

# INSTRUCTIONS

# MICRANTA

## MULTITESTER

### MODEL 100K

CAT. NO. 22-152

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Custom Mfd. in Japan for Allied Radio Shack Div. of Tandy Corp. Fort Worth, Texas, 76107

## DESCRIPTION :

Rugged and portable, the Micronta Model 22-152 is an accurate general-purpose test instrument. It measures DC voltage, AC voltage, resistance, current and decibel level in 600 ohm circuits. Its ten microamp maximum current drain minimizes circuit disturbance when testing. A carry handle also serves as a brace, holding the meter at a convenient angle for bench work. Overall dimensions are  $7\frac{1}{4}$ " high,  $2\frac{3}{4}$ " deep, and  $5\frac{1}{4}$ " wide. Supplied with batteries, test leads, and instruction book.

## CONTROLS :

Four controls are available on the front panel:

1. Meter zero. On meter face between scale and range switch. Use screwdriver to move needle rest point directly over voltage scale zero.
2. Range Switch. Chooses meter range and sensitivity. Must be on appropriate range before testing.
3. Ohms Adjust. Zeros ohms range with test prods shorted when Range Switch is at any Ohms setting.
4. Scale Reversing switch. Reverse meter polarity for DC voltage only.

## TEST CIRCUIT JACKS :

The five recessed banana jacks on front panel are test lead terminals. For most AC, DC, current and decibel measurements only the -COM and + jacks are used. Special connections are:

1. 1,000 VDC. Range switch at DC 500 V & UP; test leads to -COM and to DC 1 KV at panel upper left.
2. 1,000 VAC. Range switch at AC 250 V & UP; test leads to -COM and to AC 1 KV at panel lower left.
3. 10 Amperes. Range switch at 250 mA & 10A; test leads to -COM and to 10A+ at panel upper right.

## SAFETY :

RADIO SHACK recommends this procedure for measuring circuit voltages over 50-100 volts: Set meter to appropriate range. Turn off circuit. Make test connections, set up meter for no-hands operation and reading. Turn on circuit to make reading. Before removing or changing test connections, remember to turn the circuit off again. Do not hold meter or leads in hands while testing.

## MEASUREMENT RANGES :

1. DC volts at 100,000 ohms/volt:  
500 mV; 2.5, 10, 50, 250, 500, 1000 volts full scale.
2. AC volts at 12,500 ohms/volt:  
2.5, 10, 50, 250, 1000 volts full scale.
3. Decibels:  
-20 to +62 db. in 5 ranges ref. 1 mW into 600 ohms.
4. DC resistance:  
To 20 megohms. Center scale 160, 1,600, 16,000 and 160,000 ohms.
5. Current:  
10  $\mu$ A, 250  $\mu$ A; 2.5, 25, 250 mA; 10 A full scale.

## INTERNAL BATTERIES :

Two 1.5 volt AA cells mounted inside the case power the ohmmeter circuits. If zero ohms cannot be adjusted using the Ohms Adjust these batteries must be replaced. They should be removed if the Multimeter is stored, and checked periodically when it is in use.

## OPERATION

### DC VOLTAGE MEASUREMENTS

1. Plug the black test into the common - Jack and the red test lead into the + Jack.
2. Set the range selector switch to the appropriate range needed for the measurement and function switch to proper polarity.
3. Observing polarity, apply test leads and read voltage using proper multiplier.  
**Caution**—When in doubt as to the voltage present, always use the highest voltage range as a protection to the instrument.

For measuring up to 1000 volts the red test lead must be inserted into DC 1 KV.

### AC VOLTAGE MEASUREMENTS

1. Insert the test leads as for DC measurements.
2. Set the range selector switch to the appropriate range needed for the measurement and function switch to AC position.
3. Apply test leads and read voltage using proper multiplier.  
**Caution**—When in doubt as to the voltage present, always use the highest voltage range as a protection to the instrument.

For measuring up to 1000 volts the red test lead must be inserted into the AC 1 KV.

### RESISTANCE MEASUREMENTS

1. Insert test leads as in voltage measurements.
2. Select appropriate range.
3. Set the function switch to ohms position.
4. Short test leads and zero ohmmeter circuit.
5. Using proper multiplier read resistance.

### DIRECT CURRENT MEASUREMENT

1. Insert test leads as in voltage measurements.
2. Set the function switch to PROPER POLARITY.
3. Set range selector to 250 mA range.
4. Insert meter in series with circuit.
5. Read current on appropriate scale.

**Caution**—Observe polarity.

### DECIBEL MEASUREMENT

1. Insert test leads as for voltage measurements.
2. Read decibel scale direct when using 2.5V AC range.

#### For other AC ranges

RANGE	ADD DB
10 V AC	+12
50 V AC	+26
250 V AC	+40
1000V AC	+52

