UNI-T®

UT330

Operating Manual

ISO 9001
UNI-TREND INTERNATIONAL LTD

Certificate No. 956661

Hygro_Thermometer

P/N:110401102468

Table of Contents

I. About UT300 Series Products

UT330 series digital hygrothermograph (hereafter referred to as "hygrothermograph") is a digital temperature and humidity indicator by using high-accuracy digital temperature and humidity module as the sensor and using the ultra-low power consumption microprocessor, featuring high accuracy, manual storage, automatic storage, USB data transfer, real-time display, low power consumption, etc. This product can meet various measurements with high-accuracy requirements and long-time temperature and humidity monitoring requirements.

II. Unpacking Inspection

Operating Manual	One copy
Warranty Card	One piece
Battery	Four pieces
Disc	One piece
USB Data Cable	One piece

Refer to safety information in Table 1 and the international symbols in Table 2.

Table 1. Safety Information

⚠ Warning

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

● Before using the thermometer inspect the case. Do not use the thermometer 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. The possibility of false readings can lead to personal injury.

● Do not use the thermometer if it operates abnormally. Protection may be impaired. When in doubt, have the thermometer serviced.

● Do not operate the thermometer around explosive gas, vapor, or dust.

● When servicing the thermometer, use only specified replacement parts.

● Do not use the thermometer with any part of the case or cover removed.

● Never wash the sensor installed before the hygrothermograph by water directly; please turn the sensor cover to close completely when not in use.In order to keep the instrument or device from being damaged, please use with care.

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● Never charge the battery;

● Use the approved alkaline battery (AAA 1.5V) only;

● Keep the battery polarity same as the marks of "＋" and "-" when installing;

● Close the sensor cover and remove the batteries if the instrument is not used for a long time.

IV. Instrument ABC

● Components (See the Diagram at the right side).

Figure 1

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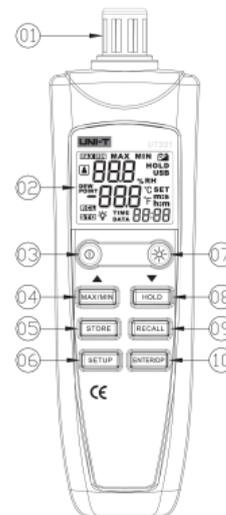
No.	Description
①	Protective cover of sensor (can be opened or closed through being rotated)
②	Display screen
③	Start/turn off low-power mode.
④	Examine the maximum value (MAX) and minimum value (MIN) of the current scale readings. This display can be closed by long press on MAX/MIN. (It can be reused as ▲)
⑤	Data storing key. It shall be used in coordination with▲ ▼ . See User Setup and Operation---Data Storage for details.
⑥	Start/Exit setup (SETUP). It shall be used in coordination with ▲ ▼. See User Setup and Operation for details.
⑦	Turn on/Turn off the background light.
⑧	The displayed scale reading can be fixed by pressing HOLD, and the function can be released and return to measuring state by pressing HOLD again. (It can be reused as ▲)
⑨	Data reading key. It shall be used in coordination with. See User Setup and Operation---Data Storage for details.
⑩	Dew-point temperature selection key (can be reused as confirmation key)

● **Display Screen (as shown in Figure 2)**
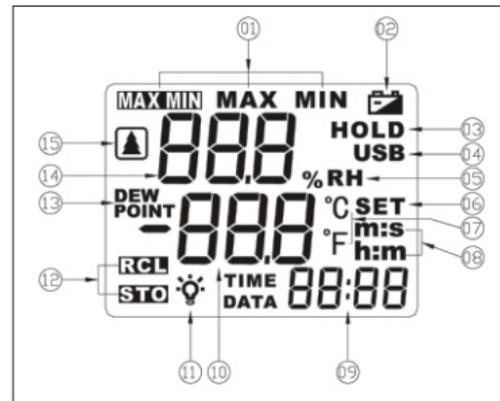
Figure 2

No.	Description	No.	Description
①	Indicator of the display of maximum and minimum values	⑨	Time display space
②	Indicator of battery voltage	⑩	Temperature display space

③	Display of holding time	⑪	Indicator of backlight switch
④	Online indicator	⑫	Access indicator
⑤	Humidity unit	⑬	Dew-point temperature
⑥	Indicator of setup mode	⑭	Humidity display space
⑦	Temperature unit	⑮	Low-power mode
⑧	Indicator of time format		

V. Setup Instruments

• SETUP Options

It can enter the setup mode by pressing SETUP, and then the words of "SET" will be flickered on the display screen. The setup states can be switched over circularly by pressing SETUP again until it stores and exits the setup. The circular order is as shown in the following figure:

Measuring state → Temperature unit setup → Time interval setup → Humidity offset setup

System time setup ← Sleep time setup ← Dew-point offset setup ← Temperature offset setup

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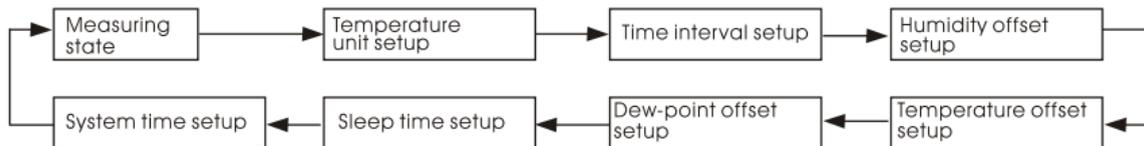
• SETUP Options Setup

1.Temperature Unit Setup:
It can be switched to the temperature unit setup mode by pressing SETUP, and then the screen tip will be displayed as "Unt", The temperature unit can be changed to ℃ or ℉ though ▼(HOLD) ▲(MAX/MIN) key.

2.Time Interval Setup:
It can be switched to the time interval setup mode by pressing SETUP, and then the screen tip will be displayed as "int". The time interval for automatically saving the data can be changed through ▼▲ key, and the setup time can be quickly increased or decreased by long press on ▼▲ key; the maximum value of interval time is 59:59, and the minimum value of that is 00:00 (set to 00:00 to close the function of automatically saving data, and the data only can be saved manually).

3.Humidity Offset Setup:
It can be switched to the humidity offset setup mode by pressing SETUP, and then the screen tip will be displayed as "H-o" The deviation value setup can be changed through ▼ ▲ key, and the deviation value range is -6~ 6;

4.Temperature Off set Setup:
It can be switched to the temperature offset setup mode by pressing SETUP, and then the screen tip will be displayed as "H-o" The deviation value setup can be changed through ▼ ▲ key, and the deviation value range is -6 ~ 6;

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1.Dew-point Offset Setup:

It can be switched to the dew-point offset setup mode by pressing SETUP, and then the screen tip will be displayed as "d-o" The deviation value setup can be changed through ▼ ▲ key, and the deviation value range is -6 ~ 6;

2.Sleep Mode Setup:

It can be switched to the sleep mode setup mode by pressing SETUP, and then the words of "SLP" will be displayed on the screen. The sleep time (5 to 60 minutes) can be selected through ▼ ▲ key, which can be quickly increased or decreased through the long press on ▼▲ when the sleep time is set to be less than 5 minutes, the letters of "OFF" will be displayed, and then the sleep function will be closed;

3.System time (S-t) Setup:

It can be switched to the system time setup mode by pressing SETUP, and then the letters of "S-t" will be displayed on the screen. The system time can be selected and set through ▼▲ ; the time format can be select to "h-m" or "m-s" by pressing ENTER, which can be quickly increased or decreased through the long press on ▼▲ key. For the convenience of users, when it is set to "m-s" mode by users and the system time exceeds 60 seconds, the product will automatically change to "h-m" format display.

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VI.Usage of Instruments

• Start and Exit Low-power Mode

1. The instruments will start automatically after getting electricity;
2. Before the instruments get electricity, the product setup will be restored to the standard value by pressing the yellow key;
3. After starting UT331, the machine can be shut off by pressing the yellow key again. The machine can be started by pressing the yellow key after being shut off;
4. After starting UT332, it can enter low-power mode (the tip of " ▲ " will be displayed on the upper left corner of the low-power mode screen) by pressing the yellow key again, and it can exit the low-power mode by pressing the yellow key once again;
5. After setting the sleep time, it will automatically enter the low-power mode without key-pressing operation in the setting time;
6. For the accurate measurement of temperature and humidity values, when the measured temperature and humidity change greatly, it is recommended for users to place the product for a period of time before reading.

• Hold to Display Temperature and Humidity Values

1.Press HOLD key to fix the scale reading on the screen, and the words of "HOLD" will be displayed on the screen.
2.Press HOLD again to close the function of "HOLD"

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● **Turn On/ff the backlight**
Under normal measuring state, press ☼ to turn on backlight, and then press ☼ again to turn off backlight (When entering the power saving model, the meter will turn off the backlight automatically).

● **Check the reading data of MAX and MIN.**
1. Press MAX/MIN to check the reading data of maximum and minimum step by step;
2. Press MAX/MIN for a long time to quit the MAX/MIN view mode.

● Check the temperature of dew point
Press ENTER, you can check the temperature of the dew point, when the screen reveals "DEW POINT", and then press ENTER once again to quit the display.

● Adjust errors of meter by applying offset
Use the humidity offset setting of SETUP options, the temperature offset setting and dew point temperature offset setting can compensate the corresponding indication errors manually.

● Data access
Press the key STORE to enter the mode of data storage, the hygrothermograph stores the recorded data into memory, it can store 100 groups of data in total from 00 to 99, and the recorded data is the data of main display screen.And press the key STORE again to exit the mode of data storage.

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Press the key RECALL can check the reading data of content recorded in memory, and press it again to quit the view record.

1.Data storage
Pressing the key STORE to enter the mode of data store, the inferior part of the screen will show the word of " DATA ", and there are two methods of the manual and automatic storage.
Manual method: if the time interval of automatic storage set is 00:00 in advance (see the SETUP option settings), after entering the storage condition, you can press the key ENTER to record the current reading data to the current storage address, and then press the ▼▲ key ENTER again and the data will be stored to the next address automatically. By using the key you can change the current storage address and the "- - - -" will also be displayed in the empty address.
Automatic method: if the time interval set in advance is not 00:00, after your entering the storage condition, the signal ": " will be displayed on the deputy display screen, and then when you press the key ENTER, the signal ": " will blink, and the hygrothermograph will sequentially record the data into the stora ge unit from the current address which was set up time interval. And press the key ENTERS again, the signal ": " will stop blinking, and then the function of automatic storage will pause; if pause cancelled, you can press the key ENTER again.

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2. Reading Data

The recorded data can be examined by pressing RECALL key, and the words of "DATA" will be flickered on the display screen. The recorded data can be scrolled and examined by pressing, which is defaulted to the scale reading when it exits the storage state for the last time. In data read back state, the data in the records from 00 to 99 can be read back quickly by pressing ENTER，and the data will be transmitted to the computer software through USB. After completing the quick read back, NO will point to 99.

3. Clear the Recorded Data.

Press STORE to enter data recording state, and the words of "ATA" will be displayed on the screen. Press STORE again for about 2 seconds, the words of "LR" will be displayed on the screen. When pressing ENTER, the 100 groups of data from 00 to 99 will be totally cleared without being removed one by one. "----" will be displayed when the recorded value is empty.
Note: When clearing the data records, 100 groups of data will be totally cleared without being removed one by one. For the avoidance of your data, please be careful when using this function.

• **Data Transmission**

The hygrothermograph can conduct data transmission under the following situations:
1. In RECALL state, the data will be automatically transmitted to the computer when pressing ENTER key to quickly read back the data.
2. When running the software connection of host machine, the product can automatically transmit the measured data to the computer.

VII. Maintenance of Instruments

• Replacement of Batteries (as shown in figure 3)
When the hygrothermograph displays ▭ , the batteries shall be replaced timely. The methods to replace the batteries are as follows:
1.Loosen battery cover screw to remove the battery cover
2.Replace the four AAA batteries
3.Fit on the battery cover and tighten the screw up
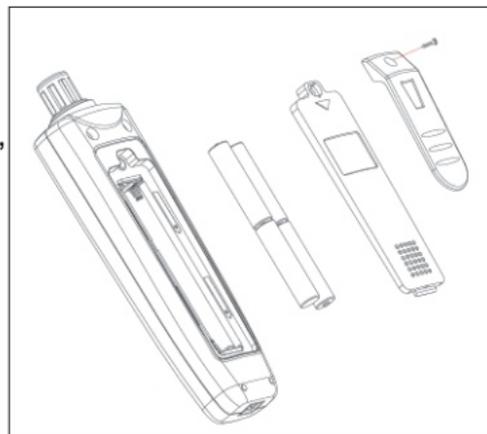
Figure 3

· Surface Cleaning

When the surface of the hygrothermograph is dirty and needs to be cleaned, it can be gently wiped by soft cloth or sponge with a little clear water, soapy water or commercial detergent. It cannot be directly washed by water, so as not to cause the water penetration in circuit board which will damage the hygrothermograph.

VIII. CE Authentication

The thermometric indicator meets the following standards:

· EN61326: 2006
· EN55022: 2006
· EN55024: 1998+A1+A2

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IX. Technical Indexes

Function	UT331	Ut332
Measuring range	Temperature: -20℃ ~ 60℃ Humidity: 0%RH ~ 100%	Temperature: -20℃ ~ 60℃ Humidity: 0%RH ~ 100%
Resolving Power	Temperature: 0.1℃ Humidity: 0.1%RH	Temperature: 0.1℃ Humidity: 0.1%RH
Measuring accuracy	Temperature: 0℃ to 40℃ : ±0.5℃ -20℃ to 0℃ : ±1.0℃ 40℃ to 60℃ : ±1.0℃ Humidity:：±3.5%RH (10%RH to 90%RH) ±5.0%RH (＜10%RH or ＞90%RH)	Temperature: 0℃ to 40℃ : ±0.5℃ -20℃ to 0℃ : ±1.0℃ 40℃ to 60℃ : ±1.0℃ Humidity:：±2.5%RH (10%RH to 90%RH) ±5.0%RH (＜10%RH or ＞90%RH)
Response time	About 10 seconds (25℃,1m/s air)	About 10 seconds (25℃,1m/s air)
Time	Relative time	Real-time time
Data storage	0 to 99	0 to 99
Setting function	Temperature unit setup, auto-save time interval setup, humidity offset setup, temperature offset setup, dew-point offset setup, sleep time setup and system time setup	

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Manufacturer:
Uni-Trend Technology (China) Limited
Dong Fang Da Dao
Bei Shan Dong Fang Industrial Development District
Hu Men Town, Dongguan City
Guang Dong Province
China
Postal Code: 523 925

Headquarters:
Uni-Trend Group Limited
Rm901, 9/F, Nanyang Plaza
57 Hung To Road
Kwun Tong
Kowloon, Hong Kong
Tel: (852) 2950 9168
Fax: (852) 2950 9303
Email: info@uni-trend.com
http://www.uni-trend.com

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