User Manual

⟨D⟩ DIGI-SENSE™
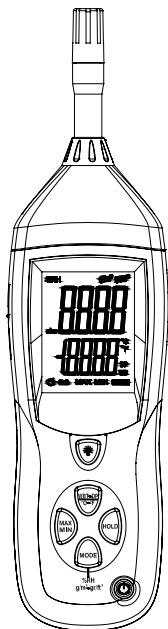
Professional Thermohygrometer

with NIST-Traceable Calibration

Model 20250-21

CE

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/m³, gr/ft³)

8. **HOLD** button
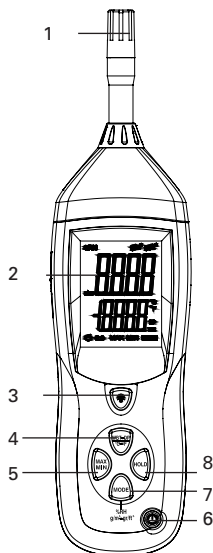
Display Layout

1. Relative humidity unit
2. Absolute humidity unit (grams per cubic meters)
3. Absolute humidity (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
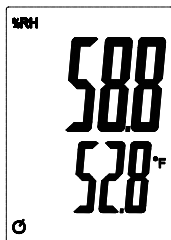15. Absolute humidity icon
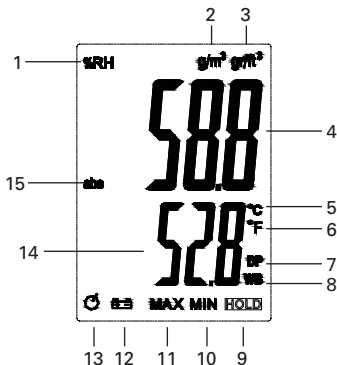
<u>Setup and Operation</u>

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, g/m³, or gr/ft³.

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 **g/m³** (or **gr/ft³**) and **abs** appears on the screen.

2. Absolute humidity is now shown in upper display.
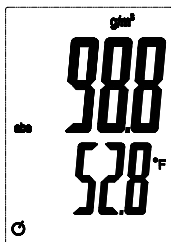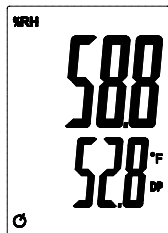
Temperature Measurements

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.
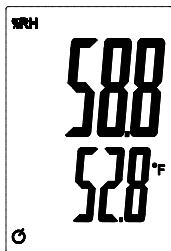
Setup and Operation (continued)

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.

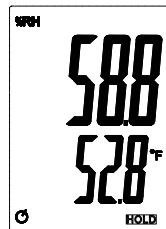2. Wet Bulb temperature is now shown in lower display.
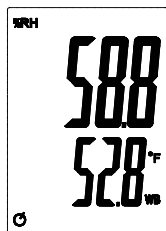
Data Hold Function

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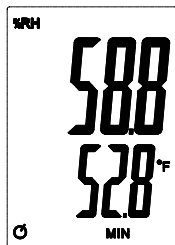
Note: While powering on the meter each time, it restarts recording Minimum and Maximum, and the recordings don't stop until the meter is turned off.

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

Range	
Humidity	0 to 100% RH
Absolute humidity (calculated)	0 to 500 g/m^3 0 to 218.5 gr/ft^3
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)
Resolution	
Humidity	0.1
Temperature	0.1°F/C
Accuracy	
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	11⅞" 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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