J-2000

owner's manual

DELMHORST®
INSTRUMENT CO.
WHEN ACCURACY IS THE POINT.™

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J-2000 FEATURES

▶ Resistance technology recognized worldwide as the most accurate method for measuring wood MC

▶ 6% to 40% MC wood (Douglas Fir ref)

▶ 6% to 60% MC wood (J-2000/X)

▶ Averages up to 100 accumulated readings

▶ User-selectable corrections for 48 species

▶ Built-in temperature compensation (F/C)

▶ Proven microcontroller circuit

▶ Easy one-hand operation

▶ Includes (1) 9-Volt Battery

▶ Includes sturdy carrying case

▶ One-year warranty

BEFORE YOU BEGIN

Key Functions

❶ READ KEY - Press to read the %MC.

❷ CALIBRATION CHECK KEY - This key, (when pressed with the read key) checks the meter calibration. It also displays the number of readings in memory (up to 100), the average, and the highest stored reading. It also clears the memory.

❸ SPECIES KEY - Press to select the species code for the wood you are testing. Species are numbered from 1 to 48 and are listed on the Species Code Chart on page 5. To scroll forward through the species codes keep the species key pressed. To scroll backward press the species key, release it and immediately press the temperature key.

❹ TEMPERATURE KEY - Press to set the wood temperature. Press and immediately press the Calibration Check the temperature key ❷ to toggle between (F and C). To increase the temperature setting keep the temperature key pressed. To decrease the temperature, press the temperature key, release it and immediately press the species key.

CHECK CALIBRATION ✓

Press the calibration check key ❷ and read key ❶ simultaneously. Meter is in calibration if it displays 12% (+ or - 0.2).

If you check the calibration and the meter does not display 12% it is likely an indication of a low battery. If this occurs, replace the battery immediately with a new EverReady or Duracell brand 9V. Continued use with a low battery may cause the meter to go out of calibration. If you have a fresh battery and the instrument still does not indicate a proper calibration, return it to DELMHORST for service. See **Service for your Meter** section.

When the battery is removed and then reconnected, the meter displays its software version for one second and then turns itself off. After replacing the battery, you must reset the meter as described in **Resetting the Meter** section.

A hard Reset is required if, after changing the battery, the display is frozen. This is sometimes caused by the interruption of contact between the battery and battery lead wire. Resolve this as follows: Disconnect the battery. Press and hold the Read key for 15 seconds. Release the Read key. Press and hold the Check key for 15 seconds. Release the Check key. Connect a fresh battery to the lead wire in a single action, making sure to align the poles properly and without interrupting contact. If the display remains frozen, repeat the procedure. If this procedure does not solve the problem, refer to the Service for Your Meter section.

Meter Default Settings

Species - Douglas Fir
Temperature - 70ºF
Pin/Electrode - 4-pin (non-insulated)
Each of these parameters is programmed into the meter and is user-selectable. Proper setting of each will insure the most accurate readings.

SET SPECIES ♠

The J-2000 defaults to Species Code #1 - Douglas
USDA standard and basis for all Delmhorst calibra
Because the electrical characteristics of different s
vary, all species read differently at the same moist
tent. For this reason you need to adjust for species
working with a species other than Douglas Fir, set
code using the species key ❸, and the meter will
necessary corrections.

▶ To change species press the species key ❸. The
display the current species code for one second.
the Species Code Chart on page 5. It is
always helpful if you have the scientific name as
any common names for the species.

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▶ **To scroll forward** through the species list hold the species key ❸ while the current species code is displayed and scroll to the species number desired.

▶ **To scroll backward** through the species list, press and release the species key ❸. Within one second, press and hold the temperature key ❹. Continue to hold the temperature button ❹ and the species number will decrease.

▶ **When scrolling in either direction**, release the key to stop at your desired species.

Species Code Chart

CODE / SPECIES		CODE / SPECIES	
1	Fir, Douglas	25	Magnolia
2	Pine, Southern	26	Mahogany, African (also Khaya)
3	SPF	27	Mahogany, Honduras
4	Alder	28	Mahogany, Philippine
5	Apitong	29	Maple, Hard/Soft
6	Aspen	30	Meranti, Dark Red
7	Ash, White	31	Oak, Red
8	Basswood	32	Oak, White
9	Birch	33	Pecan
10	Cedar, Eastern Red	34	Pine, Longleaf
11	Cedar, Incense	35	Pine, Ponderosa
12	Cherry	36	Pine, Shortleaf
13	Cottonwood	37	Pine, Sugar
14	Cypress	38	Pine, White
15	Elm, American	39	Poplar, Yellow
16	Fir, Red	40	Ramin
17	Fir, White	41	Radiata Pine
18	Gum, Black	42	Redwood
19	Gum, Red	43	Spruce, Sitka
20	Hemlock, Western	44	SPF, COFI*
21	Hackberry	45	Teak
22	Hickory	46	Virola
23	Keruing	47	Walnut, Black
24	Larch	48	Western Hemlock - COFI*

*Species and temperature correction data for both Western Hemlock-COFI (code #48) and SPF-COFI (code #44) were developed by COFI.

When comparing readings between the model RDM-2/COFI or the RDM-2S/COFI, used with type 26-E electrode with insulated pins, and the J-2000, be sure both meters are set to 2-pin electrode (insulated pins).

SET TEMPERATURE ⬡

The J-2000 defaults to a temperature of 70ºF. As wood temperature increases, its electrical resistance decreases and indicated moisture content rises. Lower wood temperatures result in lower indicated moisture content. A correction is necessary if the wood temperature is outside the range of 50ºF (10ºC) to 90ºF (32ºC). Set the temperature accordingly and the meter will make the correction.

▶**To change temperature** press and release the temperature key ❹. The meter will display the current temperature for one second.

▶**To scroll forward** through the temperature settings, press and hold the temperature key ❹ while the current temperature is displayed.

▶**To scroll backward** press and release the temperature key ❹. Within one second, press and hold the species key ❸. Continue to hold the species key ❸ and the temperature will decrease.

▶**When scrolling in either direction**, release the button to stop at the desired temperature.

Set Temperature Mode

▶**To change between Fahrenheit and Celsius modes** press the temperature key ❹.

▶**Press the calibration check key ❷** within one second and release when you are in the desired mode.

▶**The meter will display the current temperature setting** in the new mode and will wait one more second until shutting off so that you may change the temperature value as described above.

If the meter is in Fahrenheit mode, the letter "F" will display in the left-hand corner. If it is in Celsius mode, no letter will appear in the display.

In the Fahrenheit mode, the temperature will change in increments of 5ºF. In Celsius, the temperature will change in increments of either 2ºC or 3ºC depending on its conversion from Fahrenheit.

In the Fahrenheit mode, the temperature value will display in whole numbers. In the Celsius mode, positive values will display in whole numbers; negative values will display with a decimal point and a "minus" sign in the left-hand corner. (i.e.: -17.0)

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SET PIN CALIBRATION ⬤

The basic factory calibration of the J-2000 is for use with non-insulated pins. Insulated pins read lower than non-insulated ones. The difference is small below 10% MC but increases as the moisture content increases above 10%. When using an electrode with insulated pins, such as the 26-ES hammer electrode, you can change the calibration to compensate for this difference.

▶ **To change the pin setting**, press and release the species key ❸, then press the calibration check key ❷ within one second.

▶ **The meter will display** the current pin calibration as either 222 for insulated or 444 for non-insulated pins.

▶ **If you continue to hold the calibration check key ❷,** the meter will toggle between 222 and 444.

TAKING A READING

▶ **Remove the protective cover** to expose the pins. Check that the contact pins ❻ are firmly hand tightened.

▶ **To take a reading**, align the contact pins ❻ 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.

▶ **Press the read key ❶** and read the moisture content on the meter scale. The meter displays the %MC for two seconds.

▶ **To add a reading** to the sum of all the previously stored readings, release the read key ❶ within 2 seconds.

The non-insulated contact pins on the top of the meter penetrate max 5/16in. and may be used on wood up to 1-1/2 to 2in. thick. Push the pins into the wood to their full penetration for best accuracy. For thicker wood and hardwoods over 4/4, use the 26-ES hammer electrode with insulated pins. These pins (no. 496), may be used on wood up to 5-6in. thick. Connect the electrode to the input connector on the top of the meter ❼. Contact our customer service team for more information on other available pins for your application.

Insulated pins offer the advantage of taking measurements at various depths since the reading is made at the point in the wood where only the non-insulated tips of the pins make contact. This is especially useful when drying lumber since reliable shell and core readings are essential to producing high quality lumber.

See the FAQ section of our website for helpful application info. www.delmhorst.com

INFORMATION ABOUT YOUR READINGS

Readings below 6% will be displayed as a numeric value, (-##.#), but will not be added to the accumulated readings in memory. Readings below 6% due to temperature and species adjustments will be shown as a numeric value with no minus sign. These readings will be added to the accumulated total in memory and included in the statistical calculations.

Readings above 40% are always displayed as 999 and are not added to the memory.

The meter will accumulate up to 100 readings. After all 100 readings are stored it will not add new readings until the memory has been cleared. It will also continue to display the average of all 100 readings as a reminder that the memory is full.

When taking and storing readings for a specific wood species, be sure to clear the meter's memory before moving on to the next species if you do not want to group all of the readings together.

TO CHECK ACCUMULATED READINGS

This feature allows you to view the total number of all accumulated readings, the average of those readings, and the highest stored reading.

►**To view the readings** press and release the calibration check key ❷. The meter displays the number of accumulated readings for one second, then the average of those readings for two seconds. Then it displays the highest stored reading for two seconds. The total cycle time is five seconds.

►**To clear the memory** press and hold the calibration check key ❷ down for 5 seconds. All accumulated readings will be erased and the meter will display "0".

TO RESET METER

►**Press and release** the calibration check key ❷.

►**Within one second** press the species key ❸.

►**The meter will reset itself** and display "170" to indicate the meter is reset to default: Species #1 (Douglas Fir) at 70ºF, followed by 444 (pin setting). All of the readings in memory will be cleared.

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CARE OF YOUR METER

To keep your meter in good working order:

▶ Store your meter in a clean, dry place. The protective carrying case provided is an ideal storage place when the meter is not in use.

▶ Change the 9-Volt battery as needed. Use only EverReady or Duracell brand batteries. Continued use with a low battery may cause the meter to go out of calibration.

▶ Change contact pins as needed. Keep contact pins hand tightened.

▶ Clean the meter and contact pins with any biodegradable cleaner. Use the cleaner sparingly and on external parts only. Keep cleaner out of the external connector ❼.

▶ Remove the battery if the meter will not be used for one month or longer.

SERVICE FOR YOUR METER

If your meter is not working properly, replace the battery
with a new one and check the calibration. If this does not
resolve the problem please send your meter back
to Delmhorst for repair.

WARRANTY

Delmhorst Instrument Co., referred to hereafter as Delmhorst, guarantees its J-2000 meter for one year from date of purchase and any optional electrodes against defects in material or workmanship for 90 days. If, within the warranty period, you find any defect in material or workmanship return the meter following the instructions in the **Service for Your Meter** section. This limited warranty does not cover abuse, alteration, misuse, damage during shipment, improper service, unauthorized or unreasonable use of the meter or electrodes. This warranty does not cover batteries or contact pins. If the meter or any optional electrodes have been tampered with, the warranty shall be void. At our option we may replace or repair the meter.

Delmhorst shall not be liable for incidental or consequential damages for the breach of any express or implied warranty with respect to this product or its calibration. With proper care and maintenance the meter should stay in calibration; follow the instructions in the **Care of Your Meter** section.

UNDER NO CIRCUMSTANCES SHALL DELMHORST BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES OF ANY TYPE WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, LOST PROFITS OR DOWNTIME ARISING OUT OF OR RELATED IN ANY RESPECT TO ITS METERS OR ELECTRODES AND NO OTHER WARRANTY, WRITTEN, ORAL OR IMPLIED APPLIES. DELMHORST SHALL IN NO EVENT BE LIABLE FOR ANY BREACH OF WARRANTY OR DEFECT IN THIS PRODUCT THAT EXCEEDS THE AMOUNT OF PURCHASE OF THIS PRODUCT.

The express warranty set forth above constitutes the entire warranty with respect to Delmhorst meters and electrodes and no other warranty, written, oral, or implied applies. This warranty is personal to the customer purchasing the product and is not transferable.

For more than 65 years Delmhorst Instrument
has been the leading manufacturer of high quality,
US-made moisture meters and thermo-hygrometers.
Today we offer a wide range of meters for
applications including water damage restoration,
construction, flooring, lumber/woodworking,
paper, and agriculture.

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