

# TZ-WF501B

## WiFi Temperature And Humidity Sensor

### User Manual V1.1



# 1 Product Overview

TZ-WF501B is a WIFI temperature and humidity sensor based on IOT technology . It can be widely used in refrigerators, catering, warehouse and HACCP system industries and so on. It can real-time uploading data to cloud via WIFI . Users can remotely view, monitor, and manage data online via any web browser. At the same time, the device also with flash memory to storage 20,000 temperature and humidity recordings. And it can generate PDF report via the USB port. With a built-in rechargeable lithium backup battery that can provide real-time data uploading and alarm notifications continuously even after power supply cut-off.

## 2 Product Application

1. Freezer, refrigerator;
2. Greenhouse ;
3. Warehouse;
4. Catering, food and HACCP system industries;
5. Pharmacys, biochemical laboratory; etc

## 3 Product Features

1. High sensitively and precision temperature probe;
2. Keep running up to 30 hours after power supply cut-off;
3. WiFi real-time data uploading
4. 20,000 temperature and humidity recordings can be stored into device flash memory, and unlimited recordings storage on cloud based platform
5. Configurable alarm thresholds, uploading interval and temperature and humidity unit.
6. Easily to generate PDF report via USB port.

7. Equipped with LCD display screen, easily to check current temperature, alarm status, WIFI status and battery power ;
8. Equipped with buzzer to alarm locally when the temperature and humidity exceeds the limit;

## 4 Product Specification

Project	Characteristic
Power supply	5V/1A (DC)
Battery	Built in 850mAh / 3.7V battery(rechargeable)
Sensor range	-40°C to +125°C
Sensor accuracy	Temperature: $\pm 0.3^{\circ}\text{C}$ (0~60°C), $\pm 0.5$ (other) Humidity: $\pm 3\%$ (20~80%), $\pm 4\%$ (other)
Work environment	-30°C to +60°C; 0% RH ~ 85% RH (non condensation)
Communication mode	WiFi
Collection interval	1 minute to 60 minutes (configurable) 1 minute by default
WIFI Frequency band	2. 4GHz
WIFI standard	802. 11b\g\n
Low voltage alarm	Support, configurable
Temperature and humidity alarm	Support, configurable
IP protection class	IP54
Flash memory capacity	20,000 temperature and humidity recordings
Outline specification	106mm*57mm*33mm

## 5 Working Mode

Working mode	Working condition
Normal mode	The device collects the temperature and humidity data at the configured acquisition interval and then enables the module to send the data.
Low voltage alarm mode	When the device voltage is lower than 3.55V

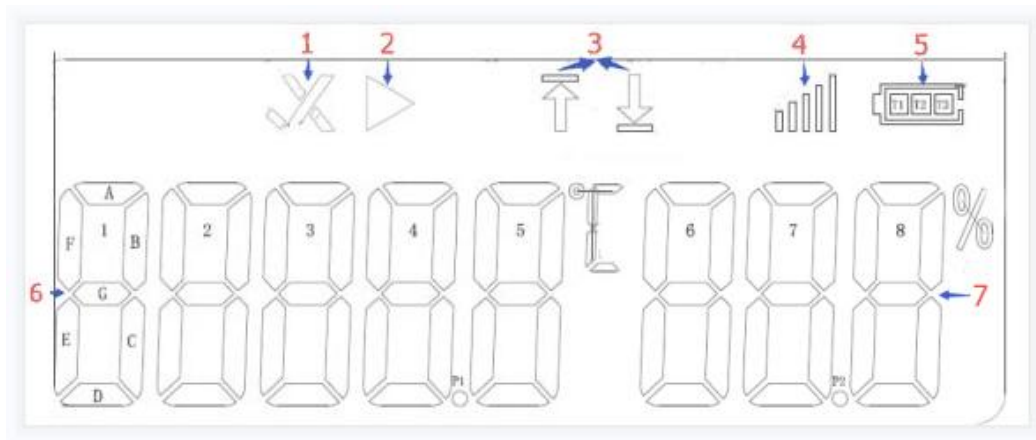
	(configurable), it will no longer send data, but store the data and send it after the device returns to normal.
Temperature and humidity alarm mode	When the ambient temperature exceeds the range set by the user, the transmitter will send data according to the set alarm interval (settable) to facilitate the customer to record the change of ambient temperature

Note:

Priority: Temperature and humidity alarm mode > Low voltage alarm mode > Normal mode

## 6 LCD Display Description

In shutdown status, the device's LCD turns off. In startup status, the LCD turns on and displays WiFi status, temperature alarm icon, operation status, temperature over limit icon, , battery level and temperature value.



S.N	Function	Explanation
1	Temperature and humidity alarm icon	Normal: √ Alarm: ✕
2	Operation status	▷ Working status
3	Temperature and humidity over limit icon	Upper limit exceeded: ↑ Lower limit exceeded: ↓ Both upper and lower limits exceeded: ↑↓

4	WiFi signal strength (RSSI value)	<p>Very strong signal</p> <p>Strong signal</p> <p>Good signal</p> <p>General signal</p> <p>Poor signal</p> <p>No display: not connected to WiFi</p>
5	Battery level	<p>Full battery</p> <p>High battery</p> <p>General battery</p> <p>Low battery</p>
6	Temperature value	Unit: Celsius or Fahrenheit optional Resolution: 0.1, When the sensor is abnormal, LCD displays -----
7	Humidity value	Resolution: 0.1, Show 100% when humidity reaches 100% When the sensor is abnormal, LCD displays ---

## 7 Operating Instruction & Indicator status

### 7.1 On off operation and indicator status

Operation	Operation method	Indicator status	Explanation
Turn-on	Press and hold the button for 3 seconds	It lights green for 5 seconds	Start working
Turn-off	Press and hold the button for 3 seconds	It lights red for 5 seconds	Stop working

Note: Please ensure that the power button is turned to ON when switching on and off the machine.

## 7.2 To judge device current status by indicator

After startup, if you need to know the device current status, you can check the indicator status as shown in the table below. If the indicator does not work, it indicates that the device is in shutdown mode. When the device sends data, the indicator will flash once, green light standing for normal temperature and humidity, red light standing for abnormal temperature and humidity. The device LED will flash quickly when generating the PDF report, after finished, the LED will light in green. The indicator status has priority. The larger the value is, the higher the priority is. The indicator status is as follows:

Device indicator (Green + Red)		
Device status	LED light	Priority
Network exception	Red light flashes quickly (on for 0.1s and off for 0.1s)	1
Power supply disconnect	Red light flashes slowly (on for 1s and off for 1s)	2
Temperature and humidity alarm	Red light is on always	3
Normal state	The green light flashes once when sending data	4

## 8 Alarm Mode

The user can use the configuration software to set the temperature range to enable the temperature alarm function. When the temperature exceeds the limit, the machine is in the alarm mode. In the alarm mode, the machine will immediately send an alarm data, and subsequently collect and send data according to the collection interval and transmission frequency set by the user. After the temperature returns to normal, the alarm mode will be released and the previous acquisition interval will be restored.

At the same time, the machine has the local buzzer alarm function in the alarm mode. If the buzzer function is enabled (it is enabled by default and always beeps), the machine will beep according to the set buzzer time.

How to close the buzzer:

1. The temperature returns to normal;
2. Background sends 037 downlink command

3. The working time of the buzzer has expired;

4. Press the button;

Note: The buzzer will not work again until the temperature is abnormal again (the temperature returns to normal first and then abnormal)

## 9 Platform Data Query

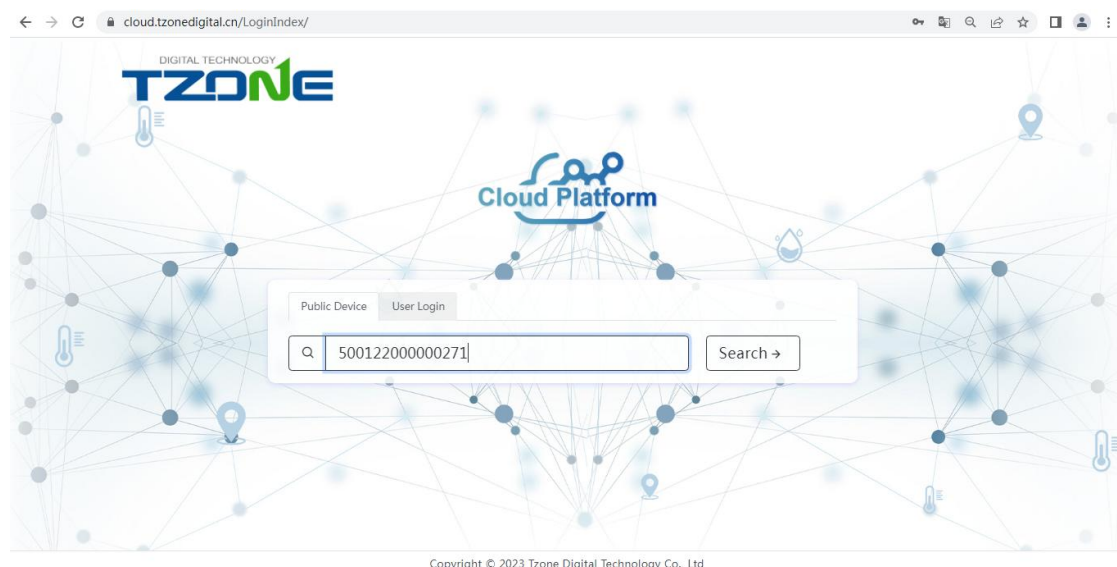
Tzone temperature and humidity cloud platform website:

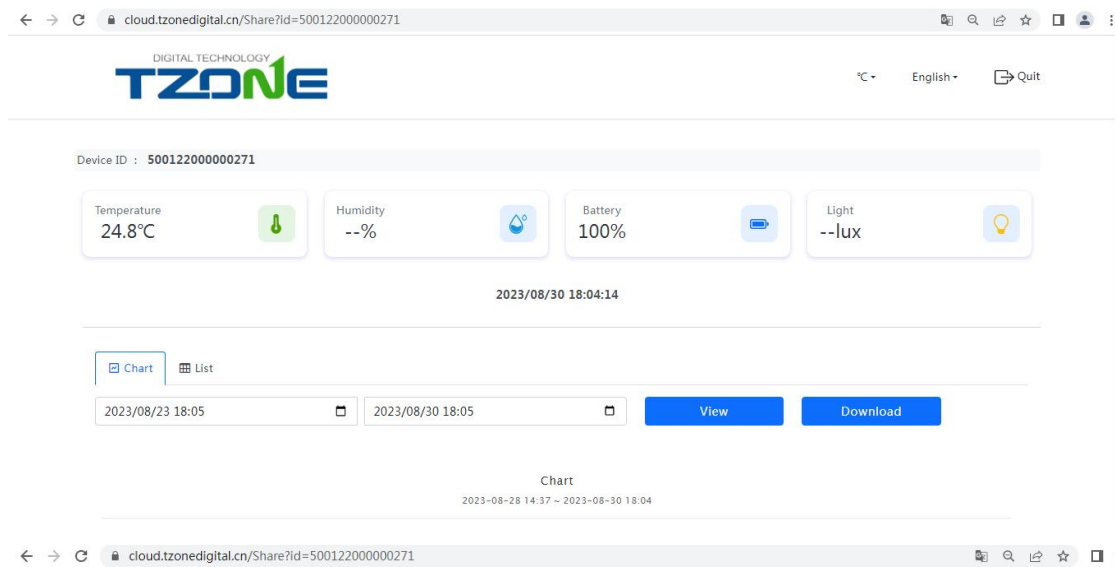
<http://cloud.tzonedigital.com/>

After power on, configure wifi and other parameters with configuration software, and users can query data on the Tzone platform. To access the platform, you need to register a user first, and then add the IMEI of WF501B in the "Device Management" . After adding the IMEI, you need to wait for a period of time for the user to query the data after the machine has reported the data.

Note: By default, the machine sends data to the server once every one minute of collection interval. The customer can also press the button, and the machine will immediately send data.

The steps to query data are as follows:





## 10 PDF report data query

The machine supports the local PDF report function. The user only needs to connect the machine to the computer and use the configuration software to read the machine information, then click "Generate PDF" to generate the PDF report. The traffic light flashes during the generation process, and the traffic light is always on after the completion.

The PDF format is as follows:



# DATA REPORT

ID: 333333333333338

### File Information

File Created Date: 08/23/21 03:21:03  
Note: All Times shown are based on UTC+0:00 and 24-Hour clock [MM/DD/YY HH:MM:SS]

### Device Information

Device Type: WF501                      Firmware Version: 1.02  
ID: 333333333333338

### Logging Summary

First Point:	08/19/21 02:17:35	Max:	28.5°C(Temp)/100.0%RH(Humidity)
Stop Time:	08/23/21 02:34:26	Min:	-21.4°C(Temp)/13.0%RH(Humidity)
Number of Points:	3034	Average:	5.9°C(Temp)/64.3%RH(Humidity)
Trip Length:	04d 00h 16m 51s	MKT:	21.3°C

