



## 1.Introduction

- Professional True RMS Industrial Clamp Meter and TFT color LCD display, providing fast A/D converting sampling time, high accuracy.
- It is easy to find and solve the problems of the production equipments, providing Bluetooth technology.
- It is much more safe measurements with double molded plastic housing design and IP65 waterproof function.

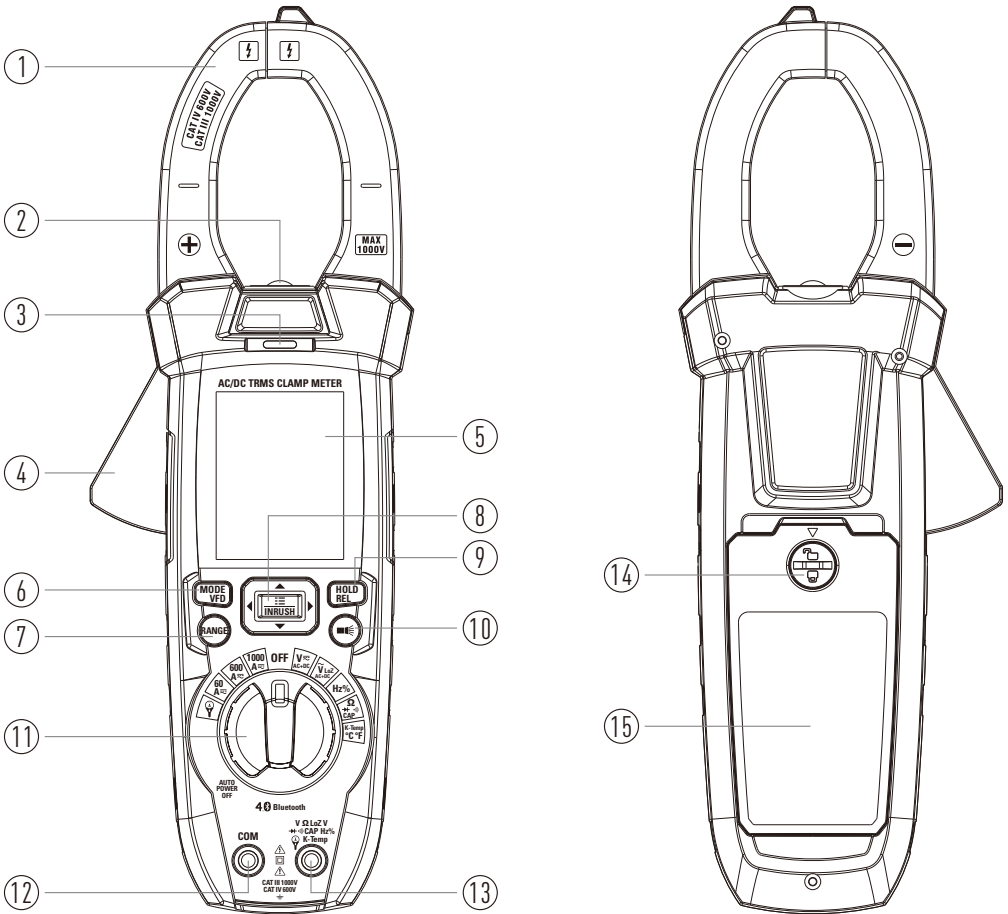
## 2.Key Features

- 6000 Count 2.4" TFT Color LCD Display
- DC Current
- AC, AC+DC TRMS Current
- DC Voltage
- AC, AC+DC TRMS Voltage
- Resistance and Continuity Test
- Diode Test
- Capacity
- Frequency
- Duty Cycle
- Temperature with K-type Probe
- Flexible Coils Current
- 1.4" (37mm) Jaw opening

### 3. Description

#### 3-1. Meter Description

- |                                 |                           |
|---------------------------------|---------------------------|
| 1-Current Clamp                 | 9-Hold/Relative Button    |
| 2-Work Light                    | 10-Light Button           |
| 3-Non-Contact Voltage Indicator | 11-Rotary Function Switch |
| 4-Clamp Trigger                 | 12-COM Input Jack         |
| 5-LCD Display                   | 13-Positive Input Jack    |
| 6-MODE/VFD Button               | 14-Battery Cover Lock     |
| 7-RANGE Button                  | 15-Battery Cover          |
| 8-INRUSH/Menu Button            |                           |



### 3-2. Understanding the Push Buttons

The 9 push buttons on the front of the Meter activate features that augment the function selected using the rotary switch, navigate menus or control power to Meter circuits.

#### 3-2-1. Cursor Buttons:



Select an item in a menu, adjust display contrast, scroll through information, and perform data entry.

“REL ▲” Use Navigation UP buttons select PEAK function.

“MAX ◀” Use Navigation Left buttons to select REL function.

“PEAK ▶” Use Navigation Right buttons select MAX function.

#### 3-2-2. Physical Buttons:

“HOLD/REL” Freezes the present reading in the display and allows the display to be saved.

“MODE/VFD” Press the MODE key to switch the functions.

“RANGE” Press the RANGE key to manual range.

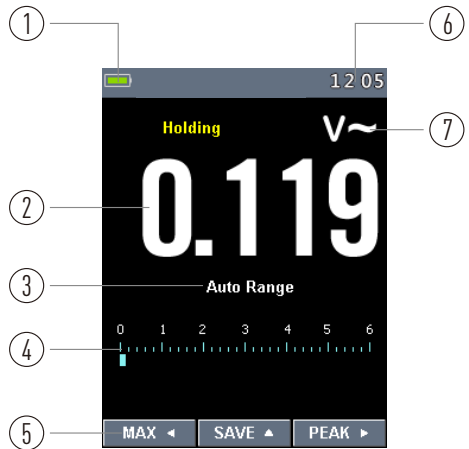
“☹” Flashlight On/Off.

“INRUSH/Menu” Enter function of the MENU or INRUSH selects.

### 3-3. Understanding the Display

#### 3-3-1. Measurement on LCD Display

- 1- Indication of Battery Charge Level
- 2- Indication of Measuring Result
- 3- Indication of Automatic/Manual Mode
- 4- Analogue Bargraph
- 5- Indications Associated with Function Keys
- 6- Indication of the system's Time
- 7- Indication of Measuring Unit



#### 3-3-2. Icons on LCD Display

- Voltage is over 30V (AC or DC)
- Warning
- Flexible Coils
- Traditional Clamps
- Relative
- High Edge Time
- VFD** Variable Frequency Driver
- Inrush Current

- AC Voltage or Current
- DC Voltage or Current
- AC+DC Voltage or Current
- Continuity Function
- Diode Function
- Ohms
- Loz** Low Impedance Mode

### 3-4. Understanding the Rotary Switch

- Select a primary measurement function by positioning the rotary switch to one of the icons around its perimeter.
- For each function, the Meter presents a standard display for that function (range, measurement units, and modifiers).
- Button choices made in one function do not carry over into another function.

**V<sub>AC+DC</sub>** DC and AC+DC Voltage Measurement

**V<sub>LoZ</sub>** Low Impedance Mode AC voltage Measurement

**Hz%** Frequency and Duty Measurement

**Ω → CAP** Resistance, Diode Test, Capacitance and Continuity Measurement

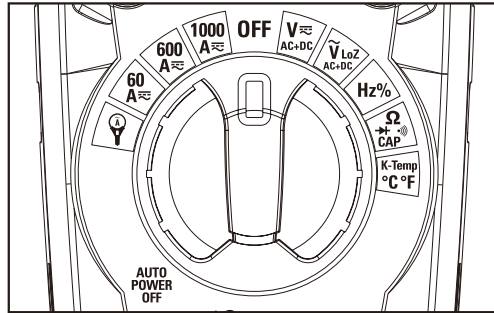
**K-Temp °C °F** Temperature Measurement

**60A** AC and DC 60 Amps Clamp Current Measurement

**600A** AC and DC 600 Amps Clamp Current Measurement

**1000A** AC and DC 1000 Amps Clamp Current Measurement

**⚡** Flexible Coils Current



## 4. Specifications

### 4-1. Technical Specifications

Function	Range	Resolution	Accuracy
DC Voltage	600.0mV	0.1mV	$\pm(0.8\% + 8 \text{ digits})$
	6.000V	0.001V	$\pm(0.5\% + 5 \text{ digits})$
	60.00V	0.01V	
	600.0V	0.1V	$\pm(0.8\% + 5 \text{ digits})$
	1500V	1V	

Input impedance  $>10M \Omega$  ; Protection against overcharge: 1500VDC/1000VAC rms

AC TRMS Voltage	6.000V	0.001V	50Hz-60Hz: $\pm(1.2\% + 5 \text{ digits})$
	60.00V	0.01V	
	600.0V	0.1V	61Hz-1kHz: $\pm(2.5\% + 5 \text{ digits})$
	1000V	1V	

Protection against overcharge: 1000VDC/ACrms.

Accuracy specified from 10% to 100% of the measuring range, sine wave;

Input impedance:  $> 9M \Omega$  ;

Accuracy PEAK function:  $\pm 10\%$ rdg, PEAK response time: 1ms.

LowZ AC TRMS Voltage	6.000V	0.001V	$\pm(3.0\% + 40 \text{ digits})$
	60.00V	0.01V	
	300.0V	0.1V	

Input impedance:  $300k \Omega$  ; Protection against overcharge: 1000VDC/ACrms.

Accuracy specified from 10% to 100% of the measuring range, sine wave.

AC+DC TRMS Voltage (50Hz-1kHz)	6.000V	0.001V	$\pm(2.5\% + 20 \text{ digits})$
	60.00V	0.01V	
	600.0V	0.1V	
	1000V	1V	

Input impedance  $>10M \Omega$  ; Protection against overcharge: 1000VDC/ACrms.

LowZ AC+DC TRMS Voltage	6.000V	0.001V	$\pm(3.5\% + 40 \text{ digits})$
	60.00V	0.01V	
	300.0V	0.1V	

Input impedance  $<300k \Omega$  ; Protection against overcharge: 1000VDC/ACrms.

Function	Range	Resolution	Accuracy
DC Current	60.00A	0.01A	±(2.0% + 8 digits)
	600.0A	0.1A	
	1000A	1A	

Protection against overcharge: 1000ADC/ACrms.

AC TRMS Current (50Hz-60Hz)	60.00A	0.01A	±(2.5% + 5 digits)
	600.0A	0.1A	
	1000A	1A	

Protection against overcharge: 1000ADC/ACrms.

Accuracy specified from 10% to 100% of the measuring range, sine wave.

Accuracy Inrush function integral time 100ms, and reading for reference only.

Flexible Coil Current (50Hz-400Hz)	30.00A	0.01A	±(3.0% + 5 digits)
	300.0A	0.1A	
	3000A	1A	

Protection against overcharge: 1000ADC/ACrms.

Accuracy specified from 10% to 100% of the measuring range, sine wave.

Resistance and Continuity Test	600.0Ω	0.1Ω	±(1.0% + 10 digits)
	6.000kΩ	0.001kΩ	±(0.8% + 5 digits)
	60.00kΩ	0.01kΩ	
	600.0kΩ	0.1kΩ	
	6.000MΩ	0.001MΩ	
	60.00MΩ	0.01MΩ	±(2.5% + 10 digits)

Buzzer <50 Ω ; Protection against overcharge: 1000VDC/ACrms.

Frequency (Electronic Circuits)	60.00Hz	0.01Hz	±(0.2% + 5 digits)
	600.0Hz	0.1Hz	
	6.000kHz	0.001kHz	
	60.00kHz	0.01kHz	
	600.0kHz	0.1kHz	
	6.000MHz	0.001MHz	
	10.00MHz	0.01MHz	

Protection against overcharge: 1000VDC/ACrms.

Sensitivity: >2Vrms (at 20%-80% duty cycle) and f<100kHz; >5Vrms (at 20%-80% duty cycle) and f>100kHz.

Function	Range	Resolution	Accuracy
Duty Cycle	10.0%-90.0%	0.1%	$\pm(1.2\% + 8 \text{ digits})$

Pulse frequency range: 40Hz-10kHz; Pulse amplitude:  $\pm 5V$  (100us-100ms).

Capacity	60.00nF	0.01nF	$\pm(3.0\% + 20 \text{ digits})$
	600.0nF	0.1nF	$\pm(3.0\% + 8 \text{ digits})$
	6.000 $\mu$ F	0.001 $\mu$ F	
	60.00 $\mu$ F	0.01 $\mu$ F	
	600.0 $\mu$ F	0.1 $\mu$ F	
	6000 $\mu$ F	1 $\mu$ F	$\pm(3.5\% + 20 \text{ digits})$
	60.00mF	0.01mF	Unspecific
	100.0mF	0.1mF	

Protection against overcharge: 1000VDC/ACrms.

Temperature with K-Type Probe	-40.0 to 600.0°C	0.1°C	$\pm(1.5\% + 3^\circ\text{C})$
	600 to 1000°C	1°C	
	-40.0 to 600.0°F	0.1°F	$\pm(1.5\% + 5.4^\circ\text{F})$
	600 to 1800°F	1°F	
	245.0 to 600.0K	0.1K	$\pm(1.5\% + 3K)$
	600 to 1273K	1K	

Protection against overcharge: 1000VDC/ACrms.


Diode Test	Test Current: <1.5mA	Max Voltage with Open Circuit: 3.3VDC
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**4-2. General Specifications****Reference Standards**

Safety	IEC/EN61010-1
EMC	IEC/EN 61326-1
Insulation	Double Insulation
Pollution Level	2
Overvoltage Category	CAT IV 600V, CAT III 1000V, CAT II 1500V
Max Operating Altitude	2000m (6562ft)

**Power Supply**

Battery Type	1 x 7.4V Rechargeable Li-ion Battery, 1200mAh
Battery Charger Power Supply	100/240VAC, 50/60Hz, 12VDC, 2A
Low Battery Indication	Symbol "  " on the Display
Auto Power Off	After 15 to 60min Minutes' Idling (May be disabled)

**Display**

Conversion	TRMS
Characteristics	Colour TFT, 6000 Dots with Bargraph
Sampling Frequency	3 times/s

**Environmental Conditions for Use**

Reference Temperature	18 to 28°C (64 to 82°F)
Operating Temperature	5 to 40°C (41 to 104°F)
Allowable Relative Humidity	<80%RH
Storage Temperature	-20 to 60°C (-4 to 140°F)
Storage Humidity	<80%RH

## Accessories:

Size(HxWxD): 95mm x 270mm x 42mm Weight: 550g

Accessories: Test leads, gift box with carrying case, Temperature probe Li-ion rechargeable battery, AC Charger