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Product data sheet



GRSE18S-P233Y

GR18

CYLINDRICAL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

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GRSE18S-P233Y | GR18

CYLINDRICAL PHOTOELECTRIC SENSORS



Illustration may differ

Ordering information

Type	Part no.
GRSE18S-P233Y	1062420

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

Detailed technical data

Features

Functional principle	Through-beam photoelectric sensor
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.	0 m ... 15 m
Sensing range	0 m ... 10 m
Type of light	Visible red light
Light source	PinPoint LED [1]
Light spot size (distance)	Ø 250 mm (10 m)
Wave length	650 nm
Adjustment	None
Indication	
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] Average service life: 100,000 h at T_U = +25 °C.

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Mechanics/electronics

Supply voltage	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	< 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
Housing material	Metal, Nickel-plated brass and ABS
Optics material	Plastic, PMMA
Enclosure rating	IP67
Items supplied	Fastening nuts (4 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
Part number of individual components	2068238 GRS18S-D233Y 2068239 GRE18S-P233Y

[1] Limit values. Operated in short-circuit protected network: max. 8 A.
[2] May not exceed or fall below 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.

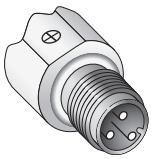
Classifications

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eCl@ss 5.1.4	27270901
eCl@ss 6.0	27270901
eCl@ss 6.2	27270901
eCl@ss 7.0	27270901
eCl@ss 8.0	27270901
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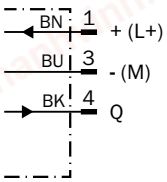
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ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC 16.0901	39121528

Connection type



Connection diagram

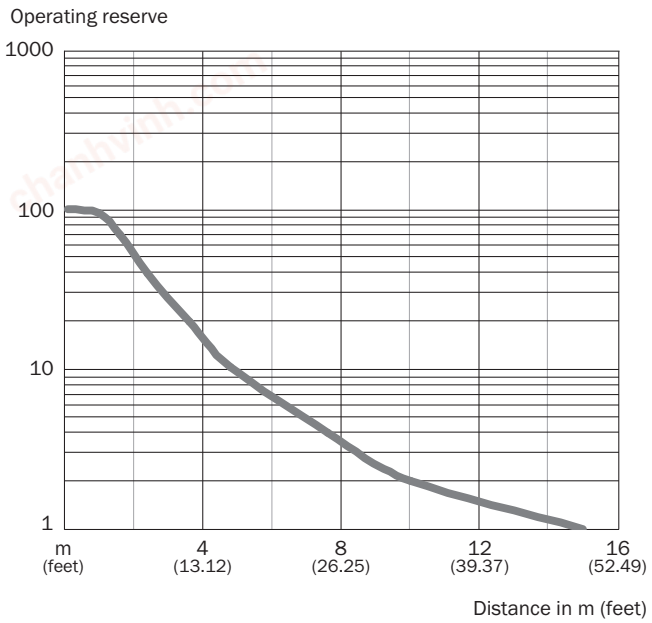
Cd-045



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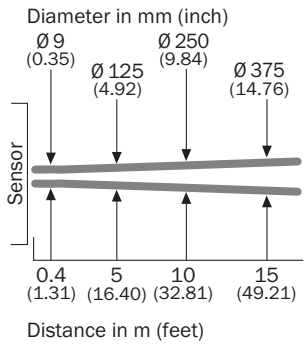
Characteristic curve

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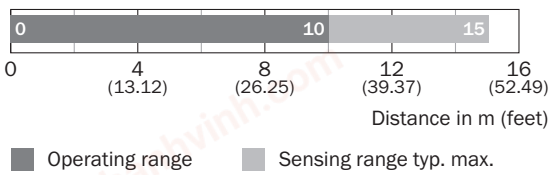
Light spot size

GRSE18, red light



Sensing range diagram

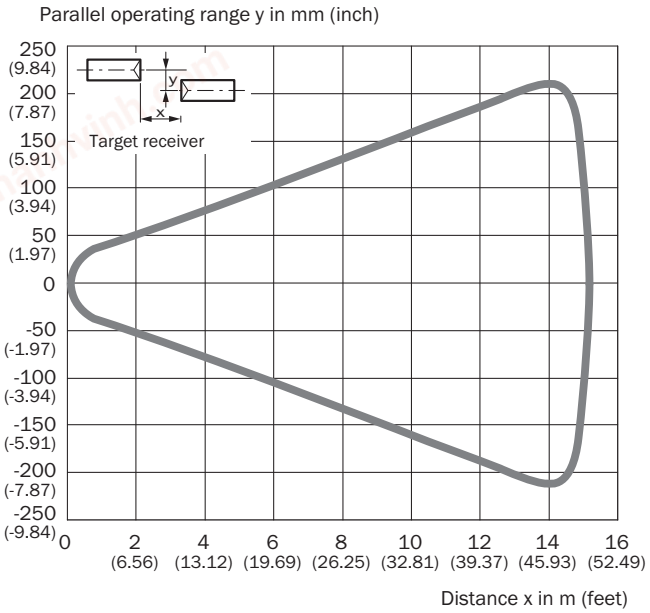
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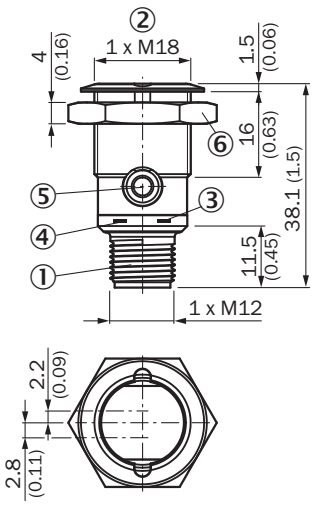
Response range

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Dimensional drawing (Dimensions in mm (inch))

GR18S, metal, connector, straight, fully flush



① Connector M12, 3-pin
② Threaded mounting hole M18 x 1
③ LED indicator yellow
④ LED indicator green
⑤ Dummy plug
⑥ Fastening nut; 24 mm hex, metal

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Recommended accessories

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

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket for M18 sensors, steel, zinc coated, without mounting hardware	BEF-WN-M18	5308446
Other mounting accessories			
	Mounting tool for "fully flush" variants	BEF-TO-GR18S	4072132

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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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