

VL180-2P42436P01 V180

PHOTOELECTRIC SENSORS





Ordering information

Туре	part no.
VL180-2P42436P01	1052191

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

Illustration may differ

Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor	
Functional principle detail	With minimum distance to reflector (dual lens system)	
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	
Optical axis	Axial	
Sensing range max.	0.05 m 7 m	
Sensing range	0.05 m 6 m ¹⁾	
Focus	Approx. 4.5°	
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)	
Special features	25 x VL180-2P42436 / 6037496 without reflectors as one package	

¹⁾ Reflector PL80A.

Mechanics/electronics

Supply voltage U _B	10 V DC 30 V DC ¹⁾

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

 $^{^{2)}}$ Average service life: 100,000 h at T_U = +25 °C.

 $^{^{2)}}$ May not fall below or exceed U_{V} 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.

Ripple	± 10 % ²⁾
Current consumption	30 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 V / 0 V
Output current I _{max.}	≤ 100 mA
Response time	\leq 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	18 g
Polarisation filter	✓
Special device	✓
Housing material	Plastic, PBT/PC
Optics material	Plastic, PMMA
Enclosure rating	IP67
Items supplied	Fastening nuts (4 x), $25 \times VL180-2P42436 / 6037496$ without reflectors as one package
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.

Classifications

ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902

 $^{^{2)}}$ May not fall below or exceed U_{V} 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.

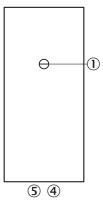
 $^{^{7)}}$ A = V_S connections reverse-polarity protected.

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

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

ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Adjustments



3 sensitivity control 270°

④ LED indicator orange: switching output active

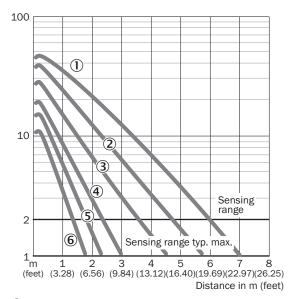
⑤ LED indicator green

Connection type



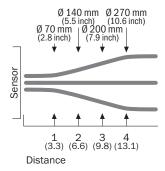
Connection diagram Cd-087

Characteristic curve VL180-2, 7 m, axial

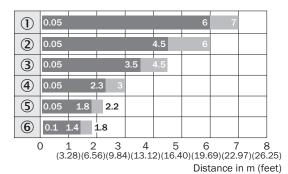


- ① Reflector PL80A
- 2 Reflector P250, PL40A, PL50A, C110A
- 3 Reflector PL30A, PL31A
- 4 Reflector PL20A
- ⑤ P45
- ® Reflective tape Diamond Grade

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

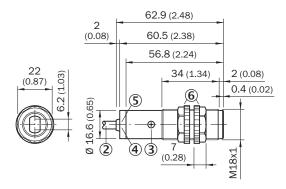
3 Reflector PL30A, PL31A

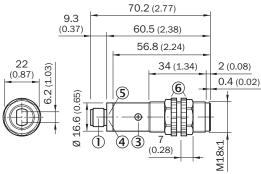
④ Reflector PL20A

⑤ P45

® Reflective tape Diamond Grade

Dimensional drawing VL180-2, plastic, axial





Dimensions in mm (inch)

- 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

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

	Brief description	Туре	part no.	
connectors ar	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	
Mounting syst	Mounting systems			
40	 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	
reflectors and optics				
	 Description: Rectangular, screw connection Dimensions: 51 mm 61 mm Ambient operating temperature: -30 °C +65 °C 	P250	5304812	

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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