Voltech

DC1000

Precision DC Bias Current Source

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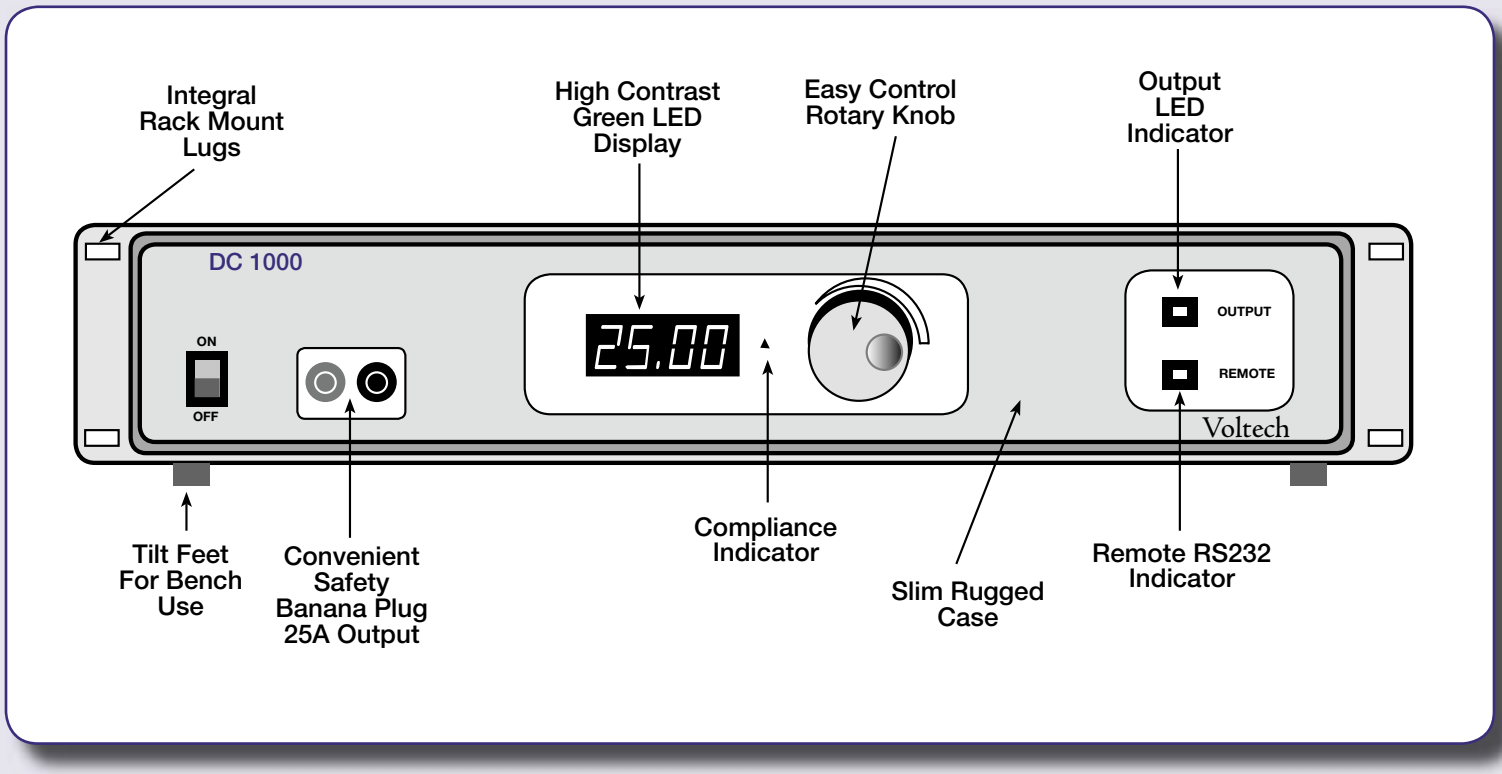
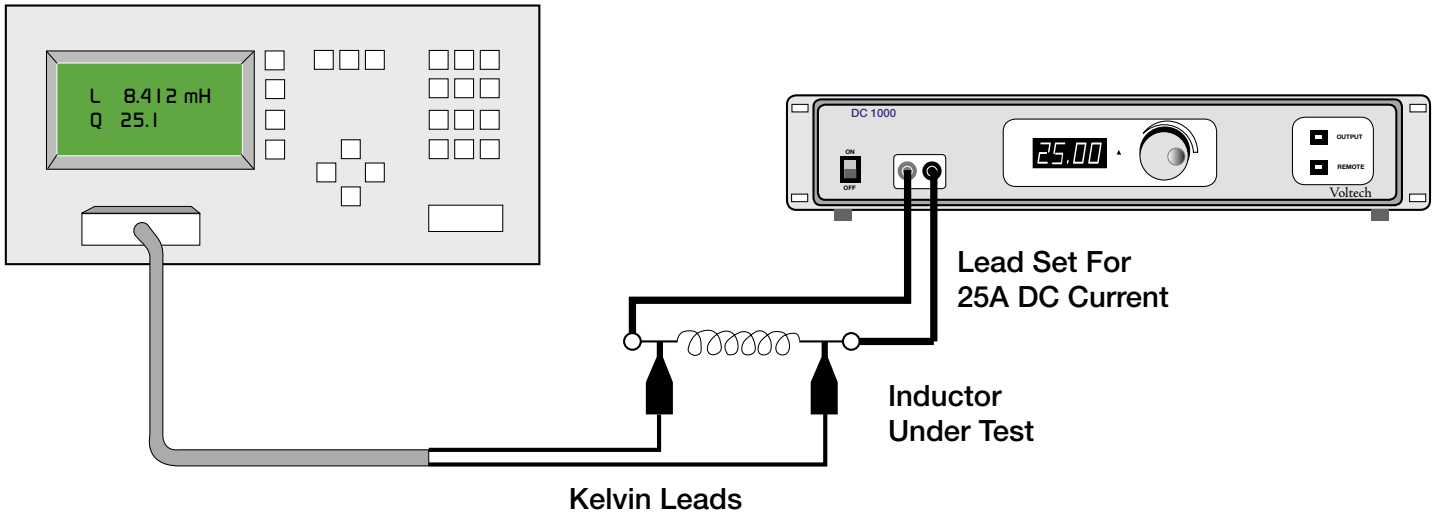


The DC1000 is used to characterize wound components that are intended for use in high current DC power supplies and DC-to-DC converters. It applies bias current to transformers and chokes for impedance testing under working conditions.

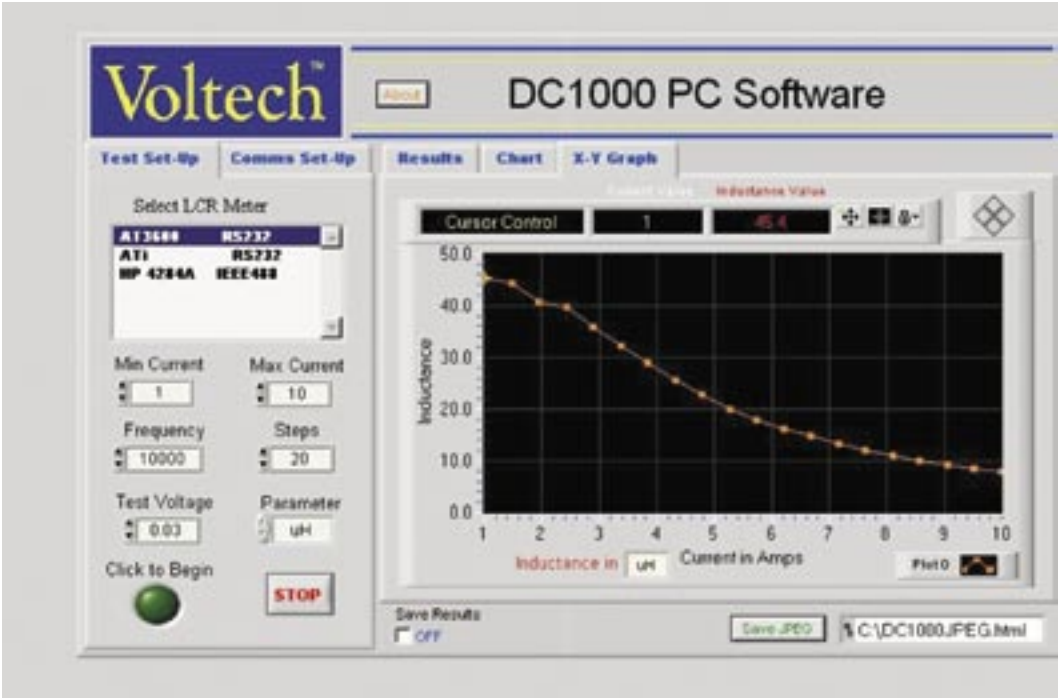
- **Superior By Design**
  No compensation required for high accuracy measurements.
- **Easy To Use**
  Switch on and use.
  Rotary knob for easy current setting.
- **Versatile**
  Compatible with most LCR meters as well as the Voltech AT*i* and AT3600 automatic transformer tester.
- **Safety Interlock**
- **Smooth 25A Linear Power**
- **Stackable to 250A**
  (up to 10 units in parallel)
- **RS232 For Remote Control**
- **20Hz to 3MHz Dynamic Range**

Applications

LCR Meter DC1000 Set-Up



DC1000 Software

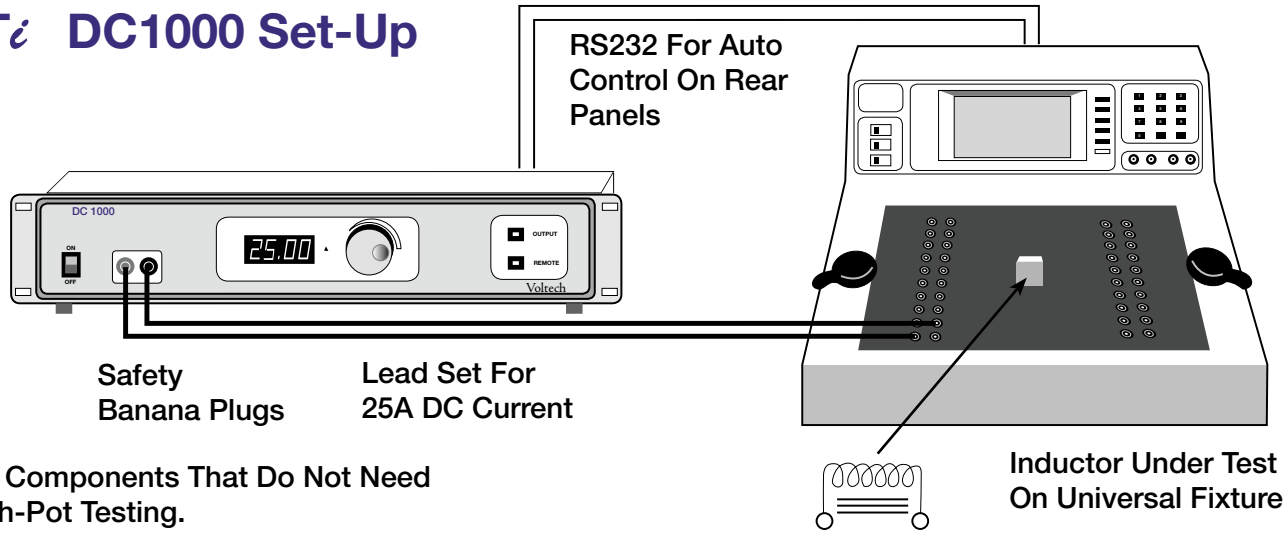


Optional Software For Use With AT*é*, AT3600 and LCR Meters

- Plot Inductance Saturation Curves
- Tabulate Results
- Save Graphs
- Export Results

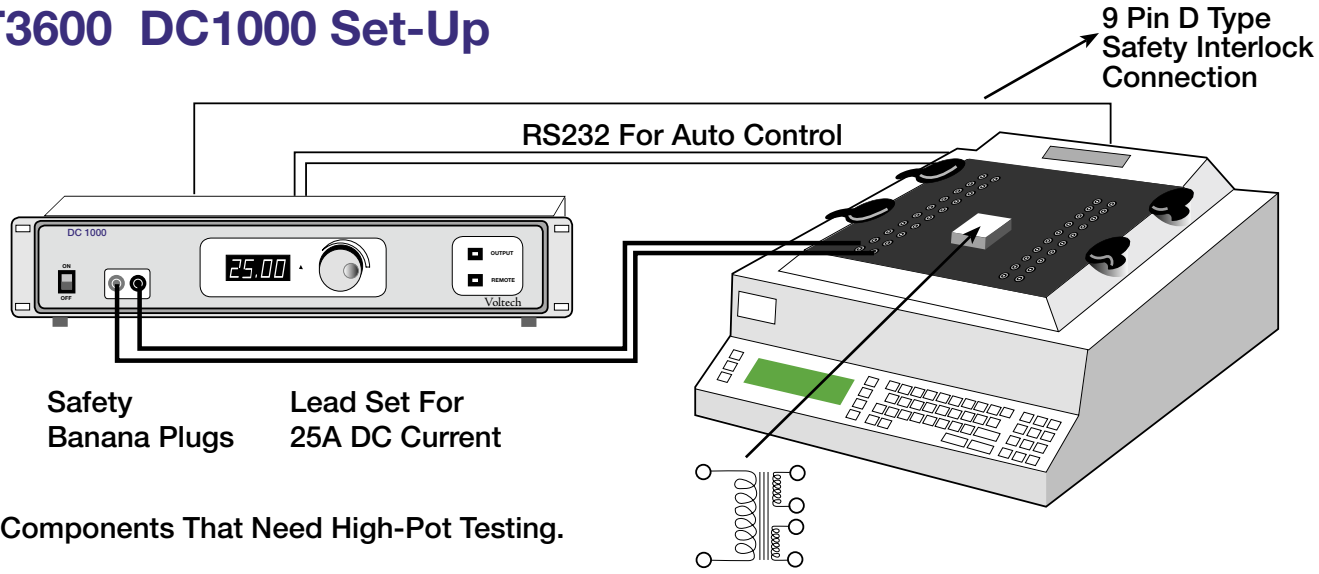
Applications

AT¿ DC1000 Set-Up



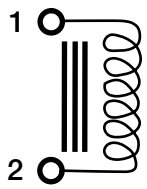
For Components That Do Not Need High-Pot Testing.

AT3600 DC1000 Set-Up



For Components That Need High-Pot Testing.

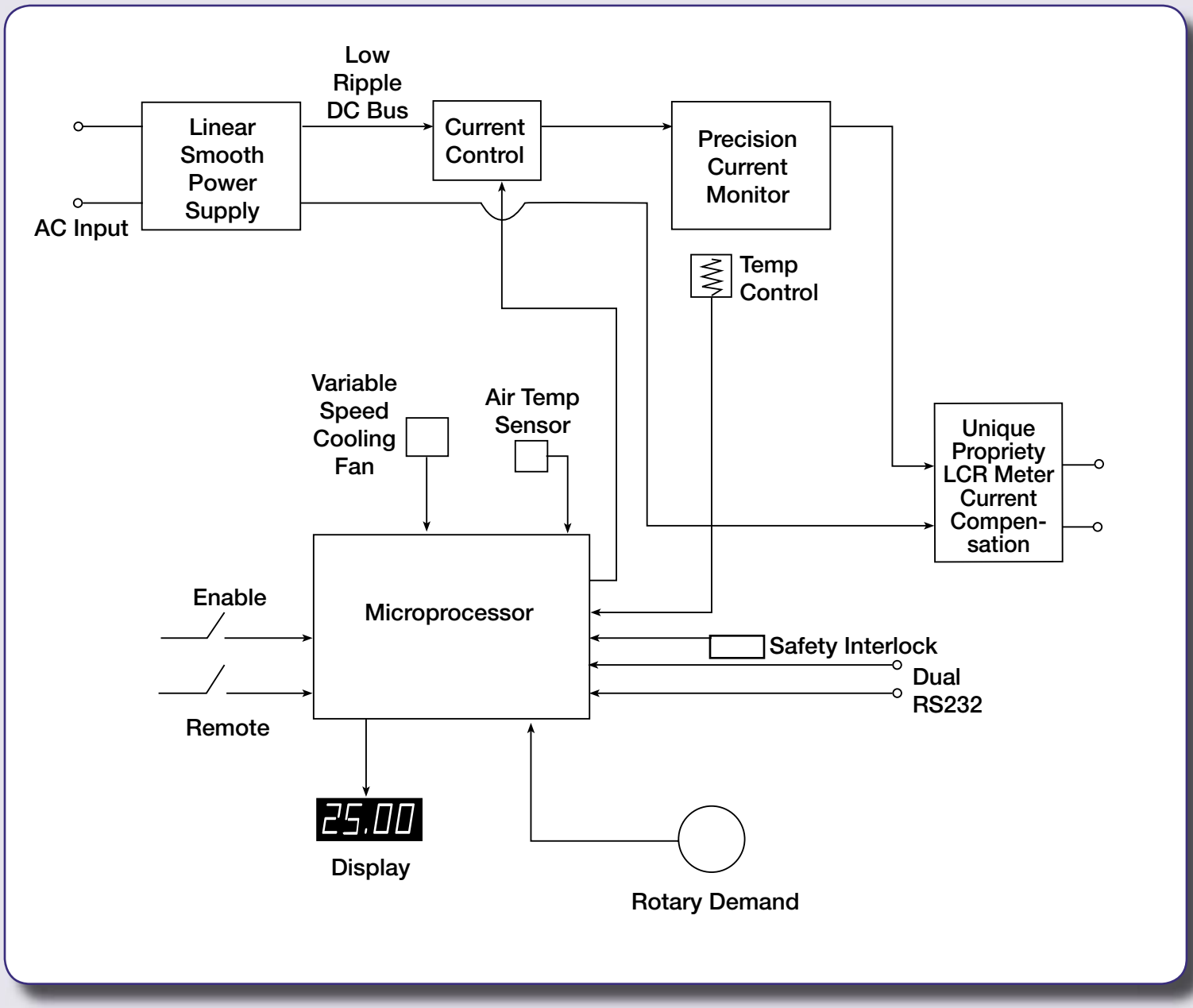
Voltech Test Program Editor

Voltech Program Editor	
 Inductance With External Bias	LSBX LPBX ZBX

Three New Tests Added For Automatic Testing Using Voltech AT¿ or AT3600

LSBX Inductance with external bias (series circuit)
LPBX Inductance with external bias (parallel circuit)
ZBX Impedance with external bias

Principles of Operation



The DC1000:

A new dimension in DC Bias testing.

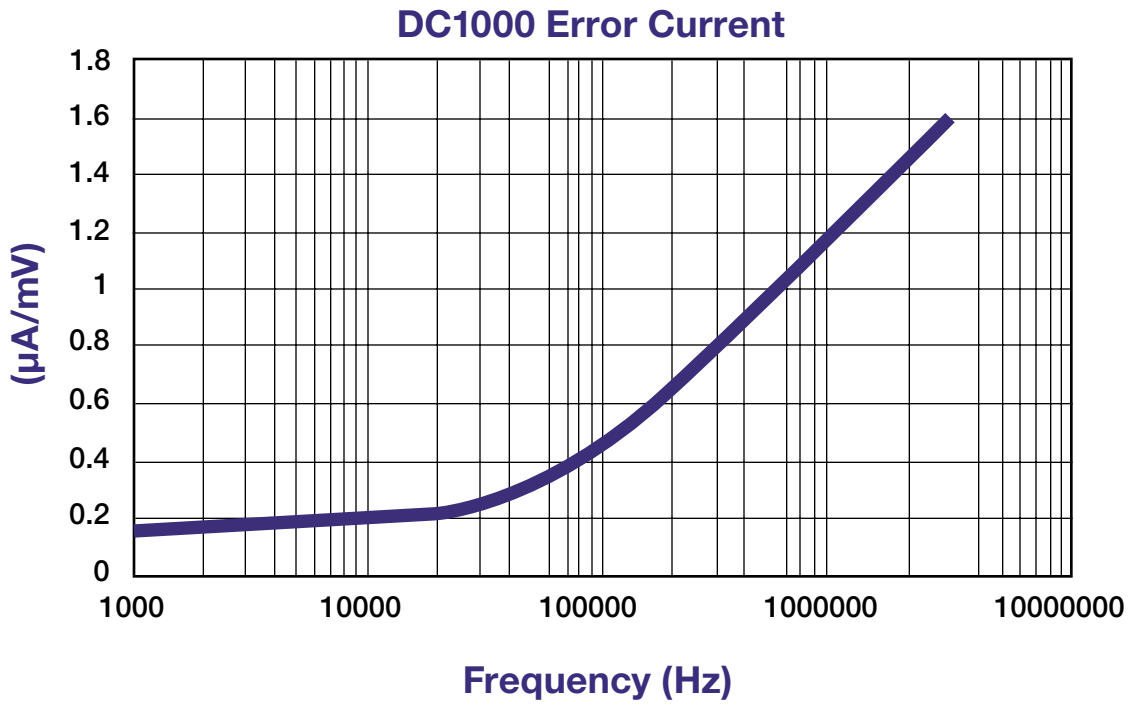
Smooth, linear power is delivered to the inductor under precision microprocessor control. Programming is performed on the front panel via a speed sensitive rotary control, or via a RS232 link. The key to the versatility of the DC1000 is its unique and proprietary current compensation technique that virtually eliminates the effect of the DC1000's impedance on the measurements made by the LCR meter.

Specifications

- Output capability: 0 to 25A; in 10mA steps
- Accuracy on supplied current ±0.5% of reading ±25mA.
- Compliance voltage: 5V pk.

Affect of the DC1000 on Inductance Readings

The affect the DC1000 has on an inductance reading is dependant on the test Voltage and frequency. The graph should be used to determine the affect for a particular test.



Example:

Measuring the inductance of a 2µH inductor at 0.2V, 100kHz:

$X_L = 2 \times \pi \times f \times L = 2 \times \pi \times 100kHz \times 2\mu H = 1.256\Omega$

Therefore inductor current at 0.2Vrms = 0.2 / 1.256Ω = 159.155mA

From the graph, the error current = 0.45µA/mV @ 100kHz

Which, for asignal of 0.2V = 200 x 0.45 µA = 90 µA

Therefore, the error in the measurement = 90 µA /159.155mA = 0.057%

Specifications

Supply Voltage:

Input Voltage: 100-125V / 200-250V AC 48-65Hz
Input Power: 400VA Max.
Fuse: 4AT

Environment:

Temperature: +5° to 40° C operating
Humidity: 10% to 80% RH non-condensing

Dimensions:

Height	88mm
Width	475mm
Length	255mm
Weight	10kg

DC1000 Back Panel

Interfaces

RS232 connection to ATℓ and AT3600 Transformer Testers

Safety Interlock

Protection for operators from back EMF when interlock connected to safety cage.

Variable Speed Cooling Fan

Runs fan at variable speed dependant on load and temperature for minimal noise.

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Ordering Information

Includes:

DC1000 CD - This contains the demo DC1000 PC software and an electronic version of the user manual.

30A Test Lead Set - One yellow and one black lead, with clips. Each lead is 150cm long.

9-Way RS232 Leads - These are for connection between your DC1000 and a PC or between your DC1000 and another DC1000

Safety Interlock Cable - This is for connection between your DC1000 and a Voltech AT3600, to allow easy integration into your safety system.

Safety Interlock Override Plug - This can be used in place of a safety system where there is no risk of dangerous voltages. This is only for use when not testing with high currents or voltages. We recommend using an approved safety system at all times. Please consult your safety officer.

Handle Assembly - This includes two handles, and the fixing hardware needed to attach them to your DC1000

Power Cord

Voltech

Voltech's customers include major household names and leading industrial companies in Asia, Europe and the Americas. Our world-wide network of trained distributors provides first level applications support and product service. Our main office and top level customer support facilities are based in the USA and UK.

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