

# WTT12LC-B2523

WTT12 PowerProx

TIME-OF-FLIGHT SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	part no.
WTT12LC-B2523	1082414

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

### Detailed technical data

#### Features

<b>Functional principle</b>	Photoelectric proximity sensor
<b>Functional principle detail</b>	Background suppression, Optical time-of-flight, distance value
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	50 mm ... 1,400 mm <sup>1)</sup>
<b>Sensing range</b>	100 mm ... 1,400 mm <sup>2)</sup> <sup>3)</sup>
<b>Distance value</b>	
Measuring range	50 mm ... 1,400 mm <sup>1)</sup>
Resolution	1,000 µm
Repeatability	1,1 mm ... 1,5 mm <sup>4) 5) 6)</sup>
Accuracy	Typ. ± 20 mm, typ. ± 15 mm <sup>7) 8)</sup>
<b>Type of light</b>	Visible red light

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

<sup>2)</sup> Adjustable.

<sup>3)</sup> Object with 90% remission (based on standard white, DIN 5033).

<sup>4)</sup> Equivalent to 1 σ.

<sup>5)</sup> See characteristic curves repeatability.

<sup>6)</sup> 6% ... 90% remission factor.

<sup>7)</sup> 50 ... 1000 mm.

<sup>8)</sup> 1000 ... 1400 mm.

<sup>9)</sup> Average service life: 100,000 h at T<sub>J</sub> = +25 °C.

<sup>10)</sup> Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

<b>Light source</b>	Laser <sup>9)</sup>
<b>Light spot size (distance)</b>	Ø 10 mm (1,400 mm)
<b>Wave length</b>	658 nm
<b>Laser class</b>	1 (IEC 60825-1 / CDRH 21 CFR 1040.10 & 1040.11) <sup>10)</sup>
<b>Adjustment</b>	Single teach-in button (2 x), IO-Link
<b>Safety-related parameters</b>	
	MTTF <sub>D</sub> 138 years
	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) Object with 90% remission (based on standard white, DIN 5033).

4) Equivalent to 1  $\sigma$ .

5) See characteristic curves repeatability.

6) 6% ... 90% remission factor.

7) 50 ... 1000 mm.

8) 1000 ... 1400 mm.

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## Interfaces

<b>Communication interface</b>	IO-Link V1.1
<b>Communication Interface detail</b>	COM2 (38,4 kBaud)
<b>Cycle time</b>	5 ms
<b>Process data length</b>	32 Bit
<b>Process data structure</b>	Bit 0 = switching signal Q <sub>01</sub> Bit 1 = switching signal Q <sub>02</sub> Bit 2 ... 8 = BDC 2 ... 8 Bit 9 ... 15 = empty Bit 16 ... 31 = distance value
<b>Additional features</b>	8 switching points for distance to object, of which 2 can be inverted, 1 switching point as switching window or configurable with hysteresis., multifunctional input: sender off, external teach, inactive
<b>VendorID</b>	26
<b>DeviceID HEX</b>	0x800147
<b>DeviceID DEC</b>	8388934

## Electronics

<b>Supply voltage U<sub>B</sub></b>	10 V DC ... 30 V DC <sup>1) 2)</sup>
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1) Limit values. Operated in short-circuit protected network: max. 8 A.

2) V<sub>S</sub> min at IO-Link operation = 18 V.

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

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

5) Q1, Q2 = 2 switching thresholds, light switching.

6) Signal transit time with resistive load.

7) With light/dark ratio 1:1.

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

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

10) C = interference suppression.

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

<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>3)</sup>
<b>Current consumption</b>	70 mA <sup>4)</sup>
<b>Switching output</b>	Push-pull: PNP/NPN <sup>5)</sup>
<b>Number of switching outputs</b>	2 (Q <sub>1</sub> , Q <sub>2</sub> ) <sup>5)</sup>
<b>Switching mode</b>	Light switching <sup>5)</sup>
<b>Output current I<sub>max</sub></b>	≤ 100 mA
<b>Response time</b>	≤ 16.7 ms <sup>6)</sup>
<b>Switching frequency</b>	30 Hz <sup>7)</sup>
<b>Analog output</b>	-
<b>Input</b>	MF <sub>in</sub> = multifunctional input programmable
<b>Circuit protection</b>	A <sup>8)</sup> B <sup>9)</sup> C <sup>10)</sup>
<b>Protection class</b>	III
<b>Enclosure rating</b>	IP67
<b>Warm-up time</b>	< 15 min <sup>11)</sup>
<b>Initialization time</b>	< 300 ms

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

<sup>2)</sup> V<sub>S</sub> min at IO-Link operation = 18 V.

<sup>3)</sup> May not fall below or exceed U<sub>V</sub> tolerances.

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<sup>8)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

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<sup>10)</sup> C = interference suppression.

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### 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<sub>a</sub> = 45 °C, a max.load current I<sub>max</sub> = 50 mA is permitted.

### Certificates

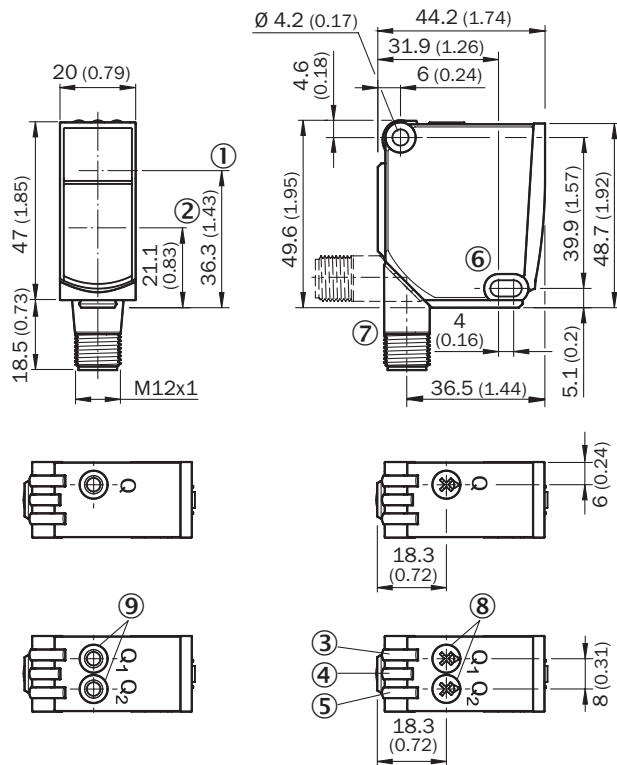
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓

<b>Moroccan declaration of conformity</b>	✓
<b>China RoHS</b>	✓
<b>cULus certificate</b>	✓
<b>IO-Link certificate</b>	✓
<b>Laser safety (IEC 60825-1) certificate</b>	✓
<b>Information according to Art. 3 of Data Act (Regulation EU 2023/2854)</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

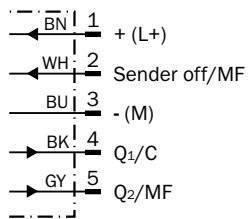
### Dimensional drawing



Dimensions in mm (inch)

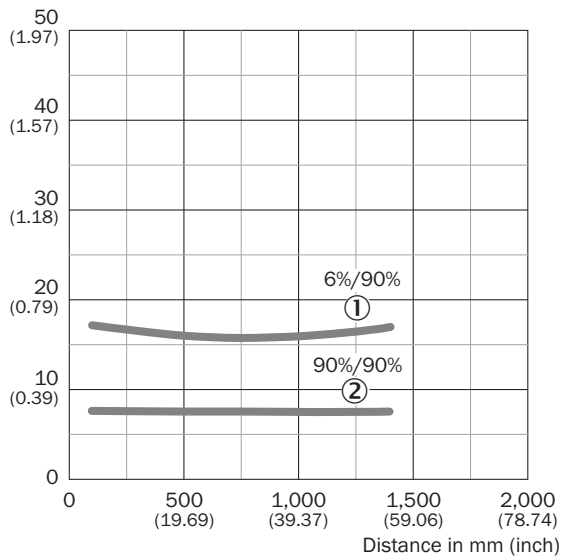
- ① optical axis, sender
- ② optical axis, receiver
- ③ LED indicator yellow: Status of received light beam
- ④ LED indicator green: power on
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ Mounting hole,  $\varnothing 4.2$  mm
- ⑦ Connection
- ⑧ Potentiometer
- ⑨ single teach-in button

### Connection diagram Cd-290



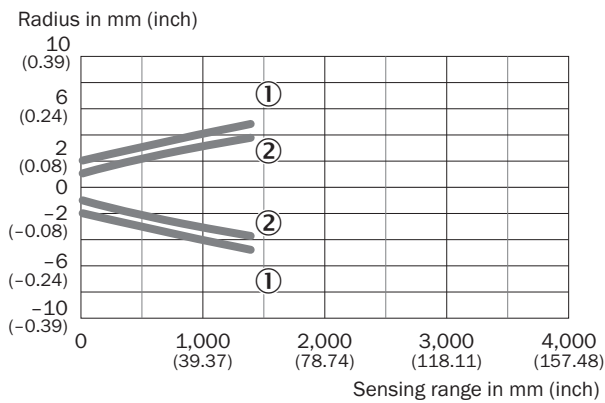
### Characteristic curve

Min. distance from object to background in mm (inch)



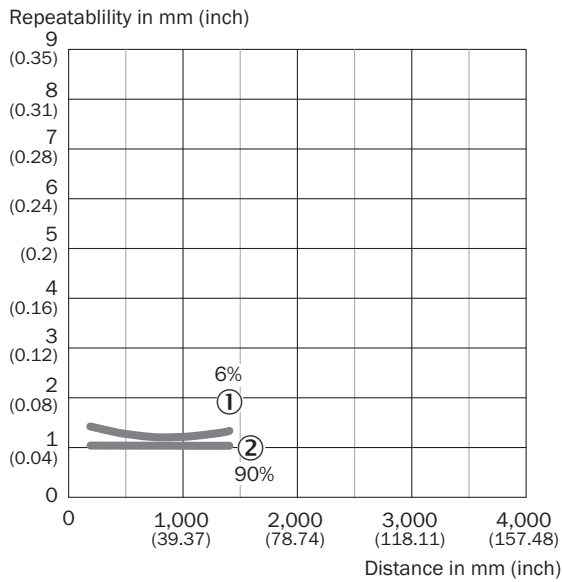
- ① Sensing range on black, 6% remission factor
- ② Sensing range on white, 90% remission factor

### 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.
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Description:</b> Unshielded</li> <li><b>Connection type head A:</b> Male connector, M12, 5-pin, straight, A-coded</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>Description:</b> Sensor/actuator cable, unshielded</li> <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>Application:</b> Uncontaminated zones, Zones with chemicals</li> </ul>	YF2A15-050VB5XLEAX	2096240
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

## 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)