



**WTB27-3S3711**  
W27

**PHOTOELECTRIC SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
WTB27-3S3711	1027764

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

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Dimensions (W x H x D)	24.6 mm x 80.6 mm x 54 mm
Housing design (light emission)	Rectangular
Sensing range max.	30 mm ... 1,600 mm <sup>1)</sup>
Sensing range	100 mm ... 1,600 mm
Type of light	Infrared light
Light source	LED <sup>2)</sup>
Light spot size (distance)	Ø 25 mm (800 mm)
Wave length	880 nm
Adjustment	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 <math>U_B</math></b>	20 V AC/DC ... 250 V AC/DC <sup>1)</sup>
<b>Current consumption</b>	40 mA <sup>2)</sup>
<b>Power consumption</b>	≤ 2.5 VA
<b>Switching output</b>	Relay, electrically isolated <sup>3)</sup>
<b>Output function</b>	Change-over contacts
<b>Switching mode</b>	Light switching
<b>Switching current (switching voltage)</b>	4 A @ 250 V AC, 4 A @ 24 V DC, 0.125 A @ 250 V DC UL: 4 A @ 250 V AC, general use / 4 A @ 250 V AC, resistive (NO) / 3 A @ 250 V AC, resistive (NC) / 4 A @ 24 V DC, NO, general use / 3 A @ 24 V DC, NC, general use / R300 / B300 (NO contacts only) / 0 °C ... +60 °C
<b>Response time</b>	≤ 10 ms
<b>Switching frequency</b>	10 Hz <sup>4)</sup>
<b>Connection type</b>	Cable with Q7 male connector, 7-pin, AC/UC-coded, 150 mm
<b>Cable material</b>	Plastic, PVC
<b>Circuit protection</b>	A <sup>5)</sup> C <sup>6)</sup>
<b>Protection class</b>	II <sup>7)</sup>
<b>Weight</b>	140 g
<b>Housing material</b>	Plastic, ABS
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP66 IP67
<b>Usage category</b>	AC-15, DC-13 According to EN 60947-1
<b>Ambient operating temperature</b>	-40 °C ... +60 °C <sup>8)</sup>
<b>Ambient temperature, storage</b>	-40 °C ... +75 °C
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493

<sup>1)</sup> Limit values.

<sup>2)</sup> Without load.

<sup>3)</sup> Provide suitable spark suppression for inductive or capacitive loads.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>6)</sup> C = interference suppression.

<sup>7)</sup> Reference voltage: 250 V AC, overvoltage category 2.

<sup>8)</sup> UL: 0 °C ... +60 °C.

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	698 years
<b>DC<sub>avg</sub></b>	0 %
<b>B<sub>10D</sub></b>	65,693 Switching cycles <sup>1)</sup>

<sup>1)</sup> Only for devices containing electro-mechanical components. In this case, the MTTF<sub>D</sub> value of the entire device must be calculated from the given B<sub>10D</sub> value, the number of switching cycles and the given MTTF<sub>D</sub> value.

## Certificates

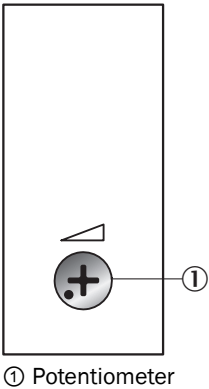
<b>EU declaration of conformity</b>	✓
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<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China RoHS</b>	✓
<b>CCC certificate</b>	✓
<b>ECOLAB certificate</b>	✓
<b>cULus certificate</b>	✓
<b>Photobiological safety (DIN EN 62471) certificate</b>	✓

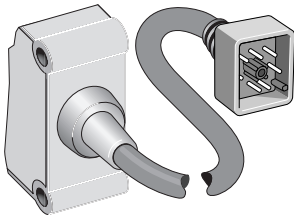
Classifications

<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
<b>UNSPSC 16.0901</b>	39121528

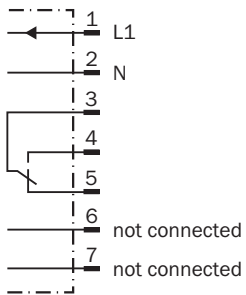
Adjustments Potentiometer



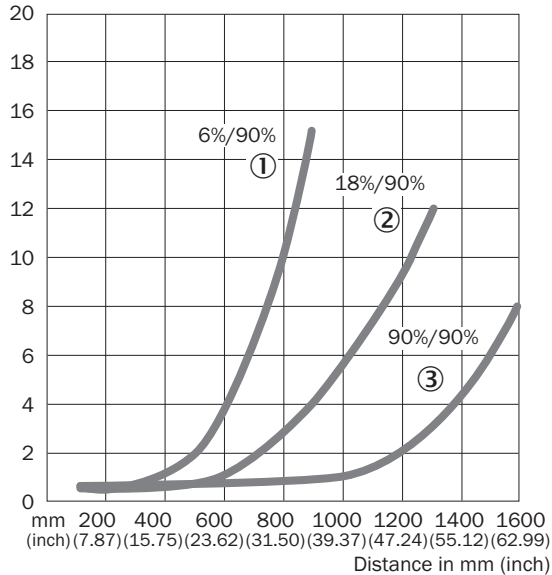
## Connection type



## Connection diagram Cd-193

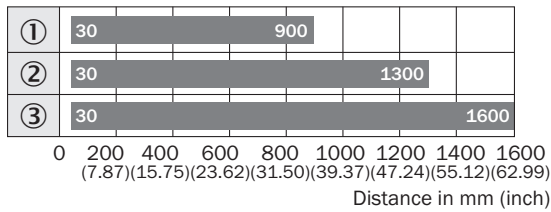


## Characteristic curve WTB27-3, infrared



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

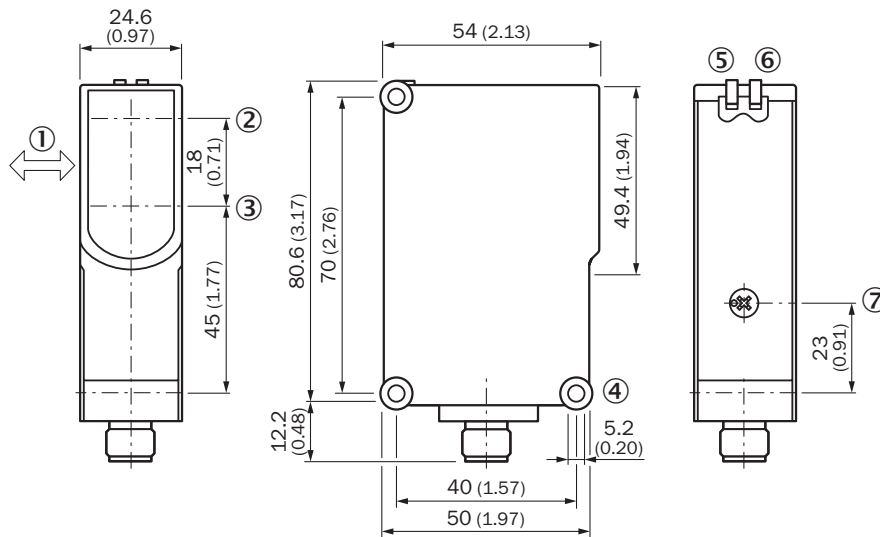
### Sensing range diagram WTB27-3, infrared



■ Sensing range

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

### 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.
connectors and cables			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, Q7, 7-pin, angled, AC-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> 0.25 mm² ... 1 mm²</li> </ul>	DOS-2207-W	6006821
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

## 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)