

RC-1E

Wood Moisture Meter Owner's Manual

Delmhorst[®]
INSTRUMENT CO

WHEN ACCURACY IS THE POINT.[™]

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1. Introduction

Thank you for purchasing the RC-1E, a resistance-type moisture meter that features a three-range analog scale (A, B & C). The meter indicates wood moisture content as a percentage of the oven dry weight in wood. The scale covers a range of 6% to 80%. The range of accuracy is from 6% to 30% (fiber saturation point), with readings above 30% considered qualitative indications only. The C scale on the meter is also a 0 - 100 relative scale and is used for relative readings on non-wood materials.

The RC-1E meter carries a one-year warranty. [REGISTER YOUR METER](https://offers.delmhorst.com/register) by going to <https://offers.delmhorst.com/register>.

We recommend that you read the following pages in detail to take full advantage of all the RC-1E has to offer.

Should you need assistance at any time, please contact us via email at info@delmhorst.com or by calling 877-DELMHORST (335-6467).

***NOTE:** The numbers in parentheses refer to the RC-1E/SP

2. Meter Features



1. **Panel Meter** – Easy to read, analog display.
2. **Electrode Connector** – Connect any external special application Delmhorst electrode. Refer to our website (www.delmhorst.com) for the common prods and electrodes for the materials in the meter.
3. **On / Off Switch** – To turn the meter on push the switch to “ON” and release it, meter remains active for four minutes. To turn the meter off, press the switch down to the “OFF” position.
4. **Range Selector Switch** - Three-range analog scale selector: A(6% - 11%), B(11% - 25%), and C(25% - 80%).

3. Calibration Check

To check the calibration, first put the selector switch on the “B” scale. Push the “ON/OFF” switch to the “ON” position and hold. The meter is in calibration if it reads “20%” $\pm 1\%$ (23%) $\pm 1\%$ or within the green band on the “B” scale.

If the needle does not read within the green band on the “B” scale, it is likely an indication of low battery power. If this occurs, change the battery immediately.

Continued use with a low battery may cause the meter to go out of calibration. If you install a new battery and the instrument still does not indicate a proper calibration, return it to DELMHORST for service. See the “**Service for Your Meter**” section.

4. Battery Check

To check the battery voltage, push the “ON/OFF” switch down to the “OFF” position and hold. The battery is “OK” if the needle moves beyond “54” (58) (BATT “OK”) on the “A” scale.

5. Taking Moisture Readings

When the meter switch is pushed up to the “ON” position and released it is turned on and remains on for four minutes. The timer is reactivated for 4 minutes with each subsequent test yielding a reading of 8% or higher. If readings are below 8%, push the switch “ON” periodically to prevent the meter from automatically turning off. The meter will then stay on for another four-minute period.

To take a moisture measurement, connect the electrode to the meter and turn the meter on. Align the contact pins parallel to the grain of the wood. Drive the pins into the wood and read the moisture content on the meter scale. Make sure the readings are taken on the scale range at which the selector switch is set. When using uninsulated pins, drive them to their full length into the wood. This will give you the highest measured reading. Insulated pins read only at the uninsulated tip and can be driven to a desired depth to gather shell and core (gradient) information.

For best accuracy, the following corrections should be applied to meter readings:

Temperature Correction –As wood temperature increases, its electrical resistance decreases and indicated moisture content rises. Lower wood temperatures result in lower indicated moisture content. Refer to the temperature correction table.

6. Temperature Correction

		METER READINGS											
°C	°F	6	7	10	15	20	25	30	35	40	50	60	
-20	0	9	11	15	22	31	38	45	53				
-10	20	8	10	14	20	28	34	40	47	55			
5	40	7	8	12	18	24	30	36	42	48			
15	60	6	7	11	16	21	27	32	38	43	54		
30	80	6	7	9	14	19	23	28	33	38	47	55	
40	100	5	6	8	12	17	21	25	29	34	42	50	
50	120	5	5	7	11	15	19	22	26	30	38	44	
60	140	4	5	7	10	14	17	20	23	27	34	40	
70	160	4	4	6	9	12	15	18	21	24	30	36	
80	180	3	4	5	8	11	13	16	19	22	27	33	
95	200	3	4	5	7	10	12	14	17	19	24	28	
105	220	2	3	4	6	9	11	13	15	17	21	26	

Moisture content values shown **shaded** are only qualitative, since they are above the fiber saturation point.

The temperature correction values shown in this chart have been rounded for easy reference.

7. Pin Correction

Pin Correction (insulated vs non-insulated) – The reference calibration of the meter was made with non-insulated pins that penetrate 5/16in. Insulated pins read slightly lower than non-insulated ones. When using an electrode with insulated pins (26-ES), refer to the correction below.

METER READINGS WITH 2-PIN 26-E ELECTRODE

7 8 10 12 14 16 18 20 22 24

CORRECTED READINGS (TRUE INDICATED MOISTURE CONTENT)

7.3 8.4 10.6 12.8 14.9 17.0 19.2 21.4 23.7 26.0

The above correction should be disregarded when the insulation of the pins has worn off, or if non-insulated pins are used.

Species Correction – Delmhorst uses Douglas Fir, the USDA standard, as the basis for all wood meter reference calibrations. Because the electrical characteristics of different species vary, all species read differently at the same moisture content. For this reason, a species correction is required. Refer to the species correction table.

The RC-1E can be used for other wood-based materials like plywood, OSB, particleboard and MDF. Call Delmhorst at 877-DELMHORST or e-mail info@delmhorst.com for information on how to interpret the readings for other materials.

8. Species Correction

SPECIES	METER READINGS WITH NON-INSULATED PINS										
	7	8	9	10	12	14	16	18	20	22	24
ALDER	8	9	10	11	13	15	17.5	19.5	21.5	24	27
APITONG	8	9	10	11	13	15	17	20	22	24	27
ASPEN	7	8	9	10	11.5	13	15	16.5	18	20	21
ASH, WHITE	6.5	7.5	8	9	11	13	14.5	16	18	19.5	21
BASSWOOD	7	8	8	9	10.5	13	15	17	19	20.5	22

BIRCH	8	9	10	11	13	15	17	19	21.5	23.5	25.5
CEDAR, EAST. RED	8	9.5	10.5	12	14	17	19	21	23	25	26
CEDAR, INCENSE	7	8	9.5	10.5	12.5	15	17	19	21	23	25
CHERRY	8	9	10	11	13.5	15.5	18	20	22	24	26
COTTONWOOD	6	7.5	8.5	9.5	12	14	15	17	19.5	21	23

CYPRESS	7	8	9	10	12	14	16	18	19.5	21.5	23.5
ELM, AMERICAN	7	7.5	8	8.5	10	11.5	13	15	16	18	19
FIR, DOUGLAS	7	8	9	10	12	14	16	18	20	22	24
FIR, RED	7	8	9	10	12.5	15	17	19	21	23	25
FIR, WHITE	8	9	9.5	10.5	12.5	15	17	19	21	23	25

GUM, BLACK	7.5	9	10	11	13	15	16	18	19	20.5	22
GUM, RED	7	8	9	10	12.5	14.5	16.5	19	20.5	22.5	24
HEMLOCK, WESTERN	7	8	9	10.5	13	15	17	19	20.5	22	23.5
HACKBERRY	7	8.5	9	9.5	12	13	15	17	18.5	20	22
HICKORY	8	8.5	9	10	11	12.5	14	15.5	17	19	20.5

KERUING	8	9	10	11	13	15	17	20	22	24	27
LARCH	7.5	9	10	11	13	15	17	19	21	23	25.5
MAGNOLIA	7.5	9	10	11.5	14	16	17.5	19	21	22.5	24.5
MAHOGANY, AFRICAN (ALSO KHAYA)	8	9.5	10.5	12	15	17	19.5	22	24	26	28

MAHOGANY, HOND.	7	8	9	10.5	12.5	14.5	16	18	19.5	21.5	22.5
MAHOGANY, PHIL.	6	7	7.5	8	9.5	11	13	14	15.5	17	18
MAPLE, HARD/SOFT	8	9	9.5	10	12	14	16	18	20	22.5	25
MERANTI, DARK RED	8.5	9.5	10.5	11.5	12.5	16	18	20.5	22.5	24.5	26.5
OAK, RED	7	8	9	10	12	14	16	18	20	22	24

OAK, WHITE	7	8	8.5	9.5	11.5	13.5	15	17	18.5	20	22
PECAN	6.5	8	9.5	11	12.5	14	16	17.5	19	22	24
PINE, LONGLEAF	8	8.5	10	11	13	15.5	17.5	19.5	21	23	25
PINE, PONDEROSA	7.5	8.5	10	11	13.5	15.5	17.5	19.5	21	23	25.5
PINE, SHORTLEAF	7.5	9	10	11	13	15.5	17.5	19.5	21.5	23.5	25

PINE, SO. YELLOW*	8	9.5	10.5	12	14.5	16.5	19	21	23	25	28
PINE, SUGAR	7	8	9	10	12	15	17	19	21	23	25
PINE, WHITE	7	8	9	10	13	15	17	19	21	23	25.5
POPLAR, YELLOW	8	8.5	10	11	13	15.5	17.5	19.5	22	24	26
RAMIN	7	8	9	10	11	13	15	16	18	20	21

RADIATA PINE	10	11	11	12	14	16	18	20	23	25	27
REDWOOD	7	8	9	10	12	13.5	15	17	19	22	24
SPRUCE, SITKA	7	8	9	10	12.5	14.5	17	19	21	23.5	26
SPF**	9	10	11.5	13	15.5	18	20.5	23	25	28	30
SPF/COFI	8	9	10	11	13	15	17	19	21	23	25

TEAK	7	8	8.5	9	11	12	14	15	17	18.5	20
VIROLA	6.5	7	8	9	11	12.5	14	16	18	18.5	20.5
WALNUT, BLACK	7.5	8.5	9.5	10.5	12.5	14.5	16	18	20	22	23.5

*Meter readings taken with 26-E 2-pin electrode. Do not apply 2-pin correction.

**SPF correction based on 2-pin 26-E reading with insulated pins. It is based on USDA/Forintek data and can be used for the following species:

Lodgepole Pine

Alpine Fir

Eastern White Spruce

Black Spruce

Jack Pine

9. Care for Your Meter

- Store your meter in a clean, dry place.
- Change the 9-Volt alkaline battery as needed. Continued use with a low battery may cause the meter to go out of calibration.
- Change contact pins on probe as needed. Keep pin retainers hand tightened.
- Clean the electrode and meter with any biodegradable cleaner. Use the cleaner sparingly and on external parts only. **DO NOT IMMERSE THE METER OR ANY ELECTRODE IN WATER.**
- Remove the battery if the meter will not be used for one month or longer.

10. Service for Your Meter

If your meter is not working properly, replace the batteries and check the calibration. If this does not resolve the problem, go to www.delmhorst.com and follow the instructions under the Support tab. If you require further assistance, please call **877-DELMHORST (335-6467) or 973-334-2557.**

11. Warranty

Delmhorst Instrument Co. 51 Indian Lane East, Towaco, NJ 07082, referred to hereafter as Delmhorst, guarantees its moisture meters against defects in material or workmanship for one year from date of purchase. Optional electrodes are guaranteed for 90 days. See the owner's manual or Delmhorst website (www.delmhorst.com) for warranty period on your specific product. If, within the warranty period of the product, you find any defect in material or workmanship, return the meter to Delmhorst or an authorized reseller, using the return form <https://www.delmhorst.com/returns-service-warranty>. Include proof of purchase. Shipping charges to return the product are customer's responsibility.

This warranty does not cover abuse, misuse, damage during shipment, improper service, unauthorized or unreasonable use of the meter or electrodes. This warranty does not cover normal wear and tear, batteries, or pins. If the meter or electrode have been altered or tampered with, the warranty shall be void. **DELMHORST RESERVES THE RIGHT TO REPAIR OR REPLACE THE PRODUCT AT ITS SOLE DISCRETION.**

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. The meter should stay in calibration indefinitely with proper care and maintenance. Follow the manufacture's guidelines in the owner's manual.

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 either from Delmhorst directly or through an authorized reseller. Purchases through unauthorized resellers, including but not limited to unauthorized e-commerce resellers, are not covered by this warranty, to the extent permitted by law.

This warranty extends to the original owner only and is not transferable.

Contact info:

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For almost 80 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.