



Photoelectric sensors  
V180-2, Photoelectric proximity sensor,  
Background blanking

VTF180-2P42419



**Model Name** > [VTF180-2P42419](#)  
**Part No.** > [6043811](#)



*Illustration may differ*

**At a glance**

- Lowest-cost M18 housing sensor on the market
- Sensing distance up to 140 mm
- Bright power and signal LEDs with 360° visibility
- High switching frequencies up to 1000 Hz
- Available in a metal housing for applications in harsh environments
- Optical axis selectively axial or radial (90°)
- Wide product portfolio solves a broad range of applications

**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



**Features**

Sensor/detection principle:	Photoelectric proximity sensor, Background blanking
Housing design (light emission):	Cylindrical, angled
Housing length:	83.8 mm
Optical axis:	radial
Sensing range max.:	1 mm ... 130 mm <sup>1)</sup>
Sensing range:	1 mm ... 100 mm <sup>2)</sup>
Type of light:	Visible red light
Light source:	LED <sup>3)</sup>
Wave length:	645 nm
Focus:	Focused approx. 7 mm at 60 mm distance
Adjustment:	Potentiometer, 270 °
Light spot size (distance):	Ø 8 mm (100 mm)

<sup>1) 2)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033) <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

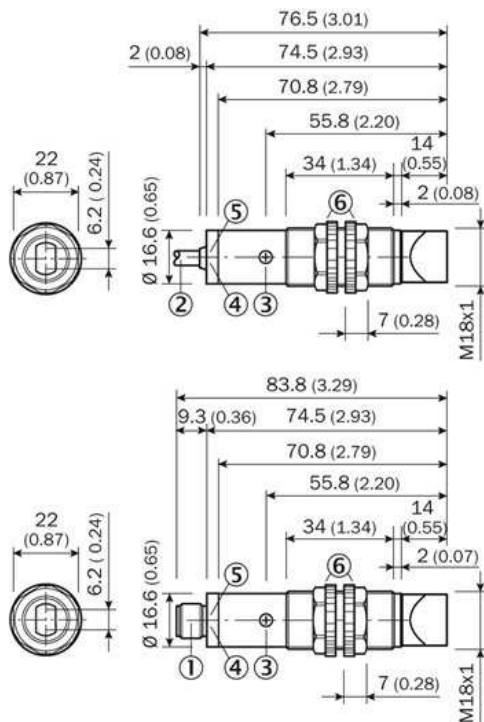
**Mechanics/electronics**

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 <sup>4)</sup>
Switching mode:	Light/dark switching <sup>5)</sup>
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:	18 g
Housing material:	Plastic, PBT/PC
Optics material:	PMMA
Enclosure rating:	IP 67
Special feature:	Focused optics
Ambient temperature operation:	-25 °C ... +55 °C
Ambient storage temperature:	-40 °C ... +70 °C
Signal voltage PNP HIGH/LOW:	Approx. V <sub>S</sub> - 1.8 V/0 V

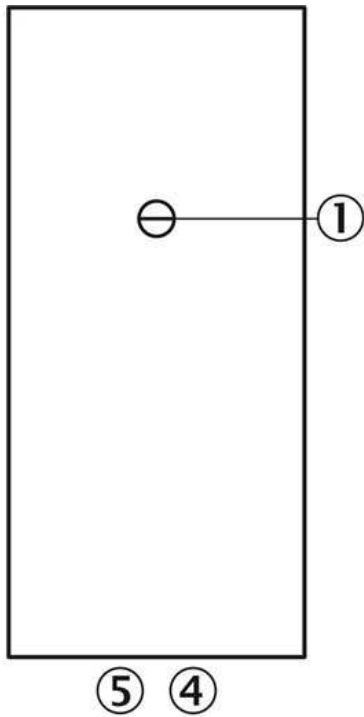
<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A   
<sup>2)</sup> May not exceed or fall short of V<sub>S</sub> tolerances   
<sup>3)</sup> Without load   
<sup>4) 5)</sup> Control wire open: dark-switching D.ON   
<sup>6)</sup> Signal transit time with resistive load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

## Dimensional drawing



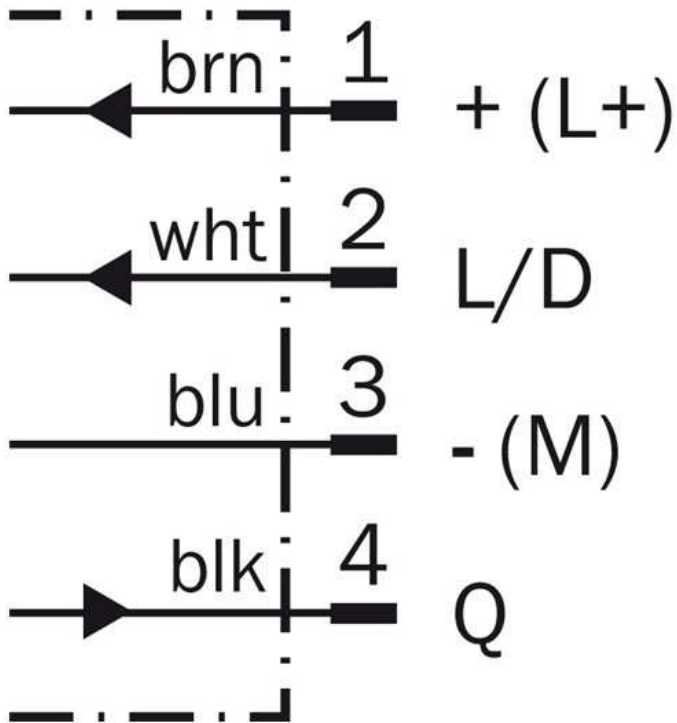
- [1] Connector M12
- [2] Connection cable 2 m
- [3] Sensitivity control; Potentiometer 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green, stability indicator:  
LED lights continuously = light reception < 0.9 / > 1.1; LED off = light reception > 0.9 / < 1.1
- [6] fastening nuts (2 x); width across 22, PC

Adjustments possible

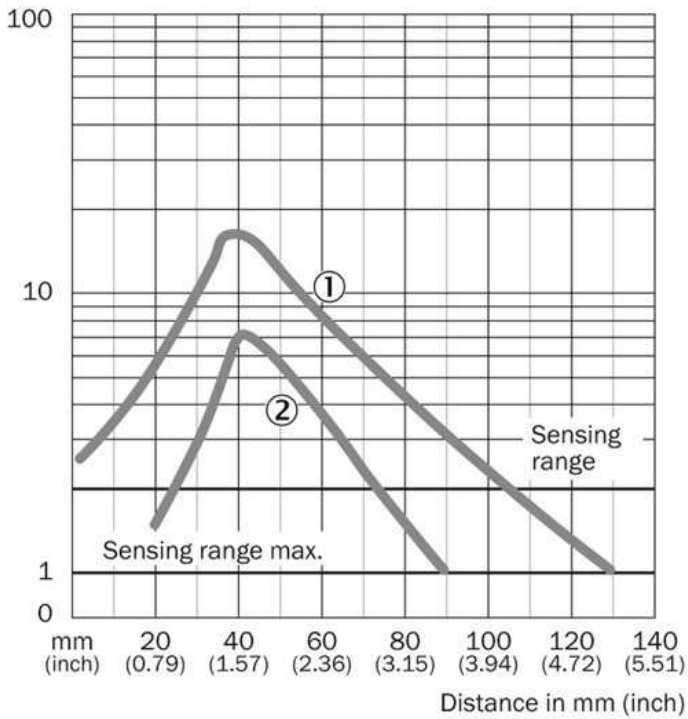


- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

Connection diagram



### Characteristic curve

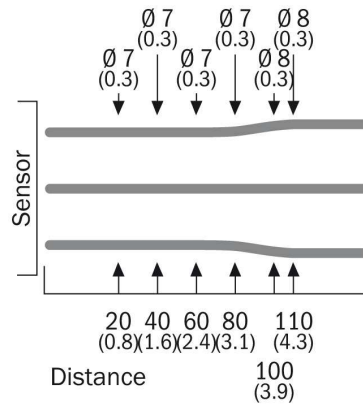


- |1| Sensing range on white, 90 % remission
- |2| Sensing range on grey, 18 % remission

### Connection type



### Light spot size



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