



Photoelectric sensors  
GR18S, Photoelectric retro-reflective sensor,  
Standard optics

GRL18S-F235W



**Model Name** > [GRL18S-F235W](#)  
**Part No.** > [1064161](#)



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 retro-reflective sensor, Standard optics
Housing design (light emission):	Cylindrical, angled, fully flush
Optical axis:	Fully flush, radial
Sensing range max.:	0.03 m ... 7.2 m <sup>1)</sup>
Sensing range:	0.06 m ... 6 m <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 175 mm (7 m)

1) 2) PL80A 3) Average service life of 100,000 h at T<sub>A</sub> = +25 °C

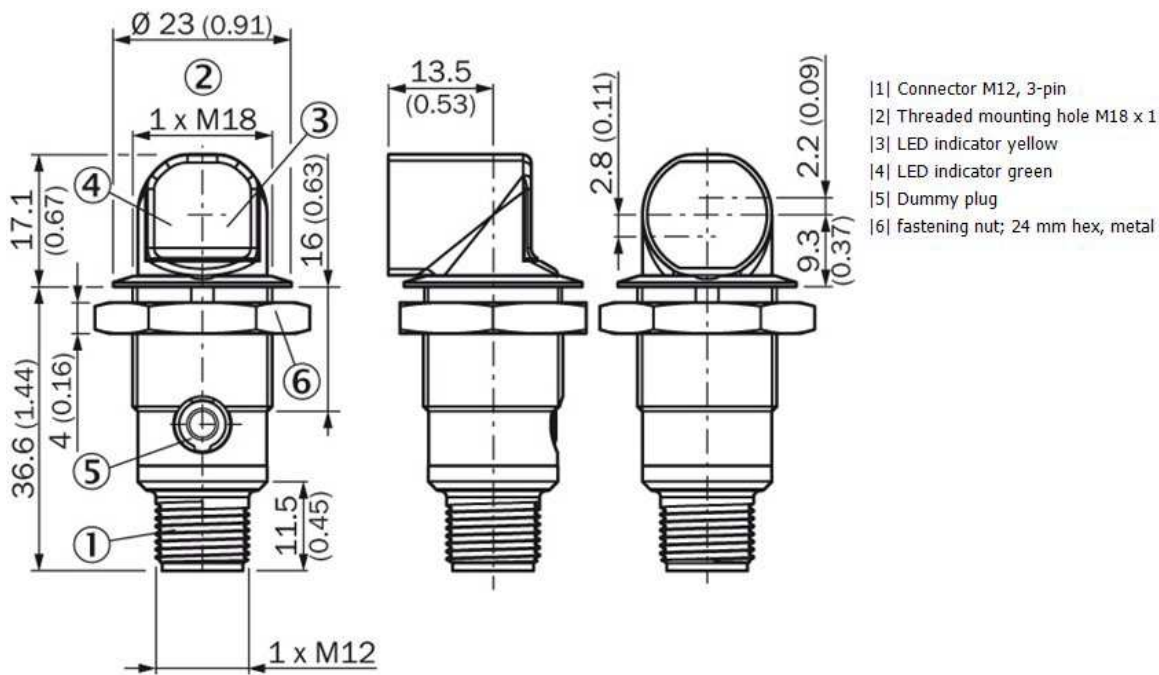
**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Ripple:	± 5 Vpp <sup>2)</sup>
Power consumption:	≤ 30 mA
Output type:	PNP
Switching mode:	Dark switching

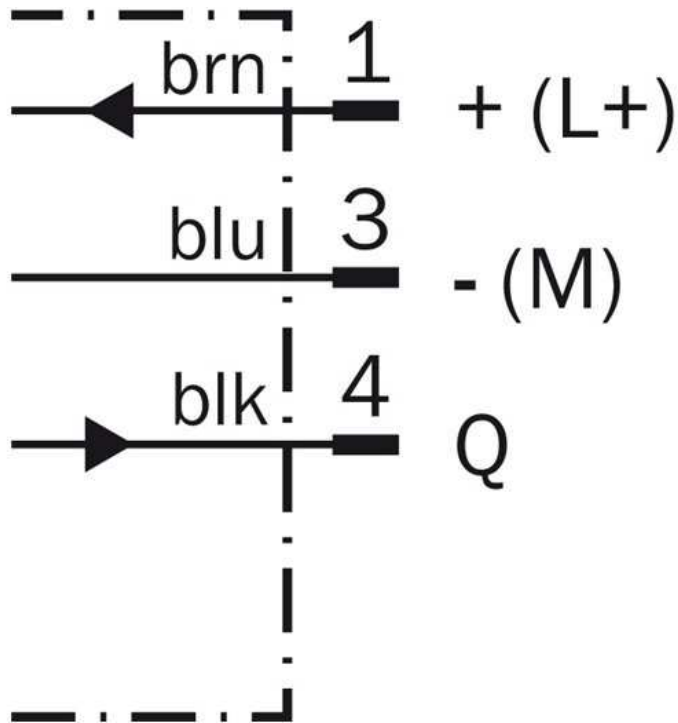
Output current I <sub>max</sub> .:	100 mA <sup>3)</sup>
Response time:	< 500 μs <sup>4)</sup>
Switching frequency:	± 1,000 Hz
Connection type:	Connector M12, 3-pin
Circuit protection:::	A, B, D <sup>5) 6) 7)</sup>
Protection class:	III
Polarisation filter:	✓
Enclosure rating:	IP 67
Items supplied:	Fastening nuts (2 x), Reflector P250
Ambient temperature operation:	-25 °C ... +55 °C <sup>8)</sup>
Ambient storage temperature:	-40 °C ... +70 °C
UL File No.:	NRKH.E348498 & NRKH7.E348498
Signal voltage PNP HIGH/LOW:	VS - (≤ 3 V)/approx. 0 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> A = V<sub>S</sub> connections reverse-polarity protected <sup>6)</sup> B = inputs and output reverse-polarity protected <sup>7)</sup> D = outputs overcurrent and short-circuit protected <sup>8)</sup> At U<sub>V</sub> ≤ 24V and I<sub>A</sub>

### Dimensional drawing

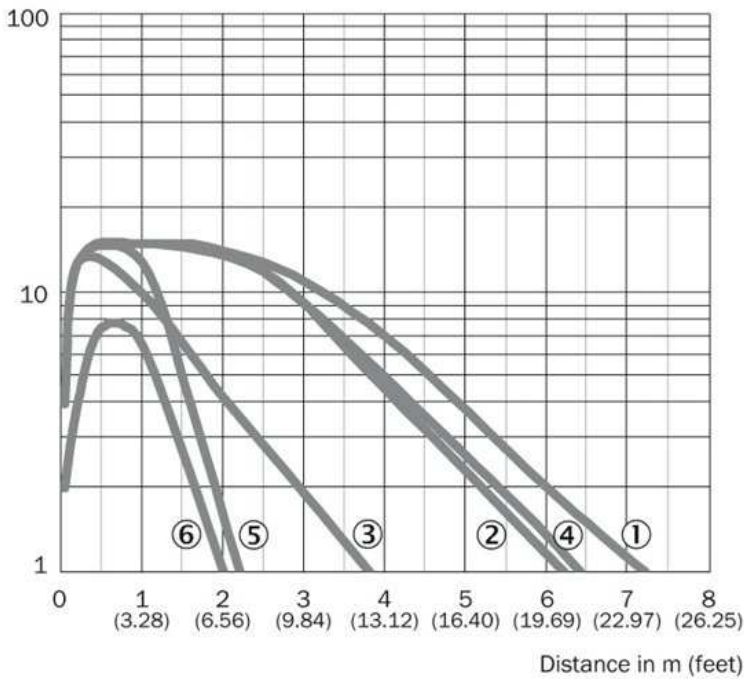


Connection diagram



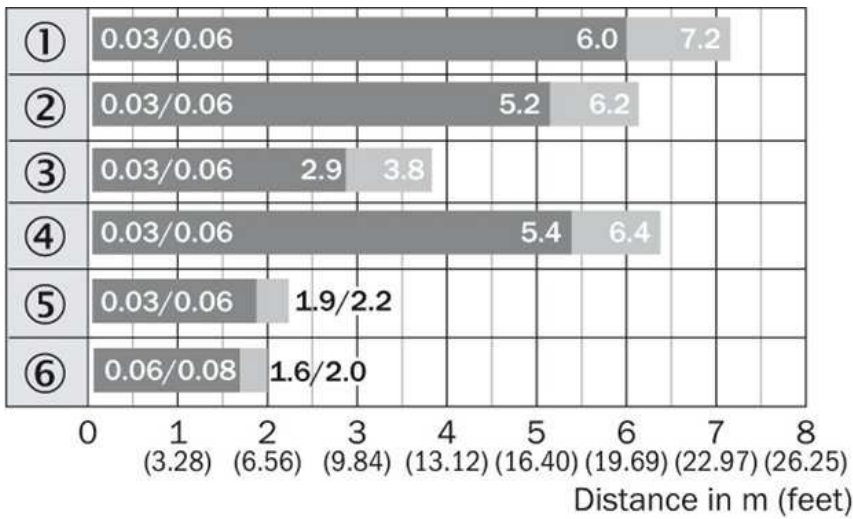
Characteristic curve

Operating reserve



- |1| Reflector type PL80A
- |2| Reflector type PL40A
- |3| Reflector type PL20A
- |4| Reflector type P205
- |5| Reflector type PL22-2
- |6| Reflective tape REF-Plus 3436

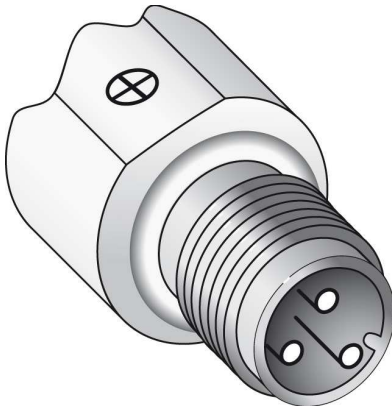
## Sensing range diagram



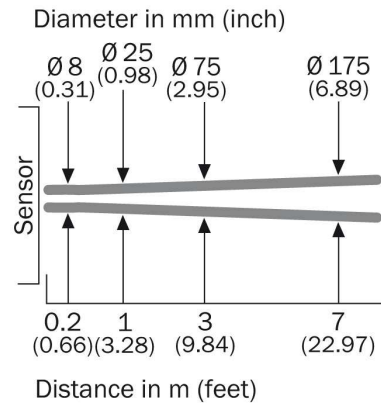
- |1| Reflector type PL80A
- |2| Reflector type PL40A
- |3| Reflector type PL20A
- |4| Reflector type P205
- |5| Reflector type PL22-2
- |6| Reflective tape REF-Plus 3436

■ Sensing range      ■ Sensing range max.

## Connection type



## Light spot size



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