



WT2F-N170

W2

MINIATURE PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
WT2F-N170	6030587

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.	1 mm ... 9 mm ¹⁾
Sensing range	1 mm ... 9 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	12 V DC ... 24 V DC ¹⁾
Ripple	< 5 V _{pp} ²⁾
Switching output	NPN
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.

Signal voltage NPN HIGH/LOW	Approx. $V_S / < 1.8 \text{ V}$
Output current I_{max}	$\leq 50 \text{ mA}$
Response time	$\leq 0.5 \text{ ms}^{3)}$
Switching frequency	$1,000 \text{ Hz}^{4)}$
Connection type	Cable, 3-wire, 2 m ⁵⁾
Cable material	PVC
Cable diameter	$\varnothing 2.4 \text{ mm}$
Circuit protection	A ⁶⁾ C ⁷⁾ 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	$-20 \text{ °C} \dots +55 \text{ °C}$
Ambient temperature, storage	$-40 \text{ °C} \dots +75 \text{ °C}$

1) $\pm 10 \%$.

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 %

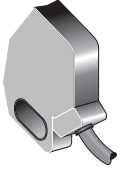
Classifications

eCl@ss 5.0	27270903
eCl@ss 5.1.4	27270903
eCl@ss 6.0	27270903
eCl@ss 6.2	27270903
eCl@ss 7.0	27270903
eCl@ss 8.0	27270903
eCl@ss 8.1	27270903
eCl@ss 9.0	27270903
eCl@ss 10.0	27270904
eCl@ss 11.0	27270904
eCl@ss 12.0	27270903
ETIM 5.0	EC001821

ETIM 6.0	EC001821
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

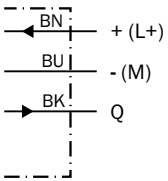
Connection type

Wx2F-x1xx



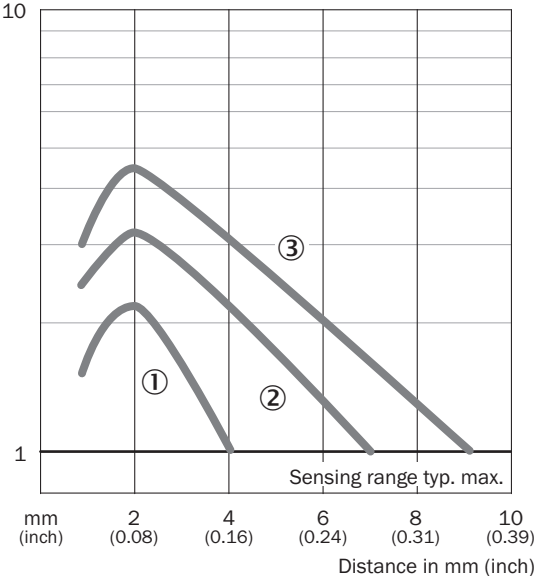
Connection diagram

Cd-043



Characteristic curve

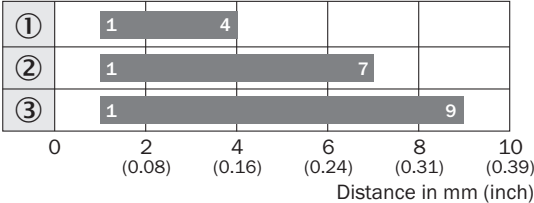
WT2F, 9 mm



- 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, 9 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

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: male connector, M8, 3-pin, straight 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.”

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