



Time Electronics

5070 DuctorCal

Ductor Tester and Micro-Ohmmeter Calibrator Technical Manual



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All Time Electronics' instruments are subject to continuous development and improvement and in consequence may incorporate minor detail changes from the information contained herein.

1. General Description



The 5070 is a portable instrument suitable for calibrating high current Ductor Testers and Micro-Ohm meters. It contains 5 sets of high current rating standard resistors which simulate the resistance being measured.

It has full 4 terminal capabilities with extra large terminals for the current connection. Gold plated terminals are used throughout to reduce contact resistance and thermal emfs (for dc based instruments).

It has a substantial maximum continuous current rating but is also suitable for much higher transient/pulse test currents.

The internal resistance standards are all high quality manganin types with good long term stability and temperature coefficients.

2. Specifications

2.1. Technical Specification

Range	Current	Accuracy
50, 100, 150, 200 $\mu\Omega$	200A	0.8%
0.5, 1, 1.5, 2m Ω	100A	0.5%
5, 10, 15, 20m Ω	30A	0.2%
50, 100, 150, 200m Ω	10A	0.1%
0.5, 1, 1.5, 2 Ω	3A	0.1%

The currents shown are the continuous rated currents for both AC and DC.

Higher currents can be used intermittently as supplied by pulse driven instruments. With an ON to OFF time ratio of 1:10 or less, the allowed peak currents are 10x those specified above, with an upper limit of 1000A and with a maximum applied time of 4 seconds. At least 1 minute should be allowed between applications for cooling.

It is important to ensure there is adequate low resistance connections on the 5070's current terminals.

2.2. General Specification

Dimensions: W540 x H210 x D410mm

Weight: 11kg

3. Operation

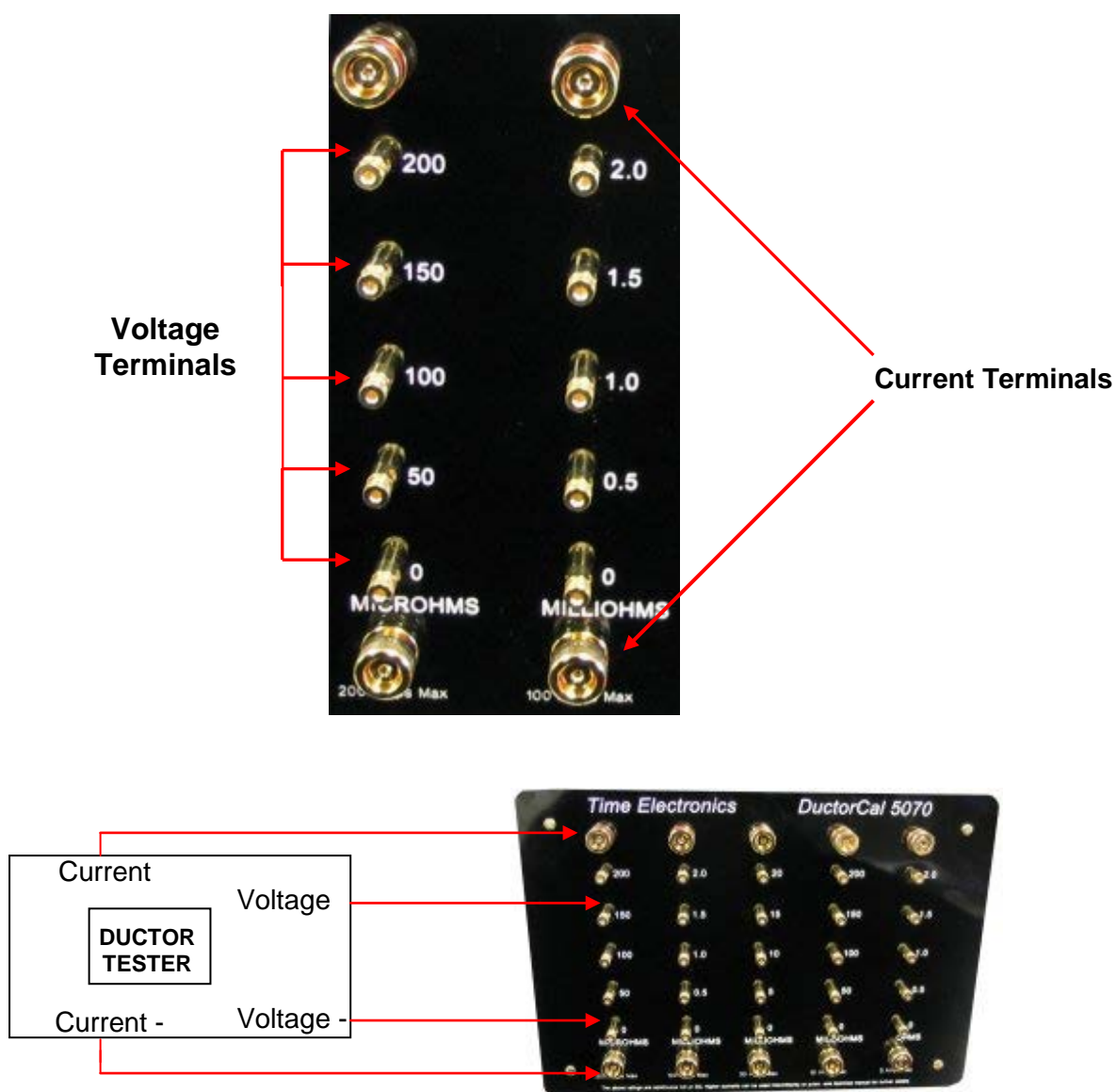
The front panel contains 5 rows of high quality gold plated terminals. All are suitable for 4mm plug insertion on screw compression connectors.

For current connection, large 25mm diameter terminals are provided. The outer ring can be completely removed for clamp connections.

It is important that the correct good quality spade terminations are used for currents above 50A since arking can cause damage to the terminals.

Connections to the voltage terminals is less critical, but to minimize errors to the thermal emf generation it is recommended that gold plated 4mm plugs are used.

Care should be taken to ensure that only the voltage terminals are used for the voltage measurement.



3.1. Example Connection

In the example below a T & R DSM200 is connected for calibration of the 200A range.



3.2. Operating Precautions

If thermal emfs are suspected the voltage terminal output should be checked on all positions with zero current flowing (current leads disconnected).

The zero position is checked with the voltage potential leads from the unit being calibrated, connected together on the 5070's '0' voltage terminal.

4. Guarantee & Servicing

Guarantee Period

This unit is guaranteed against defects in materials and workmanship for a period of **one year** from its delivery to the customer.

We maintain comprehensive after sales facilities and the unit can, if necessary be returned to us for servicing. During this period, Time Electronics Ltd will, at its discretion, repair or replace the defective items. For servicing under guarantee, the instrument type and serial number must always be quoted, together with details of any fault and the service required. The purchaser of the instrument must prepay all shipping charges. Time Electronics Ltd will pay return shipping charges.

This guarantee is void if servicing has been attempted by an unauthorised person or agent. If, during the guarantee period, failure is due to misuse or abuse of the unit, the repair will be put in hand without delay and charged unless other instructions are received.

Please note that if you require a new UKAS Certificate during the warranty period, this will be charged at the current rate on our price list.

Service After Guarantee Period

Even after the guarantee period has expired, Time Electronics Ltd., can still service your instrument. As the manufacturer, we have the specialised knowledge needed to keep your instrument in peak condition and we also maintain a comprehensive spare parts service.

Please enclose details of the service required and your full company details including a contact name when returning for servicing.

Returning Instruments

When returning instruments, please ensure that they have been adequately packed, preferably in the original packing supplied. **Time Electronics Ltd will not accept responsibility for units returned damaged.** Please ensure that all units have details of the service required and all relevant paperwork.

Send the instrument, shipping charges paid to:-

Time Electronics Ltd
 Botany Industrial Estate, Tonbridge, Kent, TN9 1RH
 Tel: +44(0)1732 355993 Fax: +44(0)1732 770312
 Email: mail@TimeElectronics.co.uk
 Web Site: www.TimeElectronics.com



Disposal of your old equipment

1. When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or return to Time Electronics.