EXTECH INSTRUMENTS

Hygro-Thermometer

Model RHT510

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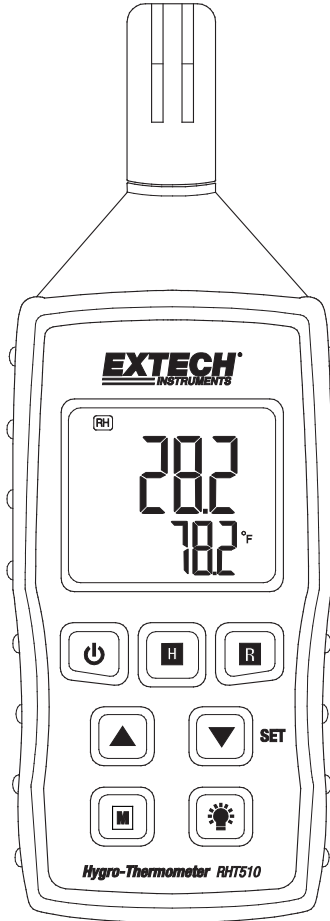
Introduction

Thank you for selecting the Extech Model RHT510. This hand-held device measures Relative Humidity, Air temperature, Dew point temperature, Wet bulb temperature, and Type K temperature (using external probe). This device is shipped fully tested and calibrated and, with proper use, will provide years of reliable service. Please visit our website (www.extech.com) to check for the latest version and translations of this User Manual, Product Updates, Product Registration, and Customer Support.

Features

- Backlit LCD with Display Hold
- Light weight, ergonomic design with lanyard
- Displays Relative Humidity and Temperature (Air, Type-K, Dew point, and Wet bulb)
- Selectable temperature units C/F
- MAX-MIN Recording
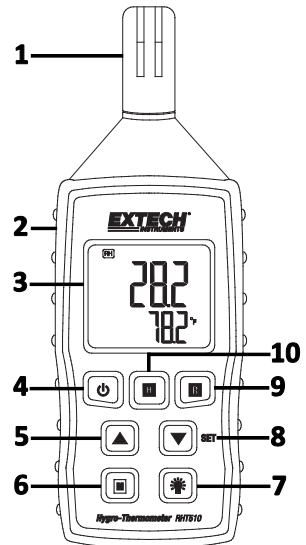- Tripod Mounting
- Battery operated

Safety

Please read the entire User Manual and Quick Start before operating this device. Use the meter only as specified and do not attempt to service or open the meter housing. Do not allow children to handle the meter. Please dispose of batteries and meter responsibly and in accordance with all applicable laws and regulations.

Meter Description

1. Air Temperature/Humidity Sensor
2. Type K Temperature Probe Input
3. LCD Display
4. ON-OFF button
5. ▲ button
6. Mode button
7. Backlight button
8. SET and ▼ button
9. Record button (MAX-MIN)
10. Display Hold button

Note: Battery compartment and tripod mount on back of meter

LCD Description

1. Type K Temperature Icon
2. Function Icons
3. MAX-MIN Record Icon
4. MAX Display Icon
5. MIN Display Icon
6. Display Hold Icon
7. Battery Status Indicator
8. Auto Power OFF (APO)
9. Primary Display
10. Secondary Display
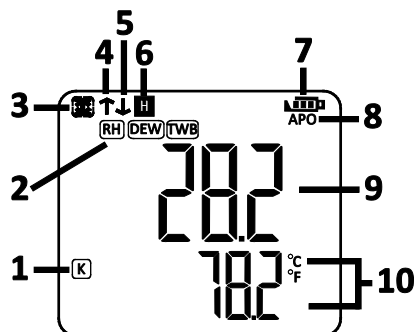
Operation

Basic Use

1. Short press the ⏻ power button to power the meter. If the LCD does not switch on, check the batteries located in the rear battery compartment.
2. Place the sensor in the testing environment.
3. View the measurement on the meter's display.
4. To power OFF the meter, short press the ⏻ button.

Mode Selection

Press the **M** button to select the mode of operation. The meter has four (4) modes: Relative Humidity %, Dew point temperature, Wet bulb temperature and Type K temperature (external probe required). Release the **M** button to make a selection.

Display Hold

Short press the **H** button to freeze or unfreeze a reading on the display. The Display Hold and APO functions are not operational in record mode.

LCD Backlight

The LCD is equipped with backlighting for easier viewing, especially in dimly lit areas. Press the ☀ backlight button to turn the backlight on. The backlight will automatically turn off after 10 seconds.

Type K Measurement

Insert the optional Type K temperature probe into the Type K temperature probe socket (left side of meter). Use the mode (M) button to set the mode of operation to Type K temperature and view the readings on the display.

MAX-MIN Recording

The meter records the maximum and minimum values over time.

Note: Display Hold, Auto Power OFF setup, and the Power button do not function in Record mode.

1. Press the **R** button to enter the Record mode. The 🎦 record icon will appear on the display. The maximum and minimum values will be recorded and updated during the measurement period.
2. Press the **R** button to display the maximum value recorded over time. The ↑ icon and maximum value will appear on the display.
3. Press the **R** button to display minimum value recorded over time. The ↓ icon and minimum value will appear on the display.
4. Press the **H** button to reset the recorded data. The previously recorded MAX-MIN readings will be cleared and the meter will start recording new MAX-MIN readings.
5. Long press the **R** button to exit the record mode.

Auto Power OFF Control

In order to conserve battery life, the meter will automatically shut off after approximately 10 minutes of inactivity. The APO icon appears in the display when APO is selected.

To set APO ON or OFF as the default condition:

1. Long press **SET** button to enter APO mode. The bottom display will show 'PoFF'.
2. Press the ▲ or ▼ button to turn the APO ON (YES) or APO OFF (NO).
3. Press the **R** button to save the selection.
4. Wait approximately 10 seconds for the meter to return to normal operation.

Temperature Units Selection (C/F)

1. Long press **SET** button. The bottom display will show 'PoFF'.
2. Press the **R** button. The bottom display will show t-CF'.
3. Press the ▲ or ▼ button to select C or F.
4. Press the **R** button to save the selection.
5. Wait approximately 10 seconds for the meter to return to normal operation.

Maintenance

Battery Replacement

1. Power OFF the meter.
2. Remove the flat head screw that secures the battery compartment at the back of the meter.
3. Open the battery compartment and replace the 3 AAA batteries observing correct polarity. Re-assemble the meter before use.

Safety: Please dispose of batteries responsibly; never dispose of batteries in a fire, batteries may explode or leak. If the meter is not to be used for 60 days or more, remove the batteries and store separately.

Never dispose of used batteries or rechargeable batteries in household waste. As consumers, users are legally required to take used batteries to appropriate collection sites, the retail store where the batteries were purchased, or wherever batteries are sold.

Disposal: Do not dispose of this instrument in household waste. The user is obligated to take end-of-life devices to a designated collection point for the disposal of electrical and electronic equipment.

Cleaning and Storage

Periodically wipe the case with a damp cloth and mild detergent; do not use abrasives or solvents.

Specifications

Electrical Specifications (23±5°C)

Humidity/Air Temperature			
Unit	**Range**	**Resolution**	**Accuracy**
%RH	10 to 95	0.1	<70%: ±(4%RH)
			≥70%: ±(4%rdg + 1.2%RH)
Temp °C	0 to 50	0.1	±1.2°C
Temp °F	32 to 122	0.1	±2.5°F
Type K Thermocouple (external probe)			
Unit	Range	Resolution	Accuracy*
Type K Temp °C	-50.0 to 1300.0	0.1	±(0.4%rdg + 0.5 °C)
	-50.1 to -100.0	0.1	±(0.4%rdg + 1.0 °C)
Type K Temp °F	-58.0 to 2372.0	0.1	±(0.4%rdg + 1.0 °F)
	-58.1 to -148.0	0.1	±(0.4%rdg + 1.8 °F)
Accuracy spec. does not include additional error introduced by the external probe			
Dew Point Temperature			
°C	-25.3 to 49.0	0.1	Calculation based on humidity/temp values.
°F	-13.5 to 120.0	0.1	
Wet Bulb Temperature			
°C	-5.4 to 49.0	0.1	Calculation based on humidity/temp values.
°F	22.2 to 120.0	0.1	

General Specifications

Display	Backlit LCD 35 x 30mm (1.38 x 1.18")
Measurements	Humidity/Temp; Dew Point; Wet Bulb; Type K Temp.
Input Overload Display	**"----"**
Tripod Mount	On rear panel
Power	1.5V AAA batteries (3)
Power Consumption	Approx. 5mA DC
Automatic Power Off	After approx. 10 minutes of inactivity
Operating Temperature	0 to 50ºC (32 to 122ºF)
Operating Humidity	95% RH max
Storage Temperature	-10 to 60ºC (14 to 140ºF)
Storage Humidity	10 to 75% RH
Dimensions/Weight	153 x 45 x 20mm (6.0 x 1.8 x 1.2") /160g (5.64oz)