



# WT24-2V510

## W24-2

COMPACT PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

| Type       | Part no. |
|------------|----------|
| WT24-2V510 | 1017855  |

Other models and accessories → [www.sick.com/W24-2](http://www.sick.com/W24-2)

## Detailed technical data

### Features

|                                        |                                                        |
|----------------------------------------|--------------------------------------------------------|
| <b>Sensor/ detection principle</b>     | Photoelectric proximity sensor, Background suppression |
| <b>Dimensions (W x H x D)</b>          | 27 mm x 87.5 mm x 65 mm                                |
| <b>Housing design (light emission)</b> | Rectangular                                            |
| <b>Sensing range max.</b>              | 100 mm ... 2,500 mm <sup>1)</sup>                      |
| <b>Sensing range</b>                   | 100 mm ... 2,500 mm <sup>1)</sup>                      |
| <b>Type of light</b>                   | Infrared light                                         |
| <b>Light source</b>                    | LED <sup>2)</sup>                                      |
| <b>Light spot size (distance)</b>      | Ø 80 mm (2,500 mm)                                     |
| <b>Adjustment</b>                      | Potentiometer                                          |
| <b>Alarm output</b>                    | ✓                                                      |

<sup>1)</sup> Object with 90 % reflectance (referred to 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>            | < 5 V <sub>pp</sub> <sup>2)</sup> |
| <b>Power consumption</b> | 50 mA <sup>3)</sup>               |
| <b>Switching output</b>  | NPN<br>PNP                        |

<sup>1)</sup> Limit values when operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not exceed or fall below U<sub>V</sub> 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<sub>S</sub> connections reverse-polarity protected.

<sup>7)</sup> C = interference suppression.

<sup>8)</sup> D = outputs overcurrent and short-circuit protected.

<sup>9)</sup> Reference voltage: 50 V DC.

|                                             |                                                                     |
|---------------------------------------------|---------------------------------------------------------------------|
| <b>Switching mode</b>                       | Light/dark switching                                                |
| <b>Switching mode selector</b>              | Selectable via PNP/NPN selector, selectable via light/dark selector |
| <b>Output current <math>I_{\max}</math></b> | $\leq 100 \text{ mA}$                                               |
| <b>Response time</b>                        | $\leq 500 \text{ } \mu\text{s}$ <sup>4)</sup>                       |
| <b>Switching frequency</b>                  | 1,000 Hz <sup>5)</sup>                                              |
| <b>Connection type</b>                      | Male connector M12, 5-pin                                           |
| <b>Circuit protection</b>                   | A <sup>6)</sup><br>C <sup>7)</sup><br>D <sup>8)</sup>               |
| <b>Protection class</b>                     | II <sup>9)</sup>                                                    |
| <b>Weight</b>                               | 330 g                                                               |
| <b>Housing material</b>                     | Metal, Zinc diecast                                                 |
| <b>Optics material</b>                      | Plastic, PMMA                                                       |
| <b>Enclosure rating</b>                     | IP69K                                                               |
| <b>Test input sender off</b>                | TE to 0 V                                                           |
| <b>Ambient operating temperature</b>        | -40 °C ... +60 °C                                                   |
| <b>Ambient storage temperature</b>          | -40 °C ... +75 °C                                                   |

1) Limit values when operated in short-circuit protected network: max. 8 A.

2) May not exceed or fall below  $U_V$  tolerances.

3) Without load.

4) Signal transit time with resistive load.

5) With light/dark ratio 1:1.

6) A =  $V_S$  connections reverse-polarity protected.

7) C = interference suppression.

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

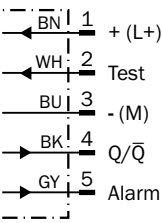
9) Reference voltage: 50 V DC.

## 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 |
| <b>ECI@ss 7.0</b>     | 27270904 |
| <b>ECI@ss 8.0</b>     | 27270904 |
| <b>ECI@ss 8.1</b>     | 27270904 |
| <b>ECI@ss 9.0</b>     | 27270904 |
| <b>ETIM 5.0</b>       | EC002719 |
| <b>ETIM 6.0</b>       | EC002719 |
| <b>UNSPSC 16.0901</b> | 39121528 |

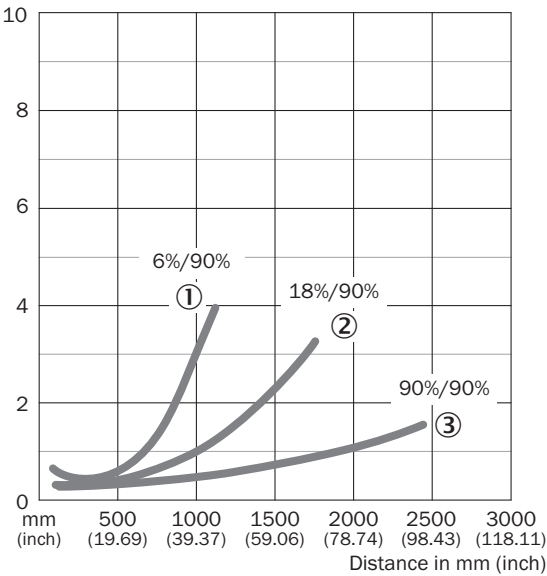
Connection diagram

Cd-150



Characteristic curve

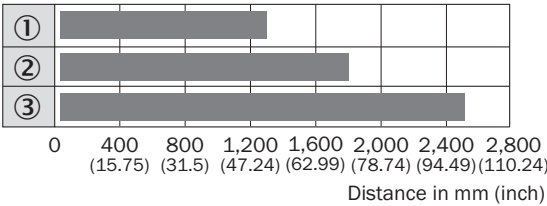
WT24-2, infrared light



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

Sensing range diagram

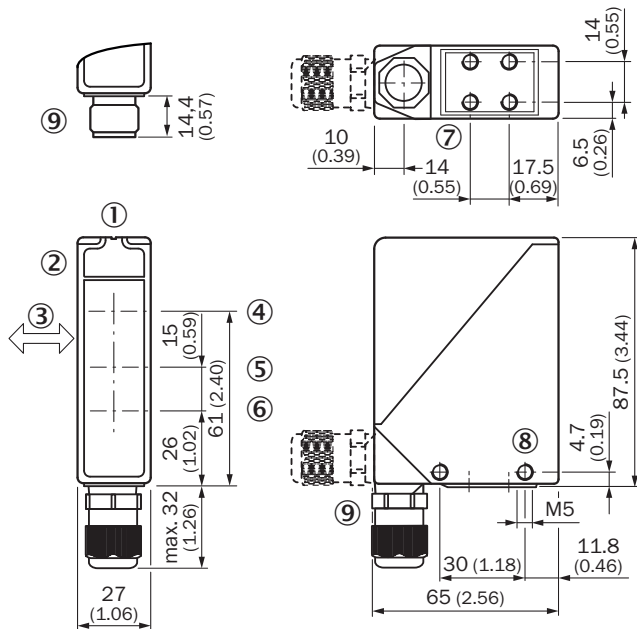
WT24-2, infrared light



- Sensing range
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## Dimensional drawing (Dimensions in mm (inch))

WT24-2



- ① Alignment sight
- ② LED signal strength indicator
- ③ Standard direction of the material being detected
- ④ Center of optical axis, sender
- ⑤ Center of optical axis, receiver (close range)
- ⑥ Center of optical axis, receiver (far range)
- ⑦ M5 threaded mounting hole, 6 mm deep
- ⑧ M5 threaded mounting hole, through-hole
- ⑨ M16 screw fixing and plug rotatable by 90°

## Recommended accessories

Other models and accessories → [www.sick.com/W24-2](http://www.sick.com/W24-2)

|                                                                                     | Brief description                                                                                                                               | Type        | Part no. |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------|
| Universal bar clamp systems                                                         |                                                                                                                                                 |             |          |
|  | Plate N04 for universal clamp, steel, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware | BEF-KHS-N04 | 2051610  |
| Mounting brackets and plates                                                        |                                                                                                                                                 |             |          |
|  | Mounting bracket, large, stainless steel, without mounting hardware for the sensor                                                              | BEF-WG-W24  | 4026324  |

## 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)