

G. Calibrating Your Instrument

When to Calibrate

Mesa recommends that users verify meter values against NIST-traceable solutions daily and calibrate (adjust) the meter when these verifications are out of tolerance. The daily verifications and calibrations are to be done at 14.0 mS and 7.0 pH.

Extended range calibrations are used to verify and adjust high and low pH and conductivity values. Mesa recommends performing extended verification and calibration if needed on a monthly basis (at pH 4.0, pH 10.0, 100 mS, 1 mS, 150 μ S).

If the meter is to be used for water quality verification or TDS measurement, Mesa recommends the 150 μ S conductivity range be verified and calibrated as needed prior to use.

Measurement Module

Under normal meter usage and storage conditions, the pH component is expected to last for 12 months. The length of time can be greater than 12 months or it can be shorter than 12 months if the measurement module is not rinsed and stored as directed after use. The pH function of the pHoenix XL relies upon a component in the measurement module which contains undissolved potassium chloride. As the measurement module is used during daily verifications, the amount of this salt will decline overtime.

When the potassium chloride in the measurement module component is depleted, the result is an unstable pH reading and inability to properly calibrate and/or verify pH with the meter. This result indicates a replacement measurement module should be installed on the pHoenix XL handle.

Instructions on proper meter and measurement module cleaning and storage are outlined in Section I.

The meter should be verified daily and calibrated as recommended above. The measurement module can continue to be utilized provided the meter results meet the requirements set forth in the User's Guide. At such time that the results do not meet these requirements, the pHoenix XL measurement module should be replaced.

Use the Proper Laboratory Standard

For verification of accurate conductivity and pH function, use a conductivity standard solution and pH buffer solution traceable to the National Institute of Standards and Technology (NIST) or an equivalent standards organization. Do not use solutions beyond their expiration date.

CAUTION: Only use sodium chloride (NaCl) based conductivity standard solutions of the values described above.

Using other solutions will result in inaccurate calibration.

Sample Cup Calibration Methods

When using a Sample Tube and Sample Cup (container) with the Conductivity Standard Solutions and pH Buffer Solutions, first rinse the Sample Cup (container) with the solution being used. Discard the rinse solution. Pour fresh solution into the rinsed Sample Cup (container). Measurements should be taken immediately after pouring, as evaporation of the solution could cause errors. Proper use of a Cal-Station or Super Station (see Accessories section, pg. 33) will eliminate these concerns.

Calibration Technique

USE THE METHODS DESCRIBED IN SECTION E “VERIFYING INSTRUMENT PERFORMANCE” to rapidly achieve readings stability.