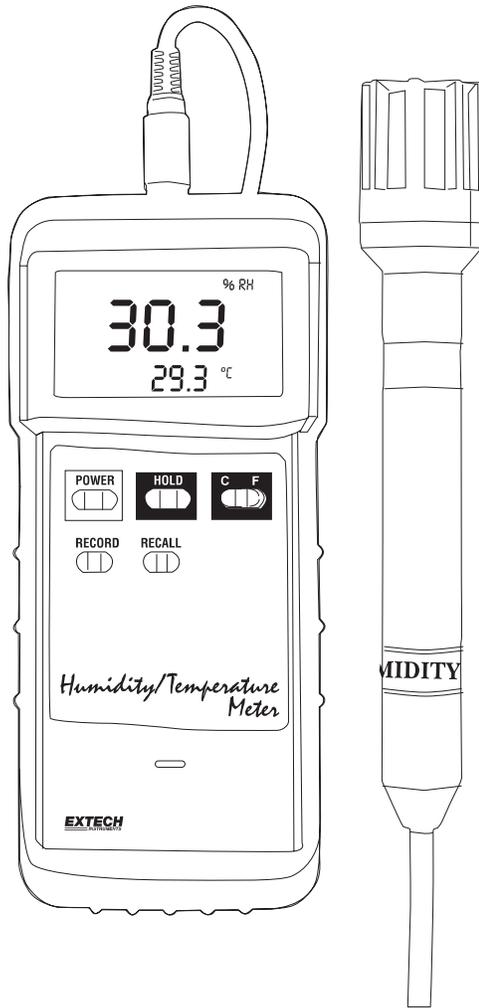


**Model 407445  
Heavy Duty Hygro-Thermometer**



***Introduction***

Congratulations on your purchase of Extech's Heavy Duty Hygro-Thermometer. The Model 407445 displays Temperature & Relative Humidity simultaneously and includes a built-in PC interface. This professional meter, with proper care, will provide years of safe reliable service.

## Specifications

### General Specifications

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Display	Dual function LCD display with contrast adjustment
Measurement	Relative Humidity (RH) and Temperature (°C & °F)
Data Hold	Freezes Display
Sensor types	Humidity: Thin film, capacitance sensor Temperature: Thermistor
Memory Recall	Records/Recalls MAX, MIN, and Average readings
Power off	Automatic power off after approx 10 minutes of inactivity
Data Output	RS 232 PC serial interface
Sampling Time	Approximately 0.8 seconds
Operating Temperature	Instrument: 32 to 122°F (0 to 50 °C) Probe: 32 to 140°F (0 to 60°C)
Operating Humidity	< 90% RH
Power Supply	9V battery
Power Consumption	Approx. 8.5 mA DC
Weight	0.76 lbs. (345 g) including batteries & probe
Size	Instrument: 7.1 x 2.8 x 1.3" (180 x 72 x 32mm) Sensor head: 1" diameter x 6.3" (26mm x 160mm)

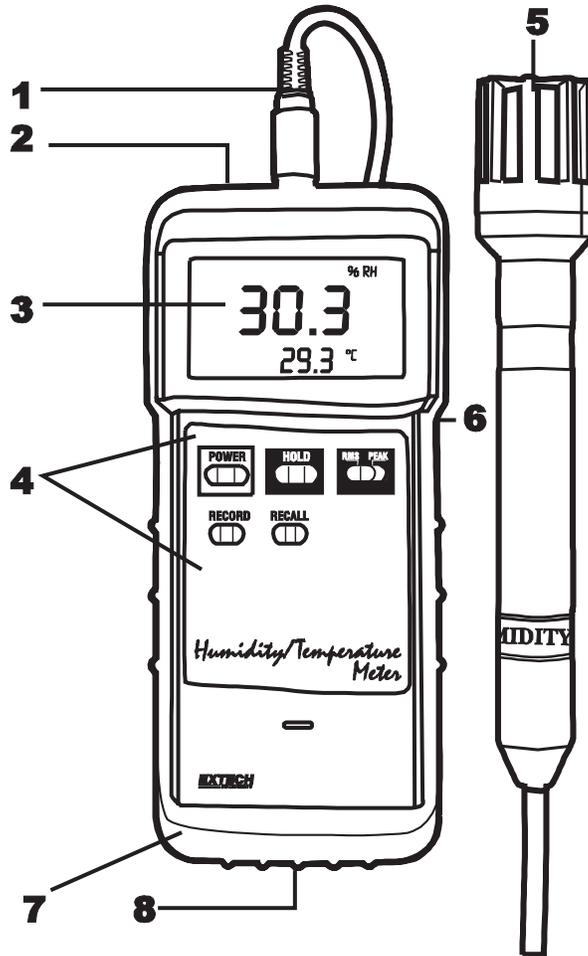
### Range Specifications

	Range	Resolution	Accuracy
RH	10% to 95% RH	0.1% RH	≥ 70% RH: ± 4% RH < 70% RH: ± 3% RH
Temperature	32°F to 122°F (0°C to 50°C)	0.1° F/C	± 1.5 °F (± 0.8°C)

## Meter Description

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1. Sensor input

2. RS-232 serial output jack
3. LCD Display
4. Keypad
5. Sensor
6. LCD contrast adjustment
7. Protective rubber jacket
8. Battery compartment and calibration pots on rear



## ***Meter Operation***

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### **Getting Started**

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1. Plug the sensor into the sensor jack at the top of the meter.
2. Press the Power OFF/ON key to turn the instrument on or off.
3. Select the temperature units by pressing the °C/°F key. The display will indicate "°C" or "°F" as selected.
4. The meter will now display the per cent relative humidity and the temperature.

**NOTE:** For accurate relative humidity measurements the meter should be allowed several minutes to adjust to ambient temperature changes.

### **Data Hold**

Press the Data Hold key to freeze the displayed temperature and humidity readings. The HOLD icon will appear on the display in the Data Hold mode. Press the Data Hold key again to exit the Data Hold mode.

### **MAX, MIN, and AVG Record / Recall**

1. Press the RECORD key to begin. The REC indicator will appear on the display and the meter will begin tracking the highest (MAX), lowest (MIN), and average (AVG) readings.
2. Press the RECALL key to display the highest (MAX) reading. The MAX indicator along with the maximum reading recorded since RECORD was first pressed will appear.
3. Press the RECALL key again to view the lowest (MIN) reading.
4. Press the RECALL key again to view the average reading (AVG).
5. To exit, press the RECORD key.

## ***Measurement Considerations***

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1. The meter includes an Auto Power OFF feature that turns the instrument off after approximately 10 minutes of inactivity. To disable this feature, press the RECORD key to enable the MIN/MAX/AVG function.
2. It may be necessary to adjust the display contrast due to a change in viewing angle or voltage drift. Use the LCD contrast adjustment located on the right side of the meter.

## ***RS-232 Serial PC Interface***

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This instrument includes a built-in RS-232 serial data port. This interface is intended for use with the Extech Data Acquisition Software (PN 407001). For more information, contact Extech or refer to the manual accompanying the 407001 software package.

## ***Battery Replacement***

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1. The low battery indicator (LBT) appears on the left corner of the display when the battery requires replacement. Reliable readings can be obtained for several hours after the first appearance of the low battery indicator.
2. To replace the battery:
  - a) Remove the rubber jacket that encases the meter.
  - b) Open the rear battery compartment using a small coin or screwdriver.
  - c) Replace the 9V battery and re-assemble the meter.

## Calibration

### Humidity Calibration

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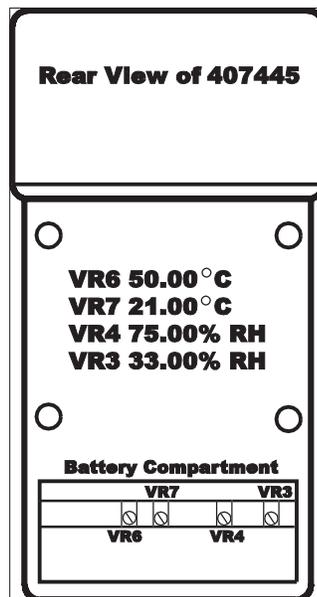
Note: Calibration reference solutions are available from Extech (33%: Part No. 407453 and 75%: Part No. 407465).

1. The grid located on top of the sensor must be removed so that it may fit into the calibration bottles.
2. Prior to calibrating, allow the meter and probe to stabilize to room temperature.
3. Open the battery compartment to access the calibration adjustments (see diagram below).
4. Place the sensor head into the 33% calibration reference solution. Wait for a stable reading (up to 30 minutes). Adjust VR3 until the display reads 33.0%.
5. Place the sensor head into the 75% calibration reference solution. Wait for a stable reading (up to 30 minutes). Adjust VR4 until the display reads 75.0%.

### Temperature Calibration

Note that the temperature calibration adjustments are rarely required. However if a temperature calibration is in order, the user must have access to an environmental chamber capable of providing 21°C and 50°C conditions. Allow time for the chamber and the meter sensor to stabilize (30 minutes approx.) and then adjust the appropriate potentiometer (see below):

- VR7 - Temperature 21°C adjustment
- VR6 - Temperature 50°C adjustment



## **Calibration and Repair Services**

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Extech offers repair and calibration services for the products we sell. Extech also provides NIST certification for most products. Call the Customer Service Department for information on calibration services available for this product. Extech recommends that annual calibrations be performed to verify meter performance and accuracy.

## Warranty

**EXTECH INSTRUMENTS CORPORATION** warrants this instrument to be free of defects in parts and workmanship for **one year** from date of shipment (a six month limited warranty applies to sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization or visit our website [www.extech.com](http://www.extech.com) for contact information. A Return Authorization (RA) number must be issued before any product is returned to Extech. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.



### Support line (781) 890-7440

Technical support: Extension 200; E-mail: [support@extech.com](mailto:support@extech.com)

Repair & Returns: Extension 210; E-mail: [repair@extech.com](mailto:repair@extech.com)

### Product specifications subject to change without notice

For the latest version of this User's Guide, Software updates, and other up-to-the-minute product information, visit our website: [www.extech.com](http://www.extech.com)  
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