



## Photoelectric sensors V180-2, Through-beam photoelectric sensor

VSE180-2P32439



Type > [VSE180-2P32439](#)  
Part No. > [6044037](#)



*Illustration may differ*

#### At a glance

- Lowest-cost M18 housing sensor on the market
- Sensing distance up to 28 m
- 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:      | Through-beam photoelectric sensor  |
| Housing design (light emission): | Cylindrical, angled                |
| Housing length:                  | 83.8 mm                            |
| Optical axis:                    | radial                             |
| Sensing range max.:              | 0 m ... 25 m                       |
| Sensing range:                   | 0 m ... 19 m                       |
| Type of light:                   | Visible red light                  |
| Light source:                    | LED <sup>1)</sup>                  |
| Wave length:                     | 645 nm                             |
| Angle of dispersion:             | Ca. 5 °                            |
| Adjustment:                      | Potentiometer, 270 ° <sup>2)</sup> |
| Light spot size (distance):      | Ø 1,100 mm (20 m)                  |

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

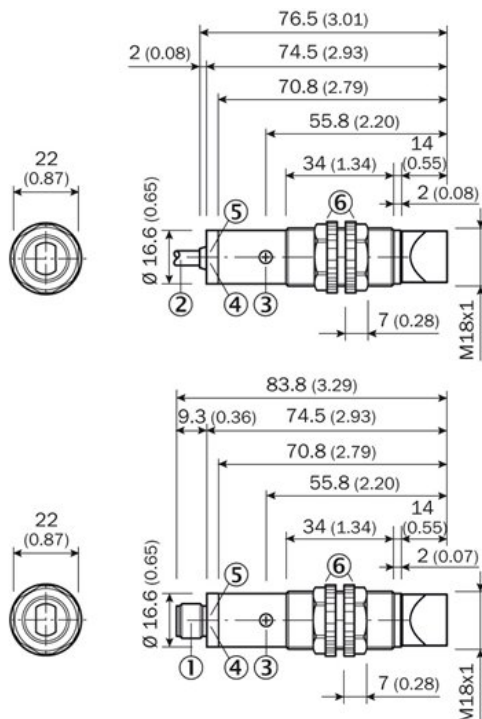
#### Mechanics/electronics

|                            |                                   |
|----------------------------|-----------------------------------|
| Supply voltage:            | 10 V DC ... 30 V DC <sup>1)</sup> |
| Ripple:                    | ± 10 % <sup>2)</sup>              |
| Power consumption, sender: | ≤ 20 mA <sup>3)</sup>             |

|                                   |                                     |
|-----------------------------------|-------------------------------------|
| Power consumption, receiver:      | $\leq 15 \text{ mA}$ <sup>4)</sup>  |
| Output type:                      | PNP                                 |
| Switching mode:                   | Dark switching                      |
| Output current I <sub>max</sub> : | $\leq 100 \text{ mA}$               |
| Response time:                    | $\leq 0.5 \text{ ms}$ <sup>5)</sup> |
| Switching frequency:              | 1,000 Hz <sup>6)</sup>              |
| Connection type:                  | Connector M12, 3-pin                |
| Circuit protection:::             | A, B, D <sup>7) 8) 9)</sup>         |
| Protection class:                 | III                                 |
| Weight:                           | 36 g                                |
| Housing material:                 | Plastic, PBT/PC                     |
| Optics material:                  | PMMA                                |
| Enclosure rating:                 | IP 67                               |
| Ambient operating temperature:    | -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) 4)</sup> Without load <sup>5)</sup> Signal transit time with resistive load <sup>6)</sup> With light/dark ratio 1:1 <sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected <sup>8)</sup> B = inputs and output reverse-polarity protected <sup>9)</sup> D = outputs overcurrent and short-circuit protected

## Dimensional drawing



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

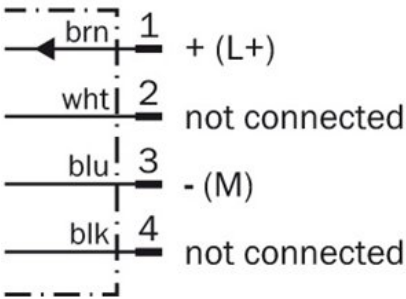
Adjustments possible



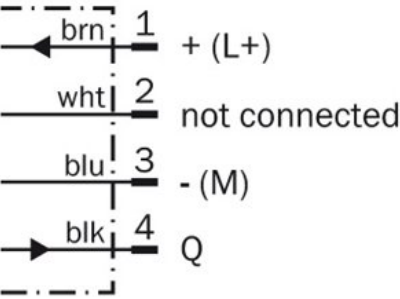
- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

Connection diagram

①

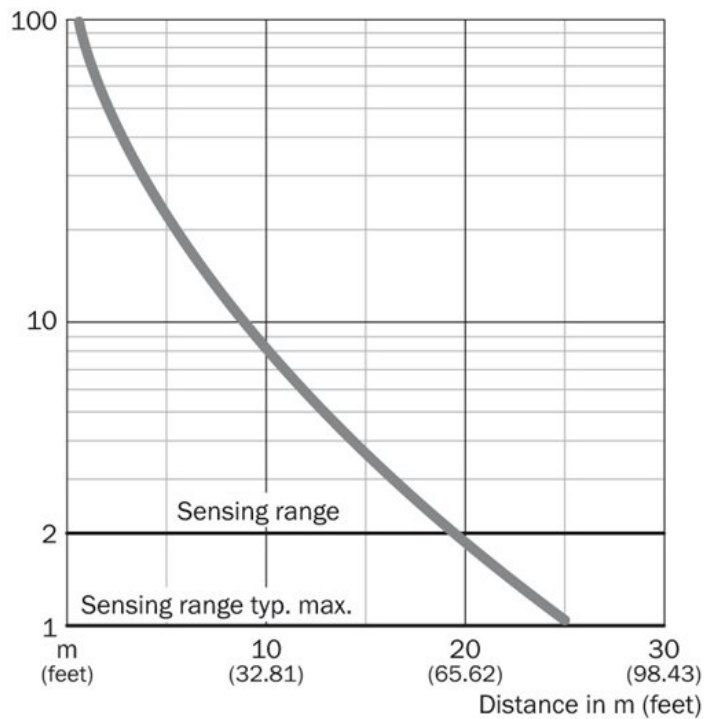


②

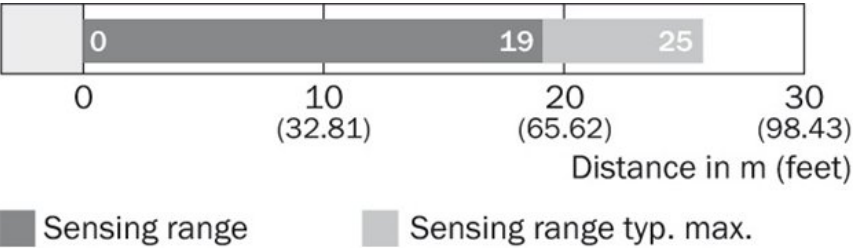


- |1| sender
- |2| receiver

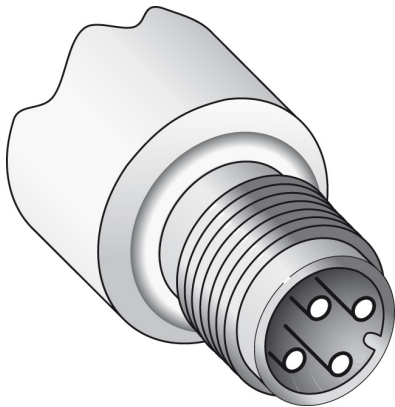
Characteristic curve



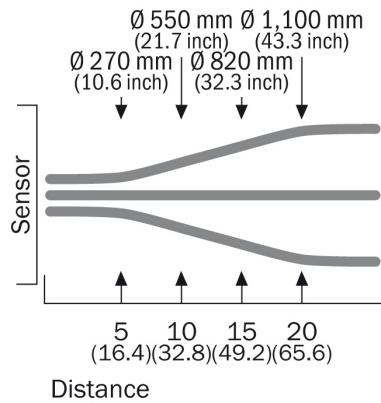
Sensing range diagram



Connection type



Light spot size



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