EC-LAB PRODUCTS

POTENTIOSTAT/GALVANOSTAT

SensorStat

The multipotentiostat/galvanostat dedicated to sensor applications





APPLICATIONS

- Electrochemical sensors
- Biomedical applications
- Electroanalytical
- Corrosion (with UiECorr™)
- Teaching

SensorStat

High throughput combinatorial micro electrochemistry.

Electrosynthesis is an effective way to produce chemical transformations by utilising redox reactions. Libraries of specific ions can be generated in the wells of microtitre plates by potentiostatic electrolysis under the computer control of the SensorStat multichannel electrochemical system. As an online technique the multi-channel system allows a very fast assessment of the redox state during the electrolysis.









Chaining units

The SensorStat has unique features which makes it an ideal choice where high sample throughput is a requirement. The SensorStat's modular concept means it can be configured to create a user defined system from an 8-channel up to a 14-channel system within the same chassis. By connecting a 14-channel SensorStat to other SensorStat units an extended system is created. A ninety-eight sensor array can be individually addressed by "chaining" together seven 14-channel systems. The software treats the combined units as one system.

Multiplexing capability

Where high throughput is not essential but high productivity needs to be achieved the user can make use of the multiplexing capabilities of the SensorStat system. Each individual channel can, with the appropriate cable set, sequentially address up to five working electrodes making a cost effective solution to working with multiple electrodes.

Multi-electrode investigations

An isolated system can also be configured to have one counter electrode, one reference electrode but multiple working electrodes. This feature makes the instrument suitable for applications such as sensor and corrosion applications.

The SensorStat is a high quality digital scanning multi-channel potentiostat system. The modular design provides a user configurable system for demanding research applications.

FEATURES

- Configurable for 8 to 14 channels
- Single USB connection controls all channels
- Ultra low noise current performance
- □ UiEChem[™]/UiECorr[™] software supplied with system
- Analogue triggering
- 5-WE multiplexing on each channel

- Interfaces to commercial electrochemical sensors
- User programmable techniques via macro programming
- Activex[®] software for LabView[™] applications
- Isolation option
- Can be coupled (7 units)

UiEChem[™]/UiECorr[™] package software

Monitoring software dedicated to combinatorial applications.

The UiEChem[™]/UiECorr [™] software supplied with the SensorStat, is a comprehensive and fully featured package which encompasses a wide selection of standard electrochemical techniques. All this is combined with an easy-to-use graphics interface. After a technique has been selected a waveform diagram is displayed showing the structure of the experiment. At the same time the user can enter in the experimental parameters, set the sampling rate, number of cycles and current autoranging. The software automatically configures itself to the number of potentiostat channels installed in the SensorStat unit.

Autosequencing

The UiEChem[™]/UiECorr [™] software provides a flexible, intuitive interface for running multiple experiments in a user-defined sequence. Once the sequence is started the experiments are run automatically, one-at-a-time, in the orderin which they appear in the sequence. The user can choose the experimental technique to include in a sequence and choose what the configuration for each experiment should be. The data is acquired automatically during the sequence and saved to disk. In addition, the user can specify that the sequence waits for a set amount of time between experiments by inserting a delay and include loops so that a group of one more experiments is repeated a set number of times. The sequencing supports also advanced functionality such as analogue triggering. The sequencing facilities may also be used in your own programming language via the optional Activex[®] control.

Graphic display & analysis

A standard graphics display is provided for each technique and we have added the ability for the user to define their preferred format for each technique from a simple template. The UiEChem[™] software features a peak analysis routine which is easy to use and utilises sophisticated routines and algorithms to provide a comprehensive data analysis package. The routines are accessible from the main software package and do not require the data to be exported. The routine can treat data from single cycle, multi-cycle and multi-channel experiments.

Advanced waveform generation

The SensorStat modules are capable of generating complex and repetitive waveforms with precision timing. The instrument has a sequenced waveform generator which generates waveforms based on a sequence of steps. Each step may comprise a waveform which includes pulses, linear sweeps and arbitrary waves. The waveform generator has a timing resolution of 125 microseconds and will seamlessly sequence from one step to the next.

Analogue triggering capability

The SensorStat modules have a real time analogue triggering facility. The triggering can be configured to execute on high or low thresholds of current, potential or auxiliary voltage. The triggering provides sub millisecond timing accuracy and can offer both pre and post trigger data as required.



UiEChemTM: Cyclic Voltammetry, Linear Sweep Voltammetry, Chronoamperometry, Chronopotentiometry, Square Wave UiECorrTM: Linear Sueep Voltammetry, Dinear Sueep Voltammetry, Dinear Sueep Voltammetry, Dinear Sueep Voltammetry, Diet CorrTM: Diet CorrTM:

Voltammetrv.

Voltammetry,

Voltammetry

Differential Pulse

Normal Pulse

- Galvanostatic
 Polarization,
- Potentiodynamic
 Polarization,
- Zero Resistance Ammetry (ZRA)







Peak analysis

Specifications





8-14
2 or 3 and earth
yes with isolation option
100 kHz
unlimited*
1 µV/s to 10 V/s
125 µs
±20 mA
1 nA/V to 10 mA/V in 8-decade ranges
61 fA
±8 V
differential electrometer
±2 V with factory option to ±8 V
61 µV
10 ¹¹ Ω II 5pF
<10 pA
± 2 V (can be customized at factory, up to ± 8 V)
±20 mA
±8 V
1 V/μsec into 1 kΩ
100 V to 240 V, 47 to 63 Hz
120 VA max.
450 x 140 x 320 mm (W x H x D)
14 kg
BS EN 61010
BS EN 61326
5° to 30°C
10° to 30°C
-25° to 70°C
Pentium IV 1 GHz
1 GB Ram (min)
50 MB
50 MB USB (2.0) ; interface cable supplied
50 MB USB (2.0) ; interface cable supplied Windows™ XP Professional™, Vista Business™, Windows 7 or Windows 8

Pictures and specifications subject to change

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