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Delmhorst Instrument Co. Model RC-1E Owners Manual

TABLE OF CONTENTS

FEATURES

- Resistance technology recognized world wide as the most accurate method for measuring moisture
- 6% -80% moisture range
- Analog readout
- Built-in calibration and battery check
- Temperature stable circuit
- One year warranty
- Over 50 years of proven quality, accuracy and service

BEFORE YOU BEGIN

The RC-1E features a three range analog scale (A, B & C) that reads wood moisture content directly as a percentage of the dry weight in the wood. The scale covers a range of 6% to 80%. The C scale on the meter is also a 0-100 relative scale and is used for relative readings on non-wood materials.

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

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%” ±1% (23%)±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.

CHECKING THE BATTERY

To check the battery voltage push the “ONOFF” 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.

TAKING A READING

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 test, 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.

When using the 26-E Electrode with insulated pins (#496 or #1849), the meter readings should be corrected according to the following table:

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 uninsulated pins are used.

Delmhorst uses the USDA standard-Douglas Fir as the basis for all calibrations. For any species other than Douglas Fir and for wood temperature out of the range of 50°F (10°C) to 90°F (32°C) temperature and species adjustment must be made. Correct for temperature first, then species. See temperature correction table and species correction tables below.

The RC-1E can be used for more than just wood. It will also give a relative reading on 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.

TEMPERATURE CORRECTION TABLE

			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.

Species Correction Table

	METER READINGS WITH NON-INSULATED PINS										
SPECIES	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

Species Correction Table

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

CARE FOR YOUR METER

- Store your meter in a clean, dry place.
- Change the 9-Volt battery as needed. Continued use with low batteries may cause the meter to go out of calibration.
- Change contact pins on probe as needed. Keep pin retainers hand tightened.
- Clean the probes 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 batteries if the meter will not be used for one month or longer.

SERVICE FOR YOUR METER

- **Before sending in your meter we recommend you give one of our trained technicians a call. Many times troubleshooting can be taken care of over the phone. Call us at 877-DELMHORST.**
- Pack your meter securely. Enclose a purchase order or letter with a brief description of the problem.
- There is no need to call us for a return authorization number if you are within the U.S. Customers outside the U.S. must contact us for more specific instructions prior to returning a meter.
- Include your name, address, daytime phone and fax numbers, or e-mail address. If you believe the meter is under warranty, please provide the original sales slip or invoice.
- Ship via UPS, Express Mail, Priority Mail or any overnight courier who provides prompt service. Do not use standard parcel post.
- Insure your instrument for its full value and ship prepaid. We are not responsible for damage in transit.
- We do not accept COD shipments or cover any incoming freight or duty charges on returned merchandise.
- Turnaround time on repairs is approximately two weeks.
- We will call you with an estimate if you specifically request one, or if we determine that the meter may be too costly to repair.
- Non-warranty repairs will be returned via UPS/COD unless you have already established other payment terms. There is no COD service outside the U.S. To pay by credit card, include the card number and expiration date with your repair. We accept Visa/Mastercard, American Express.
- Warranty repairs will be returned at no charge if shipped within the U.S. via UPS Ground Service. Freight charges for expedited services (i.e., Federal Express, UPS/2Day, UPS/1 Day, etc.) are the customer's responsibility and will be charged as per the above terms.

WARRANTY

Delmhorst Instrument Co., Inc., referred to hereafter as Delmhorst, guarantees its RC-1E moisture 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 of the RC-1E, 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, pin retainers, or 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 for 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.

DELMHORST INSTRUMENT CO.
WHEN ACCURACY IS THE POINT.™

For over 60 years Delmhorst has been the leading manufacturer of high quality moisture meters and thermo-hygrometers. Today we offer the innovative KIL-MO-TROL in-kiln monitoring system. We also offer a wide range of meters for a variety of applications including woodworking/lumber, agriculture, construction, paper, restoration, IAQ and flooring.