



Photoelectric sensors  
W2 Flat, Photoelectric proximity sensor,  
energetic

WT2F-P170



**Model Name** > [WT2F-P170](#)  
**Part No.** > [6030588](#)



*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.:	1 mm ... 9 mm <sup>1)</sup>
Sensing range:	1 mm ... 9 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

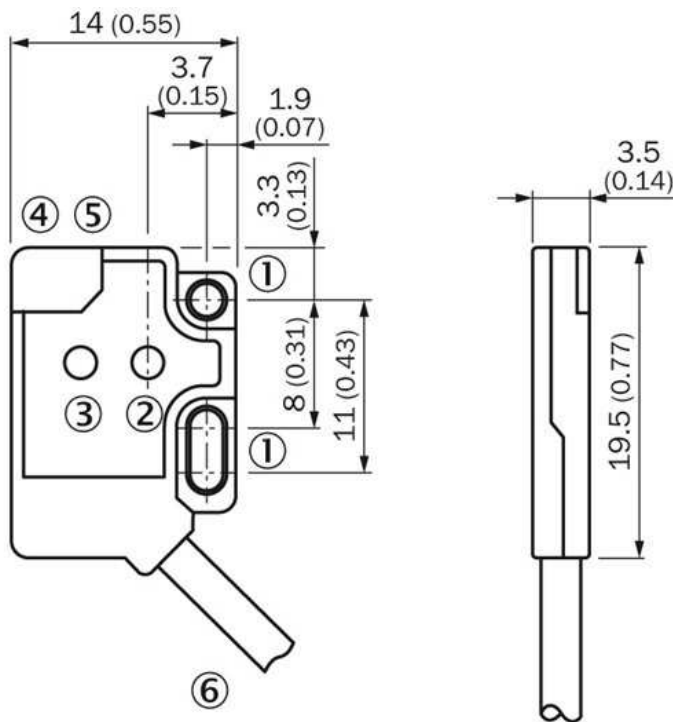
**Mechanics/electronics**

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, 3-wire, 2 m <sup>5)</sup>
Cable material:	PVC
Cable diameter:	2.4 mm
Circuit protection:::	A, C, D <sup>6) 7) 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

1)  $\pm 10\%$  2) May not exceed or fall short of  $V_S$  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

### Dimensional drawing

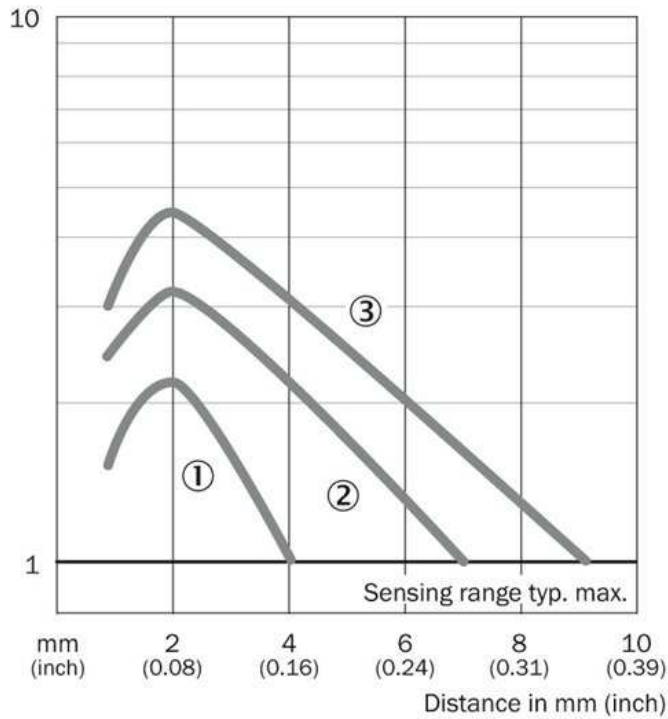


- [1] Mounting holes,  $\varnothing 2.1$  mm
- [2] Optical axis, sender
- [3] Optical axis, receiver
- [4] LED indicator orange: switching output active
- [5] LED indicator green: strength indicator
- [6] Connection

Connection diagram

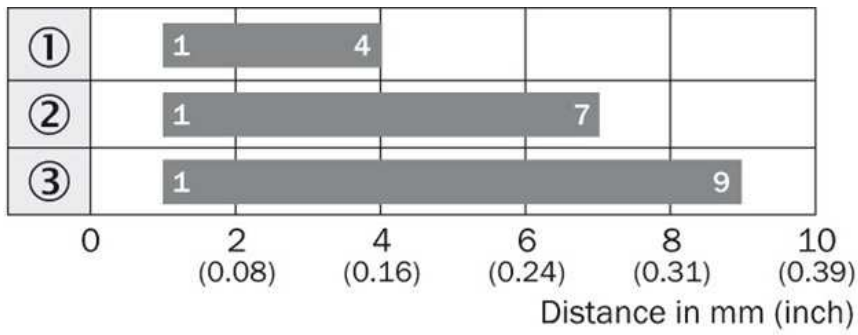


Characteristic curve



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

## Sensing range diagram

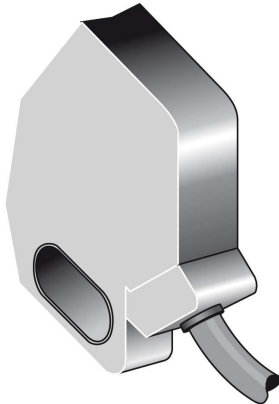


- |1| Sensing range on black, 6 % remission
- |2| Sensing range on gray, 18 % remission
- |3| Sensing range on white, 90 % remission

### ■ 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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