DLRO 200-115
Digital Low Resistance Ohmmeter



- **Small and weighs less than 32 lbs (14.5kg)**
- **Test currents from 10 A to 200 A d.c.**
- **Filtered direct current output eliminates magnetic transients**
- **0.1 μΩ best resolution**
- **On board memory for up to 300 test results and notes**
- **RS232 port to download stored results or for real time output to a printer**
- **Supplied complete with 16 ft. (5m) test leads and download software**

DESCRIPTION

The DLRO200-115 is designed to check and measure contact resistance in high voltage circuit breakers, disconnecting switches (isolators), busbar joints, or for any low resistance measurement. The test set accurately measure resistances ranging from 0.1μΩ to 1Ω, at high currents.

This versatile instrument can provide test currents from 10 amps up to 200 amps, subject to the load resistance and supply voltage. For those applications that demand a smooth dc current, the DLRO200-115 has extra filtering on the output to reduce mains frequency ripple and can drive 200 amps through a total current loop resistance of 11 milliohms. The filtered output of the DLRO200-115 also eliminates magnetic transients that could inductively trip a breaker's control (bus differential relay), if left in the test circuit.

The unique design allows the weight and size of the DLRO200-115 to be kept to a minimum; the instrument weighs less than 32 lbs. (14.5 kg). This small size plus a water/dust ingress rating of IP54 makes the test set equally at home in the workshop, on the production floor or in the field.

As many as 300 sets of results may be stored in the test set's on-board memory for later download to a PC or may be sent directly to a printer via the RS232 port. You may also add notes to any stored result by using the on-board alphanumeric keypad, thereby making later identification of results easier to determine.

As well as adding notes to stored results, the alphanumeric keypad allows you to set the test current directly by keying in the value required. The DLRO200-115 will check the continuity of the test circuit, and will quickly ramp the test current up to the desired level. The keyboard is also used to set upper and lower limits for the result and to prevent the use of excessive currents by setting an upper limit to the allowable test current.

The DLRO200-115 uses a four terminal measurement technique to cancel the resistance of the test leads from the measurement.

The test set operates in one of three modes, which are simply selected from the on-screen menu.

CONTINUOUS mode is provided for users who wish to monitor a resistance over a period of time. Connect the test leads, select the test current and press the TEST button. The DLRO200-115 will pass a current continuously, and measure the load resistance at 2 second intervals, until the test button is pressed to stop the test or the test circuit is interrupted.

In NORMAL mode you connect the leads, select the test current and press the TEST button. The test current will ramp up to the desired level, hold for 2 seconds and then ramp down. The whole process takes approximately 10 seconds.

In AUTO mode select the desired current, connect the current leads and press the TEST button. The TEST lamp will flash to show that the DLRO200-115 is ready to carry out a test. As soon as the potential leads are connected, a test

will start. To repeat a test, simply break contact with the voltage probes and remake contact.

Measuring individual joints in a busbar is a good example of the convenience to be gained by using AUTO mode. The two current leads are connected to the ends of the busbar. They will remain connected there until all tests have been completed. When the voltage leads make contact across a joint, the DLRO200-115 detects that all four leads are connected, carries out a test and stops. When you move to the next joint the DLRO200-115 detects the already completed circuit automatically and carries out the next test, and so on until all joints have been tested. The results may be stored automatically and may be recalled to the display or downloaded for review.

SPECIFICATIONS

Measurement:
Range: 0.1 µΩ to 999.9 mΩ
(Subject to supply voltage and leads used)

Accuracy:

Voltage:	±0.5% ± 0.1 mV
Current:	±0.5% ± 0.1 A
Resistance:	Better than 1% from 100 µΩ to 100 mΩ

Current Lead Resistance (Megger supplied leads)

2 x 16 ft (5 m) 25 mm^2 current leads	8 mΩ
2 x 16 ft (5 m) 50 mm^2 current leads	4 mΩ
2 x 33 ft (10 m) 70 mm^2 current leads	5.4 mΩ
2 x 49 ft (15 m) 95 mm^2 current leads	6 mΩ

Maximum Continuous Test Time
More than 10 minutes at 200 A @ 68° F (20° C) ambient.

Power Supply
for full output (additional smoothed):
100 to 130 V 50/60 HZ with a load
less than 11 mΩ including current leads

Test Modes:	Manual, Auto, Continuous.
Test Time:	10 seconds NORMAL /AUTO mode. Refreshed every 2 seconds in CONTINUOUS mode
Display:	Large, high resolution backlit liquid crystal display
Warnings	Current flowing: - LED. Other warnings are shown on the lcd display.
Data Transfer	Real time or batch download via RS232 using Download Manager.
Storage Capacity:	300 result sets and memo, battery backed for 10 years.
Memo field:	160 characters max.
Test Current Range:	Filtered direct current; 10 A to 200 A d.c.
Accuracy:	±2% ±2 A
Voltmeter input impedance:	>200 kΩ
Hum rejection:	5 V rms 50 Hz/60 Hz
Temperature Operation:	14 to +122° F (-10 to +50° C)
Storage:	-13 to 149° F (-25 to +65° C)
Calibration:	68° F (20° C)
Co-efficient:	<0.05% per ° C
Max. Humidity:	95% RH non-condensing
Maxi Altitude:	6562 ft. (2000 m)
Safety:	IEC61010 – (1995)
EMC:	EN61326 annex A (heavy industrial)
Dimensions:	16.4 x 9.84 x 10.63 in. (410 x 250 x 270 mm)
Weight:	31.97 lbs. (14.5 kg) excluding test leads

ORDERING INFORMATION

Item (Qty)	Cat No.
DLRO200-115 High Current Digital Low Resistance Ohmmeter	
115 V (English QWERTY keyboard)	DLRO200-115 E
Included Accessories	
16 ft. (5 m) Lead set comprising 2 x 25 mm^2 current leads with clips and 2 potential leads with clips	6220-787
Download Manager	6111-442
User Guide on CD-ROM	6172-763
RS232 download cable	25955-025
Quick Start Guide (English)	6172-782

Item (Qty)	Cat No.
Optional Accessories at extra cost	
16 ft. (5m) Lead set in bag comprising: 2 x 50mm^2 current leads with clamps and 2 x potential leads with clips	6220-755
49 ft. (15m) Lead set comprising 2 x 95 mm^2 current leads with clamps and 2 x potential leads with clips	6220-757
33 ft. (10m) Lead set comprising 2 x 70 mm^2 current leads with clamps and 2 x potential leads with clips	6220-756
Transport case	MC996

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