

VL180-2N41162 V180

PHOTOELECTRIC SENSORS





Ordering information

Туре	part no.
VL180-2N41162	6041812

Included in delivery: P250 (1)

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 62.9 mm
Housing design (light emission)	Cylindrical
Housing length	62.9 mm
Thread diameter (housing)	M18 x 1
Optical axis	Axial
Sensing range max.	0.05 m 7 m ¹⁾
Sensing range	0.05 m 6 m ¹⁾
Focus	Approx. 4.5°
Type of light	Infrared light
Light source	LED ²⁾
Light spot size (distance)	Ø 400 mm (6 m)
Angle of dispersion	Approx. 4.5°
Wave length	920 nm
Adjustment	Potentiometer, 270° (Sensitivity)
Special features	Photoelectric retro-reflective sensor

¹⁾ Reflector PL80A.

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

Mechanics/electronics

,	
Supply voltage U _B	10 V DC 30 V DC ¹⁾
Ripple	± 10 % ²⁾
Current consumption	30 mA ³⁾
Switching output	NPN ⁴⁾
Switching mode	Light/dark switching ⁴⁾
Switching mode selector	Selectable via L/D control cable
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	Cable, 4-wire, 2 m ⁷⁾
Cable material	Plastic, PVC
Conductor cross section	0.18 mm ²
Cable diameter	Ø 3.8 mm
Circuit protection	A ⁸⁾ B ⁹⁾ D ¹⁰⁾
Protection class	III
Weight	95 g
Housing material	Metal, Nickel-plated brass and PC
Optics material	Plastic, PMMA
Enclosure rating	IP67
Items supplied	Reflector P250, fastening nuts (2 x)
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.

Safety-related parameters

MTTF _D	1,889 years
DC _{avg}	0 %

Certificates

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

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⁾ Do not bend below 0 °C.

 $^{^{8)}}$ A = V_S connections reverse-polarity protected.

⁹⁾ B = inputs and output reverse-polarity protected.

¹⁰⁾ D = outputs overcurrent and short-circuit protected.

VL180-2N41162 | V180

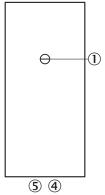
PHOTOELECTRIC SENSORS

Moroccan declaration of conformity	✓
China RoHS	√
cRUus certificate	√
Photobiological safety (DIN EN 62471) certificate	✓

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
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

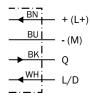


- 3 sensitivity control 270°
- 4 LED indicator orange: switching output active
- ⑤ LED indicator green

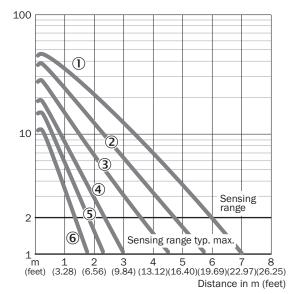
Connection type



Connection diagram Cd-089

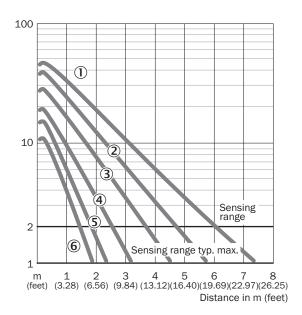


Characteristic curve VL180-2, 7 m, axial

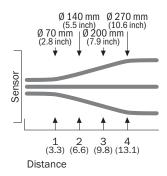


- ① Reflector PL80A
- ② Reflector P250, PL40A, PL50A, C110A
- 3 Reflector PL30A, PL31A
- 4 Reflector PL20A
- ⑤ P45
- ® Reflective tape Diamond Grade

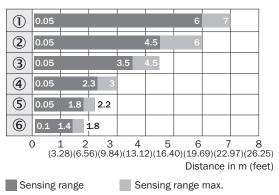
Characteristic curve



Light spot size VL180-2



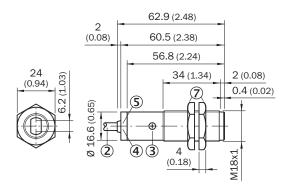
Sensing range diagram VL180-2, 7 m, axial

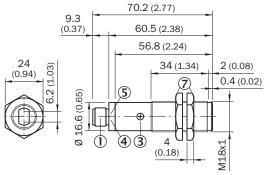


- ① Reflector PL80A
- ② Reflector P250, PL40A, PL50A, C110A
- 3 Reflector PL30A, PL31A

- 4 Reflector PL20A
- ⑤ P45
- **®** Reflective tape Diamond Grade

Dimensional drawing VL180-2, metal, axial





Dimensions in mm (inch)

- ① M12 male device connector, 4-pin
- ② Connection cable 2 m
- 3 sensitivity control 270°
- 4 LED indicator orange: switching output active
- ⑤ LED indicator green: strength indicator
- 7 Fastening nuts (2x); width across 24, metal

Recommended accessories

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

	Brief description	Туре	part no.
Mounting sys	tems		
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

VL180-2N41162 | V180 PHOTOELECTRIC SENSORS

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

