**Made in China**

CE RoHS ♻

M101040096

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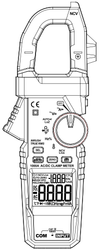

# Digital Clamp Meter

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120*90mm

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## Introduction

-This is a powerful 6000-count AC/DC auto-ranging digital clamp meter. designed for voltage measurement and AUTO-V LOZ low impedance automatic voltage identification. inrush current measurement. frequency measurement. true RMS measurement. etc. It allows for quick and accurate measurement of various electrical parameters. making it an ideal tool for power maintenance. electrical installation. industrial testing and other fields.

-The meter can be used to measure AC/DC current. AC/DC voltage. resistance. capacitance. diode. continuity. frequency. percentage. temperature. It also includes functions like NCV. Live. MAX. MIN. HOLD. INRUSH. VFD. flashlight. automatic shutdown. full-range overload protection. low battery indication and so on.

## 1.Safety information

| | |
|---|---|
| ⚠ | Attention should be paid to the use of the meter. Wrong operation may cause electric shock or damage to it. Please read the manual carefully before use and follow the instructions. |

* After receiving the meter. check for any damage during transportation.

* Before use. ensure the meter’s casing is intact. the insulation layer of the test probe is undamaged. the battery cover is closed and the screws are locked. and that the function range is correct.

* Don’t exceed the maximum measurement range or rotate the gear during measurement.

* Do not touch the probe (metal part) when the meter is connected to a measuring circuit.

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* Operate carefully if measuring voltages above DC 60V or AC 30V (RMS). The maximum input voltage is AC 750V/DC 1000V.

* Remove the test probe from the circuit before changing the measurement function.

* When measuring the current. please remove the test probe from the COM and the INPUT terminals.

* Before measuring resistance. continuity. diode. or capacitance. please disconnect the power supply of the circuit under test and discharge all high-voltage capacitors.

* Do not use the clamp to measure AC/DC currents over 1000A.

## 2. Marks

| Marks | Description |
|---|---|
| Ṽ | AC voltage |
| V⎓ | DC voltage |
| ⚠ | Important safety information. Refer to the manual. |
| ⏚ | Ground |
| ▣ | Double insulation |
| ⚡ | High voltage warning |
| CE | Comply with European Union (EU) standards |
| **CAT III** | Overvoltage (installation) level III according to IEC-61010 standard |

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## 3.Symbols

### 3.1 Display

| Symbols | Description |
|---|---|
| AUTO | Automatic measuring range |
| NCV | Non-contact voltage detection |
| Live | Live wire identification |
| HOLD | Data hold |
| MAX | Maximum value hold |
| MIN | Minimum value hold |
| ZERO | Zero adjustment |
| •))) | Continuity test |
| ⯈\| | Diode |
| AC~ | AC voltage |
| DC⎓ | DC voltage |
| mV | Millivolt |
| V | Volt |
| VFD | Variable-frequency measurement |
| K | Kilo |
| HZ | Frequency |
| % | Percentage |
| A | Unit of current |
| INRUSH | Inrush current |
| nF | Unit of capacitance |
| uF | Unit of capacitance |
| mF | Unit of capacitance |
| Ω | Unit of resistance |
| KΩ | Unit of resistance |
| MΩ | Unit of resistance |
| ℃ | Unit of temperature |
| ℉ | Unit of temperature |
| 🪫 | Low battery |
| ⏻ | Auto- shutdown |
| - | Negative pole |

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### 3.2 Buttons

| Buttons | Description |
|---|---|
| SEL | Function selection |
| MAX/MIN | Maximum/minimum value |
| ZERO | Zero adjustment |
| INRUSH/VFD | Inrush current testing/Variable-frequency measurement |
| HOLD/🔦 | Data hold/flashlight |

### 3.3 Input terminal

| Input socket | Description |
|---|---|
| COM terminal | Connect with the black probe. |
| INPUT terminal | Connect with the red probe. |

## 4. Technical parameters

| | |
|---|---|
| Automatic measuring range | Yes |
| Full range overload protection voltage | 600V |
| Maximum input voltage at INPUT and COM terminal | DC 1000V/AC 750V |
| Display | LCD |
| Maximum display value | 5999 |
| Over-range display | 0L or -0L |
| Sampling time | About 3 times/second |
| Auto-shutdown time | About 15 minutes |
| Backlight auto-off | About 3 minutes |
| Flashlight auto-off | About 5 minutes |
| Power Supply | 2x1.5V AAA batteries |
| Operating temperature | 0℃~50℃ |
| Storage temperature | -10℃ ~ 60℃ |
| Dimension | 218mmx75mmx39mm |
| Jaw size | 30mm |
| Weight | About 240g (Without battery) |

## 5. Functions

* SEL button: select NCV/Live. ℃/℉. resistance/continuity/diode/capacitance. AC/DC voltage. AC/DC current.

* MAX/MIN button: hold the measurement data in AC voltage/DC voltage/AC /DC mode. and press MAX→MIN→ to cancel the hold.

* ZERO button: In DC mode. press and hold the ZERO button for more accurate measurements. and the screen display (**ZERO**) will eliminate the base number caused by the magnetic field interference in the use environment. thus obtaining more accurate measurement results.

* VFD button: Start VFD (variable-frequency measurement) in AC voltage and current mode to effectively reduce high-frequency interference on measurement results. This ensures stable and accurate measurement of variable frequency voltage or current. even in the presence of high-frequency noise.

* INRUSH button: To measure the peak current flowing into the load when the power is on. press and hold the INRUSH button in AC current mode to enter the inrush current measurement function. Before measuring. disconnect the load's power supply. Hold the meter trigger. open the jaw. and place the single wire (neutral wire or live wire) of the circuit to be measured at the center of the clamp head. When the jaw is completely closed and the power is on. the meter will capture the peak current of the load at the moment as it flows through the clamp. Change the range or press and hold the INRUSH button again to exit.

* Auto-shutdown function: The meter automatically enters sleep mode after 15 minutes of inactivity. To wake it up. simply press any button.

* Cancel the auto-shutdown function: Turn the rotary switch to the OFF position. While holding down the SEL button. turn the switch on and the meter will emit three long and one short beeps. indicating that the auto-shutdown function can be cancelled. Note that the auto-shutdown function will be restored after the next restart.

* Battery undervoltage indication: Battery undervoltage indication: When "🔋 "appears on the screen. it indicates that the battery is low. To ensure accurate measurements. please replace the battery in time.

* HOLD button: To hold the measurement data. press the HOLD button. In data hold mode. the buzzer will sound a warning every 2 seconds to remind you that the data is locked. To exit this mode. either turn the rotary switch or press the HOLD button again. Press and hold the button to turn the flashlight on or off.

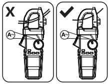
* Alarm prompt: When you use this instrument to measure AC/DC voltage reaching 600V, the red backlight of the instrument will automatically light up. When the test voltage reaches AC 750V/DC1000V, the buzzer will continue to emit a "beep" sound. This is to remind you that the current measured voltage has reached the maximum range of the instrument. Please operate with caution to avoid exceeding the range measurement and causing damage or measurement errors to the instrument.

## 6. How to Use

### 6.1 AC current

(1) Turn the switch to the ($^{Hz}$A≂) position and the screen will display ( $\widetilde{AC}$ ).

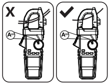
(2) Hold the meter trigger and open the jaw. and place the single conductor of the tested line in the center of the clamp head. when the jaws are fully closed, the instrument screen displays the current value and frequency of the tested circuit.



### 6.2 DC current

(1) Turn the switch to the ($^{Hz}$A≂) position and press SEL button to switch the DC current measurement mode. the screen displays (DC⎓).

(2) Hold the meter trigger and open the jaw. and place the single conductor of the circuit to be measured in the center of the clamp head. When the jaw is completely closed. the meter screen will display the current value of the circuit.



Attention!

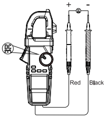
① Only a single wire should be placed in the clamp for measurement and placing two or more wires simultaneously will result in incorrect readings. ensure the load is active during measurement.

②To ensure the measurement accuracy. press the ZERO button in DC current mode to clear the base number caused by electromagnetic interference in the use environment. After zeroing. keep the same direction for measurement.

③ If the measured current shows a negative value. please adjust the measuring direction of the clamp head to make the load current flow through the clamp head in a positive direction.

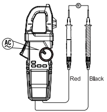
## 6.3 DC voltage

(1) Turn the switch to the ( Hz V≅ ) position. the screen shows that (DC). and the meter is in DC voltage measurement mode.
(2) The black probe is connected to the "COM" terminal. the red probe is connected to the "INPUT" terminal. and the red and black probes are connected to the circuit for measurement. and the voltage value is displayed on the screen.



## 6.4 AC voltage

(1) Turn the switch to the ( Hz V≅) position. press SEL button to switch to the AC voltage position. and the screen displays ( AC ). The meter is in the AC voltage measurement mode.
(2) The black probe is connected to the "COM" terminal. the red probe is connected to the "INPUT" terminal. and the red and black probes are connected to the circuit for measurement. and the voltage value and frequency are displayed on the screen.



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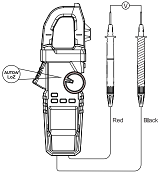
## 6.5 AUTO-V LOZ low impedance AC/DC voltage automatic identification function

(1) Turn the rotary switch to the (AUTO-V LOZ) position. and the meter is in the low impedance voltage automatic identification mode. In this mode. there is no need for any conversion. and the meter will automatically identify the voltage as AC or DC according to the measured voltage signal.
(2) The black probe is connected to the "COM" terminal. the red probe is connected to the "INPUT" terminal. and the red and black probes are connected to the circuit for measurement. the screen displays the voltage value of the tested circuit.



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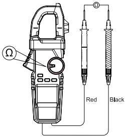
## 6.6 Resistance

(1) Turn the switch to the ( Ω ▸|·))) ⊣⊢ ) position. the screen shows that (Ω). and the meter is in resistance measurement mode.
(2) The black probe is connected to the "COM" terminal. the red probe is connected to the "INPUT" terminal. and the red and black probes are connected to the circuit for measurement. and the screen shows the resistance value.

Attention!
① The measured resistance in the circuit will be different from the actual resistance value. because the measured resistance in the circuit will form series or parallel connection with other devices in the circuit. resulting in measurement error.
②. When the measured circuit is open or the resistance is too large. the screen displays ( OL ). indicating that the measured value is out of range.



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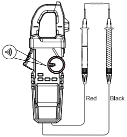
## 6.7 Continuity test

(1) Turn the switch to the ( Ω ▸|·))) ⊣⊢ ) position.
(2) Press SEL button to select continuity measurement mode. and the screen will display ( ·))) ).
(3) The black probe is connected to the "COM" terminal. the red probe is connected to the "INPUT" terminal. and the red and black probes are connected to the circuit for measurement.

Attention!
1.If the resistance value of the circuit is less than 50Ω. the meter buzzer will give a continuous alarm. indicating that the circuit is conductive. and the resistance value will be displayed on the screen.
2.If the resistance value of the circuit is over 50Ω. the meter will not give a buzzer alarm. but display the resistance value of the circuit on the screen. and when the resistance value is > 610Ω. the screen will display ( OL ).



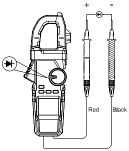
### 6.8 Diode

(1) Turn the switch to the ( ▶|Ω·))) ⊣⊢ ) position.
(2) Press the SEL key to select the diode measurement mode. screen display ( ▶| ).
(3) The black probe is connected to the “COM” terminal. the red probe is connected to the “INPUT” terminal. and the red and black probes are connected to the diode for measurement. and the on-voltage value of the diode is displayed on the screen.

Attention!

① When measuring a normal diode. the meter displays the forward voltage drop value. but it is not conductive in the reverse direction.

②. The load voltage of the diode is about 4V/ current is about 1.2mA.



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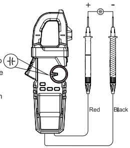
### 6.9 Capacitance

(1) Turn the switch to the ( ▶|Ω·))) ⊣⊢ ) position.
(2) Press SEL button to select capacitance measurement mode. and the screen will display ( nF ).
(3) The black probe is connected to the “COM” terminal. the red probe is connected to the “INPUT” terminal. and the red and black probes are connected to the capacitance for measurement. the screen displays the measured capacitance value.

Attention!

① When measuring the capacitance. the capacitance should be discharged first. and the meter will charge the capacitance when measuring. so it takes some time to stabilize the measured data.

② Measuring the capacitance on the circuit will form parallel or series connection with other devices. which will interfere with the measurement results and make it impossible to directly measure the accurate value of the capacitance.



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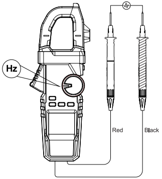
### 6.10 Frequency

(1) Turn the switch to the (HZ%) position. and the screen will display (**Hz**).
(2) The black probe is connected to the “COM” terminal. the red probe is connected to the “INPUT” terminal. and the red and black probes are connected to the measured signal source. and the frequency value is displayed on the screen.



Attention!
① When measuring the frequency. the instrument screen synchronously displays the percentage of the measured signal.

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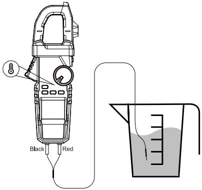
### 6.11 Temperature

(1) Turn the switch to the ( 🌡 ) position. the meter will automatically measure the current ambient temperature. and the current temperature value will be displayed on the screen. Press the SEL button can switch ℃/℉.
(2) To measure the temperature of an object or liquid. insert the red lead of the K-type thermocouple probe into the “INPUT” terminal and the black lead into the “COM” terminal. Then. place the thermocouple probe in contact with the object to be measured.



## 6.12 NCV non-contact AC voltage detection

(1) Turn the switch to the( NCV Live )position. and the screen will display(**NCV**).

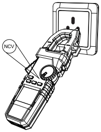
(2) Close the end marked with “NCV” at the top of the clamp head to the conductor. and the meter will automatically detect the voltage signal. If the detected voltage is low. the screen displays ( ---L ). If the detected voltage is high. the screen displays ( ---H ). the red backlight lights up. and the buzzer also emits warning sounds with different frequencies to alert you that the conductor is live.

Attention!

① Even if there is no indication from the meter. the voltage may still exist. do not rely on non-contact voltage detection to determine whether there is voltage in the conductor to avoid danger.

② The detection process may be influenced by factors such as socket design. insulation thickness and types.

③ Interference from external environment (such as flashlights. motors. electromagnetic interference. etc.) may trigger non-contact voltage detection by mistake.



## 6.13 Live wire identification

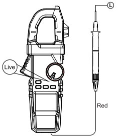
(1) Turn the switch to the ( NCV Live ) position. press the SEL button to switch the Live wire identification function. and the screen will display ( **Live** ).

(2) Insert a single red probe into the INPUT terminal. and use the probe to contact the conductor to be tested for detection. If the screen displays ( L IvE ) and the red backlight is illuminated. while the buzzer sounds an alarm. the conductor being tested is a live wire. If not. it is a neutral or ground wire.

Attention!

① Before use. please test the meter on a known live conductor to ensure it’s in good working condition.

② When testing the live wire of the socket. please unplug the other electrical devices before testing. if there are other electrical devices that may affect the measurement results.



## 7. Technical indicators

### 7.1 AC current

| Range | Resolution | Accuracy |
|---|---|---|
| 6A | 0.01A | ±(2.0% reading + 5 digits) |
| 60A | 0.01A | |
| 600A | 0.1A | ±(3.0% reading + 8 digits) |
| 1000A | 1A | |

Maximum input current: AC 1000A
Frequency range: 50Hz~ 60Hz

### 7.2 Inrush current

| Range | Resolution | Accuracy |
|---|---|---|
| 1000A | 1A | < 10A is for reference only.<br>±(10% reading+60 digits) |

### 7.3 DC current

| Range | Resolution | Accuracy |
|---|---|---|
| 6A | 0.01A | ±(2.0% reading + 5 digits) |
| 60A | 0.01A | |
| 600A | 0.1A | ±(3.0% reading + 8 digits) |
| 1000A | 1A | |

Maximum input current: DC 1000A

### 7.4 DC voltage

| Range | Resolution | Accuracy |
|---|---|---|
| 600mV | 0.1mV | ± (1.0% reading + 5 digits) |
| 6V | 0.001V | |
| 60V | 0.01V | |
| 600V | 0.1V | ± (1.2% reading + 8 digits) |
| 1000V | 1V | |

Input impedance: 10MΩ
Maximum input voltage: DC 1000V.

### 7.5 AC voltage

| Range | Resolution | Accuracy |
|---|---|---|
| 6V | 0.001V | ± (1.2% reading + 5 digits) |
| 60V | 0.01V | |
| 600V | 0.1V | ± (1.5% reading + 8 digits) |
| 750V | 1V | |

Input impedance: 10MΩ / Maximum input voltage: AC 750V
Frequency response: 40Hz-1KHz

### 7.6 AUTO-V LoZ DC voltage

| Range | Resolution | Accuracy |
|---|---|---|
| 6V | 0.001V | ± (1.0% reading + 5 digits) |
| 60V | 0.01V | |
| 600V | 0.1V | ± (1.2% reading + 8 digits) |
| 1000V | 1V | |

Input impedance: 1MΩ / Maximum input voltage: DC 1000V

### 7.7 AUTO-V LoZ AC voltage

| Range | Resolution | Accuracy |
|---|---|---|
| 6V | 0.001V | ± (1.2% reading + 5 digits) |
| 60V | 0.01V | |
| 600V | 0.1V | ± (1.5% reading + 8 digits) |
| 750V | 1V | |

Input impedance: 1MΩ / Maximum input voltage: AC 750V
Frequency range: 40Hz-1KHz

### 7.8 Resistance

| Range | Resolution | Accuracy |
|---|---|---|
| 600Ω | 0.1Ω | ± (1.2% reading + 3 digits) |
| 6kΩ | 0.001kΩ | |
| 60kΩ | 0.01kΩ | |
| 600kΩ | 0.1kΩ | |
| 6MΩ | 0.001MΩ | ± (2.0% reading + 5 digits) |
| 60MΩ | 0.01MΩ | |

Overload protection: 600V / Open circuit voltage: about 1V

### 7.9 Continuity test

| Function | Range | Description | Test condition |
|---|---|---|---|
| •))) | 600Ω | If the resistance is less than 50Ω. the buzzer will give an alarm. | Open circuit voltage: about 2V |

Overload protection: 600V

### 7.10 Diode test

| Function | Range | Test condition |
|---|---|---|
| ▶\| | 0-4V | Forward DC current: about 1mA<br>open circuit voltage: about 4V. |

Overload protection: 600V

### 7.11 Capacitance

| Range | Resolution | Accuracy |
|---|---|---|
| 6nF | 0.001nF | ±(4.0% reading + 5 digits) |
| 60nF | 0.01nF | |
| 600nF | 0.1nF | |
| 6uF | 0.001uF | |
| 60uF | 0.01uF | |
| 600uF | 0.1uF | |
| 6mF | 0.001mF | ±(5.0% reading + 10 digits) |
| 60mF | 0.01mF | |

Overload protection: 600V

### 7.12 Frequency

| Range | Resolution | Accuracy |
|---|---|---|
| 6HZ | 0.001HZ | ±(1.0% reading + 3 digits) |
| 60HZ | 0.01HZ | |
| 600HZ | 0.1HZ | |
| 6KHZ | 0.001KHZ | |
| 60KHZ | 0.01KHZ | |
| 600KHZ | 0.1KHZ | |
| 10MHZ | 0.001MHZ | |

Overload protection: 600V

### 7.13 Temperature

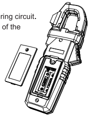
| Range | Resolution | Accuracy |
|---|---|---|
| -50~1000°C | 1°C | ±(2.0% reading + 2 digits) |
| -58~1832°F | 2°F | ±(2.0% reading + 4 digits) |

Overload protection: 600V

## 8. Battery replacement

⚠ Before opening the battery cover to replace the battery. turn the meter off and ensure that the test probe has been disconnected from the measuring circuit.

① Turn off the meter.
② Remove the test probe from the measuring circuit.
③ Use a screwdriver to remove the screw of the battery cover on the back of the meter.
④ Remove the battery cover.
⑤ Remove the old battery.
⑥ Replace with the new 1.5Vx2 AAA batteries.
⑦ Install the battery cover and tighten the screws.



## 9. Accessories

| | |
|---|---|
| 1. Clamp meter | ×1 |
| 2. User manual | ×1 |
| 3. Test probe | ×1 |
| 4. 1.5Vx2 AAA battery | ×2 |
| 5. Thermocouple | ×1 |
| 6. Storage bag | ×1 |