



# WTB27X-3P1811

W27-3 Ex

COMPACT PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
WTB27X-3P1811	1027988

Other models and accessories → [www.sick.com/W27-3\\_Ex](http://www.sick.com/W27-3_Ex)

Illustration may differ



### Detailed technical data

#### Features

<b>Sensor/ detection principle</b>	Photoelectric proximity sensor, Background suppression
<b>Dimensions (W x H x D)</b>	31.4 mm x 112.3 mm x 70.4 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	30 mm ... 1,600 mm <sup>1)</sup>
<b>Sensing range</b>	100 mm ... 1,600 mm
<b>Type of light</b>	Infrared light
<b>Light source</b>	LED <sup>2)</sup>
<b>Light spot size (distance)</b>	Ø 25 mm (800 mm)
<b>Wave length</b>	880 nm
<b>Adjustment</b>	Potentiometer
<b>Special applications</b>	Explosive areas

<sup>1)</sup> Object with 90 % reflectance (referred to 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</b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	40 mA <sup>3)</sup>

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

<sup>2)</sup> May not exceed or fall below U<sub>V</sub> tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> Do not bend below 0 °C.

<sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>8)</sup> B = inputs and output reverse-polarity protected.

<sup>9)</sup> C = interference suppression.

<sup>10)</sup> Reference voltage: 50 V DC.

<b>Switching output</b>	PNP
<b>Output function</b>	Complementary
<b>Switching mode</b>	Light/dark switching
<b>Signal voltage PNP HIGH/LOW</b>	Approx. $V_S - 2.5 \text{ V} / 0 \text{ V}$
<b>Output current <math>I_{\text{max}}</math></b>	$\leq 100 \text{ mA}$
<b>Response time</b>	$\leq 1.5 \text{ ms}^{4)}$
<b>Switching frequency</b>	$350 \text{ Hz}^{5)}$
<b>Connection type</b>	Cable, 4-wire, 10 m <sup>6)</sup>
<b>Cable material</b>	PVC
<b>Circuit protection</b>	A <sup>7)</sup> B <sup>8)</sup> C <sup>9)</sup>
<b>Protection class</b>	II <sup>10)</sup>
<b>Weight</b>	750 g
<b>Housing material</b>	Plastic, Stainless steel V2A (1.4301) Plastic
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP67
<b>ATEX marking</b>	EX II 3G EX nA op is IIB T4 Gc X EX II 3D EX tc IIIB T135 °C Dc X
<b>Ex area category</b>	3D, 3G
<b>Ambient operating temperature</b>	-20 °C ... +50 °C
<b>Ambient temperature, storage</b>	-40 °C ... +75 °C

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

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

3) Without load.

4) Signal transit time with resistive load.

5) With light/dark ratio 1:1.

6) Do not bend below 0 °C.

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

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

9) C = interference suppression.

10) Reference voltage: 50 V DC.

### Safety-related parameters

<b>MTTF<sub>D</sub></b>	754 years
<b>DC<sub>avg</sub></b>	0 %

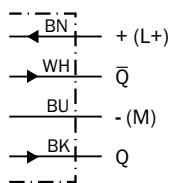
### Classifications

<b>ECI@ss 5.0</b>	27270903
<b>ECI@ss 5.1.4</b>	27270903
<b>ECI@ss 6.0</b>	27270903
<b>ECI@ss 6.2</b>	27270903
<b>ECI@ss 7.0</b>	27270903
<b>ECI@ss 8.0</b>	27270903
<b>ECI@ss 8.1</b>	27270903

<b>ECl@ss 9.0</b>	27270903
<b>ECl@ss 10.0</b>	27270904
<b>ECl@ss 11.0</b>	27270904
<b>ETIM 5.0</b>	EC001821
<b>ETIM 6.0</b>	EC001821
<b>ETIM 7.0</b>	EC002719
<b>ETIM 8.0</b>	EC002719
<b>UNSPSC 16.0901</b>	39121528

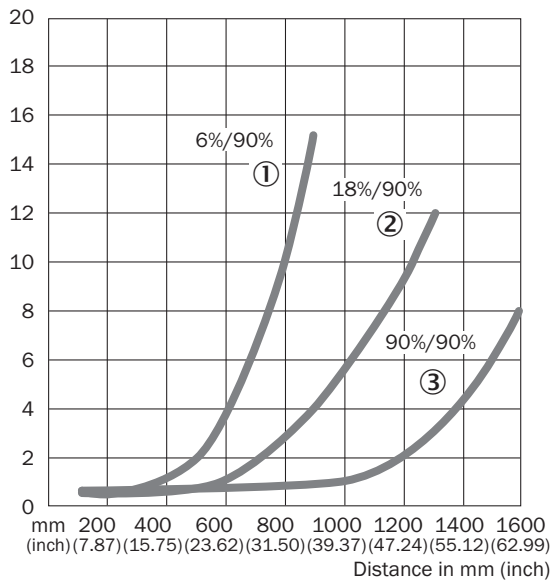
### Connection diagram

Cd-094



### Characteristic curve

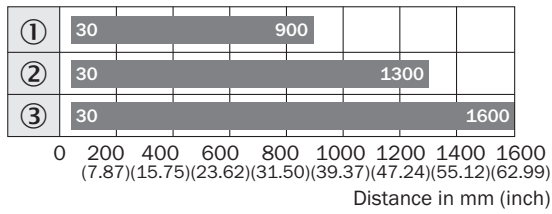
WTB27-3 EX



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

## Sensing range diagram

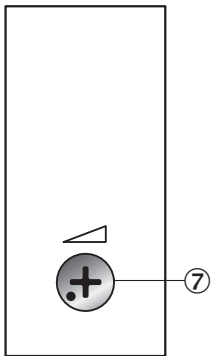
WTB27-3 EX



■ Sensing range

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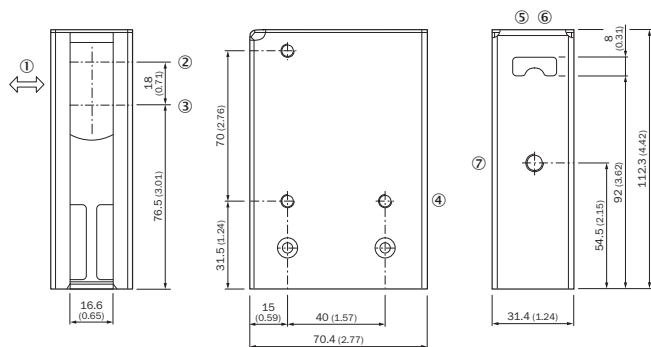
## Adjustments



⑦ Sensing range adjustment: potentiometer

## Dimensional drawing (Dimensions in mm (inch))


WTB27-3 EX



- ① Standard direction
- ② Optical axis, sender
- ③ Optical axis, receiver
- ④ Mounting hole, Ø 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/W27-3\\_Ex](http://www.sick.com/W27-3_Ex)

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: male connector, M12, 4-pin, straight Head B: - Cable: unshielded	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:

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