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## Field Unit Data Sheet

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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, isolating DC:DC converter and an isolated interface and a mini PC into an underwater diver's case, strong enough to drive over with a Land Rover yet as small as a lunch box. A Field Unit is the last word in portability without making sacrifices.



### Field Unit Standard Features

**Capabilities** - Internal Potentiostat, Zero Resistance Ammeter.

**Software** – Built in PC supplied with Windows 2000 Professional. 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** - Isolated power supply, fully shielded, mains rejection measurement.

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

**Power** - 15V DC input.

**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.

**Extra Techniques** – Localized Corrosion Monitoring (L.C.M.<sup>TM</sup>), 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



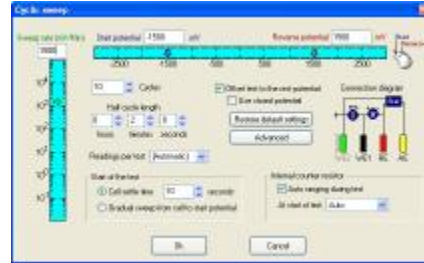
Carry Bag

## 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.

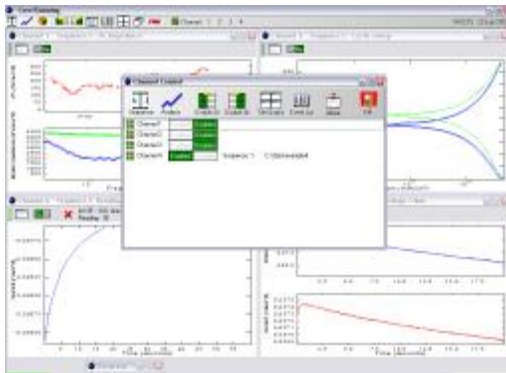


Sequencer – available techniques are displayed to the right, they are added to the sequence list on the left. A sequence list can be copied across channels, or channels can be treated individually.

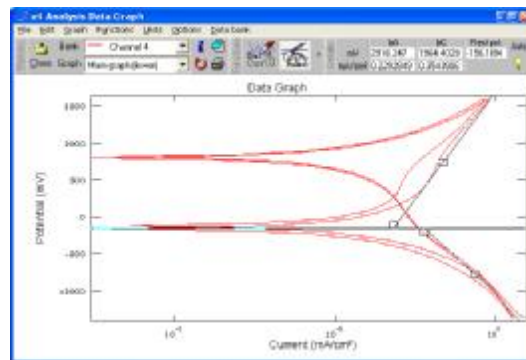


Typical technique setup page, shown is **Cyclic Sweep**. Each page smartly remembers last settings, keeping overall setup time to a minimum. Each page displays a connection diagram, displaying which parts of the instrument are in use, and which electrodes should be connected.

**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.

<b>Technical Specifications</b>	
<b>Case Dimensions</b>	25 * 27 * 12 cm
<b>Power Supply</b>	15V DC
<b>Weight</b>	3 Kg
<b>Electrode Cable Length</b>	2.5 Meters (can be increased)
<b>Noise &amp; Ripple</b>	Less than 4 $\mu$ V
<b>Potentiostat</b>	
<b>Compliance Voltage</b>	$\pm$ 12 V
<b>Sweep Range</b>	$\pm$ 3 V (can be increased)
<b>Sweep Resolution</b>	25 $\mu$ V
<b>Current Output</b>	$\pm$ 700 mA
<b>RE Input Impedance</b>	Greater than 10 <sup>12</sup> Ohms
<b>Frequency Response</b>	30 KHz (1 to 100K Ohm load)
<b>Measurement Accuracy</b>	21 Bit A/D (full mains rejection)
<b>Measurement Resolution</b>	1 $\mu$ V $\pm$ 0.0015% nonlinearity
<b>Potentiodynamic Sweep Rate</b>	200 mV / Second
<b>Zero Resistance Ammeter</b>	
<b>Current Range</b>	10 pA to 700 mA (Eight Ranges)
<b>Counter Resistors</b>	1, 10, 100, 1K, 10K, 100K, 1M, 10M $\Omega$
<b>Input Offset Voltage</b>	Less than 10 $\mu$ V
<b>Galvanostat</b>	
<b>Current Output</b>	$\pm$ 10 pA to 700 mA
<b>Potential Resolution</b>	1 $\mu$ V $\pm$ 0.0015% nonlinearity
<b>Operational Temperature</b>	-5 $^{\circ}$ C to 72 $^{\circ}$ C
<b>Calibrated Temperature</b>	25 $^{\circ}$ C
<b>Mini PC</b>	900 MHz, 64MB 4.3GB storage



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