

# DSM200 Digital Micro-Ohmmeter



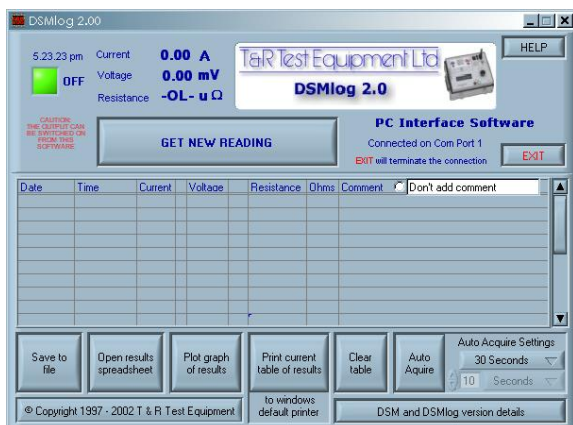
## Features

- 0-10A and 0-200A 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
- Isolated RS232 interface for printer or PC
- Triple supply voltage
- Microprocessor controlled
- High quality 3m lead set supplied as standard

T&R Test Equipment is a market leader in the field of high current micro-ohmmeters, manufacturing durable, accurate and user friendly units. The DSM200 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 back-lit display on the DSM200 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*

The DSM200 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.



Connecting the DSM200 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.



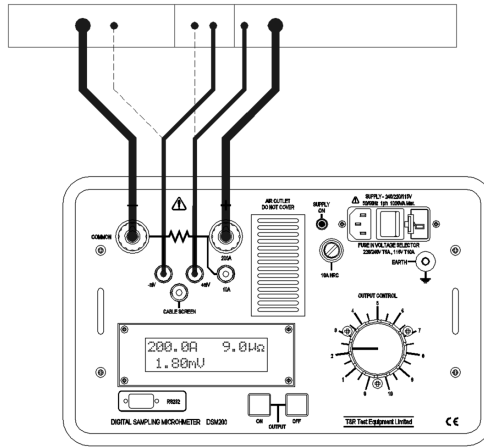
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## Example Application: Testing Busbar Joint Resistance

Testing the joint resistances of a busbar using the DSM200 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 DSM200 should also be earthed.

With the output of the DSM200 off, connect the DSM200 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



DSM200 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 DSM200 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.

## DSM200 Specification

### Outputs

The DSM200 has two outputs. The 200A output is variable between zero and 200Adc. The 10A output is filtered and has a ripple of less than 2% at 10A output current.

Range	Output current	No load voltage	Full load voltage
200A	0-200Adc	0-6.0Vdc	0-3.4Vdc
10A smoothed	0-10Adc	0-6.0Vdc	0-2.5Vdc

The DSM200 main output is rated at 200A for 5 minutes, 100A for 15 minutes, and 50A 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.

### 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

240V±10% 1 phase 50/60Hz. 1000VA Max.

220V±10% 1 phase 50/60Hz. 1000VA Max.

115V -6% to +10% 1 phase 50/60Hz. 1000VA Max.

### Temperature Range

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

### Accessories Supplied With Unit

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

### Dimensions

340 x 230 x 330mm

### Weight

DSM200 21.4kg

3m lead set 2.7kg

### Optional Accessories

Alternative output lead sets (5m, 8m or 10m)

DSM200 printer, DSMlog software, 100µΩ shunt

### Metering

All metering on the unit is fully auto-ranging, selecting from four current ranges and three voltage ranges. The maximum voltages shown are peak values, and the maximum voltage that may be measured will be reduced if the test object is inductive. The resistance range is chosen from the current and voltage ranges as shown in the table below.

#### 200A Output

	20.00A	200.0A
40.00mV	2000µΩ	200.0µΩ
400.0mV	20.00mΩ	2000µΩ
4000mV	200.0mΩ	20.00mΩ

#### 10A Output

	1.000A	10.00A
40.00mV	40.00mΩ	4000µΩ
400.0mV	400.0mΩ	40.00mΩ
4000mV	4.000Ω	400.0mΩ

The maximum resistance that can be measured by the DSM200 at 200A is 17mΩ, increasing to 4Ω at a test current of 1A. All readings are held on the display when the output is switched off.

The current and voltage ranges have a metering accuracy of 0.6% of reading +5 digits, and the ohms ranges have an accuracy of 1.2% of reading + 10 digits over the range 1-200A.

### Lead Set Specifications

A 3m output lead set is supplied with the DSM200 which includes two 25mm<sup>2</sup> 200A leads terminated in copper battery clips, a 10A lead, and a sense lead terminated in copper crocodile clips. The 3m lead set may be upgraded at an extra cost to 5m, 8m, or 10m at time of ordering.



3m lead

Note: Due to the company's continuous research programme, the information above may change at any time without prior notification. Please check that you have the most recent data on the product.

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