



Photoelectric sensors
GR18SG, Photoelectric retro-reflective sensor,
Standard optics

GRL18SG-F233X



Model Name > [GRL18SG-F233X](#)
Part No. > [1059557](#)



Illustration may differ

At a glance

- Low-cost cylindrical M18 sensor with extra short housing
- Potentiometer for adjustment of switching threshold
- 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
- Potentiometer for adjustment of switching threshold allows detection of transparent objects.
- 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, angled 90°
Optical axis:	Fully flush, Radial
Sensing range max.:	0.03 m ... 7.2 m ¹⁾
Sensing range:	0.06 m ... 6 m ²⁾
Type of light:	Visible red light
Light source:	PinPoint LED ³⁾
Wave length:	650 nm
Adjustment:	Potentiometer, 270°
Light spot size (distance):	Ø 175 mm (7 m)

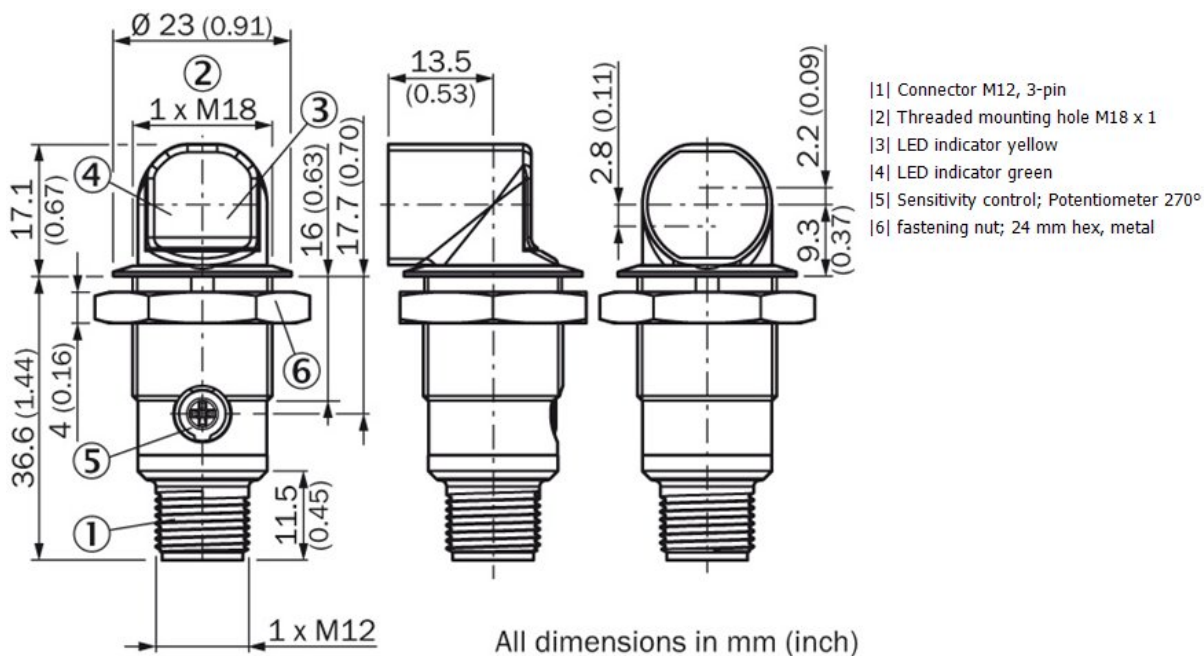
^{1) 2)} PL80A ³⁾ Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	± 5 Vpp ²⁾
Power consumption:	≤ 30 mA
Output type:	PNP
Switching mode:	Dark-switching
Output current I _{max} :	100 mA ³⁾
Response time:	< 500 μ s ⁴⁾
Switching frequency:	1,000 Hz
Connection type:	Connector M12, 3-pin
Circuit protection:::	A, B, D ^{5) 6) 7)}
Protection class:	III
Polarisation filter:	✓
Housing material:	Metal
Enclosure rating:	IP 67
Special feature:	For transparent objects
Ambient operating temperature::	-25 °C ... 55 °C ^{8) 9)}
Ambient storage temperature:	-40 °C ... 70 °C

¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ At V_S > 24 V or ambient temperature > 49 °C, I_A max = 50 mA ⁴⁾ Signal transit time with resistive load ⁵⁾ A = V_S connections reverse-polarity protected ⁶⁾ B = inputs and output reverse-polarity protected ⁷⁾ D = outputs overcurrent and short-circuit protected ⁸⁾ At U_V $\leq$ 24V and I_A ⁹⁾ Temperature stability after adjustment $\pm$ 10 °C

Dimensional drawing

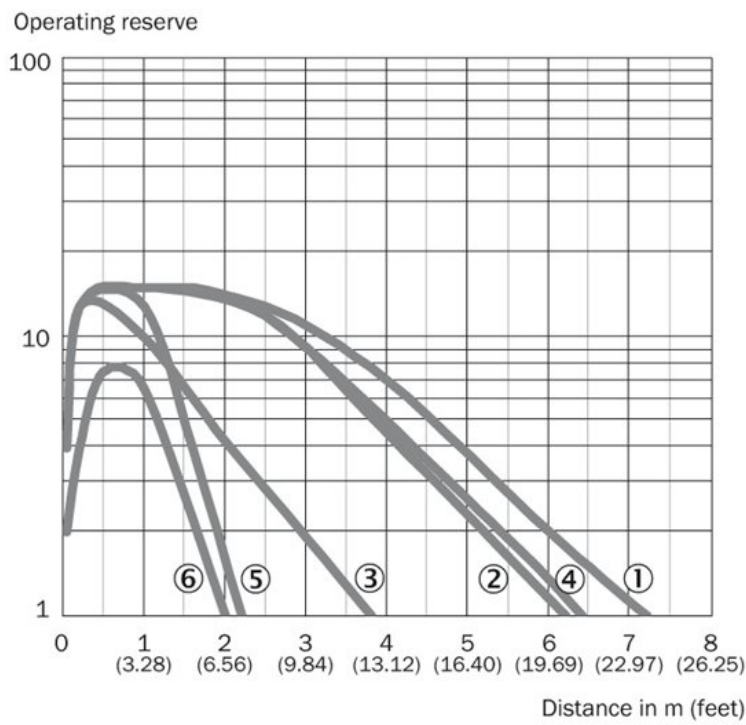


- [1] Connector M12, 3-pin
- [2] Threaded mounting hole M18 x 1
- [3] LED indicator yellow
- [4] LED indicator green
- [5] Sensitivity control; Potentiometer 270°
- [6] fastening nut; 24 mm hex, metal

Connection diagram

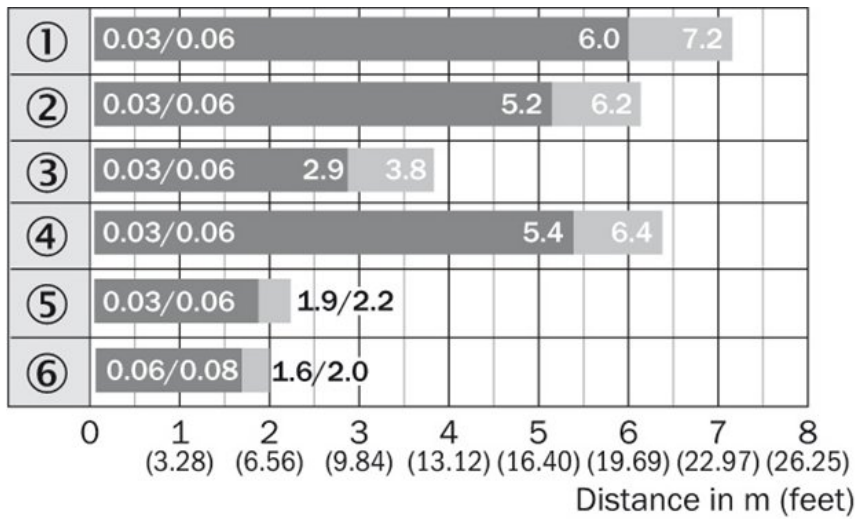


Characteristic curve



- |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

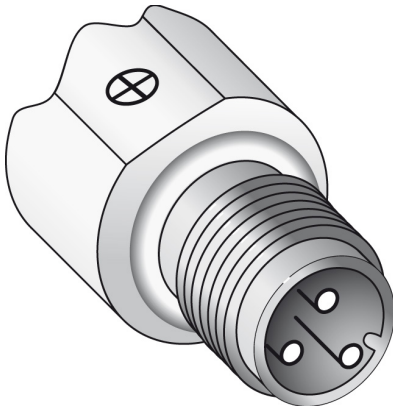
Sensing range diagram



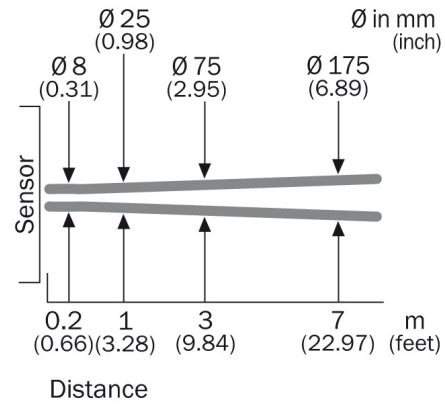
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- |3| Reflector type PL20A
- |4| Reflector type P205
- |5| Reflector type PL22-2
- |6| Reflective tape Ref Plus 3436

■ Sensing range ■ Sensing range max.

Connection type



Light spot size



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