



# WT2F-N170

W2

MINIATURE PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
WT2F-N170	6030587

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

### Detailed technical data

#### Features

<b>Functional principle</b>	Photoelectric proximity sensor
<b>Functional principle detail</b>	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% 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>	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

<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>Signal voltage NPN HIGH/LOW</b>	Approx. $V_S / < 1.8 \text{ V}$
<b>Output current <math>I_{\max}</math></b>	$\leq 50 \text{ mA}$
<b>Response time</b>	$\leq 0.5 \text{ ms}^{3)}$
<b>Switching frequency</b>	$1,000 \text{ Hz}^{4)}$
<b>Connection type</b>	Cable, 3-wire, 2 m <sup>5)</sup>
<b>Cable material</b>	PVC
<b>Cable diameter</b>	$\varnothing 2.4 \text{ mm}$
<b>Circuit protection</b>	A <sup>6)</sup> C <sup>7)</sup> 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>	$-20 \text{ °C} \dots +55 \text{ °C}$
<b>Ambient temperature, storage</b>	$-40 \text{ °C} \dots +75 \text{ °C}$

1)  $\pm 10 \%$ .

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  $0 \text{ °C}$ .

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

7) C = interference suppression.

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

### Safety-related parameters

<b>MTTF<sub>D</sub></b>	1,526 years
<b>DC<sub>avg</sub></b>	0 %

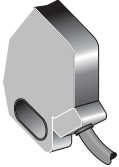
### Classifications

<b>eCl@ss 5.0</b>	27270903
<b>eCl@ss 5.1.4</b>	27270903
<b>eCl@ss 6.0</b>	27270903
<b>eCl@ss 6.2</b>	27270903
<b>eCl@ss 7.0</b>	27270903
<b>eCl@ss 8.0</b>	27270903
<b>eCl@ss 8.1</b>	27270903
<b>eCl@ss 9.0</b>	27270903
<b>eCl@ss 10.0</b>	27270904
<b>eCl@ss 11.0</b>	27270904
<b>eCl@ss 12.0</b>	27270903
<b>ETIM 5.0</b>	EC001821

<b>ETIM 6.0</b>	EC001821
<b>ETIM 7.0</b>	EC002719
<b>ETIM 8.0</b>	EC002719
<b>UNSPSC 16.0901</b>	39121528

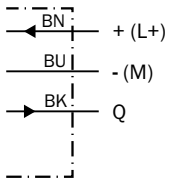
### Connection type

Wx2F-x1xx



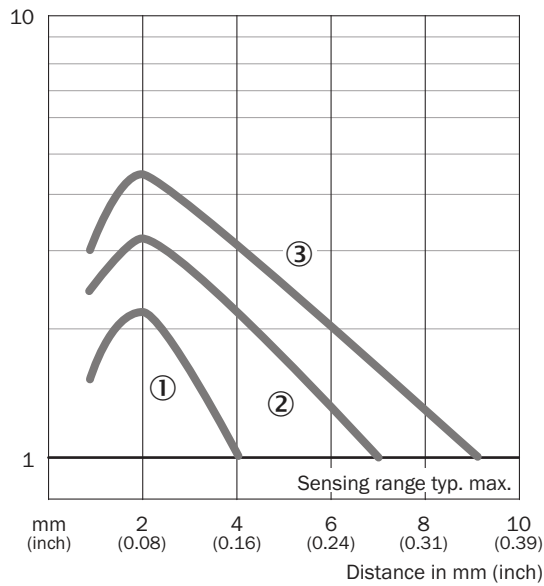
### Connection diagram

Cd-043



### Characteristic curve

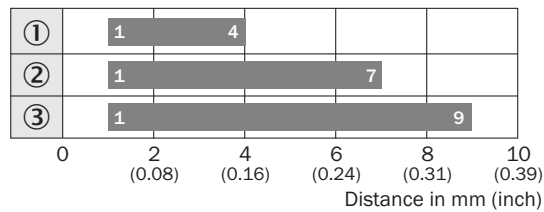
WT2F, 9 mm



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

### Sensing range diagram

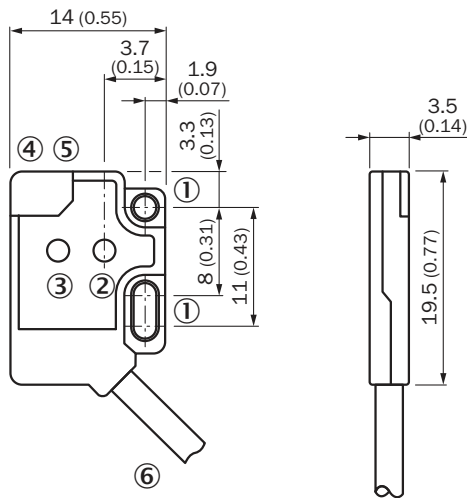
WT2F, 9 mm



- Sensing range
- ① Sensing range on black, 6% remission
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- 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

### Recommended accessories

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

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: male connector, M8, 3-pin, straight Cable: unshielded	STE-0803-G	6037322

## 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:

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