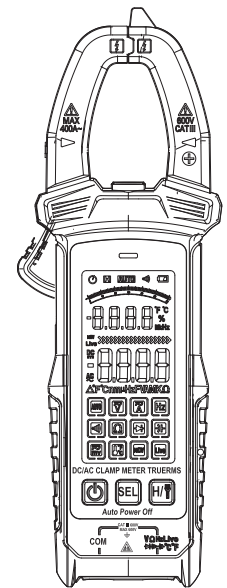


# FKM

## User Manual

### Digital Clamp Meter

Model No. FKM6016D



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#### Catalogue

1. Safety information	01
1.1 Preparation	01
1.2 Use	02
1.3 Mark	03
1.4 Maintenance	03
2. Description	04
2.1 Instructions	04
2.2 Button and Jacket	04
2.3 LCD display	06
3. Specifications	08
3.1 Overview	08
3.2 Technical indicators	09
4. Operations Guide	12
4.1 Data keep	12
4.2 Torch	12
4.3 Auto power off	12
4.4 Measurement	13
4.5 NCV	13
4.6 Live fire test	14
4.7 AC Current measurement	14
4.8 DC Current measurement	15
4.9 Voltage measurement	16
4.10 Resistant Measurement	17
4.11 Diode Measurement	18
4.12 Frequency Measurement	18
4.13 Temperature Measurement	19
5. Maintenance	19
5.1 Replace the battery	19
5.2 Replace the test leads	20
6. Accessories	20

#### 1. safety Instructions

This instrument strictly follow GB/T 13978-92 Generic specification for Digital Clamp meter, Following GB4793.1-1995 (IEC-61010-1, IEC-61010-2-032) Electronic measuring instruments safety requirements, Belong to the two class of pollution, Voltage standard CAT III 300V and CAT II 600V

This model is a 3 5/6 Smart digital clamp meter. It can be used to measure AC and DC voltage, DC current, resistance, capacitance, frequency, temperature, diode and on-off test, fire live test, NCV function with function symbol, data holding, auto power off and backlight lighting functions.

The instrument has compact structure, safety jacket, which is easy to operate and easy to carry. It is an ideal tool for electrical measurement.

Please follow the safety instructions, ensure the safety of the use of the instrument.

use and protect the item in right condition, the instrument will be in satisfactory service.

##### 1.1 Preparation

1.1.1 user must comply with the standards of safety rules when use it:

- Protection against electric shock

- To prevent the misuse of the instrument

1.1.2 After receiving instrument, check whether the damage in transit.

1.1.3 Check and confirm the meter whether damaged or not after shipment,

01

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1.1.4 Test leads must be in good condition. Check the insulation test is damaged, the wire conductor is bare before use.

1.1.5 Use the test leads to ensure safety; they must be replaced with the same or similar rank test if necessary.

##### 1.2 Use

1.2.1 Use the correct function and range.

1.2.2 Do not exceed the scope of protection of the range of the indicating value measurement. Do not exceed the scope of protection of the range of the indicating value measurement

1.2.3 When measuring circuit, do not touch the test lead tip (metal parts).

1.2.4 In the measurement, if the measured voltage is higher than 60V DC or 30V AC (RMS), attention should be paid to keep your fingers always after the test finger protection device.

1.2.5 If the voltage between the measuring end and the earth is more than AC 600V, don't measure the voltage.

1.2.6 Before turning the switch changes the measurement function, should be removed test lead from the circuit

1.2.7 Don't live line measurement of resistance, diode and continuity test

1.2.8 Under the test ranges of current, resistance, diode and continuity test, it should be taken to avoid the instrument connected voltage source.

1.2.9 Do not use this instrument in the gas, steam or dust

1.2.10 If you notice any abnormal or faulty instruments,

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02

should stop using

1.2.11 unless the instrument bottom shell and the battery cover is fastened in situ; it should not use the instrument.

1.2.12 Do not store or use the instrument in direct sunlight, high temperature, high humidity conditions.

##### 1.3 Mark

△ Note (safety information, is important see instructions)

⚠ Can be used for dangerous live conductor

⚡ Double insulation protection (II)

CAT III In accordance with the IEC-61010-1 Over voltage standard level (installation) III-. The pollution degree of 2 refers to the pulse voltage protection levels.

CE In line with European standards (EU)

⏏ Grounding

##### 1.4 Maintenance

1.4.1 Please do not attempt to test lead the shell to adjust or repair instrument, this operation can only be fully understood by technicians

1.4.2 Before test leading the instrument bottom shell and the battery cover should be removed the test lead from the measured line test lead

1.4.3 TO avoid false readings may cause electric shock, when the instrument display "⚡" symbol, The battery should be replaced immediately.

1.4.4 Use a damp cloth and a mild detergent to clean the instrument; do not use abrasive detergents or solvents.

1.4.5 The instrument when not in use should turn off the power,

03

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1.4.6 If you do not use a meter-long time, the battery should be removed to prevent damage to the instrument.

##### 2. Description

The instrument is a professional measuring instrument with liquid crystal display and a back light source. The user readings easily. Single hand operation with overload protection and low battery indicator. For professional, factory, school, lovers or family use, is an ideal Multi-function instrument.

Used for AC DC voltage, AC current, frequency, resistance, capacitance measurement and the on-off circuit, measurement, temperature measurement .

- Automatic range

- Data keep

- Auto power off

- Relative measurement

##### 2. Part name

(1) Current clamp head: For current measurement

(2) The torch of head lamp

(3) Panel

(4) LCD Monitor

(5) Power button

(6) Common socket

(7) Resistor, voltage Diode and Continuity, fire live, frequency, capacitance, temperature test input jack

(8) Data hold and Torch

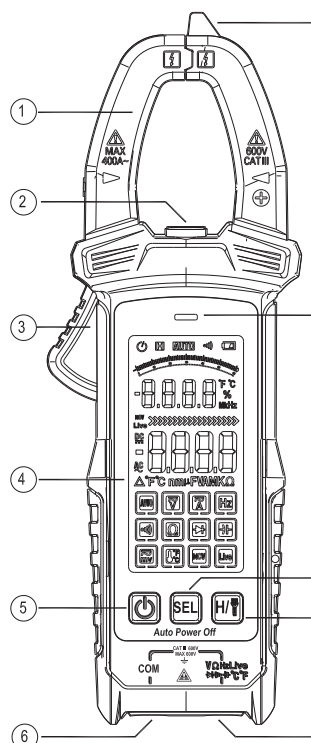
(9) Select function change between Resistor, voltage Diode and Continuity

(10) Alarm light: Continuity NCV and High voltage alarm

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04

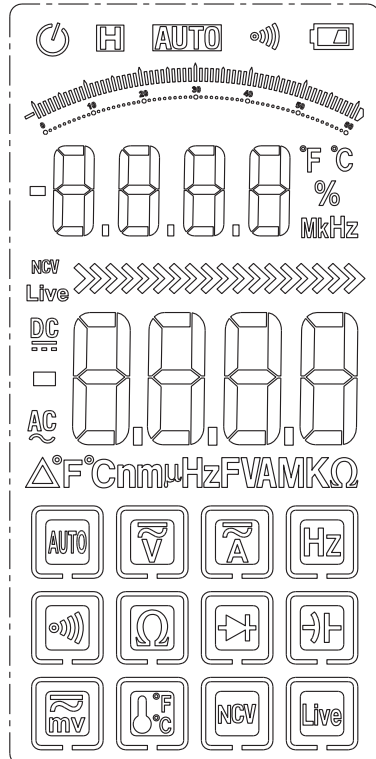
(11) NCV light



05

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#### 2.3 LCD display



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06

	Automatic range mode
	Voltage test mode
	Current test mode
	Frequency test mode
	Buzzer
	Resistant measurement
	DIODE TEST MODE
	Capacitance test mode
	Current Am test mode
	Temperature mode
	NCV test mode
	Fire live test mode
	Auto power off indicator
	Data hold on
	NCV and fire live indicator
	DC
	AC
	Relative value
	Percentage (duty cycle)
	mV, V
	Ampere (current)
	Nafala, microfarads, cents Farah
	Ohm, kilohm, megohm (resistance)
	Hertz, kilohertz, megahertz (frequency)

07

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#### 3. Specifications

The instrument shall specify one year, during 18°C ~ 28°C

- The relative humidity is less than 75% under the conditions of re calibration.

##### 3.1 Overview

Automatic measurement and manual measurement

Overload protection

The maximum voltage allowed between the measuring terminal and earth: 600V DC or 600V AC

Display: LCD

Maximum: 5999 display

Polar indication: Automatic indicator, '-', Display negative

Over range display: 'OL' or 'OL'

Sampling time: about 3 times / sec

Data hold on

Automatic power off: 15Minutes

Open Jaw is 26mm; test Line OD less than 23mm

DC

AC

Relative value

Percentage (duty cycle)

mV, V

A

nF, μF, mF

Ω, kΩ, MΩ

Hz, kHz, MHz

Operating temperature: 18°C ~ 28°C

Storage temperature: -10°C ~ 50°C

Size: 184.0×66.0×34.8mm

Weight: about 220g (Including battery)

Environment temperature: 23±5°C Relative humidity: <75%

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08

#### 3.2.1 AC Current

Range	Resolution	Accuracy
60A	0.01A	±(2.5% + 8)
600A	0.1A	±(3.0% + 10)

- Input Min Current: 0.8mA AC

- Input Max Current: 600A AC

- Frequency: 50Hz -60Hz

- When AC current is measured, the meter automatically opens an internal low-pass filter to filter out high-frequency current.

##### 3.2.2 DC current:

Range	Resolution	Accuracy
60A	0.01A	±(2.5% + 5)
600A	0.1A	±(3.0% + 8)

##### 3.2.3 DC voltage

Range	Resolution	Accuracy
600mV	0.1mV	±(0.8% + 5)
6V	0.001V	±(0.5% + 3)
60V	0.01V	
600V	0.1V	±(1.0% + 5)

- Input Min voltage: 0.6V AC

- Maximum/ input voltage: 600V AC (Effective value) OR 600V DC

- Frequency: 40Hz -1000Hz

09

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#### 3.2.4 AC voltage

Range	Resolution	Accuracy
600mV	0.1mV	±(1.0% + 8)
6V	0.001V	±(0.8% + 5)
60V	0.01V	
600V	0.1V	±(1.2% + 5)

- Input Min voltage: 0.6V AC

- Maximum/ input voltage: 600V AC (Effective value) OR 600V DC

- Frequency: 40Hz -1000Hz

##### 3.2.5 Frequency

Range	Resolution	Accuracy
99.99Hz	0.01Hz	±(0.5% + 2)
999.9Hz	0.1Hz	
9.999kHz	0.001kHz	
99.99kHz	0.01kHz	
999.9kHz	0.1kHz	

Overload protection: 250V DC or AC (Effective value)

- Input range: 200mV-10VPP (Effective value) With the increase of the measured frequency, the input voltage should be increased)

##### 3.2.6 Capacitance

Range	Resolution	Accuracy
60nF	0.01nF	±(3.0% of reading +5words)
600nF	0.1nF	
6μF	0.001μF	
60μF	0.01μF	±(3.0% of reading +5words)
600μF	0.1μF	

Overload protection: 250V DC or AC (Effective value)

- Input range: 200mV-10VPP (Effective value) With the increase of the measured frequency, the input voltage should be increased)

##### 3.2.9 Continuity test

Range	Resolution	Function
0.1Ω		If the measured line resistance is less than 50, enclosing the instrument may sound a buzzer

- Overload protection: 600V DC or AC (Effective value)

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10

6mF	0.001mF	±(5.0% of reading +5words)
60mF	0.01mF	
100mF	0.1mF	Not calibrated

##### 3.2.7 Temperature test

Range	Accuracy	Resolution
-20°C ~ 300°C	±(2.5%+5d)	1°C
301°C ~ 1000°C	±(2.5%+5d)	1°C
-4°F ~ 600°F	±(2.5%+5d)	1°F
601°F ~ 1832°F	±(2.5%+5d)	1°F

- Overload protection: 250V DC or AC (rms)

##### 3.2.8 Resistance

Range	Resolution	Accuracy
600Ω	0.1Ω	±(1.2% + 2)
6KΩ	0.001KΩ	
60KΩ	0.01KΩ	
600KΩ	0.1KΩ	
6MΩ	0.001MΩ	±(2.0% + 5)
60MΩ	0.01MΩ	

- open-circuit voltage: About 0.4V

- Overload protection: 600V DC or AC (Effective value)

##### 3.2.9 Continuity test

Range	Resolution	Function
0.1Ω		If the measured line resistance is less than 50, enclosing the instrument may sound a buzzer

- Overload protection: 600V DC or AC (Effective value)

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11

#### the resistance.

1) Press button switch to frequency status

2) Black test lead is inserted into the COM socket, the red test lead is inserted into the socket

3) Test lead will link the voltage source and load to test

4) Display readings on LCD

The test range is 10Hz-10MHz, if test frequency is less than 10Hz, the display show "00.00", if larger than , When using this function, don't insert test leads

##### 4.13 Temperature Measurement

###### Warning

Do not enter a temperature higher than 60V AC voltage 30V AC voltage to avoid damage or instrument damage

1) Press button switch to temperature status

2) Black test lead is inserted into the COM socket, the red test lead is inserted into the socket

3) The other end of the K-type thermocouple (test side) close to the surface of the measured object.

4) To be read by the liquid crystal display to read the measured temperature value.

##### Notice:

K-type thermocouple distribution of the highest measurement temperature of 250

##### 5. Maintenance

###### 5.1 Replace the battery

###### Warning

Before opening the instrument of the battery cover, please removed the test leads from measuring circuit so that to

19

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of the current clamp.

4) "△" Represents the maximum input ac current of 600 A.

5) Please hold the clamp head when the current measurement machine to open the clamp head and nose pliers head clip conductor under test, and then slowly let go of the trigger, until the clamp head closed completely, please be sure to test whether the conductor is picking up in the middle of the tong head, not in the tong head center will produce additional error, clamp table can only measure electrical conductor, a conductor if two or more current is measured at the same time, the measuring reading will be wrong.

6) The Auto mode of AC current need bigger than 0.8A, if the AC current is smaller, need change to manual test mode

4.8 DC Current measurement

Warning

An electric shock hazard.

In current clamp measurements before the test probe is removed from the instrument.

1) Hold the trigger and test lead the clamp, A wire line is measured clip in the meter.

2) Read the current value in the LCD display

Noted:

3) The correct measurement results cannot be obtained by clamping two or more wires of the circuit under test at the same time.

4) To test two or more than two wires in same time, that cannot get correct resolute

5) In order to obtain accurate readings, the conductor

15

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under test should be placed as far as possible in the center of the current clamp.

4) "△" Represents the maximum input ac current of 600 A.

6) Please hold the clamp head when the current measurement machine to open the clamp head and nose pliers head clip conductor under test, and then slowly let go of the trigger, until the clamp head is closed completely, please be sure to test whether the conductor is picking up in the middle of the tong head, not in the tong head center will produce additional errors, clamp table can only measure electrical conductor, a conductor if two or more current is measured at the same time, the measuring reading will be wrong.

7) The Auto mode of AC current needs bigger than 0.8A, if the AC current is smaller, needs change to manual test mode

4.9 Voltage measurement

Warning

An electric shock hazard.

When the measurement of high voltage, please pay special attention to avoid electric shock

Do not enter the effective value of voltage higher than AC600V

1) Press the button longer than 2 seconds. At this time, the meter is in Auto voltage measurement;

2) Use black test lead inserted into the COM socket, the red test lead is inserted into the socket,

3) Test lead will link the voltage source and load to test

4) Read the voltage value on the LCD

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