ACM Instruments

Gill AC BI-STAT Datasheet

The Gill AC BI-STAT is our bi-potentiostat system accommodating 2 Gill AC's each featuring a Potentiostat, Galvanostat and Zero Resistance Ammeter with integral Frequency Response Analyser and Sweep Generator. All within one neat enclosure the same size as our standard Gill AC. It is a highly versatile instrument, and can be used in a variety of modes:

- Two independent and isolated Gill AC Instruments that can be run independently, even in the same cell.
- Operated together including our High Speed Sweeps software
- Operated together in a single cell with one Auxiliary, one Reference and two working electrodes in the following ways:

  a) Ability to monitor the galvanic current flowing between two test electrodes, WE1 and WE 2 at a rate of 50 readings per second, which act as if they are coupled by wire. Polarisations can be applied to the two test electrodes at the same time and the current response monitored from both WE 1 and WE2.

  b) As A, except with the ability to apply an offset DC polarisation between WE1 and WE2. Polarisations can then be applied to the offset couple and the resultant current response obtained from both electrodes.

  c) The ability to apply quite different polarisations to the two test electrodes at the same time.

Total Care

When you purchase your Gill AC BI-STAT you will receive the total care package for free, this includes:

1) **FREE test box and troubleshooter software**, to help solve problems quickly in the lab and to ensure the instrument is giving reliable results.
2) **FAST e-mail and telephone support**, and unlike elsewhere you will get through to the technical staff who designed and made your instrument and software.
3) **Two year warranty,** so that if your instrument does go down it does not cost. (Can be extended to five years at low cost)
4) **FREE software updates,** to ensure you have the best experience possible when using our instruments.
5) **FREE website resources**, Manuals and technical help are available on our website.

Software

When you purchase your Gill AC BI-STAT you receive our standard software at no extra cost, this includes:

Current & Voltage Noise, AC Impedance, Cyclic Sweeps, LPR {Sweep / Step}, Potentiostatic, Long Term {Potential / Galvanic / LPR}, Corrosion Rate LPR. IR Compensation, Harmonic Analysis, Galvanodynamic Sweeps.

These standard techniques can even be removed for cost saving.

Software functions with any Standard PC using Windows 95, 98, ME, NT4, 2000 or XP (we recommend XP for improved reliability). A complete suite of standard AC and DC techniques is supplied with the popular Sequencer.

Cables - Everything needed to 'get you going': three BNC 1.2m in length, terminating in gold plated crocodile clips. Mains cable (UK, Euro, USA, Australian or bare as appropriate). Serial RS 232 cable 2m for connection to a standard PC.

Low Noise Susceptibility - optically Isolated from PC, fully shielded, torroidal transformer, mains rejection measurement, filters on mains power supply.

Self Calibration - active self calibration at the start of each test, to remove thermal induced offsets.

Manuals - A full manual including application notes housed in a water resistant book.

Included Delivery - to any part of the world typically covered by courier companies.

Install CD

Manual

Serial Cable

BNC Electrode Cables

Mains Cable

Serial Adaptor

Technical Specifications	
Case Dimensions	34 * 26 * 13 cm
Power Supply	110 / 230 VAC 50-60Hz
Weight	3.8Kg
Electrode Cable Length	1.2 Meters (can be increased)
Noise & Ripple	Less than 3µV
Potentiostat	
Compliance Voltage	± 15 V
Sweep Range	± 3 V (can be increased)
Sweep Resolution	25 µV
Current Output	± 500 mA
RE Input Impedance	Greater than 10_{12} Ohms
Frequency Response	30 KHz (1 to 100K Ohm load)
Measurement Accuracy	21 Bit A/D (full mains rejection)
Measurement Resolution	1 µV ± 0.0015% nonlinearity
Potentiodynamic Sweep Rate	200 mV / Second
Zero Resistance Ammeter	
Current Range	10 pA to 500 mA (Eight Ranges)
Counter Resistors	1, 10, 100, 1K, 10K, 100K, 1M, 10MΩ
Input Offset Voltage	Less than 10 µV
Galvanostat	
Current Output	± 10 pA to 500 mA
Potential Resolution	1 µV ± 0.0015% nonlinearity
Frequency Response Analyzer	
Frequency Range	10 µHz to 30 KHz
Amplitude	1 to 232 mV
Impedance Error	< 2% for 1 to 100K Ohm Loads
Theta Error	< 1 ° for 1 to 100K Ohm Loads
Averaging	Configurable adaptive averaging
Sample Rate	1 MHz (true continuous sample rate)
ADC	12 Bit
DAC	12 Bit
Operational Temperature	-5 °C to 72 °C
Calibrated Temperature	25 °C

Gill AC Fast Sweep

On the Gill AC BI-STAT the two potentiostats can be combined to produce faster sweeps. The Fast Sweep Generator enables the user to generate sweeps made from 180 points per second, whilst obtaining data at a rate of 50 to 60 readings per second. This enables Sweep Rates up to 10 Volts per second.

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