

G-34

HOPS MOISTURE METER

OPERATION MANUAL



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G-34

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OWNER'S MANUAL FOR MODEL G-34 MOISTURE DETECTOR FOR BALED HOPS

Thank you for purchasing the Delmhorst model G-34 Moisture Detector. The G-34 is a rugged, reliable instrument that enables you to easily check moisture levels in baled hops to assure quality and safe storage.

Features include:

- Easy-to-read analog display.
- Moisture Range: 7%-14%.
- Built-in battery and calibration check.
- Auto-shutoff timer to extend battery life.
- Sturdy plastic carrying case.
- 2-9V batteries (included)
- 1-year warranty on the meter, 90DD on all electrodes

OPERATION

1. To check battery voltage, push the switch down to the "OFF" position and hold; the batteries are OK if the needle moves beyond "11" (BATT OK)

2. To check the meter calibration, push the switch to the "ON" position and hold; the meter is in calibration if it reads "13.5" on the dial. A tolerance of + 0.5 is OK. An optional external resistance standard (part no.MCS-44) is also available. Please contact us to purchase.

3. The meter is turned on, and remains on, for 4 minutes whenever the switch is pushed up to the "ON" position and released. The timer is reactivated for 4 minutes with each subsequent test with a reading of 8% or higher. If readings are below 8%, push the switch "ON" from time to time, to prevent the meter from turning "OFF" automatically. The meter may be turned off manually by pushing the switch to the "OFF" position. NOTE: When the meter is "ON", the needle rests below the 6% mark.

4. To check the %MC of bales connect the 830-2 (10 in) or 830-5 (12 in) prod to the H-4 handle. Connect the H-4 to the input connector marked "electrode" on the meter. Force the probe into the bale and read the moisture content on the meter scale. An optional electrode (30-E/C) with two 9-1/2" insulated pins is also available.

ABOUT YOUR READINGS

Electrical meter readings provide very useful guidelines to the producer when targeting the 8%-12% MC range for safe packaging and storage. The meter indicates the moisture level in the hops that is in contact with the un-insulated tip portion of the prod. Since moisture distribution usually varies in baled hops, an average of several tests will give greater validity to the data collected. It is important to pay particular attention to any high readings and the frequency at which they occur. Keep in mind that a few wet spots in the bale may cause considerable damage.

In an effort to minimize the effect of variability of moisture and possibly improve meter accuracy, it may be desirable to grind material and take readings on smaller samples. Use an ordinary household food chopper to grind and then stir cone petals and strigs for testing in a small container or bucket. The no. 831 short pin prod (with H-4 handle) or the 37-E/C multi-pin electrode can be used for this purpose.

Meter readings are affected by the temperature of the hops. The original calibration of the meter was developed on hops at a temperature of 80°F. Higher temperatures result in higher meter readings than actual MC; lower temperatures result in lower meter readings. For best accuracy apply a temperature correction to readings that are taken at temperatures at 70°F or below and at 90°F or above. The general rule is to subtract 1% from the meter reading for every 10°F greater than 80 and add 1% to the meter reading for every 10° less than 80.

BATTERIES:

Two 9 Volt batteries are used (Eveready #216 or equivalent). The battery compartment is located at the bottom of the case.



This product is covered by EU directive 2002/96/EC (WEEE). For disposal please contact your supplier or local authorities for instructions as to best do so.

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. Continued use with a low battery may cause the meter to go out of calibration.
- ✓ Change contact pins as needed. Keep pin retainers hand tightened.
- ✓ Clean the meter, contact pins, and probes with any biodegradable cleaner.
- ✓ Use the cleaner sparingly and on external parts only. Keep the cleaner out of the external connector.
- ✓ 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.

SERVICE FOR YOUR METER

- ✓ 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 EU. Customers outside the EU 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 EU.
- ✓ Payments have to be made by Bank transfer prior to the return shipment. A proforma invoice will be raised in advance.
- ✓ Warranty repairs will be returned at no charge if shipped within the EU via UPS Ground Service. Freight charges for expedited services (i.e., Federal Express, UPS/2 Day, UPS/1 Day, etc.) are the customer's responsibility and will be charged as per the above terms.

WARRANTY

DELMHORST EUROPE, referred to hereafter as DELMHORST, guarantees your 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 meter, 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 assemblies, 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 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 the 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.

ARTTEST B.V.

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For over 65 years, Delmhorst is a leading brand for high-quality resistance moisture meters. Today the Delmhorst range consists of a complete line of portable moisture meters for a variety of different applications including woodworking / lumber, agriculture, construction and paper.