

## **User Manual of DF-68A Digital Clamp Meter**

### **Contents**

- 1.Summary
- 2.Safety instruction
  - 2-1.Safety signs
  - 2-2.Notes
- 3. Feature
  - 3-1. General feature
  - 3-2. Technical feature
    - 3-2-1. Function
    - 3-2-2. Accuracy
    - 3-2-3. AC
    - 3-2-4. ACV
    - 3-2-5. DCV
    - 3-2-6. Resistance
    - 3-2-7. Diode
- 4.Operating instruction
  - 4-1. AC measurement
  - 4-2. DCV measurement
  - 4.3. ACV measurement
  - 4.4. Resistance measurement
  - 4-5. Interrupted circuit and diode measurement
  - 4-6. DATA HOLD
  - 4-7. Back light
- 5.Maintenance

## 1. Summary

DF-68A is 3 ½ handheld digital clamp meter, and has the ability to measure AC, DCV/ACV, resistance and interrupted circuit. And it is suitable for lab, field measurement, household and large current measurement.

## 2. Safety instruction

This instrument follows the IEC1010-I (EN61010-I) pollution2, CAT.600V and UL3111-1 safety standards. Please read the manual carefully before use.

### 2-1.Safety signs:



**Cautions! Please refer to the manual before use**



**Cautions! Electric shock!**



**Double insulation**



**Power insufficient**

### 2-2.Notes:

2-2-1. please read the manual carefully before use, and operates the meter following the instruction strictly, in order to avoid damaging the personal safety and the meter.

2-2-2. please disconnect the probes and input signal before opening the outer layer, in order to avoid electric shock or damaging the meter, and keep the meter away the water.

2-2-3. please don't use the meter before fixing the layer or tightening the screw.

2-2-4. doesn't exceed the limited value during measurement.

2-2-5. it is prohibited to connect the voltage in the resistance range terminals.

2-2-6. please removes the battery if keep the meter for a long time, in case the battery leakage damages the inner components.

2-2-7. it will cause serious electric shock if the DCV>36V or ACV>25V.

2-2-8. it should be especially careful when clamping the uninsulated conductor or maternal lines, to avoid electric shock by contacting the conductor accidentally

## 3. Feature

### 3-1. General feature

3-1-1. Display: LCD display

3-1-2. Maximum display: 3 ½ (1999 character) automatically polarity display

3-1-3. over range display: maximum display"1"

3-1-4. V, A,  $\Omega$  manual range

3-1-5. Data hold function

3-1-6. Sampling speed: 3 times/second

3-1-7. low battery display

3-1-8. Manual back light

3-1-9. Continuity Buzzer measurement:  $<70\Omega$  buzzer ringing

3-1-10. Power: 2X 1.5V AAA battery

3-1-11. Jaw opening size: 28mm, cable 26mm

3-1-12. Meter operating current:  $<2\text{mA}$  (no back light)

3-1-13. Operating environment:  $0^{\circ}\text{C} \sim 40^{\circ}\text{C}$ , Relative humidity:  $<70\%$  RH

3-1-14. Storage environment:  $-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$ , Relative humidity:  $<80\%$  RH

3-1-15. Volume: 185mm\*51mm\*25mm

3-1-16. Weight: about 160g

3-1-17. Attachment: operating manual:1, probe:1, 1.5V AAA battery:2

## 3-2. Technical feature

### 3-2-1. Function (the meter has the function with the sign "▲")

	DF-68A Digital Clamp Meter
DCV	▲
ACV	▲
AC	▲
Resistance/ interrupted circuit	▲

**3-2-2. Accuracy:  $\pm(a\%$  reading number), guarantee the accuracy and the environment temperature ( $23\pm5^{\circ}\text{C}$ ); Relative humidity $<70\%$**

### 3-2-3. AC

Range	Accuracy	Resolution
2A	$\pm (3.0\%+10)$	1mA
20A	$\pm (2.5\%+5)$	10mA
200A	$\pm (2.5\%+5)$	100mA
600A	0-400A, $\pm (2.5\%+8)$ 400A-600A $<as$	1A

reference>

Overload Protection: maximum input: 600A, and the time <1 min

Frequency response: 50Hz-60Hz

### 3-2-4. ACV

Range	Accuracy	Resolution
600V	$\pm (1.5\%+5)$	1V

Input impedance: 10M $\Omega$

Frequency response: 50Hz-400Hz

Overload Protection: AC600V

### 3-2-5. DCV

Range	Accuracy	Resolution
600V	$\pm (1.0\%+3)$	1V

Input impedance: 10M $\Omega$

Overload Protection: DC600V


### 3-2-6. Resistance

Range	Accuracy	Resolution
2000K $\Omega$	$\pm (1.2\%+3)$	1K $\Omega$
2K $\Omega$		1 $\Omega$
Interrupted circuit	The value<70 $\Omega$ ,and the buzzer ringing	

Overload Protection: AC250V

Caution: prohibit inputting voltage in this range!!!

### 3-2-7. Diode

Range	Resolution	Accuracy
	1 mV	Approximated positive PN pressure drop value can be displayed

Overload Protection: AC250V

## 4. Operating instruction

### 4-1. AC measurement

4-1-1. Set the function switch to the ACA range.

4-1-2. Open the jaw and hold one wire, and in order to obtain the accurate reading, the wire is suggested to locate to the middle of the closed jaw.

Caution:

Doesn't input the current exceeding the limited value, otherwise the meter will be damaged.

#### **4-2. DCV measurement**

4-2-1. Set the function switch to the DCV range. Put the red probe into the "V/ $\Omega$ " jack, and the black probe into the "COM" jack.

4-2-2. Connect the tested probe to the tested circuit, and the voltage and the polarity of the point connecting to the red probe will be displayed on the screen.

#### **4.3. ACV measurement**

4-3-1. Set the function switch to the ACV range. Put the red probe into the "V/ $\Omega$ " jack, and the black probe into the "COM" jack.

4-3-2. Connect the tested probe to the tested circuit and obtain the value from the LCD screen.

Caution:

Doesn't input the current exceeding the limited value, otherwise the meter will be damaged.

#### **4.4. Resistance measurement**



4-4-1. Set the function switch to the  $\Omega$  range. Put the red probe into the "V/ $\Omega$ " jack, and the black probe into the "COM" jack.

4-4-2. Connect the tested probe to the tested circuit and obtain the value from the LCD screen.

Caution:

1. Please cut off all the power in the circuit and all capacitors exhausted residual charge before measuring the online resistance in order to ensure measurement correctly. (it is better to pick up one side of the resistance)
2. It is prohibited to input voltage in the resistance range.
3. The display will show "1" if the tested resistance of the circuit is open.
4. When the probes are connected shortly, there will be some clutter resistance about 1 $\Omega$ .

#### **4-5. Interrupted circuit and diode measurement**

4-5-1. Set the function switch to the "  /  "range. Put the red probe into the "V/ $\Omega$ " jack, and the black probe into the "COM" jack.

4-5-2. Connect the probes to the tested circuit, and if the buzzer ringing, the value is <70 $\Omega$ .

#### **4-6. DATA HOLD**


Press the "DATA HOLD" button, and the current data will be displayed on the LCD screen, press the button again, and the "DATA HOLD" is cancelled, then the counting is restarted.

#### **4-7. Back light**

Touch the back light button, and the back light will be lit immediately, and the light will be extinguished after 5 seconds.

### **5. Maintenance**

This meter is very precious and don't change the circuit casually.

5-1. When the LCD display under voltage " " prompt, it should be to replace the built-in battery.

5-2. When replacing the battery, the power switches to "off" position, and make the probe away from the input jack. Using a screwdriver to tighten the screws of the Battery cover, remove the battery cover, you can replace the battery of the under voltage.

5-3. Keep the meter away from the direct sunlight, high temperature and high humidity, flammable and explosive and strong magnetic field environment.

5-4. Please pay attention to the waterproof, dustproof and falls.

5-5. Clean the instrument can only use a damp cloth and a small amount of detergent, do not use chemical solvents to clean the case.

5-6. Please recalibrate the meter one year later.