

True RMS Voltmeter User Manual

Home » Voltmeter » True RMS Voltmeter User Manual

True RMS Voltmeter



Thank you for purchasing our product.

Please read this manual carefully before use.

Please keep this manual properly after reading

Contents

- 1 Safety Instructions
- **2 Measurement Notices**
- 3 Other Notices
- 4 Introduction
- **5 General Specifications**
- **6 Electrical Specifications**
- 7 Preparations for

Measurement

- 7.1 Preparations
- 8 Appearance
- 9 Measurements
- 9.1 Steps for measurement
- 9.2 Auto Power Off
- 10 Maintenance
 - 10.1 Replace Battery
 - 10.2 Replace the Fuses
 - 10.3 Clean the Product
 - 10.4 Calibration
 - 10.5 Storage Method
- 11 Related Posts

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 exceeds the measurement range of this product. Please select the correct test position and range to avoid damage to the instrument or personal injury. " Ut " will be shown on the display when out of range.
- When the voltage to be measured exceeds 36V DC or 25V AC, the operator shall 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



- DC/AC high voltage circuits are very dangerous, please be careful to measure.
- Do not to add AC/DC voltages that exceeds the maximum rated value between the ground terminal and test terminal.
- Do not add voltage that exceeds the allowable value.
- 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 coatings.

AC/DC Voltage Measurement Notice



- 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



- 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 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



- 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 stat



• 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



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

Test Leads Notice



Do not touch the pins of the test leads during the measurement. Do not use test leads with damaged coatings. Please do not stretch the cables to avoid breaking the test lead. Dust and water are not supported.



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

Introduction

This product is a multi-functional, auto-ranging digital multimeter with a 6000 counts 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

General Specifications

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

Operating Storage	Temperature	0~40°C
Operating Glorage	Humidity	75%
Operating Storage	Temperature	-20~60°C
Operating Storage	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.

Electrical Specifications

Function	Range	Resolution	Accuracy	Мах
	6.000V	0.001V		
DC Voltage	60.00V	0.01V		
V	600.0V	0.1V		1000V
	1000V	1V	±(0.5%+3)	
DC Voltage	60.00mV	0.01mV		
mV	600.0mV	0.1mV		600mV
	6.000V	0.001V		
	60.00V	0.01V		
AC Voltage	600.0V	0.1V		750V
	750V	1V		
	60.00mV	0.01mV	±(1.0%+3)	
AC Voltage mV	600.0mV	0.1mV		600mV

Function	Range	Resolution	Accuracy	Max
	6.000A	0.001A		

DC Current				
Α	10.00A	0.01A		10A
DC Current	60.00mA	0.01mA	±(1.2%+3)	222 A
mA	600.0mA	0.1mA		600mA
AC Current	6.000A	0.001A		104
Α	10.00A	0.01A		10A
AC Current	60.00mA	0.01mA	±(1.5%+3)	C00m4
mA	600.0mA	0.1mA		600mA
	600.0Ω	0.1Ω		
	6.000kΩ	0.001kΩ		
	60.00kΩ	0.01kΩ	±(0.5%+3)	
Resistance	600.0kΩ	0.1kΩ		60ΜΩ
	6.000ΜΩ	0.001ΜΩ		
	60.00ΜΩ	0.01ΜΩ	±(1.5%+3)	
	9.999nF	0.001nF	±(5.0%+20)	
	99.99nF	0.01nF		
	999.9nF	0.1nF		
	9.999µF	0.001µF		

	99.99µF	0.01µF	±(2.0%+5)	
Capacitance	999.9µF	0.1µF		9.999mF
	9.999mF	0.001mF	±(5.0%+5)	
	99.99Hz	0.01Hz		
	999.9Hz	0.1Hz		
	9.999kHz	0.001kHz		
	99.99kHz	0.01kHz		
Frequency	999.9kHz	0.1kHz	±(0.1%+2)	9.999MHz
	9.999MHz	0.001MHz		
Duty Cycle	1%~99%	0.1%	±(0.1%+2)	
	(-20~1000)°C	1°C		1000°C
Temperature	(-4~1832)°F	1°F	±(2.5%+5	1832°F
Diode	V			
Continuity	√			

Preparations for Measurement

Preparations

- 1. Please check the product carefully before use and confirm if there is cracks or missing items. If you have any questions, please contact the store you purchased.
- 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 increasing errors.
- 4. Please note that when measuring resistance, continuity, current flows 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.

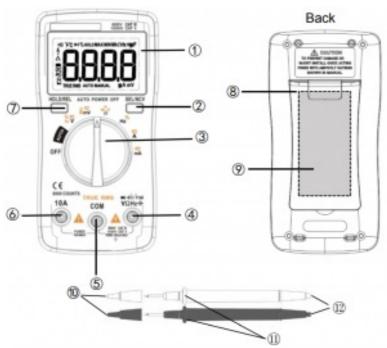
Note:

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 become stable.

Appearance

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



Function Dial

(a) Power (OFF)

- (b) AUTO (Voltage/Resistance/ Continuity)
- (c) Voltage/Frequency/ Duty Cycle 46 V
- (d) Temperature/mV Voltage
- (e) Diode/Resistance/Continuity/ Capacitance
- (f) Frequency/Duty Cycle A
- (g) A Current
- (h) mA Current mA

Measurements

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.



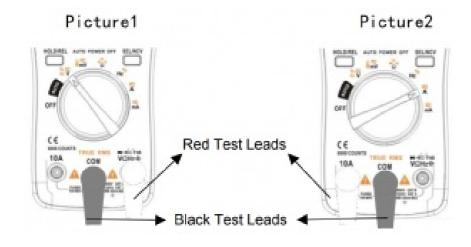
- 1. Do not confuse the item to be measured with the position of the function.
- 2. Do not exceed the maximum rated value of each function.
- 3. Do not switch functions or modes during measurement.
- 4. During the measurement process, hold the insulated part of the test lead and do not hold the pins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

Auto Power Off

- 1. This feature prevents the battery from running 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 cut 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 VOHz-literminal in Picture1
- 2. Put the red lead to 10A terminal when test the current in Picture2.



Measurement	Function Positio n	Data Display	Connection II lustration	Usage and Notice
Auto	Auto-recognition for Voltage /Resistance/ Con tinuity by connecting test le ads	5 1500 10,00 10,00 10,00		Please rotate dial to AUTO position; P ut probes correctly to recognize Volta ge/Resistance/Continuity automaticall y. Only when the voltage is higher tha n 0.8V, this data will be shown on the display. * Voltage/Resistance/Continuity can be also measured by switch dial to fu nction position manually.
		auto O	55	1. Connect the black test lead to H d C F m A VΩ Hz - H the COM Terminal and co
DC Voltage AC V oltage (Frequenc y Duty Cycle) Te mperature	Please select te mperature functio n in mV by SEL/NCV	4 1028 AC TRUE RMS AUTO		nnect the red test lead to Terminal; 2. Rotate dial to W Mode or 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 dis play. W If reverse the test lead, it shows "—" mark. The frequency is 40-100 OHz in AC Voltage Mode. There is no special link between the measured value and the test leads.

DC Current		81,05 ₪	Red Probe	Connect the black test lead to the COM Terminal and connect the red
AC Current	SCOREL AND POWER OF SEACH CONTROL OF SEA	4 20. 18 TRUE RANS AUTO M A	AC Device	test lead to the VOHz-III Terminal or the 10A Terminal (based on the value of current); 2. Rotate dial to Mode or Mode; 3. Press SEL/NCV to toggle between AC/DC mode; 4. Cut off 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
Resistance Ω		10.00		 Press SEL/NCV to toggle between AC/DC mode Please turn off the power of this component to be tested. 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 in dicates a short circuit. * Please measure the resistance ran ge in order to get detailed resistance.

Diode —————	SEL键切换功能	0.632	 Connect the red probe to the anod e and the black probe to the cathode of the diode being tested; Read the forward bias value on the display; If the polarity of the test leads is reversed with diode polarity or the diode is broken and it shows "-" mark. Do not input voltage at the Diode Mode. Disconnect circuit power and discharge all capacitors before you test diode.
Capacitance) (O,O,O)	 Connect the red test lead to the an ode and the black test lead to the c athode of the capacitor to be teste d; Disconnect circuit power and di scharge all capacitors before testin g capacitance. The electrostatic ca pacity becomes larger, the measur ement time is longer.
Frequency Duty Cycle Hz/%	HOLDIREL AUTO POWER OFF SEL/NCV	0 <u>5</u> 06	
NCV Function	HOLDIREL AUTO POWER OFF SELINCY	EF	
Data Hold/REL H OLD/REL	HOLDREL AUTO POWER OFF SELINCY WHEN TO THE	: 7 <u>0</u> 5:A :5000	

Maintenance

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
- 2. Loosen the screw on the battery door and remove the battery door.
- 3. Replace the used batteries with new batteries of the same type.
- 4. Place the battery door back and fasten the screws

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.

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.

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

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.

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