

## DC CURRENT MEASUREMENTS

1. Plug the test leads into the correct jacks.
2. Set the Range switch to the 300m DCA position (300 milliamp). Always start at the top and work down.
3. Open up the circuit in which you want to measure current and connect the black lead to the negative side and the red lead to the positive side of the circuit.
4. Apply power to the circuit under test and read the current on the black DC scales.

## DECIBEL MEASUREMENTS

1. Plug the test leads into the correct jacks.
2. Set Range switch to one of the ACV ranges.
3. For a Range switch setting of 15 ACV, read dB directly on the bottom scale in dB. For other settings of the Range switch, add the appropriate number of dB to the dB scale reading as noted on the chart at the lower right on the meter face.

Note: For absolute dB measurements, circuit impedance must be 600 ohms. 0 dB = 1 milliwatt dissipated in a 600 ohm impedance (equivalent to 0.775 volt across 600 ohms).

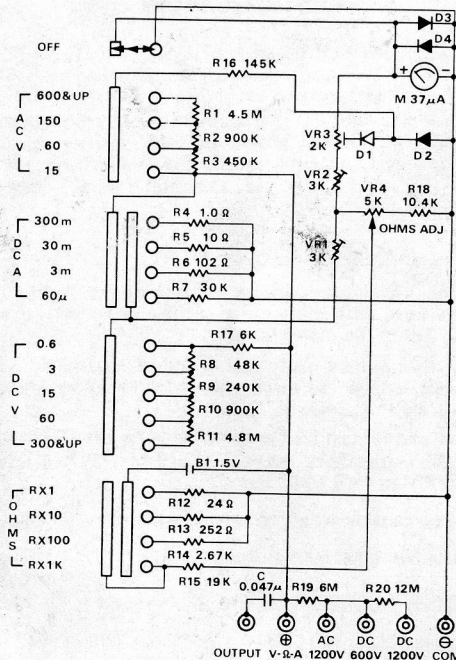
## OUTPUT VOLTAGE MEASUREMENTS


1. To measure AC voltage in the presence of DC voltage, use the Output function. Connect the black lead to the  $\ominus$  COM jack and the red lead to the OUTPUT jack.
2. Set the Range switch to an ACV position and measure the voltage in the circuit.

Note: The Output function incorporates a DC blocking capacitor, rated at 600 volts. Thus, do not exceed the 600 volt rating when measuring Output voltages.

3. Read Output voltages on the same scales as for AC Voltage.

## SCHEMATIC DIAGRAM



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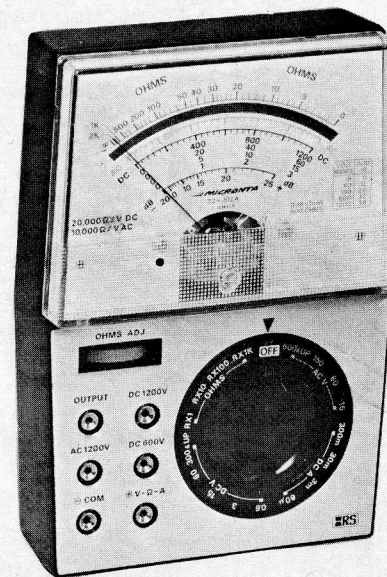
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**MICRONTA**®

## 20,000 OHMS/VOLT MULTITESTER INSTRUCTION MANUAL



CAT. NO. 22-202A

CUSTOM MANUFACTURED FOR  
**RADIO SHACK**  A DIVISION OF TANDY CORPORATION

## SPECIFICATIONS

Ranges:	25
DC Voltage	0-0.6-3-15-60-300-600-1200V
AC Voltage	0-15-60-150-600-1200 V
DC Current	0-60 $\mu$ A-3-30-300 mA
Resistance	0-2K, 0-20K, 0-200K, 0-2Meg. (center scale 24)
Decibels	-20 to +63 dB in 5 ranges.
Output	0-15-60-150-600 V
Accuracy:	$\pm 3\%$ of full-scale, DC voltage and current $\pm 4\%$ of full-scale, AC voltage $\pm 3\%$ of scale-length, Resistance
Sensitivity:	20,000 ohms/volt DC 10,000 ohms/volt AC
Meter Movement:	4"(10cm), 3-color, mirrored scale, 37 $\mu$ A movement
Battery:	Requires one type "AA" penlight cell for Ohms function
Leads:	31"(78cm) tip jack style
Size:	5-19/32" x 3-15/16" x 1-1/2"(14.2x10.0x3.8cm) (HWD)
Weight:	11 ounces (310g)

### RADIO SHACK LIMITED WARRANTY

This equipment is warranted against defects for 90 days from date of purchase. Within this period, we will repair it without charge for parts and labor. Simply bring your sales slip as proof of purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover equipment subjected to misuse or accidental damage.

This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

*We Service What We Sell*

## INTRODUCTION

This compact, sensitive Multitester is designed to measure AC and DC voltages, DC currents and resistance with accuracy and ease. The single knob function control is easy to use and read. The 4"(10cm) sensitive meter incorporates a mirrored scale for accurate readings and uses 3 colors for rapid scale identification. An "off" position is incorporated for meter protection during transit. Small and light, this instrument will provide many years of accurate voltage, current and resistance measurements.

## HOW TO USE

Notes: For most accurate readings, keep the meter laying flat on a non-metallic surface. Also use a range setting that results in a reading in the upper 1/3rd of the meter scale.

If the pointer does not normally rest exactly over the "0" at the left side of the scale, adjust the plastic screw in the lower center of the meter face to bring the needle to "0".

Always observe correct test lead polarity when making DC voltage and current measurements (Black into the  $\ominus$  COM and Red into the  $\oplus$  V- $\Omega$ -A or DC600V or DC1200V jacks).

Exercise extreme caution when measuring voltages of 150 and over.

When not in use, always leave the Range switch in the "Off" position.

## DC VOLTAGE MEASUREMENTS

1. Plug the test leads into the correct jacks (Black into  $\ominus$  COM and Red into  $\oplus$  V- $\Omega$ -A).
2. Set Range switch to one of the DCV positions; it is best to start at the top and work down.
3. Touch the test probe tips to the circuit under test; be sure to observe correct polarity.
4. Read the voltage on the black DC scales.

5. For voltages between 300 and 600, set Range switch to 300&UP and plug the red test lead into the DC600V jack. For voltages between 600 and 1200, leave Range at 300&UP and plug the red test lead into the DC1200V jack.  
USE EXTREME CARE WHEN USING THESE RANGES.

## AC VOLTAGE MEASUREMENTS

1. Plug the test leads into the correct jacks.
2. Set Range switch to one of the ACV positions; it is best to start at the top and work down.
3. Touch the test probe tips to the circuit under test.
4. Read the voltage on the red AC scales.
5. For voltages between 600 and 1200, set Range switch to 600&UP and plug the red test lead into the AC1200V jack.

## RESISTANCE MEASUREMENTS

Before taking any resistance measurements, disconnect power to the unit under test and discharge capacitors. It is best to remove batteries and unplug line cords.

1. Plug the test leads into the  $\ominus$  COM and  $\oplus$  V- $\Omega$ -A jacks.
2. Set Range switch to one of the OHMS positions; touch the test probes together and adjust the OHMS ADJ. control to bring the pointer to the "0" on the top (green) OHMS scale.
3. Now, touch the probe tips across the circuit or part under test.
4. Read the resistance on the green OHMS scale; use the proper multiplier to obtain the correct value (R "times" 1, 10, 100 or 1000, depending on the position of the Range switch).

Notes: When you are unable to adjust the pointer to "0" on the OHMS scale, the battery must be replaced. When measuring resistance, it is best to disconnect one side of the part under test (thus the remainder of the circuit will not interfere with the readings).