Multifunctional tester

User Manual

Please read this manual before switching the unit on.
Important safety information inside.

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1.Introduction

This is a multi-function meter, with temperature and humidity detection, infrared temperature measurement, laser ranging, wood humidity measurement (probes and touch), flashlights, time settings and data recording and other functions. It is a powerful and versatile instrument for measuring and diagnosing humidity of building and building materials.
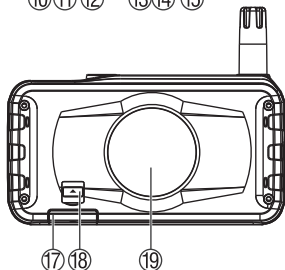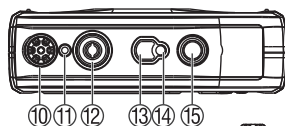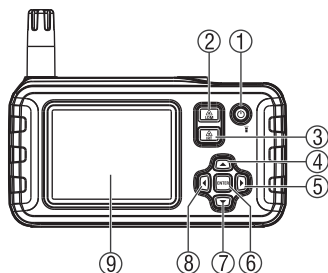
With 8 buttons, the operation is simple, the interface is bright and beautiful, the function is powerful.
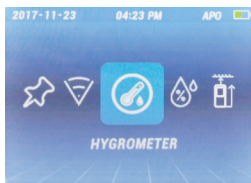
2.Features

• Quickly indicates the moisture content of materials with Pin less technology without damaging the surface; Optional remote Pin-type probe allows for moisture readings at different Penetration levels (3ft/0.9m cable length)

• Designed with patented IR design to measure non-contact surface temperature; 8:1 distance to spot ratio with 0.95 fixed emissivity.

• Built-in Humidity/Temperature probe measures Relative Humidity, Air Temperature plus grains per pound (GPP) and dew point (DP)

• Automatic calculation of differential Temperature (IR - DP)

• Auto power off and low battery indication

• Keep data convenient, easy access to each record, easy to delete a single and all records

• Laser range measurement is short in time and high in accuracy. It can measure length, area and volume

• Color, graphical interface, simple operation, easy to understand icons, pictures of beautiful

3.Front Panel Description

①.ON/OFF and Flashlight button

②.Laser ranging button

③.Infrared temperature measurement button

④.Up button

⑤.Right button

⑥.Enter button

⑦.Down button

⑧.Left button

⑨.Screen display

⑩.Temperature and humidity probe

⑪.Infrared laser emitter

⑫.Infrared temperature sensor

⑬.Ranging laser emitter

⑭.Laser ranging sensor

⑮.Flashlight

⑯.Pin Moisture probe interface

⑰.Battery cover

⑱.Battery cover switch

⑲.Pinless Moisture test board

⑳.Hand buckle

4.Indicator

Long time press the red button, the picture is the main interface, intermediate blue is currently selected icon, press ENTER button to enter the measurement interface, press the right and left key can choose a different icon on the left and right sides, the white font is the name of the currently selected icon, the upper left corner of the date, the middle time, right above the APO mark is automatically shut down, the battery icon is to show the current power.

5.Pin Moisture Meter Mode

Select PIN MOISTURE in the main interface, press ENTER to enter, there is a hole in the instrument slot on the left, used to connect the external probe, when the reading is in the range of 0-17, below the progress bar is green, length grows with larger range when reading, reading is yellow at 17-20, length grows with larger readings when the reading range is red, in between 20-99.9, the length will increase with larger readings.

Relative value interface: only when the current measurement value is between 7.8-100, can enter the interface, RELATIVE is the current measurement value, REFERENCE is the relative difference. Press BACK to return and press SAVE to save.

Connect the Pin-type Probe; the meter can now used to take reading in wood or building. The Pin-type probe images are as follows.

WME interface: water content of different kinds of materials. You can switch all kinds of materials by pressing buttons up and down.

Referring the following table can obtain the building material or chip-board moisture value.

Example: when measure building material, selected scale A and measure building material, if the reading is 12, referring the following table can obtain the building material moisture is 11.5. If the reading is 20, referring the following table can obtain the building material moisture is 17.2.

STA SCALE	Species Group							BUILD
A	B	C	E	F	G	H	J	
7	8.2	9	8	7.1	7	11	10.5	4.5
8	10	10.5	9.3	7.5	7.4	11.5	11	6.8
9	10.8	10.9	9.7	7.9	8.1	12.1	11.6	8.5
10	11.7	11.5	10.4	8.6	8.8	12.7	12.2	9.4
11	12.7	12.6	11.3	9.5	9.7	13.4	13.4	10.5
12	13.6	13.7	12.1	10.5	10.5	14	14.3	11.5
13	14.5	14.5	12.7	11.2	11.2	14.5	15.1	12.5
14	15.3	15.5	13.4	11.8	11.8	15	16	13.5
15	16.3	16.7	14.1	12.5	12.6	15.6	17	14.4
16	16.9	17.5	14.8	13	13.2	16	17.7	14.9
17	17.7	18.8	15.7	14.3	13.9	16.6	18.5	15.3
18	18.2	19.7	16.3	15	14.5	17	19.1	16.1
19	19	21	16.9	15.9	15.2	17.6	20	16.7
20	20	22.6	17.8	16.9	16.1	18.4	21.3	17.2
21	20.8	23.5	18.5	17.6	16.8	19.1	22.3	18.3
22	21.5	24.5	19.3	18.3	17.4	19.7	23.2	19.1
23	22.9	26.4	20.2	19.8	18.6	21.2	25.3	19.9
24	23.5	27.4	20.8	20.4	19	22	25.8	20.5
25	24.2	27.8	21.2	21	19.4	22.7	26.3	23
26	25.3	29	22.4	22.3	20.1	23.9	27.3	23.4
27	26.5	30	23.3	23.4	20.8	24.7	28.1	23.7
28	28	31.2	24.4	24.8	21.7	25.9	29.2	24
29	29.6	32.5	25.6	26.3	22.9	27.1	30.2	24.2
30	30.8	33.7	26.8	27.5	24.1	28.2	31.1	24.6

Moisture Meter Specifications

Function	Range	Repeatability
Moisture in Wood	6-40%	±5%
	41-99%	±5%
Moisture in Building Materials	13-99%	±5%

6.Pinless Moisture Meter Mode

Select PINLESS MOISTURE in the main interface, press ENTER to enter into the interface, if, when the back sensors do not touch any object, the surface is dry, the current reading should be 0, if not 0, please keep the back clean and dry place 2 minutes after the long press IRT button to reset. When the reading is in the range of 0-17, below the progress bar is green, length grows with larger range when reading, reading is yellow at 17-20, length grows with reading becomes large, when the reading range is red in 20-99.9, the length will grow larger with reading.

Relative value interface: only when the current measurement value is between 7.8-100, can enter the interface, RELATIVE is the current measurement value, REFERENCE is the relative difference. Press BACK to return and press SAVE button to save.

The interface has a rotating button, the screen will change to vertical display, once again press the rotary button, you can change the screen display, vertical screen stored in the history of reading data, converted to horizontal screen display.

7.Humidity Meter Mode

Select HYGROM METER at the main interface, press the ENTER button to enter, the interface RH display the air humidity value, TEMP is the temperature value of the air, the unit can set the interface switch. Press SAVE button to save data and press BACK to return.

Humidity Meter Specifications

Function	Range	Accuracy (of reading)
RH Measurement 10-50°C (50-122°F)	0-99.9%	±2%
Air Temperature	-4 to 158°F(-20 to 70 °C)	±0.5°C/0.9 °F

8. Psychrometrics Meter

The current mode has four kinds of display value are based on temperature and humidity, temperature and humidity sensor measurement and conversion, just shows the different mode, users can switch the display of these according to the use of their own, DEW POINT model, GRAMS PER KILOGRAM, ENTHALPY, VAPOR, PRESSURE.

9. Laser Distance Meter

Select the LASER DISTANCE METER in the main interface, press the ENTER button to enter the laser ranging interface, can also press the LDM shortcut button, press the down button to select measure length, area, volume, the first short press LDM button to start the measurement, press the measurement again. The function button to move to UNIT to switch the unit, if you are already setting unit selection METRIC cannot switch units, if the choice is NON METRIC can switch different units, press SAVE button to save, press BACK to exit.

When the object is a colorless liquid (eg: water), clean glass, the surface has very transparent characteristics of the object, it may produce wrong measurements. When the object is strongly reflected, the laser may be reflected out, which can also lead to erroneous measurements. The measurement length is based on the bottom of the machine.

Technical index

Range	0.12m to 50m
Measurement accuracy (2σ, standard deviation)	Typical value: ±2 mm
Laser safety standard	Class ‖
Laser type	650 nm, <1mW
Display minimum	1mm

10. IR Temperature Meter Mode

Select IR THERMOMETER in the main interface, press the ENTER button to enter the infrared interface, can also be short press IRT shortcut to enter the interface, enter the interface, press the IRT button, the laser alignment of measured objects can be in the middle of the screen, larger number is the temperature of the measured object, AIR DP is the current air dew temperature, SURF is the difference between the measured object temperature and condensation temperature. Press BACK to exit and press SAVE button to save.

IR Temperature Specifications

IR TEMP. Range	-20 to 200°C(-58 to 392°F)
Response time	less than 500 ms
Emissivity	fixed for 0.95
Optical Resolution	D/S = 8:1 (D= distance, S= spot)
Accuracy (of reading)	-20 to -1°C(-4 to 31°F) ±5°C(9°F) 0°C(32°F) ±1°C(1.8°F) 1 to 200°C(33 to 392°F) ±2% ±2°C(3.6°F)
Over range Indication	LCD will show "----"
Resolution	0.1°C / 0.1°F
Laser power	Output < 1mw

11. Records

By selecting the RECORDS icon in the main interface, press ENTER to enter, the middle of the screen will display the recorded data, the first is the data number, followed by the data saved time, can press the down button to choose different data, will be below the function button to move to VIEW, press ENTER to view the data, will mobile DEL ALL function key press OK to delete all data. In view of a single data, can press the down button on the switch between adjacent record view data, the function keys on mobile DEL, press the ENTER button to delete the current view data, record data will automatically jump to the next line, press BACK to exit the record view.

Storage data: in other measurement interface, move the button below to SAVE, press the ENTER key to save, each record will save the measurement time and measurement value. The latest saved data will have the first position,When the data is stored up to 64, the original is deleted automatically.

12. Settings

Select the settings Icon in the main interface, press ENTER to enter the interface, there are five options, namely setting unit, setting time, automatic shutdown, set the backlight brightness, buzzer switch. Press the up and down button to set the choice, press the left and right key for function selection. After setting the selected, move the function keys below to SAVE, then press ENTER to confirm. Automatic shutdown function is opened, the top right of the screen will display APO, without any key operation, shutdown time to automatically shut down, the time will be adjusted to 0, the machine will not automatically shut down. Move the bottom function key to BACK, and then press ENTER to exit the interface.

13. Version

The current interface shows the program's version, version update time, and machine production sequence number. The interface is only used to view and press ENTER to exit the interface.

14. Flashlight

In any interface, you can quickly press the power button to turn on or off the flashlight.

WARNING:
1- When the battery sign turns red, the battery should be replaced at this time.
2- Do not let the Laser enter your eye, another person's eye or the eye of an animal.
3- Do not let the Laser on a reflective surface strike your eye.

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