

**IEC REFERENCE  
IMPEDANCE NETWORK**

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## HEALTH AND SAFETY AT WORK

Electrical devices can constitute a safety hazard. It is the responsibility of the user to ensure the compliance of the installation with any local acts or bylaws in force. Only qualified personnel should install this equipment, after reading and understanding this users guide. These operating instructions should be adhered to. If in any doubt, consult your supplier.



### **DANGER OF ELECTRIC SHOCK**

Only qualified personnel should install this equipment, after reading and understanding this user manual. If in doubt, consult your supplier.



### **RISQUE D'ELECTROCUTION**

L'installation de cet équipement ne doit être confiée qu'à un personnel qualifié ayant lu et compris le présent manuel d'utilisation. Dans le doute, s'adresser au fournisseur.



### **GEFAHR VON ELEKTRISCHEM SCHOCK**

Nur entsprechend ausgebildetes Personal ist berechtigt, diese Ausrüstung nach dem Lesen und Verständnis dieses Anwendungshandbuches zu installieren. Falls Sie Zweifel haben sollten, wenden Sie sich bitte an Ihren Lieferanten.



### **RISCHIO DI SCARICHE ELETTRICHE**

Solo personale qualificato può installare questo strumento, dopo la lettura e la comprensione di questo manuale. Se esistono dubbi consultate il vostro rivenditore.



## **SAFETY PRECAUTIONS**

- 1) The IEC Reference Impedance Network is constructed in compliance with the requirements of EN61010-1 and as such ensures the safety of the network and the user when normal precautions are followed.
- 2) The power source should be inserted in a socket with a protective ground contact.
- 3) The power source should be inserted before connections are made to measuring or control circuits.
- 4) This instrument must only be serviced by qualified personnel who understand the danger of shock hazards.
- 5) Remove all connections before removing any covers.
- 6) The electronic circuitry of this instrument is fully floating with respect to ground. If the instrument is opened and dangerous voltages (above 50V peak) applied to the input terminals then all the circuitry must be considered 'Live'.
- 7) The signal leads must be in good condition with no damage.

**IMPORTANT NOTE** for users of the IEC Reference Impedance Network (USA).

The USA version of the impedance network is fitted with a standard wall USA 3-pin wall outlet. For convenience, and for testing at 230V ac, Voltech has rated this outlet at up to 1000V to ground. To use this socket at 230V, a suitably rated plug and line cord must be used or extra safety precautions taken. Standard line cord assemblies may not have sufficient voltage rating and may be hazardous.



**EQUIPMENT CHECKLIST**

The following items comprise a complete instrument:

- 1 x Impedance Override Link.
- 2 x Red test lead. Stackable 4mm safety plugs. 370mm long.
- 2 x Black test lead. Stackable 4mm safety plugs. 370mm long.
- 1 x Red test lead. 4mm safety plug to bare wire. 750mm long.
- 1 x Black test lead. 4mm safety plug to bare wire. 750mm long.
- 1 x Green / Yellow test lead. Crimp ring to bare wire 750 mm long.
- 1 x Power lead.

**SPECIFICATION (Including Test Leads)**

Series Resistance 50Hz, 23°C ± 8°C	0.4 +0 – 0.02Ω
Series Reactance 50Hz, 23°C ± 8°C	0.25 ± 0.01Ω
Continuous Current	16A rms
Peak Current	±50A peak
Max Voltage	±1000V peak
Operating Temperature Range	5 to 40°C
Relative Humidity	10-80% RH non-condensing
Dielectric Strength: Input to Case	2kV DC, 1 minute.
Power Source	110-220V ±20% 48-65Hz Fuse 20mm 1AT 10W, 30VA max

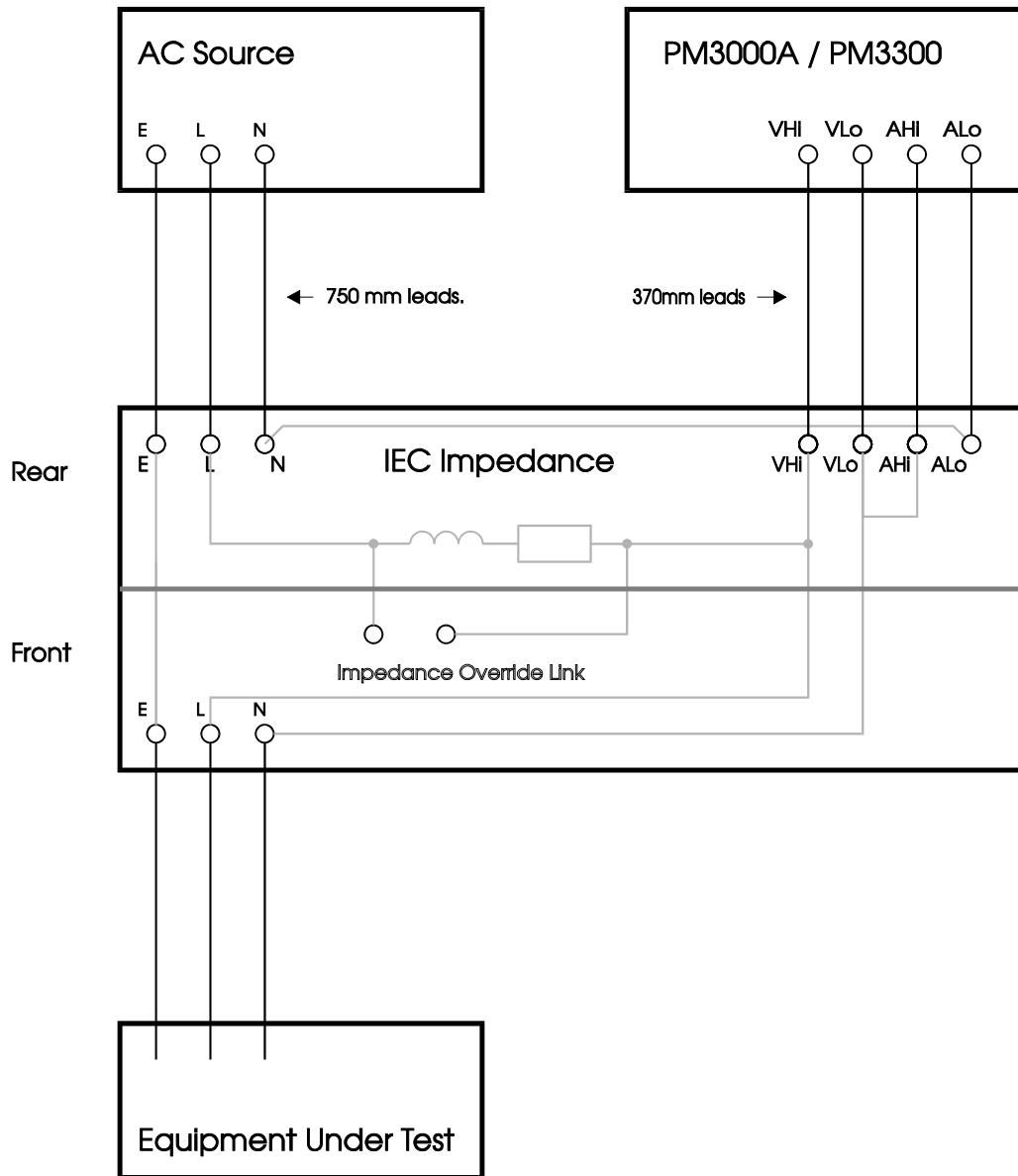
## OPERATION

The Impedance Network is designed to allow full compliance testing to EN61000-3-3 (voltage fluctuations) for single-phase loads. The internal resistance and inductance provide the required source impedance when used with the supplied test leads, connected as shown in the wiring diagram to a 50Hz source with an output impedance of  $<0.01\Omega$  (i.e. better than 0.2V regulation at 20A).

**IMPORTANT NOTE:** The Impedance Override Link must be removed when testing to EN61000-3-3. The link should be fitted when testing to EN61000-3-2 (EN60555-2) (harmonics). No other connection changes need be made.

Full details of testing to the above standards may be found in the Voltech IEC Software User Manual and Software help system. See [www.voltech.com](http://www.voltech.com)





Wiring Diagram for IEC555 Testing

EN61000-3-3 (Flicker)...	Impedance required	... NO link
EN61000-3-2 (Harmonics) ...	No impedance	... FIT link



## **WARRANTY**

This product is warranted against defect in materials and workmanship for a period of one year from date of shipment. During warranty period, Voltech Instruments will, at its option, either repair or replace products which prove to be defective.

For repair services under warranty, the instrument must be returned to a service centre designated by Voltech. Purchaser shall pre-pay shipment charges to service centre and Voltech will pay shipment charges to return instrument to purchaser.

## **Limitation of Warranty**

The foregoing warranty shall not apply to defects resulting from unauthorized modification or misuse, or operation outside specification of instrument. No other warranty is expressed or implied.

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## DECLARATION OF CONFORMITY

**Manufacturer's Name** Voltech Instruments Ltd  
**Manufacturer's Address** 148 Sixth Street  
Harwell Business Centre, Didcot  
United Kingdom

**declares, that the product**

**Product Name:** Impedance Network  
**Model Number:** IEC555 Reference Impedance Network  
**Product Options:** UK & European Versions

**conforms to the following Product Specifications**

**Safety:** BS EN 61010 (1993)  
**EMC:** BS EN 50081-2 (1992)  
BS EN 50082-1 (1992)

**Supplementary Information:** The product herewith complies with the requirements of the EMC Directives 89/336/EEC and 91/31/EEC and the Low Voltage Directive 73/23/EEC

Signed for on behalf of Voltech Instruments Ltd

  
Martin Whitley, Quality Manager

Didcot, United Kingdom September 16, 2008