FKM6016A Digital Clamp Meter User Manual

User Manual
Digital Clamp Meter
Model No. FKM6016A

Contents

Safety Instructions

This instrument strictly follow GB/T 13978 2008 Generic specification for Digital Clamp meter, by GB4793.1-1995 ¢ IEC-61010-1, IEC-61010-2-032) Electronic measuring instruments safetyrequirements, Belong to the two class of pollution, Voltage standard CAT Ill 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 using 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,

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; it 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 keeping 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

1.2.7Don’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
1.2.10If you notice any abnormal or faulty instruments, 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.

1.3Mark

⚠ Note (safety information, important see instructions)

can be used for dangerous live conductor

Double insulation protection (II)

CAT III In accordance with theIEC-61010-10Over 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

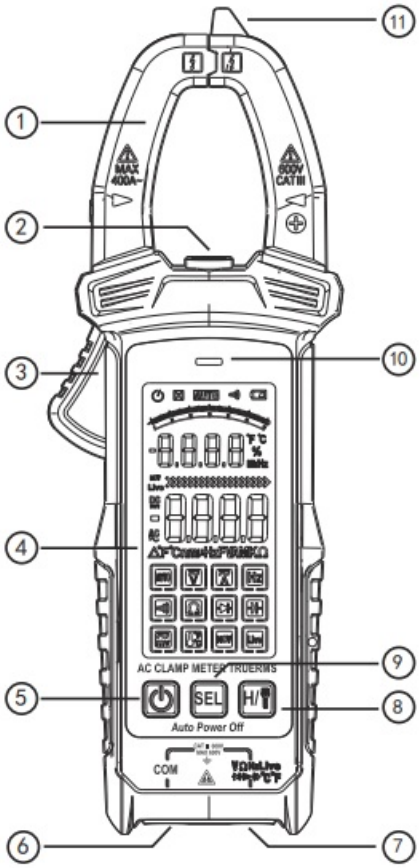
1.4.1 Please do not attempt to test lead the shell to adjust or repair instrument, this operation can only be fully understood by technicians
1.4.2 Before test leading the instrument bottom shell and the battery cover, should be removed the test lead from the measured line test lead
1.4.3 In order to 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,
1.4.6 If you do not use a meter-long time, the battery should be removed to prevent damage to the instrument.

Description

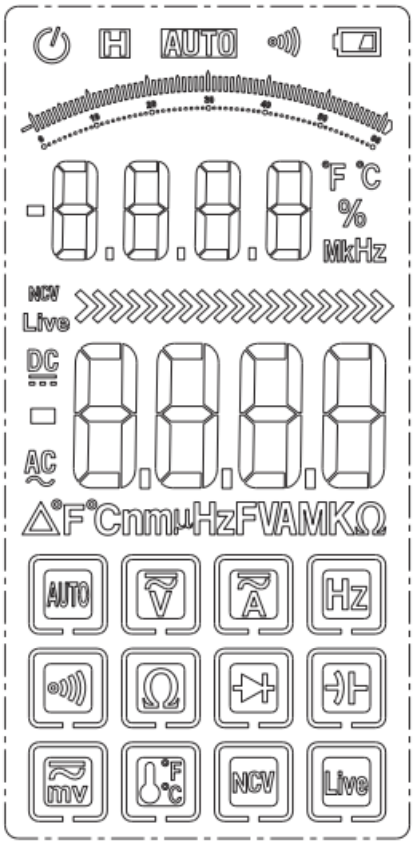
– The instrument is a professional measuring instrument with liquid crystal display and a back light source.
The user readings easily. Single hand operation with overload protection and low battery indicator.
For professional, factory, school, lovers or family use, is an ideal Multi-function instrument.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



2.3 LCD display



	Automatic range mode
	Voltage test mode
	Current test mode
	Frequency test mode
	Buzzer
Ω	Resistant measurement
	DIODE TEST MODE
	Capacitate 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	MV, volts (voltage)

A	Ampere (current)
nF, μ F **,** mF	Nafala, microfarads,cents Farah
Ω , k Ω , M Ω	Ohm, kilohm, megohm (resistance)
Hz, kHz, MHZ	Hertz, kilohertz, megahertz (frequency)

Specifications

The instrument shall specify of 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
Display unit and power display
Automatic power off: 15Minutes
Open Jaw is 26mm; test Line OD less than23mm
Input static Current: less than 85mA
Battery type: 1.5V AAA'*3
Battery voltage indication: LCD  Symbol
Temperature coefficient: less 0.1
operating temperature: 18°C ~ 28°C
Storage temperature: -10°C — 50°C
Size: 184.0×66.0x34.8mm
Weight: about 220g (Including battery)

3.2 Technical indicators

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

3.2.1 AC Current

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

3.2.2 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)

- nput Min voltage: 0.6V AC
- Maximum/ input voltage: 600V AC (Effective value) OR 600V DC
- Frequency: 40Hz -1000Hz

3.2.3 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

3.2.4 Frequency

Range	Rest)! ut inn	Accuracy
99. 991Iz	0. 011I2	± (0.5% • 2)
999. 91Iz	0. IIlz	
9. 999kIIz	0. 001kIIz	
99. 99KHZ	0. OlkIIZ	
999. WIZ	0. !kW	

– 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)

3.2.5 Capacitance

Range	Resolution	Accuracy
60nF	0.01nF	± (3.0% of reading

600n F	0.1nF	+5words)
6uF	0.001uF	
60pF	0.01pF	± (3.0% of reading +5words)
600pF	0.1pF	
6mF	0.001mF	± (5.0% of reading +5words)
60mF	0.01mF	
100mF	0.1mF	Not calibrated

3.2.6 Temperature test

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

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

3.2.7 Resistance

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

– open-circuit voltage: About 0.4V
– Overload protection: 600V DC or AC (Effective value)

3.2.8 Diode test

Range	Resolution	Function
– 	1mV	Show the approximate diode forward voltage value

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

3.2.9 Continuity test

Range	Resolution	Function
	O. 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)

Operations Guide

4.1 Data keep

In the process of measurement, such as the need to **keep reading, push**  **key, The display value** will be locked, then press the button so that relieves reading.

4.2 Torch

1. Press  **lon$_g$** than 3 second, then open the torch. Press again then close the torch. Torch cannot close automatically need close manually.
2. Torch is LED, long time on will decrease the battery life, please use the torch for short time and close the torch in

If the battery and voltage are not enough (aboutC..3.6V) The LCD display”  **”** symbol, at this time , if you use Torch , the current is big so you should not replace the battery. If you do not use the Torch , the LCD show

“  ” , you should replace the battery.

4.3 Automatic power off

1. Without operation after 15 minutes . The meter will enter the sleep state automatically shut down to save power. 1 minute before the shutdown, each 1 minutes the buzzer 1 sound prompt, dormant into a long sound after that before the shutdown.

4.4 Measurement

1. Toggle the switch and open power, If the battery and voltage Is not enough (abouts2.4V
   The LCD display”  ’symbol then the battery should be replaced
2. “⚠“symbol, The input voltage or current should not exceed the value indicated, this is to protect the internal circuit from being damaged.
3. Connect the public test line, and then connected test line is When in wiring, The test should be removed first line charged dismantling wiring.

4. when power is on, the meter has not entered to test mode, will enter to scan mode, then can press SEL enter related test mode
5. At any test mode, Press SEL to enter to auto testing mode

4.5 NCV (Non-contact voltage test)

Press SEL button, When clamp head is close to mains phase line or power switch, socket the detected voltage is close to the 110V (AC RMS) . the indicator will change from green to green +yellow When the induction voltage is higher. the indicator will change to green +yellow+ red ,With buzzer alarm more intensive and indicator will shine high frequency

⚠ **warning**

Even if no indication but the voltage may still exist.
Don't rely on non-contact voltage detector to determine whether there is a voltage shielded wire.
The operation may affect the detection by socket design, insulation thickness and different types

4.6 Firing live Measurement

1. Press SEL button and enter to Live mode ,LCD display "Live".
2. The red test leads into the VΩHzLive °C°F jack. the other hand on test circle.
3. If the red lead is fire line, the indicator will change to green +yellow+ red, With buzzer alarm more intensive and indicator will shine high frequency if there is no these single, the line is null line

Note;

1. The Voltage Test range of AC 110V~380V)
2. Please strictly observe the safety rules and standards for this range of test

4.7 AC 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

1. The correct measurement results cannot be obtained by clamping two or more wires of the circuit under test at the same time.
2. To test two or more than two wires in same time, that cannot get correct resolute
3. In order to obtain accurate readings, the conductor 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.
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 needs bigger than 0.8A, if the AC current is smaller, needs to change to manual test mode

4.8 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 is inserted into the COM socket, the red test lead is inserted into the VΩHzLive ” socket,
3. Test lead will link the voltage source and load to test
4. Read the voltage value on the LCD

notice:

1. when the measured signal is greater than or equal to 0.61v, the meter will display the dc voltage of course measured; When the measured signal is less than 0.61v, the meter will default to the resistance value and display the internal resistance value of the
measured signal.
2. “Ashow the maximum input voltage is 600V AC or 600V DC.
3. If the instrument to measures more than 600V AC, issued an alarm
4. Also can select auto and manual test mode manually

4.9 Resistance test

⚠ **warning**

The risk of electric shock
In the measurement of impedance on the line, should be determined to disconnect the power supply circuit, capacitor circuit completely discharge.

1. Press the button longer than 2 seconds. At this time, the meter is in Auto voltage measurement;
2. Use black test lead is inserted into the COM socket, the red test lead is inserted into the VΩHzLive socket,
3. Test lead will link the voltage source and load to test
4. In the measurement of low resistance, in order to measure accurately, please short-circuit the two test leads, otherwise if the test short-circuit is bigger than 0.61V the meter will think that is Voltage test mode

Notice:

1. if measured resistance value is bigger than 60MQ, the LCD will display “OL” over range status
2. If the measured resistance value is less than 50Q, the meter will buzzer alarm
3. If the measured resistance value is less than 1MQ, the instrument may take a few seconds to stable reading, it is normal for high resistivity readings
4. When testing the online resistant, please discharge the capacitate and all power shut off to make sure the test value correct.

4.10 capacitance test

⚠ **Warning**
Risk of electric shock.
To avoid damage to the meter or the device discharged capacitance before measuring

1. Press SEL button switch to capacitance test status
2. Black test lead is inserted into the COM socket, the red test lead is inserted into the VΩHzLive socket
3. Discharge the capacitance and link the capacitance to test
4. Display readings on LCD

notice:

1. In order to improve the less than 10 nF test accuracy ,
   should be minus the meter and line capacitance.

4.11 Frequency test

⚠ **Warning**
Risk of electric shock.
To avoid damage to the meter or the device under test, all power to the circuit under test should be cut off and all high voltage capacitors fully discharged before measuring the resistance.

1. Press SEL button switch to frequency status
2. Black test lead is inserted into the VΩHzLive socket, the red
   test lead is inserted into the SBE 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 the test frequency less than 10Hz, the display show “00.00” Jif larger than ,
   When using this function, don’t insert test leads

4.12 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 RAY 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 valuc.

   Notes:

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

Maintenance

5.1 Replace the battery

⚠ **Warning**
Before opening the instrument of the battery cover, please remov the test leads from measuring circuit so that to avoid the risk of electric shock.

- if “ ▟ “symbol display, please replace the battery.
- Unscrew the fastening screws of the battery cover and move away.
- replace the old battery

notice:

The battery polarity cannot be reversed

5.2 Change Test Leads

⚠ **Warning**
Please use the same test leads or same level test leads if you to need replace the test leads . the test lea ds level: 1000V 10A.

If one damaged insulation, such as wire exposed, must be replaced.

Accessories

1)	Test lead	level: 1000V 10A	one
2)	Manual		one
3)	battery	1.5V AAA	two

- The contents of this manual are subject to change without notice
- The contents of this brochure are believed to be correct, if users find errors, please contact the manufacturer.
- The company is not responsible for the accident and harm caused by user wrong operation *
- This manual describes the function, not for other special use

Warranty

Please show your product certification when you need repair service or something wrong with items, it is effective to show one and purchase invoice in together

1. Please contact with our company or repair service department when your clamp meter appears fault as soon as possible, don't delay your use and warranty period.
2. Our company provides warranty service for one year from the date of purchase. The company provides free warranty service after professionals confirm the problem is not by user sabotage during the warranty period
3. Repair need charges (repairs components fee) more than the warranty period
4. All of the following will charge the cost of repair even during the warranty period.
   (Improper use or accidental disasters caused damage to components and circuit board burn
   (2) Non-professional personnel open shell, check and modification (3)Does not follow the instructions to operation caused problems (4)No maintenance and repair of the other company products
5. users offer the maintenance of postage and transportation fees
6. Clamp meter's battery, probe, temperature probe and other functional accessories not included
   indeceavearapilistist

FKM

Get 24/7 Assistance at

Use camera or QR scanner to scan

Visit: https://fkm.afterservice.vip
Call: +1 (855) 611 6265 (Toll-free)
Email: fkm@afterservice.vip

fkm@afterservice.vip

Documents / Resources

	FKM FKM6016A Digital Clamp Meter [pdf] User Manual FKM6016A, FKM6016A Digital Clamp Meter, Digital Clamp Meter, Clamp Meter, Meter

References

- **User Manual**

Manuals+, **Privacy Policy**

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