Data sheet

VSE180-2N42434

V180

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
VSE180-2N42434	6043848

Other models and accessories ➜ 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_B	10 V DC ... 30 V DC [1]
Ripple	± 10 % [2]
Power consumption, sender	≤ 20 mA [3]

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

[2] May not fall below or exceed U_V tolerances.

[3] Without load.

[4] Control wire open: light switching L.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.

Power consumption, receiver	≤ 15 mA [3]
Switching output	NPN [4]
Switching mode	Light/dark switching [4]
Signal voltage NPN HIGH/LOW	Approx. V_S / < 1.8 V
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 0.5 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 °C ... +55 °C
Ambient temperature, storage	–40 °C ... +70 °C

[1] Limit values when operated in short-circuit protected network: max. 8 A.
[2] May not fall below or exceed U_V tolerances.
[3] Without load.
[4] Control wire open: light switching L.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

$MTTF_D$	1,107.1 years
DC_{avg}	0 %

Certificates

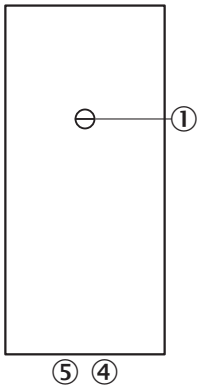
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

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

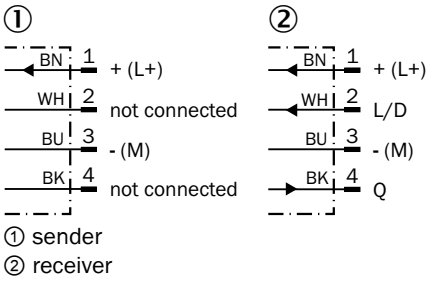
Adjustments



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

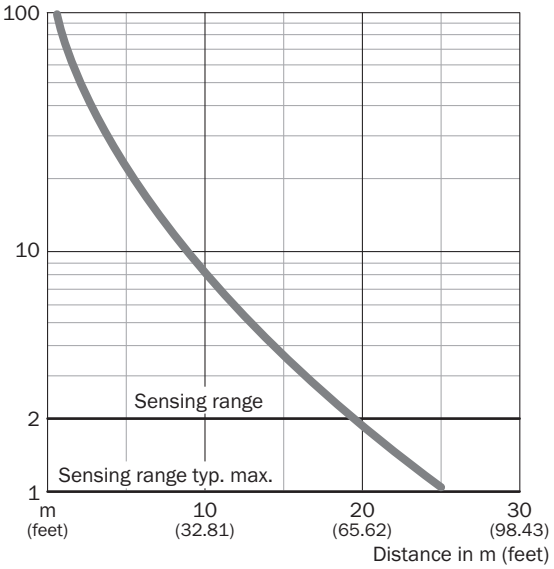
Connection type

Connection diagram Cd-060

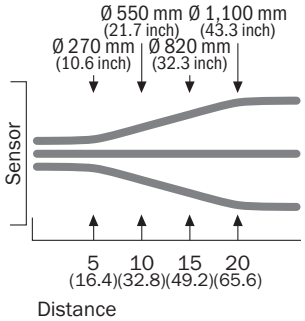


① sender
② receiver

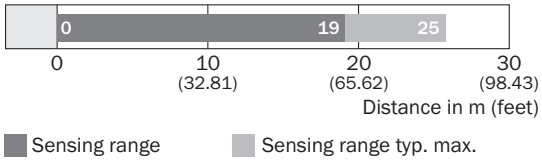
Characteristic curve VSE180-2, 25 m, radial



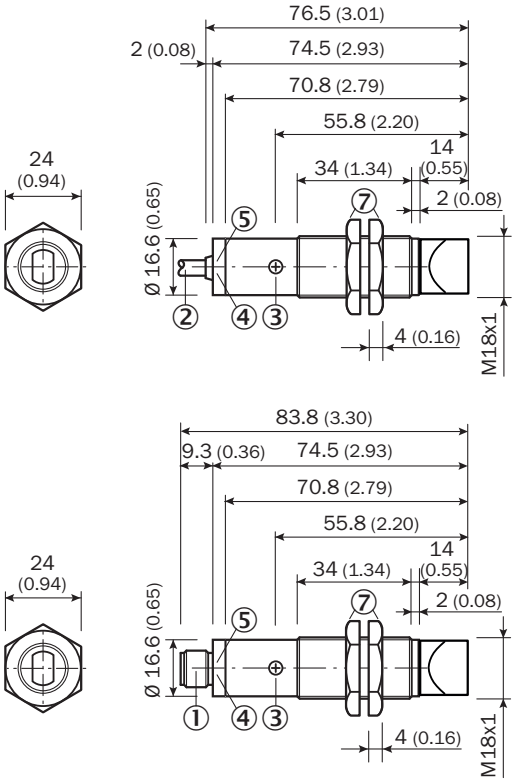
Light spot size VSE180-2, 25 m, radial



Sensing range diagram VSE180-2, 25 m, radial



Dimensional drawing VSE180-2, metal, radial



Dimensions in mm (inch)
① Connector M12, 3-pin / Connector M12, 3-pin
② Connection cable 2 m
③ sensitivity control: potentiometer 270° (VE)
④ LED indicator orange: switching output active (only VE)
⑤ LED indicator green, stability indicator (only VE): LED lights continuously = light reception < 0.9/> 1.1; LED off = light reception > 0.9 / < 1.1
⑦ Metal housing, fastening nuts (2 x); width across 24

Recommended accessories

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

	Brief description	Type	part no.
Mounting systems			
	• **Description:** Mounting bracket for M18 sensors • **Material:** Steel • **Details:** Steel, zinc coated • **Items supplied:** Without mounting hardware • **Suitable for:** GR18, V180-2, V18, W15, Z1, Z2	BEF-WN-M18	5308446
	• **Description:** Plate N11N for universal clamp bracket • **Material:** Stainless steel • **Details:** Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp) • **Items supplied:** Universal clamp (5322627), mounting hardware • **Usable for:** DeltaPac, Glare, WTD20E	BEF-KHS-N11N	2071081
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
	• **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, PUR, halogen-free • **Description:** Sensor/actuator cable, unshielded • **Application:** Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF2A14-050UB3XLEAX	2095608

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.”

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