



Photoelectric sensors  
GR18, Photoelectric proximity sensor, energetic

GRTE18-N2412



**Model Name** > GRTE18-N2412  
**Part No.** > 1067972



Illustration may differ

**At a glance**

- Economical M18 cylindrical sensor with standard housing design
- Three different versions provide sensing ranges from 100 mm to 1000 mm (energetic)
- Two different housing types made of plastic and metal with straight optical output
- Very bright and highly visible PinPoint LEDs
- Highly visible status indicator
- IP 67 enclosure rating

**Your benefits**

- A whole range of mounting options thanks to the different housing types
- Simple alignment and precise detection using PinPoint LEDs
- Easy to mount with simple M18 hole mounting. No special mounting brackets required.
- Rugged and reliable operation due to proven SICK sensing technology
- Clearly visible status display reduces setup time and maintenance time



**Features**

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

<sup>1) 2)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033) <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

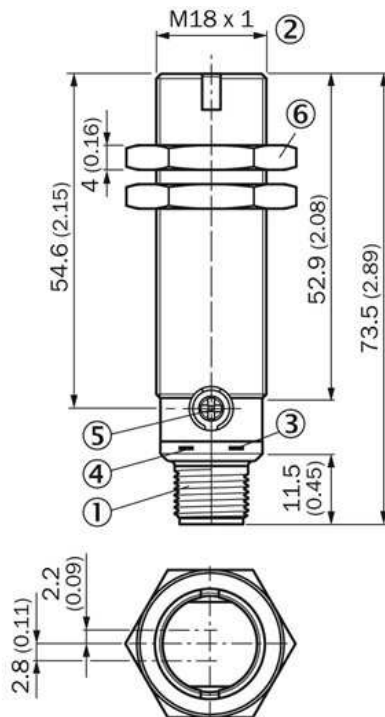
**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Residual ripple:	± 5 Vpp <sup>2)</sup>
Power consumption:	≤ 30 mA
Output type:	NPN
Output function:	Complementary
Switching mode:	Light/dark switching

Output current I <sub>max</sub> ..:	100 mA <sup>3)</sup>
Response time:	< 1,000 μs <sup>4)</sup>
Switching frequency:	500 Hz <sup>5)</sup>
Electrical connection:	Connector M12, 4-pin
Circuit protection:::	A, B, D <sup>6)</sup> <sup>7)</sup> <sup>8)</sup>
Protection class:	III
Special device:	-
Enclosure rating:	IP 67
Items supplied:	Fastening nuts (2 x)
EMC:	EN 60947-5-2
Ambient operating temperature:	-25 °C ... +55 °C <sup>9)</sup>
Ambient storage temperature:	-40 °C ... +70 °C
UL File No.:	E348498
Signal voltage NPN HIGH/LOW:	Approx. V <sub>S</sub> /≤ 3 V
Housing material:	Metal

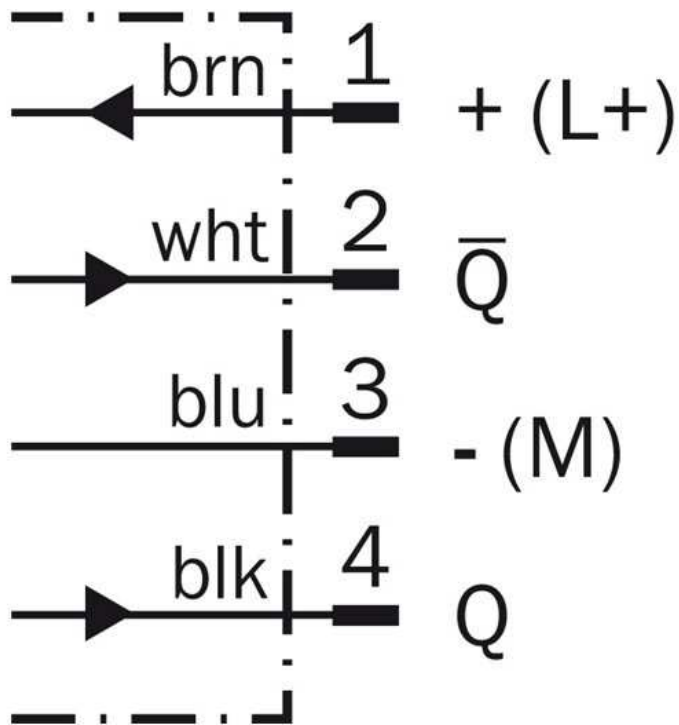
1) Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of V<sub>S</sub> tolerances <sup>3)</sup> At V<sub>S</sub> > 24 V or ambient temperature > 49 °C, I<sub>A</sub> max = 50 mA <sup>4)</sup> Signal transit time with resistive load <sup>5)</sup> With light/dark ratio 1:1 <sup>6)</sup> A = V<sub>S</sub> connections reverse-polarity protected <sup>7)</sup> B = inputs and output reverse-polarity protected <sup>8)</sup> D = outputs overcurrent and short-circuit protected <sup>9)</sup> At U<sub>V</sub> ≤ 24V and I<sub>A</sub>

## Dimensional drawing



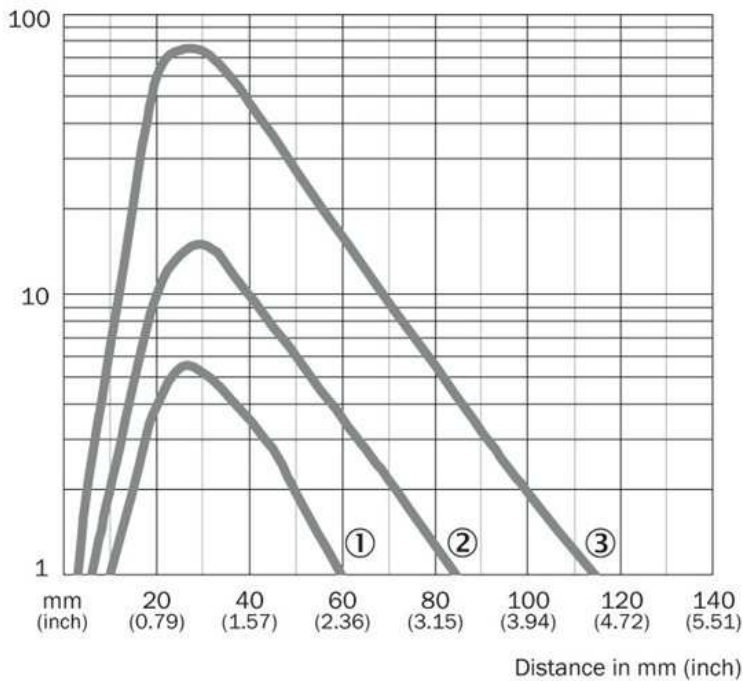
- |1| Connector M12, 4-pin
- |2| Threaded mounting hole M18 x 1
- |3| LED indicator yellow
- |4| LED indicator green
- |5| Sensitivity control; Potentiometer 270°
- |6| fastening nuts (2 x); 24 mm hex, metal

## Connection diagram



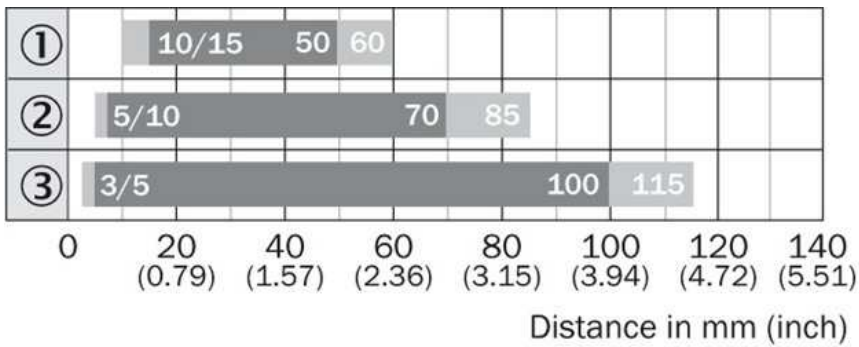
## Characteristic curve

Operating reserve



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

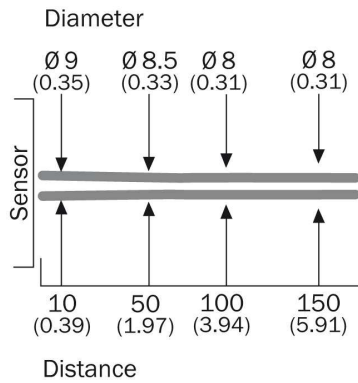
## Sensing range diagram



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

■ Sensing range      ■ Sensing range max.

## Light spot size



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