



## Photoelectric sensors W2 Flat, Photoelectric proximity sensor, energetic

WT2F-P250



**Model Name** > [WT2F-P250](#)  
**Part No.** > [6030581](#)



*Illustration may differ*

#### At a glance

- V-optic sensor with fixed sensing ranges of 9 mm or 18 mm for detecting transparent and glossy objects
- Energetic proximity sensor with fixed sensing ranges of 34 or 115 mm
- Rugged housing with metal sleeves for 2 mm fixing screws included with delivery
- 0.5 ms response time
- IP 67 enclosure rating
- Red light

#### Your benefits

- Variants with V-optics reliably detect transparent and glossy objects, resulting in a low-cost application solution - even for demanding applications
- Smart, optimal design fits into small spaces, providing increased application flexibility
- Sensors with four fixed sensing ranges provides a wide range of application options
- Quick and easy installation since sensors can be mounted directly to the machine



#### Features

|                                  |                                           |
|----------------------------------|-------------------------------------------|
| Sensor/detection principle:      | Photoelectric proximity sensor, 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 <sup>1)</sup>              |
| Sensing range:                   | 2 mm ... 34 mm <sup>2)</sup>              |
| Type of light:                   | Visible red light                         |
| Light source:                    | LED <sup>3)</sup>                         |
| Wave length:                     | 660 nm                                    |
| Focus adjustable:                | -                                         |

<sup>1) 2)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033) <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

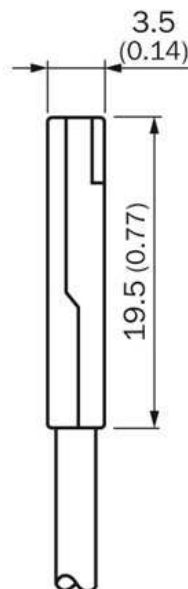
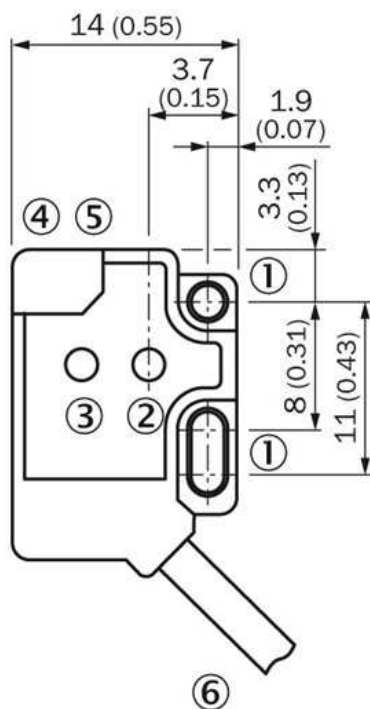
#### Mechanics/electronics

|                                     |                                   |
|-------------------------------------|-----------------------------------|
| Supply voltage:                     | 12 V DC ... 24 V DC <sup>1)</sup> |
| Residual ripple:                    | ≤ 5 Vpp <sup>2)</sup>             |
| Output type:                        | PNP                               |
| Switching mode:                     | Light switching                   |
| Output current I <sub>max</sub> ..: | ≤ 50 mA                           |
| Response time:                      | ≤ 0.5 ms <sup>3)</sup>            |

|                                |                                                      |
|--------------------------------|------------------------------------------------------|
| Switching frequency:           | 1,000 Hz <sup>4)</sup>                               |
| Electrical connection:         | Cable with connector M8, 3-pin, 200 mm <sup>5)</sup> |
| Cable material:                | PVC                                                  |
| Cable diameter:                | 2.4 mm                                               |
| Circuit protection:::          | A, C, D <sup>6)</sup> <sup>7)</sup> <sup>8)</sup>    |
| Weight:                        | 20 g                                                 |
| Polarisation filter:           | -                                                    |
| Reverse polarity protection:   | ✓                                                    |
| Short-circuit protection:      | ✓                                                    |
| Optics material:               | PC                                                   |
| Enclosure rating:              | IP 67                                                |
| Ambient temperature operation: | -20 °C ... +55 °C                                    |
| Ambient storage temperature:   | -40 °C ... +75 °C                                    |
| Signal voltage PNP HIGH/LOW:   | Approx. $V_S$ - 1.8 V / 0 V                          |
| Signal voltage NPN HIGH/LOW:   | Approx. $V_S$ / < 1.8 V                              |
| Housing material:              | Plastic, PC                                          |

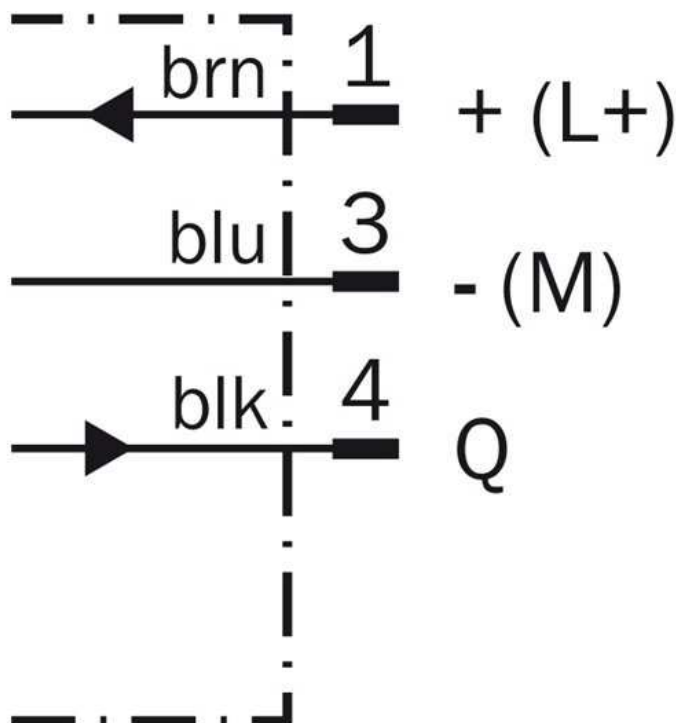
<sup>1)</sup> +/- 10 %   <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances   <sup>3)</sup> Signal transit time with resistive load   <sup>4)</sup> With light/dark ratio 1:1   <sup>5)</sup> Do not bend below 0 °C   <sup>6)</sup> A =  $V_S$   
 connections reverse-polarity protected   <sup>7)</sup> C = interference suppression   <sup>8)</sup> D = outputs overcurrent and short-circuit protected

## Dimensional drawing

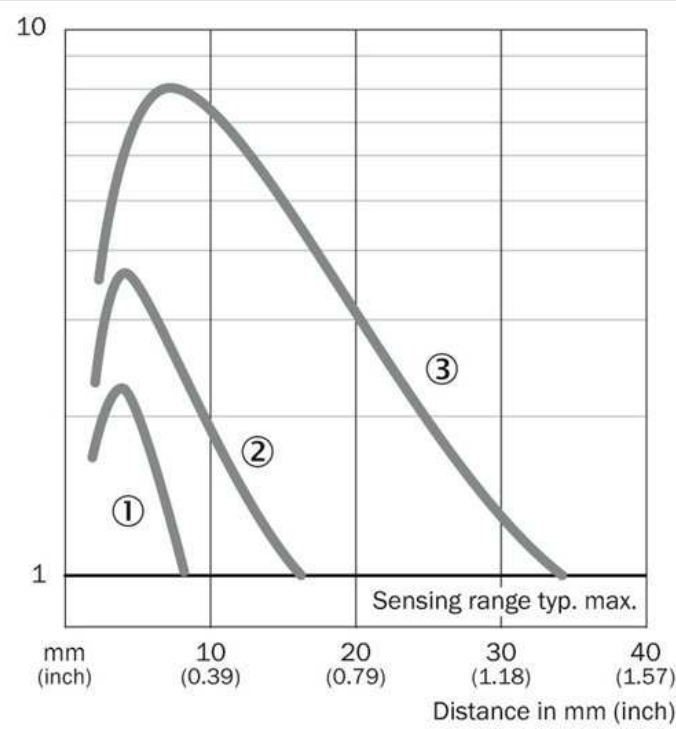


- [1] Mounting holes, Ø 2.1 mm
- [2] Optical axis, sender
- [3] Optical axis, receiver
- [4] LED indicator orange: switching output active
- [5] LED indicator green: strength indicator
- [6] Connection

Connection diagram

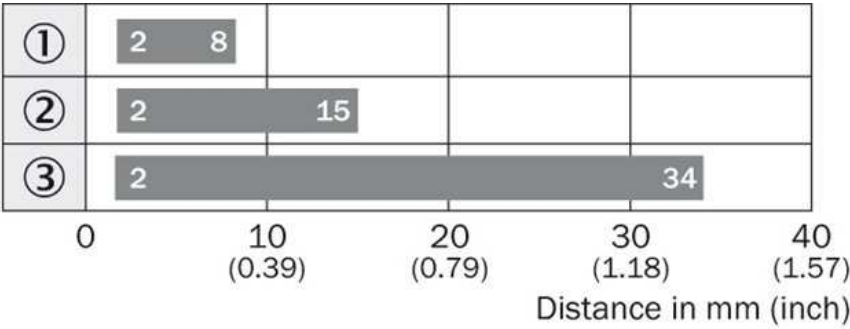


Characteristic curve



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

**Sensing range diagram**



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

■ Sensing range

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

**Connection type**



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