

Quick Start Guide

Orion 920Aplus pH/ISE Meter

All meter functions are described in detail in the accompanying instruction manual. For calibration and measurement only a few steps are required, and step-by-step instructions are given in this guide.

Meter Overview

1. Results and current mode are displayed in the large main field.
2. Channel, electrode ID, ready, and step-by-step prompts are displayed on the lower, prompt display.
3. The keys on the keypad have multiple functions. Their main function is to enter numeric values. They also have primary functions. These are labeled in white and are accessed by pressing **1st** then the function. Most keys also have secondary functions. These are labeled in green, and are accessed by pressing **2nd** then the function.
4. If you want to escape the sequence you are in or are not sure of which function you are in, pressing **1st** and then **measure** will take you to the MEASURE mode where you can start again.

Meter Connections

Power

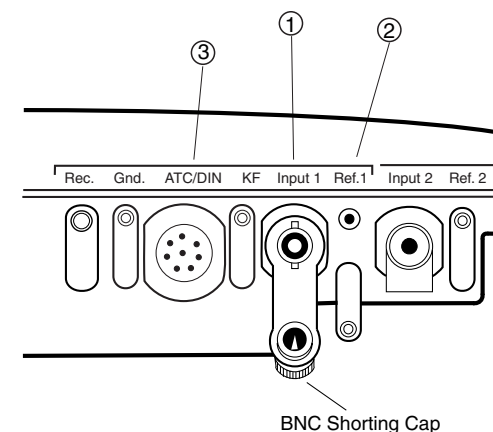
1. Plug line adapter into an appropriate wall outlet.
2. Plug line adapter firmly into power input on rear panel of meter.

Electrode Connections

1. Remove BNC shorting cap.
2. Attach electrode with BNC connector by sliding BNC connector onto electrode input (1), then push down and turn clockwise to lock into position.

NOTE: If using a combination electrode with a BNC connector, the reference electrode input (2) is not used.

3. Attach ATC probe with DIN connector by sliding the DIN connectors into the ATC probe input (3) until firmly in place.



pH Measurement Overview

pH measurement is easy and accurate with the Orion 920Aplus. The meter/electrode system is calibrated with one to five buffers which bracket your sample pH. For better accuracy, at least a two buffer calibration is recommended.

The autocalibration feature automatically recognizes 1.68, 4.01, 7.00, 10.01, and 12.46 buffers. For best results, an ATC probe is recommended to compensate for temperature variation.

ISE Measurement Overview

Direct measurement using ion selective electrodes (ISE's) is fast and convenient with the Orion 920Aplus. The meter/electrode system is calibrated with one to five standards of known concentration which bracket sample concentration. Unknown sample concentration is then read directly from the display in units used for calibration molarity, ppm, %, etc. See the appropriate electrode instruction manual for preparation of sensing and reference electrodes, required solutions (ionic strength adjusters, standards, etc.) and other special requirements. For best results during calibration, always use the most dilute standard first, and always use a fresh aliquot of standard.

pH Autocalibration with Two Buffers

1. Verify selected input is currently in use. If input 1 to be used, prompt line should indicate “1-”. If input not correct, press **2nd** then **channel** repeatedly until selected channel is displayed.
2. Select electrode ID for the electrode in use. If pH electrode to be used the prompt line should read “1-pH”. If pH not displayed then press **2nd** then **electrode ID**. Enter **1** then press **yes**.
3. Select pH mode, by pressing **mode** until pH displayed on main display.
4. Place electrode(s) into pH 7 buffer and stir moderately.
5. Press **calibrate**. The date and time of the last calibration is displayed.
6. Press **2** then **yes** to select 2 buffer calibration.
7. When “RDY” is displayed on prompt line, indicating electrode stability, press **yes**. The buffer value is entered, stored and meter display freezes for three seconds. The meter automatically switches to buffer 2.
8. Remove electrode(s) from first buffer. Rinse with deionized water.
9. Place electrode(s) into second buffer.
10. When “RDY” is displayed on prompt line, press **yes**.
11. The electrode slope is calculated and then actual value (in percent) is displayed for five seconds. Meter will then automatically proceed to the MEASURE mode.
12. Remove electrode(s) from buffer. Rinse with deionized water. Place electrode(s) into sample. When “RDY” is displayed, record the sample results.

Calibration of Ion-Selective Electrodes (ISE) with Two Standards

1. Verify selected input is currently in use. If input 1 to be used, the prompt line should indicate “1-”. If input not correct, press **2nd** then **channel** repeatedly until selected input is displayed.
2. Select electrode ID for the electrode in use. For example to select Fluoride (F -): press **2nd** then **electrode ID**. Enter **3** then press **yes**. For other choices press **2nd** then **electrode ID**, press **no** to scroll through other ISE choice. Enter number of selection and then press **yes**.
3. Select “CONCENTRATION” mode by pressing **mode** until “CON” is displayed on main display.
4. Place electrode(s) into first standard and stir moderately.
5. Press **calibrate**. The date and time of the last calibration is displayed.
6. Press **2** then **yes** to select 2 standard calibration.
7. When “READY ENTER VALUE” is displayed on prompt line, indicating electrode is stable, enter value of standard and press **yes**. The standard value is entered, stored and the meter display freezes for three seconds. The meter automatically switches to standard 2.
8. Remove electrode(s) from first standard. Rinse with deionized water.
9. Place electrode(s) into second standard.
10. When “READY ENTER VALUE” is displayed on the prompt line, indicating electrode is stable, enter value of standard and press **yes**.
11. The electrode slope is calculated and then actual value is displayed for 5 seconds. Meter then automatically proceeds to MEASURE mode.
12. Remove electrode(s) from standard. Rinse with deionized water. Place electrode(s) into sample. When “RDY” is displayed, record the sample results.

Environmental Instruments

Water Analysis

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