



## WT2F-P250

W2 Flat

MINIATURE PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
WT2F-P250	6030581

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>	2 mm ... 34 mm <sup>1)</sup>
<b>Sensing range</b>	2 mm ... 34 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>	PNP
<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 with connector M8, 3-pin, 200 mm <sup>5)</sup>
<b>Cable material</b>	PVC
<b>Cable diameter</b>	Ø 2.4 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 °C ... +55 °C
<b>Ambient temperature, storage</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.

### Safety-related parameters

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

### Classifications

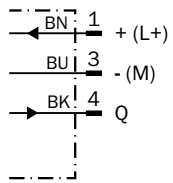
<b>ECl@ss 5.0</b>	27270903
<b>ECl@ss 5.1.4</b>	27270903
<b>ECl@ss 6.0</b>	27270903
<b>ECl@ss 6.2</b>	27270903
<b>ECl@ss 7.0</b>	27270903
<b>ECl@ss 8.0</b>	27270903
<b>ECl@ss 8.1</b>	27270903
<b>ECl@ss 9.0</b>	27270903
<b>ECl@ss 10.0</b>	27270904
<b>ECl@ss 11.0</b>	27270904
<b>ETIM 5.0</b>	EC001821
<b>ETIM 6.0</b>	EC001821
<b>ETIM 7.0</b>	EC002719

UNSPSC 16.0901

39121528

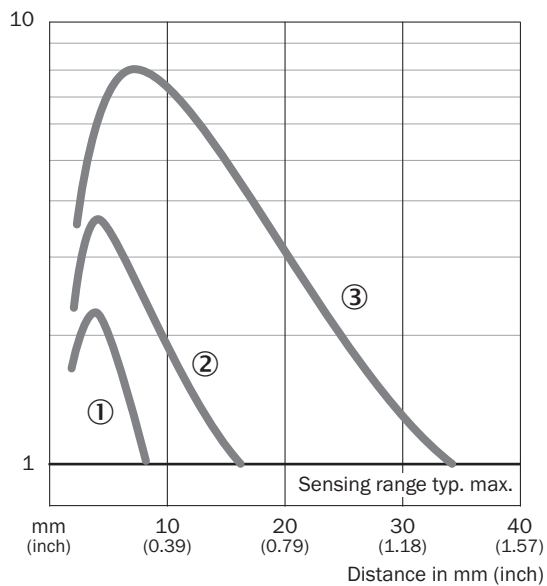
Connection diagram

Cd-045



Characteristic curve

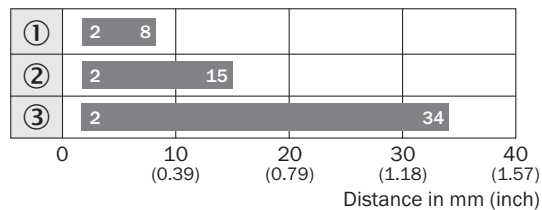
WT2F, 34 mm



- 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, 34 mm

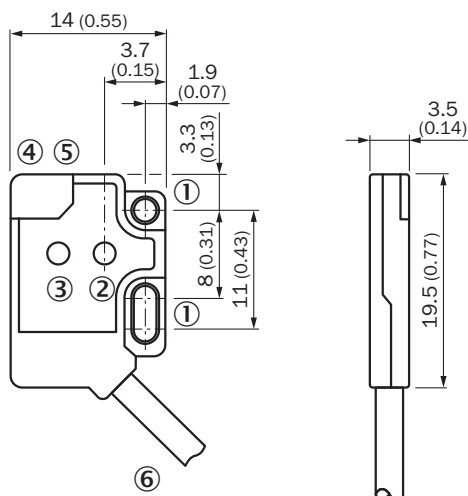


■ Sensing range

- 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


## Recommended accessories

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

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: female connector, M8, 3-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF8U13-050VA1XLEAX	2095884

# WT2F-P250 | W2 Flat

## MINIATURE PHOTOELECTRIC SENSORS

	Brief description	Type	Part no.
	Head A: male connector, M8, 3-pin, straight Head B: - 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:

Contacts and other locations –[www.sick.com](http://www.sick.com)