

VL18L-4P322 V18

**PHOTOELECTRIC SENSORS** 



## Ordering information

Туре	part no.
VL18L-4P322	6027429

Other models and accessories → www.sick.com/V18

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 97.7 mm
Housing design (light emission)	Cylindrical
Housing length	97.7 mm
Thread diameter (housing)	M18 x 1
Optical axis	Axial
Sensing range max.	0.1 m 35 m <sup>1)</sup>
Sensing range	0.1 m 30 m <sup>1)</sup>
Focus	0.04°
Type of light	Visible red light
Light source	Laser <sup>2)</sup>
Light spot size (distance)	Ø 9 mm (35 m)
Angle of dispersion	0.04°
Wave length	650 nm
Laser class	1 (IEC 60825-1) <sup>3)</sup>
Laser power output	0.4 mW
Adjustment	Cable, Single teach-in button (Sensitivity, Sensitivity) $^{4)}$ $^{5)}$
Special applications	Detecting small objects

<sup>1)</sup> Reflector P250F.

 $<sup>^{2)}</sup>$  Average service life: 100,000 h at  $T_{U}$  = +25  $^{\circ}\text{C}.$ 

 $<sup>^{\</sup>rm 3)}$  Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

 $<sup>^{4)}</sup>$  Electronically via control input C (0 V).

<sup>&</sup>lt;sup>5)</sup> Manual, via teach-in button.

## Mechanics/electronics

Supply voltage U <sub>B</sub>	10 V DC 30 V DC <sup>1)</sup>
Ripple	± 10 % <sup>2)</sup>
Current consumption	20 mA <sup>3)</sup>
Switching output	PNP
Switching mode	Light/dark switching
Switching mode selector	Selectable via control input C
Output current I <sub>max.</sub>	≤ 100 mA
Response time	≤ 0.625 ms <sup>4)</sup>
Switching frequency	800 Hz <sup>5)</sup>
Connection type	Cable, 4-wire, 2 m <sup>6)</sup>
Circuit protection	A <sup>7)</sup> B <sup>8)</sup> C <sup>9)</sup> D <sup>10)</sup>
Protection class	III
Weight	60 g
Polarizing filter	✓
Housing material	Metal, Nickel-plated brass/PC
Optics material	Plastic, PC with protective glass pane
Enclosure rating	IP67
Ambient operating temperature	-15 °C +55 °C
Ambient temperature, storage	-25 °C +70 °C
UL File No.	NRKH.E181493, CDRH-conform (0312012-00)

<sup>1)</sup> Limit values.

## Certificates

EU declaration of conformity	✓
China RoHS	✓
cULus certificate	✓

## Classifications

ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902

 $<sup>^{2)}\,\</sup>mathrm{May}$  not fall below or exceed  $\mathrm{U}_{\mathrm{V}}$  tolerances.

<sup>&</sup>lt;sup>3)</sup> Without load.

<sup>&</sup>lt;sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>&</sup>lt;sup>6)</sup> Do not bend below 0 °C.

 $<sup>^{7)}</sup>$  A = V<sub>S</sub> connections reverse-polarity protected.

<sup>8)</sup> B = inputs and output reverse-polarity protected.

<sup>9)</sup> C = interference suppression.

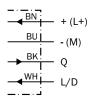
<sup>10)</sup> D = outputs overcurrent and short-circuit protected.

## VL18L-4P322 | V18

## PHOTOELECTRIC SENSORS

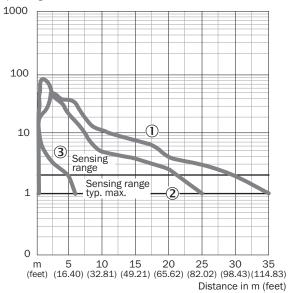
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

## Connection diagram Cd-089



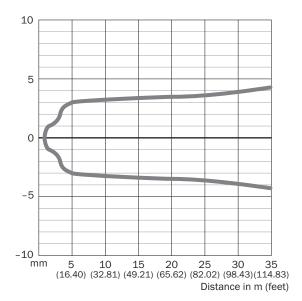
#### Characteristic curve



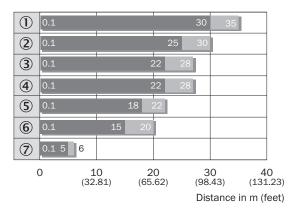


- ① Reflector P250F
- ② Reflector PL80A, P250
- 3 Reflective tape Diamond Grade

## Light spot size VL18L

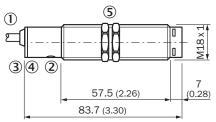


## Sensing range diagram VL18L



- Sensing range
- Sensing range max.
- ① Reflector P250F
- ② PL10F reflector
- 3 Reflector PL80A
- ④ Reflector P250
- ⑤ Reflector C110A
- Reflector PL20F
- ⑦ Reflective tape Diamond Grade

## Dimensional drawing Axial



Dimensions in mm (inch)

- ① Connection cable
- ② Sensitivity setting: single teach-in button
- 4 Yellow LED indicator:
- 4 lights continuously:
- 4 reception signal > reserve factor 2
- ④ blinks: Reception signal< reserve factor 2 but > switching threshold 1
- ⑤ fastening nuts (2 x); width across 24, metal
- (included with delivery)

#### Recommended accessories

Other models and accessories → www.sick.com/V18

	Brief description	Туре	part no.	
connectors and cables				
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, A-coded</li> <li>Description: Unshielded</li> <li>Connection systems: Screw-type terminals</li> <li>Permitted cross-section: ≤ 0.75 mm²</li> </ul>	STE-1204-G	6009932	
Mounting sys	Mounting systems			
40	<ul> <li>Description: Mounting bracket for M18 sensors</li> <li>Material: Steel</li> <li>Details: Steel, zinc coated</li> <li>Items supplied: Without mounting hardware</li> <li>Suitable for: GR18, V180-2, V18, W15, Z1, Z2</li> </ul>	BEF-WN-M18	5308446	
reflectors and optics				
00	<ul> <li>Description: Fine triple reflector, screw connection, suitable for laser sensors</li> <li>Dimensions: 52 mm 62 mm</li> <li>Ambient operating temperature: -30 °C +65 °C</li> </ul>	P250F	5308843	

## 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

