

CYCLIC VOLTAMMETRY INSTRUMENT

Performance

Electrochemistry is increasingly being used as an advanced tool to study technological processes in a diverse array of fields including biotechnology, materials science, and electronics. From the many electrochemical methods available, voltammetry in its various forms is perhaps the most effective and versatile technique available for studying redox systems and boundary processes. This instrument is an essential tool for such electrochemical measurements. Its functionality is centered on cyclic voltammetry and is designed for ease of use, flexibility, and high performance.

Applications:

- * Voltammetry
- * Biotechnology
- * Materials Science
- * Electronics

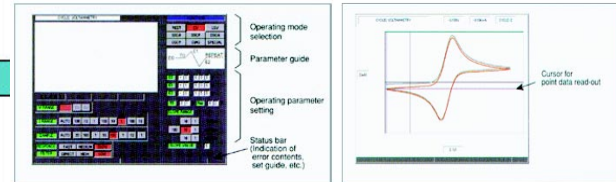
Cyclic Voltammetry Primer

A simple potential wave form that is often used in electrochemical experiments is the linear wave form (the potential is continuously changed as a linear function of time). The rate of change of potential with time is referred to as the scan rate (v). The simplest technique that uses this wave form is **linear sweep voltammetry**. The potential range is scanned in one direction, starting at the initial potential and finishing at the final potential. A more commonly used variation of the technique is **cyclic voltammetry**, in which the direction of the potential is reversed at the end of the first scan. Thus, the waveform is usually of the form of an isosceles triangle. This has the advantage that the product of the electron transfer reaction that occurred in the forward scan can be probed again in the reverse scan.

Features

1. Seven types of measuring modes: CV measurements, Constant voltage single step, Constant voltage double steps, Rest potential measurement, LSV measurement, Constant current single step, Constant current double steps
2. This instrument is a complete stand alone unit. Waveforms can be monitored on the liquid crystal color display.
3. Changes in measurement conditions can be made "on the fly" as well as trial measurements.
4. Warning/Protection Features
5. Retention of Measurement Condition
6. Sweep & Step Techniques
7. Overwrite/Point Data Read-Out
8. Measurement Central Functions (Interactive Mode).

As a Potentiostat	
(a) Maximum Output Voltage	$\pm 12V$ (CE-WE)
(b) Maximum Output Current	$\pm 100mA$
(c) Control Voltage(on constant voltage)	$0 \sim \pm 5V$ (WE-RE)
(d) Control Current(on constant current)	$0 \sim \pm 100mA$
(e) Setting Accuracy	$\pm 1mV$
As a Function Generator	
(a) Potential Setting	$\pm 5V$ (4 digit setting)
(b) Potential Setting Resolution	1mV
(c) Potential Sweep Rate	7 ranges (10V/sec., 1V/sec., 100mV/sec ~ 1mV/sec., 10mV/min., 1mV/min.)
(d) Potential Sweep Resolution	By 18 bit D/A converter
(e) CV Repetitive Cycle Number	1 ~ 99 cycle and continuous
(f) Step Time Setting	2 ranges (0.001 ~ 9.999 sec., 000.1 ~ 999.9 min.)
As a Data Collection Function	
(a) Voltage Measuring Range	2V, 5V, and auto-range
(b) Voltage Measuring Input Impedence	More than $1 \times 10^9 \Omega$
(c) Current Measuring Range	8 ranges (100mA, 10mA, 1mA, 100 μA , 10 μA , 1 μA , 100nA, 10nA)
(d) Data Sampling Time	20 $\mu sec \sim 1$ minute auto-sample
(e) A/D Converter	16 bit, maximum 100,000 data
(f) Measuring Accuracy	
Voltage	(FullX $\pm 0.2\%$) $\pm 1mV$
appro. μA range	(FullX $\pm 0.5\%$) $\pm 0.2\%$
1 μA range approx.	(FullX $\pm 2\%$) $\pm 0.2\%$
General Specifications	
Power Source	AC120V, 60 Hz, 0.7A
Working Temperature	$0 \sim 40^\circ C$
Working Humidity	10 ~ 90%
Accuracy Guaranteed Temperature	$23C \pm 5^\circ C$
Physical Dimension (WxHxD)	300mm X 165mm X 300mm
Weight	7 kg



N600-HSV100 Cyclic Voltammetry Instrument