



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

VTE180-2P42449



**Model Name** > VTE180-2P42449  
**Part No.** > 6043819



Illustration may differ

#### At a glance

- Lowest-cost M18 housing sensor on the market
- Long sensing distances: 100 mm, 400 mm, 800 mm (max. 1,100 mm)
- Bright power and signal LEDs with 360° visibility
- Wide product portfolio solves a broad range of applications
- 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 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



#### 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 ... 450 mm <sup>1)</sup>                       |
| Sensing range:                   | 1 mm ... 400 mm <sup>2)</sup>                       |
| Type of light:                   | Visible red light                                   |
| Light source:                    | LED <sup>3)</sup>                                   |
| Wave length:                     | 645 nm                                              |
| Angle of dispersion:             | Ca. 1.5 °                                           |
| Adjustment:                      | Potentiometer, 270 °                                |
| Light spot size (distance):      | Ø 20 mm (400 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

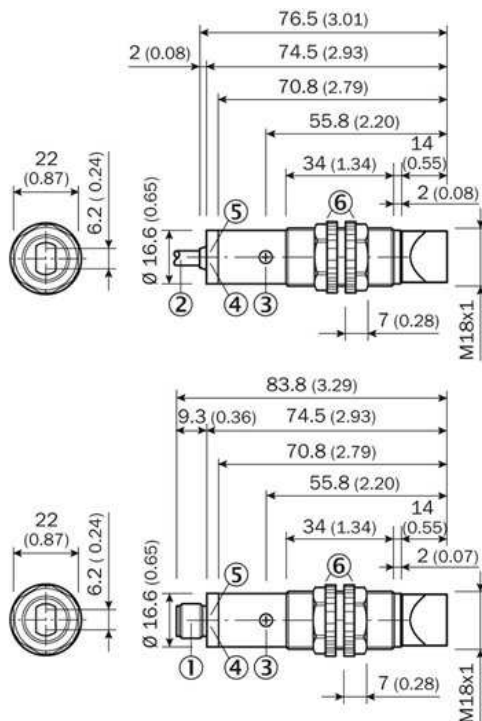
#### Mechanics/electronics

|                    |                                   |
|--------------------|-----------------------------------|
| 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                              |
| 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             |

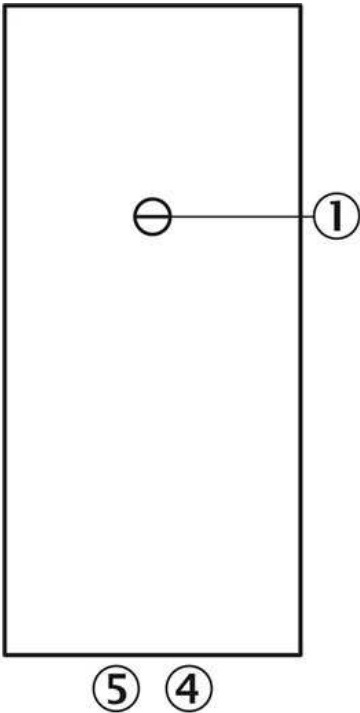
<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A    <sup>2)</sup> May not exceed or fall short of V<sub>S</sub> tolerances    <sup>3)</sup> Without load    <sup>4) 5)</sup> Control wire open: dark-switching D.ON    <sup>6)</sup> Signal transit time with resistive load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



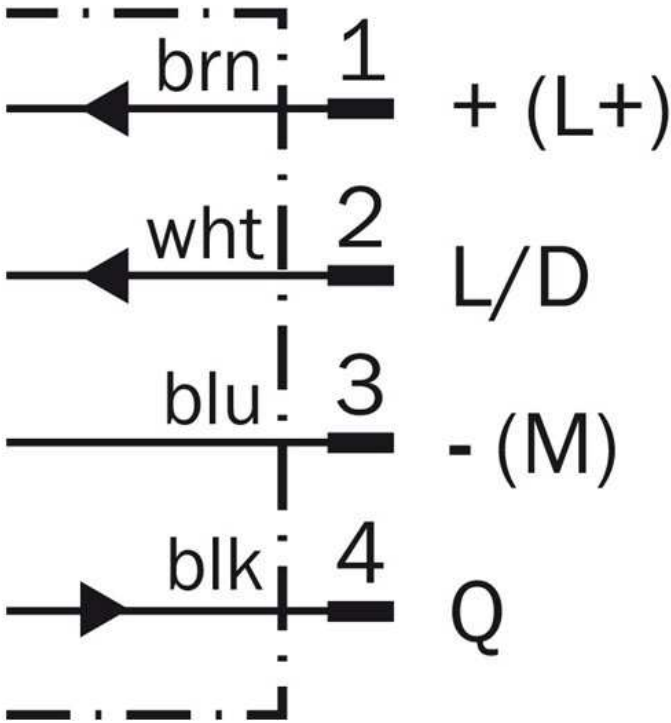
- |1| Connector M12
- |2| Connection cable 2 m
- |3| Sensitivity control; Potentiometer 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green, stability indicator:  
LED lights continuously = light reception < 0.9 / > 1.1; LED off = light reception > 0.9 / < 1.1
- |6| fastening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

Adjustments possible

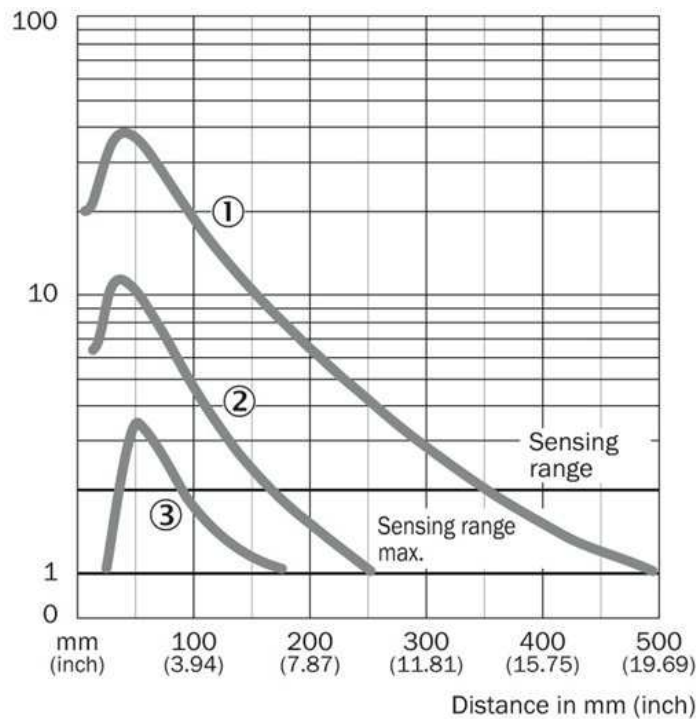


- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

Connection diagram



Characteristic curve

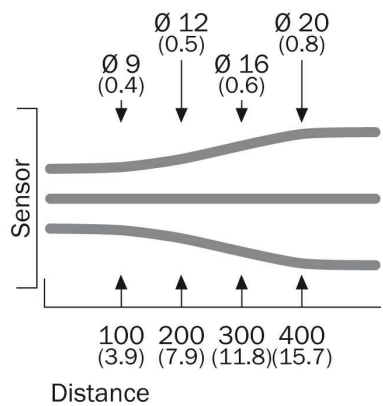


- |1| Sensing range on white, 90 % remission
- |2| Sensing range on grey, 18 % remission
- |3| Sensing range on black, 6 % remission

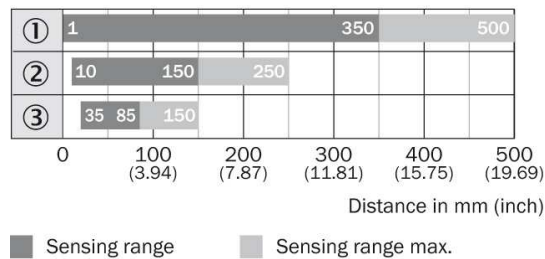
Connection type



Light spot size



Sensing range diagram



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