



Photoelectric sensors
GR18S, Photoelectric proximity sensor, energetic

GRTE18S-E231Z



Model Name > [GRTE18S-E231Z](#)
Part No. > [1059409](#)



Illustration may differ

At a glance

- Low-cost cylindrical M18 sensor with extra short housing
- Five different housing styles
- Variety of plastic and metal housing styles, with straight or right angle optics
- Bright and highly visible PinPoint-LED
- Special flush type, one-piece metal housing
- Highly visible signal indicator LED
- IP 67 rating

Your benefits

- Space-saving solution due to short housing
- Flexible mounting options due to versatile housing styles
- Easy installation and precise detection due to PinPoint LED
- Reduced maintenance costs due to high tightening torque of single piece flush metal housing
- Rugged and reliable with proven SICK technology
- Highly visible signal indicator LED saves maintenance and commissioning time



Features

Sensor/detection principle:	Photoelectric proximity sensor, energetic
Housing design (light emission):	Cylindrical, straight, fully flush
Optical axis:	axial, Fully flush
Sensing range max.:	3 mm ... 115 mm ¹⁾
Sensing range:	5 mm ... 100 mm ²⁾
Type of light:	Visible red light
Light source:	PinPoint LED ³⁾
Wave length:	650 nm
Adjustment:	Potentiometer, 270 °
Light spot size (distance):	Ø 8 mm (100 mm)

^{1) 2)} Object with 90 % reflectance (referred to standard white, DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C

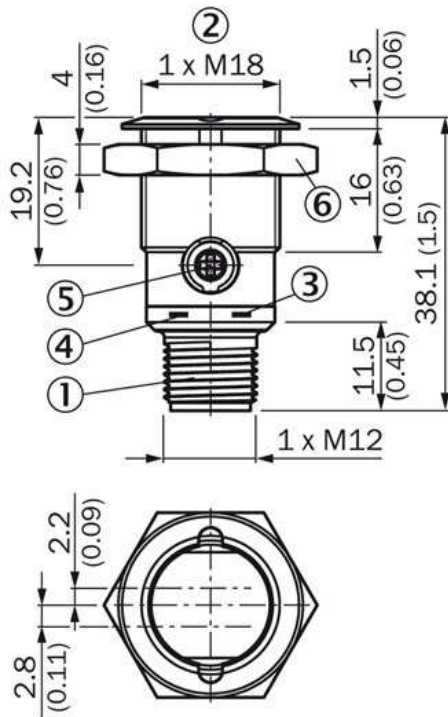
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	± 5 Vpp ²⁾
Power consumption:	≤ 30 mA
Output type:	NPN

Switching mode:	Dark switching
Output current I _{max} :	100 mA ³⁾
Response time:	< 1,000 μs ⁴⁾
Switching frequency:	500 Hz ⁵⁾
Connection type:	Connector M12, 3-pin
Circuit protection:::	A, B, D ^{6) 7) 8)}
Protection class:	III
Enclosure rating:	IP 67
Items supplied:	Fastening nuts (2 x)
Ambient operating temperature:	-25 °C ... +55 °C ⁹⁾
Ambient storage temperature:	-40 °C ... +70 °C
UL File No.:	NRKH.E348498 & NRKH7.E348498
Signal voltage NPN HIGH/LOW:	Approx. V _S /≤ 3 V
Housing material:	Metal

1) Limit values, operation in short-circuit protected network max. 8 A²⁾ May not exceed or fall short of V_S tolerances³⁾ At V_S > 24 V or ambient temperature > 49 °C, I_A max = 50 mA⁴⁾ Signal transit time with resistive load^{5) 6)} A = V_S connections reverse-polarity protected⁷⁾ B = inputs and output reverse-polarity protected⁸⁾ D = outputs overcurrent and short-circuit protected⁹⁾ At U_V ≤ 24V and I_A

Dimensional drawing



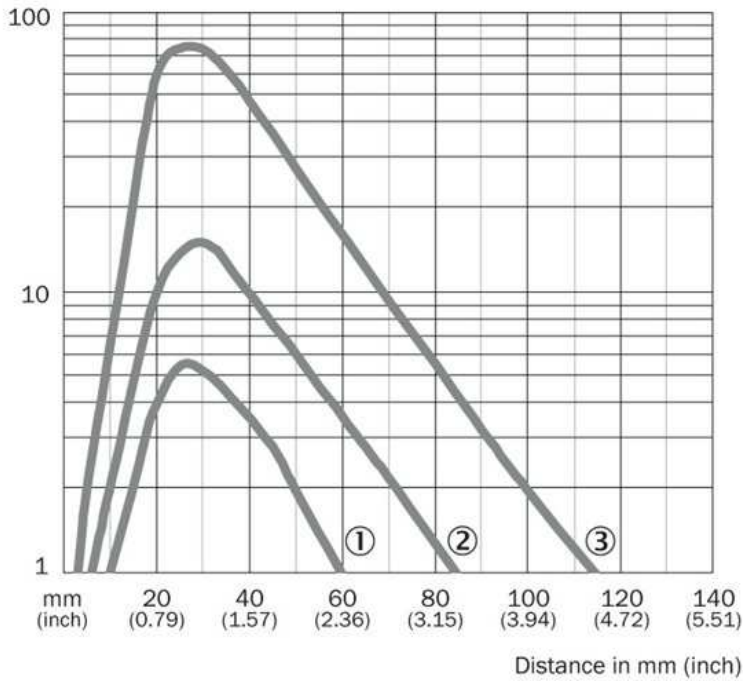
- [1] Connector M12, 3-pin
- [2] Threaded mounting hole M18 x 1
- [3] LED indicator yellow
- [4] LED indicator green
- [5] Sensitivity control; Potentiometer 270°
- [6] fastening nut; 24 mm hex, metal

Connection diagram



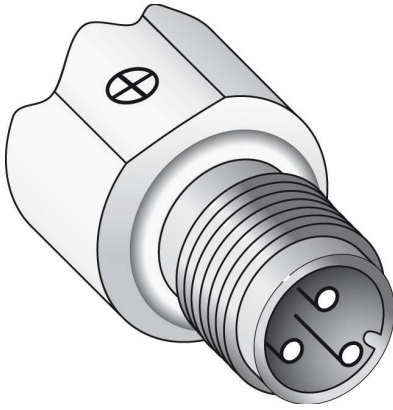
Characteristic curve

Operating reserve

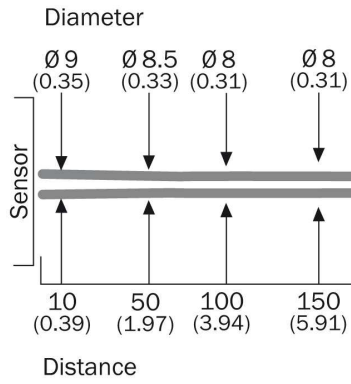


- |1| Sensing range on black, 6 % remission
- |2| Sensing range on gray, 20 % remission
- |3| Sensing range on white, 90 % remission

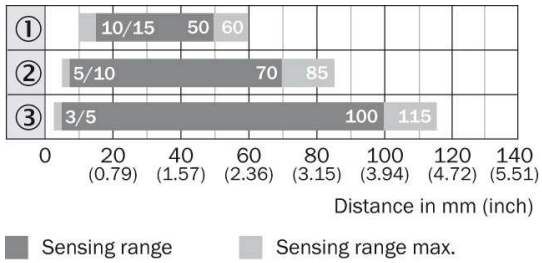
Connection type



Light spot size



Sensing range diagram



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