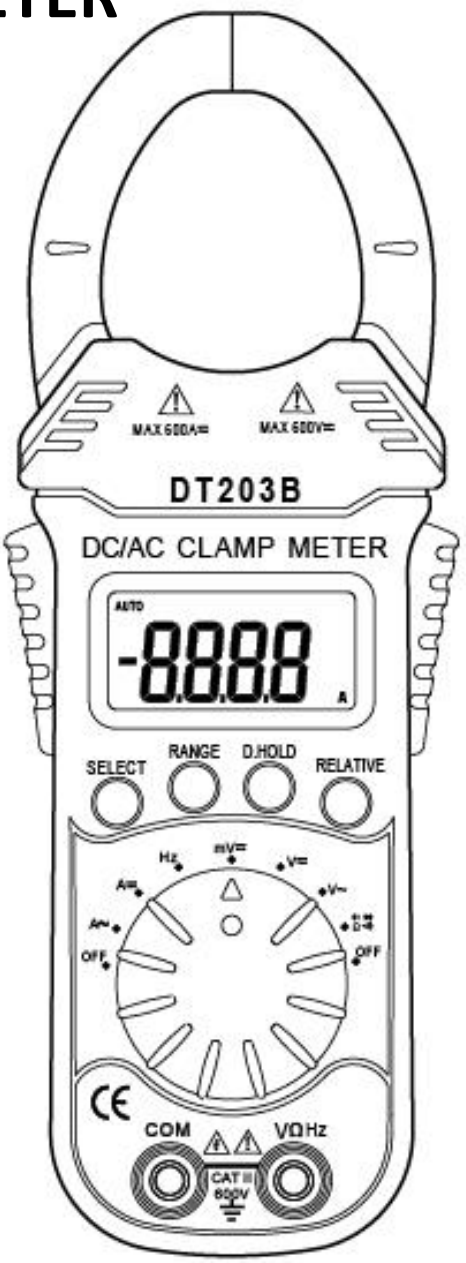
OPERATOR'S INSTRUCTION MANUAL

AUTO RANGE T-RMS DIGITAL CLAMP METER

MODEL: DT203B



WARNING

READ AND UNDERSTAND THIS MANUAL BEFORE USING THE INSTRUMENT.

1. INTRODUCTION

This manual provides all safety information, operation instruction, specifications and maintenance for the meter, which is compact, hand held, and battery operated.

This instrument performs AC/DC voltage, AC/DC Current, Resistance, Audible Continuity, Diode, Frequency and Capacitance measurements. It is a 6000 counts auto ranging digital clamp multimeter.

DT203B digital clamp multimeter has been designed according to EN61010-1 oncoming electronic measuring instruments with an over voltage category (CAT II 600V) and Pollution degree 2.

 Warning

To avoid possible electric shock or personal injury, and to avoid possible damage to the Meter or to the equipment under test, adhere to the following rules:

- Before using the Meter inspect the case. Do not use the Meter if it is damaged or the case (or part of the case) is removed. Look for cracks or missing plastic. Pay attention to the insulation around the connectors.
- Inspect the test leads for damaged insulation or exposed metal. Check the test leads for continuity.
- Do not apply more than the rated voltage, as marked on the Meter, between the terminals or between any terminal and grounding.
- The rotary switch should be placed in the right position and no any changeover of range shall be made during measurement is conducted to

prevent damage of the Meter.

- When the Meter working at an effective voltage over 60V in DC or 30V rms in AC, special care should be taken for there is danger of electric shock.
- Use the proper terminals, function, and range for your measurements.
- Do not use or store the Meter in an environment of high temperature, humidity, explosive, inflammable and strong magnetic field. The performance of the Meter may deteriorate after dampened.
- When using the test leads, keep your fingers behind the finger guards.
- Disconnect circuit power and discharge all high-voltage capacitors before testing resistance, continuity or diodes.
- Replace the battery as soon as the battery indicator  appears. With a low battery, the Meter might produce false readings that can lead to electric shock and personal injury.
- Remove the connection between the testing leads and the circuit being tested, and turn the Meter power off before opening the Meter case.
- When servicing the Meter, use only the same model number or identical electrical specifications replacement parts.
- The internal circuit of the Meter shall not be altered at will to avoid damage of the Meter and any accident.
- Soft cloth and mild detergent should be used to clean the surface of the Meter when servicing. No abrasive and solvent should be used to prevent the surface of the Meter from corrosion, damage and accident.

- The Meter is suitable for indoor use.
- Turn the Meter power off when it is not in use and take out the battery when not using for a long time. Constantly check the battery as it may leak when it has been using for some time, replace the battery as soon as leaking appears. A leaking battery will damage the Meter.

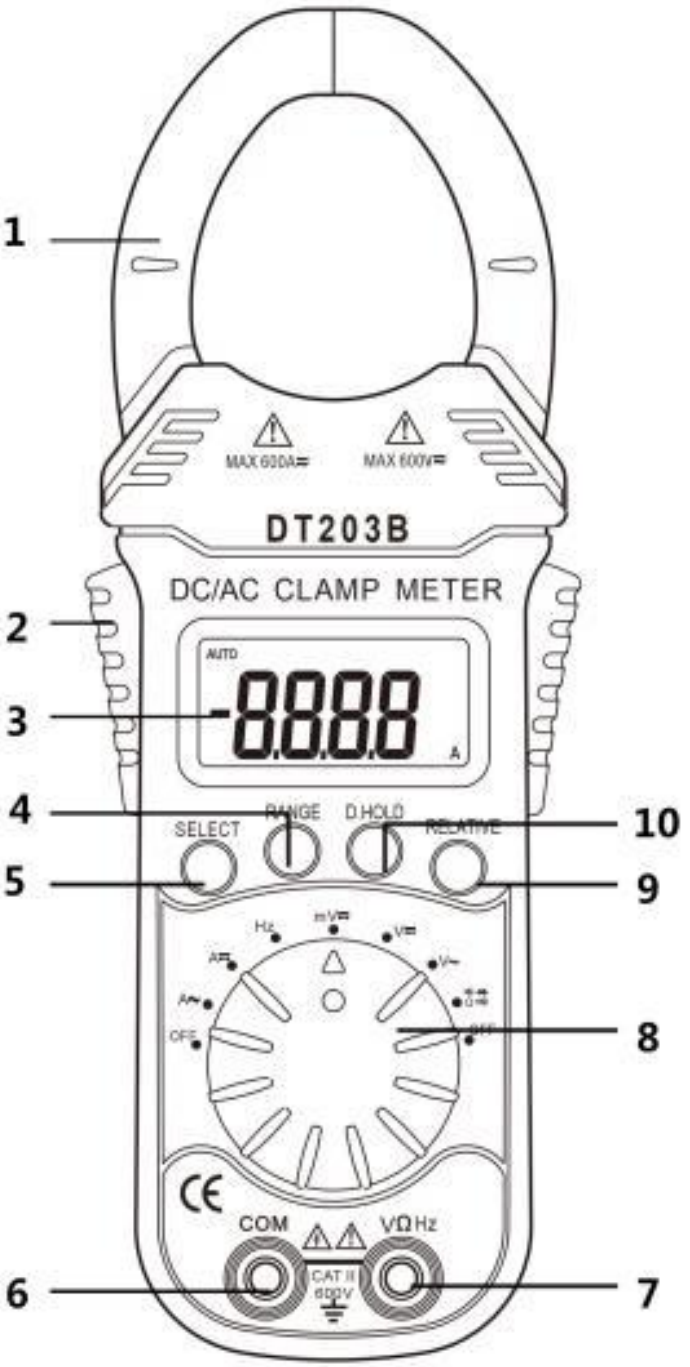
2. GENERAL CHARACTERISTICS

Display : LCD, 6000 counts updates 2/sec
LCD size : 30*49 mm
Polarity Indication : “-” displayed automatically
Over-range Indication : “OL” displayed
Low Battery Indication : “⊞” displayed
Range select : auto range or manual
True-RMS : ACV & ACA measure
Operation Temperature : 0°C to 40°C, less than 80%RH
Storage Temperature : -10°C to 50°C, less than 85%RH
Battery Type : 1.5V AAA 2PCS
Dimension(H×W×D) : 190x68x26mm
Clamp open jaw : Max. 40mm
Weight : Approx 170g including battery

3.ELECTRICAL SYMBOLS

	DC (Direct Current)
	AC (Alternating Current)
	DC or AC
	Important safety information. Refer to the manual
	Dangerous voltage maybe present
	Earth ground
	Low battery
	Diode
	Continuity test
AUTO	Auto range
	Conforms to European Union directive
	Double insulated

4. PANEL DESCRIPTION



1、**Transformer Jaws**

Pick up the Current flowing through the conductor.

2、**Trigger**

Press the level to open the transformer jaws. When the finger press on the trigger is released, the jaws will

close again.

3、Display

3 5/6 digit LCD, with a max. reading of 5999.

4、RANGE BUTTON

AC/DC voltage, and Resistance measuring ranges can be selected manually or automatically by pushing the range control button. Push this button to choose range control mode and needed ranges.

5、SELECT BUTTON

Push this button to select Ω，→+，•))) or ⊣⊢ measuring function when the function switch is set at Ω→+•)))⊣⊢ range,or to select Hz,Duty cycle(%)

6、**COM Input Jack**

Low input for all except current measurement will accept banana plugs.

7、**"VΩHz" Input Connect**

High input for all except current measurement will accept banana plugs.

8、Function & Range Switch

This switch can be used to select desired function and range.

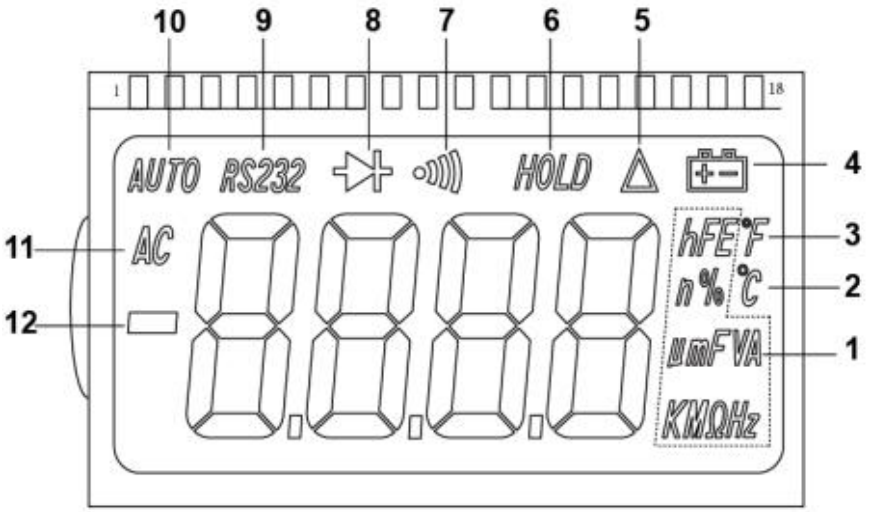
9、RELATIVE BUTTON

Push this button to measure relative value, can make meter display "0" value, DC and AC current measure, capacitance measure, you can clear the error readings to interference of meter.

10、D.HOLD BUTTON

When this button is pushed, LCD will Lock current measured readings, and "HOLD" symbol will appear till pushed again.

Back-light function, push this button for more than 2 seconds, blue back-light will light，after 15 seconds or press and hold this button more than 2 seconds，back-light will turn off automatically.



1、Electrical symbol
2、Celsius degree measure is selected
3、Fahrenheit degree measure is selected
4、Low Battery and replaced immediately
5、Relative value test symbol
6、Data hold symbol
7、Continuity test is selected
8、Diode test is selected
9、Rs232 serial interface
10、Auto range mode is selected
11、AC test is selected
12、Negative indication

5. SPECIFICATIONS

Accuracy is guarantied for 1 year 23°C±5°C less than 80%RH.

5-1. DC VOLTAGE (Auto ranging)

Range	Resolution	Accuracy
600mV	0.1mV	±(0.8% of rdg + 5dgts)
6V	1mV	±(0.8% of rdg + 3dgts)
60V	10mV	
600V	1V	±(1.0% of rdg + 5dgts)

Input Impedance: 10MΩ
Overload Protection: 600V
Max. Input voltage: 600V

5-2. AC VOLTAGE (Auto ranging)

Range	Resolution	Accuracy
600mV	0.1mV	±(0.8% of rdg + 5dgts)
6V	1mV	±(0.8% of rdg + 3dgts)
60V	10mV	
600V	1V	±(1.0% of rdg + 5dgts)

Show True-RMS value
Input Impedance: 10MΩ
Overload Protection: 600V

5-3. AC and DC CURRENT (Auto ranging)

Range	Resolution	Accuracy
0-600A	100mA	±(2% of rdg + 10dgts)

Measuring voltage drop: 600mV
AC current show True-RMS value

5-4. RESISTANCE (Auto Ranging)

Range	Resolution	Accuracy
600Ω	0.1Ω	±(1.2% of rdg + 5dgts)
6KΩ	1Ω	
60KΩ	10Ω	
600KΩ	100Ω	
6MΩ	1KΩ	
60MΩ	10KΩ	

Open Voltage: about 0.55V
Overload Protection: 250V DC/AC RMS

5-5. Diode and Continuity

Range	Introduction	Remark
	The approximate forward voltage drop will be displayed	Open circuit voltage: about 3.3V
	The built-in buzzer will sound if the resistance is less than about 30Ω.	Open circuit voltage: about 1.1V

Overload Protection: 250V DC/AC RMS
For continuity test: When the resistance is between 30Ω and 100Ω, the buzzer may sound or may not sound. When the resistance is more than 100Ω, the buzzer won't sound.

5-6. FREQUENCY (Auto Ranging)

Range	Accuracy
0 ~ 10MHz	±(1.0% of rdg + 5dgts)

Overload Protection: 250V DC/AC RMS

5-7. CAPACITANCE (Auto Ranging)

Range	Accuracy
60nF/600nF/6uF 60uF/600uF/20m（30sec）	±(8.0% of rdg + 5dgts)

Overload Protection: 250V DC/AC RMS
Capacitance must be discharge before test.

6. OPERATION INSTRUCTION

6-1. Measuring Voltage

1) Connect the black test lead to the “COM” jack and the red lead test lead to the “VΩHz” jack.
2) Set the function switch to V~ or V⎓ or mV⎓ range.
3) Connect the test leads across the source or load to be measured.
4) Read LCD display. The polarity of the red lead connection will be indicated when making a DC measurement.

Note:

a. In small range example mV range , the meter may display an unstable reading when the test leads have not been connected to the load to be measured. It is normal and will not affect the measurements.
b. To avoid damage to the meter, don’t measure a voltage which exceeds 600V.

6-2. Measuring Current

1) Set Function/Range Switch to the A~ or A⎓ range.
2) Press the trigger to open the transformer jaws, and clamp one conductor only, it is impossible to make measurements when two or three

conductors are clamped at the same time.

3) Display reading is flowing the conductor AC current or DC current.
4) ACA measure show True-RMS value.

6-3. Measure Resistance

1) Connect the black test lead to the “COM” jack and the red test lead to the “VΩHz” jack .
2) Set the function switch to ⊣(⊣Ω•)) range.
3) The symbol “MΩ” will appear as an indicator.
4) Connect the test leads across the load to be measured.
5) Read the reading on the display.

Note:

a. For resistance measurements >1MΩ, the meter may take a few seconds to stabilize reading. This is normal for high-resistance measurement.
b. When the input is not connected, i.e. at open circuit, the symbol “OL” will be displayed as an over range indicator.
c. Before measuring in-circuit resistance, be sure that the circuit under test has all power removed and all capacitors are fully discharged.

6-4. Continuity Test

6) Connect the black test lead to the “COM” jack and the red test lead to the “VΩHz” jack .
1) Set the function switch to ⊣(⊣Ω•)) range.
2) Press the “SELECT” button to select continuity measurement mode, and the symbol “ •)) ” will appear as an indicator.
3) Connect the test leads across the load to be measured.
4) If the circuit resistance is lower than about 30Ω, the built-in buzzer will sound.

6-5. Diode Test

1) Connect the black test lead to the “COM” jack and the red test lead to the “VΩHz” jack . (Note: The polarity of the red test lead is positive “+”).
2) Set the function switch to range.
3) Press the “SELECT” button to select diode test measurement mode, and the symbol “” will appear as an indicator.
4) Connect the red test lead to the anode of the diode to be tested and the black test lead to the cathode.
5) The meter will show the approximate forward voltage of the diode. If the connections are reversed, “OL” will be shown on the display.

6-7. Capacitance Measuring

1) Connect the black test lead to the “COM” jack and the red test lead to the “VΩHz” jack .
2) Set the function switch at range.
3) Press the “SELECT” button to select capacitor test measurement mode, and the symbol “nF” will appear as an indicator.
4) Connect test leads across the capacitor to be measured and be sure the polarity of connection is observed.

Note: When the capacitance to be measured is above 100uF, it needs at least 15 seconds to make readings stable.

6-8. Frequency Measuring

1) Set the function range switch to the “Hz” range.
2) Connect the black test lead to the “COM” jack and the red test lead to the “VΩHz” jack .
3) Connect the test leads across the load to be

measured.

4) Read the reading on the display.

7. Auto Power Off

If you don't operate the meter for about 15 minutes, it will turn off automatically. To turn it on again, press "SELECT" or "D.HOLD" button seconds.

If you want to disable APO function, press & hold "SELECT" button, rotate the function switch turn on meter same-time.

8. BATTERY REPLACEMENT

If the sign "  " appears on the display, it indicates battery should be replaced. Remove screws and open the back case, replace the exhausted battery with new batteries (1.5V AAA equivalent).

9. ACCESSORIES

Owners manual:	1 piece
Test leads:	1 pair
Battery (1.5V AAA):	2 piece

WARRANTY

This Instrument is warranted to be free from defects in material and workmanship for a period of one year. Any instrument found defective within one year from the delivery date and returned to the factory with transportation charges prepaid, will be repaired, adjusted, or replaced at no charge to the original purchaser. This warranty does not cover expandable items such as batteries. If the defect has been caused by a misuse or abnormal operating conditions, the repair will be billed at a nominal cost.

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