



**WTB27-3F2411**  
W27-3

**COMPACT PHOTOELECTRIC SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

| Type         | Part no. |
|--------------|----------|
| WTB27-3F2411 | 1027753  |

Other models and accessories → [www.sick.com/W27-3](http://www.sick.com/W27-3)

## Detailed technical data

### Features

|                                        |                                                                              |
|----------------------------------------|------------------------------------------------------------------------------|
| <b>Sensor/ detection principle</b>     | Photoelectric proximity sensor, Background suppression                       |
| <b>Dimensions (W x H x D)</b>          | 24.6 mm x 80.6 mm x 54 mm                                                    |
| <b>Housing design (light emission)</b> | Rectangular                                                                  |
| <b>Sensing range max.</b>              | 30 mm ... 1,600 mm <sup>1)</sup>                                             |
| <b>Sensing range</b>                   | 100 mm ... 1,600 mm                                                          |
| <b>Type of light</b>                   | Infrared light                                                               |
| <b>Light source</b>                    | LED <sup>2)</sup>                                                            |
| <b>Light spot size (distance)</b>      | Ø 25 mm (800 mm)                                                             |
| <b>Wave length</b>                     | 880 nm                                                                       |
| <b>Adjustment</b>                      | Potentiometer                                                                |
| <b>Time type</b>                       | On delay<br>Off delay<br>Switch on delay and time delay off                  |
| <b>Time functions</b>                  | Adjustable via time delay selector switch:<br>0.02 ... 0.5 s<br>0.5 ... 10 s |

<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>                              | $\leq 5 V_{pp}$ <sup>2)</sup>                         |
| <b>Power consumption</b>                   | 40 mA <sup>3)</sup>                                   |
| <b>Switching output</b>                    | PNP                                                   |
| <b>Output function</b>                     | Complementary                                         |
| <b>Switching mode</b>                      | Light/dark switching                                  |
| <b>Signal voltage PNP HIGH/LOW</b>         | Approx. $V_S - 2.5 V / 0 V$                           |
| <b>Output current <math>I_{max}</math></b> | $\leq 100 mA$                                         |
| <b>Response time</b>                       | $\leq 1.5 ms$ <sup>4)</sup>                           |
| <b>Switching frequency</b>                 | 350 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> |
| <b>Protection class</b>                    | II <sup>9)</sup>                                      |
| <b>Weight</b>                              | 100 g                                                 |
| <b>Housing material</b>                    | Plastic, ABS                                          |
| <b>Optics material</b>                     | Plastic, PMMA                                         |
| <b>Enclosure rating</b>                    | IP69K                                                 |
| <b>Ambient operating temperature</b>       | -40 °C ... +60 °C                                     |
| <b>Ambient storage temperature</b>         | -40 °C ... +75 °C                                     |
| <b>UL File No.</b>                         | NRKH.E181493 & NRKH7.E181493                          |

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

<sup>2)</sup> May not exceed or fall below  $U_V$  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> Reference voltage: 50 V DC.

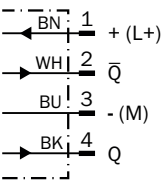
## Classifications

|                     |          |
|---------------------|----------|
| <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 |

|                |          |
|----------------|----------|
| UNSPSC 16.0901 | 39121528 |
|----------------|----------|

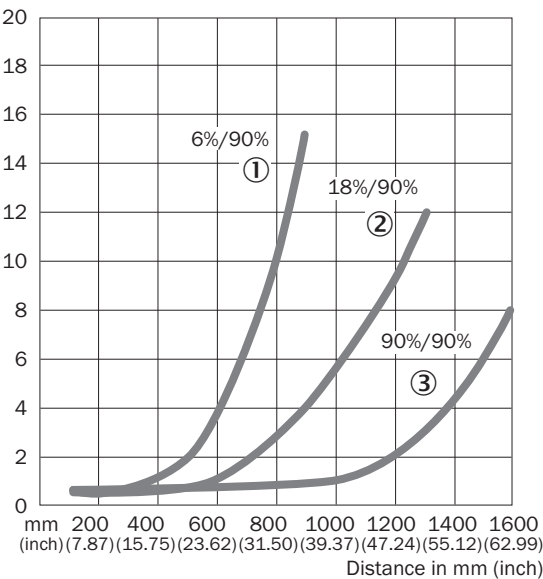
Connection diagram

Cd-083



Characteristic curve

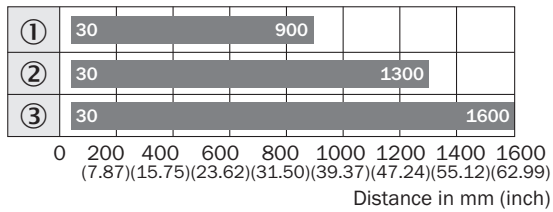
WTB27-3, infrared



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

## Sensing range diagram

WTB27-3, infrared

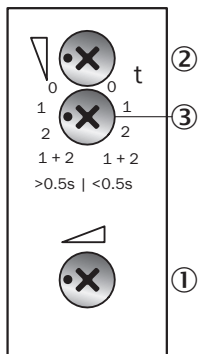


■ Sensing range

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

## Adjustments possible

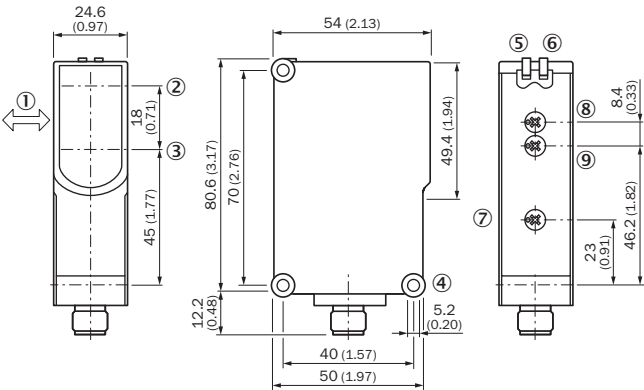
Potentiometer, time functions



- ① Potentiometer
- ② Time control
- ③ Time delay selector switch

Dimensional drawing (Dimensions in mm (inch))

WTB27-3, potentiometer, time functions



- ① Standard direction of the material being detected
- ② Optical axis, sender
- ③ Optical axis, receiver
- ④ Mounting hole  $\varnothing$  5.2 mm
- ⑤ LED indicator green: Supply voltage active
- ⑥ LED indicator yellow: Status of received light beam
- ⑦ Sensing range adjustment: potentiometer
- ⑧ Time control
- ⑨ Time delay selector switch

Recommended accessories

Other models and accessories → [www.sick.com/W27-3](http://www.sick.com/W27-3)

|                                                                                     | Brief description                                                                                                                     | Type               | Part no. |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| Mounting brackets and plates                                                        |                                                                                                                                       |                    |          |
|  | Mounting bracket with hinged arm, steel, zinc coated, mounting hardware included                                                      | BEF-WN-W27         | 2009122  |
| Plug connectors and cables                                                          |                                                                                                                                       |                    |          |
|  | Head A: female connector, M12, 4-pin, straight, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PVC, unshielded, 5 m | YF2A14-050VB3XLEAX | 2096235  |
|  | 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](http://www.sick.com)