



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

VL180-2P42462



**Model Name** > [VL180-2P42462](#)  
**Part No.** > [6041815](#)



*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°)



**Features**

Sensor/detection principle:	Photoelectric retro-reflective sensor, Standard optics
Housing design (light emission):	Cylindrical, straight
Housing length:	70.2 mm
Thread diameter (housing):	M18 x 1
Optical axis:	axial
Sensing range max.:	0.05 m ... 7 m <sup>1)</sup>
Sensing range:	0.05 m ... 6 m <sup>2)</sup>
Type of light:	Infrared light
Light source:	LED <sup>3)</sup>
Wave length:	920 nm
Angle of dispersion:	Ca. 4.5 °
Light spot size (distance):	Ø 400 mm (6 m)

<sup>1) 2)</sup> PL80A <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

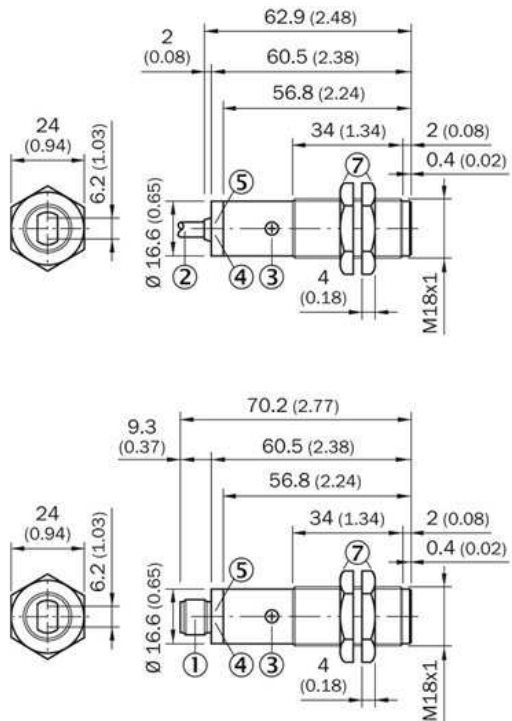
**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Residual ripple:	± 10 % <sup>2)</sup>
Power consumption:	≤ 30 mA <sup>3)</sup>
Output type:	PNP, open collector <sup>4)</sup>
Switching mode:	Light/dark switching <sup>5)</sup>
Switching mode selector:	Selectable via L/D control wire
Output current I <sub>max.</sub> :	≤ 100 mA
Response time:	≤ 0.5 ms <sup>6)</sup>
Switching frequency:	± 1,000 Hz <sup>7)</sup>

Electrical connection:	Connector M12, 4-pin
Circuit protection:::	A, B, D <sup>8) 9) 10)</sup>
Protection class:	III
Weight:	47 g
Polarisation filter:	✓
Special device:	-
Optics material:	PMMA
Enclosure rating:	IP 67
Items supplied:	Fastening nuts (2 x), Reflector P250
Ambient temperature operation:	-25 °C ... +55 °C
Ambient storage temperature:	-40 °C ... +70 °C
UL File No.:	NRKH2.E300503 & NRKH8.E300503
Signal voltage PNP HIGH/LOW:	Approx. VS - 1.8 V/0 V
Housing material:	Nickel-plated brass and PC, Metal

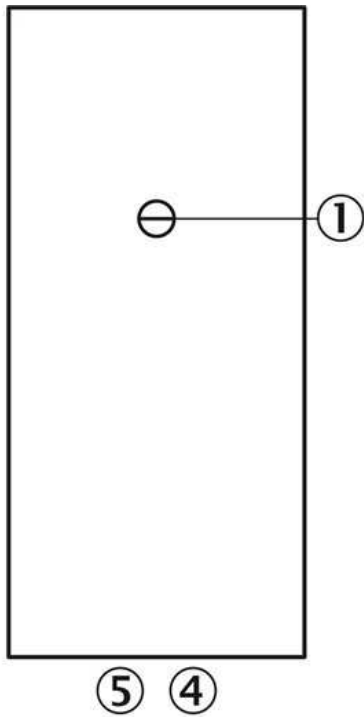
1) Limit values, operation in short-circuit protected network max. 8 A    2) May not exceed or fall short of  $V_S$  tolerances    3) Without load    4) 5) Control wire open: dark switching D.ON    6) Signal transit time with resistive load    7) With light/dark ratio 1:1    8)  $A = V_S$  connections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

## Dimensional drawing



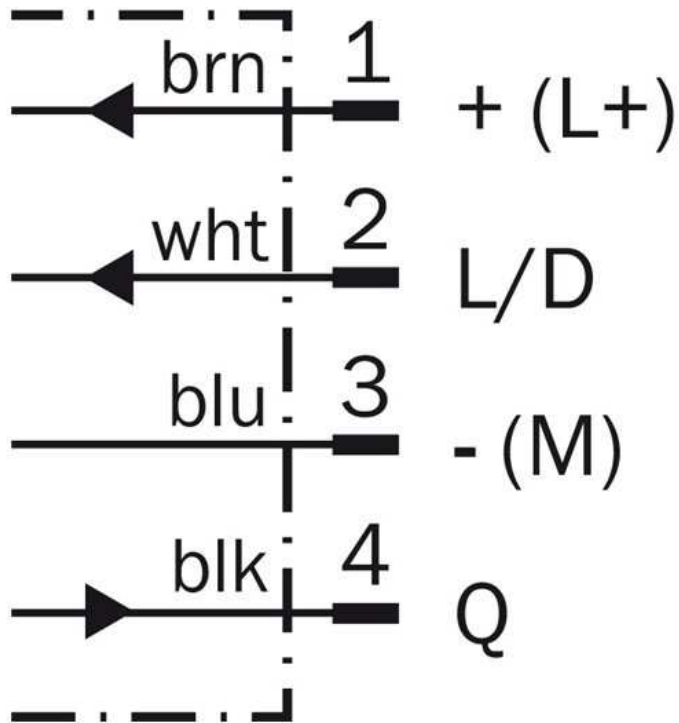
- [1] Connector M12, 4-pin
- [2] Connection cable 2 m
- [3] Sensitivity adjustment 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green: strength indicator
- [7] fastening nuts (2 x); 24 mm hex, metal

## Adjustments possible

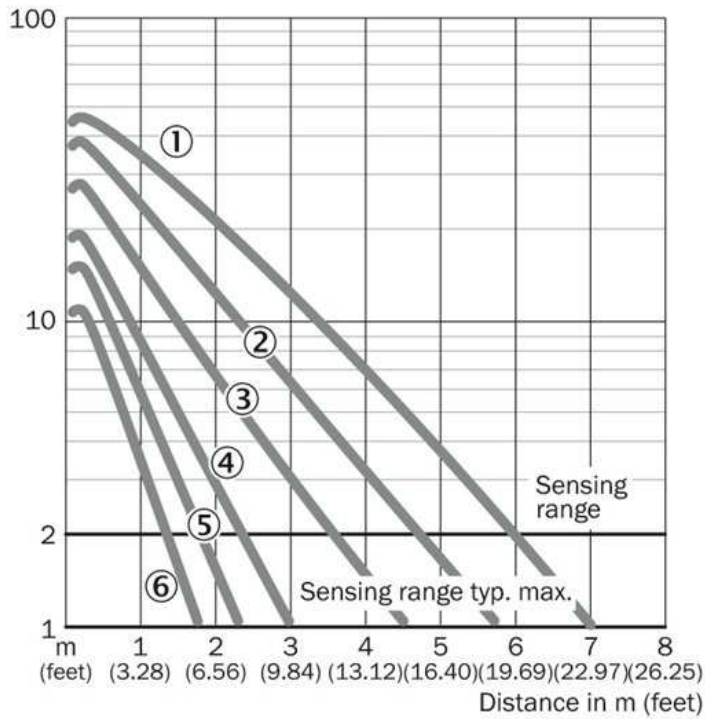


- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

## Connection diagram

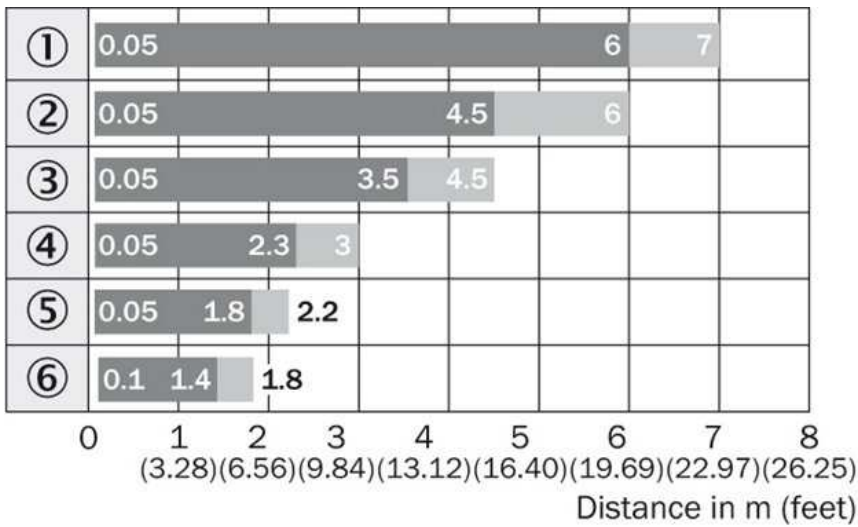


### Characteristic curve



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

### Sensing range diagram



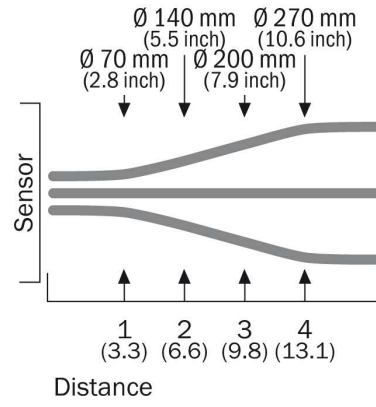
- |1| PL80A
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- |3| PL30A, PL31A
- |4| PL20A
- |5| P45
- |6| Reflective tape Diamond Grade

■ Sensing range      ■ Sensing range max.

### Connection type



### Light spot size



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