



Photoelectric sensors
V180-2, Photoelectric retro-reflective sensor,
Standard optics

VL180-2P42436



Model Name > [VL180-2P42436](#)
Part No. > [6037496](#)



At a glance

- Lowest-cost M18 housing sensor on the market
- Sensing distance up to 7 m
- Polarizing filter ensures reliable detection of highly-reflective objects
- Bright power and signal LEDs with 360° visibility
- Includes reflector
- High switching frequencies up to 1000 Hz
- Available in a metal housing for applications in harsh environments
- Optical axis selectively axial or radial (90°)

Your benefits

- Lowest-cost M18 cylindrical sensor on the market reduces installation costs
- Bright red sender LED simplifies alignment and saves installation time
- Bright power and signal LEDs with 360° visibility offer quick and simple troubleshooting, reducing maintenance time and costs
- The flat and smooth lens reduces the collection of dust and dirt, ensuring safe operation with less maintenance and fewer costs
- Polarizing filter prevents false readings on reflective surfaces, reducing downtime



Features

Sensor/detection principle:	Photoelectric retro-reflective sensor, Standard optics
Housing design (light emission):	Cylindrical, straight, straight
Housing length:	70.2 mm
Thread diameter (housing):	M18 x 1
Optical axis:	Axial
Sensing range max.:	0.05 m ... 7 m ¹⁾
Sensing range:	0.05 m ... 6 m ²⁾
Type of light:	Visible red light
Light source:	LED ³⁾
Light spot (distance):	400 mm (6 m)
Wave length:	645 nm
Sensitivity adjustment:	Potentiometer, 270°

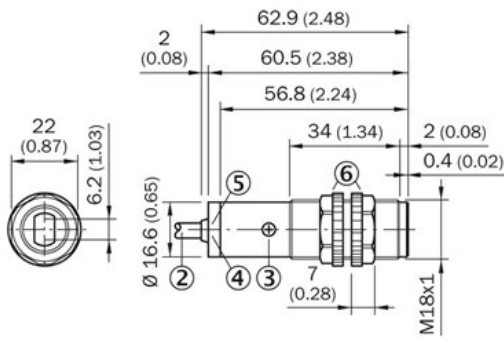
^{1) 2)} PL80A ³⁾ Average service life 100,000 h at Ta = +25 °C

Mechanics/electronics

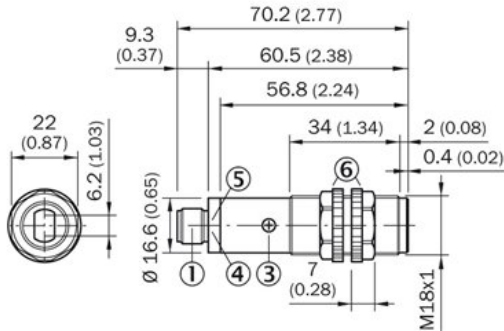
Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	± 10 % ²⁾
Power consumption:	30 ³⁾
Switching output:	PNP, Light/dark-switching, Selectable via L/D control wire, open collector
Signal voltage PNP HIGH/LOW:	Approx. $V_S - 1.8 \text{ V} / 0 \text{ V}$
Output current I _{max} :	≤ 100 mA
Response time:	≤ 0.5 ms ⁵⁾
Switching frequency:	1,000 Hz ⁶⁾
Angle of dispersion:	Ca. 4.5 °
Connection type:	Connector M12, 4-pin
Circuit protection:::	A, B, D ^{7) 8) 9)}
Protection class:	III
Weight:	18 g
Polarisation filter:	✓
Housing material:	PBT and PC
Optics material:	PMMA
Enclosure rating:	IP 67
Items supplied:	Fastening nuts (2 x), Reflector P250
Ambient operating temperature:	-25 °C ... 55 °C
Ambient storage temperature:	-40 °C ... 70 °C

¹⁾ Limit values ²⁾ May not exceed or fall short of V_S ³⁾ Without load ⁴⁾ Control wire open: dark-switching D.ON ⁵⁾ Signal transit time with resistive load ⁶⁾ With light/dark ratio 1:1 ⁷⁾ A = V_S connections reverse-polarity protected ⁸⁾ B = inputs and output reverse-polarity protected ⁹⁾ D = outputs overcurrent and short-circuit protected

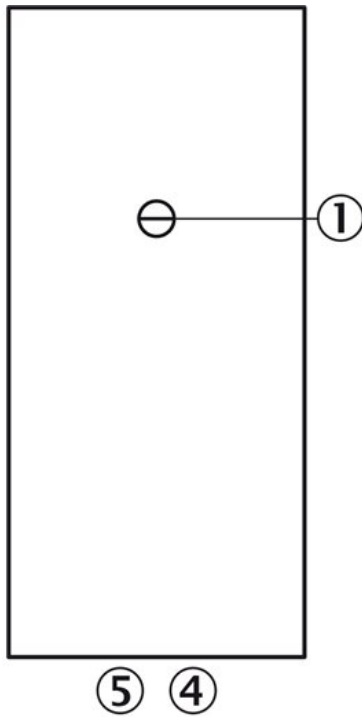
Dimensional drawing



- |1| Connector M12, 4-pin
- |2| Connection cable 2 m
- |3| Sensitivity control (potentiometer, 270°)
- |4| LED indicator orange: switching output active
- |5| LED indicator green: strength indicator
- |6| fastening nuts (2 x); width across 22, PC

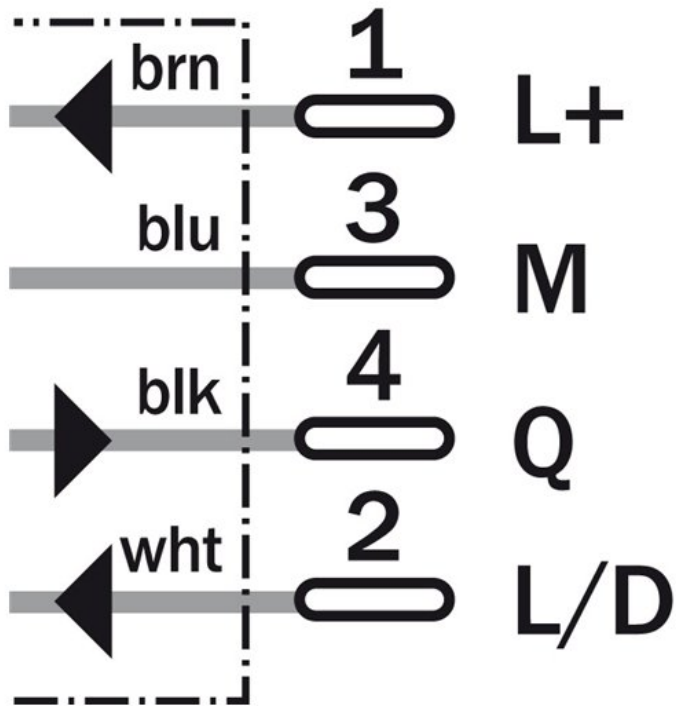


Adjustments possible

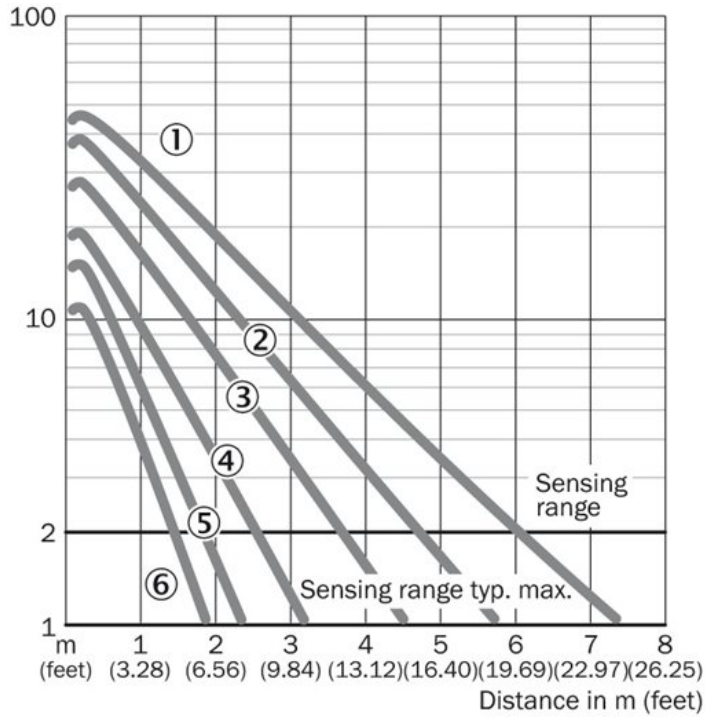


- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

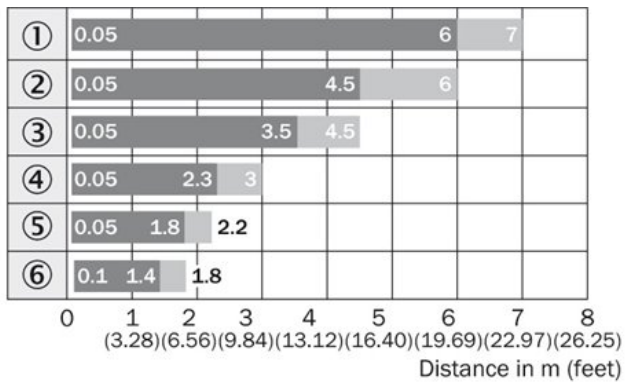
Connection diagram



Characteristic curve



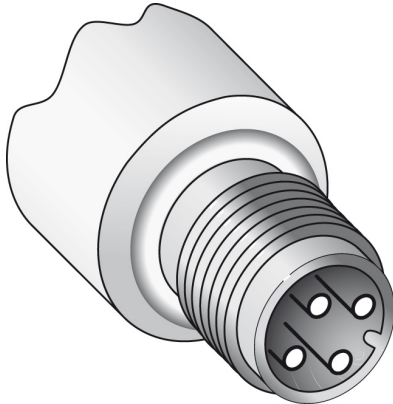
Sensing range diagram



Reflector type

- ① PL80A
- ② P250/PL40A/PL50A/C110A
- ③ PL30A/PL31A
- ④ PL20A
- ⑤ P45
- ⑥ Reflective tape
Diamond Grade

Connection type



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