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Product data sheet




# WT2F-P450

## W2

MINIATURE PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

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# WT2F-P450 | W2

MINIATURE PHOTOELECTRIC SENSORS




Illustration may differ

## Ordering information

| Type | Part no. |
|---|---|
| WT2F-P450 | 6030582 |

Other models and accessories → www.sick.com/W2

## Detailed technical data

### Features

| | |
|---|---|
| **Functional principle** | Photoelectric proximity sensor |
| **Functional principle detail** | Energetic |
| **Dimensions (W x H x D)** | 14 mm x 19.5 mm x 3.5 mm |
| **Housing design (light emission)** | Rectangular |
| **Sensing range max.** | 2 mm ... 34 mm [1] |
| **Sensing range** | 2 mm ... 34 mm [1] |
| **Type of light** | Visible red light |
| **Light source** | LED [2] |
| **Wave length** | 660 nm |
| **Adjustment** | None |

[1] Object with 90% remission (based on standard white, DIN 5033).

[2] Average service life: 100,000 h at $T_U$ = +25 °C.

### Mechanics/electronics

| | |
|---|---|
| **Supply voltage $U_B$** | 12 V DC ... 24 V DC [1] |
| **Ripple** | < 5 $V_{pp}$ [2] |
| **Switching output** | PNP |
| **Switching mode** | Light switching |
| **Signal voltage PNP HIGH/LOW** | Approx. $V_S$ – 1.8 V / 0 V |

[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.

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| | |
|---|---|
| **Signal voltage NPN HIGH/LOW** | Approx. $V_S$ / < 1.8 V |
| **Output current $I_{max.}$** | ≤ 50 mA |
| **Response time** | ≤ 0.5 ms [3] |
| **Switching frequency** | 1,000 Hz [4] |
| **Connection type** | Cable with M8 male connector, 4-pin, 200 mm [5] |
| **Cable material** | PVC |
| **Cable diameter** | Ø 2.4 mm |
| **Circuit protection** | A [6]<br>C [7]<br>D [8] |
| **Weight** | 20 g |
| **Reverse polarity protection** | ✓ |
| **Short-circuit protection** | ✓ |
| **Housing material** | Plastic, PC |
| **Optics material** | Plastic, PC |
| **Enclosure rating** | IP67 |
| **Ambient operating temperature** | –20 °C ... +55 °C |
| **Ambient temperature, storage** | –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

| | |
|---|---|
| **$MTTF_D$** | 1,526 years |
| **$DC_{avg}$** | 0 % |

## Classifications

| | |
|---|---|
| **ECLASS 5.0** | 27270903 |
| **ECLASS 5.1.4** | 27270903 |
| **ECLASS 6.0** | 27270903 |
| **ECLASS 6.2** | 27270903 |
| **ECLASS 7.0** | 27270903 |
| **ECLASS 8.0** | 27270903 |
| **ECLASS 8.1** | 27270903 |
| **ECLASS 9.0** | 27270903 |
| **ECLASS 10.0** | 27270904 |
| **ECLASS 11.0** | 27270904 |
| **ECLASS 12.0** | 27270903 |
| **ETIM 5.0** | EC001821 |

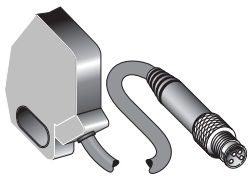
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| | |
|---|---|
| **ETIM 6.0** | EC001821 |
| **ETIM 7.0** | EC002719 |
| **ETIM 8.0** | EC002719 |
| **UNSPSC 16.0901** | 39121528 |

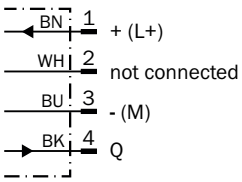
## Connection type

Wx2F-x4xx



## Connection diagram

Cd-066

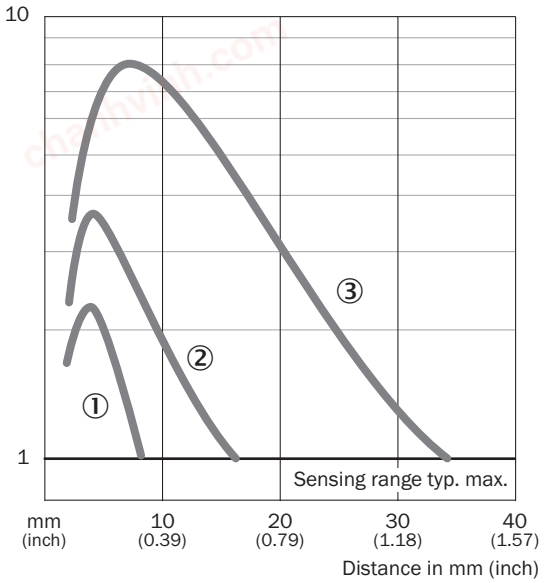


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## Characteristic curve

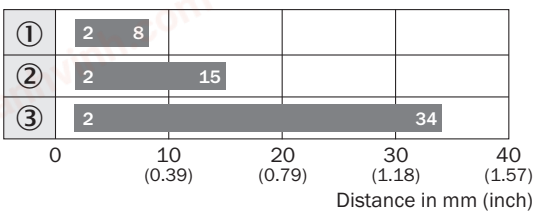
WT2F, 34 mm




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

## Sensing range diagram

WT2F, 34 mm




Sensing range

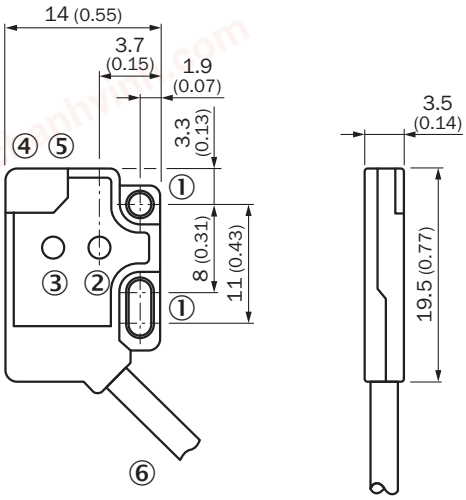
① Sensing range on black, 6% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on white, 90% remission factor

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## Dimensional drawing (Dimensions in mm (inch))

WT2F




① Mounting holes, Ø 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

| | Brief description | Type | Part no. |
|---|---|---|---|
| Plug connectors and cables | | | |
|  | • **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals | YF8U14-050VA3XLEAX | 2095889 |
|  | • **Connection type head A:** Male connector, M8, 4-pin, straight<br>• **Description:** Unshielded<br>• **Connection systems:** Screw-type terminals<br>• **Permitted cross-section:** 0.14 mm² ... 0.5 mm² | STE-0804-G | 6037323 |

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# 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.”**

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Contacts and other locations –www.sick.com