



VL180-2P42436P02

V180-2

CYLINDRICAL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
VL180-2P42436P02	1053299

Included in delivery: PL40A (1)

Other models and accessories → www.sick.com/V180-2

Illustration may differ



Detailed technical data

Features

Dimensions (W x H x D)	18 mm x 18 mm x 70.2 mm
Housing design (light emission)	Cylindrical
Housing length	70.2 mm
Thread diameter (housing)	M18 x 1
Sensing range max.	0.05 m ... 7 m ¹⁾
Sensing range	0.05 m ... 6 m ¹⁾
Type of light	Visible red light
Light source	LED ²⁾
Light spot size (distance)	Ø 400 mm (6 m)
Angle of dispersion	Approx. 4.5°
Wave length	645 nm
Adjustment	Potentiometer, 270° (Sensitivity)

¹⁾ Reflector PL80A.

²⁾ Average service life: 100,000 h at T_J = +25 °C.

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC ¹⁾
Ripple	± 10 % ²⁾
Switching output	PNP ³⁾
Switching mode	Light/dark switching ³⁾
Switching mode selector	Selectable via L/D control cable

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

²⁾ May not exceed or fall below U_v tolerances.

³⁾ Control wire open: light switching L.ON.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ A = V_S connections reverse-polarity protected.

⁷⁾ B = inputs and output reverse-polarity protected.

⁸⁾ D = outputs overcurrent and short-circuit protected.

Signal voltage NPN HIGH/LOW	Approx. $V_S / < 1.8 \text{ V}$
Output current I_{\max}	$\leq 100 \text{ mA}$
Response time	$\leq 0.5 \text{ ms}^{4)}$
Switching frequency	$1,000 \text{ Hz}^{5)}$
Circuit protection	A ⁶⁾ B ⁷⁾ D ⁸⁾
Protection class	III
Weight	18 g
Polarisation filter	✓
Housing material	Plastic, PBT/PC
Optics material	Plastic, PMMA
Enclosure rating	IP67
Items supplied	Reflector PL40A, fastening nuts (2 x)
Ambient operating temperature	$-25 \text{ °C} \dots +55 \text{ °C}$
Ambient storage temperature	$-40 \text{ °C} \dots +70 \text{ °C}$

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

2) May not exceed or fall below U_V tolerances.

3) Control wire open: light switching L.ON.

4) Signal transit time with resistive load.

5) With light/dark ratio 1:1.

6) A = V_S connections reverse-polarity protected.

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

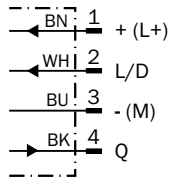
8) D = outputs overcurrent and short-circuit protected.

Classifications

ECl@ss 5.0	27270902
ECl@ss 5.1.4	27270902
ECl@ss 6.0	27270902
ECl@ss 6.2	27270902
ECl@ss 7.0	27270902
ECl@ss 8.0	27270902
ECl@ss 8.1	27270902
ECl@ss 9.0	27270902
ECl@ss 10.0	27270902
ECl@ss 11.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
UNSPSC 16.0901	39121528

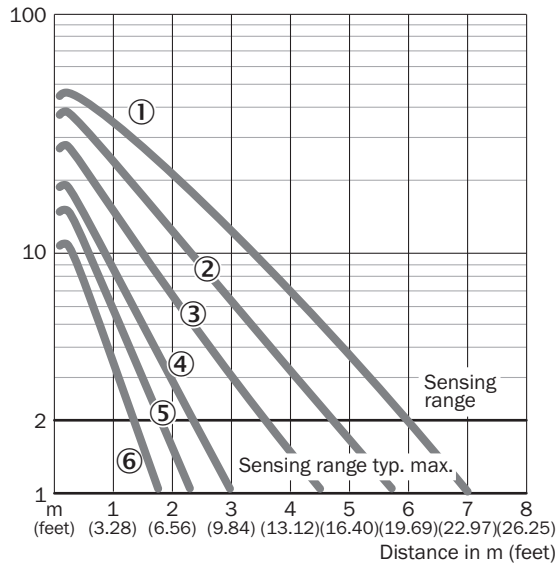
Connection diagram

Cd-087



Characteristic curve

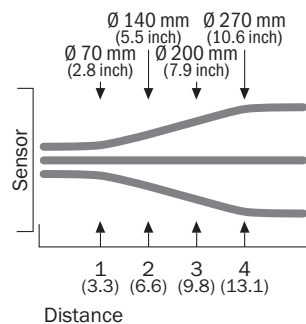
VL180-2, 7 m, axial



- ① Reflector PL80A
- ② Reflector P250, PL40A, PL50A, C110A
- ③ Reflector PL30A, PL31A
- ④ Reflector PL20A
- ⑤ P45
- ⑥ Reflective tape Diamond Grade

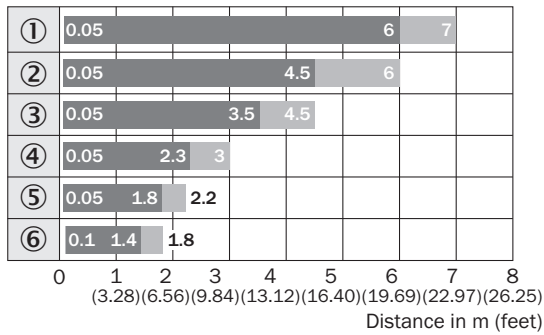
Light spot size

VL180-2



Sensing range diagram

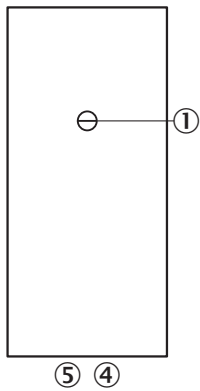
VL180-2, 7 m, axial



■ Sensing range ■ Sensing range max.

- ① Reflector PL80A
- ② Reflector P250, PL40A, PL50A, C110A
- ③ Reflector PL30A, PL31A
- ④ Reflector PL20A
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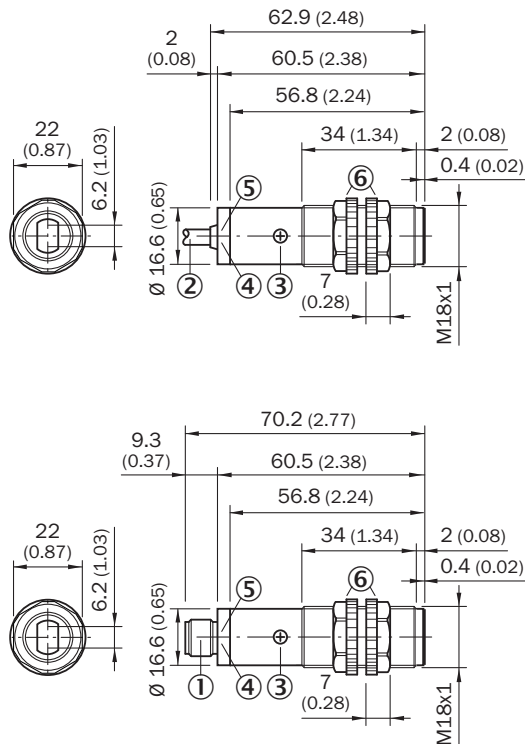
Adjustments



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

Dimensional drawing (Dimensions in mm (inch))

VL180-2, plastic, axial



- ① M12 male device connector, 4-pin
- ② Connection cable 2 m
- ③ Sensitivity control (potentiometer, 270°)
- ④ LED indicator orange: switching output active
- ⑤ LED indicator green: strength indicator
- ⑥ Fastening nuts (2 x); A/F 22, PC

Recommended accessories

Reflectors and optics

Reflectors

Angular

Plug connectors and cables

Plug connectors and cables

Connecting cables

Field-attachable connectors

Other models and accessories → www.sick.com/V180-2

Brief description	Type	Part no.
Rectangular, screw connection, 51 mm x 61 mm, PMMA/ABS, Screw-on, 2 hole mounting	P250	5304812

Brief description	Type	Part no.
Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235
Brief description	Type	Part no.
Head A: male connector, M12, 4-pin, straight Head B: - Cable: unshielded	STE-1204-G	6009932

SICK AT A GLANCE

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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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