

# DSM600 Digital Micro-Ohmmeter



## Features

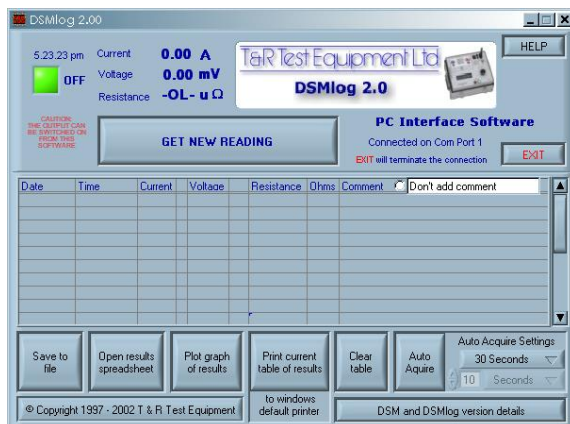
- 0-600A DC test current
- 0.1 $\mu\Omega$  resolution
- mV, A, and  $\mu\Omega$  displayed simultaneously
- Direct Ohms reading at any current
- Large back-lit liquid crystal display
- Thermal and over-current protection
- Compact and portable
- Isolated RS232 interface for printer or PC connection
- 90-264V Supply voltage range\*
- High quality 3m lead set supplied as standard

\*See specification overleaf

T&R Test Equipment is a market leader in the field of high current micro-ohmmeters, manufacturing durable, accurate and user friendly units. The DSM600 is a high current micro-ohmmeter suitable for measuring very low resistances in a wide range of applications. The unit is equally suited to commissioning, maintenance, and production line environments. Contact resistances in circuit breakers, switch panels, isolators, and busbar joints are all easily and safely measured.

The DSM600 is simple to operate, only requiring the user to switch the output on and set the test current. Selection of all ranges is fully automatic, and current, voltage and resistance are displayed simultaneously at all times. The resistance is calculated from the test current and sense voltage, and there is no need to set an exact test current to guarantee an accurate test result. To assist the user, all readings are held on the display when the output is switched off.

*The back-lit display on the DSM600 is bright and clear with a wide viewing angle. The results of a test can be seen here as they appear on the display of the unit, showing current, sense voltage and resistance*



Connecting the DSM600 to a PC running the optional DSMlog software adds data capture and reporting functions to the unit, allowing test results to be exported directly to Excel or saved to a file. All results are time stamped, and a comment may be added to each test. Data capture can be controlled from the PC, and the resistance of a test object can be monitored over a period of time.

Alternatively, connecting a printer allows all of the test parameters to be printed automatically whenever the reading is held.

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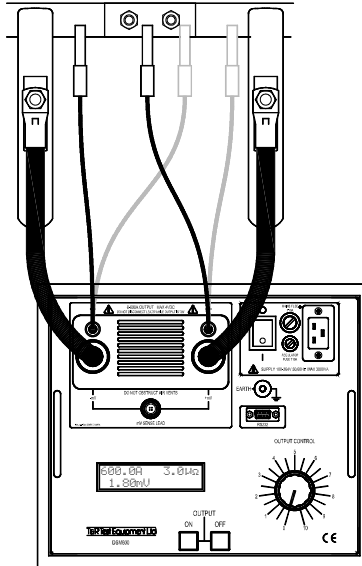
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## Example Application: Testing Busbar Joint Resistance

Testing the joint resistances of a busbar using the DSM600 is a simple task. Before undertaking any testing, always ensure that power to the object under test is **OFF** and the object is earthed. The DSM600 should also be earthed.

With the output of the DSM600 off, connect the DSM600 output cables to the busbar, ensuring that all joint resistances to be measured are included in the circuit.

Connect the sense leads to the first joint to be measured, and switch the output of the DSM600 on. Increase



the current to the desired level, and switch the output off. The readings will be held on the display.

Move the sense leads to the next joint (shown dotted on the diagram on the left), and switch the output of the set on and off to measure the resistance of the joint.

The process is even simpler if the optional DSM600 printer or a PC and DSMlog software is used. In this case the results are printed out or logged to the PC every time the reading is held by pressing the off pushbutton.

### Output Ratings

Supply	Output	No load	Full load
Voltage	current	voltage	voltage
230V	0-600Adc	0-4.4Vdc	0-2.5Vdc
115V	0-400Adc	0-2.2Vdc	0-1.1Vdc
90V	0-300Adc	0-1.6Vdc	0-0.75Vdc

The full output is available from the DSM600 for a 230V±10% supply. A reduced output is available from lower supply voltages.

The DSM600 output is rated at 600A for 1 minute, 400A for 5 minutes, and 200A continuously. An off time of 15 minutes must be allowed after any of the above test times. These ratings are based on an ambient temperature of 25°C.

### Lead Set Specifications

The DSM600 is supplied with a 3m lead set as standard. This includes two 70mm<sup>2</sup> high current leads terminated in copper battery clips and a sense lead terminated in crocodile clips.

### Protection and Safety

The unit is protected by electronic over current and duty cycle trips on the output, thermal trips on the power components, and fuses on the input and regulator. An earth terminal is provided for connection to a local earth. The unit is designed to comply with BSEN61010, and is CE marked.

### Supply Requirements

90-264VAC one phase 50/60Hz. 3200VA Max.

See output ratings section above for supply voltage limitations.

### Temperature Range

Storage	-20°C to 60°C	Operating	0°C to 45°C
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### Dimensions

332 x 288 x 202mm

### Weight

26.4kg

3m lead set weight 6.0kg

### Metering

All metering on the unit is fully auto-ranging, selecting from two current ranges and three voltage ranges. The resistance range is chosen from the current and voltage ranges as shown in the table below.

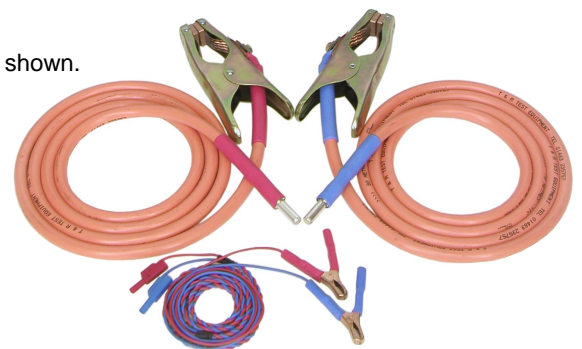
	<b>60.00A</b>	<b>600.0A</b>
<b>40.00mV</b>	667μΩ	66.7μΩ
<b>400.0mV</b>	6.67mΩ	667μΩ
<b>4000mV</b>	66.7mΩ	6.67mΩ

The maximum resistance that can be measured by the DSM600 at 600A is 4mΩ, increasing to 400mΩ at a test current of 10A. The current and voltage ranges have a metering accuracy of 0.5% of reading + 5 digits, and the ohms ranges have an accuracy of 1.0% of reading + 10 digits over the range 10-600A.

### Accessories Supplied with Unit

Spare fuses, supply lead, 3 metre output lead set, operating manual.

3m lead set shown.



### Optional accessories

DSM600 printer, DSMlog software, Lead set extension. Longer leads sets are available to order.

1m lead set for higher output current with low mains voltages.

100μΩ shunt

Remote control sense leads (allows the output to be switched on and off from the sense probes).

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