



# VTE18L-4N324

V18 Laser

CYLINDRICAL PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

| Type         | Part no. |
|--------------|----------|
| VTE18L-4N324 | 6027420  |

Other models and accessories → [www.sick.com/V18\\_Laser](http://www.sick.com/V18_Laser)

## Detailed technical data

### Features

|  |   |
|--|---|
| <b>Functional principle</b>            | Photoelectric proximity sensor  |
| <b>Functional principle detail</b>     | Energetic   |
| <b>Dimensions (W x H x D)</b>          | 18 mm x 18 mm x 97.7 mm   |
| <b>Housing design (light emission)</b> | Cylindrical   |
| <b>Housing length</b>                  | 97.7 mm   |
| <b>Thread diameter (housing)</b>       | M18 x 1   |
| <b>Optical axis</b>                    | Axial   |
| <b>Sensing range max.</b>              | 0 mm ... 400 mm <sup>1)</sup>   |
| <b>Sensing range</b>                   | 5 mm ... 300 mm   |
| <b>Type of light</b>                   | Visible red light   |
| <b>Light source</b>                    | Laser <sup>2)</sup>   |
| <b>Light spot size (distance)</b>      | Ø 8 mm (300 mm)   |
| <b>Wave length</b>                     | 650 nm  |
| <b>Laser class</b>                     | 1 (IEC 60825-1)   |
| <b>Laser power output</b>              | 0.4 mW  |
| <b>Adjustment</b>                      | Cable, Single teach-in button (Sensing range, Sensing range) <sup>3) 4)</sup> |
| <b>Special feature</b>                 | Focused optics  |
| <b>Special applications</b>            | Detecting small objects   |

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).

<sup>2)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

<sup>3)</sup> Electronically via control input C (0 V).

<sup>4)</sup> Manual, via teach-in button.

## Mechanics/electronics

|  |  |
|--|--|
| <b>Supply voltage <math>U_B</math></b>     | 10 V DC ... 30 V DC <sup>1)</sup>  |
| <b>Ripple</b>                              | $\pm 10\%$ <sup>2)</sup>   |
| <b>Current consumption</b>                 | 30 mA <sup>3)</sup>  |
| <b>Switching output</b>                    | NPN  |
| <b>Switching mode</b>                      | Light/dark switching   |
| <b>Switching mode selector</b>             | Selectable via control input C   |
| <b>Output current <math>I_{max}</math></b> | $\leq 100$ mA  |
| <b>Response time</b>                       | $\leq 0.625$ ms <sup>4)</sup>  |
| <b>Switching frequency</b>                 | 800 Hz <sup>5)</sup>   |
| <b>Connection type</b>                     | Male connector M12, 4-pin  |
| <b>Circuit protection</b>                  | A <sup>6)</sup><br>B <sup>7)</sup><br>C <sup>8)</sup><br>D <sup>9)</sup> |
| <b>Protection class</b>                    | III  |
| <b>Weight</b>                              | 60 g   |
| <b>Housing material</b>                    | Metal, Nickel-plated brass/PC  |
| <b>Optics material</b>                     | Plastic, PC with protective glass pane                                   |
| <b>Enclosure rating</b>                    | IP67   |
| <b>Special feature</b>                     | Focused optics   |
| <b>Ambient operating temperature</b>       | $-15\text{ }^\circ\text{C}$ ... $+55\text{ }^\circ\text{C}$              |
| <b>Ambient temperature, storage</b>        | $-25\text{ }^\circ\text{C}$ ... $+70\text{ }^\circ\text{C}$              |
| <b>UL File No.</b>                         | NRKH.E181493, CDRH-conform (0312012-00)                                  |

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

<sup>2)</sup> May not exceed or fall below  $U_V$  tolerances.

<sup>3)</sup> Without load.

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

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

<sup>6)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>7)</sup> B = inputs and output reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

## Classifications

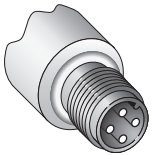
|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270903 |
| <b>ECLASS 5.1.4</b> | 27270903 |
| <b>ECLASS 6.0</b>   | 27270903 |
| <b>ECLASS 6.2</b>   | 27270903 |
| <b>ECLASS 7.0</b>   | 27270903 |
| <b>ECLASS 8.0</b>   | 27270903 |
| <b>ECLASS 8.1</b>   | 27270903 |
| <b>ECLASS 9.0</b>   | 27270903 |
| <b>ECLASS 10.0</b>  | 27270904 |

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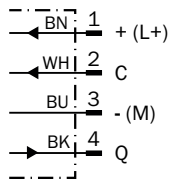
|                       |          |
|-----------------------|----------|
| <b>ECLASS 11.0</b>    | 27270904 |
| <b>ECLASS 12.0</b>    | 27270903 |
| <b>ETIM 5.0</b>       | EC001821 |
| <b>ETIM 6.0</b>       | EC001821 |
| <b>ETIM 7.0</b>       | EC002719 |
| <b>ETIM 8.0</b>       | EC002719 |
| <b>UNSPSC 16.0901</b> | 39121528 |

### Connection type



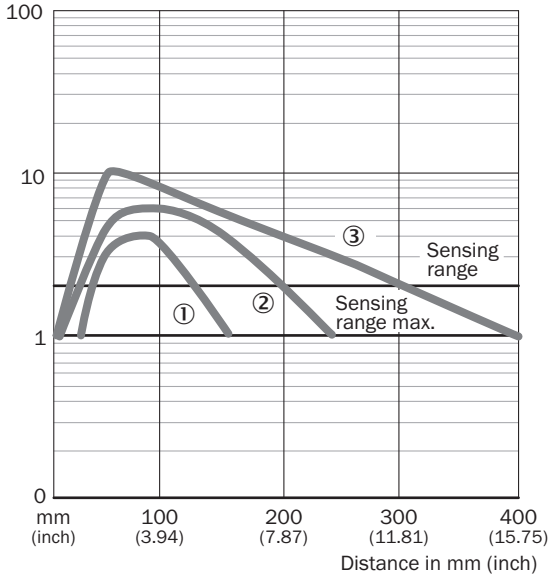
### Connection diagram

Cd-099



### Characteristic curve

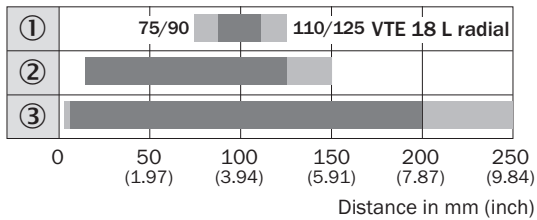
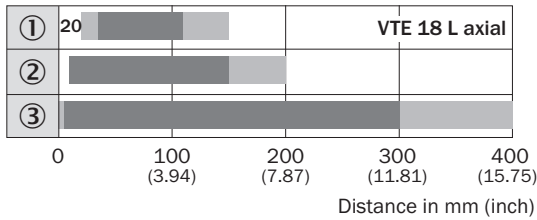
Operating reserve



- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

### Sensing range diagram

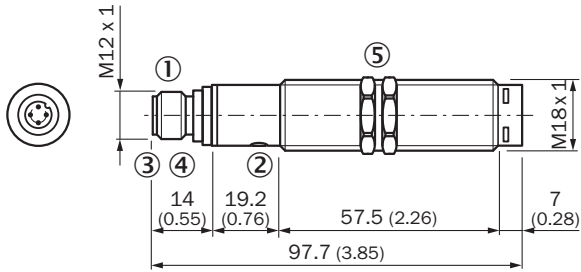
VTE18L



- Sensing range      ■ Sensing range max.
- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

**Dimensional drawing** (Dimensions in mm (inch))



Axial



- ① M12 male device connector, 4-pin
- ② Sensitivity setting: single teach-in button
- ③ Green LED indicator:  $V_S$  Supply voltage feed
- ④ Yellow LED indicator: - lights continuously: Reception signal > reserve factor 2- 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\\_Laser](http://www.sick.com/V18_Laser)

|   | Brief description   | Type               | Part no. |
|---|---|--------------------|----------|
| Others  |   |                    |          |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul> | YF2A14-050VB3XLEAX | 2096235  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>  | 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](http://www.sick.com)