



Photoelectric sensors  
GR18, Photoelectric retro-reflective sensor,  
Standard optics

GRL18-P2437



**Model Name** > [GRL18-P2437](#)  
**Part No.** > [1066555](#)



*Illustration may differ*

**At a glance**

- Economical M18 cylindrical sensors with standard housing design
- 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 retro-reflective sensor, Standard optics
Housing design (light emission):	Cylindrical, straight
Optical axis:	axial
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)

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

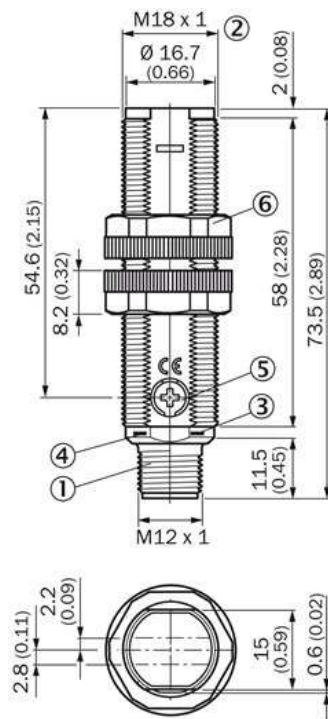
**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Ripple:	± 5 Vpp <sup>2)</sup>
Power consumption:	≤ 30 mA
Output type:	PNP
Output function:	Complementary
Switching mode:	Light/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 <sup>5)</sup>
Electrical connection:	Connector M12, 4-pin
Circuit protection:::	A, B, D <sup>6) 7) 8)</sup>
Protection class:	III
Polarisation filter:	✓
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 PNP HIGH/LOW:	VS - (≤ 3 V)/approx. 0 V
Housing material:	Plastic

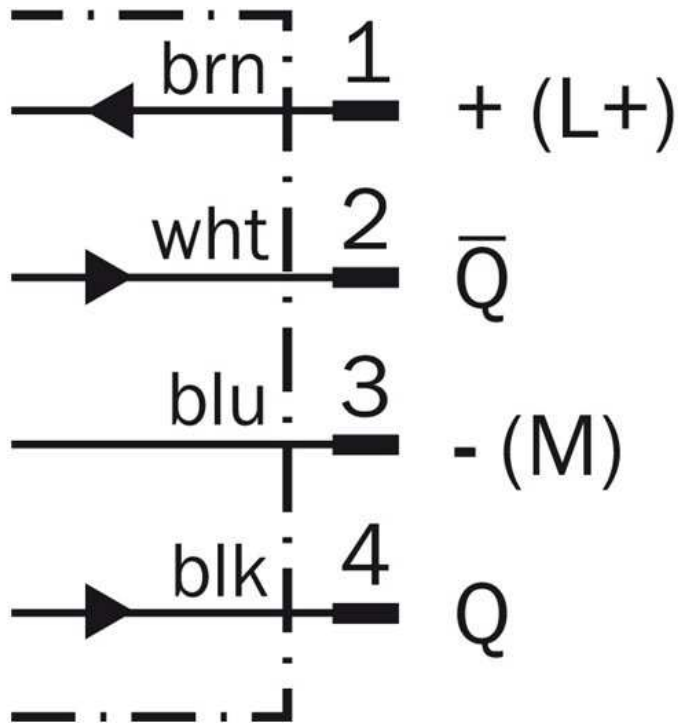
1) Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> At  $V_S > 24$  V or ambient temperature  $> 49$  °C,  $I_{A \max} = 50$  mA <sup>4)</sup> Signal transit time with resistive load <sup>5)</sup> With light/dark ratio 1:1 <sup>6)</sup> A =  $V_S$  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  $U_V \leq 24$  V and  $I_A$

## Dimensional drawing



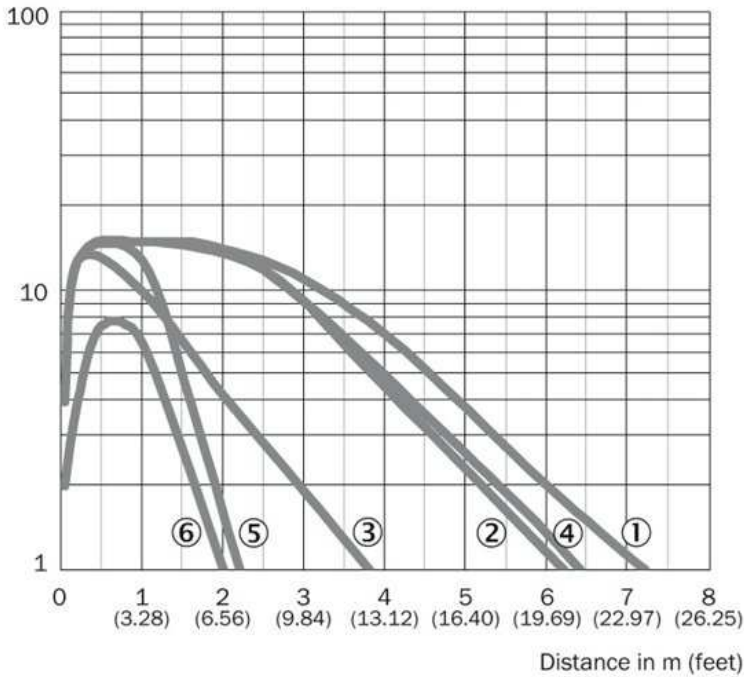
- [1] Connector M12, 4-pin
- [2] Threaded mounting hole M18 x 1
- [3] LED indicator yellow
- [4] LED indicator green
- [5] Sensitivity control; Potentiometer 270°
- [6] fastening nuts (2 x); width across 22, plastic

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

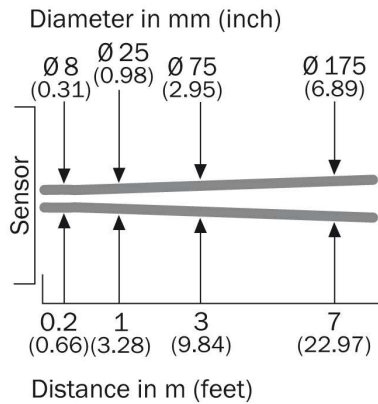
## Sensing range diagram



- |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.

## Light spot size



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