



Mini Field Machine Data Sheet

A Field Machine in miniature, we have packed a 700 mA potentiostat, 700 mA auto ranging ZRA, 18 bit sweep generator, two 24 bit ADC's, DSP, powerful battery, DC:DC converter and an isolated interface into an underwater diver's case, strong enough to drive over with a Land Rover yet as small as a lunch box. A Mini Field Machine is the last word in portability without making sacrifices.



Mini Field Machine Standard Features

Capabilities - internal Potentiostat, Zero Resistance Ammeter.

Software - functions with any Standard PC (suited portable can be suggested / purchased at time of order) using Windows 95, 98, ME, NT4, 2000 or XP (we recommend XP for improved reliability). A complete suite of standard DC techniques is supplied with the popular Sequencer.

Included Techniques - Current & Voltage Noise, Cyclic Sweeps, LPR {Sweep / Step}, Potentiostatic, Long Term {Potential / Galvanic / LPR}, Corrosion Rate LPR.

Cables - Everything needed to 'get you going': electrode cables 2.5m terminating in banana plugs, a universal adaptor is supplied also for quick wiring to any probe type. Mains cable (UK, Euro, USA, Australian or bare as appropriate). 2x Serial RS 232 cables 2m & short. Car cigarette adaptor and battery cable.

Low Noise Susceptibility - optically Isolated from PC, fully shielded, mains rejection measurement.

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

Power - Mains & 12V input, inbuilt charger, 12V output for portable computer.

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

Warranty - 2 years return to base, can be extended to 5 years.

Channels - Single channel (up to 4 can be specified)

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

Options

Channels - expandable to 4 channels.

Software - custom elements, especially logging techniques created to your exact specification, call us, we are always glad to oblige. A Mini Field Machine can also be controlled from your own software with our supplied DLLs (dynamic link libraries).

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

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,

Extra Techniques – IR Compensation. Standard included techniques can be removed for cost saving.

Warranty - extendable to 5 years.

Included Accessories



Install CD



Manual



Universal
Interfaces



Electrode Cables



Charger



Car Adaptor



2 Serial Cables



Battery Cable



Mains Cable



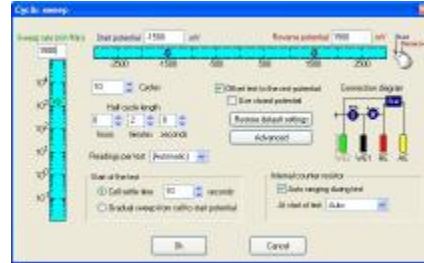
Carry Bag

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.

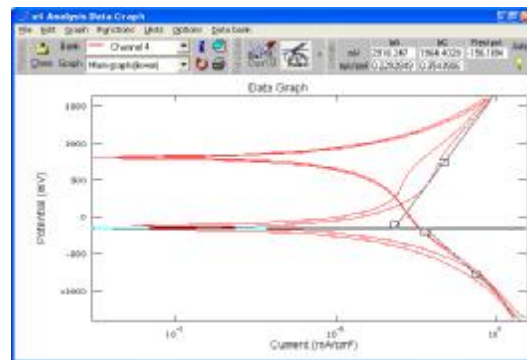


Typical technique setup page, shown is **Cyclic Sweep**. Each page smartly remembers last settings, keeping overall setup time to a minimum. Each page displays a connection diagram, displaying which parts of the instrument are in use, and which electrodes should be connected.

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 finger tips. 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	25 * 27 * 12 cm
Power Supply	110 / 230 VAC 50-60Hz, or 12V DC
Internal Battery	Lead Acid 12V
Weight	3 Kg
Electrode Cable Length	2.5 Meters (can be increased)
Noise & Ripple	Less than 4 μ V
Potentiostat	
Compliance Voltage	± 12 V
Sweep Range	± 3 V (can be increased)
Sweep Resolution	25 μ V
Current Output	± 700 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 μ V \pm 0.0015% nonlinearity
Potentiodynamic Sweep Rate	200 mV / Second
Zero Resistance Ammeter	
Current Range	10 pA to 700 mA (Eight Ranges)
Counter Resistors	1, 10, 100, 1K, 10K, 100K, 1M, 10M Ω
Input Offset Voltage	Less than 10 μ V
Galvanostat	
Current Output	± 10 pA to 700 mA
Potential Resolution	1 μ V \pm 0.0015% nonlinearity
Operational Temperature	-5 $^{\circ}$ C to 72 $^{\circ}$ C
Calibrated Temperature	25 $^{\circ}$ C

Requirements

Operating System - Windows 95, 98, ME, NT4, 2000 or XP (we recommend XP for improved reliability).

Minimum PC Requirements – Standard PC with free serial port, Pentium 100, 64MB RAM (dependant on operating system), 40MB free disc space, CD Rom drive.



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