



DATA SHEET

VSE180-2P42434

V180
Photoelectric sensors

SICK

Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

VSE180-2P42434

ORDERING INFORMATION

Type	part no.
VSE180-2P42434	6043850

Further device versions and accessories at www.sick.com/V180



DETAILED TECHNICAL DATA

FEATURES

Functional principle	Through-beam photoelectric sensor
Dimensions (W x H x D)	18 mm x 18 mm x 83.8 mm
Housing design (light emission)	Cylindrical
Housing length	83.8 mm
Optical axis	Radial
Sensing range max.	0 m ... 25 m
Sensing range	0 m ... 19 m
Focus	Approx. 5°
Type of light	Visible red light
Light source	LED ¹⁾
Light spot size (distance)	Ø 1,100 mm (20 m)
Angle of dispersion	Approx. 5°
Wave length	645 nm
Adjustment	Potentiometer, 270° (Sensitivity) ²⁾

¹⁾ Average service life: 100,000 h at T_U = +25 °C.

²⁾ Receiver.

MECHANICS/ELECTRONICS

Supply voltage U_s	10 V DC ... 30 V DC ¹⁾
Ripple	$\pm 10\%$ ²⁾
Power consumption, sender	$\leq 20\text{ mA}$ ³⁾
Power consumption, receiver	$\leq 15\text{ mA}$ ³⁾
Switching output	PNP ⁴⁾
Switching mode	Light/dark switching ⁴⁾
Signal voltage PNP HIGH/LOW	Approx. $V_s - 1.8\text{ V} / 0\text{ V}$
Output current I_{max}	$\leq 100\text{ mA}$
Response time	$\leq 0.5\text{ ms}$ ⁵⁾
Switching frequency	1,000 Hz ⁶⁾
Connection type	Male connector M12, 4-pin
Circuit protection	A ⁷⁾ B ⁸⁾ D ⁹⁾
Protection class	III
Weight	94 g
Housing material	Metal, Nickel-plated brass and PC
Optics material	Plastic, PMMA
Enclosure rating	IP67
Ambient operating temperature	$-25\text{ }^{\circ}\text{C} \dots +55\text{ }^{\circ}\text{C}$
Ambient temperature, storage	$-40\text{ }^{\circ}\text{C} \dots +70\text{ }^{\circ}\text{C}$

¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.

²⁾ May not fall below or exceed U_s tolerances.

³⁾ Without load.

⁴⁾ Control wire open: dark switching D.ON.

⁵⁾ Signal transit time with resistive load.

⁶⁾ With light/dark ratio 1:1.

⁷⁾ A = V_s connections reverse-polarity protected.

⁸⁾ B = inputs and output reverse-polarity protected.

⁹⁾ D = outputs overcurrent and short-circuit protected.

SAFETY-RELATED PARAMETERS

MTTF _D	1,296 years
DC _{avg}	0 %

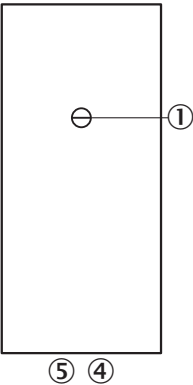
CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓

Photobiological safety (DIN EN 62471) certificate

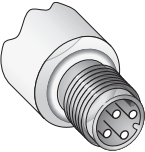
✓

ADJUSTMENTS

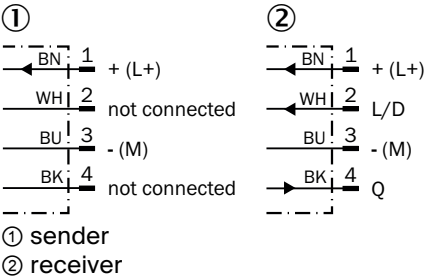


- ③ sensitivity control 270°
- ④ LED indicator orange: switching output active
- ⑤ LED indicator green

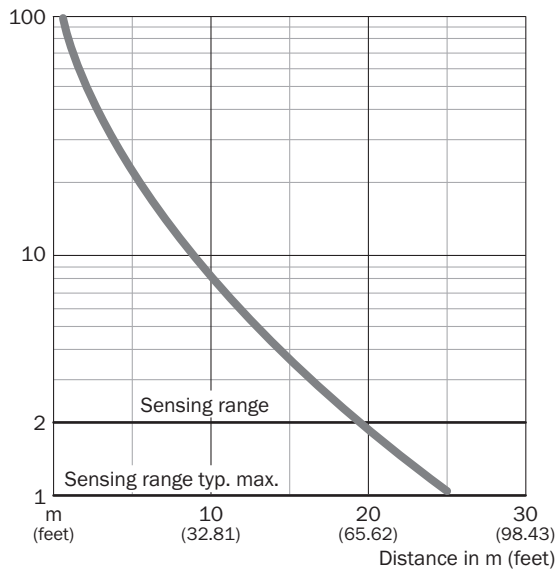
CONNECTION TYPE



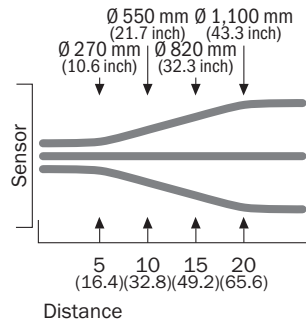
CONNECTION DIAGRAM CD-060



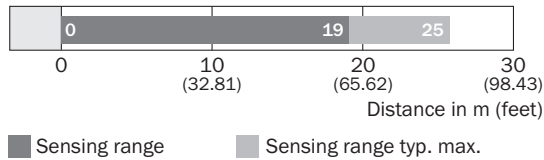
CHARACTERISTIC CURVE VSE180-2, 25 M, RADIAL



LIGHT SPOT SIZE VSE180-2, 25 M, RADIAL



SENSING RANGE DIAGRAM VSE180-2, 25 M, RADIAL



Technical drawing of a 1/2" x 18" x 1" stainless steel tie rod with a 1/2" x 18" x 1" nut and washer. The drawing shows two views: a side view and a front view. The side view shows the tie rod with a threaded end (Ø 16.6) and a nut/washer assembly. The front view shows the tie rod with a threaded end (Ø 16.6) and a nut/washer assembly. Dimensions are given in inches and millimeters. Callouts 1 through 7 identify specific parts: 1. Nut, 2. Washer, 3. Tie rod, 4. Tie rod, 5. Tie rod, 6. Tie rod, 7. Tie rod.

Dimensions (inches / millimeters):

- Overall length: 76.5 (3.01)
- Distance from end to first thread: 74.5 (2.93)
- Distance from end to second thread: 70.8 (2.79)
- Distance from end to third thread: 55.8 (2.20)
- Distance from end to fourth thread: 34 (1.34)
- Distance from end to fifth thread: 14 (0.55)
- Distance from end to sixth thread: 2 (0.08)
- Distance from end to seventh thread: 4 (0.16)
- Distance from end to eighth thread: 4 (0.16)
- Distance from end to ninth thread: 4 (0.16)
- Distance from end to tenth thread: 4 (0.16)
- Distance from end to eleventh thread: 4 (0.16)
- Distance from end to twelfth thread: 4 (0.16)
- Distance from end to thirteenth thread: 4 (0.16)
- Distance from end to fourteenth thread: 4 (0.16)
- Distance from end to fifteenth thread: 4 (0.16)
- Distance from end to sixteenth thread: 4 (0.16)
- Distance from end to seventeenth thread: 4 (0.16)
- Distance from end to eighteenth thread: 4 (0.16)
- Distance from end to nineteenth thread: 4 (0.16)
- Distance from end to twentieth thread: 4 (0.16)
- Distance from end to twenty-first thread: 4 (0.16)
- Distance from end to twenty-second thread: 4 (0.16)
- Distance from end to twenty-third thread: 4 (0.16)
- Distance from end to twenty-fourth thread: 4 (0.16)
- Distance from end to twenty-fifth thread: 4 (0.16)
- Distance from end to twenty-sixth thread: 4 (0.16)
- Distance from end to twenty-seventh thread: 4 (0.16)
- Distance from end to twenty-eighth thread: 4 (0.16)
- Distance from end to twenty-ninth thread: 4 (0.16)
- Distance from end to thirtieth thread: 4 (0.16)
- Distance from end to thirty-first thread: 4 (0.16)
- Distance from end to thirty-second thread: 4 (0.16)
- Distance from end to thirty-third thread: 4 (0.16)
- Distance from end to thirty-fourth thread: 4 (0.16)
- Distance from end to thirty-fifth thread: 4 (0.16)
- Distance from end to thirty-sixth thread: 4 (0.16)
- Distance from end to thirty-seventh thread: 4 (0.16)
- Distance from end to thirty-eighth thread: 4 (0.16)
- Distance from end to thirty-ninth thread: 4 (0.16)
- Distance from end to fortieth thread: 4 (0.16)
- Distance from end to forty-first thread: 4 (0.16)
- Distance from end to forty-second thread: 4 (0.16)
- Distance from end to forty-third thread: 4 (0.16)
- Distance from end to forty-fourth thread: 4 (0.16)
- Distance from end to forty-fifth thread: 4 (0.16)
- Distance from end to forty-sixth thread: 4 (0.16)
- Distance from end to forty-seventh thread: 4 (0.16)
- Distance from end to forty-eighth thread: 4 (0.16)
- Distance from end to forty-ninth thread: 4 (0.16)
- Distance from end to fiftieth thread: 4 (0.16)
- Distance from end to fifty-first thread: 4 (0.16)
- Distance from end to fifty-second thread: 4 (0.16)
- Distance from end to fifty-third thread: 4 (0.16)
- Distance from end to fifty-fourth thread: 4 (0.16)
- Distance from end to fifty-fifth thread: 4 (0.16)
- Distance from end to fifty-sixth thread: 4 (0.16)
- Distance from end to fifty-seventh thread: 4 (0.16)
- Distance from end to fifty-eighth thread: 4 (0.16)
- Distance from end to fifty-ninth thread: 4 (0.16)
- Distance from end to sixtieth thread: 4 (0.16)
- Distance from end to sixty-first thread: 4 (0.16)
- Distance from end to sixty-second thread: 4 (0.16)
- Distance from end to sixty-third thread: 4 (0.16)
- Distance from end to sixty-fourth thread: 4 (0.16)
- Distance from end to sixty-fifth thread: 4 (0.16)
- Distance from end to sixty-sixth thread: 4 (0.16)
- Distance from end to sixty-seventh thread: 4 (0.16)
- Distance from end to sixty-eighth thread: 4 (0.16)
- Distance from end to sixty-ninth thread: 4 (0.16)
- Distance from end to seventieth thread: 4 (0.16)
- Distance from end to seventy-first thread: 4 (0.16)
- Distance from end to seventy-second thread: 4 (0.16)
- Distance from end to seventy-third thread: 4 (0.16)
- Distance from end to seventy-fourth thread: 4 (0.16)
- Distance from end to seventy-fifth thread: 4 (0.16)
- Distance from end to seventy-sixth thread: 4 (0.16)
- Distance from end to seventy-seventh thread: 4 (0.16)
- Distance from end to seventy-eighth thread: 4 (0.16)
- Distance from end to seventy-ninth thread: 4 (0.16)
- Distance from end to eightieth thread: 4 (0.16)
- Distance from end to eighty-first thread: 4 (0.16)
- Distance from end to eighty-second thread: 4 (0.16)
- Distance from end to eighty-third thread: 4 (0.16)
- Distance from end to eighty-fourth thread: 4 (0.16)
- Distance from end to eighty-fifth thread: 4 (0.16)
- Distance from end to eighty-sixth thread: 4 (0.16)
- Distance from end to eighty-seventh thread: 4 (0.16)
- Distance from end to eighty-eighth thread: 4 (0.16)
- Distance from end to eighty-ninth thread: 4 (0.16)
- Distance from end to ninetieth thread: 4 (0.16)
- Distance from end to ninety-first thread: 4 (0.16)
- Distance from end to ninety-second thread: 4 (0.16)
- Distance from end to ninety-third thread: 4 (0.16)
- Distance from end to ninety-fourth thread: 4 (0.16)
- Distance from end to ninety-fifth thread: 4 (0.16)
- Distance from end to ninety-sixth thread: 4 (0.16)
- Distance from end to ninety-seventh thread: 4 (0.16)
- Distance from end to ninety-eighth thread: 4 (0.16)
- Distance from end to ninety-ninth thread: 4 (0.16)
- Distance from end to one hundred thread: 4 (0.16)

⑦ Metal housing, fastening nuts (2 x); width across 24



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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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