# VTB18-4P1212

V18

CYLINDRICAL PHOTOELECTRIC SENSORS

**SICK**
Sensor Intelligence.

# VTB18-4P1212 | V18

CYLINDRICAL PHOTOELECTRIC SENSORS

## Ordering information

| Type | Part no. |
|------|----------|
| VTB18-4P1212 | 6030188 |

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

## Detailed technical data

### Features

| | |
|---|---|
| Sensor/ detection principle | Photoelectric proximity sensor, Background suppression |
| Dimensions (W x H x D) | 18 mm x 18 mm x 65.2 mm |
| Housing design (light emission) | Cylindrical |
| Housing length | 65.2 mm |
| Thread diameter (housing) | M18 x 1 |
| Optical axis | Axial |
| Sensing range max. | 25 mm ... 140 mm [1] |
| Sensing range | 30 mm ... 130 mm |
| Type of light | Visible red light |
| Light source | LED [2] |
| Light spot size (distance) | Ø 12 mm (130 mm) |
| Angle of dispersion | Approx. 5 ° |
| Wave length | 660 nm |
| Adjustment | Potentiometer, 270 ° (Sensing range) <br> Potentiometer, 270 ° |

[1] Object with 90 % reflectance (referred to standard white, DIN 5033).

[2] Average service life: 100,000 h at $T_U$ = +25 °C.

## Mechanics/electronics

| | |
|---|---|
| **Supply voltage** | 10 V DC ... 30 V DC [1] |
| **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 |
| **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** | PVC |
| **Conductor cross-section** | 0.14 mm² |
| **Cable diameter** | Ø 5 mm |
| **Circuit protection** | A [8]<br>B [9]<br>C [10]<br>D [11] |
| **Protection class** | III |
| **Weight** | 240 g |
| **Housing material** | Metal, Nickel-plated brass |
| **Optics material** | Plastic, PMMA |
| **Enclosure rating** | IP67 |
| **Ambient operating temperature** | –25 °C ... +70 °C |
| **Ambient storage temperature** | –55 °C ... +80 °C |
| **UL File No.** | NMFT2.E175606 |

[1] Limit values.

[2] May not exceed or fall below $U_V$ 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] Do not bend below 0 °C.

[8] A = $V_S$ connections reverse-polarity protected.

[9] B = inputs and output reverse-polarity protected.

[10] C = interference suppression.

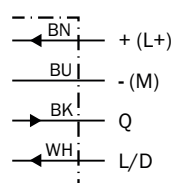[11] D = outputs overcurrent and short-circuit protected.

## Classifications

| | |
|---|---|
| **ECl@ss 5.0** | 27270904 |
| **ECl@ss 5.1.4** | 27270904 |
| **ECl@ss 6.0** | 27270904 |
| **ECl@ss 6.2** | 27270904 |
| **ECl@ss 7.0** | 27270904 |

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

## Connection diagram

Cd-089

BN + (L+)
BU - (M)
BK Q
WH L/D

## Characteristic curve



6%/90% ①
18%/90% ②
90%/90% ③

Distance in mm (inch)

## Sensing range diagram

| | | |
|---|---|---|
| ① A | 25–28 | |
| ① B | 0 | 110 |
| ② A | 25–29 | |
| ② B | 0 | 124 |
| ③ A | 23–30 | |
| ③ B | 0 | 130 |

0   20 (0.79)   40 (1.57)   60 (2.36)   80 (3.15)   100 (3.94)   120 (4.72)   140 (5.51)
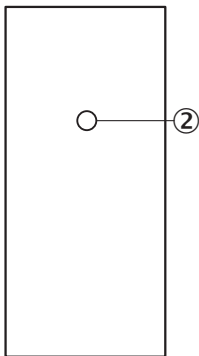
Distance in mm (inch)
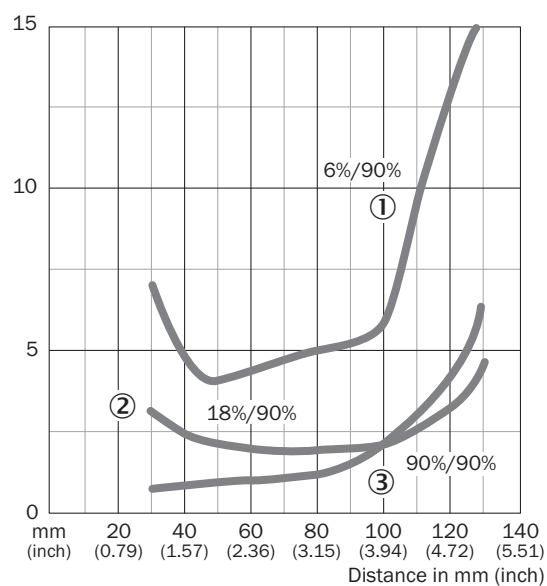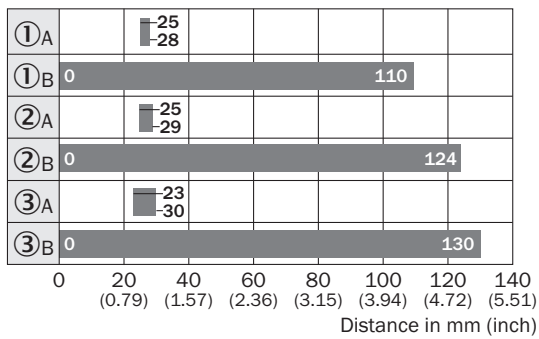
▇ Sensing range
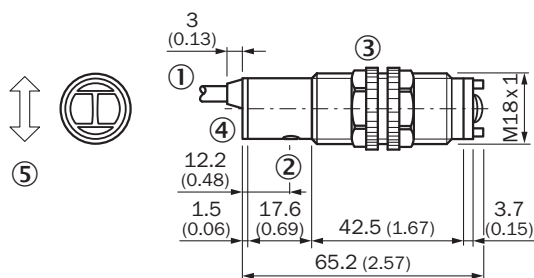
① Sensing range on black, 6 % remission
② Sensing range on gray, 18 % remission
③ Sensing range on white, 90 % remission
A   Sensing range adjuster on MIN
B   Sensing range adjuster on MAX

## Adjustments

② Sensing range adjustment: potentiometer, 270°

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

3 (0.13)
M18 x 1
12.2 (0.48)
1.5 (0.06)
17.6 (0.69)
42.5 (1.67)
3.7 (0.15)
65.2 (2.57)

① Connection
② Adjustment of sensing range
③ Mounting nuts SW, 24
④ LED indicator yellow;Lights continuously: output aktivNo light: output inactiveBlinks slowly: shot circuit detected
⑤ Standard direction of the material being detected

## Recommended accessories

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

| Brief description | Type | Part no. |
|---|---|---|
| **Mounting brackets and plates** | | |
| Mounting bracket for M18 sensors, steel, zinc coated, without mounting hardware | BEF-WN-M18 | 5308446 |
| **Plug connectors and cables** | | |
| Head A: male connector, M12, 4-pin, straight<br>Head B: -<br>Cable: unshielded | 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**

SICK AG   |   Waldkirch   |   Germany   |   www.sick.com

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