TechCheck PLUS

MOISTURE METER

Owner's Manual

Version 1.0

For TechCheck Meters starting with Serial #12160

Delmhorst Instrument Co.
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GENERAL DESCRIPTION & FEATURES

Thank you for your purchase of Delmhorst Instrument Co's newly designed **TechCheck Plus** handheld moisture meter. The **TechCheck Plus** offers the latest in features and functionality and is intuitive and easy to operate. We recommend that you read the following pages in detail to take full advantage of all that the **TechCheck Plus** has to offer.

Outstanding Features:

- **Pin mode**
  - 6%-60% wood scale (Douglas Fir)
  - 0.1% - 6% drywall scale
- **Scan Mode**
  - 0-300 numerical reference scale
- **Other Features:**
  - Spanish Language Option
  - Built in back-light makes reading in dark places a cinch
  - Alarm lets you know when your pre-selected moisture threshold is reached
  - Hold readings on-screen to make even the most demanding inspection more manageable
  - Auto shutoff timer saves battery life
  - Rugged construction ensures years of reliable use
  - Sturdy plastic carrying case
  - 9-V Battery
  - 1 year warranty

OPERATING INSTRUCTIONS
-User Guide-

This guide provides step-by-step instructions on powering up, using and powering down the meter.

NAVIGATION:

The meter uses an on-screen, menu-driven approach to navigate through the meter features, allowing for an intuitive understanding of keypad functions. Each screen presents the user with a number of selectable options. One of the options is always selected and the user can move (navigate) the selection to any other available option. The keypad is aimed at providing navigational control, and not at accessing specific features. There are four directional keys aligned intuitively around a middle (fifth) key (see Figure 1): Above (UP), below (DOWN), to the right (RIGHT) and to the left (LEFT). The middle key is used to SELECT the option highlighted on the screen. For purposes of this owner's manual, the five keys will be referred to as ⇦ ⇨ ⇧ ⇩ and SELECT.

INSTALLING THE BATTERY:

The battery compartment is located on the underside of the case, at the bottom of the handle.

1. Open the battery compartment by sliding the lid back while pressing on the release indent.
2. Ensure correct polarity, and push the battery in flush with the bottom board until the connectors snap together on both sides.
3. Replace the battery compartment lid.

LOW BATTERY:

The meter features a battery status monitor, designed to warn the user as well as protect measurement accuracy from impending battery failure conditions. The battery warning is triggered by either continuous or temporary low voltage conditions. Visible (a battery icon on the top right side of the display) and audible (buzzer warble) indicators accompany a battery warning. Once a permanent low battery condition is detected, all measurement functions are disabled. The battery should be replaced immediately. If the battery reaches critical levels, the meter will refuse to stay on at power-up. This gradual warning system is intended to provide the user advanced battery status notice and give ample time for replacement before operational limitations occur.
NOTE: *Current meter settings are not lost during battery replacement or low battery conditions.*

TO POWER THE METER ON:

To turn the meter on, press and hold the SELECT button for approx. 2 seconds. The first screen will temporarily display the meter name and the software revision level. Refer to this revision level whenever you call Customer Service.

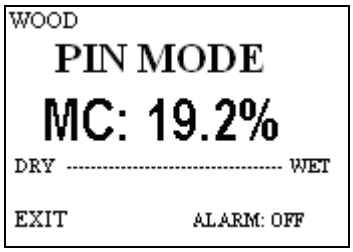
The next screen is the MAIN MENU. Use the ⇦ ⇨ ⇧ ⇩ keys to select the desired function/mode and then press **SELECT** to activate the function.

METER USE

TO TAKE WOOD READINGS:

1. **From the Main Menu**, use the ⇩ key to highlight **WOOD**. Then, use the **SELECT** key to enter the **WOOD** screen.

2. The meter will display the **WOOD** screen, as shown below:



3. Push the contact pins into material to be tested. Any Delmhorst electrode may also be used in **WOOD** mode by simply attaching it to the connector next to the contact pins.

4. The unit will read %MC on a wood scale between 6% and 60%. At elevated wood temperatures, a reading above 30 percent is valid if the temperature-corrected reading falls below 30 percent. Otherwise, these high readings provide relative comparisons, indicating that the material is taking on or losing moisture.

5. To hold a reading on-screen, press the **HOLD (SELECT) KEY**. Press the **HOLD (SELECT) KEY** again to return to measuring mode.

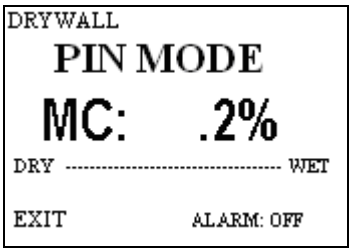
6. Use the ⇩ key to highlight **EXIT**. Then, use the **SELECT** key to return to the **MAIN MENU** when finished.

NOTE: The **TechCheck Plus** is calibrated to give %MC readings on Douglas Fir. If you are taking readings on other species of wood, refer to the species correction chart.

TO TAKE DRYWALL READINGS:

1. **From the Main Menu**, use the ⇩ key to highlight **DRYWALL**. Then, use the **SELECT** key to enter the pin mode.

2. The meter will display the **DRYWALL** screen, as shown below:



3. Push the contact pins into material to be tested. Any Delmhorst electrode may also be used in **DRYWALL** mode by simply attaching it to the connector next to the contact pins.

4. The unit will read %MC on a drywall scale between .1% and 6%.

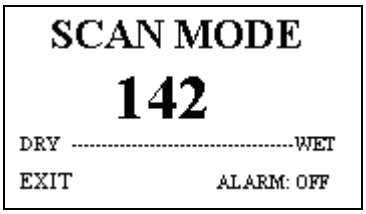
5. To hold a reading on-screen, press the **HOLD (SELECT) KEY**. Press the **HOLD (SELECT) KEY** again to return to measuring mode.

6. Use the ⇩ key to highlight **EXIT**. Then, use the **SELECT** key to return to the **MAIN MENU** when finished.

TO TAKE SCAN READINGS:

1. **From the Main Menu**, use the ⇧ ⇩ key to highlight **SCAN**. Then, use the **SELECT** key to enter the **SCAN** mode.

2. The meter will display the **SCAN** screen, as shown below:



3. **You may begin taking readings** by firmly pressing the back of the meter onto the material to be tested. This will display a relative reading that ranges between 0 and 300.

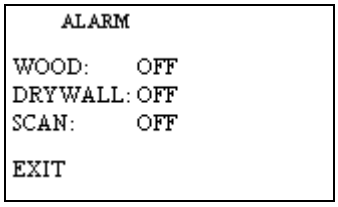
4. To hold a reading on-screen, press the **HOLD (SELECT) KEY**. Press the **HOLD (SELECT) KEY** again to return to measuring mode.

NOTE: The **SCAN** mode will give relative readings only, not %MC. The numbers displayed represent the relative dryness or wetness of the material on a scale of 0 to 300. In order to accurately interpret your readings, first establish a baseline reading by taking a reading in an area you know to be unaffected or dry, then take a reading in the affected or wet area and compare the two readings.

TO SET THE ALARM FOR WOOD, DRYWALL, OR SCAN MODE:

1. If you wish to set the alarm, to beep after a pre-selected value is reached for **WOOD**, **DRYWALL**, or **SCAN** use the ⇧ ⇩ keys from the **MAIN MENU** screen to highlight the **ALARM**. Press the **SELECT** key to enter the alarm sub menu.

2. **The default status of all alarms is "OFF**." Press the **HOLD (SELECT)** key on the desired alarm to turn it on.



3. After the alarm is turned on, use the ⇨ key to increase the alarm value, and the ⇦ key to decrease alarm value.

4. After you have selected the alarm value, use the ⇩ key to highlight **EXIT.** Press the center **HOLD (SELECT)** key to return to **MAIN MENU**.

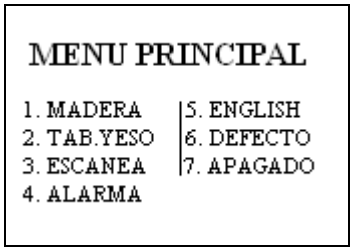
5. The chosen alarm value will be displayed on the **WOOD**, **DRYWALL**, or **SCAN** mode screen and an audible alarm will sound if that value is reached.

Note: Default alarm settings are: WOOD - 15% DRYWALL – 1%, SCAN - 300.

MAIN MENU OPTIONS:

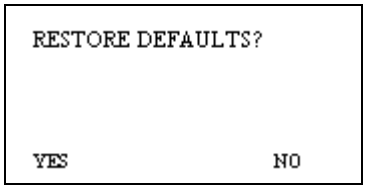
- **ENGLISH / ESPANOL:**

  This option will toggle the displayed language. Pressing **SELECT** key on this option when displayed as **ESPANOL** will change all displayed meter text to the **Spanish** language. Pressing the **SELECT** key on this option when displayed as **ENGLISH** will change all displayed meter text to the **English** language.



- **DEFAULTS:**

  This will delete all defined parameters and readings stored in the meter. The meter will be now set to the factory parameters: English, Wood Alarm 15% and OFF, DRYWALL Alarm 1% and OFF, SCAN Alarm 300 and OFF.



- **OFF:**

  This menu option will power down the meter.

TAKING A READING – PRACTICAL APPLICATIONS

The following application notes are intended for use with the meter in PIN MODE except where otherwise indicated.

TESTING WOOD:

The contact pins provided are best for materials up to 6/4. On materials over 6/4 or for hardwoods over 4/4 we recommend using a remote probe such as the 26-ES ram-type electrode. Mount the 26-ES directly to the external connector. **To take a reading**, align the contact pins parallel to the grain and push them to their full penetration into the wood, if possible. Insulated pins read only at the tip and can be driven to the desired depth.

PAINT FAILURE AND MOISTURE

Moisture is by far the most frequent cause of paint failure. The key to preventing paint failure is to insure that moisture is not absorbed through the wood to the back of the paint film. So, in order to insure quality paint jobs, wood must remain dry after the application of paint.

Outdoor wood can be safely painted without danger of peeling if the %MC is 15% or less. In drier climates, the maximum reading should be 10% to 11%. Indoor wood should be between 7% and 8% prior to painting.
The following conditions may cause high moisture content in wood:

⇒ Leaky gutters and down spouts
⇒ Leaky pipes or condensation on cold water lines in attic or hollow walls
⇒ Faulty flashing around windows, doors and where porch and dormer roofs meet sidings
⇒ End-grain wood that is not sealed with paint at all joints around windows, corners, and butt joints
⇒ Porch columns that do not have good drainage and ventilation where they rest on porch floors
⇒ Siding or any other wood that is in contact with the ground may absorb moisture
⇒ Siding and shingles without sufficient lap so that water is forced up through cracks by wind pressure
⇒ Ice dams
⇒ Condensation of vapor within hollow walls

EIFS (Exterior Insulation & Finish Systems)

Moisture intrusion problems in EIFS (also known as synthetic stucco) stem from leaking window frames, improper use of or lack of sealant, and faulty installation of flashing.

If you suspect a problem take a visual inspection. Look for gaps around windows, doors, air conditioning units, light fixtures, hose bibs, dryer vents and other areas of potential penetration. Also look for visible signs of water damage. If you feel a problem exists, use the **21-E electrode**. This electrode uses the **608 - (4") insulated pins or 608/001 (7") insulated pins.**

Procedure:

⇒ **Drill two 1/4" holes** about ¾" apart at an upward 45° angle.

⇒ **Push the 21-E Electrode into the holes** through the polystyrene and into the substrate and read the moisture content on the meter scale. When used on materials other than wood, the

meter's **PIN** mode will give relative readings only, not %MC. The numbers displayed represent the relative dryness or wetness of the material on a scale of 5 to 60. In order to accurately interpret your readings, first establish a baseline reading by taking a reading in an area you know to be unaffected, then take a reading in the affected area and compare the two readings.

TESTING CONCRETE SLABS FOR FLOORING APPLICATIONS

Moisture meters are an effective tool to check moisture in concrete. They can tell you where there may be excess moisture and help determine if you need to conduct further testing.

It is important to test both the surface and mid-section of the slab, especially if the slab is on or below grade. This will help determine if there is continuous moisture migration toward the surface. If this condition exists, the moisture movement may be so slow that once it reaches the surface, moisture evaporates and causes a "dry" reading when a surface test is made.

However, if a sub-surface test is made, the meter may read "wet" indicating the presence of moisture. When the slab is covered and the upward movement of moisture continues, moisture will move into a hygroscopic (wood) floor, or build-up pressure under a non-breathing synthetic floor, causing delamination.

Taking a surface reading:

USING PIN MODE

- **Drive two hardened-steel masonry nails** about 3/4" apart into the finish coat of concrete floor. Drive them about 1/8" deep so they make firm contact with the concrete and do not move when touched.

- **Touch the nails** with the contact pins. Remember that when used on materials other than wood, the meter's **PIN** mode will give relative readings only. Establish a baseline reading by taking a reading in an area you know to be unaffected, then take a reading in the affected area and compare the two readings.

USING SCAN MODE

- First establish a benchmark. Take readings in areas that you know are dry, or acceptable.

- Take readings on areas that are wet. These "dry to wet" readings can be used as reference points against which subsequent readings are compared. Understanding the meter's behavior on a particular material, along with these comparative readings, your experience, and visual clues will all help determine the overall condition. All readings should be evaluated in the light of factors such as type of paint, type of construction, and climatic conditions.

Subsurface test:

- **Drill two 1/4" holes,** 3/4" apart and 1/2" to 2" deep.

- **Drive the masonry nails** into the bottom of the holes and make the tests as described above. Nails must not touch sides of drilled holes.

If the meter still indicates a “dry” condition, the floor is ready for covering. Tests should be made at several points, especially when the slab is thick (4” or more) and air circulation is poor. Make tests only in newly drilled holes.

When evaluating a slab for readiness, always consider its age, thickness, whether the slab is on grade or suspended, whether a vapor barrier is present and the drainage condition of the ground.

TESTING INSULATION:

To take a reading, attach a 21-E electrode with 4” insulated contact pins to the meter. Push the contact pins through the Drywall into the insulation behind it. Remember that when used on materials other than wood, the meter’s **PIN** mode will give relative readings only. Establish a baseline reading by taking a reading in an area you know to be unaffected, then take a reading in the affected area and compare the two readings.

TESTING DRYWALL

USING PIN MODE

To take a reading, set the meter scale for drywall and push the contact pins into their full penetration, if possible.

Press the SELECT button and read the moisture content on the meter scale. The meter displays the %MC for two seconds.

USING SCAN MODE

You can also take a reference reading on drywall using the meter’s **SCAN** mode**. To take a reading,** firmly press the back of the meter onto the material to be tested while in **SCAN** mode. This will display a relative reading that ranges between 0 and 300. Remember to establish a baseline reading by taking a reading in an area you know to be unaffected, then take a reading in the affected area and compare the two readings.