and optics					
	 Description: Rectangular, screw connection Dimensions: 51 mm 61 mm Ambient operating temperature: -30 °C +65 °C 	P250	5304812		

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	Brief description	Туре	part no.	
connectors and cables				
	 Connection type head A: Male connector, M8, 3-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: 0.14 mm² 0.5 mm² 	STE-0803-G	6037322	

SICK AT A GLANCE

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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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