

# OPERATING MANUAL

This kind of mini digital multimeter with test leads attaching on its cover will give you years of satisfactory service. Before using your new instrument, please read this Operating Manual completely and familiarize yourself thoroughly with all functions and connections.

## SAFETY RULES

- To avoid electrical shock, always disconnect the circuit under test when measuring high voltages.
- Never use this instrument when the back cover is not properly fixed.
- Never fail to keep maximum tolerable input.

## GENERAL CHARACTERISTICS

Display	3 1/2 digits LCD
Polarity indication	Automatic negative polarity indication
Low battery indication	⚡ mark displayed on the right LCD
Operating temperature	23±5°C ,less than 75%RH
Battery	9-12V (following batteries can be used:23A and other equivalents)
Dimensions	120x70x21mm
Weight	Approx.110g (including batteries)

## SPECIFICATIONS

Accuracies: ±(%reading +No.of digits),Guranteed for 1 year

## DC VOLTAGE

Range	Resolution	Accuracy
2V	1mV	±(0.5%+1)
20V	10mV	±(0.8%+1)
200V	0.1V	
500V	1V	

Max. Input voltage : 500V  
Input impedance: 1MΩ

## AC VOLTAGE

Range	Resolution	Accuracy
2V	1mV	Accuracy is not guaranteed.
20V	10mV	
200V	0.1V	±(1.2%+10)
500V	1V	

Max. Input impedance: about 500kΩ  
Max. input voltage: 500V  
Frequency: 40Hz~400Hz  
Indication: Average respond,rms of sine wave

## DC CURRENT

Range	Resolution	Accuracy
200mA	0.1mA	±(2%+2)

Overload Protection :250mA/250V

## RESISTANCE

Range	Resolution	Accuracy
2k	1 Ω	±(1.0%+2)
20k	10 Ω	
200k	100Ω	
2000k	1kΩ	

Open circuit Voltage:0.4V  
Overload protection:250V DC or rms AC

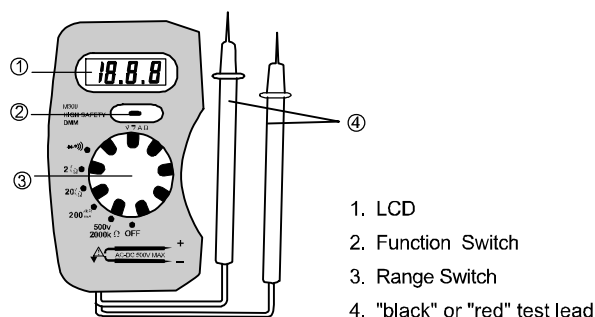
## DIODE

Resolution	Test Current Max.	Open circuit Voltage	Overload Protection
1mV	0.8mA	3.2V	250VrmAC

## BUZZER

It will sound when the resistance value is under 50Ω

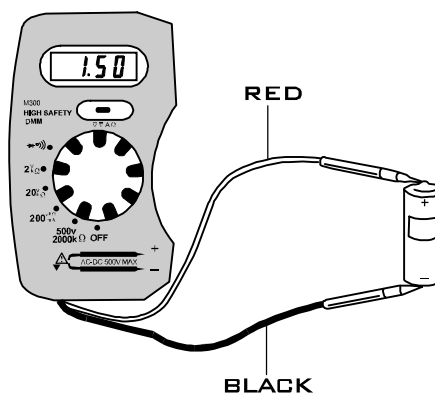
## DESCRIPTION OF PANEL



## OPERATING INSTRUCTION

### DC VOLTAGE MEASUREMENT

Set the function switch at V<sub>DC</sub> position.  
Set the range switch at desired position. If the magnitude of voltage is not known beforehand, set the switch at the highest range and reduce until satisfactory reading is obtained.  
Connect test leads to device or circuit to be measured. Voltage value will appear on the display along with the voltage polarity.  
When set the range switch at 500V position, a "HV" sign will appear on the display to remind you of high voltage measuring.  
Special attention should be paid.



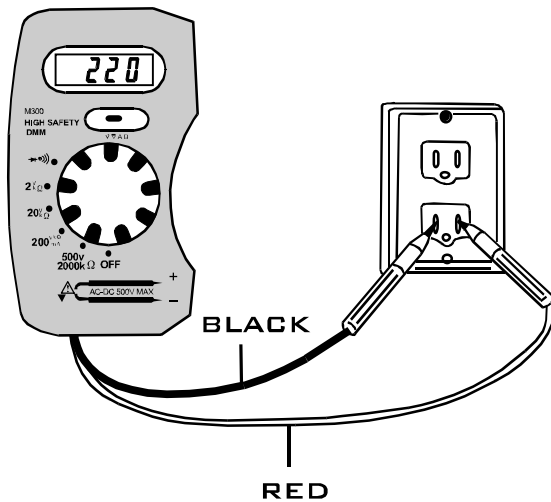
## AC VOLTAGE MEASUREMENT

Set the function switch at V~ position.

Set the range switch at desired position. Measurement reading can be obtained at 2V and 20V position, but the accuracy is not guaranteed.

Connect test leads to device or circuit to be measured. Read voltage value on the display .

When set the range switch at 500V position, a "HV" sign will appear on the display to remind you of high voltage measuring .Special attention should be paid.



## DC CURRENT MEASUREMENT

Set the function switch at A position.

Set the range switch at 200mA position: Measurement reading can be obtained at other positions, but the decimal point is in incorrect place.

Open the circuit to be measured and connect test leads in series with the load in which current is to be measured.

Read the current value on the display along with the polarity.

## DIODE TESTING

Set the function switch at position.

Set the range switch at position.

Connect the red test lead to the anode of the diode to be tested and black test lead to the cathode.

Read the forward voltage drop on the display in mV. If the connection of diode is reversed, only figure "1" will be displayed.

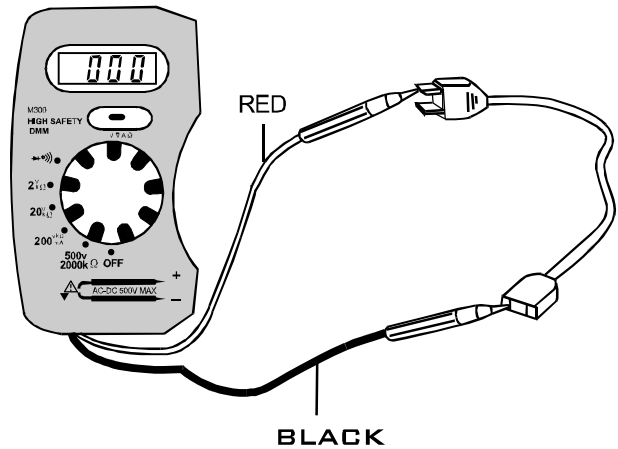
## RESISTANCE MEASUREMENT

Set the function switch at position.

Set the range switch at desired position.

If the resistor is connected to a circuit, turn off power and discharge all capacitors before applying test leads.

Connect test leads across the resistor to be measured and read resistance value on the display.



## REPLACEMENT OF BATTERIES

When the batteries become exhausted or drop below the operation voltage, the sign  $\text{⏏}$  will appear on the left of the display.

Turn off the meter and remove test leads from all test circuit prior to replacing batteries.

Remove the battery cover and replace batteries , making sure that the proper polarity is observed.

## CAUTION

Do not operate instrument unless battery cover is installed back in place and fully closed.

## REPLACEMENT OF FUSE

Fuse rarely need to be replaced and blow almost always as a result of operator 's error.

To replace fuse, remove the screw on the center of the back case and open the case. Replace fuse with a new one of the same type.

## CAUTION

Make sure that test leads are disconnected from test circuit and the range switch is set at OFF position before opening the case.

To prevent fire, install fuse only with AMP/VOLT same as the original (250mA/250V).