



**WTB27-3N1161**  
W27

**PHOTOELECTRIC SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ

## Ordering information

Type	part no.
WTB27-3N1161	1051644

Other models and accessories → [www.sick.com/W27](http://www.sick.com/W27)

## Detailed technical data

### Features

<b>Functional principle</b>	Photoelectric proximity sensor
<b>Functional principle detail</b>	Background suppression
<b>Dimensions (W x H x D)</b>	24.6 mm x 80.6 mm x 54 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	30 mm ... 2,000 mm <sup>1)</sup>
<b>Sensing range</b>	100 mm ... 2,000 mm
<b>Type of light</b>	Visible red light
<b>Light source</b>	PinPoint LED <sup>2)</sup>
<b>Light spot size (distance)</b>	Ø 12 mm (800 mm)
<b>Wave length</b>	660 nm
<b>Adjustment</b>	Potentiometer

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).

<sup>2)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

### Mechanics/electronics

<b>Supply voltage U<sub>B</sub></b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Switching output</b>	NPN
<b>Output function</b>	Complementary
<b>Switching mode</b>	Light/dark switching

<sup>1)</sup> Limit values when operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not fall below or exceed U<sub>V</sub> 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<sub>S</sub> connections reverse-polarity protected.

<sup>7)</sup> B = inputs and output reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> Reference voltage: 50 V DC.

<b>Signal voltage NPN HIGH/LOW</b>	Approx. $V_S / < 2.5 \text{ V}$
<b>Output current <math>I_{\max}</math></b>	$\leq 100 \text{ mA}$
<b>Response time</b>	$\leq 1.5 \text{ ms}^{3)}$
<b>Switching frequency</b>	$350 \text{ Hz}^{4)}$
<b>Connection type</b>	Cable, 4-wire, $2 \text{ m}^{5)}$
<b>Cable material</b>	Plastic, PVC
<b>Circuit protection</b>	A <sup>6)</sup> B <sup>7)</sup> C <sup>8)</sup>
<b>Protection class</b>	II <sup>9)</sup>
<b>Weight</b>	180 g
<b>Housing material</b>	Plastic, ABS
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP66 IP67
<b>Ambient operating temperature</b>	$-40 \text{ °C} \dots +60 \text{ °C}$
<b>Ambient temperature, storage</b>	$-40 \text{ °C} \dots +75 \text{ °C}$
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493

1) Limit values when operated in short-circuit protected network: max. 8 A.

2) May not fall below or exceed  $U_V$  tolerances.

3) Signal transit time with resistive load.

4) With light/dark ratio 1:1.

5) Do not bend below  $0 \text{ °C}$ .

6) A =  $V_S$  connections reverse-polarity protected.

7) B = inputs and output reverse-polarity protected.

8) C = interference suppression.

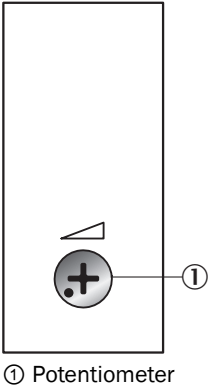
9) Reference voltage: 50 V DC.

## Classifications

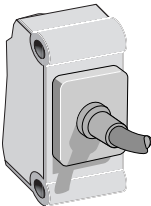
<b>ECLASS 5.0</b>	27270904
<b>ECLASS 5.1.4</b>	27270904
<b>ECLASS 6.0</b>	27270904
<b>ECLASS 6.2</b>	27270904
<b>ECLASS 7.0</b>	27270904
<b>ECLASS 8.0</b>	27270904
<b>ECLASS 8.1</b>	27270904
<b>ECLASS 9.0</b>	27270904
<b>ECLASS 10.0</b>	27270904
<b>ECLASS 11.0</b>	27270904
<b>ECLASS 12.0</b>	27270903
<b>ETIM 5.0</b>	EC002719
<b>ETIM 6.0</b>	EC002719
<b>ETIM 7.0</b>	EC002719
<b>ETIM 8.0</b>	EC002719

UNSPSC 16.0901	39121528
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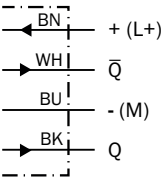
Adjustments Potentiometer



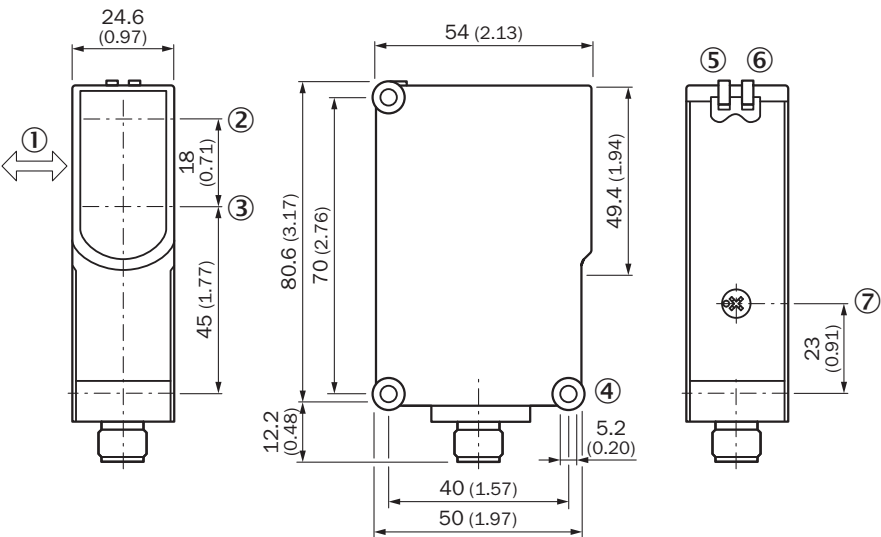
Connection type



Connection diagram Cd-094





Dimensional drawing WTB27-3, potentiometer




- Dimensions in mm (inch)
- ① Standard direction of the material being detected
  - ② Optical axis, sender
  - ③ Optical axis, receiver
  - ④ Mounting hole  $\varnothing$  5.2 mm
  - ⑤ LED indicator green: Supply voltage active
  - ⑥ LED indicator yellow: Status of received light beam
  - ⑦ Sensing range adjustment: potentiometer

Recommended accessories

Other models and accessories → [www.sick.com/W27](http://www.sick.com/W27)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"><li>• <b>Description:</b> Mounting bracket with hinged arm</li><li>• <b>Material:</b> Steel</li><li>• <b>Details:</b> Steel, zinc coated</li><li>• <b>Items supplied:</b> Mounting hardware included</li><li>• <b>Suitable for:</b> W23-2, W27-3, Reflex Array</li></ul>	BEF-WN-W27	2009122
device protection and care			
	<ul style="list-style-type: none"><li>• <b>Description:</b> Protective housing for W26, W27-3 and mounting rods with diameter 12 mm ... 20 mm</li><li>• <b>Material:</b> Steel, zinc diecast</li><li>• <b>Items supplied:</b> Universal clamp BEF-KHS-KH1 (2022726), mounting hardware</li><li>• <b>Suitable for:</b> W27-3, W26, RAY26</li></ul>	BEF-SG-W27	2039601

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight, A-coded</li><li>• <b>Description:</b> Unshielded</li><li>• <b>Connection systems:</b> Screw-type terminals</li><li>• <b>Permitted cross-section:</b> ≤ 0.75 mm²</li></ul>	STE-1204-G	6009932

## 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.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)