INSTRUCTION MANUAL

C555

MOISTURE METER

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WAGNER METERS
Unleash Your Expertise

INTRODUCTION

About Your Meter

Your Wagner Meters C555 hand-held concrete moisture meter was designed to make a fast assessment of concrete slab drying patterns easy and inexpensive. Large areas can be surveyed quickly and easily. Wagner meters are nondestructive. They do not require drilling or driving pins into the concrete. Your model C555 has the built-in capability to capture and display relative humidity, temperature, and dew point readings to help determine ambient or service conditions and identify potential condensation risks.

The C555 is designed to give an average moisture indication of the area it is scanning. However, using readings from surface concrete moisture meters should NEVER be the sole factor when determining if a concrete slab is dry enough to install a floor covering.

The C555 sensor pad measures 2.0-inch (50mm) wide by 2.5-inch (63mm) long. Where appropriate, or when specified, use further testing as outlined in ASTM F2170.

In the Standard Measurement mode, your C555 measures moisture within the 1% to 6.9% moisture reading range.

The C555 has an easy-to-read digital display scaled in 0.1 increments when in Standard Measurement mode.

C555 PARTS

AMBIENT RH/TEMP & DEW POINT SENSOR

LCD

ON/ HOLD BUTTON

AUDIO BUTTON

MODE BUTTON

UP BUTTON

DOWN BUTTON

SENSOR PLATE WITH ABRASION RESISTANT COVERING ADDED FOR PROTECTION

BATTERY COMPART-MENT

(Meter Serial Number is located in this compartment)

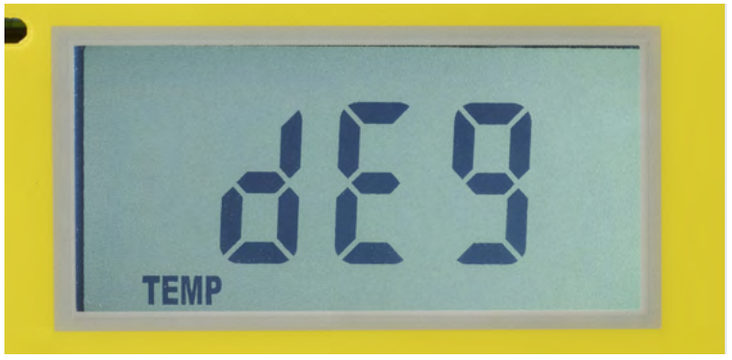
QUICK START: BASIC USE FOR SOLID WOOD

With your C555 turned OFF, press and release the ON/HOLD button. The meter will turn on and briefly display the model number, followed by the firmware revision number. If this is the first time you are using your new C555, the meter display should revert to Standard Measurement mode for concrete immediately after the revision number is displayed, with the display showing C 0.0 when the meter is held in the air.

Press the MODE button until the display shows CON, then press the ON/HOLD button to enter the Concrete Reading mode. A large C will be displayed while in Concrete Reading mode.

The next press of the MODE button will display REL. Press ON/HOLD to select. This mode will show the relative reading. Press the MODE button until you see CAL on the display. This mode is used in conjunction with the included On-Demand Calibrator. You will place the meter in this mode to perform your own field calibration. See instructions on page 11.

Press the MODE button until you see RH and then press the ON/HOLD button to select. The Relative Humidity mode will display RH for 3.5 seconds, then it will display the ambient relative humidity (e.g., 34.5%). After 3.5 seconds, the mode will change to temperature and DEG will display, then toggle to the ambient temperature (e.g., 75.1F). The temperature display can be changed to Celsius (e.g., 24.0C) by pressing either the UP or DOWN arrow key.



To view dew point, press the MODE button until DP appears on the display, then press the ON/HOLD button to select. The meter will then display the ambient dew point temperature to help identify potential condensation risks.

When you are finished taking measurements and wish to turn the meter off, press the ON/HOLD button for approximately 2 seconds. Alternatively, the meter will automatically shut off after approximately 60 seconds of no activity.

CORRECT USAGE GUIDELINES FOR YOUR C555 MOISTURE METER

To make sure that you are getting the most accurate readings from your C555 meter, Wagner Meters recommends that you pay close attention to the following guidelines:

1. To prevent high or inaccurate readings, always ensure there are no metal objects near or directly under the moisture meter.

2. The sensor plate is a 2.0-inch (50mm) wide by 2.5-inch (63.5mm) long rectangle on the back of the meter (opposite side of the display). To take a valid measurement, the sensor plate must be completely covered with the material you are measuring. If the sensor plate is not completely covered, your moisture reading will be inaccurate.
3. If there is visible moisture or water on the surface of the concrete to be tested, wipe off any excess and let the surface dry out for a few minutes before taking measurements.

4. Be sure to press down with slight but firm pressure to ensure good sensor plate contact with the surface of the concrete.

FUNCTION BUTTONS: DETAILED USAGE INSTRUCTIONS

ON/HOLD Button

When the meter is OFF, pressing and releasing the ON/HOLD button will turn the meter ON, with the meter briefly displaying the model number, followed by the firmware revision number. Immediately after briefly displaying the revision number, the meter will be in the Standard Measurement mode. At this point, the

meter is ready to take moisture measurements. Be assured that any settings that you have previously programmed/selected will be active. In other words, turning off the meter will not cause the meter to revert to factory default settings, but will retain whatever settings you programmed it with.

When in the Standard Measurement mode, pressing and releasing the ON/HOLD button will freeze whatever reading is showing on the display. Additionally, the word HOLD will show in the upper right-hand corner.This HOLD feature is valuable when there is a need to document readings.

If the audio function of the meter is turned on (refer to the AUDIO BUTTON section on page 9), the meter will emit a short beep every 4 seconds that the current reading remains on HOLD.

The current reading will remain on the screen until the ON/HOLD button is briefly pressed again, returning the meter back to Standard Measurement mode. HOLD will then disappear from view.

NOTE: *The C555 will shut down automatically after 60 seconds if the meter is left on HOLD with no measurement activity. Pressing the ON/HOLD button for 2 seconds will turn the meter off.*

UP and DOWN Buttons

The particular settings mode that you are in at a given time will determine how these buttons will function. Settings values will be increased or decreased ordifferent functions activated according

to the specific instructions outlined for each settings button.

MODE Button

The MODE button on your C555 is used to place your meter into one of three different modes by pressing the button until you are in the desired mode. The available modes are:

1. **Concrete Reading Mode.** Press the MODE button until the display shows CON, then press the ON/HOLD button to enter the Concrete Reading mode. C 0.0 will be displayed, indicating the meter is ready to take readings. Make sure the surface of the concrete has been brushed clean of loose debris and dust. Place the sensor of the meter on the area of the concrete to be tested and press down slightly but firmly, making sure the sensor rests flat against the concrete. Take several readings close to each other. If the readings vary, use the highest reading. The moisture readings will show between 0.0% to a maximum of 6.9%.

Note: *Moisture readings in concrete may be affected by the following factors:*

- The type of aggregate used in the mix may contain iron or other metals that could cause the reading to be high or read the same value no matter where you place the meter.

- Any rebar or metal screen too close to the surface will cause a high reading. Move the meter to several areas for more comparisons.

2. **Relative Measurement Mode.** Press the MODE button until the display shows REL, then press the ON/HOLD button. With nothing under the sensor plate, 0 will be

displayed. While in this mode, REL will show in the lower-left corner of the display.

Note: *This mode is normally used for obtaining relative measurements, typically for non-concrete applications (example: relative measurements on gypsum or drywall).*

3. **Meter Calibration Mode**. Press the MODE button until CAL is displayed on the screen. Follow the instructions printed on page 11 or on the back of the included On-Demand Calibrator.

4. **Relative Humidity and Temperature Mode**. Press the MODE button until you see RH on the display, then click the ON/HOLD button. Once in this mode, your meter will be in a Relative Humidity (RH) Measurement mode (showing 0-100%) and Temperature Measurement mode (showing 32°F to 110°F or 0°C to 43.3°C) for measuring ambient RH and temperature. Press and release the MODE button until the display shows RH. The display will toggle every 3.5 seconds to display the following:

   - RH with a small RH in the middle left corner followed by the ambient RH (e.g., 35.4%).

   - DEG with a small TEMP in the upper left corner followed by the ambient temperature in Fahrenheit (e.g., 75.1F). While the temperature display is active, the display can be changed to Celsius (e.g., 24.0C) by pressing either the UP or DOWN arrow key.

5. Dew Point Mode. To view dew point, press the MODE button until DP appears on the display. Press the ON/HOLD button to select. The meter will then display the ambient dew point temperature to help identify potential condensation risks.

Relative Scale for Moisture Measurement of Non-Concrete Building Materials

As mentioned earlier, this mode can be entered by pressing and releasing the MODE button until you are in this mode (display will show REL in lower left corner). Once in this mode, your meter will be in a relative measurement scale (0-100) for measuring non-wood based materials. Press the ON/HOLD button to begin measuring in Relative Measurement mode. To get back to Standard Measurement mode, press the MODE button until CON appears on the display and then press the ON/HOLD button.

AUDIO Button

Your C555 AUDIO button allows you to set a high moisture content alarm threshold (setting from 0.0 to 6.9) for material measurement applications, and also set the volume for the audible alarm. This feature is useful, for example, when quickly scanning a section of concrete or other material, and trying to locate any higher moisture content areas, without having to continually look at the digital display.

Press the AUDIO button and the display will show the current moisture content high threshold (e.g., 6.4). The factory default is 2.0. Each press and release of the UP or DOWN buttons will adjust the threshold setting by 0.1.

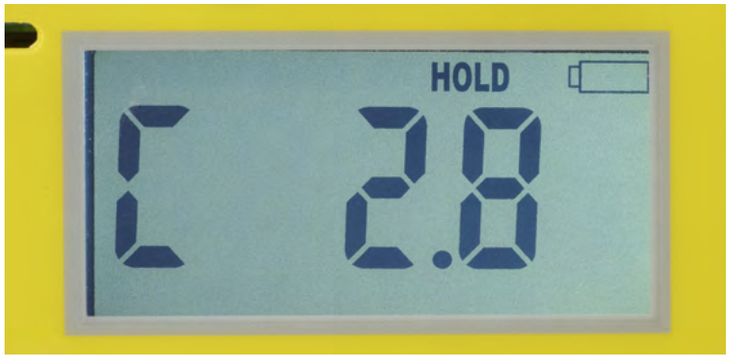
To get to your desired setting faster, hold down the UP button for 0.7 seconds; the alarm threshold setting will increase to the next setting number (e.g., if the alarm threshold setting is currently 2.4, the setting will advance to 3.0). If the DOWN button is pressed and held for 0.7 seconds, the setting will decrease to the next number down (e.g., if the alarm threshold setting is currently 6.4, the setting will change to 5). Every 0.7 seconds thereafter that the button is pressed and held, the setting will change by another number unit (e.g., from 5 to 4). Once the setting has been increased to the maximum programmable Moisture Content Percentage (MC%) threshold (6.9), the setting will wrap around to the minimum (1) and continue to increase from there. Similarly, if the setting has been decreased to the MC% minimum (1) the setting will wrap around to the maximum (6.9) and continue to decrease from there.

Next, press the AUDIO button again, and you will be taken to a display that will show the current volume setting for audible sound. Simply use the UP or DOWN arrow buttons to set the desired audible level. The volume setting has a range of OFF to 9, with 9 being the loudest and 1 being the quietest and OFF indicating that the audible alarm is disabled.

When finished, you can place your meter back to Standard Measurement mode by pressing the ON/HOLD button.

Low Battery Alert Indication

When the battery begins to get low, a small battery icon indicator appears in the upper right-hand corner of the display. If the 9-volt battery is not replaced soon after, a critical level will be reached and the text “BAT” will be flashed three times on the screen followed by the meter shutting down immediately. This shutdown action is to prevent inaccurate readings.



Auto Shut-Down to Preserve Battery Life

Regardless of which mode the meter is in, if there is no change in measurement activity over a period of 1 minute, the meter will automatically turn off.

Backlit Display

The C555 now has a backlit display. The backlight can be enabled and the intensity (25%, 50%, 75% or 100%) set by using the UP and DOWN arrow keys. The backlight can be adjusted in the concrete scale or relative scale measurement modes. If enabled, it can be used in all screens.

Calibration of Your C555

If you have reason to believe your C555 may be out of calibration, it can be easily recalibrated using the provided On-Demand Calibrator. Before calibrating your meter, please be aware that you must ONLY calibrate to the correct Calibrator that came with the meter. Serial numbers on the Calibrator (found underneath) and meter (found in the battery compartment) MUST match for correct calibration. Also, the sticker must not be damaged, as this may cause incorrect calibration. Follow the steps below for proper calibration. The instructions are also printed on the back of the Calibrator.

1. Place the Calibrator on its legs on a non-metallic surface.

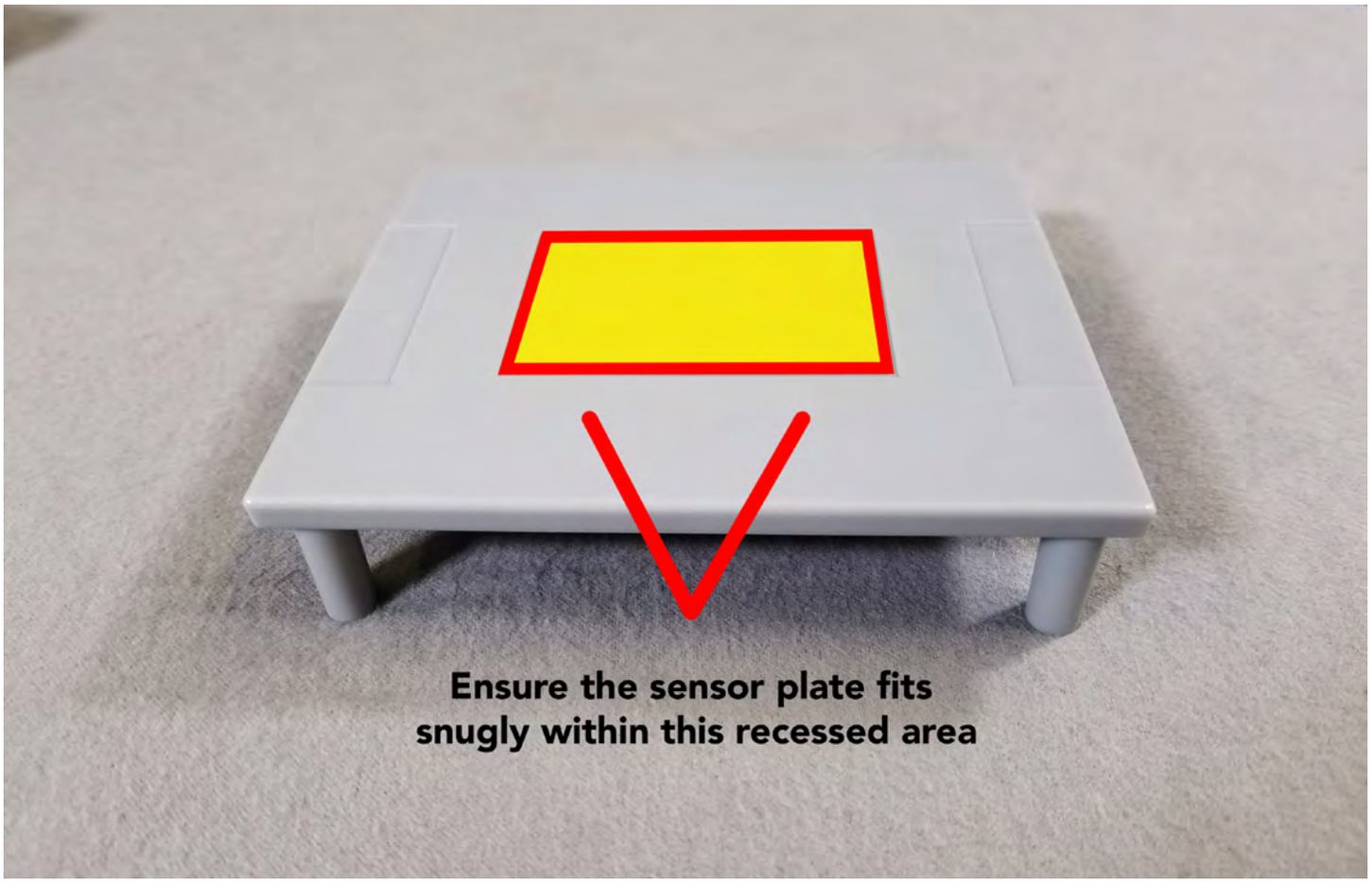
2. Turn the meter on, and then use the MODE button to put your meter in CAL mode. (Refer to the MODE button section of the manual.)

3. Place the meter on the Calibrator, correctly seating the meter sensor pad firmly on the recessed area of the Calibrator. IMPORTANT: Failure to correctly and firmly “seat” the sensor pad in the recessed area will cause an inaccurate calibration.

4. Apply light downward pressure and press the AUDIO button three (3) times. The meter will make a beeping sound which indicates it is going through the automatic calibration procedure.

5. When the calibration procedure is complete, the meter will display the word LIFT. Immediately remove the meter from the Calibrator and hold the meter in the air for approximately 5 seconds until the word DONE appears on the display. During this last phase in the air, be sure to keep your hand and other objects away from the underside of the meter.

6. Press the ON/HOLD button to return the meter to Standard Measurement mode.



If, after recalibrating the C555, there is still a problem with the meter, please contact a Wagner representative for further instructions at our worldwide toll-free number, (844) 746-3764.

Protective Rubber Boot for Your C555

In an effort to help avoid damage resulting from your C555 meter being dropped or banging the edges against other hard objects, Wagner Meters has provided a fitted rubber boot which fits snugly around the perimeter of your C555 meter.

This protective boot should remain in place at all times even when calibrating your meter with the On-Demand Calibrator.* All function buttons as well as the display screen, sensing plate, and battery compartment are accessible without removal of this rubber guard. The boot will fit on the meter only one way correctly. Failure to correctly place the boot will result in inaccurate readings.

**Although not recommended, you may wish to use the meter without the protective rubber boot. If you choose to do so, make sure you recalibrate your meter on the On-Demand Calibrator with the boot off.*

SUMMARY OF C555 FEATURES

- Adjustable backlit display while in wood or relative scale measurement modes
- Relative Humidity & Temperature mode
- Dew Point Mode
- Moisture content measurement range for concrete 0% to 6.9% (the display will show 0 to 6.9)
- Digital display resolution of 0.1% (in Standard Measurement mode)
- Relative scale for testing non-concrete building materials
- Large moisture measurement sensor area
- Current reading can be frozen on display screen, great for note taking
- Low battery alert indication
- Audible alarm for programmable high moisture content limits
- Programmable audio alert volume
- Can be field-calibrated with the included On-Demand Calibrator
- Protective rubber boot
- Hard shell storage case and a 9-volt battery are included
- 1-year warranty
- Automatic shutoff when not in use

SPECIFICATIONS

Dimensions with Boot

- Length: 5.75 inches (146mm)
- Width: 3.0 inches (76mm)
- Thickness: 1.0 inches (25mm)

Scanning Area

- 2.0 inches (50mm) x 2.5 inches (63mm)

Weight with Boot

- 7.2 oz. (204g)

Power

- 9-volt battery (Wagner recommends using non-rechargeable Alkaline or Lithium or rechargeable NiMH batteries)

Auto Power Shut-Down

- 60 seconds

Measurement Ranges

- Moisture range for concrete:0.1 to 6.9

Storage Temperature and Humidity

- +50˚F to +90˚F (+10˚C to +32˚C), Maximum relative humidity of 95%, non-condensing

Operating Temperature

- +32˚F to +110˚F (+0˚C to +43˚C)

CHANGING THE BATTERY

As indicated earlier in this manual, if BAT appears on the display, the battery must be changed immediately or any further moisture measurements will be inaccurate. Replace with 9-volt, non-rechargeable Alkaline or Lithium or rechargeable NiMH batteries. Be sure to observe proper battery polarity. The battery fits very snugly in its compartment and will not become dislodged while taking measurements. Reattach the compartment door carefully so that it snaps back in place.

METER STORAGE

When meter is not in use, we recommend that it be stored in the hard shell carrying case provided with each C555 meter. After each use, clean the meter case with a soft rag lightly moistened with water. If the meter is to be stored for a period longer than 30 days, remove the 9-volt battery.

WARRANTY

Wagner recommends that you register your moisture meter at www.genuinewagner.com for faster support and benefits.

Register your meter at
www.genuinewagner.com

Wagner Meters' warranty offers this product protection against defects in material and workmanship for one (1) year from the date of purchase on all C555 moisture meters, subject to the following terms and conditions:

Wagner Meters' liability under this warranty shall be limited, at Wagner Meters' option, to the repair or replacement of this product or any part thereof, which is demonstrated to be defective. To exercise this warranty, visit www.wagnerrepairs.com for instructions. This limited warranty does not apply if Wagner Meters determines that the product has been damaged by accident, negligent handling, misuse, alteration, damage during shipment, or improper service not attributed solely to the actions of Wagner Meters. Wagner Meters' liability for any defect in material or workmanship in this product shall be limited to the amount of purchase price of the product.

With proper care and maintenance, the meter should stay in calibration; however, because Wagner Meters has no control over the manner in which the unit will be used, it makes no

guarantee that the meter will stay in calibration for any specific period of time. Wagner Meters recommends returning the unit to the factory for a diagnostic checkup in the event the meter is dropped or otherwise damaged. If the meter is suspected to be inaccurate, using the provided On-Demand Calibrator and performing a recalibration will ensure the meter is reading correctly. If the meter fails to calibrate properly then it should be sent to the factory for a diagnostic checkup.

When instructed to return a meter, the meter must be returned with the Calibrator that matches the serial number of the meter.

This warranty is in lieu of all other warranties, whether oral or written, express or implied.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF. **WAGNER METERS HEREBY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** Under no circumstances shall Wagner Meters be liable for any incidental or consequential damages. Agents and employees of Wagner Meters are not authorized to make modifications to this warranty or additional warranties binding on Wagner Meters. Accordingly, additional statements, whether oral or written, except written statements from an officer of Wagner Meters, do not constitute warranties and should not be relied upon by the customer.

This warranty is personal to the customer purchasing the product from Wagner Meters or Wagner Meters' authorized distributors, and is not transferable.

Technical Support/Repair Contact
Worldwide Toll-Free: (844) 746-3764

Glossary of Terms

Relative Humidity
The amount of water vapor in the air, expressed as a percentage of the maximum amount that the air could hold at the given temperature.

Temperature
The degree or intensity of heat present in a substance or object, especially as expressed according to a comparative scale and shown by a thermometer or perceived by touch.

Dew Point
The temperature at which air becomes saturated with moisture and condensation can begin to form on surfaces. Monitoring dew point can help identify conditions that may lead to flooring, coating, or adhesive failures caused by condensation.

Notes

500-00555-001 REV C

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