INSTRUCTION MANUAL
MTD84

LIMITED WARRANTY AND LIMITATION OF LIABILITY

Customers enjoy one-year warranty from the date of purchase.
This warranty does not cover fuses, disposable batteries, damage from misuse accident, neglect, alteration, contamination, or abnormal conditions of operation or handling, including failures caused by use outside of the product's specifications, or normal wear and tear of mechanical components.

Specifications are subject to change without notice.

MAJOR TECH (PTY) LTD

South Africa
www.major-tech.com
sales@major-tech.com

Australia
www.majortech.com.au
info@majortech.com.au

Thank you for purchasing our product.
Please read this manual carefully before use.
Please keep this manual properly after reading.

Safety Instructions

Please read the following precautions carefully.

Caution There may be a risk of death or serious injury.

Caution There may be a risk of personal injury or property loss.

- Do not input signals that exceed the measurement range of this product. Please select the correct test position and range to avoid damage to the instrument or personal injury. " OL " will be shown on the display when out of range.
- When the voltage to be measured exceeds 36V DC or 25V AC, the operator must be careful to avoid electric shock.
- Check the function position before measuring.
- Disconnect the test leads from the circuit before changing the mode.
- For your safety, please read this manual carefully before use. Please fully understand the instructions and use this product correctly.

Caution

Do not measure circuits that exceed the maximum input rated value 1000V.

Measurement Notices

Common Notice

Caution

- DC/AC high voltage circuits are very dangerous, please be careful when measuring.
- Do not measure AC/DC voltages that exceeds the maximum rated value between the earth terminal and test terminal.
- Do not operate this product with wet hands to avoid the risk of electric shock.
- Do not use the product around explosive gas, vapor, or in damp or wet environments.
- Do NOT touch the input terminals when measuring.
- Do not use test leads with damaged insulation.

AC/DC Voltage Measurement Notice

Caution

- The measured voltage should not exceed the rated maximum test value, otherwise it may damage the product and endanger personal safety.
- Do not measure voltages that exceed the allowable value.

AC/DC Current Measurement Notice

Caution

- The measured current should not exceed the rated maximum test value, otherwise it may damage the product and endanger personal safety.
- Use the 10A Terminal and the A Mode to judge range and choose the right function position when measure an unknown current.
- It is strictly forbidden to input voltage in this measuring state.

Resistance Measurement Notice

Caution

- Before measuring the resistance, please make sure that all capacitors in the circuit to be measured are fully discharged.
- It is strictly forbidden to input voltage in this measuring state.

Continuity Measurement Notice

Caution

- Please do not measure the continuity with a voltage circuit or wire.
- It is strictly forbidden to input voltage in this measuring state.

Other Notices

Battery Change Notice

Caution

- Please turn off the power.
- Install the battery cover and tighten the screws before measuring.

Test Leads Notice

Caution

Do not touch the pins of the test leads during measurements.
Do not use test leads with damaged insulation.
Please do not stretch the cables to avoid damaging the test lead. Keep away from dust and water.

Maintenance and Modification

Caution

Except for our company or our authorized suppliers, please do not attempt to repair or modify the circuit board to avoid the danger caused by improper operation.

1. Introduction

This product is a multi-functional, auto-ranging digital multimeter with a 6000 count LCD display.

- Measurement functions include AC/DC voltage, AC/DC current, resistance, diode test/continuity, NCV, frequency/duty cycle, capacitance.
- Support True- RMS
- Support Auto Power Off
- Support temperature measurement
- Support data hold

2. General Specifications

Display（LCD）	6000 counts
Ranging	Auto
Material	ABS/PVC
Update Rate	3 times / second
Low Battery Indication	√
Product Weight	114g （batteries not included）
Product Dimension	130*65*32mm

Operating Storage	Temperature	0~40℃
	Humidity	＜75%
Operating Storage	Temperature	-20~60℃
	Humidity	＜80%

※ Specifications are subject to change without notice.
※ Batteries included are samples.
※ Battery life may be shorter than regular commercial batteries. If the backlight and buzzer are used frequently, battery life will be shortened.

3. Electrical Specifications

Function	Range	Resolution	Accuracy	Max
DC Voltage （V）	6. 000V	0. 001V	±(0. 5%+3)	1000V
	60. 00V	0. 01V		
	600. 0V	0. 1V		
	1000V	1V		
DC Voltage （mV）	60. 00mV	0. 01mV		600mV
	600. 0mV	0. 1mV		
AC Voltage （V）	6. 000V	0. 001V	±(1.0%+3)	750V
	60. 00V	0. 01V		
	600. 0V	0. 1V		
	750V	1V		
AC Voltage （mV）	60. 00mV	0. 01mV		600mV
	600. 0mV	0. 1mV		
DC Current （A）	6.000A	0.001A	±(1.2%+3)	10A
	10.00A	0.01A		
DC Current （mA）	60.00mA	0.01mA		600mA
	600.0mA	0.1mA		
AC Current （A）	6.000A	0.001A	±(1.5%+3)	10A
	10.00A	0.01A		
AC Current （mA）	60.00mA	0.01mA		600mA
	600.0mA	0.1mA		
Resistance	600.0Ω	0.1Ω	±(0.5%+3)	60MΩ
	6.000kΩ	0.001kΩ		
	60.00kΩ	0.01kΩ		
	600.0kΩ	0.1kΩ		
	6.000MΩ	0.001MΩ		
	60.00MΩ	0.01MΩ	±(1.5%+3)	
Capacitance	9.999nF	0.001nF	±(5.0%+20)	9.999mF
	99.99nF	0.01nF	±(2.0%+5)	
	999.9nF	0.1nF		
	9.999μF	0.001μF		
	99.99μF	0.01μF		
	999.9μF	0.1μF		
	9.999mF	0.001mF	±(5.0%+5)	
Frequency	99.99Hz	0.01Hz	±(0.1%+2)	9.999MHz
	999.9Hz	0.1Hz		
	9.999kHz	0.001kHz		
	99.99kHz	0.01kHz		
	999.9kHz	0.1kHz		
	9.999MHz	0.001MHz		
Duty Cycle	1%~99%	0.1%	±(0.1%+2)	
Temperature	(-20~1000)℃	1℃	±(2.5%+5）	1000℃
	(-4~1832)℉	1℉		1832℉
Diode	√			
Continuity	√			

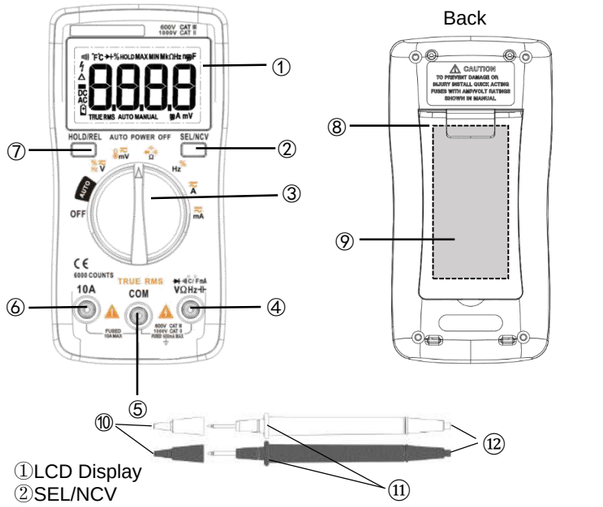
4. Preparations for Measurement

4.1 Preparations

(1) Please check the product carefully before use and confirm if there is any visible damage. If you have any questions, please contact the agent.
(2) Disconnect the test leads from the circuit before changing the mode.
(3) Please note that if there are noise-generating devices around, or large temperature difference, the data may become unstable or there may be increased errors.
(4) Please note that when measuring resistance, continuity, current flowing through the measured circuit will result in incorrect measurement.
(5) When using this device, it may cause display differences due to external strong noise, etc. If the measurement is not available, please turn off the power and wait for a while, then turn the power on again.

Note:
The display changes irregularly under the situations where the test leads are not connected . This is caused by high input sensitivity, not a fault.
When connected to the circuit, the correct measurement can be taken after the data becomes stable.

5. Appearance



①LCD Display
②SEL/NCV
③Function Dial
④Voltage/Diode/Resistance/ Continuity/Frequency/Temperature / Capacitance Input Terminal
⑤COM Terminal
⑥Current Input Terminal
⑦Data Hold/-☀-
⑧Stand
⑨Battery Cover
⑩Probe Cover
· Test Lead Insulator
· Test Leads

Function Dial
(a)Power (OFF)
(b)AUTO (Voltage/Resistance/ Continuity) mV
(c)Voltage/Frequency/ Duty Cycle Hz %
(d)Temperature/mV Voltage
(e)Diode/Resistance/Continuity/ Capacitance Ω
(f) Frequency/Duty Cycle Hz %
(g)A Current A
(h)mA Current mA

6. Measurements

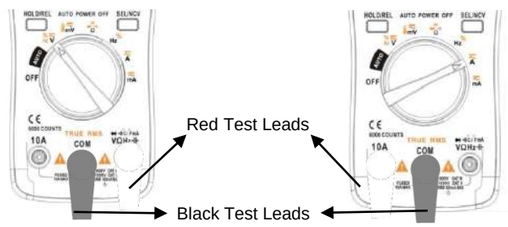
6.1 Steps for measurement
1. Confirm the measurement content in the table on the right.
2. Switch function dial according to the item to be measured.
3. Please remove test leads after measuring.
4. Turn off the power.

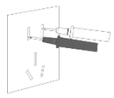
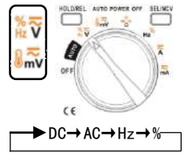
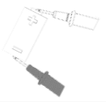
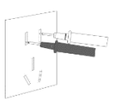
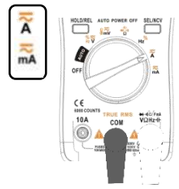
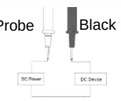
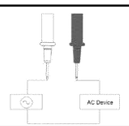
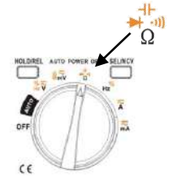
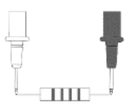
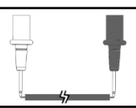
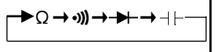
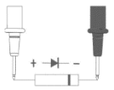
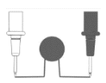
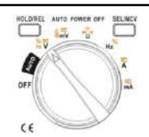
⚠ Caution
1. Do not confuse the item to be measured with the position of the function.
2. Do not exceed the maximum rated value of each function.
3. Do not switch functions or modes during measurement.
4. During the measurement process, hold the insulated part of the test lead and do not hold the pins of the test lead.

6.2 Auto Power Off
1. This feature prevents the battery from depleting out if you forget to turn off the power.
2. If the operation is not continued for about 15 minutes, the auto power off function will automatically switch off the power.
3. If you want to cancel this function, you should press and hold the SEL/NCV button and then turn it on again. It will be cancelled after five beeps.

※Methods of Connecting Test Leads
① Put the black lead into **COM** terminal and put the red lead to VΩHz terminal in Picture1
② Put the red lead to **10A** terminal when test the current in Picture2.

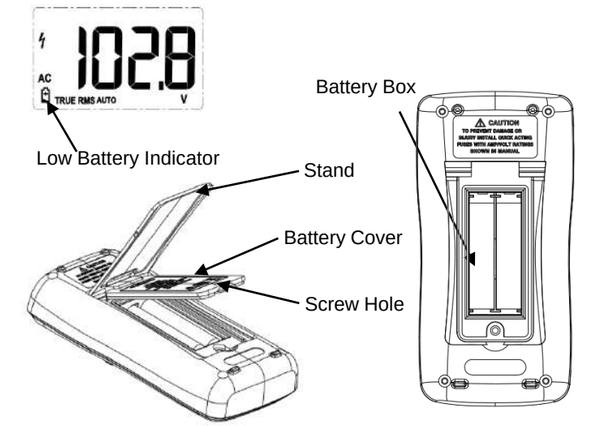
Picture1 Picture2



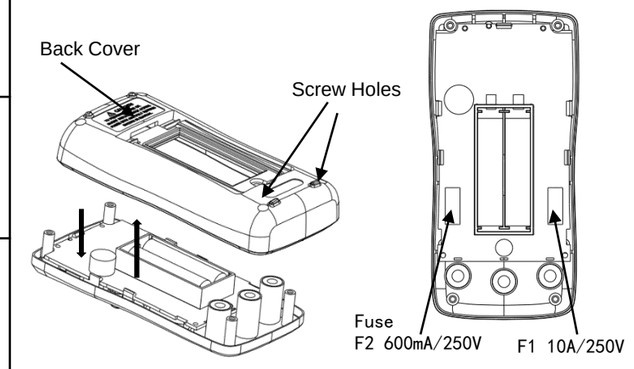
Measurement	Function Position	Data Display	Connection Illustration	Usage and Notice
Auto	 Auto-recognition for Voltage /Resistance/ Continuity by connecting test leads			Please rotate dial to AUTO position; Put in probes correctly to auto recognize Voltage/Resistance/Continuity automatically. Only when the voltage is higher than 0.8V, this data will be shown on the display. ※ Voltage/Resistance/Continuity can be also measured by switching dial to function position manually.
DC Voltage AC Voltage (Frequency Duty Cycle) Temperature	 Please select temperature function in mV by SEL/NCV		 	1.Connect the black test lead to the COM Terminal and connect the red test lead to VΩHz Terminal; 2. Rotate dial to V Mode or mV Mode; 3. Press SEL/NCV to toggle between AC/DC; 4. Touch the correct test points of the circuit to measure the voltage; 5. Read the measured data on the display. ※ If reverse the test lead, it shows " - " mark. The frequency is 40-1000Hz in AC Voltage Mode. There is no special link between the measured value and the test leads.
DC Current			Red Probe Black Probe 	1.Connect the black test lead to the **COM** Terminal and connect the red test lead to the VΩHz Terminal or the **10A**Terminal (based on the value of current) ; 2.Rotate dial to A Mode or mA Mode; 3.Press SEL/NCV to toggle between AC/DC mode; 4.Cut the circuit path to be measured. Then connect the test leads across the circuit and power supply; 5.Read the measured current on the display. ※Please measure current by 10A terminal within 15 sec When measuring DC current, please access to the circuit. from the red test lead to the black test lead based on the direction of the current flow.
AC Current				
Resistance Ω	 SEL键切换功能			1.Press SEL/NCV to toggle between AC/DC mode 2.Please turn off the power of this component to be tested. 3.All capacitors are fully discharged. ※ There is no special link between the measured value and the test leads.
Continuity				The built-in beeper will beep when the resistance is lower than 50Ω, which indicates a short circuit. ※Please measure the resistance range in order to get detailed resistance.
Diode				1.Connect the red probe to the anode and the black probe to the cathode of the diode being tested; 2.Read the forward bias value on the display; 3.If the polarity of the test leads is reversed with diode polarity or the diode is broken and it shows " - " mark. a. Do not input voltage on the Diode Mode. b. Disconnect circuit power and discharge all capacitors before you test diode.
Capacitance				1. Connect the red test lead to the anode and the black test lead to the cathode of the capacitor to be tested; ※ Disconnect circuit power and discharge all capacitors before testing capacitance. The electrostatic capacity becomes larger, the measurement time is longer.
Frequency Duty Cycle Hz/%				1. Press SEL/NCV to toggle data 2. A higher frequency may be measured in this mode, . ※The maximum frequency that can be measured is 9.999Mhz. The Frequency Mode only applies to measure high frequency with low voltage.
NCV Function				1.Keep pushing the NCV button to enter the NCV mode. 2.Hold the product and move it around, the built-in beeper will beep when the inner sensor detects AC voltage nearby. The stronger the voltage is, the quicker the beeper beeps. ※ It is impossible to use NCV function in current mode.
Data Hold/☀ HOLD/☀				1.Press the Data Hold /☀ function button in each measurement mode. 2.The product will keep the present reading on the display by short press.

7.Maintenance

7.1 Replace Battery
When " " is shown on the display, batteries should be replaced as below:
1. Remove the test leads and turn off the product before replacing the batteries;
1. Loosen the screw on the battery door and remove the battery door.
2. Replace the used batteries with new batteries of the same type.
3. Place the battery door back and fasten the screws.



7.2 Replace the Fuses
If current measurement is not possible, make sure that the fuse is not blown.
If it is blown, please replace the required rated fuse.
1. Remove the battery cover and battery according to the battery replacement method;
2. Use a screwdriver to remove the two screws on the back cover.
3. Remove the back cover;
4. Replace the fuse;
5. Put the back cover and battery cover back, tighten the screws.



7.3 Clean the Product
Wipe the product with a damp cloth and mild detergent.
Do not use abrasives or solvents. Dirt or moisture in the terminals can affect readings.
*Remove the input signals before you clean the product.

7.4 Calibration
Calibration is regularly performed at the calibration laboratory to ensure accurate measurements.
The recommended calibration period is once a year.
Please consult your dealer for calibration cost and delivery time.

8.Storage Method

Please turn off the power after use to avoid consuming the built-in battery.
If it is not used for a long time, please remove the battery and keep it.