TOTAL

One-Stop Tools Station

DIGITAL AC CLAMP METER

TMT42002



totaltoolsworld

TOTAL TOOLS WORLD

AC 200A

Safety Statement

The design and manufacture of clamp meters conform to IEC 61010-1, IEC 61010-2-032, IEC 61010-031 International Electrical Safety Standards, and Compliance with IEC 61010 CAT.III 600V measurement category and pollution grade 2.

⚠ **Warning** ***Read this manual before using the instrument.***

Safety Operation Specifications

"**Warning**" mark indicates the condition and operation which may cause danger to users.

"**Caution**" mark refers to the condition and operation which may cause damage to the instrument or equipment.

⚠ **Warning**

In order to avoid possible electric shock or personal injury and other safety accidents, please abide by the following specifications:

Please read this manual carefully before using the instrument, and pay special attention to safety warning information.

Strictly observe the operation of this manual and use this instrument. Otherwise, the protection function of the instrument may be damaged or weakened

- Please be careful if the measurement exceeds 30V AC true RMS, 42V AC peak or 60V DC. There may be danger of electric shock at this kind of voltage
- Voltage applied between terminals or between each terminal and grounding point shall not exceed the rated value.
- By measuring the known voltage to check whether the meter work is normal, if it is not normal or damaged, do not use it again
- Before using the instrument, please check whether there are cracks in the instrument shell or plastic parts damaged. If so, please do not use again.。
- Before using the instrument, please check whether the probe is cracked or damaged. If so, please replace the same type and the same electrical specifications
- Do not exceed the lowest rated Category of Measurement (CAT) rating in products, probes or accessories
- Do not measure the current when the probe is inserted into the input jack。
- Don't work alone
- Please comply with local and national safety code. Wear

personal protection equipment (such as approved rubber gloves, masks and flame retardant clothes, etc.) to prevent being damaged by electric shock and electric arc due to exposed hazardous live conductor

- When it shows low battery indicator, please replace the battery in time in case of any measurement error
- Do not use the instrument around explosive gas, steam or in wet environment.
- When using the probe, please put your fingers behind the finger protector of the probe
- When measuring, please connect the neutral wire or the ground wire firstly, then connect the live wire; When disconnecting, please disconnect the live wire firstly, then disconnect the neutral wire and ground wire
- Before opening the outer cabinet or battery cover, please remove the probe on the instrument. Do not use the instrument in the circumstances that the instrument is taken apart or battery cover is opened。
- It only meets the safety standards when the instrument is used together with the supplied probe. If the probe is damaged and needs to replace, the probe with same model

number and same electrical specifications must be used for replacement.

Safety Symbols

	High voltage warning
	AC (Alternating current)
	DC (Direct current)
	AC or DC
	Warning, important safety signs
	Ground
	Fuse
	Equipment with double insulation/reinforced insulation protection
	low battery
	Product complies with all relevant European laws
	The additional product label shows that do not discard this electrical/electronic product into household garbage.

Overview

The new generation of high-performance digital clamp meter makes your work easier, more efficient and safer. Measurable AC/DC voltage, AC current, resistance, continuity, diode.

Instrument panel description

① Current clamp

② Trigger

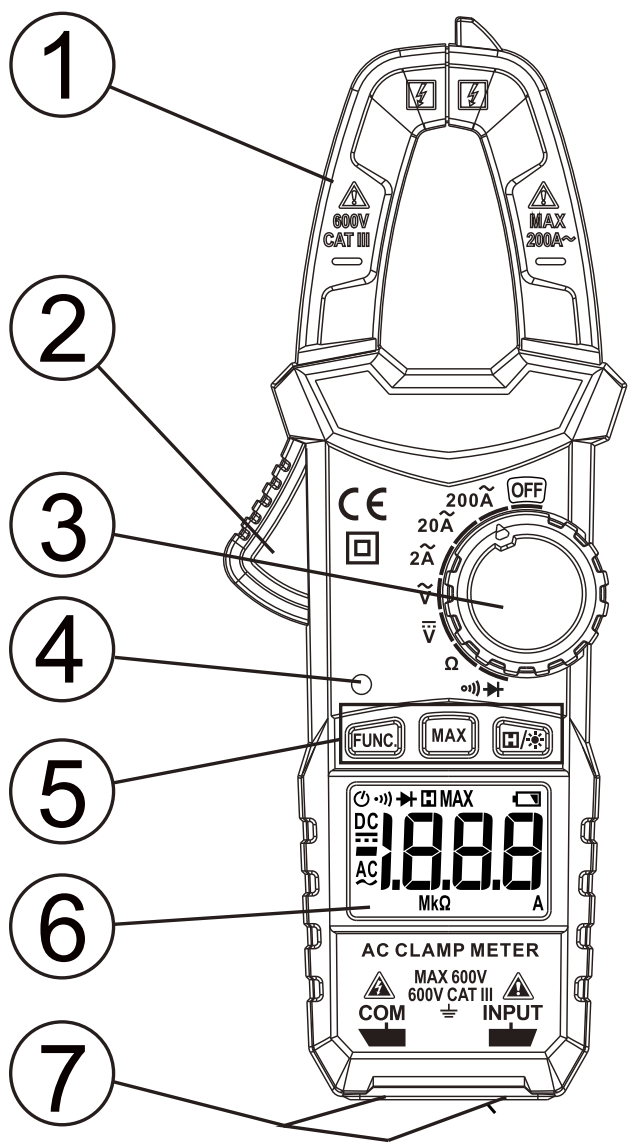
③ Knob switch

④ LED indicator

⑤ Function keys

⑥ Display screen

⑦ Measuring input jack



Function key

FUNC. : Functional selection

MAX : Max

⊡/☼ : Data hold /Backlight

Other functions

- Max measurement：press MAX key View Maximum ， press MAX key and keep more than 2 seconds to exit the maximum measurements
- Backlight：press 🔦/☀ key to turn on or off the backlight, or automatically turn off the backlight after 30 seconds
- Data hold：press 🔦/☀ key to turn on or off data hold
- Auto power off：

  No operation in 15 minutes. The instrument will shut down automatically to save battery energy. After automatic shutdown, press any key to restore the working state of the instrument.

  If you press the " FUNC. " key and keep, Then turn on the meter power, the automatic shutdown function will be cancelled. Reboot can restore automatic shutdown function.

Measurement operation

AC current measurement

1) Turn the knob to Ã，and select Proper range(2A、20A or 200A)。
2) Then press the trigger to open the clamp, clamp the conductor to be tested, then slowly release the trigger until the clamp are completely closed, and determine whether the conductor to be tested is clamped in the center of the pliers, if the conductor is not in the center of the pliers, additional errors will occur.
3) Read the measurement results from the display screen
4) When the measurement result is greater than 3A, the orange backlight will on.

⚠ Warning

- When measuring high voltage, pay special attention to safety, so as not to be subjected to electric shock or personal injury.。
- In order to ensure the measurement accuracy, the measured conductor must be placed in the center of the clamp, otherwise additional errors will occur.

AC/DC voltage measurement

1) Turn the knob to $\overline{\overline{V}}$(DCV) or $\tilde{V}$(ACV)
2) Insert the red probe in “INPUT” jack，insert the black probe in “COM” jack。
3) Contact the probe to the measured circuit (connect to the measured power supply or circuit in parallel), measure the voltage.
4) Read the measurement result on the screen.
5) When the measurement result is greater than 80V, the orange backlight will on.

⚠ **Warning**

- The voltage above 600V can’t be measured; otherwise the instrument may be damaged.
- Pay special attention to safety when measuring high voltage to avoid electric shock or personal injury.
- Test the known voltage with the meter before use, confirm the instrument function is intact.

Resistance measurement

1) Turn the knob to ▶|Ω, Selective resistance measurement function.

2) Insert the red probe in “INPUT” jack，insert the black probe in “COM” jack。

3) Contact the probe to the measured circuit or resistance.

4) Read the measurement result on the screen.

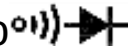
⚠ Warning

When measuring Capacitance on the line, disconnect the power supply and discharge all the high-voltage capacitors. Otherwise, the instrument may be damaged and may be struck by electric shocks.

⚠**Caution**：To avoid damaging the instrument or equipment, do not input a voltage greater than 10V.

⚠**Note**：When measuring resistance on a circuit, the reading may be affected by other paths between meters and pens.。

Continuity test

1) Turn the knob to  , press FUNC. key to set continuity.

2) Insert the red probe in “INPUT” jack，insert the black probe in “COM” jack。

3) Contact the probe to the measured circuit or resistance

4) Read the measurement result on the screen.

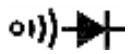
5) If the resistance of circuit or the measured resistance is less than 30Ω, the buzzer will on and lighting LED Indicator

⚠ Warning

When measuring Capacitance on the line, disconnect the power supply and discharge all the high-voltage capacitors. Otherwise, the instrument may be damaged and may be struck by electric shocks.

⚠**Note**：When measuring resistance on a circuit, the reading may be affected by other paths between meters and pens.。

Diode test

1) Turn the knob to  , press FUNC. key to set diode.
2) Insert the red probe in “INPUT” jack，insert the black probe in “COM” jack
3) Touch the diode anode with the red probe, the black probe contacts the diode cathode.
4) Read the measurement result on the screen.

⚠ Warning

When measuring diode on the line, disconnect the power supply and discharge all the high-voltage capacitors. Otherwise, the instrument may be damaged and may be struck by electric shocks.

General Technical Specifications

- Environment condition of using:

  CAT.III 600V

  Pollution level：2

  Altitude < 2000m。

  Working environment temperature and humidity:

  0~40°C (<80% RH, <10°C non condensing).

  Storage environment temperature and humidity:

  -10~60°C (<70% RH, remove the battery).

- Temperature coefficient:

  0.1× accuracy/°C (<18°C or >28°C).

- MAX. Voltage between terminals and earth ground：600V
- Display: 6000 counter readout. Automatically display the unit symbols according to the shift of the measurement function.
- Over range indication: it displays “OL”.
- Low battery indication: when the battery voltage is lower than the normal working voltage, “  ” will be displayed.
- Input polarity indication: automatically display “–”.
- Power: 2 x 1.5V AAA batteries.

Accuracy Specifications

The accuracy applies within one year after the calibration.

Reference condition: the environment temperature 18°C to 28°C, the relative humidity is no more than 80%,

accuracy: ±（% reading + word）.

DC voltage

Range	Resolution	Accuracy
200mV	0.1mV	±(0.5% reading+5)
2V	0.001V	
20V	0.01V	
200V	0.1V	
600V	1V	

Input impedance：10MΩ　　Overload protection: 600V

Maximum input voltage: 600V

AC voltage

Range	Resolution	Accuracy
2V	0.001V	±(1.0% reading+5)
20V	0.01V	
200V	0.1V	
600V	1V	

Input impedance：10MΩ

Overload protection: 600V

Maximum input voltage: 600V

Frequency Response：40Hz ~ 1000Hz

AC current

Range	Resolution	Accuracy
2A	0.001A	±(2.5%reading+8)
20A	0.01A	
200A	0.1A	

Maximum current：200A

Frequency Response：45Hz ~ 65Hz

resistance

Range	Resolution	Accuracy
200Ω	0.1Ω	±(1.0%reading+5)
2kΩ	0.001kΩ	
20kΩ	0.01kΩ	
200kΩ	0.1kΩ	
2MΩ	0.001MΩ	
20MΩ	0.01MΩ	

Overload protection：250V

Continuity

	<30Ω, buzzer on and LED light on	Open circuit voltage: approx. 2V Overload protection:250V

Overload protection：250V

Diode

	It displays the approximate forward voltage value of the diode.	Test voltage approx. 2V Overload protection:250V

Overload protection：250V

Maintenance

⚠ Warning

To avoid electric shock, remove the test probe before opening the battery cover or back cover。

General maintenance

- Maintenance and service of this instrument must be carried out by professional qualified maintenance personnel or maintenance department.
- Use wet cloth or mild detergent regularly to clean the shell. Do not use abrasives or solvents. Wipe the contacts in the socket with a clean cotton swab soaked in alcohol.

Battery Installation or Replacement

The instrument uses two AAA 1.5V batteries. Please install or replace the batteries according to the following steps.

1) Turn off the power of the instrument and remove the probe
2) Use screwdriver to unscrew the screw that fixes the battery cover and remove the battery cover
3) Remove the old battery and install the new battery according to the polarity of the battery marked in the battery box

4) After installing the new battery, cover the battery cover and lock the screw

⚠ Warning

- To avoid the possibility of electric shock or personal injury caused by incorrect reading, replace the battery immediately when the "  " sign is displayed on the display screen.
- Please use the same type of batteries, do not use substandard batteries
- In order to ensure safe operation and maintenance of the instrument, please take out the battery when not in use for a long time, in order to prevent damage to the product caused by battery leakage.。

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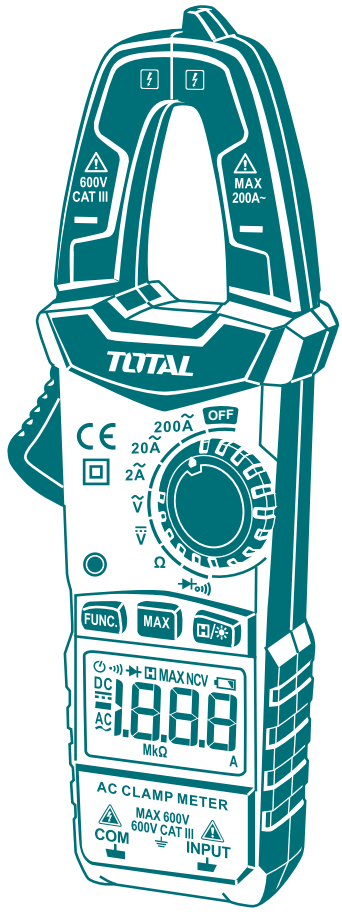

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TOTAL TOOLS CO., PTE. LTD.
MADE IN CHINA
T0420.V02

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