Reference 600+

Potentiostat/Galvanostat/ZRA

+ Fast CV
+ EIS To 5 Mhz
+ Ultra Low Current
+ Floating Operation
+ Low Noise

GAMRY
INSTRUMENTS

Reference 600+

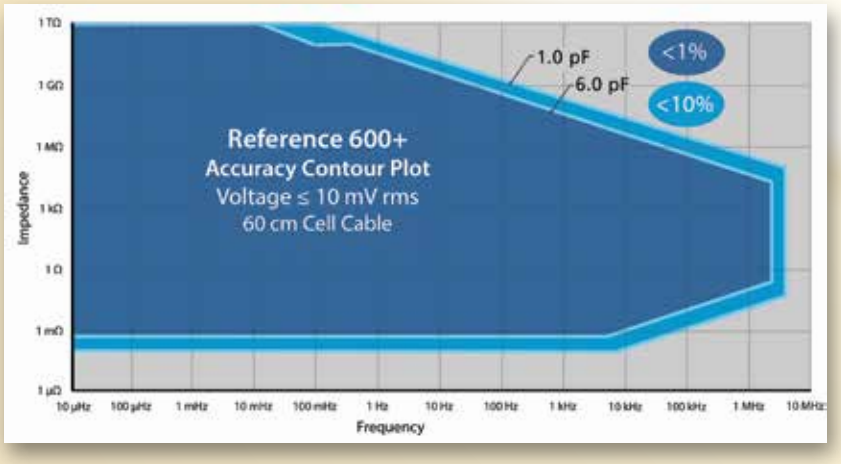
Potentiostat/Galvanostat/ZRA

The **Reference 600+** has been designed to bring you maximum performance for demanding applications. It is ideally suited for:

- + Corrosion Measurement
- + Paints & Coatings
- + Bioelectrochemistry & Sensor Development
- + Physical & Analytical Electrochemistry
- + Energy Devices

+ High Performance EIS

EIS from 10 µHz to 5 MHz. Our specially designed cables reduce mutual inductance increasing the low impedance bandwidth. Techniques include single sine Potentiostatic, Galvanostatic, and Hybrid EIS. Also included are multi-sine techniques for Potentiostatic and Galvanostatic. Our unique power-leveling algorithm improves signal-to-noise ratios and reduces acquisition time.

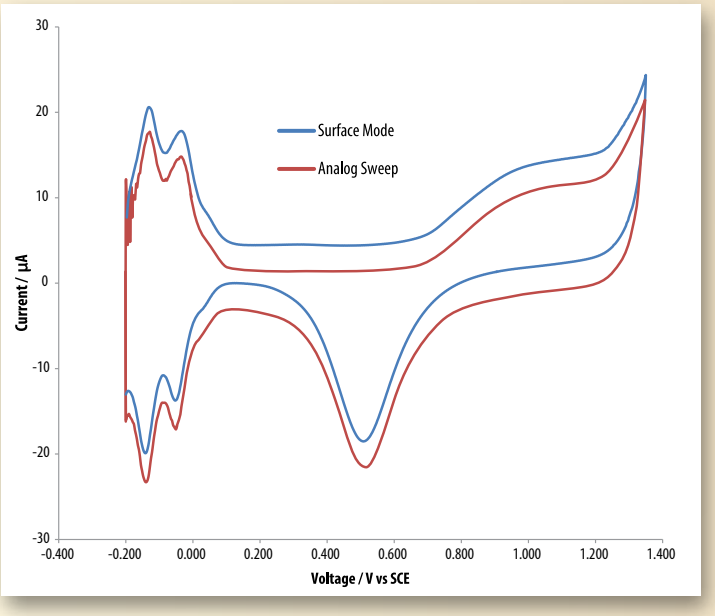


+ Ultra-Low Noise

The Reference 600+ enjoys an intrinsic noise level of <2 µV rms, thanks to a well-designed electronic layout, components selected to balance speed and noise, and intelligent analog filtering and shielding. The instrument can oversample the signals, then average to smooth a slowly changing, but noisy, signal.

+ Digital Signal Processing

All Gamry potentiostats employ digital signal processing (DSP) technology, allowing for oversampling and averaging in order to improve signal-to-noise ratios and provide accurate capacitance measurements. Our instruments have three sampling modes – Fast, Noise Reject, and Surface. Fast corresponds to sampling at the end of each step. Noise reject oversamples and averages during the last 20% of a step. Surface mode oversamples and averages during the entire step thereby ensuring no lost charge for an accurate capacitance measurement.



Comparison of Surface Mode vs Analog Sweep. Pt WE in 1 M H2S04. Surface mode current offset 3 µA for easy comparison.

+ Floating Operation

Gamry provides the highest electrical isolation allowing for measurements on grounded cells and electrodes. Electrical isolation also allows for coupling to other instruments such as TEMs and SECMs.

+ Small Footprint

Only 9x19x27 (WxHxD) cm and 3 kg.

+ Current Interrupt & Positive Feedback iR Compensation

The Reference 600+ has both current interrupt and positive feedback modes of iR Compensation.

+ Optional Inputs & Outputs

The Reference 600+ gives you several input and output options. An additional voltage can be read via a BNC input. An external signal can be fed into the control amplifier, allowing you to input external signals right into your cell. A 15-pin connector is provided to allow for digital inputs and outputs for TTL level triggering of or with external devices. This connector also provides a voltage out, allowing control of external devices such as a rotating electrode setup.

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Potentiostat/Galvanostat/ZRA

SPECIFICATIONS

Potentiostat	Yes
Galvanostat	Yes
Zero Resistance Ammeter	Yes
Cell Connections	2, 3, 4, 5, or 6
Isolated from earth	Yes

SYSTEM

Max. Current	± 600 mA
Current Ranges	11 (60 pA-600 mA), 13 with 10X and 100X gain
Max. Applied Potential	± 12 V
Rise Time	< 250 ns
Noise and Ripple	< 2 µV rms (typical)
Min. Time Base	3.333 µs
Min. Potential Step	12.5 µV

EIS MEASUREMENT

Frequency Range	10 µHz – 5 MHz
Impedance Accuracy	See accuracy contour map
Max AC Amplitude	3 V max
	600 mA max

CONTROL AMP

Compliance Voltage	> ± 22 V
Output Current	> ± 600 mA
Speed Settings	5

ELECTROMETER

Input Impedance	> 10^{14} Ω
Input Current	< 10 pA
Bandwidth (-3dB) (typical)	> 15 MHz

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