



Instruments

Weld Tester Data Sheet

With five independent ZRAs a weld tester is the ideal instrument when testing segmented or mixed metal systems. A full range of AC and DC techniques are included for simultaneous testing of all 5 ZRAs. Each ZRA has the same frequency response, count resistor ranges and power as a standard Gill AC ZRA.



Weld Tester Standard Features

Capabilities - internal Potentiostat, 5x Zero Resistance Ammeters, Frequency Response Analyser and Galvanostat.

Software - functions with any Standard PC using Windows 2000, XP, Vista or Windows 7. A complete suite of standard AC and DC techniques is supplied with the popular Sequencer.

High Power - 2 Amp main ZRA, 500mA other four ZRAs.

Cables - Everything needed to 'get you going': eight or twelve electrode cables, 2.5m 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.

Manuals - A full manual including application notes on CD

Warranty - 2 years return to base, can be extended to 8 years.

Included Techniques - Current & Voltage Noise [W], AC Impedance [W], Cyclic Sweeps [W], LPR {Sweep / Step} [W], Potentiostatic [W], Long Term {Potential / Galvanic / LPR} [W], Harmonic Analysis, Galvanodynamic Sweeps, IR Compensation, Corrosion Rate LPR. [W] = weld testing on 1 to 5 ZRAs.

Channels - 12 or 8 sequential channels.

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

Options

Channels - Weld Testers can be specified with 1 to 12 channels. Field Machine Weld tester is also available (1 to 4 channels).

Software - DC only techniques cost saving. Custom elements, especially logging techniques created to your exact specification, call us, we are always glad to oblige. A Weld Tester can also be controlled from your own software with our supplied DLLs (dynamic link libraries).

Offsetting Ability – Tests performed around individual rest potentials

Femto Amp - Increased impedance measurement by two decades.

Extra Inputs - 6 Voltage or temperature inputs (such as K-Type thermocouples),

Higher Power – Up to +/- 30 Volts and 50 Amps.

Cables - longer, shorter, different probe connections.

Training - On site or off site, including installation.

Internet Control - remote operation anywhere in the world.

Critical Pitting Temperature - determination of local corrosion critical temperature,

Electrical Resistance - precision measurement of ER probes.

Bubble Test software addition for testing inhibitors.

Warranty - extendable to 8 years.

Included Accessories



Installation CD



Manual on
Installation CD



Serial Cable



Electrode Cables



Mains Cable



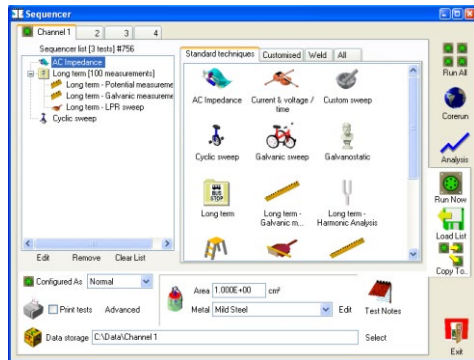
USB to Serial
adapter



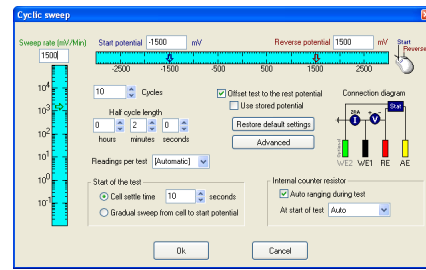
Total Tester
Test box

Software Overview

At the heart of an ACM system is a Sequencer and Core Running application, now into Version 5 the emphasis is on reliability. Working in unison, Sequencer setups up a sequence of techniques and Core Running collects data from a sequence of techniques. The Sequencer was designed to be easy to use, with an intuitive interface, one that is common across the range from Data Collection to Analysis; learning effort is kept to a minimum.



Sequencer – available techniques are displayed to the right, they are added to the sequence list on the left. A sequence list can be copied across channels, or channels can be treated individually.

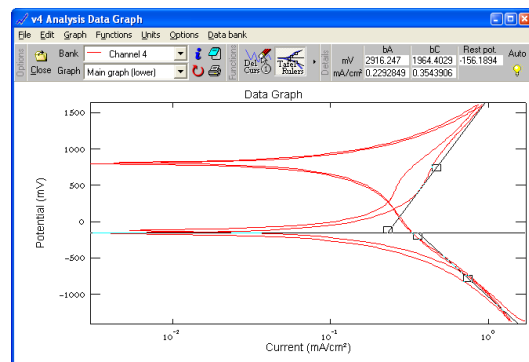


Typical technique setup page, shown is **Cyclic Sweep**. Each page smartly remembers last settings, keeping overall setup time to a minimum. Each page displays a connection diagram, displaying which parts of the instrument are in use, and which electrodes should be connected.

Test Notes allows entry of a complete ASTM G107 notebook, hundreds of optional fields can be entered to catalogue your experiment, metals, temperature, environment, etc..., fields are saved in a global database for searching and cross-referencing at a later date. Onto data collection, pressing one button in the sequencer **Run All** starts data collection:



Core Running – data collection control at your fingertips. View each channel individually, or tile all, instantly display any one of the last 10 collected tests, printing on operator demand.



Analysis – display multiple plots on same graph, smooth, delete points, label, zoom, all catered for. A raft of standard analysis functions is included such as Tafel rulers, AC Nyquist Circle fits, C&V FFT analysis, point to point.

Once in the analysis, data is quick to load, browse and display, test parameters are obtainable, including rest potentials. A quick export to a multitude of packages such as Excel is supported; graphs can be clipped into a word document.

Technical Specifications	
Case Dimensions	53 * 21 * 40 cm
Power Supply	110 / 230 VAC 50-60Hz
Weight	12Kg
Electrode Cable Length	2.5 Meters (can be increased)
Potentiostat	
Compliance Voltage	± 15 V
Sweep Range	± 3 V (can be increased)
Sweep Resolution	25 µV
Current Output	± 2 A (main ZRA) ± 300mA others
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 2 A (main ZRA) ± 300mA others
Counter Resistors	1, 10, 100, 1K, 10K, 100K, 1M, 10MΩ
Input Offset Voltage	Less than 10 µV
Galvanostat	
Current Output	± 10 pA to 2 A (main ZRA only)
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

Requirements

Operating System - Windows XP SP3, Vista, 7, 8, 10 and 11.

Minimum PC Requirements – Any PC capable of running Microsoft Windows with a free USB or RS232 port.



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