

# CS5010B Power Booster

Single-channel potentiostat (CS350M/ CS310M/ CS300M etc) can achieve maximum  $\pm 2A/10V$  output when it's used alone. This value is  $\pm 1A/10V$  for each channel of bipotentiostat (CS2350M/CS2150M) and multichannel potentiostat (CS310X). When it requires higher current and applied voltage, we have power booster to meet this requirement. The combination of potentiostat and a CS5010B booster can achieve  $10A/50V$  output current/voltage. The combination is for applications of fuel cell, water splitting, Cylindrical cell, pouch battery, and battery cell testing.



## Key specifications

- Maximum applied potential:  $\pm 50V$
- Maximum applied current:  $\pm 10A$  AC/DC
- Current range: 10A fixed
- Compliance voltage:  $\pm 50V$
- EIS frequency range:  $1\mu Hz \sim 10kHz$
- Communication: RS485

## Techniques

The techniques of the combination depends on the potentiostat that CS5010B connects to. A full-featured potentiostat includes the following functionalities:

**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), Chronoamperometry (CA), Chronocoulometry (CC)

**Voltammetry:** 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)

**Electrochemical Impedance Spectroscopy:** Potentiostatic EIS (Nyquist, Bode), Galvanostatic EIS, Potentiostatic EIS (Optional freq.), Galvanostatic EIS(Optional freq.), Mott-Schottky, Potentiostatic EIS vs. Time (Single freq.), Galvanostatic EIS vs. Time (Single freq.)

**Corrosion Measurements:** Cyclic polarization curve (CPP), Linear polarization curve (LPR), Electrochemical Potentiokinetic Reactivation (EPR), Electrochemical Noise (EN), Zero resistance Ammeter (ZRA)

**Battery testing:** Battery Charge and Discharge, Galvanostatic Charge and Discharge (GCD), Potentiostatic Charging and Discharging (PCD), Potentiostatic Intermittent Titration Technique (PITT), Galvanostatic Intermittent Titration Technique (GITT)

**Amperometric:** Differential Pulse Amperometry (DPA), Double Differential Pulse Amperometry (DDPA), Triple Pulse Amperometry (TPA), Integrated Pulse Amperometric Detection (IPAD)

**Stripping Voltammetry:** Potentiostatic Stripping, Linear Stripping, Staircase Stripping, Square Wave Stripping, Differential Pulse Voltammetry Stripping, Normal Pulse Voltammetry Stripping, Differential Normal Pulse Voltammetry Stripping

**Extensions:** Data Logger, Electrochemical Stripping/ Deposition, Bulk Electrolysis with Coulometry (BE),  $R_s$  Measurement

## Supply list of CS5010B

- CS5010B instrument
- Power cable
- Connection cable for communication(1.5m)
- Electrode connection cable (1.5m)
- WE/CE copper nose-copper nose electrode cable
- RE/SENSE potential sampling cable
- Tool kit
- High power dummy cell