Pocket Moisture Meter

850001

Instruction Manual

SPER SCIENTIFIC

Environmental Measurement Instruments

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INTRODUCTION

This Sper Scientific Pocket Moisture Meter (model 850001) displays the moisture content on a large backlit LCD screen. This meter combines the versatility of measuring many different materials with the peace of mind of an in-cap calibration check. The meter simultaneously displays the moisture content in multiple formats including percentage, low and high, and a convenient bar graph that can be seen at a distance. The meter's pins are minimally invasive to surfaces while still having the strength to penetrate a variety of materials including hardwoods, brick, and concrete.

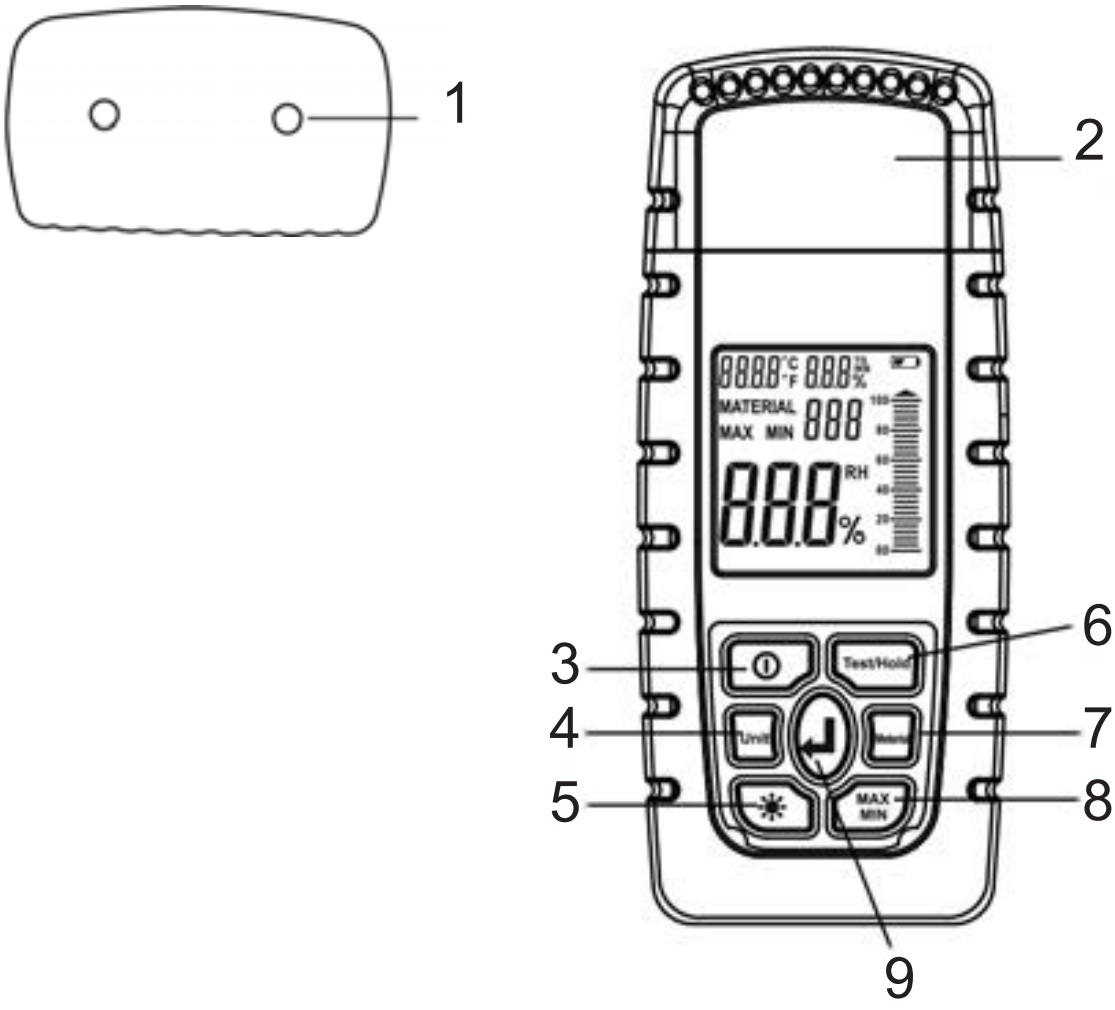
FEATURES

- Reads 7 different building materials
- Minimally invasive penetration pins
- Rugged housing
- Hold button for maintaining readings
- Maximum and minimum values
- Backlight
- In-cap calibration check
- LCD that can withstand freezing temperatures
- Reads ambient temperature in °C or °F
- Reads ambient humidity and dew point
- Automatically calculates wet bulb value

MATERIALS SUPPLIED

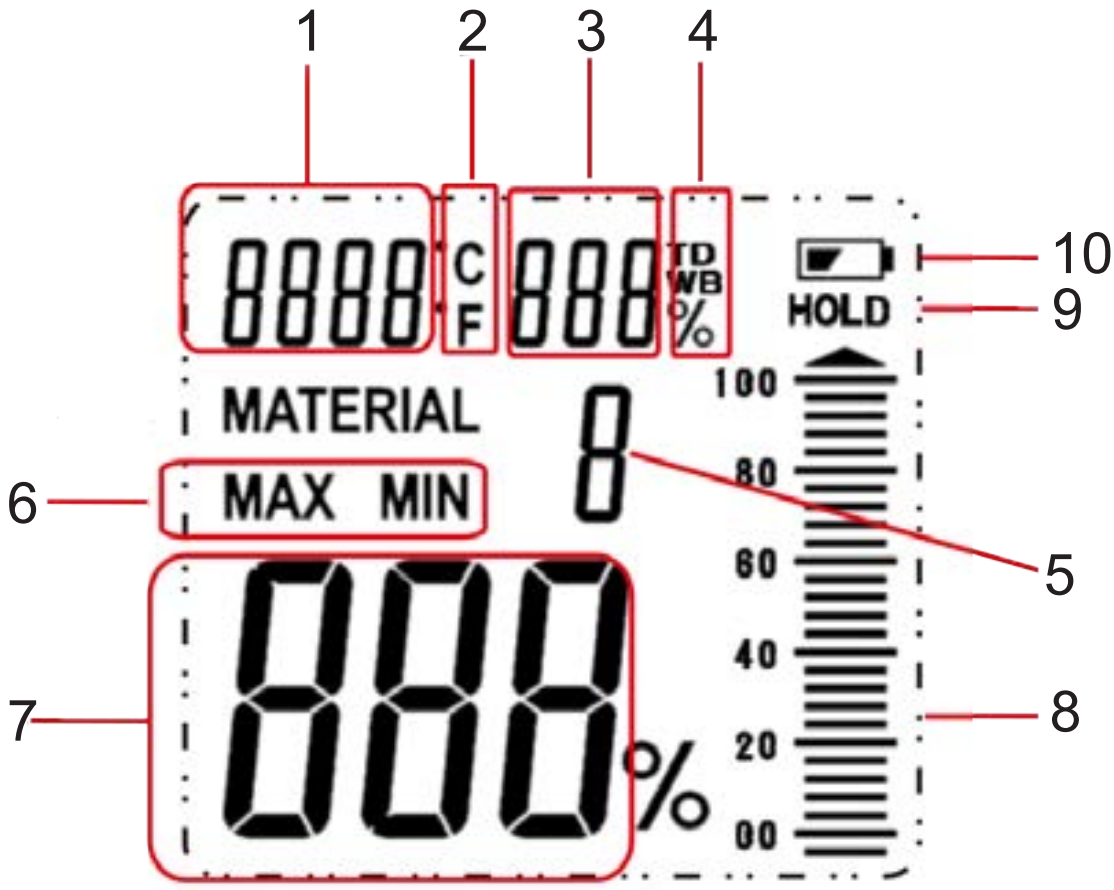
- Pocket moisture meter
- Calibration cap
- Soft carrying case
- Instruction manual
- Two AAA batteries

FRONT PANEL DESCRIPTION



1. Calibration Sensors on top of cap
2. Calibrating Cap/protective cover
3. Power Button
4. Unit Selector
5. Backlight Button
6. Data Hold Button
7. Material Selector
8. Maximum/Minimum Button
9. Enter Button

LCD DISPLAY



1. Ambient Air Temperature
2. Temperature Units
3. Ambient Air Moisture
4. Moisture Units
5. Material Selected
6. Maximum and Minimum Values
7. Material Moisture Reading
8. Material Moisture Bar Graph
9. Data Hold Indicator
10. Low-Battery Icon

SET UP

Battery Installation

This meter uses two AAA batteries. To install the batteries before first use:

1. Unscrew the single screw in the center of the back of the meter. This screw secures the battery cover.
2. Remove the battery door by inverting the meter and allowing the door to slide out.
3. Insert two new AAA batteries, ensuring correct polarity.
4. Replace the battery cover and reinstall the screw.

Replace the batteries when the low-battery icon blinks on the LCD.

Note…
Before replacing the batteries, turn the meter **off**.

Meter On and Off

1. Press **POWER** to turn the meter **on**.
2. Press **POWER** to turn the meter **off**.
3. The meter will automatically turn off after ten minutes of inactivity.

Backlight

1. Press the backlight button to illuminate the LCD screen.
2. The backlight will shut off automatically when the power is turned off.

Select Ambient Air Units

IMPORTANT:

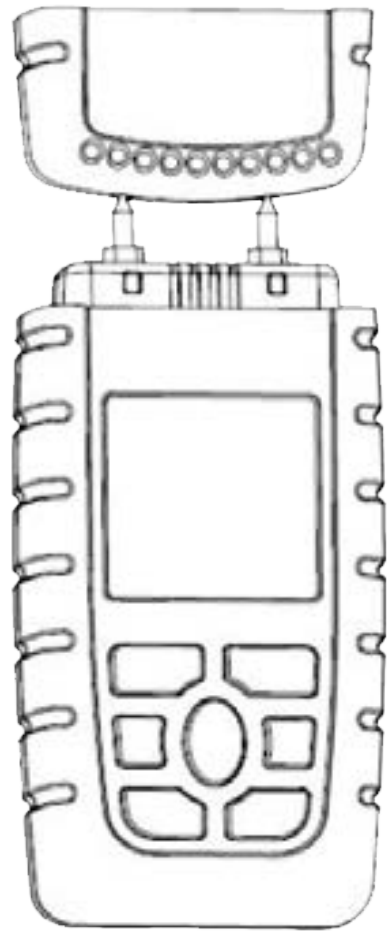
The temperature and humidity readings represent the temperature and humidity of the surrounding air and do NOT represent the temperature or humidity of the material being tested.

1. Press **UNIT** to toggle through temperature and humidity unit options. The meter will toggle through temperature settings first (°C or °F) followed by the humidity options of Realative Humidity, Wet Bulb, and Dew Point (%, WB, and TD).
2. Once the desired unit of measure appears on the screen, press **ENTER** to select it. The meter will return to normal measuring mode.
3. Press **UNIT** again to toggle to your preferred humidity unit. Press **ENTER** to select it. The meter will return to normal measuring mode.
4. The unit will remember your choice of temperature units after turning off.

CALIBRATION

Check the meter periodically using its included calibration cap. The meter can be checked before each use or when switching between materials.

1. Turn the meter on and ensure it is set to Material 1.
2. Remove the protective cap and turn it upside down to expose the calibration sensors. See image to the right.
3. Wipe pins with a cloth and remove all debris.
4. Place the pins into the cap's calibration sensors. Wait up to ten seconds. The meter will display the number 35% once calibration is complete.



5. If the meter does not display the number 35%, follow these troubleshooting steps.
    a. Ensure there is no residual material on the pins. Drywall, wood, wet concrete, or screed can adhere to the pins. Ensure both pins are clean and dry.
    b. It is normal for the meter to read approximately 14.5% during calibration. It can take up to ten seconds for the meter to calibrate. Ensure you have waited ten seconds.
    c. Ensure you have Material Type 1 selected during calibration.
    d. If the meter still does not calibrate, the pins may need to be replaced or the meter may need repair.

MEASUREMENT PROCEDURES

Select Material for Testing

1. Using the table below, choose the material to be tested by pressing **MATERIAL**. Each material is represented by a number which will appear on the LCD next to the word **MATERIAL**.
2. The meter is now ready for use.

MATERIAL	Material Number	Minimum Moisture content
Soft Woods such as Pine, Birch, Redwood, Spruce, etc.	1	6%
Hard Woods such as Mahogany, Maple, Oak, Teak, Walnut, etc.	2	5%

Gypsum Drywall, Sheetrock, Cementboard, and other manufactured wallboards	3	1%
Anhydrite Screed and other flooring adhesives	4	0%
Low lime concrete, cement, and cement mortar	5	0.5%
Lime mortar, plaster, stucco	6	0.5%
Unpolished Red Brick	7	0%

Read the Moisture Content

1. Remove the protective cap and insert the pins into the material to be tested using consistent firm pressure.
2. For best results, hold the meter by the dark rubber handgrip. If your hand is too close to the top of the meter, you could obtain incorrect ambient air readings or risk damage to your hand from the pins.
3. The moisture content appears on the screen.
4. If the meter displays the word **Lo**, your material is at or below the minimum expected moisture content for the material.
5. If your meter toggles between **Lo** and a reading, this means the material is within 2% of the lowest possible moisture content for that material.

Data Hold

The Minimum/Maximum functions on the meter are disabled during data hold. Also, new readings cannot be taken.

1. Press **HOLD** to freeze the reading on the display. “Hold” appears at the top of the LCD and the reading remains on the display until hold is disabled.
2. Press **HOLD** to return to Normal Mode.

Maximum/Minimum Mode

It is important to take readings from different areas of your material to determine the overall moisture content. This is especially true of large surfaces due to material inconsistency, location of moisture sources, depth of penetration, and environmental factors. Maximum/Minimum mode allows you to take several readings and displays the minimum and maximum values.

1. Turn the meter **OFF** and then **ON**.
2. Select your desired material number as described on page 12.
3. Take your desired number of readings by inserting the pins into several different locations of the test area.
4. Press **MAXIMUM/MINIMUM** once to view the Maximum value of all readings.
5. Press **MAXIMUM/MINIMUM** again to view the Minimum value of all the readings.

6. Press **MAXIMUM/MINIMUM** again to return to regular mode. You will not lose the previous MIN/MAX readings.
7. To clear the memory of previous readings, turn the meter **OFF**.

CARE AND MAINTENANCE

- Periodically wipe the meter with a dry, lint-free antistatic cloth.
- Do not use abrasives, solvents or cleaning agents containing carbon, alcohol or benzenes on the meter.
- Repairs or services not covered in this manual should be performed by qualified personnel only. Please contact Sper Scientific to speak with a technician.
- Do not leave the meter uncapped as this could potentially damage the pins or create an unsafe situation because the pins are very sharp and can pierce skin.
- Clean the pins often, especially when switching between materials. Dust or dampness from a foreign substance can alter readings.

SPECIFICATIONS

	Range	Resolution	Accuracy
Temperature	-5 - 45°C 23 - 113°F	0.1°	±2°C
Relative Humidity	10 - 90%	0.1%	±5%
Dew Point	0 - 30°C 32 - 85°F	0.1°	±2°C
Wet Bulb*	-5 - 45°C 23 - 113°F	0.1°	N/A*
Moisture Content	0 - 75%	0.1%	±2% FS
Power Supply	AAA, 1.5V battery x 2		
Battery Life	200 hours (Backlight off)		
*Wet Bulb value is calculated internally using the temperature and relative humidity. There is no physical wet bulb located on the meter, therefore there is no stated accuracy.			

WARRANTY

Sper Scientific warrants this product against defects in materials and workmanship for a period of **one (1) year** from the date of purchase, and agrees to repair or replace any defective unit without charge. If your model has since been discontinued, an equivalent Sper Scientific product will be substituted if available. This warranty does not cover pins, batteries, battery leakage, or damage resulting from accident, tampering, misuse, or abuse of the product. Opening the meter to expose its electronics will break the waterproof seal and void the warranty. To obtain warranty service, ship the unit postage prepaid to:

SPER SCIENTIFIC LTD.
8281 E. Evans Rd., Suite #103
Scottsdale, AZ 85260
(480) 948-4448

The defective unit must be accompanied by a description of the problem and your return address. Register your product online at www.sperwarranty.com within 10 days of purchase.