

# *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 functions. Conductivity calibration should be performed monthly by a designated technician. Contact Customer Service concerning Temperature calibration.

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  
E-mail: [medservice@mesalabs.com](mailto:medservice@mesalabs.com)

Fax: 1-303-987-8989  
Website: [www.mesalabs.com](http://www.mesalabs.com)

## Level 1 Calibration

<b>Materials needed</b>	<ul style="list-style-type: none"> <li>• 14.0mS conductivity standard or a value closest to the solutions you will be measuring</li> <li>• TRI-STATION, or a clean 100 ml container and sampling tube</li> <li>• Calibration label</li> </ul>			
TASK	STEP 1	STEP 2	STEP 3	STEP 4
<b>To enter the Level 1 calibration mode</b>	Press and hold the [MODE] switch until a flashing "CAL" symbol appears.	Within 3 seconds press either arrow switch;	a steady "CAL" symbol will be displayed.	
<b>To adjust mid-range conductivity (2.0-19.9 mS)</b>	Press the [MODE] switch <b>ONCE</b> and the conductivity function will be displayed  Note: If the switch is pressed twice, turn the meter off and on.	Initially flush solution through the cell, then draw a sample and observe the reading while it is flowing	While drawing fluid, when the reading stabilizes, press the [UP] or [DOWN] switch to change the display value to match the solution value.  Note: Only press the switches while drawing fluid, not when expelling.	Expel and discard the solution. Draw fresh solution to confirm the accuracy of the display reading  Repeat steps 2 and 3, if needed
<b>To perform Level 2 Calibration</b>	<b>DO NOT EXIT! GO TO: LEVEL 2 CALIBRATION</b>			
<b>To exit calibration mode</b>	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. If the display shows "Er", the values were not saved. In that event, contact MEAS LABS or your local distributor.		
<b>Resetting Factory Default Values</b>	<ol style="list-style-type: none"> <li>1. Enter Level 2 Calibration mode.</li> <li>2. Press the [MODE] switch and both of the [UP] and [DOWN] switches on the back of the unit simultaneously. On the display, you should see a single digit in the upper left, "CAL" in the upper right, and two digits in the conductivity area.</li> <li>3. Repeat step 2, ensuring that all three switches are pushed at the same time. This causes the values to be reset to the factory defaults. The display should read "C1" then "C2" as it resets the values.</li> <li>4. The meter has now been reset to known nominal values.</li> </ol> <p><b>CAUTION: Resetting factory default values requires complete recalibration for all ranges and modes</b></p>			

## Level 2 Calibration (S/N > NS06500 only)

<b>Additional materials needed</b>	• 1mS and 100mS conductivity standard solutions			
TASK	STEP 1	STEP 2	STEP 3	STEP 4
<b>To enter the Level 2 calibration mode</b>	Press and hold the [MODE] switch until the "HOLD" and "CAL" symbols appear (≈6 seconds).			
<i>NOTE: Must be entered from within the Level 1 Calibration mode</i>				
<b>To adjust low and high conductivity ranges (.01-1.99 mS) (20.0-199 mS)</b>	Press the [MODE] switch and the conductivity function will be displayed	Using 1mS (100mS) solution, initially flush through the cell, then observe the reading while drawing solution through the cell.	While drawing fluid, when the reading stabilizes, press the [UP] or [DOWN] switch to change the displayed value to 1.00mS (100 mS).  Note: Only press the switches while drawing fluid, not when expelling.	Expel the solution and discard. Draw fresh solution to confirm the accuracy of the displayed reading  Repeat steps 2 and 3, if needed  Repeat steps 2-4 with 100 mS solution; rinse well after using 100 mS solution
<b>To exit calibration mode</b>	Press and hold the [MODE] switch until the "HOLD" and "CAL" symbols disappear.	NOTE: The display will show "C1" then "C2" to confirm that new calibration values were correctly saved. If the display shows "Er", the values were not saved. In that event, contact MEAS LABS or your local distributor.		



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