



## Model TH-10 Hygro-Thermometer Pen

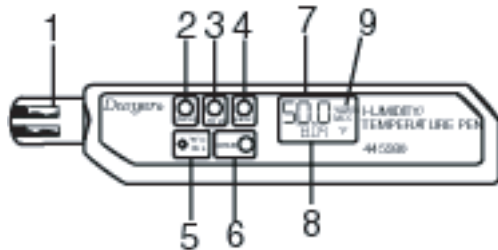
### Specifications– Calibration and Operating Instructions



#### DESCRIPTION

This portable advanced meter can measure RH from 10 % to 90% and Temperature from 14 to 113° (-10 to 45°C). Advanced features include MIN/MAX Memory, Push-button Calibration, Display Hold, and Automatic Power Off. The Model TH-10K kit includes Calibration bottles and a hard shell carrying case.

#### METER DESCRIPTION



1. RH/Temperature Sensor
2. POWER ON/OFF button
3. Data HOLD button
4. MIN/MAX Memory button
5. Calibration and units select button
6. Memory Reset button
7. RH Display
8. Temperature Display
9. Function Displays

#### OPERATION

##### Measurements

Press the ON/OFF button to turn the meter ON. After a 5 second initialization, RH will be displayed in the upper display and temperature will be displayed in the lower display.

##### Data Hold

Press the HOLD button to freeze the reading in the display. "HLD" and the last reading will appear in the display. Press and hold the RESET button until the "HLD" icon disappears from the display to return the meter to normal operation.

#### SPECIFICATIONS

RH Sensor: High precision thin-film capacitance type

Temperature Range: 14 to 122°F (-10 to 50°C)

RH Range: 10 to 95% RH

Resolution: Temperature: 0.1°; RH: 0.1%

Accuracy: Temperature:  $\pm 1.8^{\circ}\text{F}$  ( $\pm 1.0^{\circ}\text{C}$ ); RH:  $\pm 5\%$  (at 25°C)

DC Power: 2032 button battery (150 hour battery life)

Response Time: 120 seconds

Dimensions: 6.9 x 1.6 x 0.6" (175 x 42 x 16 mm)

#### MIN/MAX Memory Recall

1. Press and hold MIN/MAX button until "MIN" appears on the display. The reading will then be the lowest humidity and temperature measurements made since the meter was turned on or last reset.

2. Press and hold MIN/MAX again until "MAX" appears on the display. The reading will then be the highest humidity and temperature measurements made since the meter was turned on or last reset.

Press the MIN/MAX key again to return to normal operation.

#### Min/Max Memory Reset

Press and hold the RESET button until "88.8" appears in the display to reset (clear) the MIN/MAX memory.

#### Automatic Power Off (Sleep Mode)

The meter will automatically shut off after a period of approximately 20 minutes. To defeat this mode, press and hold the MIN/MAX button while turning power on. Release the ON/OFF button after the display initializes. "n" will appear in the display, indicating that the non-sleep mode has been activated. Sleep mode will be re-activated when the meter is turned off.

#### Setting Temperature Units (C or F)

**CAUTION!** The meter's calibration can be corrupted if this procedure is not followed exactly as stated.

1. With the meter off, press and Hold the recessed F/C button (use a paper clip or similar object to press this button) and press the ON/OFF button. Release the F/C button when the F and C appear in the display.

2. Press the MIN/MAX key to select C or F on the display.

3. Press the recessed F/C button to store the selection. "S" will appear in the display.

4. Turn the meter off.

Note: Accidentally pressing the RESET button during this procedure will corrupt the meter's calibration.

#### Error Messages

An error message will appear on the display if the meter fails an internal diagnostic test.

E2: Calibration error. Recalibration is necessary.

E5: RH sensor failure. Repair/replacement is necessary.

## CALIBRATION

The following verification and calibration procedures require the 33% and 75% RH reference bottles which are supplied with the model TH-10K kit.

### Accuracy Verification

#### Checking the 33% or 75% RH Calibration

1. Insert meter's sensor into the 33% or 75% salt reference bottle
2. Place the meter and bottle inside the meter case
3. Check the reading after 40 minutes
4. Verify that the reading is within the accuracy specification

### Relative Humidity Calibration (33% and 75%)

#### 33% Calibration

1. With power OFF, insert the meter sensor into the 33% salt reference bottle. Allow the meter to stabilize for 40 minutes
2. Press and Hold the recessed F/C CAL button (use a paper clip or similar object to hold this key) and press ON. Release F/C CAL button when the display blanks and then displays only the small "c" and "f" symbols.
3. Press RESET. "% MIN" will appear in the display.
4. Press F/C CAL. "S" will briefly appear and then "%MAX" will appear.
5. Turn power off. The 33% calibration is now complete.

#### 75% Calibration

1. With power OFF, insert the meter into the 75% salt reference bottle. Allow the meter to stabilize for 40 minutes.
2. Press and Hold the recessed F/C CAL button (use a paper clip or similar object to hold this key) and press ON. Release F/C CAL when the display blanks and then displays only the small "c" and "f" symbols.
3. Press RESET twice. "%MIN" and then "%MAX" will appear in the display.
4. Press F/C CAL. "S" will appear briefly and then the meter will return to normal operation.
5. Turn power off. The 75% calibration is now complete.

Note: The bottles contain a saturated salt solution that generates a known and accurate relative humidity (dependent on the type of salt) in the air above it. The calibration bottles will maintain their accuracy as long as the salt is damp. If the salt in the bottom of the bottle appears dry, the bottle should be replaced.

## BATTERY REPLACEMENT

Use a coin to remove the battery compartment cover on the rear of the meter. Replace the 2032 lithium battery installing it face (+) up in the battery compartment.

## WARRANTY

Dwyer Instruments, Inc. 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 on 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 (800) 879-8000 for authorization. A Returned Goods Authorization (RGA) number must be issued before any product is returned to Dwyer Instruments, Inc.. 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. Dwyer Instruments, Inc. 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. Dwyer'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.