

GRL18SG-F2339 GR18

PHOTOELECTRIC SENSORS





Ordering information

Туре	part no.
GRL18SG-F2339	1059554

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





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		Radial				
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				

¹⁾ Reflector PL80A.

²⁾ Average service life: 100,000 h at T_U = +25 °C.

Special feature	Detecting transparent objects
Special applications	Detecting transparent objects

¹⁾ Reflector PL80A.

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	Connector M12, 3-pin
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	✓

 $^{^{2)}}$ Average service life: 100,000 h at T_U = +25 °C.

 $^{^{2)}}$ 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.

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

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Moroccan declaration of conformity	✓
China RoHS	✓
ECOLAB certificate	✓
cULus certificate	√
Photobiological safety (DIN EN 62471) certificate	✓

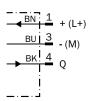
Classifications

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 type

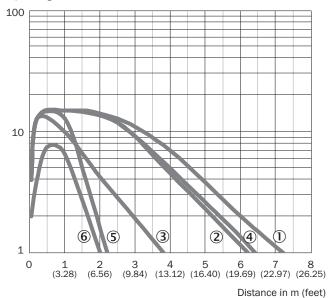


Connection diagram Cd-045



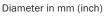
Characteristic curve GRL18S

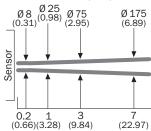




- ① Reflector PL80A
- ② Reflector PL40A
- 3 Reflector PL20A
- 4 Reflector P250
- ⑤ Reflector PL22
- ® Reflective tape REF-Plus 3436

Light spot size GRL18S





Distance in m (feet)

Sensing range diagram GRL18S

1	0.03/0.06					6	6.0		7.2	
2	0.03/0.06				5.2		6.2			
3	0.03/0.06	3	2.9	3.8						
4	0.03/0.06				5.	.4	6	.4		
(5)	0.03/0.06	1	.9/2	.2						
6	0.06/0.08	1.6	/2.0							
((3.28)	2 (6.56)	(9.8	4) (13	5 (16.	40)		69)		8 (26.25 (feet

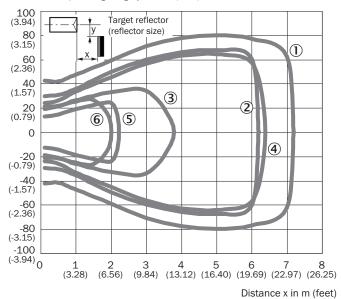
Sensing range

Sensing range max.

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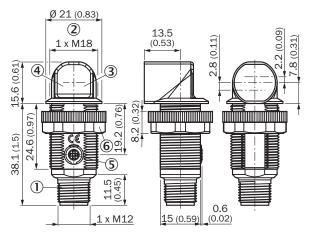
Response range GRL18S

Parallel operating range y in mm (inch)



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Dimensional drawing GR18S, plastic, connector, angled



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; 22 mm hex, plastic

Recommended accessories

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

	Brief description	Туре	part no.
Mounting sys	tems		
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
00 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	d optics		
	 Description: Rectangular, screw connection Dimensions: 51 mm 61 mm Ambient operating temperature: -30 °C +65 °C 	P250	5304812
connectors a	nd cables		
1	 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

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."

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