



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

VL180-2P41133



Model Name > [VL180-2P41133](#)
Part No. > [6043832](#)



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, angled
Housing length:	76.9 mm
Optical axis:	Radial
Sensing range max.:	0.05 m ... 5.5 m ¹⁾
Sensing range:	0.05 m ... 4.5 m ²⁾
Type of light:	Visible red light
Light source:	LED ³⁾
Wave length:	645 nm
Angle of dispersion:	Ca. 4.5 °
Adjustment:	Potentiometer, 270°
Light spot size (distance):	Ø 270 mm (4 m)

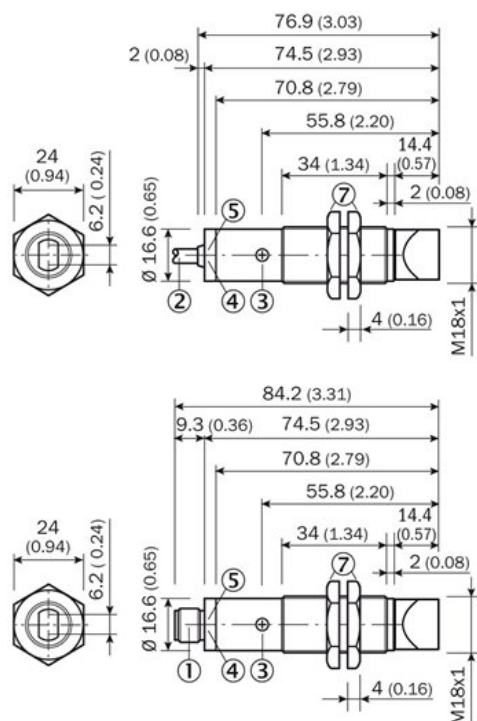
^{1) 2)} PL80A ³⁾ Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	± 10 %
Power consumption:	≤ 30 mA ²⁾
Output type:	PNP ³⁾
Switching mode:	Light/dark-switching ⁴⁾
Signal voltage PNP HIGH/LOW:	Approx. VS - 1.8 V / 0 V
Output current I _{max} :	≤ 100 mA ⁵⁾
Response time:	≤ 0.5 ms ⁶⁾
Switching frequency:	1,000 Hz ⁶⁾
Connection type:	Cable, 4-wire, 2 m ⁷⁾
Cable material:	PVC
Conductor cross-section:	0.18 mm ²
Cable diameter:	Ø 3.8 mm
Circuit protection:::	A, B, D ⁸⁾ ⁹⁾ ¹⁰⁾
Protection class:	III
Weight:	95 g
Polarisation filter:	✓
Special device:	-
Housing material:	Nickel-plated brass and PC, Metal
Optics material:	PMMA
Enclosure rating:	IP 67
Items supplied:	Reflector P250
Ambient operating temperature:	-25 °C ... 55 °C
Ambient storage temperature:	-40 °C ... 70 °C

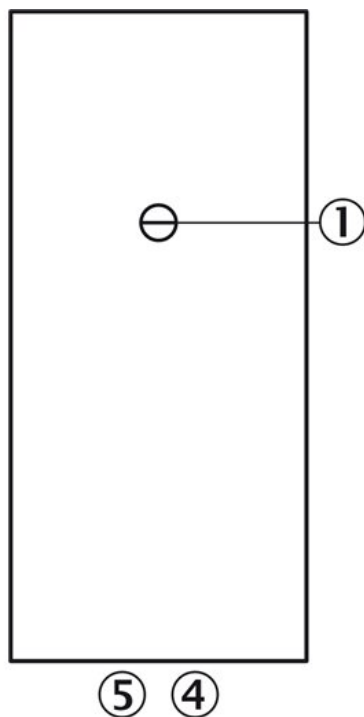
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ Without load ³⁾ ⁴⁾ Control wire open: dark-switching D.ON ⁵⁾ Signal transit time with resistive load ⁶⁾ With light/dark ratio 1:1 ⁷⁾ Do not bend below 0 °C ⁸⁾ A = V_S connections reverse-polarity protected ⁹⁾ B = inputs and output reverse-polarity protected ¹⁰⁾ D = outputs overcurrent and short-circuit protected

Dimensional drawing



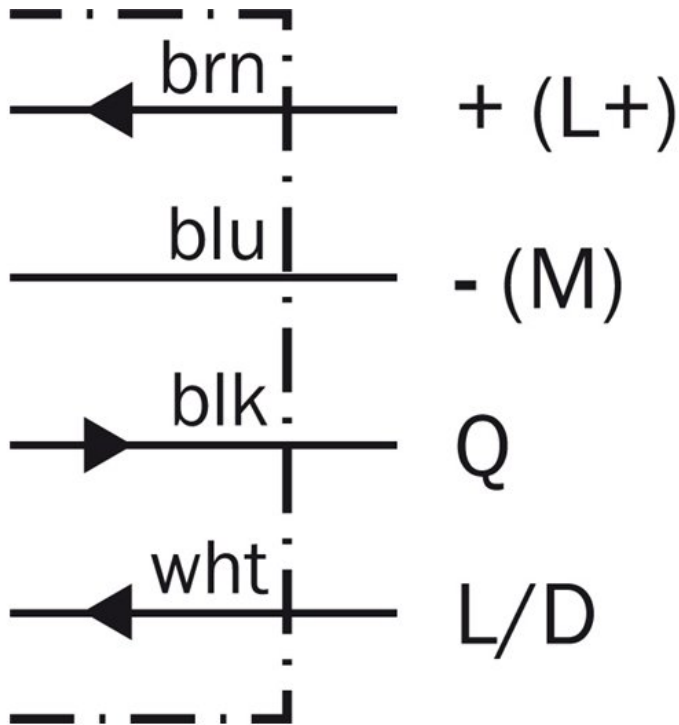
- [1] Connector M12, 3-pin / Connector M12, 3-pin
- [2] Connection cable 2 m
- [3] Sensitivity control; Potentiometer 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green, stability indicator:
LED lights continuously = light reception < 0.9 / > 1.1; LED off = light reception > 0.9 / < 1.1
- [7] Metal housing, fastening nuts (2 x); width across 24

Adjustments possible

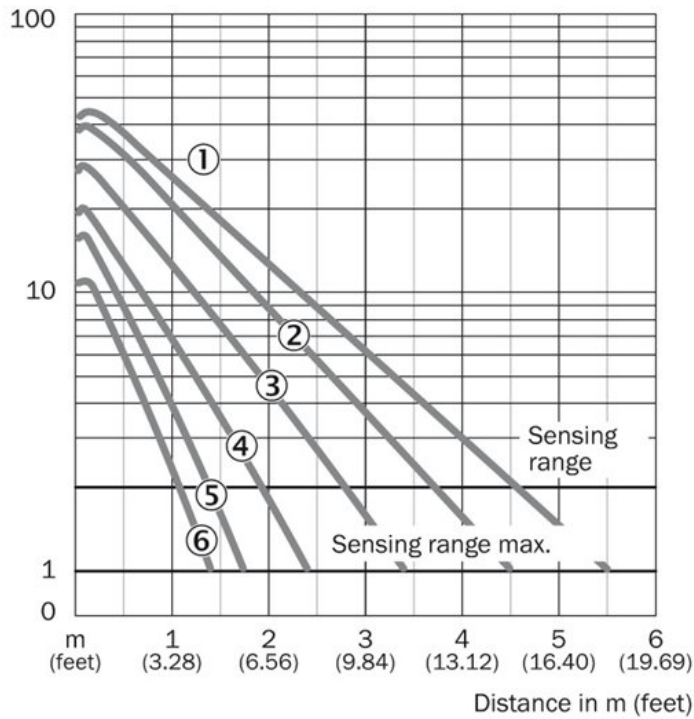


- [3] Sensitivity adjustment 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green

Connection diagram

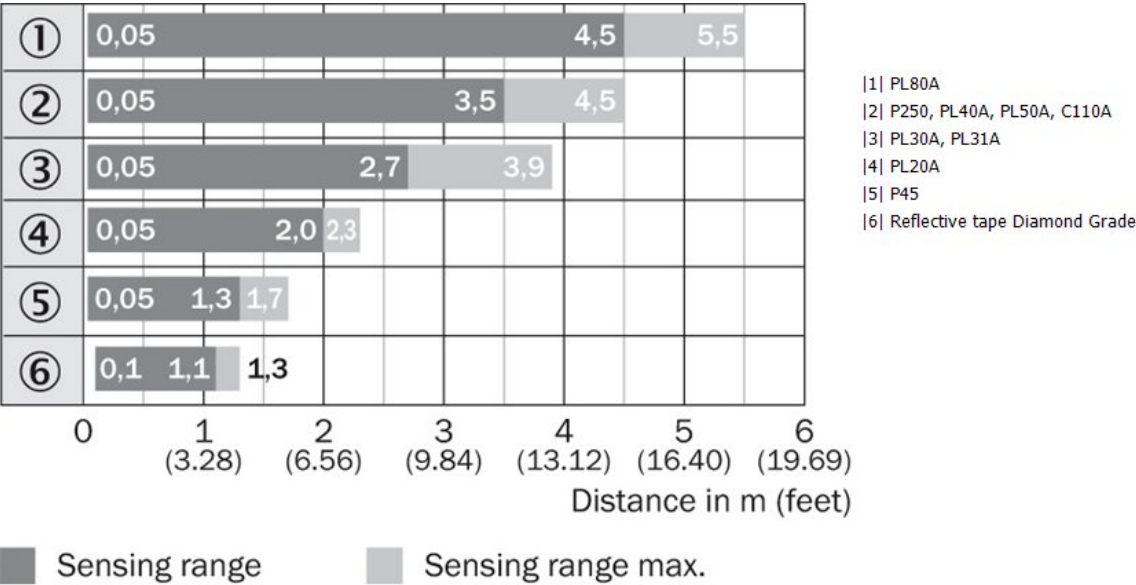


Characteristic curve

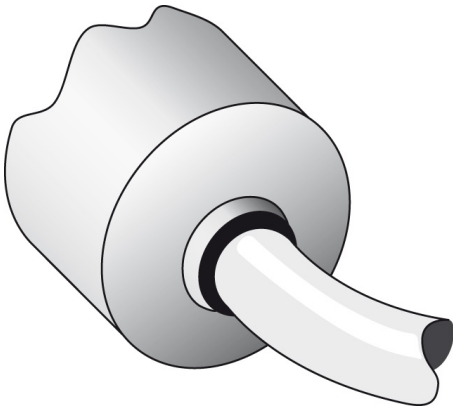


- |1| PL80A
- |2| P250, PL40A, PL50A, C110A
- |3| PL30A, PL31A
- |4| PL20A
- |5| P45
- |6| Reflective tape Diamond Grade

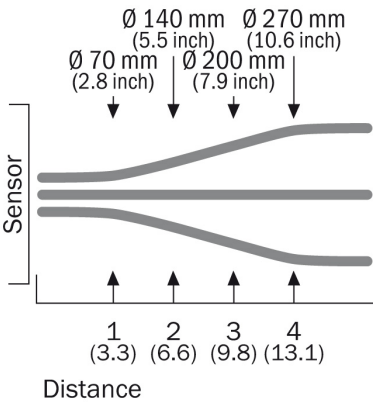
Sensing range diagram



Connection type



Light spot size



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