

# UT331 +/UT332+ Digital Temperature Humidity Meters

## Overview

UT330+ series temperature humidity meters (hereafter referred to as "Meters") adopts high precision sensor and super-low power consumption microprocessor in its design, featuring high accuracy, manual and auto storage, USB data transfer, USB power supply, backlight alarm, real-time display, low power consumption, etc. These Meters can be used in factories, laboratories, research institutes, food and health, environmental protection and other fields.

## Unpacking Inspection

- Operating Manual ----- 1 piece
- Battery ----- 4 pieces
- USB Data Cable ----- 1 piece

## Safety Information

### ⚠ Warning

A warning identifies conditions and actions that pose hazards to the user. To avoid electrical shock or personal injury, follow these guidelines:

- Inspect the case before using Meters. Do not use Meters if it appears damaged. Look for cracks or missing plastic. Pay particular attention to the insulation around the connectors.
- Replace the batteries as soon as the battery indicator "🔋" appears.
- Do not use Meters if it operates abnormally. Protection may be impaired. When in doubt, have Meters serviced.
- Do not operate Meters around explosive gas, vapor, or dust.
- When servicing Meters, use only specified replacement parts.
- Do not use Meters with any part of the case or cover removed.
- Do not clean the sensor with water. Turn to close the protective sensor cover when not in use. To avoid damage to the device, please use with care.
- Never charge the battery.
- Use the approved alkaline battery (AAA 1.5V) only.
- Pay attention to "+" and "-" marks when installing the batteries.
- Close the sensor cover and remove the batteries if Meters is not used for a long time.

## Meter Description

### Meter Structure (See Figure 1)

No.	Description
1	Protective cover of sensor (turn to open or close)
2	Display screen
3	Power on/off
4	Press to display Max/Min value among current readings. Long press to exit the function (also used as ▲ button).
5	Press to save data. Refer to "Store and Recall Data" for details
6	To set Meters. It is used together with ▼▲ buttons. See "Setting Meters" for details.
7	Short press to turn on/off the backlight, long press to turn on/off alarm function.
8	Press to freeze the displayed readings, press again to exit the function. (also used as ▼ button)
9	Press to view data, it is used together with ▼▲ buttons. See "Store and Recall Data" for details.
10	Dew-point temperature and wet bulb temperature selection key (also used as confirm button).

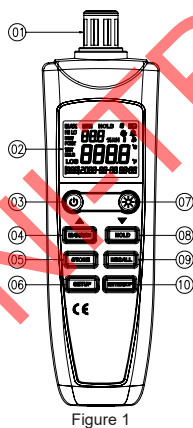


Figure 1

## Display Screen

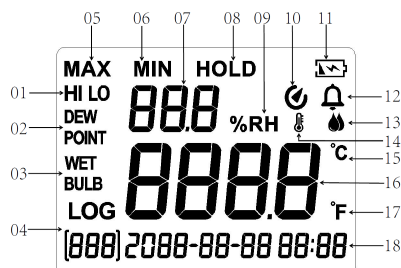


Figure 2

No.	Description	No.	Description
1	HI: Upper limit. LO: Lower limit	10	Auto power off
2	Dew-point temperature	11	Low battery/USB power supply
3	Wet-bulb temperature	12	Alarm
4	Storage group number	13	Humidity icon
5	Maximum value	14	Temperature icon
6	Minimum value	15	Celsius unit
7	Humidity display zone	16	Temperature display zone
8	Data hold	17	Fahrenheit unit
9	Humidity unit	18	Time display zone

## Setting Meters

### ● SETUP Options

Short press SETUP button to enter into setting mode, first enter into unit setting page, and then press recyclable to switch the setting state until the setting is storage and exit. On any setting page, the setting mode will exit and be back to measuring page if no any button is pressed for 15 seconds. The cycle sequence:

Measuring state → Temperature unit setup → Time interval setup → Temperature & Humidity Upper Limit Alarm Setup → Temperature & Humidity Lower Limit Alarm Setup → Sleep time setup → System time setup → Temperature & Humidity Offset setup → Measuring state.

### ● Performing the Setups

#### 1. Setting Temperature Unit

Short press SETUP to access temperature unit setup mode, press ▼ (HOLD) ▲ (MAX/MIN) to select °C or °F unit.

#### 2. Setting Time Unit

Short press SETUP to switch to time interval mode, "int" shows on LCD. Press ▼▲ to change the interval for automatic data storage. Long press ▼▲ to increase/decrease the time quickly. The interval can be set up to 59:59 and down to 00:00 (auto data storage disabled at 00:00).

#### 3. Upper-limit temperature & humidity setting

Short press SETUP for 3 times to access upper limit setup mode, "HI" shows on LCD, short press ENTER/DP to switch upper-limit temperature & humidity, upper-limit dew-point temperature, upper-limit wet-bulb temperature, press ▼▲ to change the value.

#### 4. Lower-limit temperature & humidity setting

Short press SETUP for 4 times to switch to lower limit setup mode, "LO" shows on LCD, short press ENTER/DP to switch following setups: lower-limit temperature & humidity, lower-limit dew-point temperature, lower-limit wet-bulb temperature, press ▼▲ to change the value.

#### 5. Sleep Mode Setting

Short press SETUP for 5 times to switch to sleep setting mode, "SLP" icon shows, press ▼▲ to set up sleep time (5~60mins), long press ▼▲ to increase/decrease the time quickly. When the set time is <5mins, "OFF" icon shows and sleep function is disabled.

#### 6. System Time Setting

Short press SETUP for 6 times to switch to system time setting mode, short press ENTER/DR to switch Year/Month/Day/Hour/Minute, press ▼▲ to the time value, long press ▼▲ to increase/decrease the time quickly. Only when the minute setting is completed and short press ENTER/DP again can the system time is stored.

#### 7. Setting Temperature & Humidity Offset

Short press SETUP for 7 times to switch to temperature & humidity offset setting mode, "t-o" shows on LCD, short press ENTER/DP to switch temperature offset setting (t-o), humidity offset setting (h-o), dew-point temperature offset setting (d-o), wet bulb temperature offset setting (b-o), press ▼▲ to change offset value that within -6~6.

## Using Meters


### ● Turn on/off Meters

1. Long press yellow button to turn on Meters.
2. With Meters already turned on, long pressing yellow button again will turn off Meters.
3. After the sleep time is set, Meters will auto turn off if no button is active within the set time.
4. To ensure an accurate result, the user is recommended to wait for a while before taking the readings if the measured humidity & temperature change dramatically.

### ● Data Hold

1. Press HOLD button to freeze the reading, "HOLD" appears on LCD.
2. Press HOLD again to quit the function.

**● Turn on/off Backlight**

Short press backlight button to turn on the backlight, press again to turn it off. Long press backlight button to activate alarm, the alarm icon  appears, long press backlight button again to inactivate alarm, the alarm icon disappears.

With the alarm function activated, the red backlight will flash every 500ms if Meters alarms due to upper limit, the blue backlight will flash every 500ms if Meters alarms due to lower limit. If Meters alarms due to upper & lower limit, the red/blue backlight will flash every 500ms in turn and the corresponding icon will light up, for example, if Meters alarms due to upper temperature limit, the red backlight, temperature icon and upper icon (HI) will flash at the same time.

**● View Max/Min Reading**

1. Short press MAX/MIN button to check Maximum reading, minimum reading and normal test value.
2. Long press MAX/MIN to exit the mode.

**● View dew-point temperature and wet bulb temperature**

Short press ENTER to view dew point temperature, wet bulb temperature and normal temperature. For dew point temperature, "DEW POINT" is displayed on the screen, for wet bulb temperature, "WET BULB" is displayed on the screen.

**● Use offset value to adjust Meters error.**

Users can compensate the error in temperature & humidity offset setting of SETUP.

**● Data Access**


**Store Data**

Manual storage: time interval is set at 00:00, in test page, short press STORE to store data manually, Meters flashes and show the storage area. Take LOG 001 as an example, it represents the data is stored at 001. UT331+ can store 299 groups of data, UT332+can store 999 groups of data, the record data is the data shown in the main display screen.

Auto storage: time interval is not set at 00:00, in test page, short press STORE to store data manually, long press STORE to store data automatically, the storage area, i.e. LOG 001, will flash at intervals, Meters will automatically save data in circle at the set interval, the record data is the data shown in the main display screen.

**● Recall Data**

Short press RECALL to check recorded data, press again to exit.

1. Short press RECALL to check recorded data, the screen displays the storage area, i.e. LOG 001, press  to scroll through recorded readings, Meters defaults at the reading saved last time you exit the STORE mode.
2. Short pressing ENTER under RECALL mode can quickly review from 01 to 299 /999 data and also allow you to transfer data to PC through USB, after quick review, the number stops at 299/999. On data reviewing status, short press RECALL to exit and go back to main display screen.
3. Long press RECALL under RECALL MODE to clear the recorded data, the screen will keep displaying dELE until the data is completely cleared, and then go back to main display screen.

Note: The data will be completely cleared once the function is enabled. Step-by-Step clearing is not allowed. To avoid any data loss, please think it twice before you use the function.

**● Transfer Data**

Meters will transfer data to PC under following two circumstances:

1. Enter into RECALL status, short pressing ENTER button will not only allow you to review the data quickly but also transfer the data automatically to PC.
2. When PC is running the supplied software and has been already connected to Meters, the measured data will be automatically transferred to PC.

**● USB power supply**

Connect USB cable to PC USB interface or 5V DC adaptor, Meters will automatically switch to USB power supply. Disconnect the USB cable to switch to battery power supply.


Note: The DC voltage of USB power supply is 5V, voltage over 5V may damage Meters.

**USB Communication**

1. Please download PC software according to the attached general file, and install step by step.
2. After running the master computer software, connect the USB cable to the computer.
3. Browse and analyze data through the master computer software, for the usage of master computer software, please refer "Software Manual" from the Help Option of Operation Page.

**Maintenance**

**● Replacing the battery (See Figure 3)**

When Meters indicates , please replace the battery timely. Follow the steps as below:

1. Unscrew the battery cover and remove it from Meters.
2. Replace the batteries with new 4\*AAA batteries.
3. Rejoin the battery cover and tight up the screw.

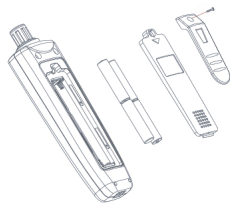


Figure 3

**● Cleaning the casing**

When it becomes necessary to clean the surface of Meters, clean it with soft cloth or sponge dampened with just a little of water, soap water or mild detergent. Prohibit washing Meters with water directly, which may damage the circuits inside.

**Technical Index**

Function		UT331+	UT332+
	Measurement range	Measurement accuracy	Measurement accuracy
Temperature	-20.0°C~70.0°C	±0.5°C	±0.3°C
Dew point temperature	-78.2°C ~ 70.0°C	±1°C	±0.8°C
Wet bulb temperature	-21.6°C ~ 70.0°C	±0.5°C	±0.3°C
Humidity	0~99.9%RH	10%~90%RH, ±3%RH. For others: ±3.5%RH.	10%~80%RH, ±2%RH. For others: ±2.5%RH.
Resolution		Temperature: 0.1°C, Humidity: 0.1%RH	
Temperature measurement		Measurement temperature/Dew point temperature/Wet bulb temperature	
Manual storage		√	
Auto storage		Users can turn on/off auto storage(It defaults at "turn off") and adjust the storage interval 0s~60min.	
Storage group number		299 groups	999 groups
Data viewing		View storage data	
Unit setting		°C or °F	
Alarm setting		Users can turn on/off the alarm (It defaults at "turn off"). Backlight alarm (For upper-limit alarm, the red light flashes every 500ms. For lower-limit alarm, the blue light flashes every 500ms.)	
Max./Min. value measurement		√	
Data hold		√	
Data export		Users can view the real-time data through the software of master computer and export the storage data.	
Auto power off		Users can turn on/off the function of auto power off (It defaults at "turn on") and adjust the auto power off time (5min~60min).	
Real time		Set the real time of system.	
Offset setting		Temperature, dew point temperature, wet bulb temperature, humidity offset value (-6~6).	
Backlight		Users can turn it on/off (It defaults at "turn off").	
USB power supply		Connect USB and switch to USB power supply, USB voltage is 5V.	

**EMC Standard:** EN61326-1 2013

**Reference Standard:**

JJG205-2005 Mechanical Hygro-Thermometer

JJF 1076-2001 Calibration Specification of Humidity Sensor

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