Particulars Furnished

The company accepts no legal responsibility for any consequences arising from the use of this product.The company reserves the right to modify product design or manual content at any time without prior notice.

Part Number : 7603331
GTIN: 6298043998079

MarMonix®

MMU 112

Digital Multimeter

Instruction Manual

Part Number : 7603331
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A. Introduction

This instrument is a battery-powered, true-RMS, auto-ranging digital multimeter with 6000-count LCD display and backlight.

Safety Information
To ensure safe operation and prevent electric shock, fire, or personal injury, read all safety instructions before use.

1. Do not exceed the specified maximum values in the product specifications.
2. Verify test lead connections and insulation integrity before measuring voltages above 36 V DC or 25 V AC.
3. Disconnect test leads from the circuit before switching measurement modes.
4. Incorrect mode or range selection may create hazards; observe caution. The display shows “OL” when the input exceeds range.
5. Safety symbols:

	Hazardous Voltage		Earth
	Double Insulated		Low Battery
	Risk of Danger. Check the User Manual.		

C . Specifications

Electrical Specifications					
Function	Range	Resolution	Accuracy	MAX.Value	Other
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	40Hz-1kHz
	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)	20A	
	20.00A	0.01A			
DC Current (mA)	60.00mA	0.01mA		600mA	
	600.0mA	0.1mA			
DC Current (μA)	600.0μA	0.1μA		6000μA	
	6000μA	1μA			
AC Current (A)	6.000A	0.001A	±(1.5%+3)	20A	40Hz-1kHz
	20.00A	0.01A			
AC Current (mA)	60.00mA	0.01mA		600mA	
	600.0mA	0.1mA			
AC Current (μA)	600.0μA	0.1μA		6000μA	
	6000μA	1μA			

Function	Range	Resolution	Accuracy	MAX.Value	Other
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)		
Diode	√				
Continuity	√				
Temperature	(-20~1000)℃	1℃	±(2.5%+5)	1000℃	
	(-4~1832)℉	1℉		1832℉	

General Specifications	
Display（LCD）	6000 counts
Ranging	Auto/Manual
Material	ABS
Update Rate	3 times/second
Ture RMS	√
Data Hold	√
Backlight	√
Low Battery Alert	√
Auto Power Off	√

Mechanical Specifications		
Dimension	180*90*45mm	
Weight	319g	
Battery Type	1.5V AA Battery * 2	
Warranty	One year	
Environmental Specifications		
Operating	Temperature	0~40℃
	Humidity	<75%
Storage	Temperature	-20~60℃
	Humidity	<80%

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D . Instruction

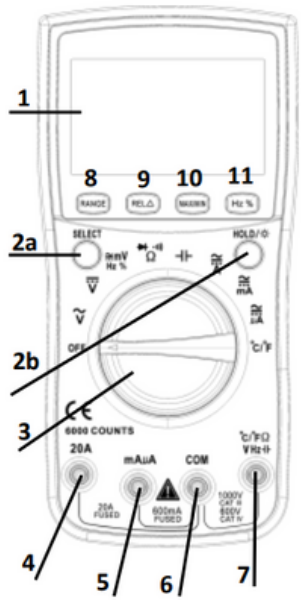
(1) Front Panel (see image on right)**

1. **LCD Display**
2. **Buttons**

* **SELECT**: Switch between AC/DC, Voltage (mV)/Frequency/Duty Cycle/Resistance/Continuity/Diode, or °C/°F by pressing this button.
* **HOLD**: Freezes the current reading; "HOLD" appears on the display. Press again to release. Hold for over 2 seconds to activate backlight; long-press again to turn it off.
3. **Rotary Switch**: Selects mode or range. (From OFF, clockwise):

* OFF
* AC Voltage (V)
* DC Voltage (V)
* Voltage (mV)/Frequency/Duty Cycle
* Resistance/Continuity/Diode
* Capacitance
* AC/DC Current (A)
* AC/DC Current (mA)
* AC/DC Current (μA)
* Temperature

4. **20A**: Input terminal for high-current measurements.
5. **mA/μA**: Input terminal for low-current measurements.
6. **COM**: Common terminal for all measurements.
7. **VΩHz**: Input terminal for voltage, frequency, duty cycle, resistance, continuity, diode, capacitance, and temperature.
8. **RANGE**: Activates manual ranging. Each press increases range; after the highest range, the next press cycles to the lowest. Hold 2 seconds to return to auto range.
9. **REL**: Enables relative measurements for Voltage, Current, and Capacitance. Press again to exit.
10. **MAX/MIN**: Press once to capture maximum value, twice for minimum. Hold 2 seconds to exit.
11. **Hz %**: While measuring AC Voltage or AC Current, press to view frequency or duty cycle.



(2) Measure AC/DC Voltage

1. Connect the black test lead to the COM Terminal and connect the red test lead to the VHz Terminal; 2. Turn the rotary switch to the AC Voltage (V) Mode, the DC Voltage (V) Mode, or the Voltage (mV) Mode; 3. Press SELECT to toggle between AC/DC; 4. Touch the probes to the correct test points of the circuitto measure the voltage; 5. Read the measured voltage on the display. *Caution: a. Do not measure voltage that exceeds the MAX Value as indicated in the Specifications; b. Do not touch high voltage circuit during measurements

(3) Measure AC/DC Current

1. Connect the black test lead to the **COM terminal** and the red test lead to the **20A terminal** or the **mA/μA terminal**, depending on the expected current.
2. Set the rotary switch to **AC/DC Current (A), (mA), or (μA) mode** as required.
3. Press **SELECT** to switch between AC and DC measurement.
4. Break the circuit to be measured, connect the test leads across the break, and apply power.

5. Read the current value directly on the display.
Caution:
a. Do not measure current exceeding the maximum value specified.
b. For unknown current levels, start with the **20A terminal** in **Current-A mode**, then switch to the **mA/μA terminal** and lower current ranges if needed.

> Do not input voltage exceeds 36V DC or 25V AC when you are at the setting of measuring current.

(4) Measure Resistance

1. Connect the black test lead to the **COM terminal** and the red test lead to the **VHz terminal**.
2. Set the rotary switch to **Resistance mode**; the display will indicate “OL”.
3. Place the probes on the circuit test points to measure resistance.
4. Read the resistance value directly on the display.

Caution:
a. Disconnect circuit power and fully discharge capacitors before measuring resistance.
b. Do not apply voltage while in Resistance mode.

(5) Measure Continuity

1. Connect the black test lead to the **COM terminal** and the red test lead to the **VHz terminal**.
2. Set the rotary switch to **Resistance mode** and press **SELECT** once to switch to **Continuity mode**.
3. Place the probes on the circuit test points.
4. The built-in beeper sounds when resistance is below 50Ω, indicating a short circuit.

Caution:
a. Do not apply voltage in Continuity mode.

(6) Measure Diode

1. Connect the black test lead to the **COM terminal** and the red test lead to the **VHz terminal**.
2. Set the rotary switch to **Resistance mode** and press **SELECT** twice to enter **Diode mode**.
3. Place the red probe on the anode and the black probe on the cathode of the diode under test.
4. Read the forward bias voltage directly on the display.
5. If the test lead polarity is reversed or the diode is faulty, the display shows “OL”.
Caution:
a. Do not apply voltage in Diode mode.
b. Disconnect circuit power and discharge all capacitors before testing diodes.

(7) Measure Capacitance

1. Connect the black test lead to the **COM terminal** and the red test lead to the **VHz terminal**.
2. Set the rotary switch to **Capacitance mode**.
3. Place the red probe on the anode and the black probe on the cathode of the capacitor under test.
4. Read the capacitance value on the display once the measurement stabilizes.

Caution:
a. Disconnect circuit power and fully discharge capacitors before testing capacitance.

(8) Measure Frequency and Duty Cycle

1. Connect the black test lead to the **COM terminal** and the red test lead to the **VHz terminal**.
2. Set the rotary switch to **Voltage (mV) mode**; press **SELECT** twice to switch to **Frequency mode**, or three times to switch to **Duty Cycle mode**.
3. Place the probes on the circuit test points.
4. Read the frequency or duty cycle value directly on the display.
Caution:
a. Frequency mode is intended only for measuring high frequency at low voltage.

(9) Measure Temperature

1. Connect the black thermocouple probe to the **COM terminal** and the red thermocouple probe to the **VHz terminal**.

2. Set the rotary switch to **Temperature mode**; the display will show ambient temperature. Press **SELECT** to toggle between °C and °F.
3. Place the probes on the desired test points.
4. Read the measured temperature directly on the display.
Caution:
a. Do not apply voltage in Temperature mode.

(10) Auto Power Off

1. The meter **automatically powers off** after 15 minutes of inactivity.
2. The **built-in beeper sounds five times** one minute before shutdown.
3. Press **SELECT** to restart the meter.
4. To **disable Auto Power Off**, hold **SELECT** while powering on; five beeps confirm successful deactivation.

E. Genearl Maintenance

Except for battery and fuse replacement, **do not perform repairs or service** unless qualified and provided with the relevant calibration, performance, and service instructions.

1. Do not operate the meter in **hot, wet, flammable, explosive, or strong magnetic environments**.
2. Clean the meter with a **damp cloth and mild detergent**; avoid abrasives or solvents.
3. **Disconnect all input signals** before cleaning.
4. Remove batteries during extended storage to **prevent leakage**.
5. When " " appears on the display, replace batteries as follows:

   1. Loosen the screw and remove the battery cover.
   2. Install new batteries of the **same type**.
   3. Replace the battery cover and fasten the screw.

6. Replace fuses following the same procedure; use **only fuses identical** to the originals.

Warning:
1. **Do NOT exceed the "maximum value" indicated in the Specification;**
2. **Do NOT input voltage at the Current Mode, the Resistance Mode, the Diode Mode, the Continuity Mode, or the Temperature Mode;**
3. **Do NOT use the product when the batteries or the battery cover is not placed properly;**
4. **Turn off the product and remove the test leads from the test points before changing batteries or fuses.**

F. Troubleshooting

If your product do not function as normal, the following steps may help you. If the problem still cannot be solved, please contact your dealer

Problem	Possible Reason
Display Malfunction	Low battery; replace batteries
Symbol	Replace batteries
No current input	Replace fuse

LIMITED WARRANTY AND LIMITATION OF LIABILITY

Customers enjoy one-year exchange, three-year warranty fromthedateofpurchase. This warranty does not cover fuses, disposable batteries, or damagefrom accident, neglect, misuse, alternation, contamination, or abnormal conditions of operation or handling.

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