



Photoelectric sensors
W2 Flat, Photoelectric proximity sensor,
energetic

WT2F-N170



Model Name > WT2F-N170
Part No. > 6030587



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, Flat
Sensing range max.:	1 mm ... 9 mm ¹⁾
Sensing range:	1 mm ... 9 mm ²⁾
Type of light:	Visible red light
Light source:	LED ³⁾
Wave length:	660 nm
Focus adjustable:	-

^{1) 2)} Object with 90 % reflectance (referred to standard white DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C

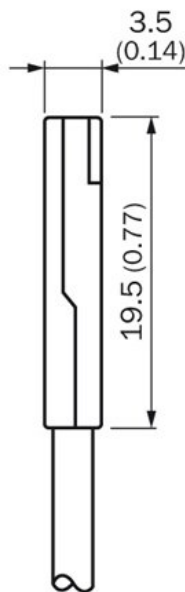
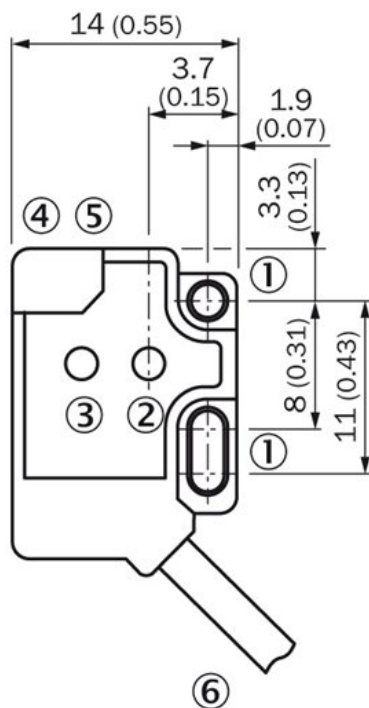
Mechanics/electronics

Supply voltage:	12 V DC ... 24 V DC ¹⁾
Ripple:	≤ 5 V _{pp} ²⁾
Output type:	NPN, Light-switching
Signal voltage PNP HIGH/LOW:	Approx. VS - 1.8 V / 0 V
Signal voltage NPN HIGH/LOW:	Approx. VS / < 1.8 V
Output current I _{max} :	50

Response time:	$\leq 0.5 \text{ ms}$ ³⁾
Switching frequency:	1,000 ⁴⁾
Connection type:	Cable, 3-wire, 2 m ⁵⁾
Cable material:	PVC
Cable diameter:	2.4 mm
Circuit protection:::	A, C, D ⁶⁾ ⁷⁾ ⁸⁾
Weight:	20 g
Polarisation filter:	-
Reverse polarity protection:	✓
Short-circuit protection:	✓
Housing material:	PC
Optics material:	PC
Enclosure rating:	IP 67
Ambient operating temperature:	-20 °C ... 55 °C
Ambient storage temperature:	-40 °C ... 75 °C

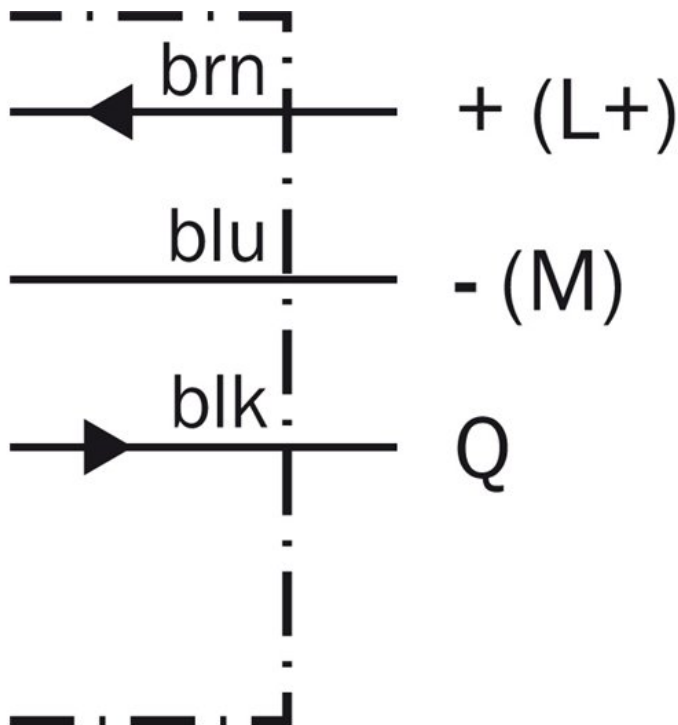
1) $\pm 10 \%$ 2) May not exceed or fall short of V_S tolerances 3) Signal transit time with resistive load 4) With light/dark ratio 1:1 5) Do not bend below 0 °C 6) $A = V_S$
connections reverse-polarity protected 7) C = interference suppression 8) D = outputs overcurrent and short-circuit protected

Dimensional drawing

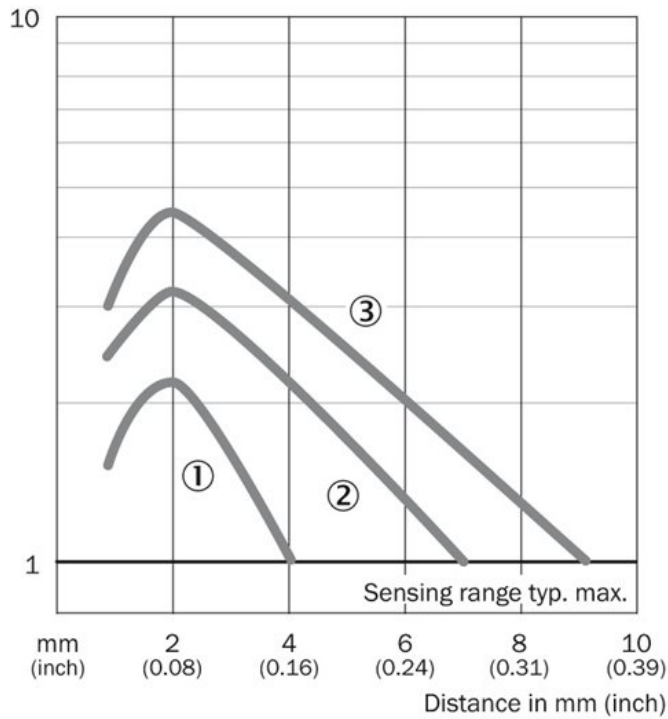


- [1] Mounting holes, $\varnothing 2.1 \text{ mm}$
- [2] Optical axis, sender
- [3] Optical axis, receiver
- [4] LED indicator orange: switching output active
- [5] LED indicator green: strength indicator
- [6] Connection

Connection diagram

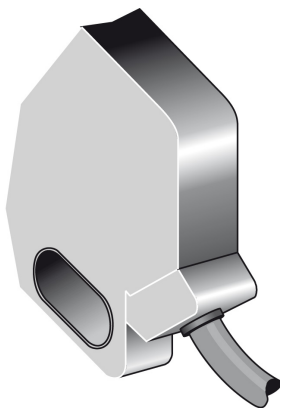


Characteristic curve

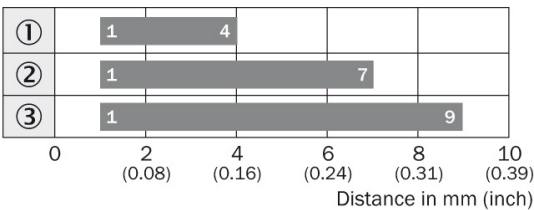


- |1| Sensing range on black, 6 % remission
- |2| Sensing range on grey, 18 % remission
- |3| Sensing range on white, 90 % remission

Connection type



Sensing range diagram



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

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