

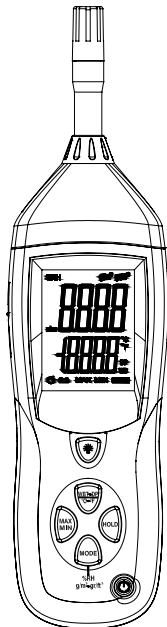
# User Manual



## Professional Thermohygrometer

with NIST-Traceable Calibration

### Model 20250-21



THE STANDARD IN PRECISION MEASUREMENT

## **Introduction**

The Digi-Sense Professional Thermohygrometer (Model 20250-21) offers fast response and high accuracy.



This heavy-duty meter measures humidity (relative and absolute), temperature, plus it calculates dew point and wet bulb. Advanced features include data Hold, Min/Max readings, and automatic power-off. The instrument is fully tested and calibrated to NIST-traceable standards. Careful use of this meter will provide years of reliable service.

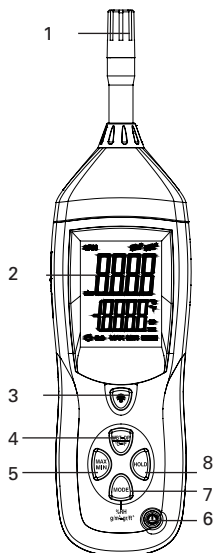
## **Unpacking**

Check individual parts against the list of items below. If anything is missing or damaged, please contact your instrument supplier immediately.

1. Meter
2. Carrying case
3. One 9 V battery
4. User manual
5. NIST-traceable calibration report with data

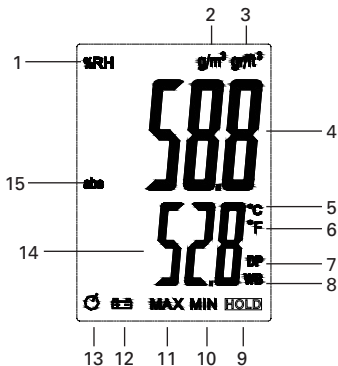
## Meter Description

1. Humidity/temperature sensor
2. LCD
3.  **Backlight** button
4. **WBT/DP/°C/°F** button (wet bulb, dew point, temperature units)
5. **MAX/MIN** button
6.  **Power on/off** button
7. **MODE** button (%RH, g/m<sup>3</sup>, gr/ft<sup>3</sup>)
8. **HOLD** button



## Display Layout

1. Relative humidity unit
2. Absolute humidity unit (grams per cubic meters)
3. Absolute humidity unit (grains per cubic feet)
4. Humidity displayed reading
5. °C temperature unit
6. °F temperature unit
7. Dew point icon
8. Wet bulb icon
9. Hold icon
10. Minimum reading icon
11. Maximum reading icon
12. Low-battery indication
13. Auto power-off icon
14. Temperature / DP / WB displayed reading
15. Absolute humidity icon



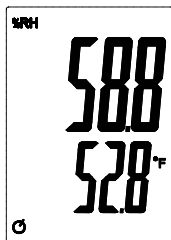
## Setup and Operation

### Power

Press the **Power on/off** button to turn unit on.

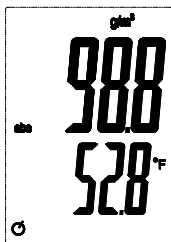
### Taking Measurements

1. Hold the probe in the area to be tested. Allow adequate time for readings to stabilize.
2. Press the **MODE** button to toggle between humidity measuring units (shown on top display): %RH,  $\text{g}/\text{m}^3$ , or  $\text{gr}/\text{ft}^3$ .
3. Press the **°C/°F** button to toggle between temperature measuring modes (shown on bottom display): °C, °F, Dew Point (DP), or Wet Bulb (WB).



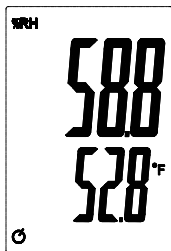
### Absolute Humidity Measurements

1. To select the Absolute Humidity measurement, press the **MODE** button until  $\text{g}/\text{m}^3$  (or  $\text{gr}/\text{ft}^3$ ) and **abs** appears on the screen.
2. Absolute humidity is now shown in upper display.



### Temperature Measurements

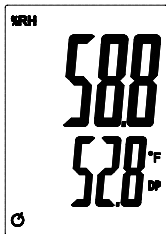
1. To select the temperature measurement, press the **°C/°F** button until the **°C** or **°F** icon appears in the lower right.
2. Temperature is now shown in lower display.



## Setup and Operation (continued)

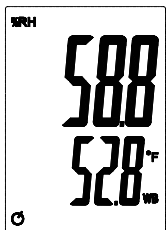
### Dew Point Measurements

1. To select the Dew Point measurement, press the **WBT/DP/°C/°F** button until the **DP (°C)** or **DP (°F)** icon appears in the lower right.
2. Dew Point temperature is now shown in lower display.



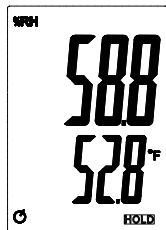
### Wet Bulb Measurements

1. To select the Wet Bulb measurement, press the **WBT/DP/°C/°F** button until the **WB (°C)** or **WB (°F)** icon appears in the lower right.
2. Wet Bulb temperature is now shown in lower display.



### Data Hold Function

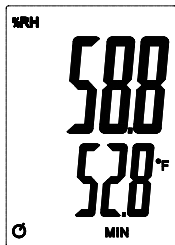
1. Press **HOLD** button to freeze the displayed readings. The **HOLD** icon appears on the lower right-hand side of the screen.
2. Press **HOLD** button again to return to normal operation.



## Viewing the Min and Max Readings

The MIN/MAX mode allows the user to view only the lowest (**MIN**) or highest (**MAX**) reading.

1. Press **MAX/MIN** button once and the **MIN** icon appears on bottom of screen. The LCD is now displaying the minimum reading of the selected parameter in the display. The display will not change until a lower reading is registered.
2. Press **MAX/MIN** button again and the **MAX** icon appears on bottom of screen. The LCD is now displaying the maximum reading of the selected parameter. The display will not change until a higher reading is registered.
3. Press **MAX/MIN** button again to exit the MIN/MAX mode.



**Note:** While powering on the meter each time, it restarts recording Minimum and Maximum, and the recordings don't stop until the meter is turned off.

## **Setup and Operation** (continued)

### **LCD Backlight**

Press **Backlight** button to turn on the backlight. Press again to turn off the backlight.

### **Automatic Power-Off**

To conserve battery life, the meter automatically turns off after 10 minutes (indicated by the icon on the screen). To disable this feature:

1. Turn the meter off.
2. Press and hold the **HOLD** button while powering on.
3. "dis AUP" will appear in the display and the Auto power-off icon will no longer be shown, indicating that the Auto power-off feature is disabled.
4. Note that Auto power-off is re-enabled each time the meter is turned on.



## Specifications

<b>Range</b>	
Humidity	0 to 100% RH
Absolute humidity (calculated)	0 to 500 g/m <sup>3</sup> 0 to 218.5 gr/ft <sup>3</sup>
Temperature	-22 to 212°F (-30 to 100°C)
Dew point (calculated)	-22 to 212°F (-30 to 100°C)
Wet bulb (calculated)	32 to 176°F (0 to 80°C)
<b>Resolution</b>	
Humidity	0.1
Temperature	0.1°F/C
<b>Accuracy</b>	
Humidity	±2% RH from 40 to 60% RH ±3% RH from 20 to 40% RH and 60 to 80% RH ±4% RH from 0 to 20% RH and 80 to 100% RH
Temperature	±1.8°F (1°C) from -4 to 140°F (-20 to 60°C) ±2.7°F (1.5°C) from -22 to -4°F (-30 to 19°C) and 140 to 212°F (60 to 100°C)

## **Specifications** (continued)

Display	Dual LCD
Response time	<15 sec (90% of final value in moving air)
Sensors	Humidity: precision capacitance; Temperature: thermistor
Auto power-off	Unit shuts off automatically after 10 minutes to preserve battery life
Operating temperature	32 to 122°F (0 to 50°C)
Operating humidity	<80% RH, noncondensing
Storage temperature	-40 to 185°F (-40 to 85°C)
Storage humidity	<99% RH, noncondensing
Weight	14 oz (400 g)
Dimensions	11 $\frac{7}{8}$ " x 3" x 1" (30 x 7.5 x 5 cm)
Power	One 9 V battery
Battery life	Typically 48 hrs. Battery life will be reduced significantly if the backlight is used continuously.

## **Maintenance, Recalibration, and Repair**

### **Cleaning and Storage**

- The meter should be cleaned with a damp cloth and mild detergent when necessary. Do not use solvents or abrasives.
- Store the meter in an area with moderate temperature and humidity (refer to the operating and storage range in the specifications chart earlier in this manual).

### **Battery Replacement**

When the battery power falls low, the Low Battery icon will appear on the screen. Remove the battery compartment cover on the rear of unit and replace the 9 V battery. Ensure that the compartment cover is securely closed when finished.

**It is recommended that Digi-Sense products are calibrated annually** to ensure proper function and accurate measurements; however, your quality system or regulatory body may require more frequent calibrations. To schedule your recalibration, please contact InnoCal, an ISO 17025 calibration laboratory accredited by A2LA.



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