



# WTT12L-B2560S46

WTT12 PowerProx

TIME-OF-FLIGHT SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
WTT12L-B2560S46	1139590

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

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression, Optical time-of-flight
Housing design (light emission)	Rectangular
Sensing range max.	50 mm ... 3,800 mm <sup>1)</sup>
Sensing range	100 mm ... 3,800 mm <sup>2)</sup> <sup>1)</sup>
Type of light	Visible red light
Light source	Laser <sup>3)</sup>
Light spot size (distance)	Ø 18 mm (3,800 mm)
Wave length	658 nm
Laser class	1 (IEC 60825-1 / CDRH 21 CFR 1040.10 & 1040.11)
Adjustment	Single teach-in button (1 x)
Special features	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.
Safety-related parameters	
	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

Supply voltage U <sub>B</sub>	10 V DC ... 30 V DC <sup>1)</sup>
Ripple	< 5 V <sub>pp</sub> <sup>2)</sup>
Current consumption	70 mA <sup>3)</sup>
Switching output	Push-pull: PNP/NPN <sup>4)</sup>
Number of switching outputs	2 (Q <sub>1</sub> , Jam) <sup>4)</sup>
Switching mode	Light switching <sup>4)</sup>
Output current I <sub>max.</sub>	≤ 100 mA
Response time	≤ 5 ms <sup>5)</sup>
Switching frequency	100 Hz <sup>6)</sup>
Analog output	-
Input	Deactivated
Circuit protection	A <sup>7)</sup> B <sup>8)</sup> C <sup>9)</sup>
Protection class	III
Enclosure rating	IP67
Warm-up time	< 15 min <sup>10)</sup>
Initialization time	< 300 ms

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

2) May not fall below or exceed U<sub>y</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

Dimensions (W x H x D)	20 mm x 49.6 mm x 44.2 mm
Housing material	Plastic, VISTAL®
Optics material	Plastic, PMMA
Weight	48 g
Connection type	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  $T_a = 45\text{ °C}$ , a max.load current  $I_{\max} = 50\text{ mA}$  is permitted.

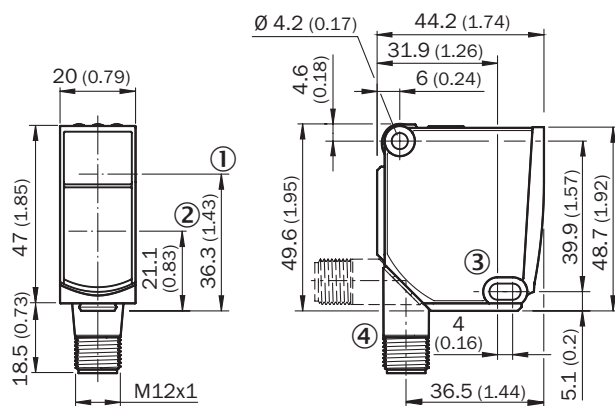
### Certificates

<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

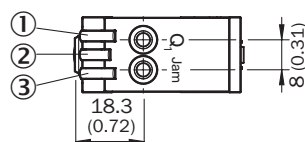
## Dimensional drawing



Dimensions in mm (inch)

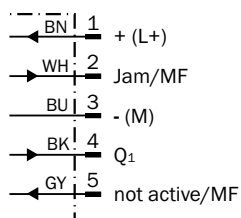
- ① optical axis, sender
- ② optical axis, receiver
- ③ Mounting hole, Ø 4.2 mm
- ④ Connection

## Display and control elements

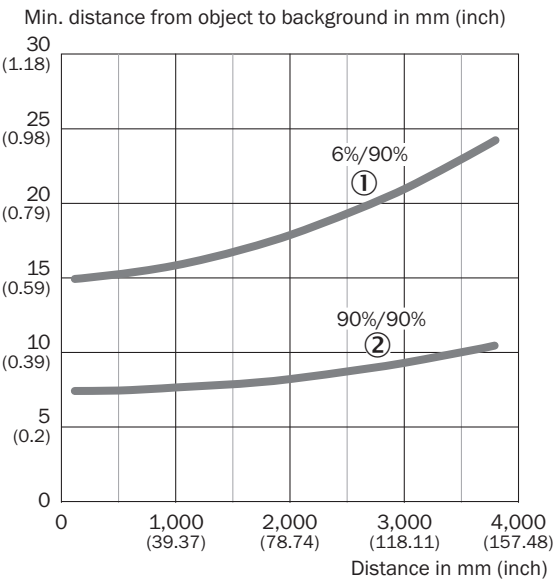


- ① Yellow indicator LED: Object is detected
- ② LED indicator green: power on
- ③ Indicator LED yellow: Pin 2 signal for jam detection

## Connection diagram

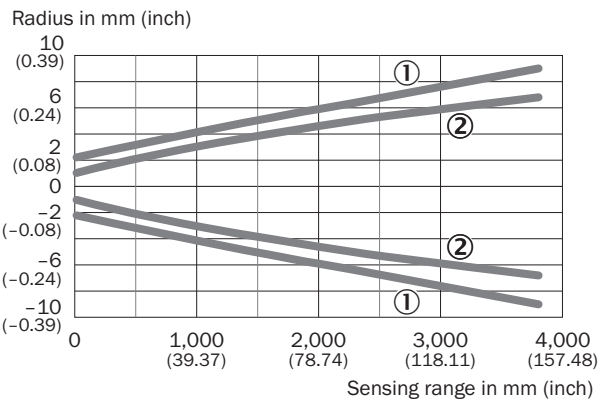


Characteristic curve



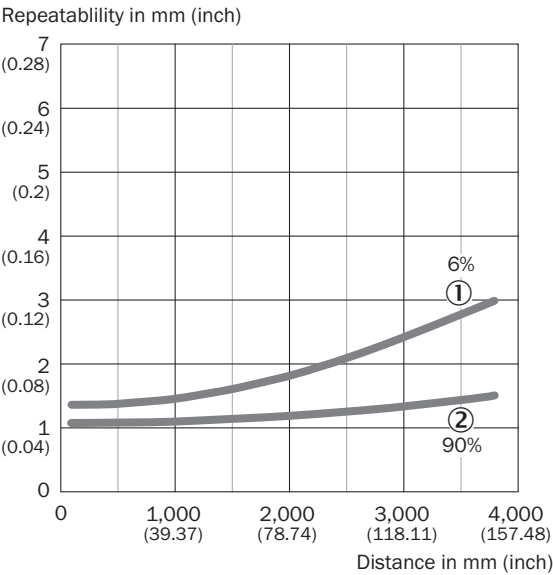
- ① Sensing range on black, 6% remission factor  
② Sensing range on white, 90% remission factor

Light spot size



- ① Light spot horizontal  
② Light spot vertical


Repeatability








- 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> <math>\leq 0.75 \text{ mm}^2</math></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)