User Guide

EXTECH
INSTRUMENTS
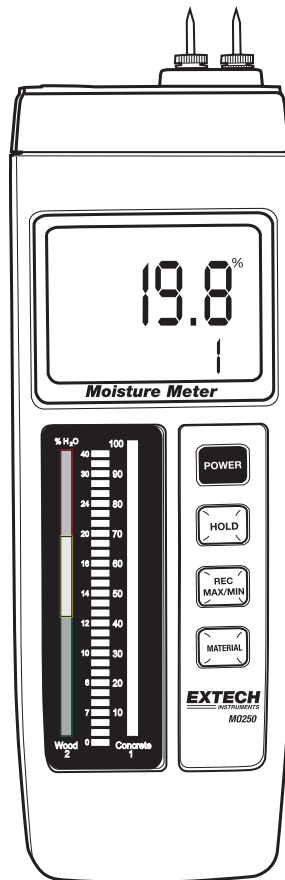
Moisture Meter

Model MO250

Introduction

Congratulations on your purchase of the Extech MO250 Moisture Meter. The MO250 detects moisture in wood and other building materials such as brick, wall board, sheet rock, cardboard, paper, plaster, concrete, and mortar. This meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.
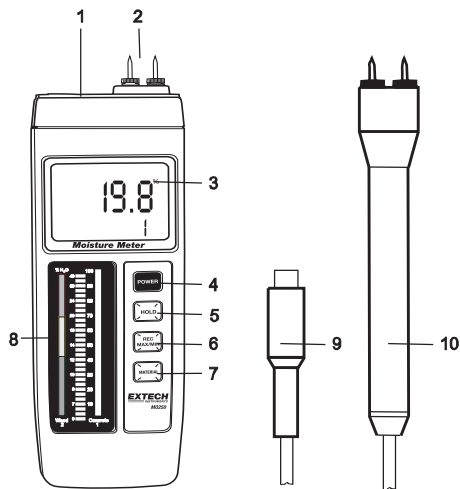
Features

- Designed to check the moisture level of wood, concrete, and other non-wood material
- Measures from 6% to 40% moisture in wood
- Measures 13% to 100% relative moisture for concrete and other non-wood material
- Measurements are shown on Red LED bargraph indicator and LCD digital display
- Optional external moisture sensor probe (MO252) for remote moisture measurements
- Microprocessor provides high accuracy and advanced features such as MAX / MIN
- Data Hold feature freezes displayed reading
- Heavy duty construction and compact housing enhance portability and durability
- Low battery indicator alerts user when battery needs replacing

Description

Meter Description

1. External probe input
2. Measurement electrode pins
3. LCD display
4. POWER key
5. HOLD key
6. REC MAX/MIN key
7. MATERIAL key
8. LED bargraph
9. External probe plug
10. External probe (Optional)

Notes:

- External probe is optional (use part number MO252 to order probe)
- Battery compartment, tilt stand, and tripod mount are located on the rear of the instrument
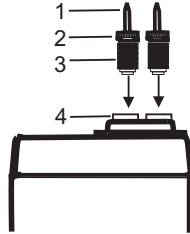- Electrode pin protective cover not shown

Operation

Electrode Pins

> **CAUTION**: The electrode measurement pins are extremely sharp. Use care when handling this instrument. Cover the pins with the protective cap when the instrument is not in use.

The electrode pins are replaceable / removeable and must be inserted before the meter can be used. To insert or replace the pins refer to the illustration and instructions below:

a) Remove the protective cap at the top of the meter

b) To remove the pins, loosen the locknut at the base of the electrode pins

c) Install the new pins and tighten the locknuts

d) Replace the protective cap

1. Electrode pins
2. Locking nuts
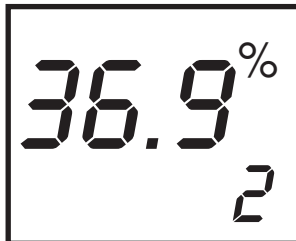3. Threaded posts
4. Electrode jacks at top of meter

Basic Operation

1. Remove the protective cap to expose the electrode pins.
2. Press the **POWER** key to turn the meter ON / OFF.
3. Press the **MATERIAL** key to select the material under test.

   A **'1'** will appear in the right bottom display for concrete and other non-wood material. A **'2'** will appear for wood. See details below:
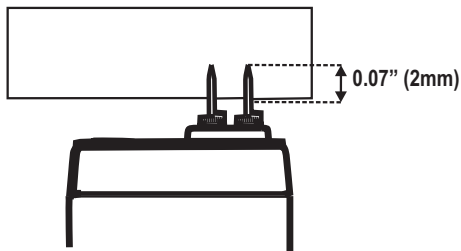
   Material 1: 13 to 100% relative moisture for concrete and other non-wood materials; display shows a '1' on the bottom right.

   Material 2: 6% to 40% moisture range for wood; the display shows a '2' on the bottom right.
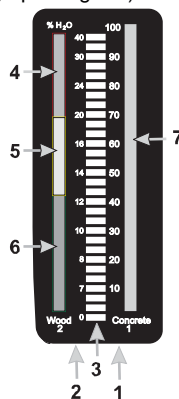

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4. Carefully push the electrode pins a minimum of 0.07" (2mm) into the material under test. Note that the pins should be inserted into wood perpendicular to the wood's fiber structure. For high moisture readings, it may take several minutes for the meter reading to stabilize.

0.07" (2mm)

5. Take several readings in several locations on the material for the best representation of the amount of moisture present.

6. Read the measurement values on the LCD digital display or the LED bar graph (see bargraph diagram)

7. Replace the protective cap when finished.

1. Material 1 (non-wood) moisture scale 13-100%

2. Material 2 (wood) moisture scale 6-40%

3. LED bargraph reading

4. Color code for material 2 (High Moisture)

5. Color code for material 2 (Medium Moisture)

6. Color code for material 2 (Low Moisture)

7. Color code for material 1 (High Moisture when LEDs reach darker color)

Data Hold feature

The Data Hold function freezes the reading in the display. Press the **HOLD** key momentarily to activate the Data Hold function. The reading will freezee and the '**HOLD**' display icon will appear. Press the **HOLD** key again to exit the Data Hold function (the **HOLD** display icon will switch off).

Max/Min Memory feature

The meter's Max/Min feature allows the user to take multiple readings while storing the highest (Max) and lowest (Min) readings.

1. Press the **REC MAX/MIN** key to activate the MAX/MIN recording mode. The display icon '**REC**' will appear. Now begin taking measurements.

2. To view the MAX reading, press the **REC MAX/MIN** key again. The display icon '**MAX**' and the maximum recorded value will appear on the display. The meter will now display and hold the maximum reading. To return back to the MAX/MIN recording mode, press the '**HOLD**' key. It will update only when a new 'Max' occurs.

3. To view the stored Min reading, press the **REC MAX/MIN** key again. The display icon '**REC MIN**' and the minimum value will appear on the display. The meter will display and hold the minimum reading. To return back to the MAX/MIN recording mode, press the **HOLD** key. It will update only when a new 'Min' occurs.

4. To exit MAX/MIN mode press and hold the **REC MAX/MIN** key for 2 seconds then release. The display icon '**REC**' will switch off.

External Probe (optional)

An optional external probe is available (part number MO252) that allows the user to reach into areas that would be difficult to access with the meter's built-in electrode pins.

1. The input socket for the external probe is located at the top of the meter.
2. The plug and jack are keyed so that the plug can only fit in the jack one way.
3. Turn the plug carefully until it lines up with the jack and then firmly push the plug in place. Do not apply undue force or try to twist the plug side-to-side.
4. The meter will continue to operate as described in this manual.

Battery Replacement

If the instrument does not switch ON or displays the low battery symbol 🔋, replace the battery as follows:

1. Open the rear battery cover by removing the screw using a Phillips head screwdriver
2. Replace the 9V battery
3. Put the battery cover back in place. Secure with the Phillips screw.

Maintenance

- Always keep the instrument dry
- To clean, wipe the meter with a damp cloth. Use a mild detergent if necessary but never use abrasives or solvents.
- Prevent dirt from accumulating at the electrode pins

Specifications

Display	LCD digital display and red LED bargraph scale
Resolution	0.1%
Accuracy	± (5% rdg + 5 digits)
Sampling rate	One reading every 0.8 seconds (approx.)
Memory	Maximum and Minimum readings can be saved and viewed
Measurement principle	Electrical resistance
Range	Wood: 6 to 40%, Building materials: 13 to 100%
Electrode pin length	0.44" (11mm)
Electrode pin type	Integrated, replaceable
Power supply	9V alkaline battery
Power consumption	16mA DC (approx.)
Low Battery Indication	Battery symbol 🔋 displayed on LCD
Meter housing	Impact-proof plastic
Operating Temperature	32 to 122°F (0 to 50°C)
Operating Humidity	80% Relative Humidity maximum
Dimensions	8.4 x 2.7 x 1.2" (216.5 x 68.5 x 29.7mm)
Weight	8.8 oz. (251g)

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 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.*

Calibration and Repair Services

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.

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Support line (781) 890-7440

Technical support: Extension 200; E-mail: support@extech.com

Repair & Returns: Extension 210; E-mail: 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

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