

Arc Resistance Tester

Model Microarc-1



Description

- ◆ The Model MICROARC-1 Arc Resistance Test Set is designed to meet the requirements of ASTM specification D-495, Federal Specification L-P-406 Method 4011.2, and IPC-TM-650 Method 2.5.1 for determining the resistance of solid electrical insulating materials to the formation of a conductive path from application of an arc of high voltage and low current to the surface of the insulation. Provision for the measurement of arc resistance breakdown voltage the so-called "volts after tracking" is not included in this model.

Operation

- ◆ The MICROARC-1 can be used at either 115/120VAC or 220/240VAC 50/60Hz by switching the fuse block on the power entry module to read "120" or "220" respectively. This allows the unit to be ready to run world wide without major modification. The Red POWER button initiates power to the controls, and allows for all functions to be initiated.
- ◆ A microprocessor controlled stepping process is used in the MICROARC-1 which automatically cycles the equipment through its steps increasing arc period and power at one minute intervals. This feature, together with the use of a digital timer, leaves the operator completely free to observe the test as it proceeds automatically.
- ◆ The Test Cycle will be interrupted when the front panel is open, and the "INTERLOCK" light is lit on the front panel. This condition will also prevent the start of a new test cycle.
- ◆ The Test Cycle is initiated when the "Red" START button is depressed and released. The test cycle will be terminated when the "Black" STOP button is depressed and released.
- ◆ The VOLTAGE ADJUST knob adjusts the voltage on the Primary side of the High Voltage Transformer in the unit. This primary voltage is in turn displayed on the front panel VOLTAGE meter. Adjustment of this Primary Voltage will in turn adjust the Arc Voltage. To Achieve an Arc voltage of 12,500 VAC as required by the test, the Primary Voltage should be adjusted to 114.0 VAC without Initiation of a test cycle. This value along with the Arc Current values were calibrated at the factory. No Adjustment other than this will be necessary. If calibration of the unit is desired, an electrostatic voltmeter can be put into the circuit in place of the electrode. The Primary Voltage can then be adjusted during the 10 portion of the cycle to read 12,500 VAC. The current values are set, and cannot be adjusted by the user.
- ◆ The SECONDS display totals the amount of test time between depression of the START button, and depression of the STOP button or opening of front panel. The display will freeze the time until the START button is depressed again.
- ◆ The CURRENT display shows the value of current flowing through the Arc in milliamps. This display will typically not display the required 10mA during the interrupted portion of the test due to the short duration of the pulse although adequate current is flowing.
- ◆ The test specimen holder and electrode assembly differ from the design suggested in the above referenced specifications but represent an improved model while still meeting the requirements. The lab jack included allows the operator to position various sizes of test pieces under the electrode set.
- ◆ The electrode assembly is weighted so that the electrodes rest on the test piece with a force of 50 +/- 5 grains while still maintaining ease of removed for inspection by merely lifting from position. It is necessary only to be sure that it is properly seated when replacing. It is important that electrode spacing is between 0.248 & 0.252 inches at an angle of 35 degrees to normal.

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