



# VTB18-4P1240VS01

V18V

CYLINDRICAL PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

| Type             | Part no. |
|------------------|----------|
| VTB18-4P1240VS01 | 6037754  |

Other models and accessories → [www.sick.com/V18V](http://www.sick.com/V18V)

Illustration may differ



### Detailed technical data

#### Features

|                                        |                                                                      |
|----------------------------------------|----------------------------------------------------------------------|
| <b>Functional principle</b>            | Photoelectric proximity sensor                                       |
| <b>Functional principle detail</b>     | Background suppression                                               |
| <b>Dimensions (W x H x D)</b>          | 18 mm x 18 mm x 83 mm                                                |
| <b>Housing design (light emission)</b> | Cylindrical                                                          |
| <b>Housing length</b>                  | 83 mm                                                                |
| <b>Thread diameter (housing)</b>       | M18 x 1                                                              |
| <b>Sensing range max.</b>              | 0 mm ... 100 mm <sup>1)</sup>                                        |
| <b>Sensing range</b>                   | 0 mm ... 100 mm                                                      |
| <b>Type of light</b>                   | Visible red light                                                    |
| <b>Light source</b>                    | LED <sup>2)</sup>                                                    |
| <b>Light spot size (distance)</b>      | Ø 3 mm (100 mm)                                                      |
| <b>Wave length</b>                     | 660 nm                                                               |
| <b>Adjustment</b>                      | Single teach-in button (Sensing range)<br>Manual, via Touch-Teach-in |
| <b>Special applications</b>            | Hygienic and washdown zones                                          |

<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.

## Mechanics/electronics

|                                       |                                                                            |
|---------------------------------------|----------------------------------------------------------------------------|
| <b>Supply voltage</b>                 | 10 V DC ... 30 V DC <sup>1)</sup>                                          |
| <b>Ripple</b>                         | ± 10 % <sup>2)</sup>                                                       |
| <b>Current consumption</b>            | 50 mA <sup>3)</sup>                                                        |
| <b>Switching output</b>               | PNP <sup>4)</sup>                                                          |
| <b>Switching mode</b>                 | Light/dark switching <sup>4)</sup>                                         |
| <b>Switching mode selector</b>        | Selectable via L/D control cable                                           |
| <b>Signal voltage PNP HIGH/LOW</b>    | Approx. VS – 2.0 V / 0 V                                                   |
| <b>Output current I<sub>max</sub></b> | ≤ 100 mA                                                                   |
| <b>Response time</b>                  | ≤ 1.25 ms <sup>5)</sup>                                                    |
| <b>Switching frequency</b>            | 400 Hz <sup>6)</sup>                                                       |
| <b>Connection type</b>                | Male connector M12, 4-pin <sup>7)</sup>                                    |
| <b>Circuit protection</b>             | A <sup>8)</sup><br>B <sup>9)</sup><br>C <sup>10)</sup><br>D <sup>11)</sup> |
| <b>Protection class</b>               | III                                                                        |
| <b>Weight</b>                         | 120 g                                                                      |
| <b>Special device</b>                 | ✓                                                                          |
| <b>Housing material</b>               | Stainless steel, Stainless steel V4A (1.4404, 316L)                        |
| <b>Optics material</b>                | Plastic, Plan, PPS (Grilamid)                                              |
| <b>Enclosure rating</b>               | IP67<br>IP68<br>IP69K <sup>12)</sup>                                       |
| <b>Ambient operating temperature</b>  | –25 °C ... +80 °C <sup>13)</sup>                                           |
| <b>Ambient temperature, storage</b>   | –40 °C ... +80 °C                                                          |
| <b>UL File No.</b>                    | FDA, UL No. NRKH.E181493 & cUL No. NRKH7.E181493                           |

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

<sup>2)</sup> May not exceed or fall below U<sub>v</sub> tolerances.

<sup>3)</sup> Without load, at VS 30 V DC.

<sup>4)</sup> Control wire open: dark switching D.ON.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> With light/dark ratio 1:1.

<sup>7)</sup> With gold plated contact pins, PPS with FDA certificate.

<sup>8)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

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

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

<sup>11)</sup> D = inputs and output reverse-polarity protected.

<sup>12)</sup> With correct mounted IP69K connector.

<sup>13)</sup> +100 °C at max 15 minutes.

## Classifications

|                     |          |
|---------------------|----------|
| <b>eCI@ss 5.0</b>   | 27270904 |
| <b>eCI@ss 5.1.4</b> | 27270904 |
| <b>eCI@ss 6.0</b>   | 27270904 |
| <b>eCI@ss 6.2</b>   | 27270904 |

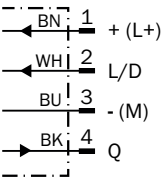
|                |          |
|----------------|----------|
| eCl@ss 7.0     | 27270904 |
| eCl@ss 8.0     | 27270904 |
| eCl@ss 8.1     | 27270904 |
| eCl@ss 9.0     | 27270904 |
| eCl@ss 10.0    | 27270904 |
| eCl@ss 11.0    | 27270904 |
| eCl@ss 12.0    | 27270903 |
| ETIM 5.0       | EC002719 |
| ETIM 6.0       | EC002719 |
| ETIM 7.0       | EC002719 |
| ETIM 8.0       | EC002719 |
| UNSPSC 16.0901 | 39121528 |

Connection type

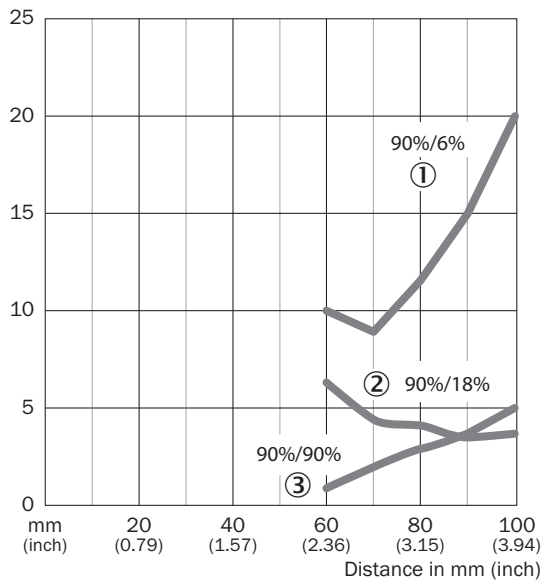


Connection diagram

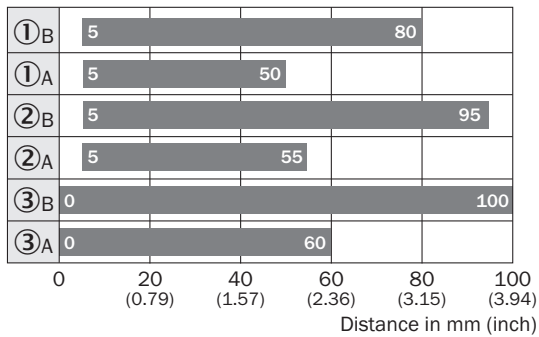
Cd-087



## Characteristic curve



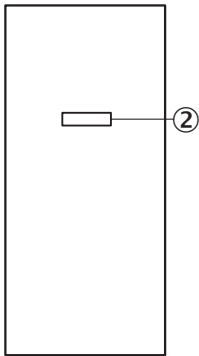
## Sensing range diagram



■ Sensing range

- ① Sensing range on black, 6 % remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90 % remission
- A Sensing range adjuster on MIN
- B Sensing range adjuster on MAX

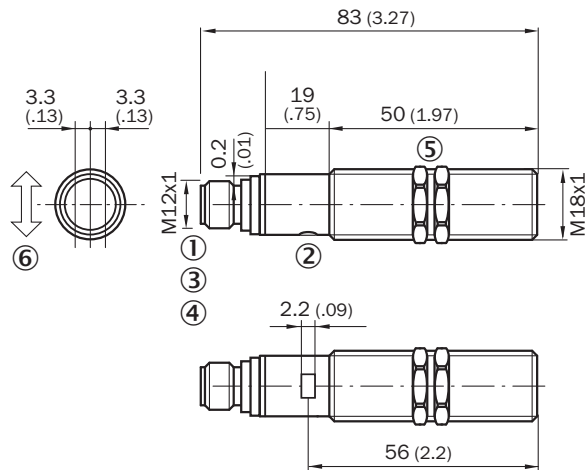
## Adjustments



② Sensing range adjustment: Touch-Teach-In

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

VTB18V



- ① M12 male device connector, 4-pin
- ② Sensing range adjustment: Touch-Teach-In
- ③ Status indicator LED, green: signaling Touch-Teach-in
- ④ LED indicator yellow: Status of received light beam
- ⑤ Fastening nuts (2 x); width across 24, stainless steel
- ⑥ Standard direction of the material being detected

## Recommended accessories

Other models and accessories → [www.sick.com/V18V](http://www.sick.com/V18V)

|                                                                                   | Brief description                                                                                                                                                                                                                                                                                                                | Type            | Part no. |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------|
| Plug connectors and cables                                                        |                                                                                                                                                                                                                                                                                                                                  |                 |          |
|  | Head A: female connector, M12, 4-pin, straight<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PVC, unshielded, 5 m<br>This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2) | DOL-1204-G05MNI | 6052615  |

## 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)