

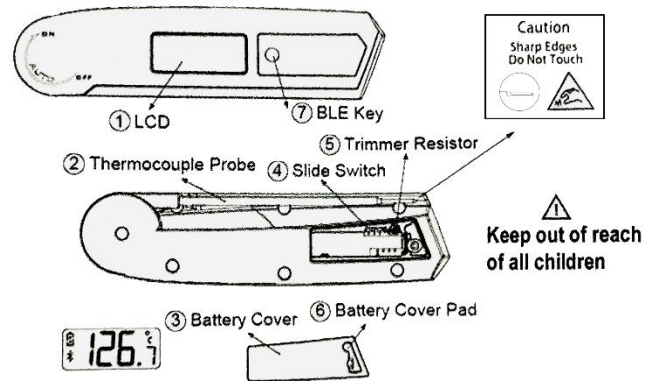
TCK512BTFP Thermocouple Thermometer Operating Instructions

Scigiene's Bluetooth HACCP thermometer is a high-quality waterproof folding thermocouple thermometer with Standard HACCP zone lights and can be recalibrated to meet ISO/HACCP and SQF requirements. Powered by a replaceable AAA 1.5V batteries, the thermometer is a handy temperature measurement device for a whole range of measurement and control applications. Information that is useful and important for understanding the function is highlighted in the instructions text.

- ① LCD
- ② Thermocouple Probe
- ③ Battery Cover
- ④ Slide Switch
- ⑤ Trimmer Resistor
- ⑥ Battery Cover Pad
- ⑦ BLE Key

OPERATION

1. **Power on**
Swing out the foldable thermocouple probe (②) greater than an angle of 20° for use.
2. **Display LCD**
All necessary information is displayed on the LCD.
The individual symbols have the following meanings:
 - 2.1 Display for current measured values
 - 2.2 minus (negative measured values)
 - 2.3 Battery status indicator
 - 2.4 Temperature unit
 - 2.5 BLE sign
3. **°C/°F**
Please open the battery cover. Insert a pointed object to press left the slide switch (④), you can change the LCD display from °C to °F. Oppositely, press right the slide switch to change the LCD display from °F to °C.
4. **Power off**
The thermocouple probe (②) swings back to switch off.



TRIMMER RESISTOR

Fine tune accuracy through the trimmer resistor (⑤).

HACCP CHECK

The "HACCP CHECK" feature is incorporated in our thermometer temperature to indicate critical temperature zone. The LED backlight indicates a food product stays in a safe or unsafe HACCP "Danger Zone" temperature. The green and red LED backlight will always be lit before power off.

A green LED backlight indicates a safe cool or frozen condition below 4°C (40°F) or indicates a safe holding temperature above 60°C (140°F).

When temperature is between 4°C and 60°C, the red LED backlight indicates that the temperature is fallen within the HACCP "Danger Zone" from 4°C to 60°C (40~140°F).



CAUTION

The thermometer should be protected from the following:

1. **Electro Static Discharge**
2. **"Thermal shock" caused by large or abrupt ambient temperature changes.**
 - Allow 30 minutes for unit to stabilize before use when exposed to "thermal shock".
3. **Do not leave the unit on or near objects of high temperature.**
4. **Keep out of reach of all children.**

STORAGE & CLEANING

Clean the device with a damp cloth. Do not use any solvents such as Acetone as they corrode the plastic. Isopropyl alcohol may be used to disinfect. Do not submerge any part of the thermometer. The thermometer should be stored at room temperature between -20°C to +65°F (-4°C to +149°F).

LCD ERROR MESSAGES

The thermometer incorporates visual diagnostic messages as follows:

Er2 Er3

'Er2' is displayed when the thermometer is exposed to rapid changes in the ambient temperature.

'Er3' is displayed when the ambient temperature exceeds the range of 0°C~50°C. The thermometer should be allowed plenty of time (minimum 30 minutes) to stabilize to the working/room temperature.

Er
Hi Lo

Error 5~9, for all other error messages it is necessary to reset the thermometer. To reset it, turn the instrument off, remove the battery and wait for a minimum of one minute, reinsert the battery and turn on. If the error message remains please contact the Scigiene Corporation for further assistance.

'Hi' or 'Lo' is displayed when the temperature being measured is outside of the measurement range.

BATTERIES

The thermometer incorporates visual low battery indication as follows:



'Battery OK': measurements are possible



'Battery Low': battery needs to be replaced; measurements are still possible



'Battery Exhausted': measurements are not possible

BATTERY REPLACEMENT

⚠ When the 'Low Battery' icon indicates the battery is low, the battery should be replaced immediately with AAA, 1.5V batteries.

Note: You must turn the instrument off (swing back the temperature thermocouple probe ②) before replacing the batteries. Place the battery cover ③ before power on (swing out the foldable thermocouple ②) to prevent the instable power supply of loose batteries.

1. Pull out the Battery Cover Pad (⑥)
2. Loosen the screw and pull out the Battery Cover (③)
3. Replace and reinstall with new batteries
4. Place the Battery Cover (③) back and fasten the screw
5. Plug the Battery Cover Pad (⑥) to avoid failure of waterproof

⚠ If the device is not to be used for a long time, turn the power off, remove and store the batteries in a cool, dry place.

⚠ Dispose of used batteries properly and keep away from children.

⚠ Disposal of batteries into fire or hot oven, or mechanically crushing or cutting of batteries, can result in an explosion.

⚠ Leaving batteries in an extremely high temperature surrounding environment can result in an explosion or the leakage of flammable liquid or gas.

⚠ Risk of explosion if battery is replaced by an incorrect type.

SPECIFICATION

Measurement Range	-50~300°C (-58~+572°F)
Operating Range	0~50°C (32~+122°F)
Accuracy (Tamb=25°C)	-30~150°C: $\pm 0.5^{\circ}\text{C}/0.9^{\circ}\text{F}$, otherwise $\pm 1^{\circ}\text{C}/1.8^{\circ}\text{F}$ or 1% of reading, whichever is greater
Resolution	0.1°C/0.1°F
Response Time (90%)	3 sec.
Battery Life	TCP: 48 hours continuous use
Dimensions	161.05 x 40.20 x 29.32 mm (6.34 x 1.58 x 1.15 inch)
Weight	117.9 grams (4.16 oz) including batteries (AAA*2 pcs)

BLUETOOTH APP OPERATING INSTRUCTIONS

Turn on the thermometer, press the BLE Key (⑦) to start the Bluetooth broadcast. In broadcast mode, "BLE key" will flash blue light first, the light will be changed to blue-green during connecting. After the APP is successfully connected with the device, the light will change "from blue-green to green" for 8 seconds.

**** Each broadcast time of the TCK512FBTP thermocouple thermometer is 30 seconds. During the broadcast, if "pairing failed", the Bluetooth of thermometer will be in "sleep mode" until the broadcast time is over. When "pairing successful", the Bluetooth of thermometer will be in sleep mode until the thermometer is turned off. Once disconnecting, the thermometer will reactivate the broadcast for 30 seconds.**

< For Android >

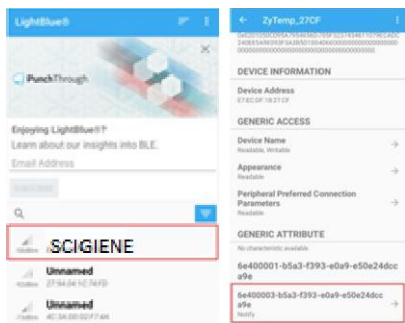
1. Download "LightBlue" APP from the Google Play. (Figure 1)
2. Turn on "Bluetooth" of the android device and the thermometer.
3. Launch the "LightBlue" APP on the android device.
4. Choose "SciGene" device. (Figure 2)
5. Pair the thermometer with the android device & click "Notify". (Figure 3)
6. Click "Hex" conversion of units. (Figure 4)
7. Click "UNSUBSCRIBE". Simply aim the thermometer at the target, press Meas. key to display the surface temperature. Start to sync the temperature data to the android device via Bluetooth at the same time. (Figure 5)



LightBlue® — Bluetooth Low Energy

(Figure 1)

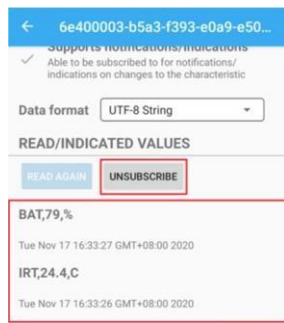
EX.: Convert Hex to UTF-8 String



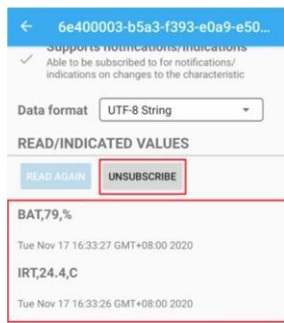
(Figure 2)



(Figure 3)



(Figure 5)



< For iOS >

1. Download "LightBlue" APP from the App Store. (Figure 6)
2. Turn on "Bluetooth" of the iOS device and the thermometer.
3. Launch the "LightBlue" APP on the iOS device.
4. Choose "SciGene" device. (Figure 7)
5. Pair the thermometer with the iOS device & click "Notify". (Figure 8)
6. Click "Hex" conversion units (Figure 9 & 10)
7. Click "Listen for notifications". Simply aim the thermometer at the measure target with Lens and press Meas. key to display the surface temperature. Start to sync the temperature data to the IOS device via Bluetooth at the same time. (Figure 11& 12)



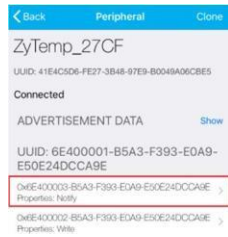
LightBlue®
Punch Through

(Figure 6)

EX.: Convert Hex to UTF-8 String



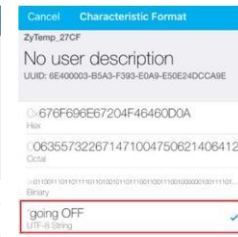
(Figure 7)



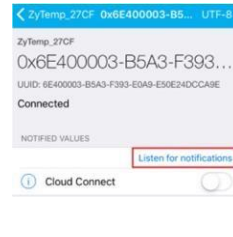
(Figure 8)



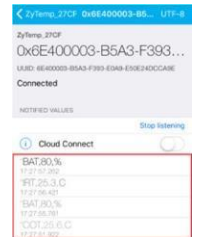
(Figure 9)



(Figure 10)



(Figure 11)



(Figure 12)

DATA FORMAT

1. **Nordic BLE Module UUID:**
6e400001: -b5a3-f393-e0a9-e50e24dcca9e:
UART Service 6e400002: -b5a3-f393-e0a9-e50e24dcca9e: RX
6e400003: -b5a3-f393-e0a9-e50e24dcca9e: TX Characteristic BLE Module → APP

2. **Ambient Temperature:**

Ex: AMB=25.9°C

Byte No	1	2	3	4	5	6	7	8	9	10	11	12
ASCII	A	M	B	,	2	5	.	9	,	C	CR	LF
HEX	0x41	0x4D	0x42	0x2C	0x32	0x35	0x2E	0x39	0x2C	0x43	0x0D	0x0A

Ex: AMB=78.6°F

Byte No	1	2	3	4	5	6	7	8	9	10	11	12
ASCII	A	M	B	,	7	8	.	6	,	F	CR	LF
HEX	0x41	0x4D	0x42	0x2C	0x37	0x38	0x2E	0x36	0x2C	0x46	0x0D	0x0A

3. **Probe Measurement Temperature:**

Ex: COT=25.0°C

Byte No	1	2	3	4	5	6	7	8	9	10	11	12
ASCII	C	O	T	,	2	5	.	0	,	C	CR	LF
HEX	0x43	0x4F	0x54	0x2C	0x32	0x35	0x2E	0x30	0x2C	0x43	0x0D	0x0A

Ex: COT=77.0°F

Byte No	1	2	3	4	5	6	7	8	9	10	11	12
ASCII	C	O	T	,	7	7	.	0	,	F	CR	LF
HEX	0x43	0x4F	0x54	0x2C	0x37	0x37	0x2E	0x30	0x2C	0x46	0x0D	0x0A

4. **Battery Level:**

Ex: BAT=25%

Byte No	1	2	3	4	5	6	7	8	9
ASCII	B	A	T	,	2	5	%	CR	LF
HEX	0x42	0x41	0x54	0x2C	0x32	0x35	0x25	0x0D	0x0A

5. **going OFF: Display "going OFF" before the thermometer power off.**

Byte No	1	2	3	4	5	6	7	8	9	10	11
ASCII	g	o	i	n	g		O	F	F	CR	LF
HEX	0x67	0x6F	0x69	0x6E	0x67	0x20	0x4F	0x46	0x46	0x0D	0x0A

BLUETOOTH GENERAL SPECIFICATION

Item	Specification
Chipset	Nordic nRF51822
Power Rating	DC 1.8V to 3.6V
Operation Temp.	-30 ~ 85°C
Storage Temp.	-40 ~ 85°C
Humidity non-operating	95 % Maximum
Frequency and Power	2402-2480 MHz; 40 ch; 3.0mW
Certification	CE-RED Contain FCC ID: SH6MDBT40 Contain IC ID: 8017A-MDBT40 CMIIT ID: 2015DJ2435 TELEC(MIC): 204-420020 NCC: CCAM15LP0230T1



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