

HT-3000

THERMO-HYGRO METER

OPERATION MANUAL



DELMHORST EUROPE

TITANIUMLAAN 100
NL 5221 CK 's-HERTOGENBOSCH
THE NETHERLANDS

info@delmhorst.eu
www.MoistureMetersDelmhorst.com
+31 (0)73 6395080

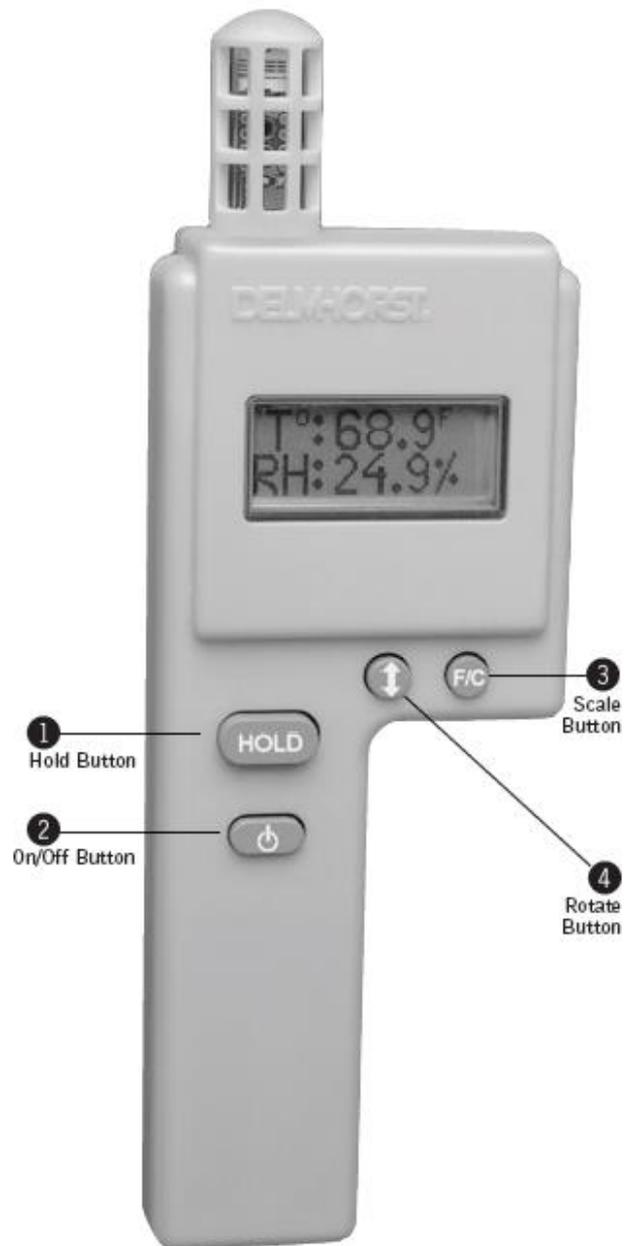
TABLE OF CONTENTS

3	Features
4	Introduction
4	Operation
5	Auto-Off
5	Backlight
5	Low Battery
5	Adjusting the Display Contrast
6	Operation Summary
6	Calibration & Maintenance
6	Technical Specification
	<ul style="list-style-type: none">• Measurement• Accuracy• Response Time• Resolution• Power Supply• Battery Life
7	Care of Your Meter
7	Service
8	Warranty



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.





HT-3000 FEATURES

- Bright, clear digital display
- Fast response time
- Relative Humidity Range: 0%-100%
- temperature Range: -20°C - 70°C (-4°F - 158°F)
- Dew Point Range: -40°C - 70°C (-40°F - 158°F)
- GPP Range: .1 GPK - 285 GPK (1 GPP - 2000 GPP)
- Automatic power down
- Reading HOLD feature
- Size: 20x8x4cm (8" x 3" x 1 5/8")
- Weight: 285gr. 10 oz.
- Rugged construction ensures years of reliable use
- Sturdy plastic carrying case
- 9V battery
- 1-year warranty

INTRODUCTION

The model HT-3000 is a portable, battery-powered meter for the measurement of ambient temperature, relative humidity, and through calculation, dewpoint and absolute humidity (grains per pound).

The display can be read in either degrees Fahrenheit (°F) or degrees Celsius (°C).

OPERATION

1. Install the battery in the compartment located on the underside of the instrument case handle.
2. Press and hold the ON/OFF button until the display activates. The meter is now ON. The current software version will flash on the screen and then the meter automatically enters its default mode: measured Temperature (°F) and Relative Humidity (%) will appear on the display. T and RH readings are updated at a five second interval.
3. Tap the ROTATE button to alternate between the display of T and RH and the calculated values of Dewpoint and Absolute Humidity. A full set of all four values is always in the meter memory after power up. This allows immediate access to any measured or calculated value, even if the data of interest is not currently displayed.
4. Press the SCALE (F/C) button at any time to switch Temperature, Dewpoint, and Absolute Humidity readings between Fahrenheit and Celsius. Absolute Humidity is displayed in GPK (grams per kilogram), when the HT-3000 is set in Celsius mode, and in GPP (grains per pound) when set in Fahrenheit mode.
5. Press the HOLD button to freeze the displayed readings. The letter H appears at the right of the first display line. The meter stops collecting additional readings, but the SCALE and ROTATE functions are still available. Press the HOLD button again to return the meter to normal operation.
6. Press and hold the ON/OFF button to turn the meter OFF. The meter must be in normal operating mode and not in HOLD mode to turn it off.

AUTO-OFF

The meter automatically switches OFF after 10 minutes without any button activity and as long as the meter is not in HOLD mode. If the backlight is active, the auto-off time is 35 seconds. (see below)

BACKLIGHT

The meter is equipped with a display backlight, allowing use under poor lighting conditions. Continued use of the backlight presents an extra drain on the battery and significantly reduces expected battery life.

To activate the backlight, tap the ON/OFF button. Tap the ON/OFF button again to turn off the backlight.

LOW BATTERY

A "low battery" indication will appear on the display when voltage is no longer sufficient. Immediately replace the battery (9V Alkaline only). Typical battery life is approximately 55 hours (without backlight).

ADJUSTING THE DISPLAY CONTRAST

The display contrast is preset in the system memory at an optimal level. Under most operating conditions, no further adjustment should be necessary. However, if the meter is operated in extreme temperature conditions, some adjustment may be desirable for optimal viewing quality.

Procedure:

1. Ensure the meter is not in HOLD mode. Press and hold the ON/OFF button. Keep it pressed throughout the adjustment process.
2. To turn the display darker, press and hold the SCALE (F/C) button within 2 seconds. Release this button when desired contrast is achieved.
3. To turn the display lighter, press and hold the ROTATE button within 2 seconds. Release the button when the desired contrast is achieved.
4. Once the desired contrast is achieved, release the ON/OFF button within 2 seconds.

OPERATION SUMMARY

On/Off (Hold)	Hold	Rotate	Scale	On/Off (Tap)	On/Off ± Scale	On/Off ± Rotate
Turns meter ON and OFF if held for longer than 2 seconds	Places meter in HOLD mode: current data is held, all data is available for display	Alternates between T/RH and D/AH data set displayed on screen	Alternates between F and C scales for Temperature and Dew Point readings	Alternates the state of the backlight	Contrast adjustment—turns display darker.	Contrast adjustment—turns display lighter.

CALIBRATION & MAINTENANCE

Continuous exposure to dirt and dust may shorten the life of the RH sensor and also cause the meter to go out of calibration more quickly. Avoid exposure to liquids and other contaminants. Suggested factory calibration interval is once a year. Field calibration is not available for the HT-3000.

TECHNICAL SPECIFICATIONS

- Temperature: -20°C to 70°C, -4°F to 158°F
- Relative Humidity: 0-100%RH
- Dewpoint: -40°C to 70°C, -40°F to 158°F
- Absolute Humidity: 1 GPP to 2000 GPP, .1 GPK to 285 GPK.

ACCURACY

Temperature: +/- 1°C over 0°C -70°C, +/- 1.8°F over 32°F to 158°F
Relative Humidity: +/-3%

RESPONSE TIME

Temperature: reaches 80% of full excursion in approximately 75 seconds
Relative Humidity: reaches 90% of full excursion in approximately 45 seconds

RESOLUTION

0.1°C; 0.1%RH

POWER SUPPLY

(1) 9V Alkaline battery.

BATTERY LIFE

Approximately 55 hours under constant use (no backlight) or 23 hours with backlight.

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.
- ✓ Clean the meter with any biodegradable cleaner.
- ✓ Use the cleaner sparingly and on external parts only.
- ✓ DO NOT IMMERGE THE METER 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.
Tradename DELMHORST EUROPE
TITANIUMLAAN 100
NL 5221 CK 's-HERTOGENBOSCH
THE NETHERLANDS
info@delmhorst.eu
www.MoistureMetersDelmhorst.com
+31 73 6395080

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.