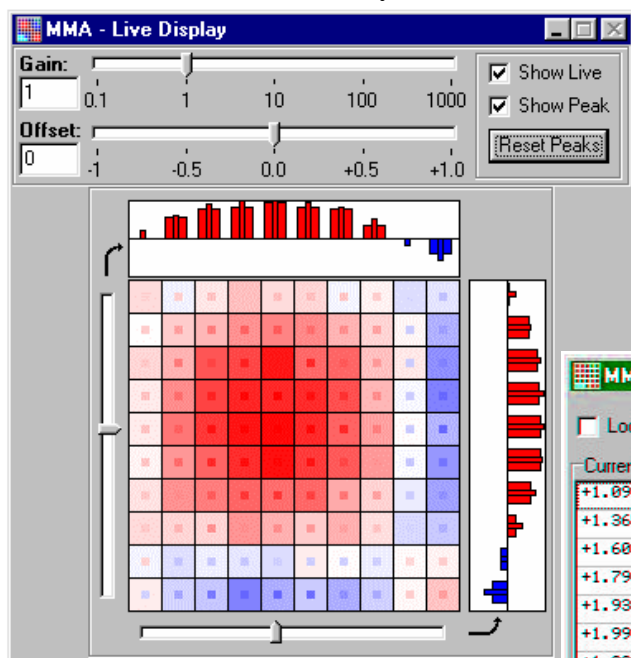


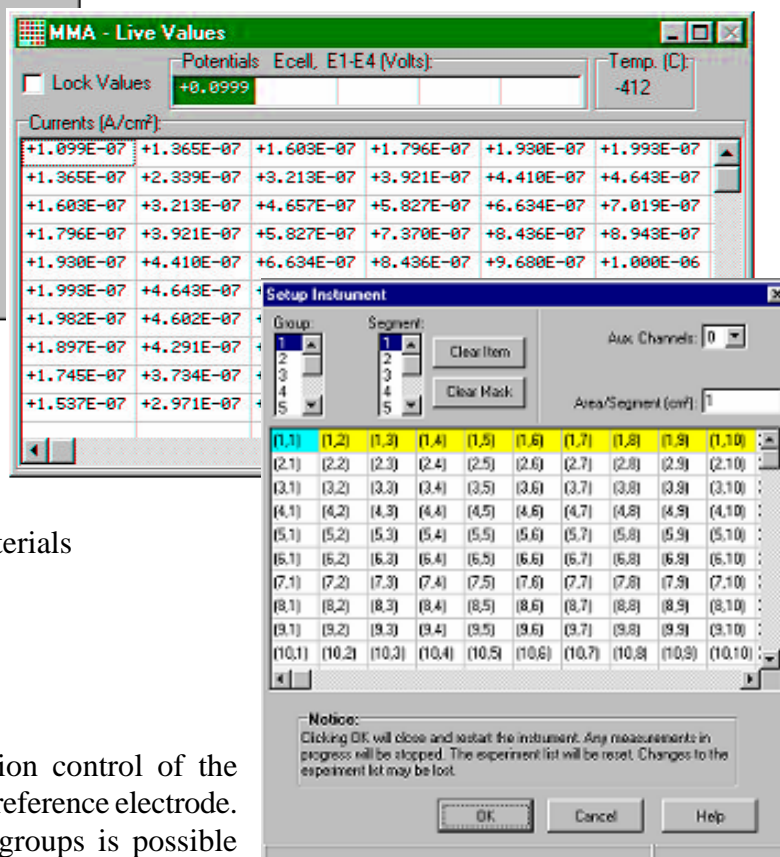
Model 900 / 900B Multichannel Microelectrode Analyzer



Scribner Associates **Model 900 Multichannel Microelectrode Analyzer (MMA)** is designed for use with macro- and micro-scale electrode grids, segmented striplines and other spatial electrode or sensor arrays. Applications include corrosion science, inhibitor and coating performance studies; current distribution analysis and electrode interaction; biological and chemical sensor arrays; combinatorial electrochemistry and high-throughput materials evaluation. The Model 900 MMA is a flexible laboratory tool for the study and development of multi-electrode systems or sensor arrays.



The Model 900 MMA is equipped for 100 channels of current measurement with sensitive zero resistance ammeters (ZRAs) and/or electrode potential measurement with high input-impedance electrometers. An on-board microprocessor-based data acquisition system with 16-bit resolution provides wide dynamic range and low-noise current and potential measurement.

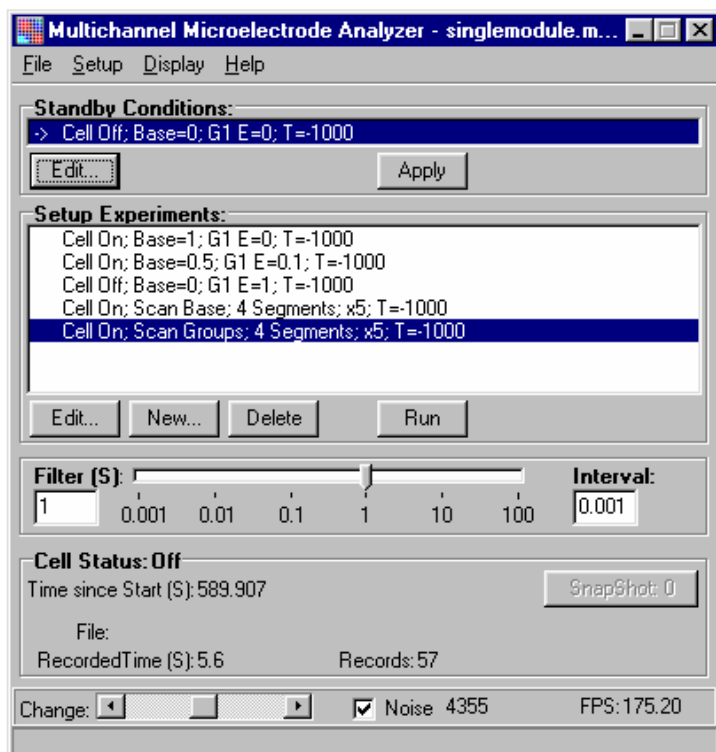


Typical Applications

- Chemical & Biological Sensor Arrays
- Combinatorial Electrochemistry
- Battery Electrode & Electrocatalyst Materials Development
- Current Distribution Mapping
- Corrosion Science & Engineering
- Inhibitor & Coating Evaluation

A built-in potentiostat provides polarization control of the electrode array with a common counter and reference electrode. Offset polarization of electrode segment groups is possible with 12-bit resolution. Traditional DC electrochemistry such as Potential Scans, Square Waves, or Cyclic Voltammetry may be performed on either the entire array, or on a group of segments. Combination arrays of reference and working electrodes are possible by mixing the signal conditioning group electronics.

Windows graphical interface provides for real-time display of current and/or potential for each electrode. Many different spatial arrangements may be selected depending on the actual electrode configuration.



A profile of row and column data may be selected with peak and average values displayed in real time. Data collected by the local microprocessor is updated every 40 milliseconds and presented in the display window. Raw data is logged to an ASCII file that can be easily imported into standard spreadsheet or graphic display programs for off-line analysis. A time-stamped snapshot of the entire electrode data can be recorded.

A convenient MMA software control panel is provided for setting the gain, offset and averaging parameters of the displayed data. This feature permits easy normalization for display purposes without affecting the raw data. Controls are also provided for the internal potentiostat to set the applied potential of the working electrode as well as the desired offset value for each group of electrode segments. Additional channels are available for electrode

substrate and/or cell temperature control. A batch preset menu is used to set the conditions for the electrode that may be applied as a step function.

Specifications

- Working Electrode Inputs: 100 channels, interchangeable electronics in 10 groups of 10
Current: 1, 10 or 100 μ A full scale
Resolution: 33 pA, 330 pA or 3 nA
Voltage: +/- 10 V input; Electrometer: $10^{12} \Omega \parallel 3 \text{ pF}$
Resolution: 305 μ V
- Auxiliary channels standard: 4 extra electrometer inputs for analog signals
- Internal potentiostat: +/- 10 V compliance, at 10 mA maximum
- Applied potential range: +/- 5 V, resolution of 160 μ V
- Group offset potential range: +/- 5 V, resolution of 2.5 mV
- Risetime: 100 μ s; controlled slew rate of 10 μ s/V
- Maximum Data Rate: 20-100 frames/s (depending on electrode configuration)
- Temperature control: Thermocouple control channel for substrate conditioning
- Working Electrode Interface: Model 900A: 321-pin ZIF PGA socket with guarded signal inputs
Model 900B: five 68-pin connectors with mating ribbon cables
- Included Host Computer: Dell Pentium PC with high speed interface
- MMA software: Installed and supported under Windows2000/XPPro

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