



Photoelectric sensors
V180-2, Through-beam photoelectric sensor

VSE180-2P41139



Type > [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 ¹⁾
Wave length:	645 nm
Angle of dispersion:	Ca. 5 °
Adjustment:	Potentiometer, 270 ° ²⁾
Light spot size (distance):	Ø 1,100 mm (20 m)

¹⁾ Average service life of 100,000 h at T_A = +25 °C ²⁾ Receiver

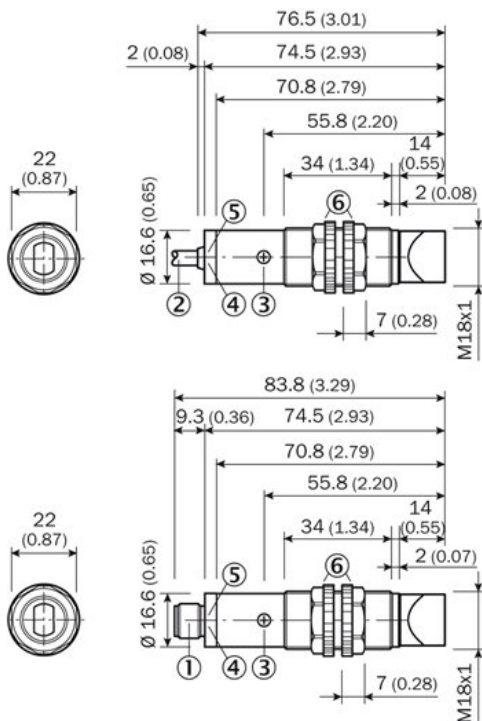
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	± 10 % ²⁾
Power consumption, sender:	≤ 20 mA ³⁾

Power consumption, receiver:	≤ 15 mA ⁴⁾
Output type:	PNP, open collector ⁵⁾
Switching mode:	Light/dark switching ⁶⁾
Output current I _{max} ·:	≤ 100 mA
Response time:	≤ 0.5 ms ⁷⁾
Switching frequency:	1,000 Hz ⁸⁾
Connection type:	Cable, 4-wire, 2 m ⁹⁾
Cable material:	PVC
Conductor cross-section:	0.18 mm ²
Cable diameter:	Ø 3.8 mm
Circuit protection:::	A, B, D ¹⁰⁾ ¹¹⁾ ¹²⁾
Protection class:	III
Weight:	124 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 _S - 1.8 V / 0 V

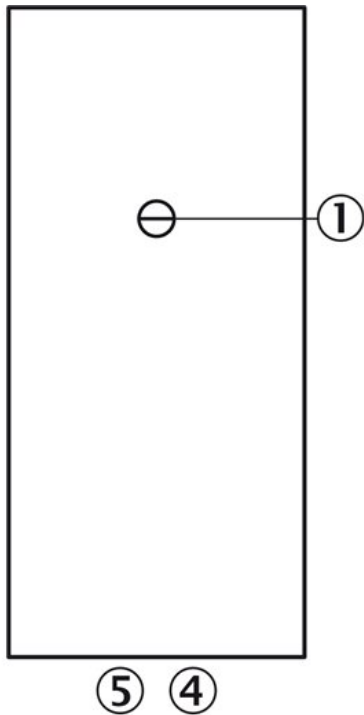
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ^{3) 4)} Without load ^{5) 6)} Control wire open: dark-switching D.ON ⁷⁾ Signal transit time with resistive load ⁸⁾ With light/dark ratio 1:1 ⁹⁾ Do not bend below 0 °C ¹⁰⁾ A = V_S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

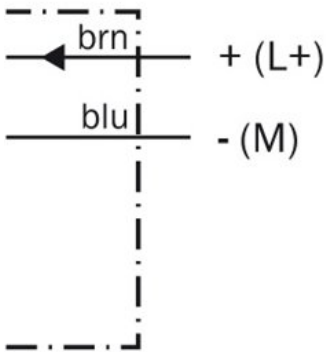
Adjustments possible



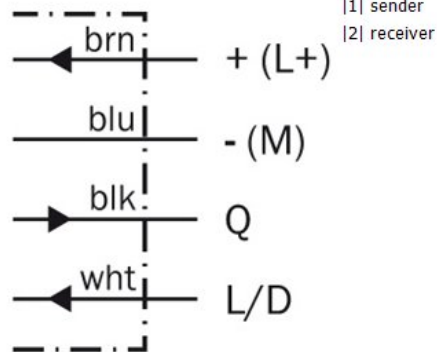
- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

Connection diagram

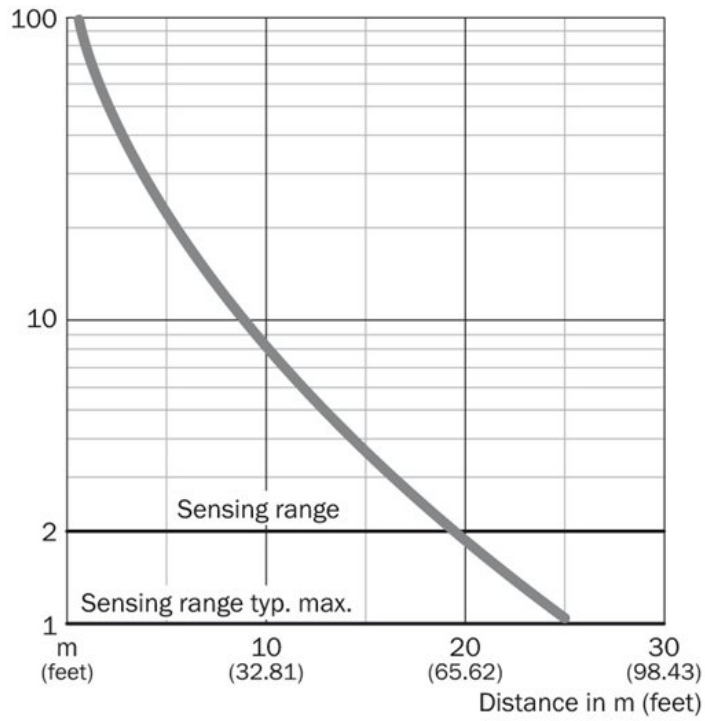
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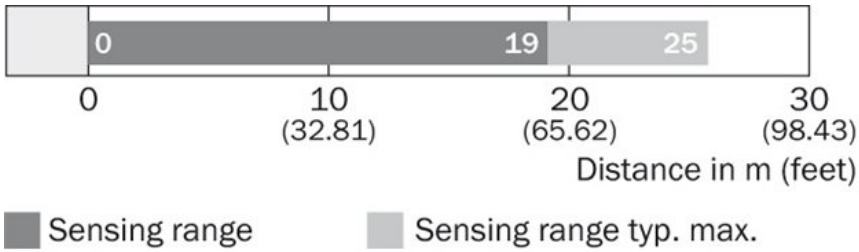
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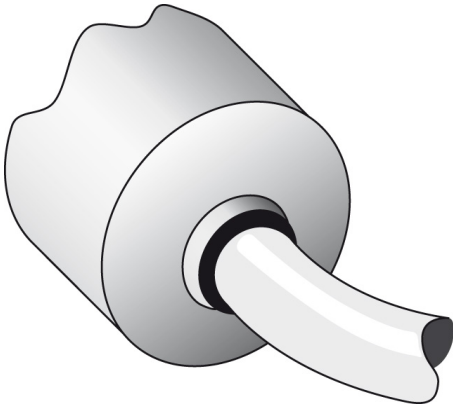
Characteristic curve



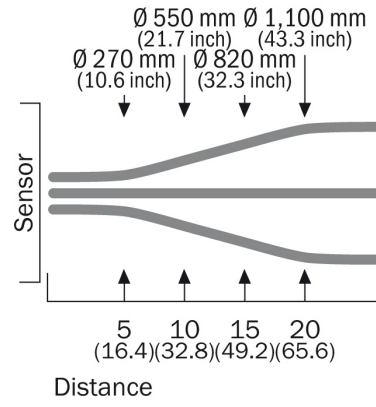
Sensing range diagram



Connection type



Light spot size



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