NEO-STAT+ METER™

Calibration Guide

INTRODUCTION

This guide explains the calibration procedures for the NEO-STAT+ Meter. See the *Test Instrument User's Guide* for reference information.

Calibration covers the meter's conductivity and temperature functions. Conductivity calibration should be performed monthly by a designated technician. Temperature calibration should be performed only as needed, or whenever inaccurate readings are suspected.

Throughout this guide, instrument switches will be enclosed in [brackets]. Display symbols will be enclosed in “quotations.”

USE THE PROPER LABORATORY STANDARD

For verification of accurate conductivity function, use a conductivity standard solution traceable to the National Institute of Standards and Technology (NIST) or an equivalent standards organization. Use sodium chloride (NaCl) conductivity standard solution. Using other solutions may result in inaccurate calibration.

For verification of accurate temperature function, use a NIST-traceable thermometer having a resolution of 0.1°C.

CALIBRATION METHODS

When using conductivity standard solutions, first rinse a clean container with the solution. Discard the rinse solution. Pour approximately 50 ml of fresh solution into the rinsed container. Measurements should be taken immediately after pouring—evaporation could cause errors. Connect a clean sampling tube to the distal port of the meter. Insert the end of the tube into the solution. Draw solution through the cell and take the reading.

As an alternative, the TRI-STATION™ and SUPER STATION™ accessories from MESA LABS make calibration fast and easy. These convenient racks hold solution bottles equipped with check valves to prevent contamination and evaporation. Contact MESA LABS or your local distributor for more details.

After calibration, rinse the cell and syringe interior by drawing RO water through the cell filling the syringe. Expel and repeat. Note the date and the initials of the person performing the calibration on a calibration label and adhere it to the meter exterior.

SERVICE AND SUPPORT

Mesa Laboratories, Inc. offers full repair and calibration service for the NEO-STAT+ Meter at its corporate headquarters in Lakewood, Colorado USA and at authorized service depots throughout the world. Contact MESA LABS for further information.

- **Telephone** 1-800-992-6372
- **Fax** 1-303-987-8989
- **E-mail** medservice@mesalabs.com
- **Website** www.mesalabs.com

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Conductivity Calibration

Materials needed	· 14.0 mS Conductivity Standard Solution · TRI-STATION, SUPER STATION, or a clean 100 ml container and sampling tube · Calibration label

TASK	STEP 1	STEP 2	STEP 3	STEP 4
To enter calibration mode	Press and hold the [MODE] switch until a flashing "CAL" symbol appears in the upper right corner of the display.	Within 3 seconds, press and release either arrow switch on the back of the meter.	A steady "CAL" symbol will be displayed.	Release the [MODE] switch.
To adjust conductivity to 14.0 mS	Press and release the [MODE] switch until the conductivity function is displayed.	Draw the solution through the cell. Observe the reading while it is flowing.	When the reading stabilizes, press the [UP] or [DOWN] arrow switch to change the displayed value to match the solution value.	Expel and discard the solution. Draw fresh solution to confirm the accuracy of the displayed reading. *Repeat steps 2 and 3, if needed.*

Temperature Calibration

Additional materials needed	· Thermometer having 0.1°C resolution *NOTE: Temperature calibration should be performed only as needed, or whenever inaccurate readings are suspected.*

To adjust temperature *NOTE: Submerge the thermometer into a solution bath whose temperature is between 25° and 37°C.*	Press and release the [MODE] switch until the temperature function is displayed.	Draw solution through the cell. Observe the reading while it is flowing. Take the reading when it has stabilized. *NOTE: Maintain a steady flow of solution. Idle solution cools quickly.*	Take the thermometer's reading and round it to the nearest whole number. Press the [UP] or [DOWN] arrow switch to change the displayed value to the rounded number.	Expel and discard the solution. Draw fresh solution to confirm the accuracy of the displayed reading. *Repeat steps 2 and 3, if needed.*

To Exit Calibration Mode and Save The Readings

To exit calibration mode	Press and hold the [MODE] switch until the "CAL" symbol disappears.	*NOTE: The display will show "C1" then "C2" to confirm that new calibration values were correctly saved. This step is essential to save the calibration into the meter's memory. If the display shows "Er", the values were not saved. In that event, contact MESA LABS or your local distributor.*