



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

VSE180-2N42439



**Model Name** > [VSE180-2N42439](#)  
**Part No.** > [6043852](#)



*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

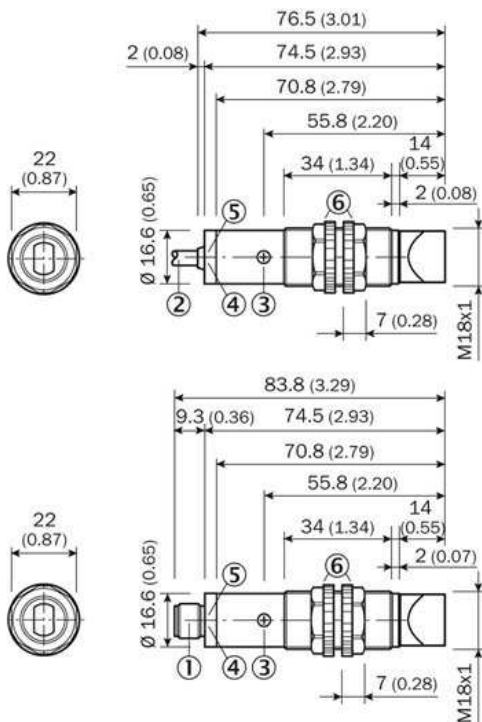
**Mechanics/electronics**

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

|                                    |   |
|------------------------------------|---|
| Power consumption, receiver:       | ≤ 15 mA <sup>4)</sup>                               |
| Output type:                       | NPN, open collector <sup>5)</sup>                   |
| Switching mode:                    | Light/dark switching <sup>6)</sup>                  |
| Output current I <sub>max.</sub> : | ≤ 100 mA  |
| Response time:                     | ≤ 0.5 ms <sup>7)</sup>                              |
| Switching frequency:               | 1,000 Hz <sup>8)</sup>                              |
| Electrical connection:             | Connector M12, 4-pin                                |
| Circuit protection:::              | A, B, D <sup>9)</sup> <sup>10)</sup> <sup>11)</sup> |
| Protection class:                  | III   |
| Weight:                            | 36 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 NPN HIGH/LOW:       | Approx. V <sub>S</sub> / < 1.8 V                    |

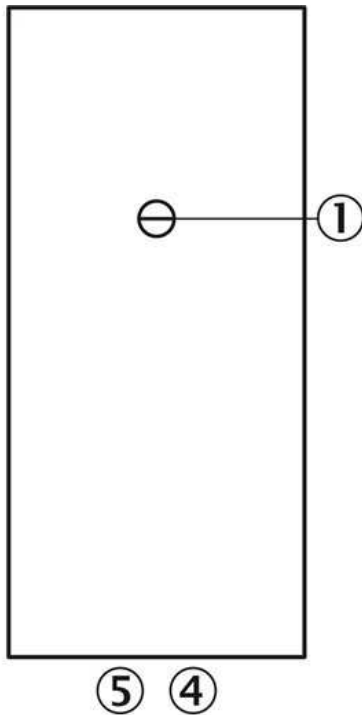
<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A    <sup>2)</sup> May not exceed or fall short of V<sub>S</sub> tolerances    <sup>3) 4)</sup> Without load    <sup>5) 6)</sup> Control wire open: light-switching L.ON    <sup>7)</sup> Signal transit time with resistive load    <sup>8)</sup> With light/dark ratio 1:1    <sup>9)</sup> A = V<sub>S</sub> connections reverse-polarity protected    <sup>10)</sup> B = inputs and output reverse-polarity protected    <sup>11)</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

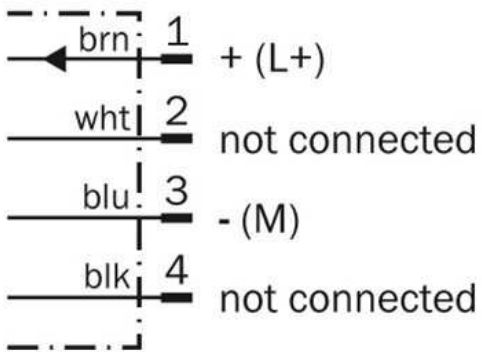
Adjustments possible



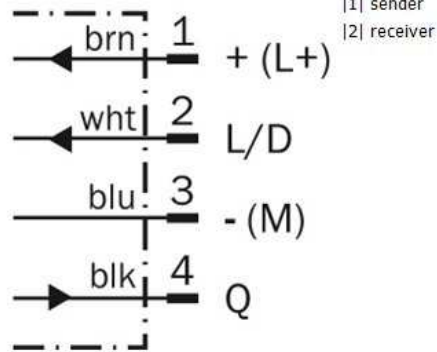
- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

Connection diagram

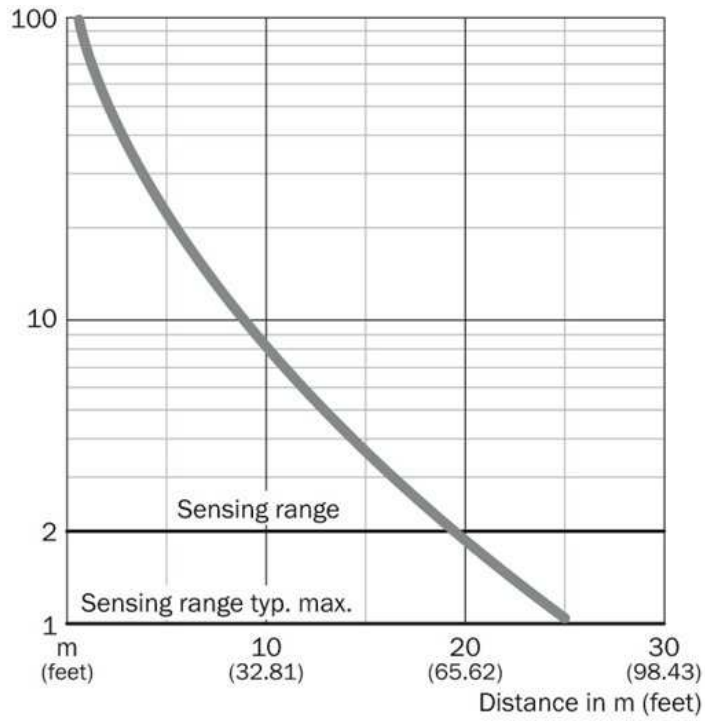
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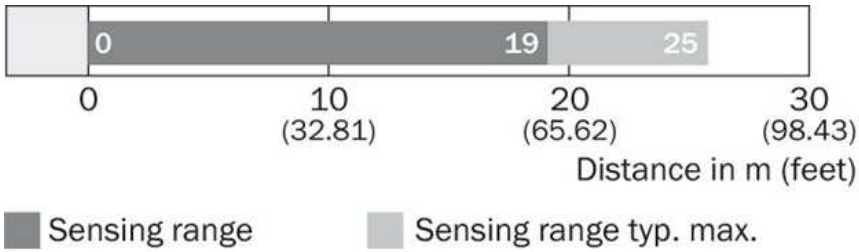
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### Characteristic curve



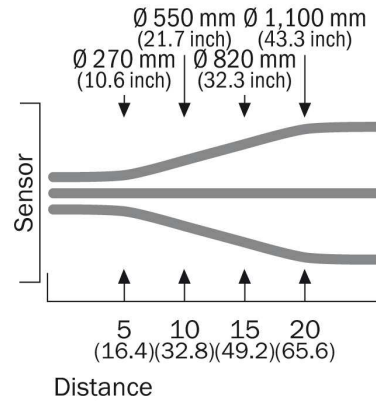
### Sensing range diagram



### Connection type



### Light spot size



**Australia**

Phone +61 3 9457 0600  
1800 33 48 02 – tollfree  
E-Mail sales@sick.com.au

**Belgium/Luxembourg**

Phone +32 (0)2 466 55 66  
E-Mail info@sick.be

**Brasil**

Phone +55 11 3215-4900  
E-Mail marketing@sick.com.br

**Canada**

Phone +1 905 771 14 44  
E-Mail information@sick.com

**Česká republika**

Phone +420 2 57 91 18 50  
E-Mail sick@sick.cz

**China**

Phone +86 4000 121 000  
E-Mail info.china@sick.net.cn  
Phone +852-2153 6300  
E-Mail ghk@sick.com.hk

**Danmark**

Phone +45 45 82 64 00  
E-Mail sick@sick.dk

**Deutschland**

Phone +49 211 5301-301  
E-Mail info@sick.de

**España**

Phone +34 93 480 31 00  
E-Mail info@sick.es

**France**

Phone +33 1 64 62 35 00  
E-Mail info@sick.fr

**Great Britain**

Phone +44 (0)1727 831121  
E-Mail info@sick.co.uk

**India**

Phone +91-22-4033 8333  
E-Mail info@sick-india.com

**Israel**

Phone +972-4-6881000  
E-Mail info@sick-sensors.com

**Italia**

Phone +39 02 27 43 41  
E-Mail info@sick.it

**Japan**

Phone +81 (0)3 5309 2112  
E-Mail support@sick.jp

**Magyarország**

Phone +36 1 371 2680  
E-Mail office@sick.hu

**Nederland**

Phone +31 (0)30 229 25 44  
E-Mail info@sick.nl

**Norge**

Phone +47 67 81 50 00  
E-Mail sick@sick.no

**Österreich**

Phone +43 (0)22 36 62 28 8-0  
E-Mail office@sick.at

**Polska**

Phone +48 22 837 40 50  
E-Mail info@sick.pl

**România**

Phone +40 356 171 120  
E-Mail office@sick.ro

**Russia**

Phone +7-495-775-05-30  
E-Mail info@sick.ru

**Schweiz**

Phone +41 41 619 29 39  
E-Mail contact@sick.ch

**Singapore**

Phone +65 6744 3732  
E-Mail sales.gsg@sick.com

**Slovenija**

Phone +386 (0)1-47 69 990  
E-Mail office@sick.si

**South Africa**

Phone +27 11 472 3733  
E-Mail info@sickautomation.co.za

**South Korea**

Phone +82 2 786 6321/4  
E-Mail info@sickkorea.net

**Suomi**

Phone +358-9-25 15 800  
E-Mail sick@sick.fi

**Sverige**

Phone +46 10 110 10 00  
E-Mail info@sick.se

**Taiwan**

Phone +886 2 2375-6288  
E-Mail sales@sick.com.tw

**Türkiye**

Phone +90 (216) 528 50 00  
E-Mail info@sick.com.tr

**United Arab Emirates**

Phone +971 (0) 4 88 65 878  
E-Mail info@sick.ae

**USA/México**

Phone +1(952) 941-6780  
1 (800) 325-7425 – tollfree  
E-Mail info@sickusa.com

More representatives and agencies  
at [www.sick.com](http://www.sick.com)