Multichannel potentiostat model CS3104

Model CS3104 multichannel potentiostat/ galvanostat is the 4-channel potentiostat. And you have 4 slots un-occupied for future expansion of channels.

Full floating module and electrical isolation design guarantee each channel is totally independent, which ensures accurate data and efficient simultaneous measurements.

Multichannel potentiostat brings convenience to those who have many samples, and is an ideal device for studies of energy materials, battery study, metal corrosion etc.

The number of channel is expandable by adding and installing more boards, thanks to the intelligent chassis and plug-in design. Each channel potential control range is ±10V, current control range ±1A, can meet experiment requirement for most people.

Application

- Reaction mechanism of Electrosynthesis, electrodeposition (electroplating), anodic oxidation.
- Electrochemical analysis, electro-catalysis, sensor;
- New energy materials, advanced functional materials, photoelectronic materials;
- Corrosion study of metals in water, concrete and soil etc;
- Fast evaluation of corrosion inhibitor, water stabilizer, coating and cathodic protection efficiency.

Specifications

Specifications	
Number of channels with boards: 4	Channel insulation resistance: >100MΩ
Communication: Ethernet	Lower-pass filter: covering 8-decade
Potential control range: ±10V	Constant current control range: ±1A
Potential accuracy: 0.1%×full range±1mV	Current accuracy: 0.1%×full range
Potential resolution:10μV(>100Hz), 3μV(<10Hz)	Current resolution: 1pA
Potential rise time: <1μs(<10mA), <10μs(<2A)	Current range: 2nA ~1A, 10 ranges
Reference electrode input impedance: $10^{12}\Omega$‖20pF	Maximum current output: 1A
Compliance voltage: ±21V	Current increment during scan: 1mA @1A/ms
CV and LSV scan rate: 0.001mV~10000V/s	Potential increment during scan: 0.076mV@1V/ms
CA and CC pulse width: 0.0001~65000s	DPV and NPV pulse width: 0.0001~1000s
SWV frequency:0.001~100KHz	CV minimum potential increment: 0.075mV
AD data acquisition:16bit@1MHz,20bit @1kHz	IMP frequency:10μHz~1MHz
DA resolution:16bit, setup time:1μs	Current and potential range: automatic
Operating System requirements: Windows 7/8/10 /11	Weight: 12.5 Kg Dimensions: 40*40*14cm
Electrochemical Impedance Spectroscopy (EIS)	
Signal generator	
Frequency range: 10μHz~1MHz	AC signal amplitude: 1mV~2500mV
Frequency accuracy: 0.005%	Signal resolution: 0.1mV RMS
DDS output impedance: 50Ω	DC Bias: -10V~+10V
Wave distortion: <1%	Waveform: sine wave, triangular wave, square wave
Scan mode: Logarithmic/linear, increase/decrease	
Signal analyzer	
Maximum integral time:10^6 cycles or 10^5s	Measurement delay:0～10^5S
Minimum integral time:10ms or the longest time of a cycle	
DC offset compensation	
Potential compensation range: -10V~+10V	Current compensation range: -1A~+1A
Bandwidth adjustment: automatic and manual, 8-decade frequency range	

Advantages

High current/voltage: Applied potential range ±10V, current ±1A. It can meet the needs of most studies.

Comprehensive techniques: Built-in EIS (10μHz~1MHz) is equipped in one channel for model CS3104. There are comprehensive techniques in each channel.

Warranty: 5 years warranty. We're the manufacturer, and our engineers will provide technical support anytime you need.

Low cost: The price includes instrument host, software (experiment control & data processing), necessary cables, dummy cell. No other charges.

Reliability &quality: We've been in the market for 20 years, and now is the No. 1 brand of potentiostat product in China

Techniques

Model	CS3104
Number of channels	4
EIS *(10μHz~1MHz)*	One channel has EIS

Stable polarization
- Open Circuit Potential (OCP)
- Potentiostatic (I-T curve)
- Galvanostatic
- Potentiodynamic (Tafel plot)
- Galvanodynamic (DGP)

Transient Polarization
- Multi Potential Steps
- Multi Current Steps
- Potential Stair-Step (VSTEP)
- Galvanic Stair-Step (ISTEP)

Chrono Method
- Chronopotentiometry (CP)
- Chronoamperametry (CA)
- Chronocaulometry (CC)

Voltammetry
- Linear Sweep Voltammetry (LSV)
- Cylic Voltammetry (CV)
- Staircase Voltammetry (SCV)
- Square Wave Voltammetry (SWV)
- Differential Pulse Voltammetry (DPV)
- Normal Pulse Voltammetry (NPV)#
- Differential Normal Pulse Voltammetry (DNPV)
- AC Voltammetry (ACV)
- 2nd harmonic AC Voltammetry (SHACV)
- Fourier Transform AC Voltammetry (FTACV)

Stripping Voltammetry

- Potentiostatic Stripping
- Linear Stripping
- Staircase Stripping
- Square Wave Stripping
- Differential Pulse Voltammetry Stripping
- Normal Pulse Voltammetry Stripping
- Differential Normal Pulse Voltammetry Stripping

Amperometric

- Differential Pulse Amperometry (DPA)
- Double Differential Pulse Amperometry (DDPA)
- Triple Pulse Amperometry (TPA)
- Integrated Pulse Amperometric Detection (IPAD)

Electrochemical Impedance Spectroscopy (EIS)

- EIS vs Frequency (IMP)
- EIS vs Time (IMPT)
- EIS vs Potential (IMPE)(Mott-Schottky)

Corrosion Measurements

- Cyclic polarization curve (CPP)
- Linear polarization curve (LPR)
- Electrochemical Potentiokinetic Reactivation (EPR)
- Electrochemical Noise (EN)
- Zero resistance Ammeter (ZRA)

Battery test

- Battery Charge and Discharge
- Galvanostatic Charge and Discharge (GCD)
- Potentiostatic Charging and Discharging(PCD)
- Potentiostatic Intermittent Titration Technique (PITT)
- Galvanostatic Intermittent Titration Technique (GITT)

Extensions

- Electrochemical Stripping/ Deposition
- Bulk Eletrolysis with Coulometry (BE)
- Rs Measurement

Simultaneous Measurements

You can run a same experiment for each channel at the same time. Set the same parameters for each experiment once and run all independently. It's especially useful when you have many samples for one single test.

(it runs the EIS in each channel, just for instance. Kindly note there is only one channael with EIS for model CS3104)
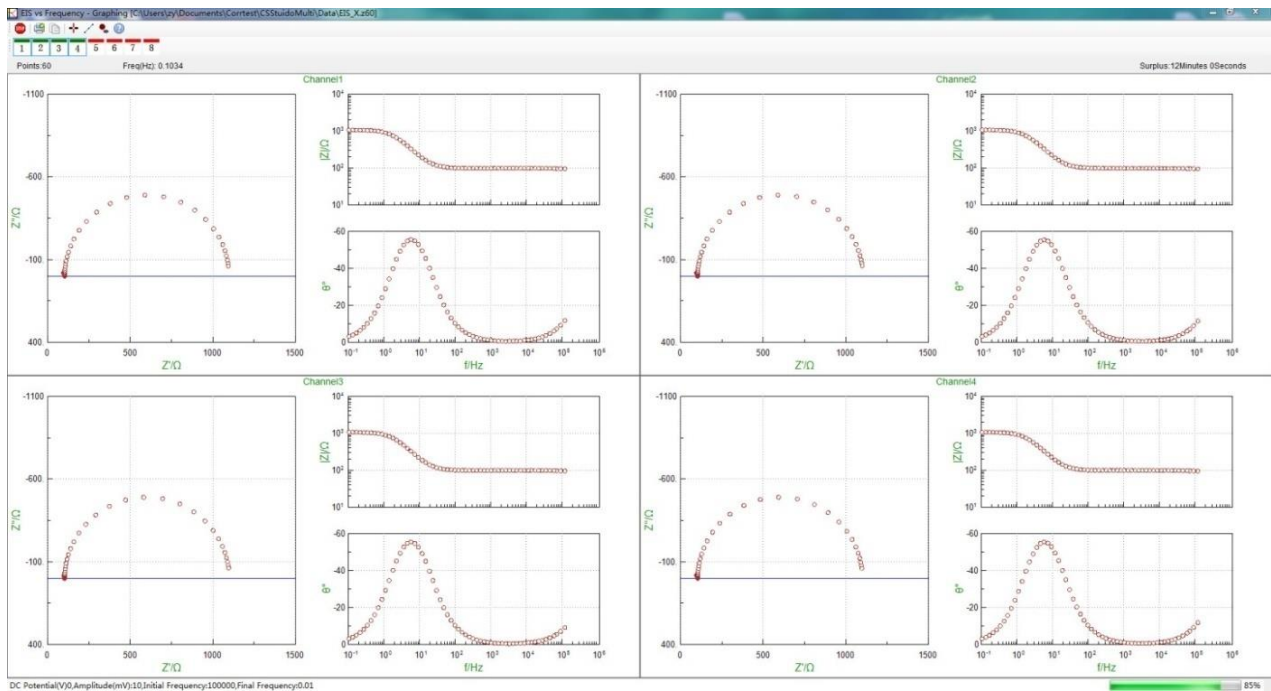
You can also choose different techniques in each channel. Set the parameters for each experiment one by one, and run each experiment independently. As is shown in right picture, EIS, Galvanostatic charge & discharge, Cyclic Voltammetry, and polarization curve test are tested.
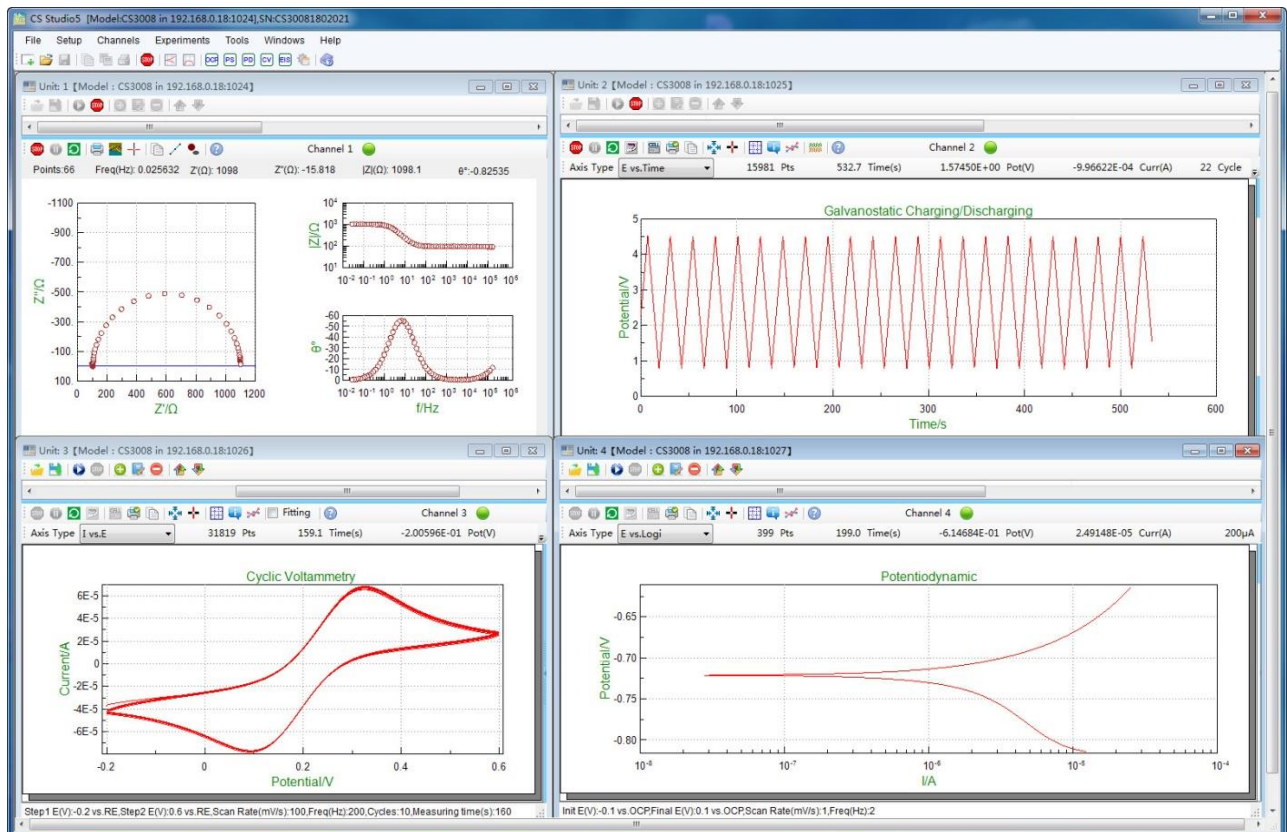
Standard supply for a set CS3104 multichannel potentiostat:

Instrument host *1

CS studio software package *1

Power cable * 1

Ethernet cable *1

Cell/Electrode cable *8 pcs

Dummy cell *4

Manual *1

After-sales Service

1. Warranty period: 5 years.

2. Provide manual, software installation video & training videos.

3. Free repair service

4. Lifetime software upgrading and technical service.