



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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## WT2F-N170

W2 Flat

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type      | Part no. |
|-----------|----------|
| WT2F-N170 | 6030587  |

Other models and accessories → [www.sick.com/W2\\_Flat](http://www.sick.com/W2_Flat)

### Detailed technical data

#### Features

|  |   |
|--|---|
| <b>Sensor/ detection principle</b>     | Photoelectric proximity sensor, energetic |
| <b>Dimensions (W x H x D)</b>          | 14 mm x 19.5 mm x 3.5 mm                  |
| <b>Housing design (light emission)</b> | Rectangular                               |
| <b>Sensing range max.</b>              | 1 mm ... 9 mm <sup>1)</sup>               |
| <b>Sensing range</b>                   | 1 mm ... 9 mm <sup>1)</sup>               |
| <b>Type of light</b>                   | Visible red light                         |
| <b>Light source</b>                    | LED <sup>2)</sup>                         |
| <b>Wave length</b>                     | 660 nm                                    |
| <b>Adjustment</b>                      | None                                      |

<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>J</sub> = +25 °C.

#### Mechanics/electronics

|                                    |                                      |
|------------------------------------|--------------------------------------|
| <b>Supply voltage</b>              | 12 V DC ... 24 V DC <sup>1)</sup>    |
| <b>Ripple</b>                      | ≤ 5 V <sub>pp</sub> <sup>2)</sup>    |
| <b>Switching output</b>            | NPN                                  |
| <b>Switching mode</b>              | Light switching                      |
| <b>Signal voltage PNP HIGH/LOW</b> | Approx. V <sub>S</sub> - 1.8 V / 0 V |
| <b>Signal voltage NPN HIGH/LOW</b> | Approx. V <sub>S</sub> / < 1.8 V     |

<sup>1)</sup> ± 10 %.

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

<sup>3)</sup> Signal transit time with resistive load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> Do not bend below 0 °C.

<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.

|  |   |
|--|---|
| <b>Output current <math>I_{\max}</math>.</b> | ≤ 50 mA   |
| <b>Response time</b>                         | ≤ 0.5 ms <sup>3)</sup>                                |
| <b>Switching frequency</b>                   | 1,000 Hz <sup>4)</sup>                                |
| <b>Connection type</b>                       | Cable, 3-wire, 2 m <sup>5)</sup>                      |
| <b>Cable material</b>                        | PVC   |
| <b>Cable diameter</b>                        | Ø 2.4 mm  |
| <b>Circuit protection</b>                    | A <sup>6)</sup><br>C <sup>7)</sup><br>D <sup>8)</sup> |
| <b>Weight</b>                                | 20 g  |
| <b>Reverse polarity protection</b>           | ✓   |
| <b>Short-circuit protection</b>              | ✓   |
| <b>Housing material</b>                      | Plastic, PC   |
| <b>Optics material</b>                       | Plastic, PC   |
| <b>Enclosure rating</b>                      | IP67  |
| <b>Ambient operating temperature</b>         | -20 °C ... +55 °C                                     |
| <b>Ambient storage temperature</b>           | -40 °C ... +75 °C                                     |

1) +- 10 %.

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

3) Signal transit time with resistive load.

4) With light/dark ratio 1:1.

5) Do not bend below 0 °C.

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

7) C = interference suppression.

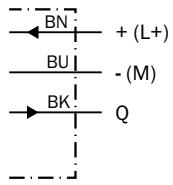
8) D = outputs overcurrent and short-circuit protected.

## Classifications

|                       |          |
|-----------------------|----------|
| <b>ECl@ss 5.0</b>     | 27270904 |
| <b>ECl@ss 5.1.4</b>   | 27270904 |
| <b>ECl@ss 6.0</b>     | 27270904 |
| <b>ECl@ss 6.2</b>     | 27270904 |
| <b>ECl@ss 7.0</b>     | 27270904 |
| <b>ECl@ss 8.0</b>     | 27270904 |
| <b>ECl@ss 8.1</b>     | 27270904 |
| <b>ECl@ss 9.0</b>     | 27270904 |
| <b>ETIM 5.0</b>       | EC002719 |
| <b>ETIM 6.0</b>       | EC002719 |
| <b>UNSPSC 16.0901</b> | 39121528 |

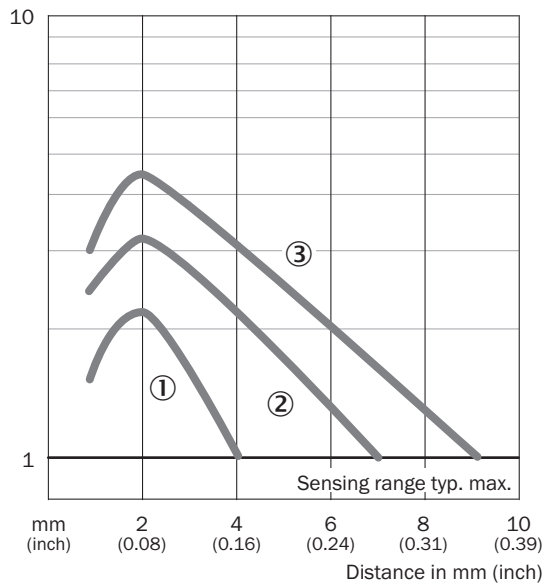
Connection diagram

cd-043



Characteristic curve

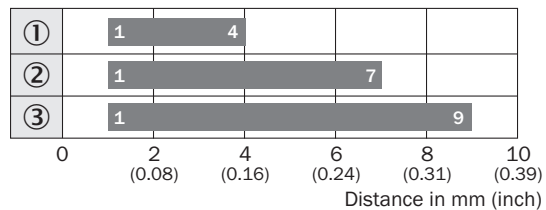
WT2F, 9 mm



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

Sensing range diagram

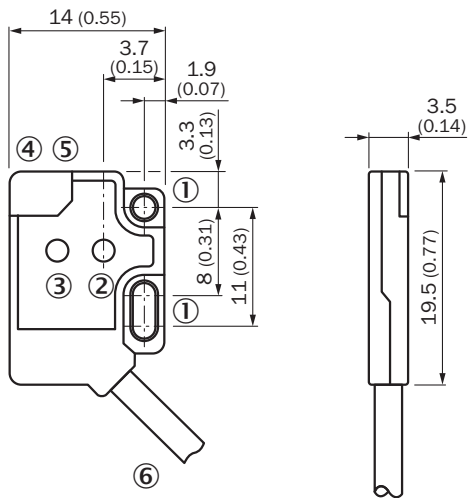
WT2F, 9 mm



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

Dimensional drawing (Dimensions in mm (inch))

WT2F



- ① Mounting holes,  $\varnothing$  2.1 mm
- ② Optical axis, sender
- ③ Optical axis, receiver
- ④ LED indicator orange: switching output active
- ⑤ LED indicator green: strength indicator
- ⑥ Connection

## 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)