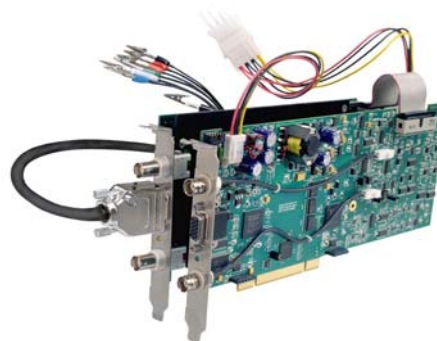


## Series G™ 750 Potentiostat

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The Series G 750™ Potentiostat/Galvanostat/ZRA is a research-grade electrochemical instrument for applications requiring high currents. The Series G 750 Potentiostat can be used with desktop and notebook computers (with the eStation Portable Electrochemistry System). It supports Gamry electrochemical software packages such as the DCI05™ DC Corrosion Techniques, ESA400™ Electrochemical Signal Analyzer, PHE200™ Physical Electrochemistry, PV220™ Pulse Voltammetry, and the EIS300™ Electrochemical Impedance Spectroscopy Software.



Though small in size, the Series G 750 does not compromise performance. Its output is a healthy  $\pm 750$  mA. This is especially useful for battery development, fuel cell research, electrodeposition experiments, or measuring high corrosion rates. Its 9 decades of current ranges and post-gain offset capability allow for a maximum resolution of 2.5 fA. 16-bit D/A and A/D converters, along with four terminal current and voltage measurements, provide accurate results down to 1  $\mu$ V resolution. The on-board Direct Digital Synthesis circuitry allows EIS measurements from 10  $\mu$ Hz to 300 kHz. The noise specification is among the lowest in the industry. Extensive voltage and current signal filtering allows quiet measurements in noisy environments.

The Series G 750 is fully isolated from the computer's chassis ground, so it can function with earth-grounded cells. It offers both current interrupt and positive feedback IR compensation. It works in the field, even when the computer is powered by a generator or a battery-powered inverter. Extra I/O connections are available to control external peripheral equipment.

### Features

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- Installed inside your computer for the world's most compact computer-controlled electrochemistry system.
  - Powered from the computer power supply to eliminate extra cables and clutter.
  - On-board DDS for EIS measurements from 10  $\mu$ Hz to 300 kHz using Sub-Harmonic Sampling.
  - Nine decade, autoranging current measurement.
  - Up to 8 Series G 750s can share one computer in a MultEchem™ System.
  - Electrically isolated from earth ground for use with autoclaves, stress testers, or pipeline probes.
  - Current interrupt and positive feedback iR compensation for work in resistive media.
  - Auxiliary I/O -- 1 analog input, 1 analog output, 4 digital inputs, 4 digital outputs, and 1 external signal generator input.
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## Specifications

Potentiostat	Yes
Galvanostat	Yes
Zero Resistance Ammeter	Yes
Cell Connections	2, 3, or 4
Floating (Isolated from earth)	Yes
<b>SYSTEM</b>	
Max. Current	±750 mA
Current Ranges	9 (7.5nA-750mA)
Current Ranges (with internal gain applied)	11 (75 pA-750mA)
Min. Voltage Resolution	1 µV
Min. Current Resolution	2.5 fA
Max. Applied Potential	±8 V
Rise Time	<2 µs
Noise and Ripple	<20 µV rms
Min. Time Base	50 µs
Max. Time Base	600 s
Min. Potential Step	12.5 µV
Analog/Digital Converters	16 bit
Max. Data Points Per Expt.	262,143
<b>EIS MEASUREMENT</b>	
Frequency Range	10 µHz-300 kHz
Max AC Amplitude	3600 mV rms
Min AC Amplitude	55 µV rms
<b>CONTROL AMP</b>	
Compliance Voltage	±12 V
Output Current	±750 mA
Speed Settings	4
Unity Gain Bandwidth (typical)	200, 100, 40, 6 kHz
<b>ELECTROMETER</b>	
Input Impedance	>10 <sup>12</sup>
Input Current	<10 pA
Bandwidth (-3dB) (typical)	>4 MHz
Common Mode Rejection Ratio	>80 dB (3 Hz), >60 dB (100 kHz)
<b>APPLIED POTENTIAL</b>	
Accuracy	± 2 mV ±0.2 % of setting
Resolution	12.5 µV, 50 µV, 200 µV/bit

Drift	<30 µV/°C
Potential Scan Range	±0.4 V, ±1.6 V, ±6.4 V
<b>APPLIED CURRENT</b>	
Accuracy	±10 pA ±0.3 % of setting
Resolution	0.0033 % full scale/bit
<b>MEASURED CURRENT</b>	
Accuracy	±0.3% range ± 50 pA
Resolution	0.0033 % full-scale/bit
Bandwidth (-3dB)	>500 kHz (750 µA-750 mA)
Note: Bandwidth is current range dependent	>100 kHz (75 µA), >10 Hz (7.5nA)
Stability Settings	3
Post Offset Gain	0.1, 1, 10, 100
Offset Range	±2X full-scale
<b>IR COMPENSATION</b>	
Mode	Current interrupt & pos feedback
Minimum interrupt time	30 µs
Maximum interrupt time	64 ms
<b>AUXILIARY A/D INPUT</b>	
Range	±3 V
Resolution	0.1 mV
Input Impedance	>25 kΩ
<b>AUXILIARY D/A OUTPUT</b>	
Range	±5 V or 0-10 V
Resolution	2.5 mV
<b>WEIGHT</b>	
	1 kg
<b>DIMENSIONS</b>	
	2 10 x 25 cm PCI Printed Circuit Boards

## System Information

The Series G 750 is shipped with a Hardware Operator's Manual, Quick-Start Guide, one 1.5 m standard Cell Cable, a Gamry Mouse Pad, and a Universal Dummy Cell 3. The Series G 750 is protected by a 2-year factory service warranty.

Two 10 in. x 4 in. (25 x 10 cm) PCI slots and one hard-drive power connector (13 cm, 5.25 in) are required for installation. The Series G 750 complies with Rev 2.2 of the PCI bus specification.

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