

ScienceCube



# Wireless Thermocouple WL123TC User Manual

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※ This product is intended for educational purposes for use in scientific experiments and is not intended for use in industrial, medical, or commercial applications.

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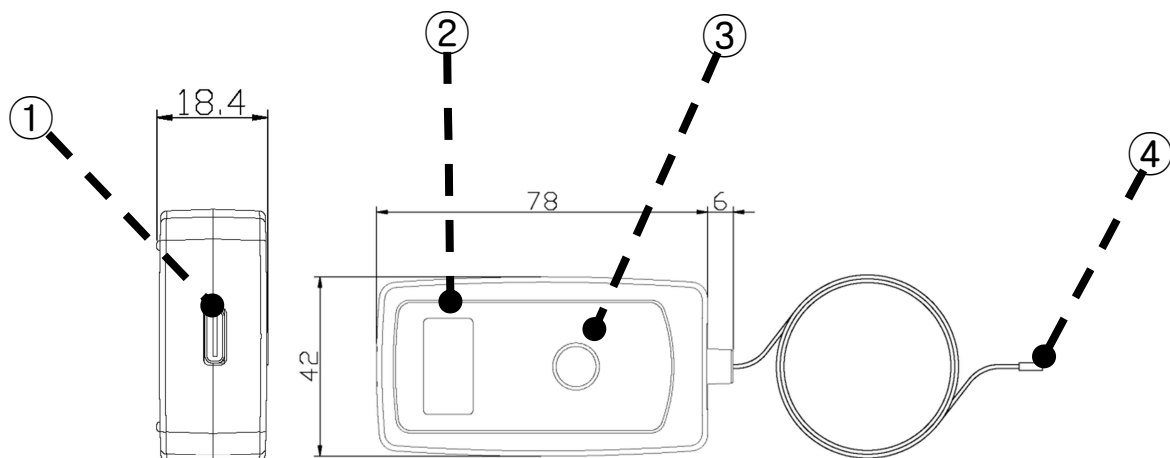
## Introduction

A wireless thermocouple temperature sensor measures the change in electromotive force caused by the temperature difference between the two ends of a wire and converts it to temperature and displays the measurement. At the end of the sensing part that measures temperature, there is an element whose resistance to electromotive force changes with temperature, and the resistance change of the element is converted to temperature change and the measured value is displayed. It can be remotely connected to a smart device or PC via wireless or wired to measure without an interface.

## Composition

The Science Cube Wireless Thermocouple Sensor product configuration is as follows

- Wireless Thermocouple Sensor (WL 123TC)
- USB-C type cable
- User manual




- ① USB port : Used to connect to the USB port of a PC for experiments or to charge the sensor.
- ② Display : Displays the measured sensor value and battery level.
- ③ Power button : Press the button to turn on the power, and press for about 5 seconds to turn off the power.

- ④ Sensor : Where the micro voltage signal comes out when measuring the temperature to an object

**Caution :** Do not use the sensor in close proximity to open flame, explosive gases. High contaminants can cause permanent damage to the sensor.

## Feature

- You can connect up to four ScienceCube wireless sensors to a PC or smart device at the same time.
- It supports dual-mode Bluetooth, so you can connect to your smartphone as well as your desktop, PC, laptop, etc. to experiment with your Science#  application.
- It connects to a PC via a USB port, and you can experiment with it using the Science# program.



## Specifications

	Description
Range	-200 ~ +1,200 °C
Resolution	0.6 °C
Sampling Rate	100 Hz (1/100 sec)
Operating Environment	-20 ~ 60°C, ~ 85% RH
Wireless Connet	Bluetooth v5.0 or Classic 2.1
Wlred Connect	USB 2.0 (Type-C)
Battery	700mAh Li-ploy rechargeable battery
Charging Time	within 2 hours
Operation Time	~ 8 hour(after full charge)

**CAUTION:** Do not use the instrument beyond the measurement range or in conditions that exceed the short-term exposure limits. Prolonged exposure beyond the maximum permissible range can cause serious damage to the sensor.

## LCD Screen



① Connect mode	Mobile : Connecting to Android or iOS PC : Connecting to Windows PC ※ Press and hold at power on to change the connection mode.
② Sensor-ID	Displays the sensor's unique ID, which is the name by which it connects (pairs) with Bluetooth.
③ Battery	See the battery usage, and a charging indicator appears when you plug in the charging cable.
④ Value	Shows the sensor's measurement value and units in real time. Briefly press a button during a measurement to change the sensor type or measurement range.

## Example experiments

You can use a thermocouple temperature sensor to perform the following experiments

- Measure ignition point
- Measure the temperature of the inner flame, outer flame, and flame center.

\*See the Science # content for detailed experiments.

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**KoreaDigital Co.,Ltd.**

#804, 273 Digital-ro, Guro-gu, Seoul, Korea

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