



VSE180-2P42437

V180

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
VSE180-2P42437	6037500

Other models and accessories → www.sick.com/V180

Illustration may differ



Detailed technical data

Features

Functional principle	Through-beam photoelectric sensor
Dimensions (W x H x D)	18 mm x 18 mm x 69.8 mm
Housing design (light emission)	Cylindrical
Housing length	69.8 mm
Thread diameter (housing)	M18 x 1
Optical axis	Axial
Sensing range max.	0 m ... 28 m
Sensing range	0 m ... 20 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_B	10 V DC ... 30 V DC ¹⁾
Ripple	$\pm 10\%$ ²⁾
Power consumption, sender	20 mA ³⁾
Power consumption, receiver	15 mA ³⁾
Switching output	PNP ⁴⁾
Switching mode	Light/dark switching ⁴⁾
Switching mode selector	Selectable via L/D control cable
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	36 g
Housing material	Plastic, PBT/PC
Optics material	Plastic, PMMA
Enclosure rating	IP67
Items supplied	Fastening nuts (4 x)
Ambient operating temperature	$-25\text{ }^{\circ}\text{C} \dots +55\text{ }^{\circ}\text{C}$
Ambient temperature, storage	$-40\text{ }^{\circ}\text{C} \dots +70\text{ }^{\circ}\text{C}$
UL File No.	NRKH2.E300503 & NRKH8.E300503

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

²⁾ May not fall below or exceed U_Y 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

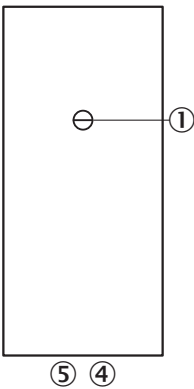
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓

China-RoHS	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

Classifications

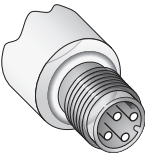
ECLASS 5.0	27270901
ECLASS 5.1.4	27270901
ECLASS 6.0	27270901
ECLASS 6.2	27270901
ECLASS 7.0	27270901
ECLASS 8.0	27270901
ECLASS 8.1	27270901
ECLASS 9.0	27270901
ECLASS 10.0	27270901
ECLASS 11.0	27270901
ECLASS 12.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC 16.0901	39121528

Adjustments

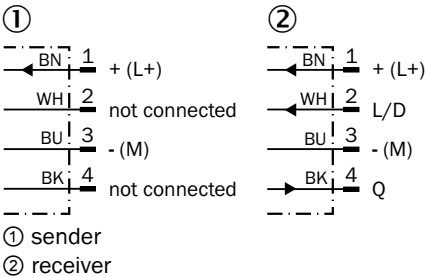


- ③ sensitivity control 270°
- ④ LED indicator orange: switching output active
- ⑤ LED indicator green

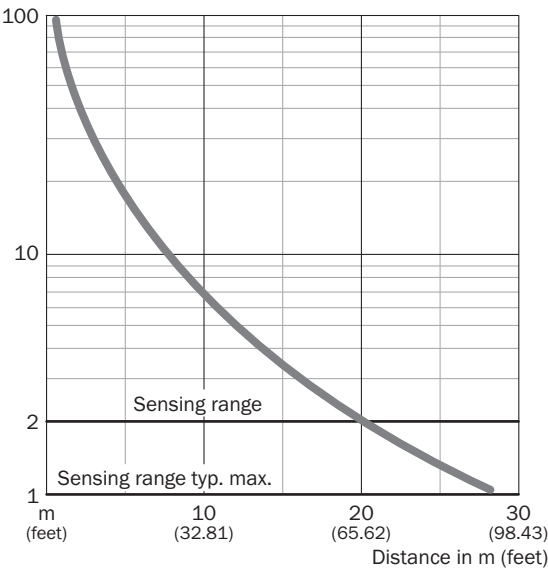
Connection type



Connection diagram Cd-060



Characteristic curve VSE180-2, 28 m, axial



Distance in m (feet)

0 10 (32.81) 20 (65.62) 30 (98.43)

0 28

■ Sensing range ■ Sensing range typ. max.

Technical drawing showing two variants of a Tee fitting (1/2" NPT x 1" NPT).

Top Variant (1/2" NPT Male Thread):

- Overall Length: 62.5 (2.46)
- Distance from End to First Thread: 2 (0.08)
- Distance from End to Second Thread: 60.5 (2.38)
- Distance from End to Third Thread: 56.8 (2.24)
- Distance from End to Fourth Thread: 41.8 (1.65)
- Distance from End to Fifth Thread: 34 (1.34)
- Distance from End to Sixth Thread: 2 (0.08)
- Thread Size: M18x1
- Callouts: 1 (End), 2 (First Thread), 3 (Second Thread), 4 (Third Thread), 5 (Fourth Thread), 6 (Fifth Thread), 7 (Sixth Thread)

Bottom Variant (1/2" NPT Female Thread):

- Overall Length: 69.8 (2.75)
- Distance from End to First Thread: 9.3 (0.37)
- Distance from End to Second Thread: 60.5 (2.38)
- Distance from End to Third Thread: 56.8 (2.24)
- Distance from End to Fourth Thread: 41.8 (1.65)
- Distance from End to Fifth Thread: 34 (1.34)
- Distance from End to Sixth Thread: 2 (0.08)
- Thread Size: M18x1
- Callouts: 1 (End), 2 (First Thread), 3 (Second Thread), 4 (Third Thread), 5 (Fourth Thread), 6 (Fifth Thread), 7 (Sixth Thread)

- ① M12 male device connector, 4-pin
- ② Connection cable 2 m

- ③ sensitivity control 270°
- ④ LED indicator orange
- ⑤ LED indicator green: strength indicator
- ⑥ fastening nuts (2 x); A/F 22, PC

Recommended accessories

Other models and accessories → www.sick.com/V180

	Brief description	Type	part no.
connectors and cables			
	• Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals, Uncontaminated zones	YF2A14-050VB3XLEAX	2096235
	• Connection type head A: Male connector, M12, 4-pin, straight, A-coded • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm²	STE-1204-G	6009932

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com