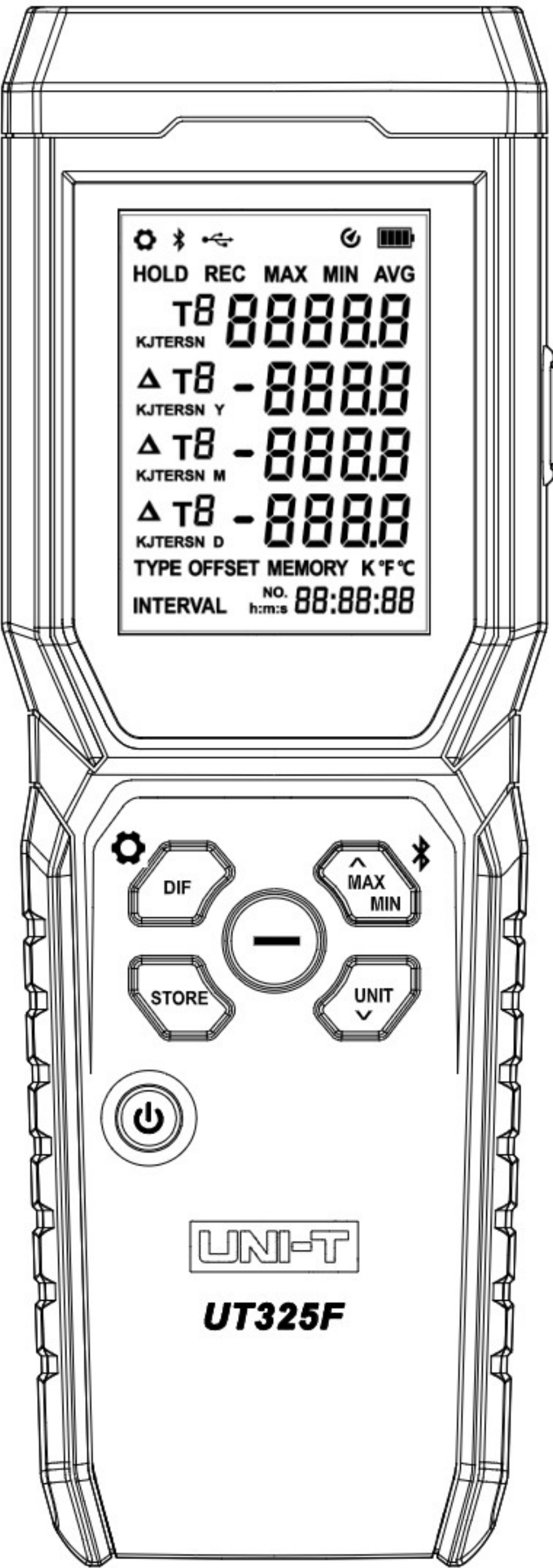


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UNI-T®



UT325F
4-Channel Thermometer
User Manual

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UT325F 4-Channel Thermometer User Manual

Overview

UT325F 4-Channel Thermometer ("Thermometer") is a high-accuracy digital thermometer that uses a thermocouple as the temperature probe and comes with a microprocessor.

Features:

- It can work with type K, J, T, E, R, S and N thermocouples.
- With four-channel temperature measurement, the temperature difference can be displayed.
- It can set the time interval to automatically record data.
- 72,000 groups of data can be stored.
- Offset value compensation can be set.
- It can connect to a smartphone (Android or iOS) via Bluetooth and edit or view the recorded data and save and export charts in the smartphone APP.
- It can connect to a computer via the USB cable to edit or view the recorded data and save and export charts in the PC software.

Use the thermometer according to the steps in this user manual. Otherwise, the protection provided by the product may be impaired.

Safety Instructions

⚠ Warning

A Warning identifies conditions and actions that pose hazards to users. To avoid electric shock or personal injury, please follow these instructions.

- Check the housing for broken or missing plastic parts, especially insulation around joints before using the thermometer. Do not use the thermometer if it is damaged.
- Disconnect the thermocouple from the thermometer before opening the housing.
- When is displayed on the screen, replace the batteries as soon as possible.
- If the thermometer is not operating properly, do not continue to use it because the protection provided by the product may have been impaired. If in doubt, the thermometer should be sent to a designated place for repair.
- Do not use the thermometer near explosive gases, vapors or dust.
- Do not apply voltage between thermocouples or between the thermocouple and the ground terminal.
- When potential difference between thermocouples may occur, an insulating thermocouple should be used.
- Use the specified replacement parts when repairing the thermometer.
- Do not use the thermometer with its housing or cover open.

⚠ Cautions

A Caution identifies conditions and procedures that could cause thermometer damage or equipment under test damage. Please use the thermometer carefully.

- Select the appropriate thermocouple, function scale or range scale when using the thermometer.
- When taking multi-channel measurement, it is necessary to ensure that there is no potential difference between the two channels.
- Please do not try to charge the batteries.
- Pay attention to the battery polarity when installing.

Introduction Structure

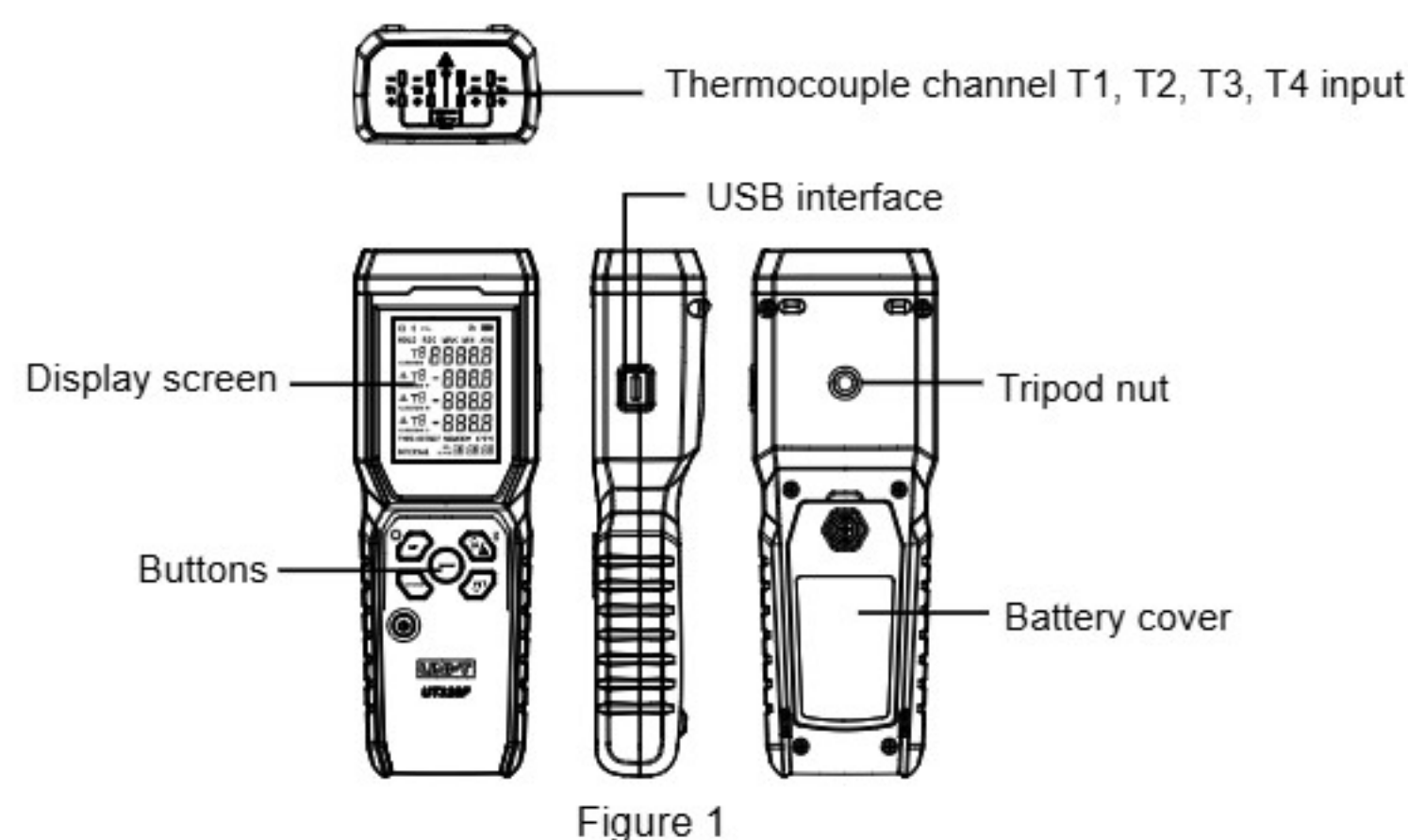


Figure 1

LCD Indicators/Icons

The LCD indicators/icons are shown in Figure 2.

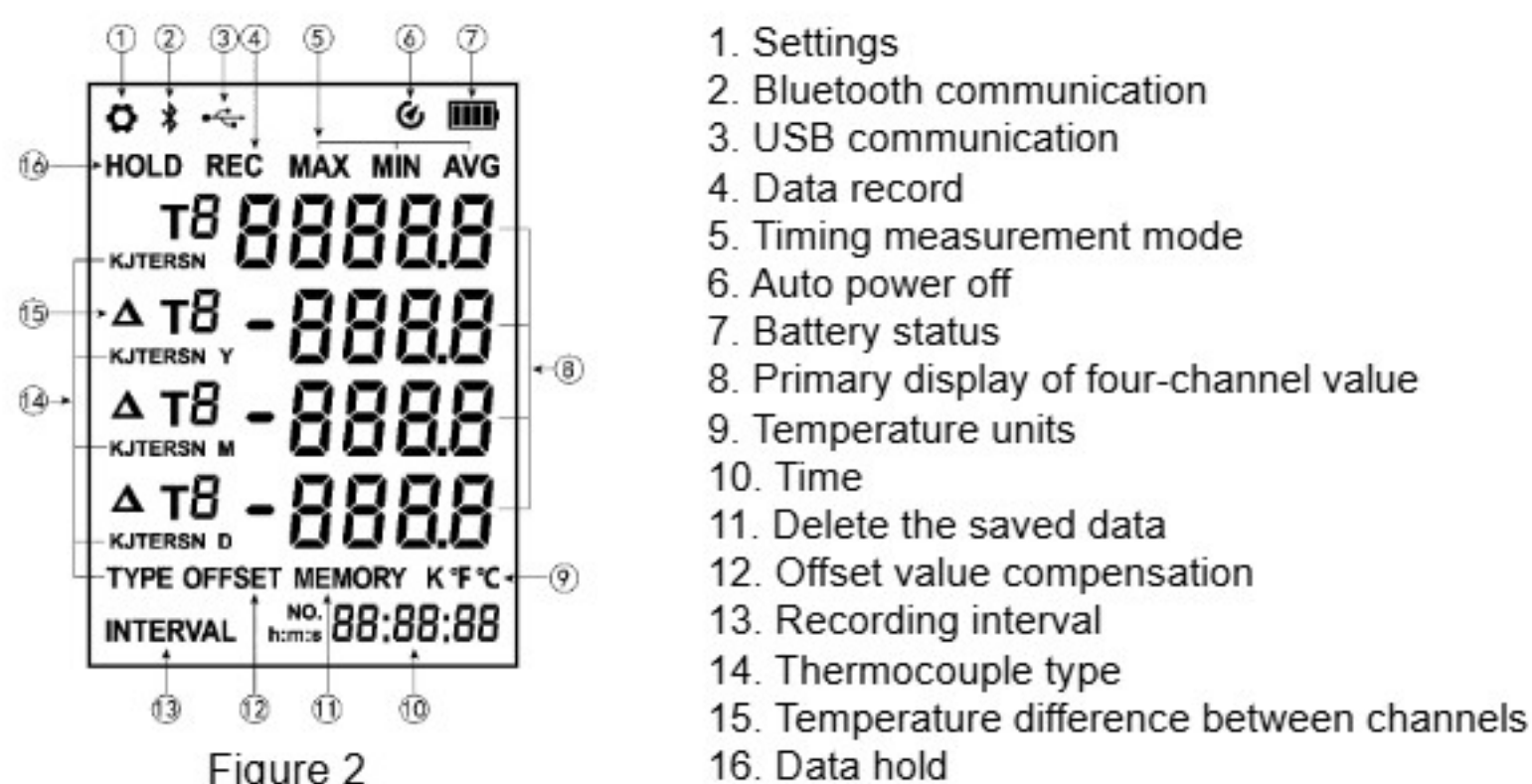


Figure 2

See the buttons detail as following

Button	Short press	Long press
	Difference between channels/Return	Enter/Exit the setting interface
	Start/Stop recording the data	/
	Turn on/off the backlight	Power on/off
	Data hold/Confirm the setting	/
	Enter the timing measurement mode/Up or add the value	Exit the timing measurement mode/ Turn on or off the Bluetooth
	Unit switching/Down or subtract the value	/

Setting Interface

In the main interface, long press to enter the setting interface. The symbol will show at the top left of the screen. Press or to step through the setting options. The sequence is: Interval of auto recording → Saved data and deletion → Thermocouple type → Offset value compensation → Auto power off → Power frequency anti-interference → Time → Restore factory settings. Long press to exit the setting interface.

Interface Description

● Interval of auto recording (INTERVAL)

Short press in this interface, and the second of the time in the lower right corner will blink. Press or to add or subtract the blinking value. Press to set the value of hour, minute and second in sequence. After setting, short press to save and return to the INTERVAL interface (If there is no operation for a period of time, it automatically exits the modified state). Press to enter the next setting interface.

Note: When the interval is 00: 00: 00, the auto recording function will be disabled and turn into manual recording. Press to record the data once and stop recording.

● Saved data and deletion (MEMORY)

In this interface, only the number of the saved data can be displayed. The information such as the recording time and temperature can be viewed in the smartphone APP or PC software. Press to choose whether to delete the saved data or not. The symbol "no" will flash by default. Press or to switch between "yes" and "no". When "yes" is flashing, press to turn into the "doing" interface (deleting). The data will be deleted after one minute, and then it will return to the MEMORY interface (If there is no operation for a period of time, it automatically exits the modified state). In the modified state, press to return. Press to enter the next setting interface.

Note: When "doing" is displayed, it means that it takes a period of time to delete the historical data.

● Thermocouple type (TYPE)

In this interface, short press , and the thermocouple type of the channel T1 will flash. At this time, pressing or can switch the thermocouple type. Press to confirm the selection and to set the thermocouple type of the channel T2. Repeat the preceding steps until the channel T4 is set up, and press to save the settings and return to the TYPE interface (If there is no operation for a period of time, it automatically exits the modified state). In the modified state, press to return. Press to enter the next setting interface.

● Offset value compensation (OFFSET)

In this interface, short press to display the temperature and the ambient temperature (E) of the channel T1. The default compensation value "0.0" will flash. At this time, pressing or can adjust the compensation value of the channel T1. Press to complete the T1 setting and enter the T2 setting. Repeat the preceding steps until the channel T4 is set up, and press to save the settings and return to the OFFSET interface (If there is no operation for a period of time, it automatically exits the modified state). In the modified state, press to return. Press to enter the next setting interface.

1.1 Adjust the error of the temperature probe with the offset value

The reading of the thermometer can be adjusted and the error of a thermocouple can be compensated in the OFFSET interface.

1. Insert the thermocouple into the input jack.
2. Place the thermocouple in a known and stable temperature environment such as an ice bath or dry well calibrator.
3. Let the temperature readings settle down.
4. Change the offset compensation value according to the interface instructions until the temperature reading is the same as the calibrated temperature.

● Auto power off (SLP)

In this interface, short press to turn on/off the auto power off function. Press to enter the next setting interface.

● Power frequency anti-interference (Line)

In this interface, short press to switch between the power frequency anti- interference type 50Hz/60Hz. Press to enter the next setting interface.

● Time (Y M D h:m:s)

In this interface, short press to make the value of year/month/day/hour/ minute/second flash. Press or to adjust the value. When the value of second is flashing, press , and "SAVE" will show on the screen. Press again to confirm the adjustment, and "done" will be displayed (If there is no operation for a period of time, it automatically exits the modified state). Press to enter the next setting interface.

● Restore factory settings (Sfr)

In this interface, short press to choose whether to restore factory settings or not. The symbol "no" will flash by default. Press or to switch between "yes" and "no". When "yes" is flashing, press to restore factory settings and return to the main interface (If there is no operation for a period of time, it automatically exits the modified state).

Operation

• Connect the thermocouple

Insert the thermocouple into the input jack.
Long press the Power button to turn on the thermometer.
Set the thermocouple type to match the type of the thermocouple that is inserted.
Note: If the thermocouple is not connected to the selected input or if the thermocouple is "open circuit", "----" will show on the thermometer. When the range is exceeded, the thermometer will display "OL" or "-OL".

• Display the temperature

Press  to select an appropriate temperature unit.
Put the thermocouple in the position to be measured.
The temperature will be displayed on the screen in the selected unit.

• Hold the displayed temperature

Press  to hold the reading, and "HOLD" will show on the screen.
Press  again to disable the hold function.

• Turn on/off the backlight

When the thermometer is turned on, short press the Power button to turn on/off the backlight (it is automatically turned off in about 2 minutes).

• Temperature difference between channels

Short press  to view the temperature difference  between T1 channel and T2/3/4 channel. Press the button again to switch to the difference between T2 channel and T1/3/4 channel. Users can view the temperature difference between any two channels in this way. When  is not displayed, the interface shows the measured values of four channels by default.

• Data recording

Short press  to enable the data recording function. "REC" will appear on the screen, indicating that it is in the continuous recording state. The interval of auto recording is set in the INTERVAL interface. 
The time character and the record number "NO." character are alternately displayed in the lower right corner. Press the button again to exit the data recording state.
Note:
(1) When the interval is 00: 00: 00, the auto recording function will be disabled and turn into manual recording. Press  to record the data once and stop recording.
(2) Only the number of the saved data can be displayed. The information such as the recording time, temperature and thermocouple type can be viewed in the smartphone APP or PC software.

• Timing measurement mode

Short press  to enable the timing measurement mode. "MAX "will appear on the screen, indicating that it is in the continuous timing state. The timing starts at the lower right corner. Press  to step through MAX/MIN/AVG. Long press the button to exit the timing measurement mode.

• Bluetooth data transmission

Long press  to enable the Bluetooth function. The Bluetooth symbol flashing on the screen indicates waiting for the connection. After connected, the symbol will not flash, and users can use the smartphone to view the recorded data, save and export charts.
Note:
(1) The Bluetooth cannot be turned on when it is in the timing mode.
(2) The Bluetooth can be used normally with the help of the smartphone APP.

• USB data transmission

Connect the thermometer to the PC with the data cable, and the USB symbol will appear on the screen. Click "Connect" in the PC software to view the recorded data, save and export charts.

• Offset value compensation adjusts the error of the temperature probe

This function adjusts the reading of the thermometer to compensate for the error of a certain thermocouple. For operation, see "Offset value compensation (OFFSET)".

Maintenance

• Replace the battery

When  shows on the screen, replace the battery in time. To replace the battery, perform the following steps:
Turn off the thermometer.
Manually or use a "+" screwdriver to remove the quick release screw and open the battery cover.
Replace the battery.
Install the battery cover and tighten the screw.

• Surface cleaning

If the surface of the thermometer is dirty and needs to be cleaned, users can use a soft cloth or sponge dipped in a little water , soapy water or commercial detergent to gently wipe. Do not clean with water, so as not to cause water into the circuit board and damage the thermometer.

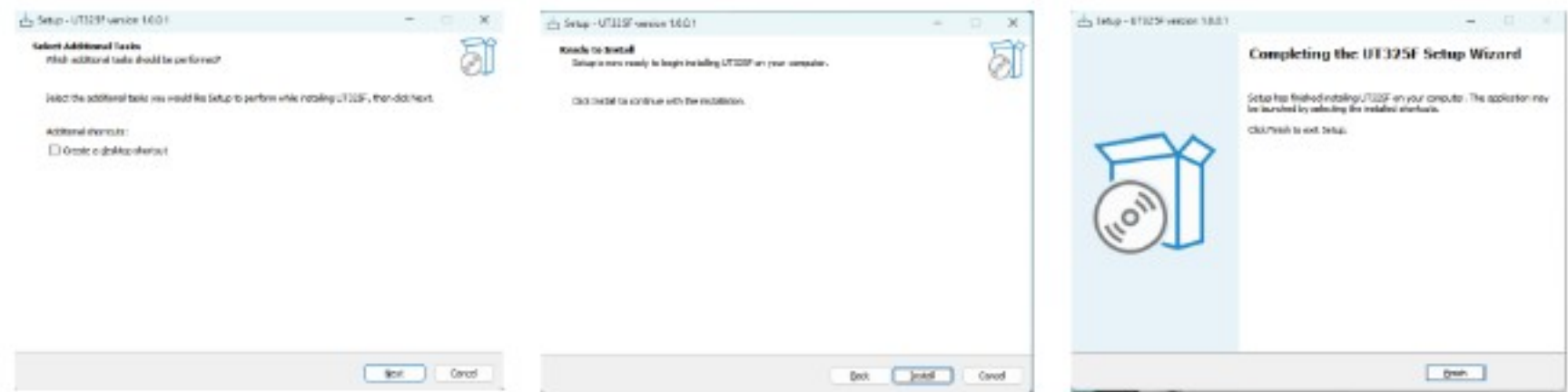
PC Software Download and Installation

Download

1. Please download the PC software according to the attached operation guide.
2. Go to Uni-Trend's official website <https://meters.uni-trend.com> to find and download the software of the corresponding model in the product center.

Installation

Click on the Setup.exe file and follow the following figures.



Bluetooth APP Installation

1. Preparation

Please install the APP IENV (iOS) or iENV2.0 (Android) on the smartphone first

2. Installation

For iOS system, search "IENV" in APP Store. For Android system, search "IENV2.0" in Play Store.

3. Connection

When the thermometer is turned on, long press the MAX button in the main interface, and the Bluetooth symbol on the screen will blink. Turn on the Bluetooth function and the "IENV" APP on the smartphone. After searching the device UT325F, tap it to connect. The Bluetooth symbol on the screen will not blink after connected.

Note: Smartphones with Android 10 or later need to enable the location function to connect successfully.

Cautions

Due to different batches, the materials and details of actual products may be slightly different from the graphic information. Please refer to the goods received.
The experimental data in the manual are theoretical values and all from Uni-Trend's internal laboratories, for reference only. Customers cannot use them as bases for placing orders. If users have any questions, please contact customer service.

Specifications

Thermocouple types		Type K, J, T, E, R, S and N
Measuring range	Type K thermocouple	-200. 0℃~-1372℃ (-328. 0°F~2501°F)
	Type J thermocouple	-210. 0℃~-1200℃ (-346. 0°F~2192°F)
	Type T thermocouple	-250. 0℃~-400. 0℃ (-418. 0°F~752. 0°F)
	Type E thermocouple	-150. 0℃~-1000℃ (-238. 0°F~1832°F)
	Type R thermocouple	0℃~1767℃ (32°F~3212°F)
	Type S thermocouple	0℃~1767℃ (32°F~3212°F)
	Type N thermocouple	-200. 0℃~-1300℃ (-328. 0°F~2372°F)
Display resolution	0.1℃/ °F / K(1000)	
	1.0℃/ °F / K(≥1000)	
Accuracy	±(0.2%+0.5℃)	Below -10℃: The original basis + 0.5℃; Below -200℃: The original basis + 2℃; Type T below -200℃: For reference only
	±(0.2%+0.9°F)	
	The accuracy is applicable to the ambient temperature of 18℃ to 28℃, and it does not include the error of the thermocouple	
Temperature coefficient	Ambient temperature outside the specified temperature range of 18℃ to 28℃: 0.01% of reading + 0.05℃/℃ (0.05°F/°F) Add 0.1% of the reading when measuring temperatures below -100℃	
Repeatability accuracy	± 0.1%+0.3℃	
Response time	About 500ms	
Measurement functions	Unit selection	℃/°F/K
	Data hold	√
	Auto power off	The product will shut down automatically if no button press occurs for 10 minutes. Users can manually disable this function.
	Measurement modes	MIN/MAX/AVG
	Difference	View temperature difference between any two channels
	Timing measurement	The recording interval can be set for 1s-24h to record the measurement data periodically
System functions	Data recording	Up to 72000 groups of data can be recorded (including channel T1-T4 temperature, thermocouple type, measurement time)
	Backlight	Turn on/off
	Data transmission	Type-C USB, Bluetooth
	Battery status	√
Power frequency anti-interference	50/60Hz	
Input protection	60Vmax	
Certificates	CE,UKCA,RoHs	
Executive standard	JJG 617-1996	
Drop proof	1m	
Battery type	3*AAA alkaline zinc-manganese battery	
Operating time	>30h	
Operating temperature	-10℃~-50℃ (14°F~122°F)	
Storage temperature	20℃~60.0℃ (-4°F~140°F)	
Operating humidity	90%RH (non-condensing)	