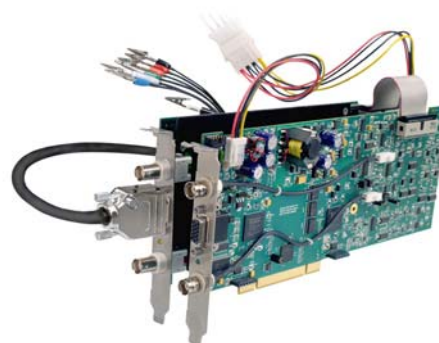


Series G™ 300 Potentiostat

The Series G 300™ Potentiostat/Galvanostat/ZRA is a research-grade electrochemical instrument with specifications suitable for a wide range of applications. The Series G 300 Potentiostat can be used with desktop and notebook computers (with the eStation Portable Electrochemistry System). It supports Gamry's electrochemical software packages such as the DCI05™ DC Corrosion Techniques, PHE200™ Physical Electrochemistry, PV220™ Pulse Voltammetry, EIS300™ Electrochemical Impedance Spectroscopy, and the ESA400™ Electrochemical Signal Analyzer.



The Series G 300's current span is a good choice for both high and low current experiments. Its maximum current output is ± 300 mA, while the lowest current range of 3 nA allows reliable measurements in the picoamp region. Its current ranges cover 9 decades and post-gain offset capability allow for a maximum resolution of 1 fA. 16-bit D/A and A/D converters, along with four terminal current and voltage measurements, provide accurate results down to 1 μ V resolution. The on-board Direct Digital Synthesis circuitry allows EIS measurements from 10 μ 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 300 is fully isolated from the computer's chassis ground so it can work 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 provided to control external peripheral equipment.

Features

- 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 μ Hz to 300 kHz using Sub-Harmonic Sampling.
 - Nine decade autoranging current measurement.
 - Up to 8 Series G 300s 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
SYSTEM	
Max. Current	±300 mA
Current Ranges	9 (3nA-300mA)
Current Ranges (with internal gain applied)	11 (30 pA-300mA)
Min. Voltage Resolution	1 µV
Min. Current Resolution	1 fA
Max. Applied Potential	±11 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
EIS MEASUREMENT	
Frequency Range	10 µHz-300 kHz
Max AC Amplitude	3600 mV rms
Min AC Amplitude	55 µV rms
CONTROL AMP	
Compliance Voltage	>±20 V
Output Current	>±300 mA
Speed Settings	4
Unity Gain Bandwidth (typical)	200, 100, 40, 6 kHz
ELECTROMETER	
Input Impedance	>10 ¹²
Input Current	<10 pA
Bandwidth (-3dB) (typical)	>4 MHz
Common Mode Rejection Ratio	>80 dB (3 Hz), >60 dB (100 kHz)
APPLIED POTENTIAL	
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
MEASURED POTENTIAL	
Accuracy	± 1 mV ±0.3% of reading
Full-Scale Ranges	30 V, 3 V, 300 mV, 30 mV
Resolution	1 mV, 100 µV, 10 µV, 1 µV/bit
Offset Range	12 V
APPLIED CURRENT	
Accuracy	±10 pA ±0.3 % of setting
Resolution	0.0033 % full scale/bit
MEASURED CURRENT	
Accuracy	±0.3% range ± 50 pA
Resolution	0.0033 % full- scale/bit
Bandwidth (-3dB)	>500 kHz (300 µA-300 mA)
Note: Bandwidth is current range dependent	>100 kHz (30 µA), >10 Hz(3 nA)
Stability Settings	3
Post Offset Gain	0.1, 1, 10, 100
Offset Range	±2X full-scale
IR COMPENSATION	
Mode	Current interrupt & pos feedback
Minimum interrupt time	30 µs
Maximum interrupt time	64 ms
AUXILIARY A/D INPUT	
Range	±3 V
Resolution	0.1 mV
Input Impedance	>25 kΩ
AUXILIARY D/A OUTPUT	
Range	±5 V or 0-10 V
Resolution	2.5 mV
WEIGHT	
	1 kg
DIMENSIONS	
	210 x 25 cm PCI Printed Circuit Boards

System Information

The Series G 300 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 300 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 300 complies with Rev 2.2 of the PCI bus specification.

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All specifications subject to change without notice.

