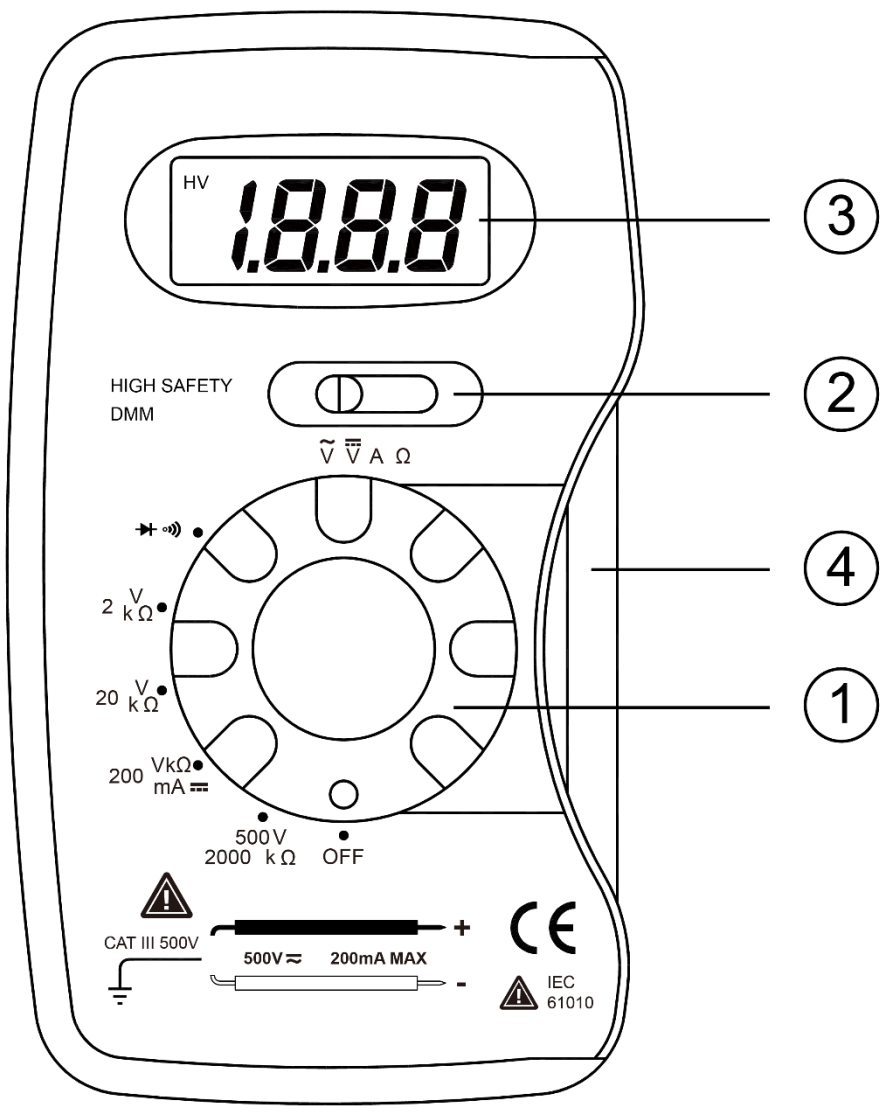


**Pocket  
Multimeter  
M300**



## 1. SAFETY INFORMATION

This meter has been designed according to IEC-61010 concerning electronic measuring instruments with an over voltage category (CAT III 500V) and pollution degree 2.

Follow all safety and operating instructions to ensure the meter is used safely and is kept in good condition.

With proper use and care, your digital multimeter will give you years of satisfactory service.

## 2. PRELIMINARY

2.1 When using the meter, the user must observe all normal safety rules concerning:

- Protection against the danger of electrical attack.
- Protection of the meter against misuse.

2.2 When the meter is delivered, check if it has been damaged in transit.

2.3 When harsh preservation or shipping conditions caused, inspect and confirm this meter without delay.

2.4 Test leads must be in good condition. Before using, verify that the insulation on test leads is not damaged and/or the leads wire is not exposed.

2.5 Full compliance with safety standards can be guaranteed only is used with test leads supplied. If necessary, they must be replaced with the same model or the same class.

## 3. DURING USE

- Never exceed the protection limit indicated in the specifications for each range of measurement.
- Never use the meter to measure voltages that might exceed 500V above earth ground in category III installations.
- Always be careful when working with voltages above 60V DC or 30V AC rms. Keep fingers behind the probe barriers while measuring.
- Do not perform resistance measurements on live circuits.

## 4. SAFETY SYMBOLS



Caution: refer to the instruction manual, Incorrect use may result in damage to the device or its components.



AC (Alternating Current)




DC (Direct Current)



AC or DC

 Earth ground

 Double insulated

 Fuse

 Conforms to European Union directives

## **5. MAINTENANCE**

Before opening case, always disconnect test leads from all energized circuits.

For continuous protection against fire, replace fuse only with ratings: F 250mA/250V (Quick Acting).

Never use the meter unless the back cover is in place and fastened completely.

Do not use abrasives or solvents on the meter. To clean it use only a damp cloth and mild detergent.

## **6. GENERAL DESCRIPTION**

This compact digital multimeter is designed to measure AC and DC voltages, DC current, Resistance, Diode and to perform audible continuity checks with accuracy and easy.

Small and lightweight, with a carrying case and test leads wound on its body, this instrument will provide you years of satisfactory service.

## **7. FRONT PANEL DESCRIPTION**

### **7.1 Range Switch**

This switch is used to select desired ranges as well as to turn on/off the meter.

### **7.2 Function Switch**

Switch for selecting functions.

### **7.3 LCD Display**

3½ digit, 7 segment, maximum 1999 counts

### **7.4 Test Leads**

Red test lead for positive (+) and black test lead for negative (-).

## **8. SPECIFICATION**

Accuracy is guaranteed for 1 year, 23°C ± 5°C, less than 80% RH and altitude 2000M.

## DC VOLTAGE

Range	Resolution	Accuracy
2V	1mV	±0.5% of rdg ± 1 digit
20V	10mV	±0.8% of rdg ± 1 digit
200V	100mV	±0.8% of rdg ± 1 digit
500V	1V	±0.8% of rdg ± 1 digit

Overload Protection: 500V DC or rms AC for all ranges.

## AC VOLTAGE

Range	Resolution	Accuracy
200V	100mV	±1.2% of rdg ± 10 digits
500V	1V	±1.2% of rdg ± 10 digits

Overload Protection: 500V DC or rms AC for all ranges.  
Frequency range: 45Hz to 400Hz.  
Response: Average responding, calibrated in rms of a sine wave.

## DC CURRENT

Range	Resolution	Accuracy
200mA	0.1mA	±2.0% of rdg ± 2 digits


Overload Protection: F 250mA/600V fuse.

## RESISTANCE

Range	Resolution	Accuracy
2kΩ	1Ω	±1.0% of rdg ± 2 digits
20kΩ	10Ω	±1.0% of rdg ± 2 digits
200kΩ	100Ω	±1.0% of rdg ± 2 digits
2000kΩ	1kΩ	±1.0% of rdg ± 2 digits


Maximum Open Circuit Voltage: 0.65V.  
Overload Protection: 250V rms AC for all ranges.

## DIODE TEST

Range	Description
	Show the approx. forward voltage drop of the diode.


Overload Protection: 250V rms AC.

## CONTINUITY TEST

Range	Description
	Built-in buzzer sounds when resistance is approx. less than 50Ω


Overload Protection: 250V rms AC.

## 9. GENERAL CHARACTERISTICS

Maximum voltage between terminals and earth ground	CAT III 500V
Fuse protection	F 250mA/600V $\Phi$ 6x30mm
Power supply	12V battery. GP-23Ax1
Display	LCD, 1999 counts, updates 2-3/sec
Measuring method	Dual-slope integration A/D converter
Overrange indication	Only figure "1" on the display
Polarity indication	"-" displayed for negative polarity
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	-10°C to 50°C (10°F to 122°F)
Low battery indication	"  " appears on the display
Size	125 x 69 x 23mm
Weight	Approx. 102g (without battery)

## 10. OPERATING INSTRUCTION


### DC VOLTAGE MEASUREMENT

1. Set the function switch at V  position.
2. Set the range switch at desired position. If the magnitude of voltage to be measured is unknown beforehand, set the range switch at the highest position and then reduce until satisfactory reading is obtained.
3. Connect test leads across the source or load being measured. The polarity of red lead connection will be indicated at the same time as the voltage value.
4. When the range switch is set at 500V position, a "HV" sign will appear on the display to remind user of high voltage measurement. Special attention should be paid.

### AC VOLTAGE MEASUREMENT

1. Set the function switch at V~ position.
2. Set the range switch at desired position, Measurement reading can be obtained at 2V and 20V positions, but the accuracy is not guaranteed.
3. Connect test leads across the source or load being measured and read the voltage value on the LCD display.
4. When the range switch is set at 500V position, a "HV" sign will appear on the display to remind user of high voltage measurement.


## **DC CURRENT MEASUREMENT**

1. Set the function switch at A  position.
2. Set the range switch at 200mA position. Measurement reading can be obtained at other positions, but the decimal point will be at the incorrect places.
3. Open the circuit in which the current is to be measured, and connect test leads in series with the circuit.
4. Read current value on the LCD display along with the polarity of red lead connection.


## **RESISTANCE MEASUREMENT**

1. Set the function switch at  $\Omega$  position. (Note: The polarity of red lead is positive "+")
2. Set the range switch at desired position.
3. Connect test leads across the resistor to be measured and read LCD display.
4. If the resistor being measured is connected to a circuit, turn off power and discharge all capacitors before applying test leads.


## **DIODE TEST**

1. Set the function switch at  $\Omega$  position. (Note: The polarity of red lead is positive "+")
2. Set the range switch at  position.
3. Connect the red test lead to the anode of the diode to be tested and the black lead to the cathode of the diode.
4. The approx. forward voltage drop of the diode will be displayed in mV. If the connection is reversed, only figure "1" will be shown.

## **AUDIBLE CONTINUITY TEST**

1. Set the function switch at  $\Omega$  position.
2. Set the range switch at  position.
3. Connect test leads to two points of the circuit to be tested, if the resistance is approx. less than 50 $\Omega$ , buzzer will sound.

## **11. BATTERY & FUSE REPLACEMENT**

If the sign " "appears on the LCD display, it indicates that the battery should be replaced. Remove the screw on the back cover and open the case. Replace the exhausted battery with a new one of the same type.

Fuse rarely need replacement and blow almost always as a result of

Operator's error. Open the case and replace the blown fuse with the ratings Specified: F250mA/600V  $\Phi$ 6x30mm.

## **12. WARNING**

Before attempting to open the case, always be sure that test leads have been disconnected from measurement circuits. Close case and tighten screws completely before using the meter to avoid electrical shock hazard.

## **ACCESSORIES**

Battery	12V, GP-23A	1 Piece
Carrying Case		1 Piece
Operating manual		1 Piece



WLS003