

## Potentiostat /Galvanostat



### **CS300M Single-Channel Potentiostat/Galvanostat: Precision and Versatility for Electrochemical Research**

The **CS300M** is a top-tier single-channel potentiostat/galvanostat that offers unparalleled precision and versatility for a wide range of electrochemical applications. Whether you're conducting **corrosion studies**, **battery research**, **electrochemical analysis**, **sensor development**, or working within the fields of **life sciences** and **environmental chemistry**, the CS300M ensures the most accurate measurements to meet your research needs.

#### **Key Benefits of the CS300M:**

- **Precision Control for Reliable Results:** Achieve **accurate** and **stable electrochemical measurements** with the CS300M's high-performance potentiostat/galvanostat and zero-resistance ammeter (ZRA).
- **Wide Voltage & Current Range:** With a **±10V potential control range** and **±2A current control range**, the CS300M covers a broad spectrum of electrochemical research applications.

- **Unmatched Sensitivity:** Offering **10<sup>-9</sup>V potential resolution** and **1pA current resolution**, the CS300M delivers ultra-sensitive results for even the most demanding experiments.
- **Advanced IR Compensation:** Supports **current ranges up to ±100A** with an external booster, ensuring high performance across a wide range of applications.

### Supported Electrochemical Techniques:

- **Voltammetry Methods:**
  - **Linear Sweep Voltammetry (LSV)**
  - **Cyclic 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**
- **Corrosion Measurements:**
  - **Cyclic Polarization Curve (CPP)**
  - **Linear Polarization Curve (LPR)**
  - **Electrochemical Potentiokinetic Reactivation (EPR)**
  - **Electrochemical Noise (EN)**
  - **Zero Resistance Ammeter (ZRA)**
- **Battery Testing:**
  - **Charge and Discharge**

- **Galvanostatic Charge and Discharge (GCD)**
- **Potentiostatic Charging and Discharging**
- **Potentiostatic Intermittent Titration Technique**
- **Galvanostatic Intermittent Titration Technique**

### **Comprehensive Software for Enhanced Data Analysis:**

- **CS Studio Software:** The CS300M is equipped with **CS Studio**, a powerful software suite that provides an intuitive interface for analyzing data. With tools for smoothing, differentiation, and integration, it streamlines your workflow for a variety of electrochemical techniques.
- **Non-Linear Fitting & Polarization Curve Analysis:** The CS300M supports in-depth analysis of polarization curves using the **Butler-Volmer equation** to calculate critical parameters such as Tafel slope, corrosion current density, polarization resistance, and corrosion rate.
- **Advanced Battery & EIS Analysis:** Evaluate **battery performance** by analyzing charge/discharge efficiency, capacity, and energy. The **Electrochemical Impedance Spectroscopy (EIS)** feature also allows for precise analysis using Bode, Nyquist, and Mott-Schottky plots, with built-in fitting functions for custom equivalent circuits.
- **Robust Data Management:** The CS300M ensures **real-time data saving**, even during power failures, and supports **automated combination tests**, allowing for more efficient research workflows.

### **Versatile Applications Across Industries:**

- **Electrochemical Analysis & Sensors:** Perfect for developing and testing electrochemical sensors, offering accuracy for even the most sensitive applications.
- **Battery Research:** Ideal for materials such as **Li-ion batteries**, **solar cells**, **fuel cells**, and **supercapacitors**, enabling precise testing and optimization.
- **Corrosion Studies:** The CS300M excels in **corrosion research**, analyzing materials in various environments such as **water**, **soil**, and **concrete**.
- **Corrosion Inhibitor Evaluation:** Quickly assess the performance of **corrosion inhibitors**, **water stabilizers**, **coatings**, and **cathodic protection** systems.

### **Included Standard Accessories:**

- CS300M Instrument Host x1
- CS Studio Software x1
- Power Cable x1
- USB Cable x1
- Cell Cables x2
- Dummy Cell (1k $\Omega$ ||100 $\mu$ F) x1
- User Manual x1

### **Comprehensive Service & Support:**

- **Lifetime Software Upgrades:** Enjoy **free software upgrades** and ongoing **technical support** for the lifetime of your instrument.
- **Easy Installation:** Access **step-by-step installation guidance**, including manuals and software installation videos, ensuring a smooth setup process.

The **CS300M** is the **ultimate solution** for electrochemical research. Whether you're exploring corrosion mechanisms, testing battery performance, or developing sensors, this instrument offers the precision and versatility your work demands.