

Application Note

Ion Measurements in mV mode

Any ISE electrode, with BNC connector, can be attached to your Denver meter and measurements can be made using mV mode.

Plotting a calibration curve –

- This can be done on semi-logarithmic paper or using a program such as Microsoft Excel. The concentration (typically in ppm) is on the x-axis and mV on the y-axis.
1. Make standards bracking the expected concentration range of your samples. Standards should be no more than a decade apart. For example if your samples are expected to be between 5 – 25 ppm you would make standards at 1, 10 and 100 ppm. Add ISA to all standards.
 2. Place the probe in the lowest concentration standard and wait for a stable reading. Plot this point on the graph.
 3. Repeat step 2 for each standard.
 4. Connect the points. We recommend a point-to-point connection rather than a best fit line as ion probes are not linear across the entire measuring range.

Taking measurements –

1. Add ISA to the sample.
2. Place the probe in the sample and wait for a stable reading.
3. Find the mV value of the sample along the left hand side of the curve. Draw a horizontal line until you reach the calibration curve. Then draw a vertical line down which will lead you to the concentration of the sample.

NOTES:

- Some customers choose to set a mV offset (typically 0 mV) at a blank value or at another concentration and then plot the relative mV values. This is acceptable as long as the mV offset is set before any standards are plotted on the graph.
- For best results samples and standards should be measured near 25 °C.
- Moderate stirring of samples is recommended during analysis.
- Refer to the electrode and meter operation manuals for complete information. This only provides further information on this specific application.