



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

VL180-2P41136



Model Name > [VL180-2P41136](#)
Part No. > [6037495](#)



Illustration may differ

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: | 62.9 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° |

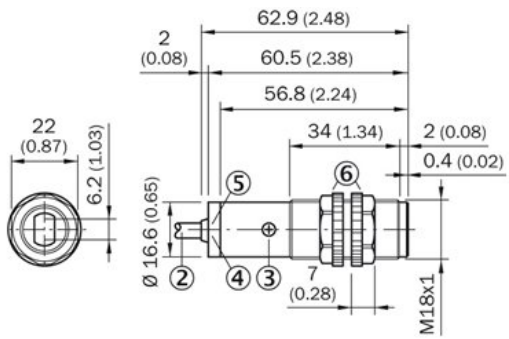
^{1) 2)} PL80A ³⁾ Average service life 100,000 h at Ta = +25 °C

Mechanics/electronics

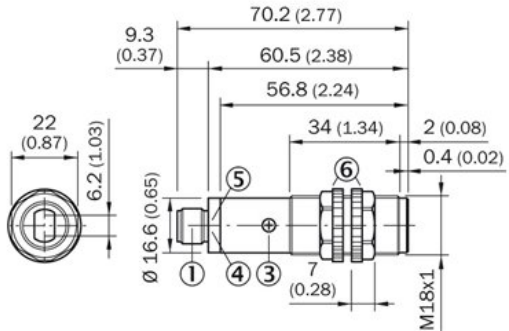
| | |
|-----------------------------------|--|
| Supply voltage: | 10 V DC ... 30 V DC ¹⁾ |
| Ripple: | ± 10 % ²⁾ |
| Power consumption: | 30 ³⁾ |
| Switching output: | PNP, Light/dark-switching, Selectable via L/D control wire, open collector |
| Signal voltage PNP HIGH/LOW: | Approx. $V_S - 1.8 \text{ V} / 0 \text{ V}$ |
| 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: | Cable, 4-wire, 2 m ⁷⁾ |
| Cable material: | PVC |
| Conductor cross-section: | 0.18 mm ² |
| Cable diameter: | 3.8 mm |
| Circuit protection::: | A, B, D ⁸⁾ ⁹⁾ ¹⁰⁾ |
| Protection class: | III |
| Weight: | 62 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⁾ Do not bend below 0 °C ⁸⁾ A = V_S connections reverse-polarity protected ⁹⁾ B = inputs and output reverse-polarity protected ¹⁰⁾ D = outputs
overcurrent and short-circuit protected

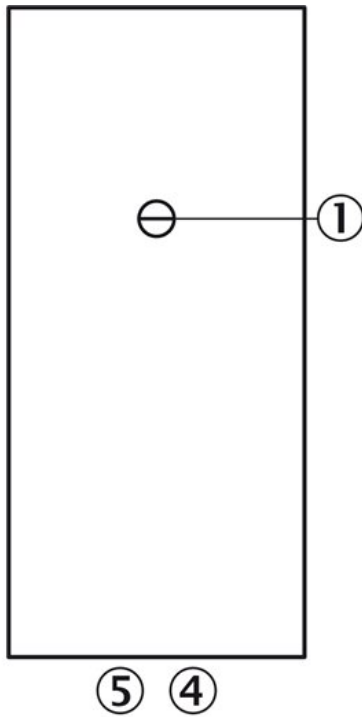
Dimensional drawing



- |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

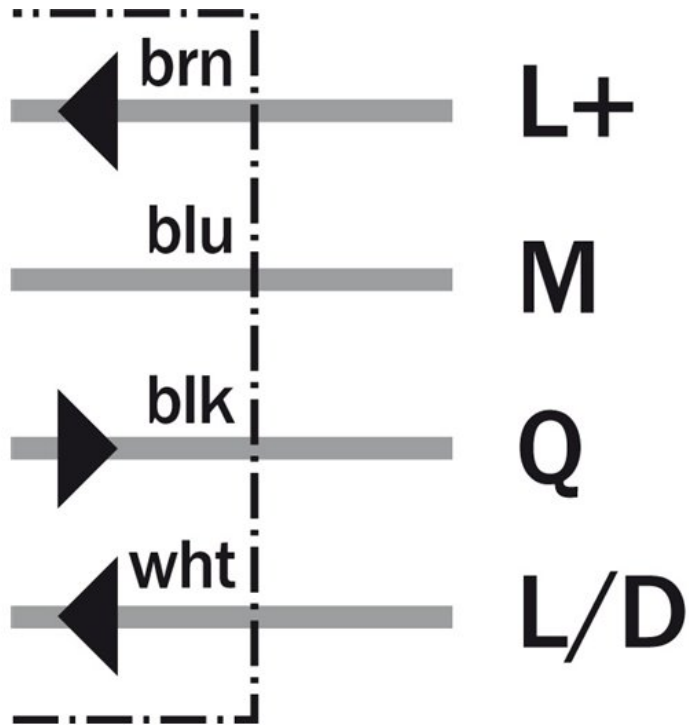


Adjustments possible

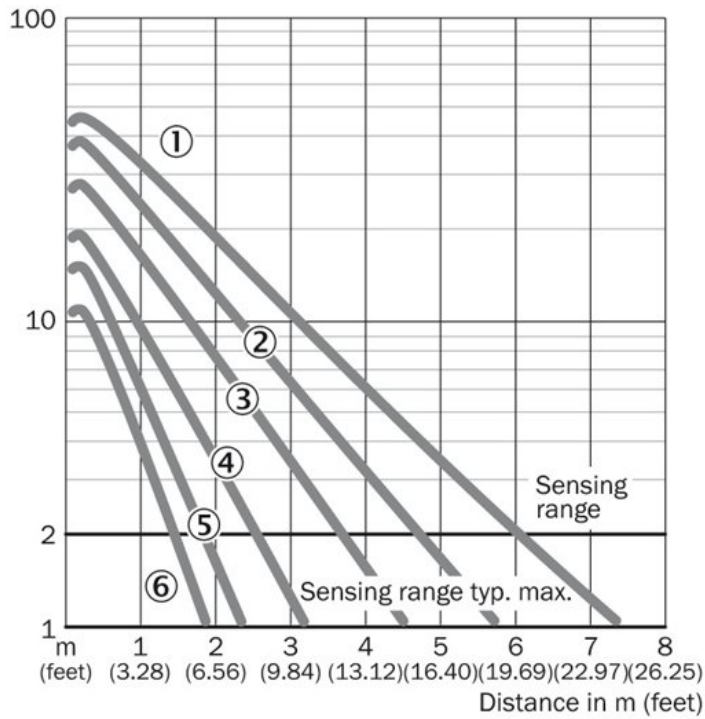


- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

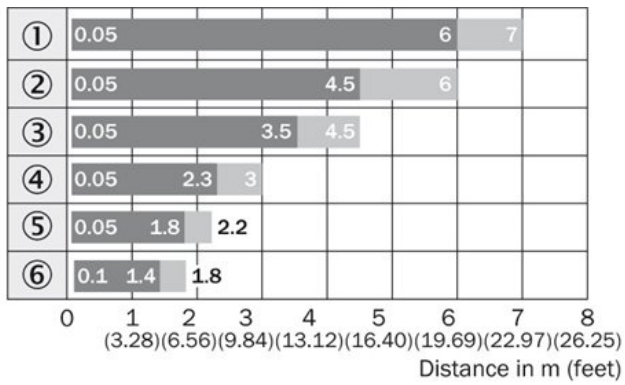
Connection diagram



Characteristic curve



Sensing range diagram

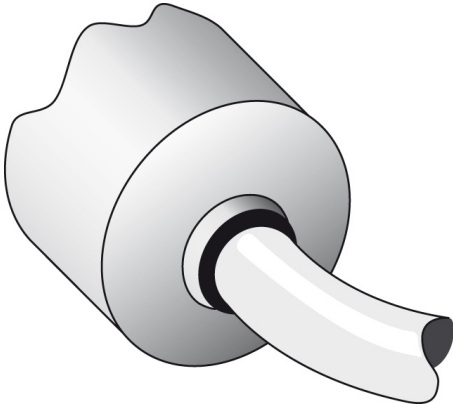


■ Sensing range ■ Sensing range typ. max.

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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