



Photoelectric sensors  
V180-2, Through-beam photoelectric sensor

VSE180-2P41139



**Model Name** > VSE180-2P41139  
**Part No.** > 6043853



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:	76.5 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

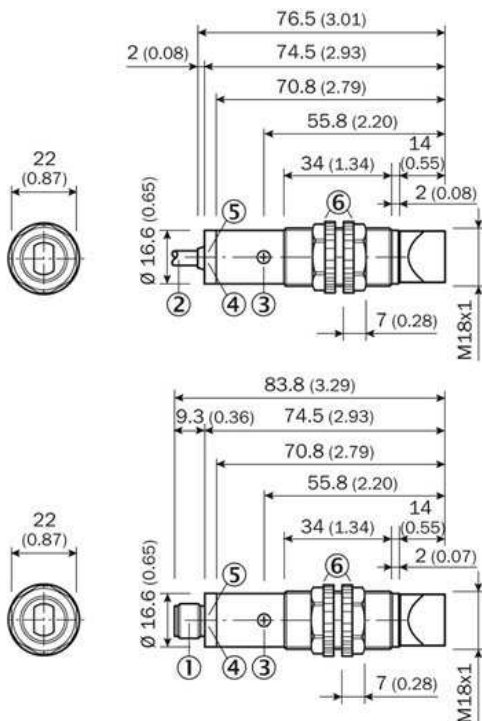
**Mechanics/electronics**

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:	PNP, 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:	Cable, 4-wire, 2 m <sup>9)</sup>
Cable material:	PVC
Conductor cross-section:	0.18 mm <sup>2</sup>
Cable diameter:	Ø 3.8 mm
Circuit protection:::	A, B, D <sup>10)</sup> <sup>11)</sup> <sup>12)</sup>
Protection class:	III
Weight:	124 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

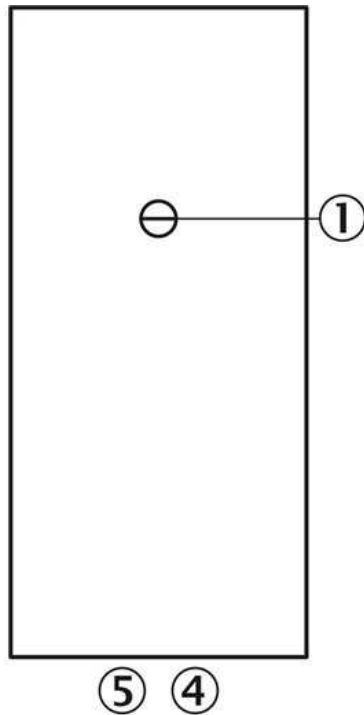
<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of V<sub>S</sub> tolerances <sup>3) 4)</sup> Without load <sup>5) 6)</sup> Control wire open: dark-switching D.ON <sup>7)</sup> Signal transit time with resistive load <sup>8)</sup> With light/dark ratio 1:1 <sup>9)</sup> Do not bend below 0 °C <sup>10)</sup> A = V<sub>S</sub> connections reverse-polarity protected <sup>11)</sup> B = inputs and output reverse-polarity protected <sup>12)</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

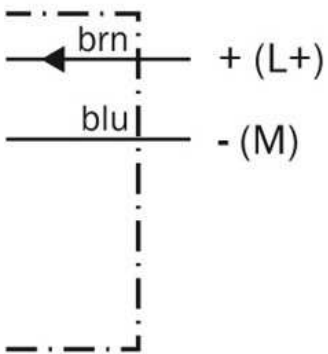
## Adjustments possible



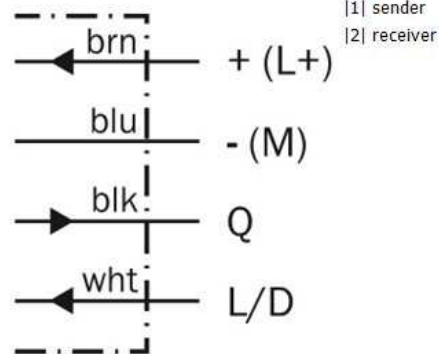
- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

## Connection diagram

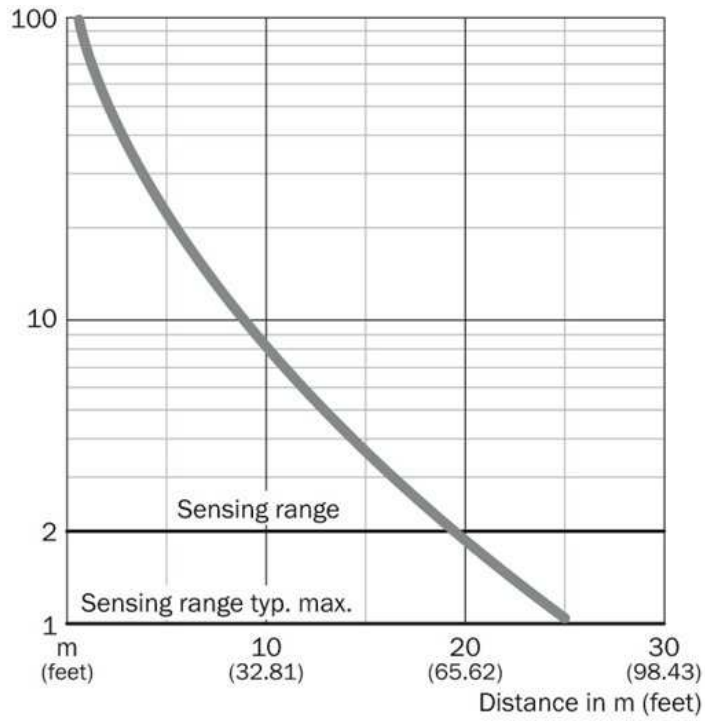
①



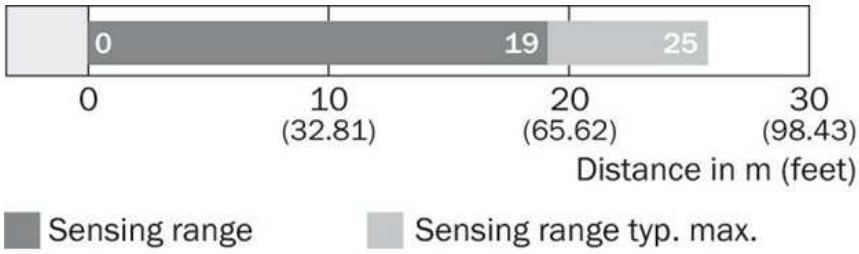
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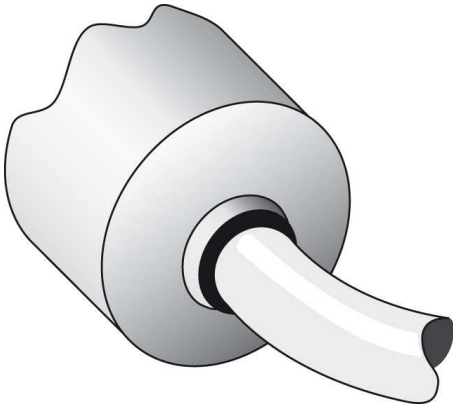
### Characteristic curve



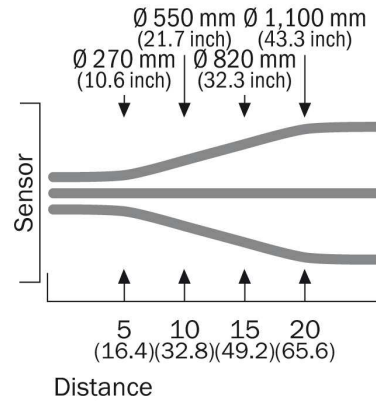
### Sensing range diagram



### Connection type



### Light spot size



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