INSTRUCTION MANUAL

MT800

ANALOGUE MULTIMETER

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1. INTRODUCTION

The MT800 multimeter is designed to measure AC and DC voltage, DC current, and resistance with accuracy and ease. It can also be used as a battery tester for 1.5V and 9V batteries. The meter circuit incorporates a fuse to protect the delicate meter and other internal parts in case of inadvertent overload or improper function selection. The MT800 includes well insulated test leads with plugs which ensures firm and safe connections.

2. SPECIFICATIONS

Function	Range
DC Voltage (2000 ohms/v)	2.5V, 10V, 50V, 250V, 500V
AC Voltage (2000 ohms/v)	10V, 50V, 250V, 500V
DC Current	500uA, 10mA, 250mA
Resistance	2k ohms, 200k ohms (center scale 3.6)
Battery Test	1.5V, 9V
Accuracy	±5% of full scale value on DC ranges ±5% of full scale value on AC ranges
	±5% of full scale-length on ohms
Sensitivity	AC/DC voltage 2,000 ohms/volt
Battery	1x AA
Size	100 x 64 x 35mm
Weight	125g
Accessory	Tip jack style leads (red/black)

3. CONTROLS AND FUNCTIONS

1 - OHMS scale
2 - ACV / DCV / DC mA scale
3 - AC 10V scale
4 - Battery test scale
5 - OHMS ADJUST
6 - 500 AC/DC 250mA MAX (for red lead)
7 - Range switch
8 - Black test lead

WARNING: Use with extreme caution. Follow all safe guards suggested in the manual in addition to normal safety precautions. Do not use this meter if you are unfamiliar with electrical circuits and testing procedures.

4. TIPS FOR USING YOUR MULTIMETER

When using this tester, pay particular attention to polarities and check positive and negative points. The red lead connects to positive points and the black lead to negative. If you are checking unknown voltage and currents, use highest range first then next lower range, and so on until readings can be obtained. For most accurate readings, keep the meter lying flat. Also, use a range setting that results in a reading in the upper third of the meter scale. For exact readings, look at the scale from the point where the pointer and its reflection on the mirror come together, otherwise a reading error may result due to parallax.

5. TEST LEADS

Only use the same type of test leads that are supplied with this meter. These test leads are rated for 1000V.

6. BATTERY INSTALLATION

A battery is required for resistance measurements. To install, use a phillips screwdriver to remove the screw on the back cover. Pull apart the front and back covers. Insert 1 AA battery (not supplied) in the battery compartment observing correct polarity. Never leave a weak or dead battery in your unit. Even leak-proof types may leak damaging chemicals. Remove the battery when you don't intend to use your unit for more than a week.

To avoid electric shock, disconnect measuring terminals before installing or removing battery. Open cover only when replacing battery, do not touch any inside area other than the battery.

7. OPERATION

CAUTION: the MAX input limit for voltage and current measurements between '+' and '—' is 500V AC, 500V DC and 250 mA DC.

8. DC/AC VOLTAGE MEASUREMENTS

WARNING: Use extreme care when making measurements for high voltage. Do not touch terminals or probe ends.

1. Plug the test leads into the correct jacks (black into '-' and red into '+')
2. Set range switch to one of the DCV/ACV positions. If you are not certain about the voltage level, start with 500V range.
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/AC scales. For AC 10V, read the red AC 10V scale.

9. DC CURRENT MEASUREMENTS

WARNING: Do not apply voltage to measuring terminals while range switch is in current position

1. Plug the test leads into the correct jacks.
2. If you are not certain about the current level, start with 250mA range.
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 scale.

10. RESISTANCE MEASUREMENTS

WARNING: Do not apply voltage to measuring terminal while range switch is in ohms position.

1. Plug the test leads into the '-' and '+' jacks.
2. Set range switch to the OHM position (Rx10 or Rx1k ohms) touch the test probe tips together and adjust the OHMS ADJUST control to bring the pointer to the '0' on the top (green) OHMS scale.
3. Now. touch the probe tips across the circuit or the part under test.
4. Read the resistance on the green OHMS scale.

NOTES: when you are unable to adjust the pointer to '0' on the OHMS scale, the battery must be replaced.

11. NOTE FOR TESTING SEMI CONDUCTOR JUNCTIONS

When attempting to identify cathode and anode ends or the type of transistor (PNP) or (NPN), the actual polarity of meter's voltage is opposite of the lead colours. The red lead is the '-' source and black lead is '+'.

CAUTION: Always disconnect test leads before replacing battery.

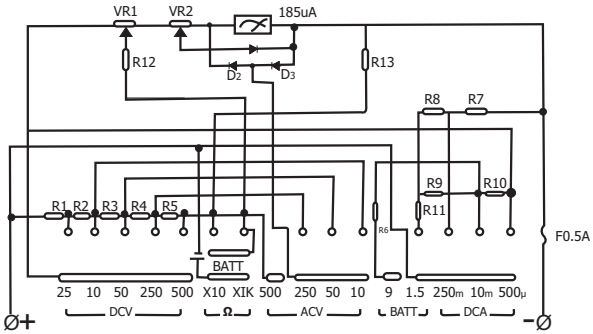
12.REPLACEMENT OF FUSE

WARNING: To avoid electric shock, disconnect measuring terminals before removing fuse.
CAUTION: for continued protection against fire, replace only with 0.3A, 250V fuse.

1. Use a phillips screwdriver to remove the screw on the back cabinet. Pull apart the front and back cabinets.
2. Replace the fuse with a new fuse of the same type / rating (0.3A, 250V)
3. Do not touch any inside area other than the fuse.

13. TIPS FOR BEST HANDLING

1. Always observe correct polarity: red lead to positive and black lead to negative terminal.
2. When checking unknown voltages, use the highest range first and gradually decrease until readings are obtained.
3. For exact readings, look at the scale from the point where the pointer and its reflection in the mirror come together, otherwise a reading error due to parallax will result.



R1. 4.4K
R2. 15K
R3. 80K
R4. 400K
R5. 500K
R6. 1.14K
R7. 2Ω
R8. 2Ω
R9. 46Ω
R11. 9Ω
R12. 3K
R13. 36Ω
D1,D3. IN4148
D2. IN60P

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