



Photoelectric sensors V180-2, Photoelectric retro-reflective sensor

VL180-2P42431



Model Name > [VL180-2P42431](#)
Part No. > [6041819](#)



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

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

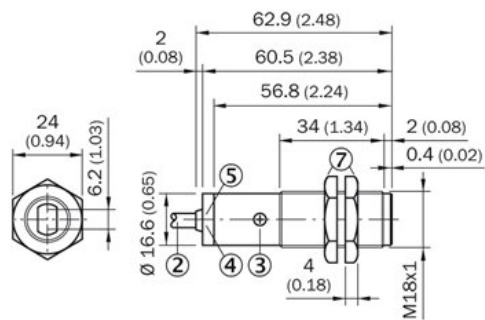
^{1) 2)} PL80A ³⁾ Average service life 100,000 h at Ta = +25 °C

Mechanics/electronics

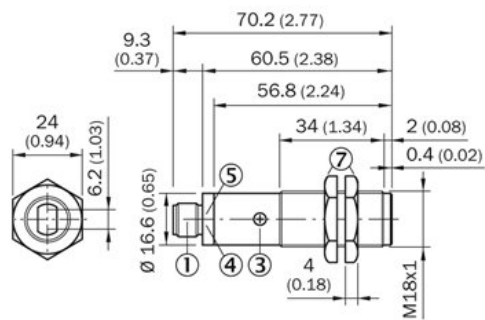
Enclosure rating:	IP 67
Supply voltage:	10 V DC ... 30 V DC ¹⁾
Residual ripple:	$\pm 10\%$ ²⁾
Power consumption:	30 ³⁾
Switching output:	PNP, light/dark-switching, Selectable via L/D control wire, open collector
Output current I _{max} :	$\leq 100\text{ mA}$
Response time:	$\leq 0.5\text{ ms}$ ⁵⁾
Switching frequency:	1,000 Hz ⁶⁾
Connection type:	Connector M12, 4-pin
Protection class:	III
Circuit protection:::	A B D 7) 8) 9)
Weight:	47 g
Housing material:	Nickel-plated brass and PC
Optics material:	PMMA
Ambient operating temperature:	-25 °C ... 55 °C
Ambient storage temperature:	-40 °C ... 70 °C
Polarisation filter:	✓
Items supplied:	Fastening nuts (2 x), Reflector P250
Output state-LED:	-
Signal voltage PNP HIGH/LOW:	Approx. VS - 1.8 V/0 V
Special device:	-
Angle of dispersion:	Ca. 4.5 °

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

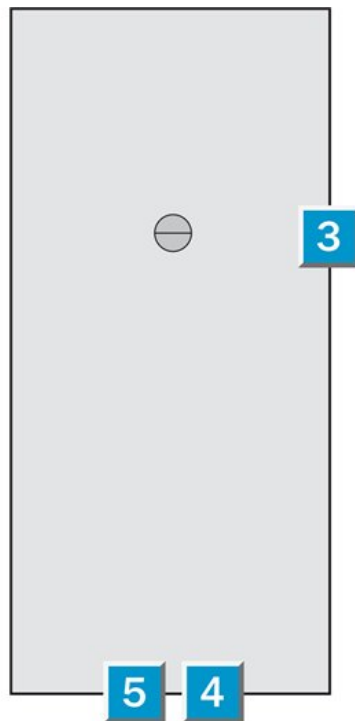


- [1] Plug M12, 4-pin
- [2] Connection cable 2 m
- [3] Sensitivity adjustment 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green: strength indicator
- [7] fastening nuts (2 x); width across 24, metal



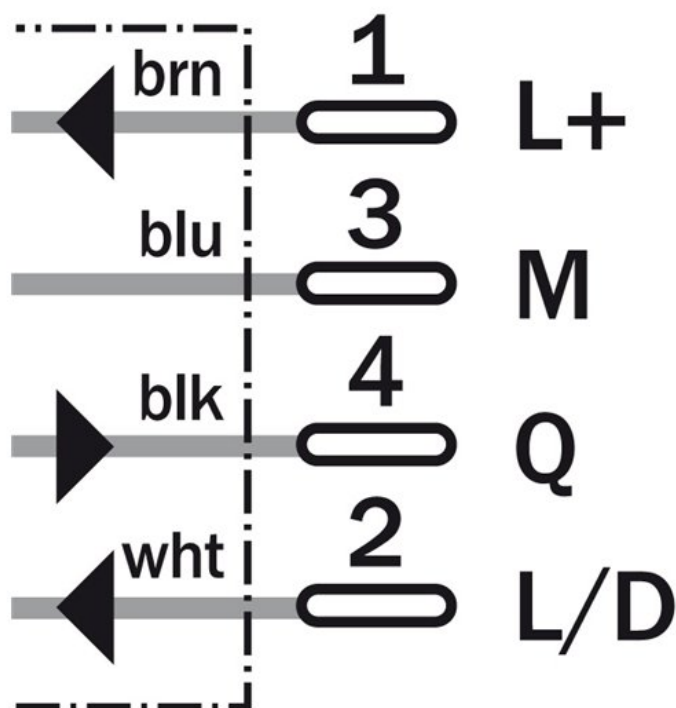
All dimensions in mm (inch)

Einstell-Möglichkeiten

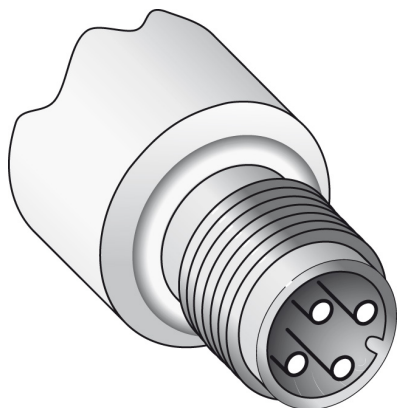


- [3] Sensitivity adjustment 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green

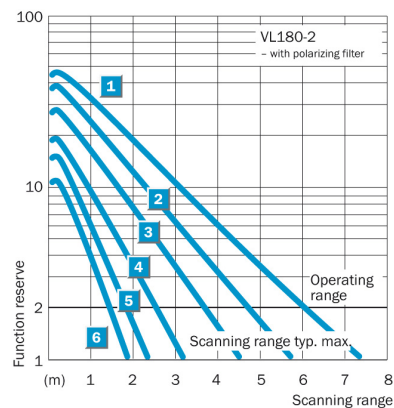
Connection diagram



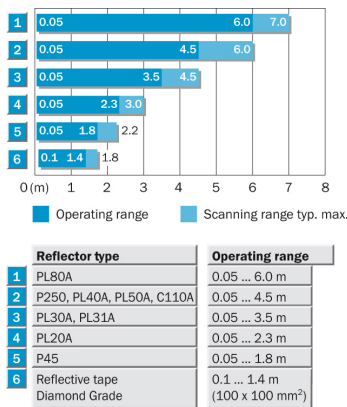
Connection type



Characteristic curve



Sensing range diagram



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