



## WTT12L-B2560S46

WT12 PowerProx

TIME-OF-FLIGHT SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
WTT12L-B2560S46	1139590

Other models and accessories → [www.sick.com/WTT12\\_PowerProx](http://www.sick.com/WTT12_PowerProx)

Illustration may differ



## Detailed technical data

## Features

<b>Functional principle</b>	Photoelectric proximity sensor
<b>Functional principle detail</b>	Background suppression, Optical time-of-flight
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	50 mm ... 3,800 mm <sup>1)</sup>
<b>Sensing range</b>	100 mm ... 3,800 mm <sup>2)</sup> 1)
<b>Type of light</b>	Visible red light
<b>Light source</b>	Laser <sup>3)</sup>
<b>Light spot size (distance)</b>	Ø 18 mm (3,800 mm)
<b>Wave length</b>	658 nm
<b>Laser class</b>	1 (IEC 60825-1 / CDRH 21 CFR 1040.10 & 1040.11)
<b>Adjustment</b>	Single teach-in button (1 x)
<b>Special features</b>	Teach button 1: Deactivated Yellow indicator LED 1: Object is detected Yellow indicator LED 2: Pin 2 signal for jam detection Teach offset of -30 mm. The teach can be performed on the background, and after the teach the background is not recognized as an object.
<b>Safety-related parameters</b>	
	MTTF <sub>D</sub> 138 years

<sup>1)</sup> Object with 6 ... 90% remission (based on standard white, DIN 5033).

<sup>2)</sup> Adjustable.

<sup>3)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

DC <sub>avg</sub>	0 %
T <sub>M</sub> (mission time)	20 years

1) Object with 6 ... 90% remission (based on standard white, DIN 5033).

2) Adjustable.

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

## 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>Current consumption</b>	70 mA <sup>3)</sup>
<b>Switching output</b>	Push-pull: PNP/NPN <sup>4)</sup>
<b>Number of switching outputs</b>	2 (Q <sub>1</sub> , Jam) <sup>4)</sup>
<b>Switching mode</b>	Light switching <sup>4)</sup>
<b>Output current I<sub>max.</sub></b>	≤ 100 mA
<b>Response time</b>	≤ 5 ms <sup>5)</sup>
<b>Switching frequency</b>	100 Hz <sup>6)</sup>
<b>Analog output</b>	-
<b>Input</b>	Deactivated
<b>Circuit protection</b>	A <sup>7)</sup> B <sup>8)</sup> C <sup>9)</sup>
<b>Protection class</b>	III
<b>Enclosure rating</b>	IP67
<b>Warm-up time</b>	< 15 min <sup>10)</sup>
<b>Initialization time</b>	< 300 ms

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

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

3) Without load. At V<sub>S</sub> = 24 V.

4) Q<sub>1</sub> = switching thresholds, light switching.

5) Signal transit time with resistive load.

6) With light/dark ratio 1:1.

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

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

9) C = interference suppression.

10) Below T<sub>U</sub> = -10 °C a warm-up time is necessary.

## Mechanics

<b>Dimensions (W x H x D)</b>	20 mm x 49.6 mm x 44.2 mm
<b>Housing material</b>	Plastic, VISTAL®
<b>Optics material</b>	Plastic, PMMA
<b>Weight</b>	48 g
<b>Connection type</b>	Plug, M12, 5-pin

## Ambient data

<b>Ambient operating temperature</b>	-35 °C ... +50 °C <sup>1)</sup>
<b>Ambient temperature, storage</b>	-40 °C ... +70 °C

<sup>1)</sup> As of  $T_a = 45$  °C, a max.load current  $I_{max} = 50$  mA is permitted.

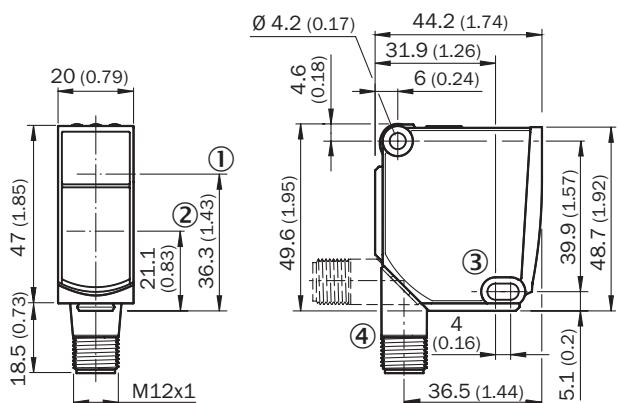
## Certificates

<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>cULus certificate</b>	✓
<b>IO-Link</b>	✓
<b>Laser safety (IEC 60825-1) 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

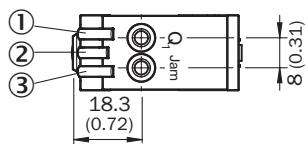
## Dimensional drawing



Dimensions in mm (inch)

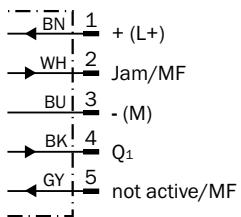
- ① optical axis, sender
- ② optical axis, receiver
- ③ Mounting hole, Ø 4.2 mm
- ④ Connection

## Display and control elements

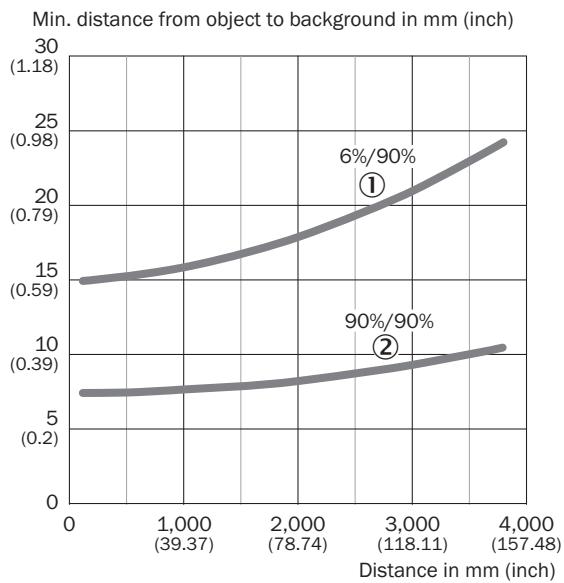


- ① Yellow indicator LED: Object is detected
- ② LED indicator green: power on
- ③ Indicator LED yellow: Pin 2 signal for jam detection

## Connection diagram



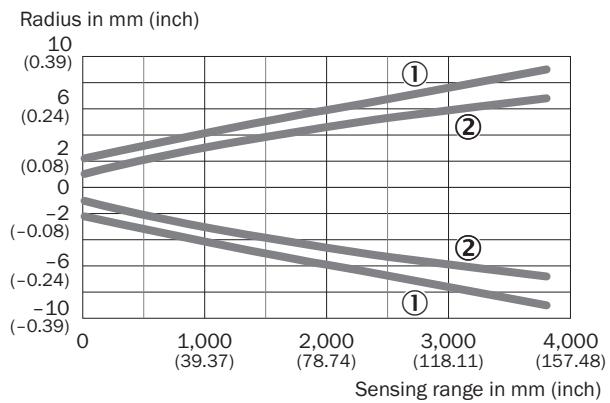
## Characteristic curve



① Sensing range on black, 6% remission factor

② Sensing range on white, 90% remission factor

## Light spot size

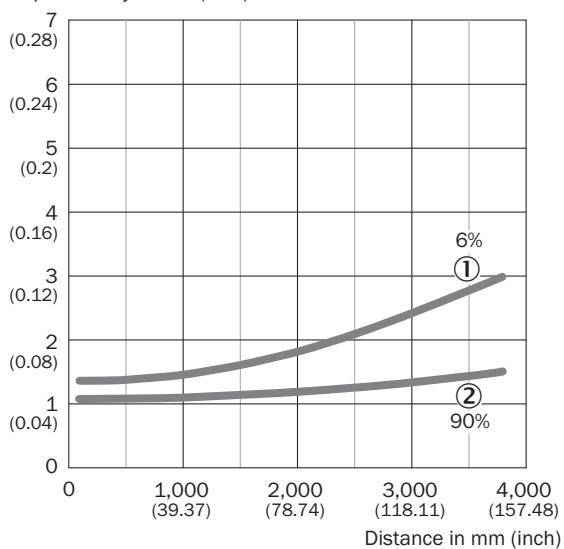


① Light spot horizontal

② Light spot vertical

## Repeatability

Repeatability in mm (inch)



① 6 % remission, on black

② 90 % remission, on white

## Recommended accessories

Other models and accessories → [www.sick.com/WTT12\\_PowerProx](http://www.sick.com/WTT12_PowerProx)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"><li><b>Description:</b> Mounting brackets</li><li><b>Suitable for:</b> PowerProx</li></ul>	BEF-WTT12L	2078538

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A15-020VB5XLEAX	2096239
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 5-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 mm<sup>2</sup></li> <li><b>Note:</b> For field bus technology</li> </ul>	STE-1205-G	6022083
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A15-050VB5XLEAX	2096240
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 0.6 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A15-C60VB5XLEAX	2145570
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 3 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A15-030VB5XLEAX	2145572

## 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)