



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

VTB180-2P42412



**Model Name** > [VTB180-2P42412](#)  
**Part No.** > [6043870](#)



*Illustration may differ*

**At a glance**

- Detecting presence and positioning in:
  - - Storage/conveying technology
  - - Material handling technology
  - - Packaging industry
  - - Transportation industry
  - - Automotive industry
  - - Wood industry
- Applications with limited space behind the sensor (radial types)

**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 installation and maintenance costs
- The flat and smooth lens reduces the collection of dust and dirt, ensuring safe operation with less maintenance and fewer costs
- Sensors with background suppression for reliable detection of challenging objects



**Features**

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Housing design (light emission):	Cylindrical, straight
Thread diameter (housing):	M18 x 1
Optical axis:	axial
Sensing range max.:	10 mm ... 350 mm <sup>1)</sup>
Sensing range:	30 mm ... 200 mm <sup>2)</sup>
Type of light:	Visible red light
Light source:	LED <sup>3)</sup>
Wave length:	632 nm
Angle of dispersion:	Ca. 2.8 °
Adjustment:	Potentiometer, 4 turns
Light spot size (distance):	Ø 15 mm (300 mm)

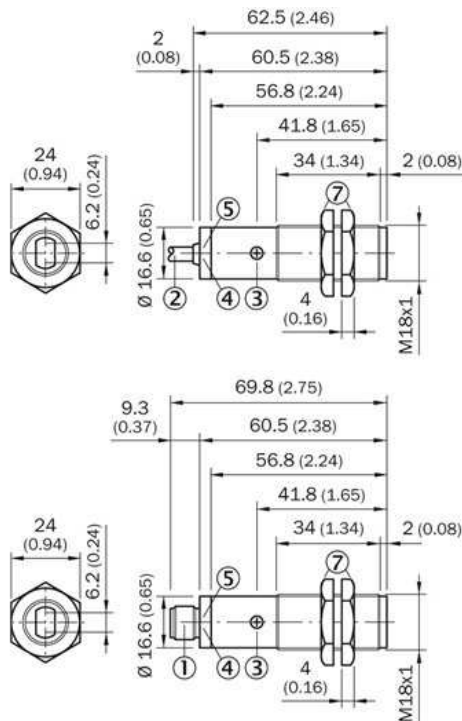
<sup>1) 2)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033) <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Residual ripple:	± 10 % <sup>2)</sup>
Power consumption:	≤ 35 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:	≤ 1 ms <sup>6)</sup>
Switching frequency:	≤ 500 Hz <sup>7)</sup>
Electrical connection:	Connector M12, 4-pin
Circuit protection:::	A, B, D <sup>8)</sup> <sup>9)</sup> <sup>10)</sup>
Protection class:	III
Weight:	47 g
Housing material:	Nickel-plated brass and PC, Metal
Optics material:	PMMA
Enclosure rating:	IP 67
Items supplied:	Fastening nuts (2 x)
Ambient temperature operation:	-25 °C ... +55 °C
Ambient storage temperature:	-40 °C ... +70 °C
Signal voltage PNP HIGH/LOW:	Approx. VS - 1.8 V/0 V

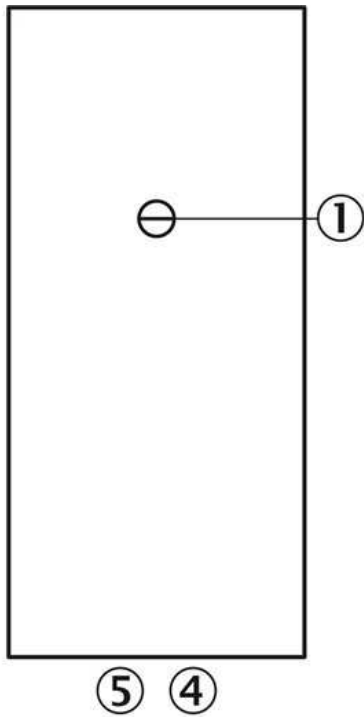
- <sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A    <sup>2)</sup> May not exceed or fall short of V<sub>S</sub> tolerances    <sup>3)</sup> Without load    <sup>4) 5)</sup> Control wire open: dark-switching D.ON    <sup>6)</sup> Signal transit time with resistive load    <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



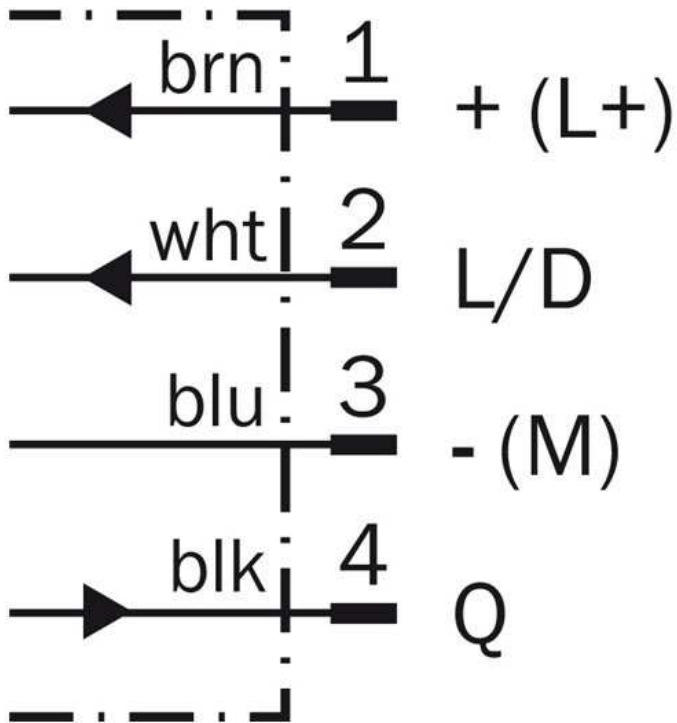
- [1] Connector M12, 4-pin
- [2] Connection cable 2 m
- [3] Sensitivity adjustment 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green: strength indicator
- [7] fastening nuts (2 x); 24 mm hex, metal

## Adjustments possible

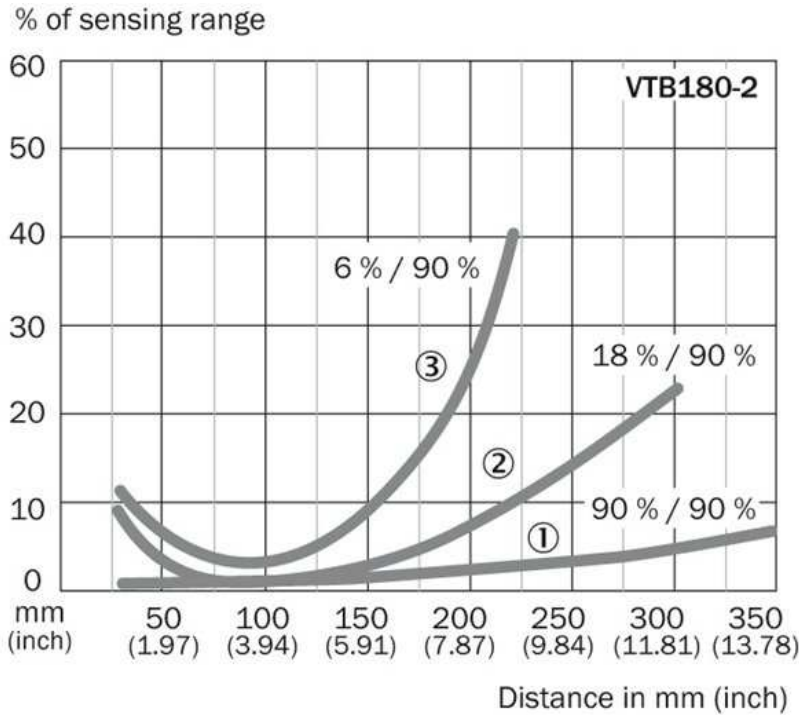


- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

## Connection diagram



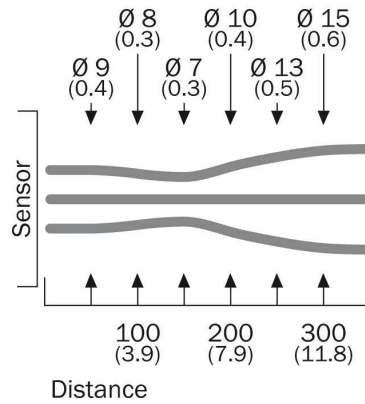
**Characteristic curve**



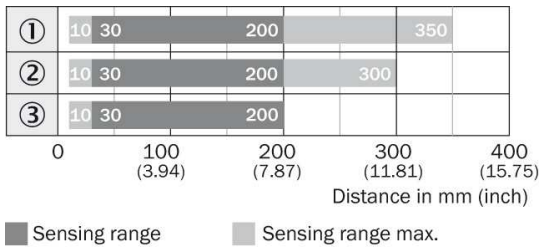
**Connection type**



**Light spot size**



**Sensing range diagram**



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