MTD801 series Thermo-Hygrometer User Manual

V1.2



Safety Instructions

To ensure that you install and use this product correctly, please read carefully and strictly abide by the following contents:

1. Please use 3 AAA batteries. Do not use other batteries to prevent damage to the equipment or other failures;
2. Do not disassemble, squeeze, hit, or heat the battery, or place the battery in fire, otherwise it may cause the battery to explode and trigger a fire;
3. If the instrument is not used for a long time, please remove the batteries from the instrument.

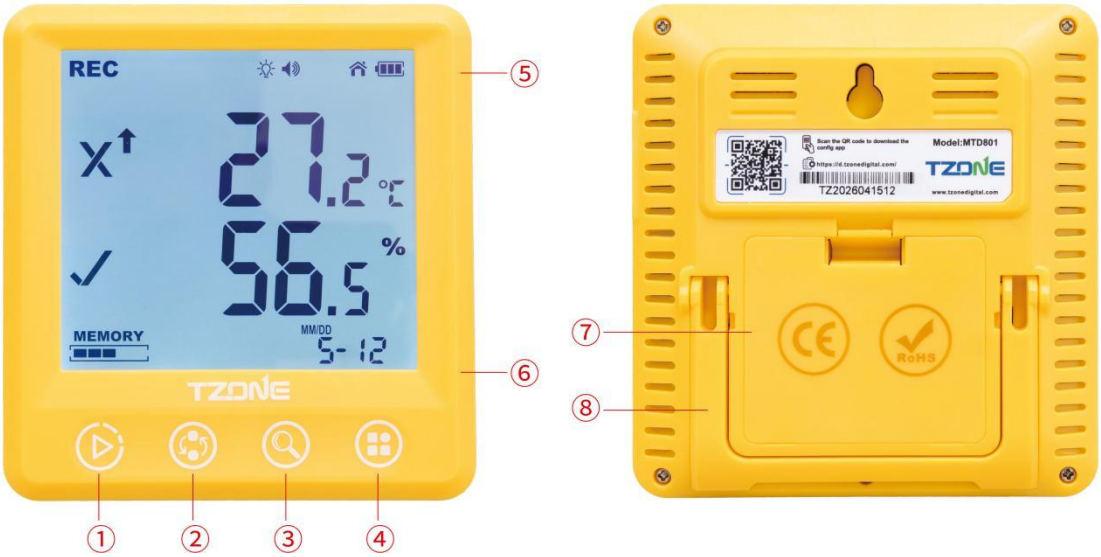
1. Product Overview

The temperature and humidity instrument is mainly designed for professional scenarios such as various warehouses, pharmacies, and laboratories to detect ambient temperature and humidity.

2. Product Features

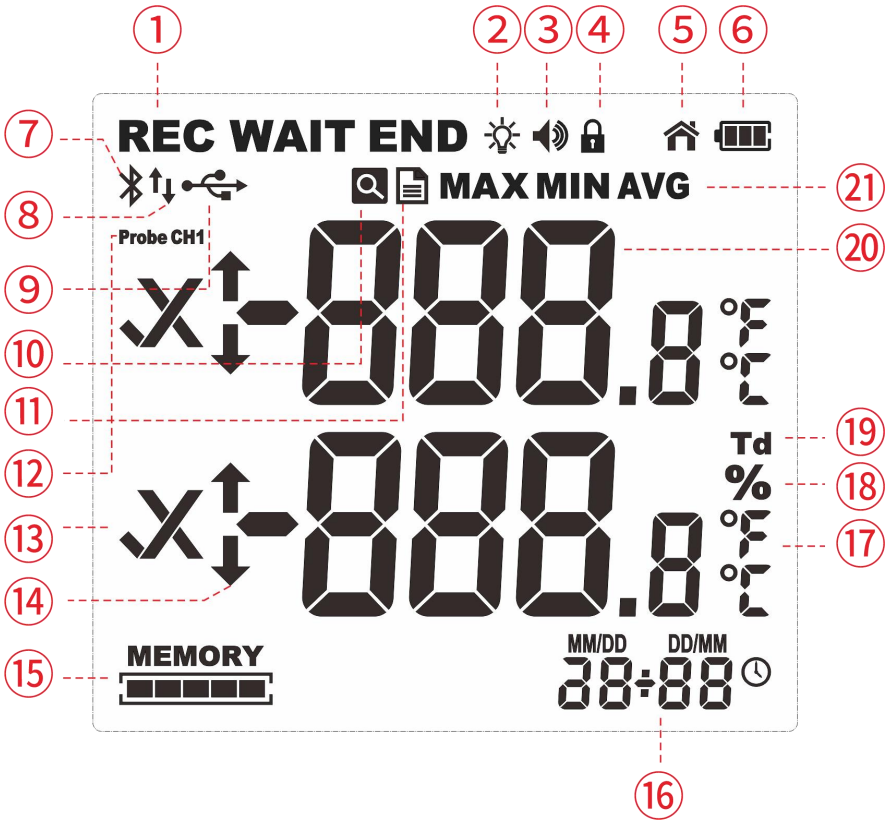
- 4.2-inch large display for clearer data viewing;
- APP monitoring for easier data traceability;
- Supports OTA;
- Professional PC data analysis software.

3. Product Appearance



① Start/Stop recording & Time query button	⑤ External probe port
② Sensor switch / °C-°F switch button	⑥ USB port
③ Recording information query button	⑦ Battery cover
④ Return to home page / Bluetooth	⑧ Stand

4. Screen Display



1	REC: Recording, WAIT: Start delay status, END: Stop recording	12	External probe icon
2	Backlight icon	13	Temperature & humidity alarm icon: √ Normal × Alarm
3	Buzzer alarm enabled icon	14	Real-time temp/humidity over-limit: ↑Exceed upper limit ↓Exceed lower limit
4	Bluetooth password icon	15	Recording memory icon
5	Home interface icon	16	Date & time
6	Battery level icon	17	Temperature unit (℃ / ℉)
7	Bluetooth icon	18	Humidity unit
8	Bluetooth connection icon	19	Dew point temperature
9	USB connection icon	20	Value display area
10	Max/Min/Avg query icon	21	Max/Min/Avg icon
11	Instrument has data file icon		

5. Technical Parameters

Sensor Type	MTD801-L40: Built-in Temp/Humidity Sensor: SHT40 External Temperature Sensor: NTC
	MTD801-L200: Built-in Temp/Humidity Sensor: SHT40 External Temperature Sensor: PT200
Temperature Range	MTD801-L40: -20℃~60℃(Built-in sensor) -40℃~70℃(External sensor)
	MTD801-L200: -20℃~60℃(Built-in sensor) -200℃~200℃(External sensor)
Temperature Accuracy	MTD801-L40: ±0.3℃ [0~60℃]; others ±0.5℃ (Built-in sensor) ±0.5℃ [-20~40℃]; others ±1℃ (External sensor)
	MTD801-L200: ±0.3℃ [0~60℃]; others ±0.5℃ (Built-in sensor) ±0.3℃ [-80~80℃];others ±1℃ (External sensor)
Temperature Resolution	0.1℃
Humidity Measuring Range	5%—95% RH (Non-condensing)
Humidity Accuracy	±3% [10%,90%]; others ±5%
Humidity Resolution	0.1%
External Probe Cable Length	2m
Measurement Interval	5 seconds
LCD Refresh Interval	5 seconds
Max Recording Points	34560
Operating Temperature	-20~60℃, 5~95% (No condensation)
Report Type	PDF and CSV
Bluetooth Protocol	BLE5.3
USB Interface	USB2.0
Battery Type	3 x 1.5V AAA (Alkaline batteries)
Battery Life	1 year (At room temperature 25℃, default configuration)
Dimensions	102.5mm * 108.5mm * 21.5mm
Weight	146.5g（without battery）

6. Operating Instructions

6.1 Product Activation

Pull out the insulating sheet from the back of the product. The product powers on and displays the built-in sensor data. After powering up, please sync the time using the mobile APP or PC-end software.

6.2 Button Functions

Button	Short Press	Long Press (3s+)
	Cyclically switch: Year, Month/Day, Hour/Minute	Start/Stop recording
	Switch between built-in/external sensor data	Switch temperature unit (℃ / ℉)
	Query Max/Min/Average values	Switch to the dew point temperature interface of the built-in sensor
	Return to the built-in temperature and humidity display interface	Turn on Bluetooth fast broadcast

6.3 Start Recording

(1) Long press  Button for 3 seconds to start recording. Recording can also be started through the mobile APP.

(2) If repeated recording by button is disabled, the logger must be reconfigured using the PC software after each recording session before recording can be restarted.

6.4 Start Delay

If the data logger is set with a start delay, the LCD screen will display 'WAIT' and will not start recording until the delay ends.

6.5 Stop Recording

(1) Long press the Stop Button for 3 seconds to stop recording (requires the button stop function to be enabled and the device to be currently recording). Recording can also be stopped via the APP.

(2) Recording automatically stops when the maximum number of recording points is reached.

6.6 Turning Off Buzzer Alarm Ringing

When an over-limit alarm occurs, press any button once to stop the alarm sound.

6.7 Temporary Report

When temporary report is enabled, the data logger can be plugged into a computer to view the temporary report during its operation. During the reading of the temporary report, the data logger will not stop recording.

6.8 Instrument File Generation

(1) Connect the completed logger to a USB-readable device (such as a PC) to generate files. File type can be configured in the PC software.

(2) File generation takes time. While waiting for file generation, the file icon on the screen flashes;

(3) After the file generation is completed, the file icon is displayed natively without flashing.

7. APP Operating Instructions

“Temperature Logger” is a free mobile APP provided by our company. Through Bluetooth connection, users can configure the device, transfer data, record information, and send reports by email. BLE Bluetooth technology allows temperature and humidity monitoring via smartphone.

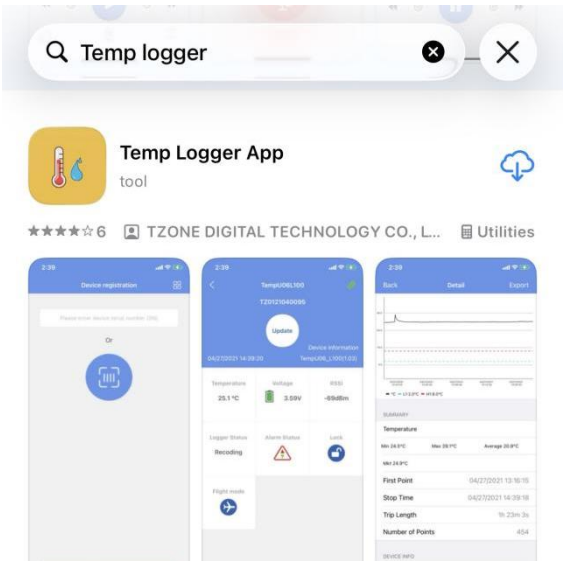
Android Download: (Supports Android 8.0 and higher versions)

Method 1: Enter Google Play, search for "Temp Logger";

Method 2: Scan the QR code below;

iOS Download: (Supports iOS 14.0 and higher versions)

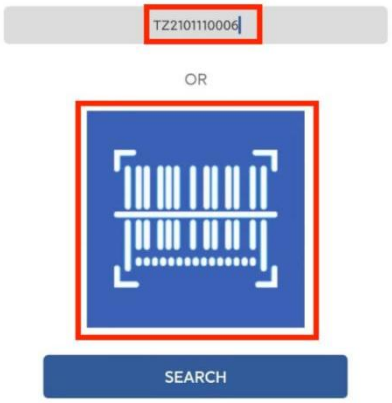
Search “Temp Logger” in the Apple App Store.



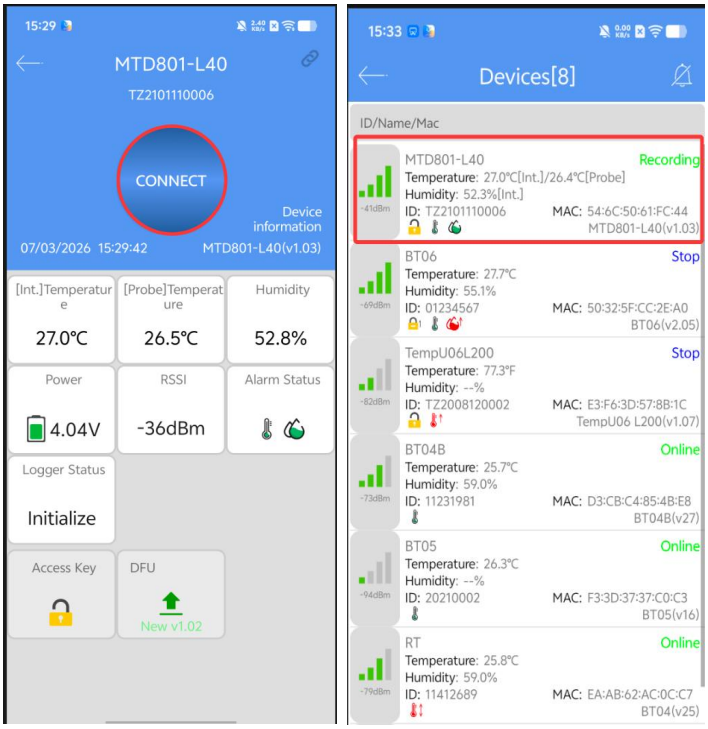
Before connecting the APP to the instrument, press and hold the button for more than 3 seconds until the Bluetooth icon flashes, allowing faster APP connection.

7.1 Device Registration

(1) Open the APP program, enter the device ID directly in the 'Add Device' section on the homepage, scan the QR code to get the device ID, or leave it blank and click 'Search' directly to find this device:

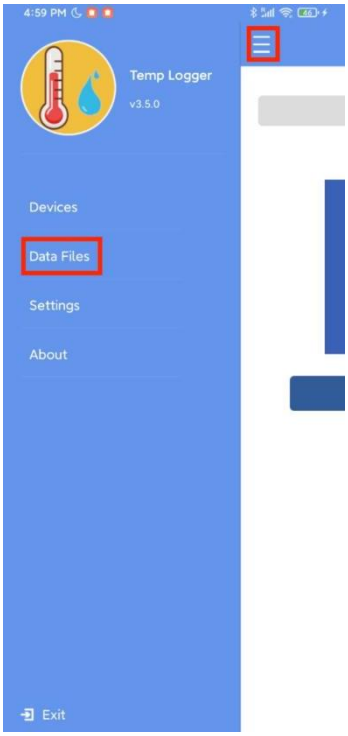


(2) Enter the connection page and click “Connect”. After successful connection, the device ID will appear on the “Device” page, indicating successful registration.



7.2 Device Viewing

Click the icon on the upper left corner of the homepage screen to expand the main menu. You can select menu functions. Click 'Device' to enter the multi-device interface. The functions of the device interface are as follows:



(1) View Device Information:

You can view the device names, IDs, temperature & humidity data, device models, and statuses of

all current devices, or check specific device information by ID or name;

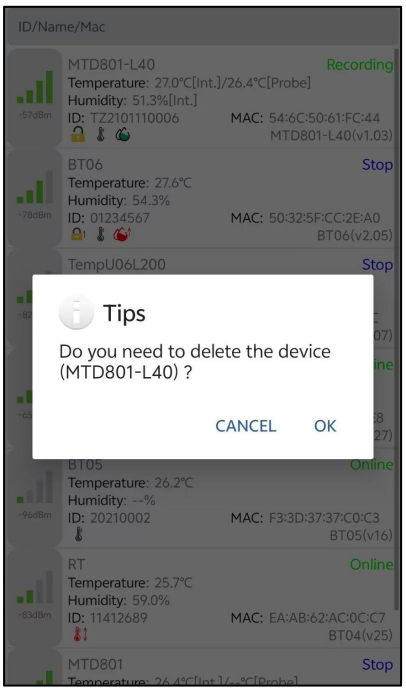


Device Icon Status Description:

Temp Icon	Status	Humidity Icon	Status
	Temperature normal		Humidity Normal
	Temperature Upper Limit Alarm		Humidity Upper Limit Alarm
	Temperature Lower Limit Alarm		Humidity Lower Limit Alarm
	Temperature Upper & Lower Limit Alarm		Humidity Upper & Lower Limit Alarm

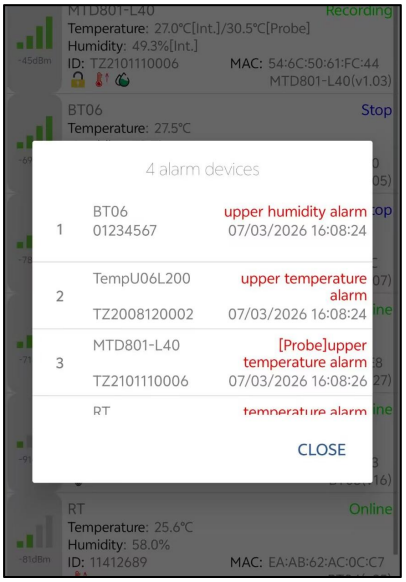
(2) Delete Device

Long press the device to delete it;



(3) Device Alarm:

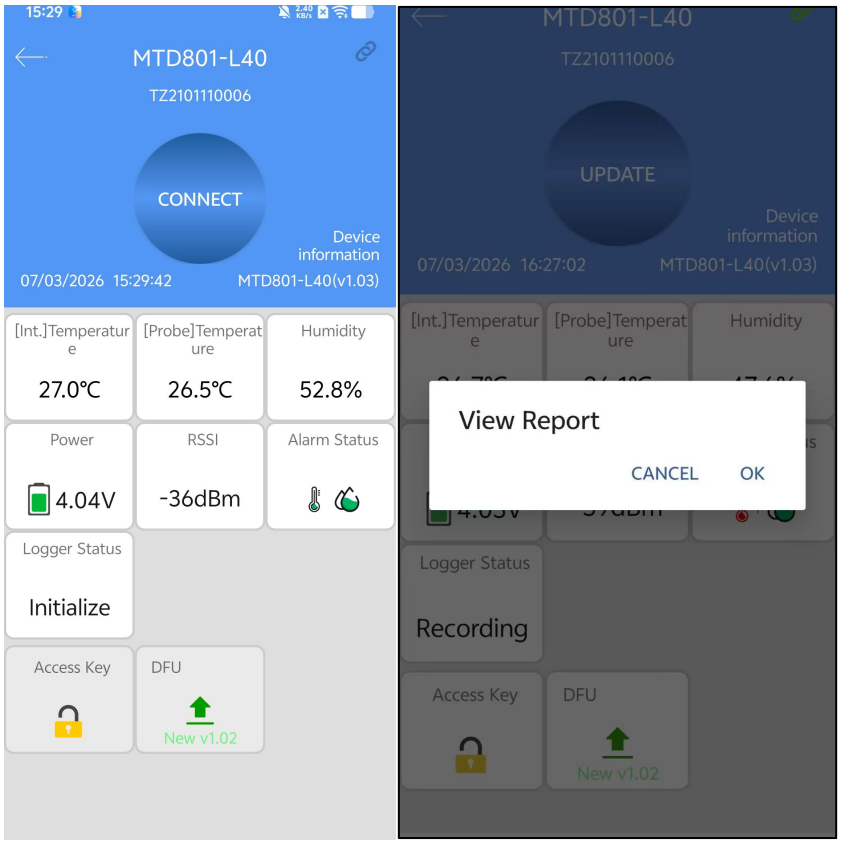
When the device exceeds the set upper or lower limit during data recording, an alarm message will be displayed and the alarm ringtone will sound. Click 'Close' to turn off the alarm message and ringtone;



7.3 Device Connection

Quickly click a single device to enter the connection interface. This interface displays the device's temperature/humidity, voltage, signal strength, alarm status, and recording status. Click 'Connect'. After a successful connection, it skips to 'Update', indicating that the device has successfully connected and read the current data content. Upon connection, it prompts whether to view the report, and the device password function will also be available. Three buttons are displayed at the

bottom of the APP:



Notes:

The device will not update data during the connection process. It will disconnect after 5 minutes of inactivity, and the three buttons at the bottom will turn gray and cannot be clicked.

(1) Device Password

Click 'Device Password' to encrypt this device. It is disabled by default;

(2) Firmware Upgrade

The firmware upgrade function is disabled by default. If this function is enabled in the system settings, click 'Firmware Upgrade' to upgrade the device's current version to the latest version. If it is already the latest version, it cannot be upgraded.

Notes:

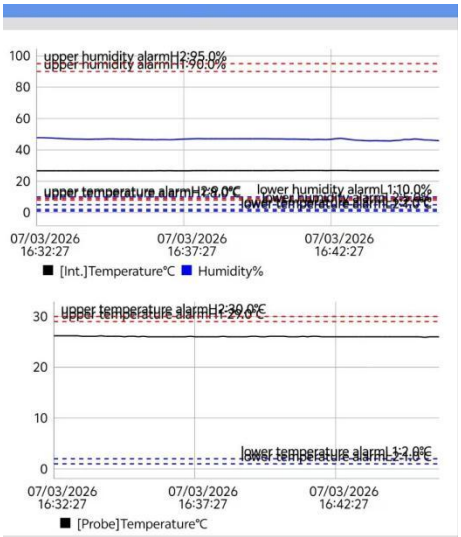
Do not exit the APP during upgrade, otherwise device damage may occur.

(3) Details / Email / Print / Time Range Report

- Click “Details” to view all device reports.
- Click “Export” to generate PDF or CSV reports and send them by email.
- Click “Print” to automatically search for Bluetooth printers, pair with the printer, and print the report.

➢ Click the top right corner to select a time period to generate a report.

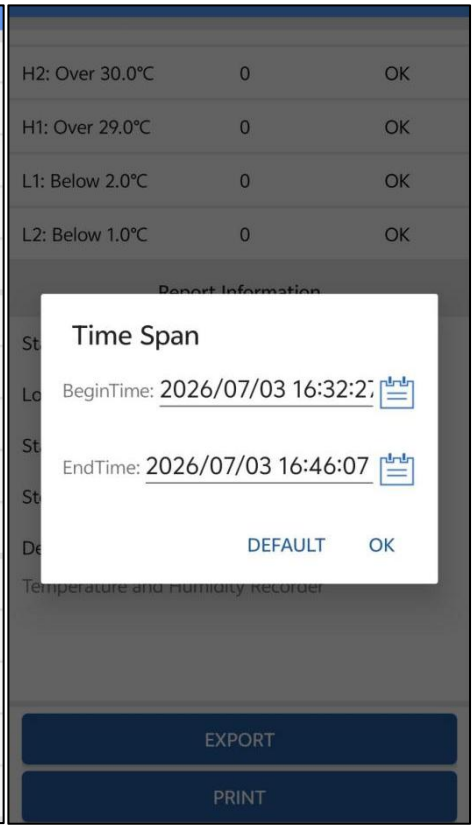
① **Detailed Summary:**



Summary		
[Int.]Temperature		
Min:26.7℃	Max:26.9℃	Avg:26.7℃
MKT:26.7℃		
[Int.]Humidity		

[Int.]Humidity		
Min: 45.7%	Max: 47.8%	Avg: 46.8%
[Probe]Temperature		
Min:25.9℃	Max:26.2℃	Avg:26.0℃
MKT:26.0℃		
First Point:	07/03/2026 16:32:27	
Stop Time:	07/03/2026 16:46:07	
Trip Lenght:	00h 13m 40s	
Number of Points:	83	
Device Info		
Device Name:	MTD801-L40	
ID:	TZ2101110006	
MAC:	54:6C:50:61:FC:44	
Firmware Version:	1.03	
Alarms		

[Int.]Temperature		
H2: Over 9.0℃	1	Alarm
H1: Over 8.0℃	1	Alarm
L1: Below 2.0℃	0	OK
L2: Below 1.0℃	0	OK
[Int.]Humidity		
H2: Over 95.0%	0	OK
H1: Over 90.0%	0	OK
L1: Below 10.0%	0	OK
L2: Below 5.0%	0	OK
[Probe]Temperature		
H2: Over 30.0℃	0	OK
H1: Over 29.0℃	0	OK
L1: Below 2.0℃	0	OK
L2: Below 1.0℃	0	OK



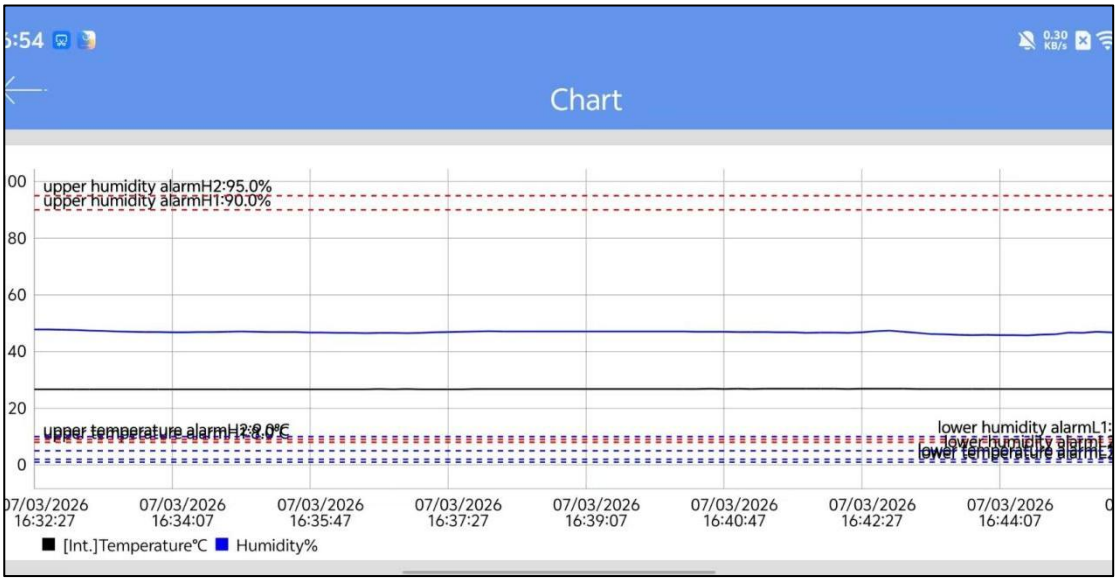
Notes:

1. The mobile phone must have an email APP and a logged-in account to send emails;

2. It must be connected to the Bluetooth printer specified by our company, with the Bluetooth name 'MTP-II' and password '0000';

3. Only the Android APP features the print function;

② **Chart:**

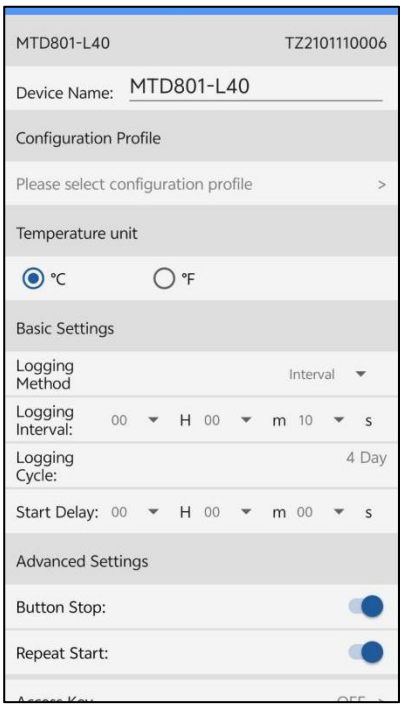


③ **List:**

NO.	DateTime	[Int.]Temperature	[Int.]Humidity	[Probe]Temperature
1	07/03/2026 16:32:27	26.7℃	47.8%	26.2℃
2	07/03/2026 16:32:37	26.7℃	47.8%	26.2℃
3	07/03/2026 16:32:47	26.7℃	47.7%	26.2℃
4	07/03/2026 16:32:57	26.7℃	47.6%	26.2℃
5	07/03/2026 16:33:07	26.7℃	47.4%	26.2℃
6	07/03/2026 16:33:17	26.7℃	47.3%	26.2℃
7	07/03/2026 16:33:27	26.7℃	47.1%	26.1℃
8	07/03/2026 16:33:37	26.7℃	47.0%	26.1℃
9	07/03/2026 16:33:47	26.7℃	46.9%	26.1℃
10	07/03/2026 16:33:57	26.7℃	46.9%	26.1℃
11	07/03/2026 16:34:07	26.7℃	46.8%	26.2℃
12	07/03/2026 16:34:17	26.7℃	46.8%	26.1℃
13	07/03/2026 16:34:27	26.7℃	46.9%	26.1℃
14	07/03/2026 16:34:37	26.7℃	46.9%	26.1℃

7.4 Device Configuration

After connecting, when the device has not started recording, click 'Configure' to set up the machine:



7.5 Start/Stop Recording

Recording can be started or stopped through the APP buttons.

Notes:

Clicking “Start” will also delete historical data.

7.6 Data Files

Click the “Data Files” menu to enter the data file interface.The functions of the device interface are as follows:



1	TZ2101110006	07/03/2026 16:46:22	☐
2	TZ2101110006	07/03/2026 16:07:55	☐
3	TZ0120010002	07/03/2026 14:15:42	☐
4	TZ0120010002	07/03/2026 09:33:21	☐
5	TZ0120010002	05/27/2026 08:54:54	☐
6	TZ2101110006	05/22/2026 09:25:26	☐
7	TZ0120010002	05/19/2026 11:14:49	☐
8	TZ0120010002	05/19/2026 10:50:43	☐
9	TZ0826051501	05/18/2026 17:20:58	☐
10	11412689	05/18/2026 14:20:45	☐
11	01234567	05/15/2026 17:16:00	☐
12	TZ2101110006	05/14/2026 19:13:49	☐

(1) View Single Data File:

The time displayed for this file is the time when the device data was read for the first time. The information content will be updated after each reading until the machine stops recording;

(2) Supports Graph Report Comparison of up to 5 Data Files:

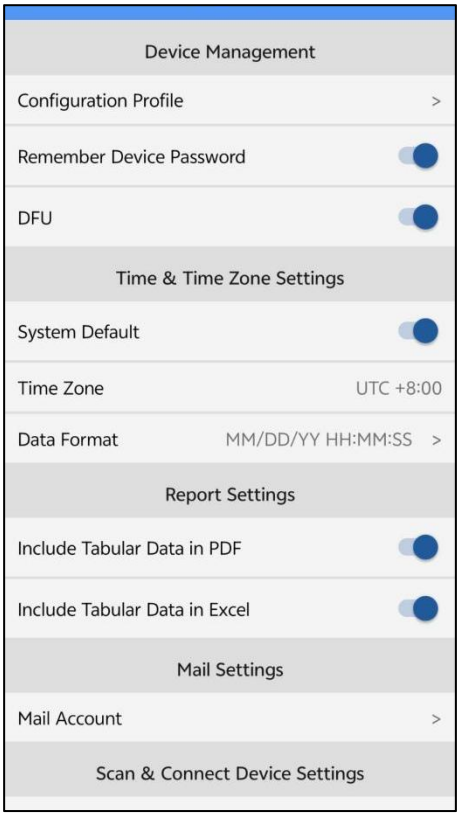
Select data files and click “Compare” to compare temperature chart reports.

(3) Delete Data Files:

Select data files and click “Delete”.

7.7 System Settings

After clicking the 'System Settings' menu bar, enter the system settings interface. The functions of the system settings interface are as follows:



(1) Device Management

A. Configuration File: You can view configuration files previously saved in the 'Configure' option;

B. Remember Password

- Disabled: Password required every connection
- Enabled: Password required only once (default)

C. Firmware Upgrade

- Disabled: Firmware upgrade unavailable (default)
- Enabled: Firmware upgrade available after connection

(2) Time and Time Zone Settings (Only for reports generated via APP):

A. Follow System Time Zone / Time Zone

- Disabled: UTC or manually selected time zone
- Enabled: Current mobile system time zone (default)

B. Time Format: YY/MM/DD HH:MM:SS

(3) Report Settings (Only for reports generated via APP):

A. Include Table Data in PDF: Select include or exclude (included by default);

B. Include Table Data in CSV: Select include or exclude (included by default);

(4) Scan and Connect Device Settings:

A. Connection Timeout: If no connection is made within the time, it is determined as connection timeout (default: 20 seconds);

8. PC Software

This software can perform operations such as parameter settings, data download, data analysis, and data export for the instrument.

Software Download Link: https://d.tzonedigital.com/usb

9. Precautions

- Do not use the device outdoors to avoid damage caused by rain, lightning, or other harsh weather conditions.
- Use the device only within the specified temperature and humidity range.
- Do not subject the product to strong impact.
- Replace batteries promptly when battery power is low.
- Measurement values may be affected by the following factors:

① **Temperature Error:**

• Stabilization time in the measurement environment is too short;

• Close to heat sources, cold sources, or directly exposed to sunlight;

② **Humidity Error:**

• **High Humidity Exposure:** Long-term exposure to high humidity environment (>80% RH) may cause a temporary reading offset, which can usually recover automatically.

• **Condensation:** Direct contact with liquid water may allow moisture to penetrate the polymer film sensor, causing permanent damage or complete failure.

• **VOC Contamination:** Contact with volatile organic compounds (VOCs) will permanently alter the dielectric properties of the polymer material, leading to irreversible drift in readings.

• **Physical Barrier:** Accumulated dust, oil, or other pollutants will physically shield the sensing area, blocking water vapor from entering, thereby affecting measurement response speed and accuracy.