KM-DM05D Smart Digital Multimeter
Operating Instruction

Ⅰ.General introduction

Welcome to use this product!

The meter is an smart digital multi-meter, that can switch among the measurement functions and ranges automatically based on the to-be-measured parameter. may measure the AC/ DC voltage, the AC/ DC current, resistance, frequency, capacitance, Continuity test, diode. This measuring appliance structure is exquisite, the operation is easy, it is your ideal test service tool!

Ⅱ.Safety Rules and Notes

The instrument design conforms to EN1010-1:2010 600V CATIII, EN61326-1:2013 Safety requirements for EMC standards. Please read this manual carefully before use.

⚠ Warning, be careful!

⚠ Danger of being hit by high-pressured electric!

□ Dual insulation protection.

2.2 when measure, do not surpass the greatest stipulated input value.

2.3do not surpass 10V voltage to the input end, except the voltage grade

2.4 In the process of measuring, do not t change the measuring function, in case to destroy the measuring appliance.

2.5The measuring appliance can display the mark while the voltage is bigger than DC60V and AC30V, remind the user that the measured voltage has surpassed the safety voltage, please operate carefully.

2.6 Measuring appliances should avoid the straight sunlight, the high temperature, and moisture.

2.7 if it doesn't use for a long time, should take out the battery, in case the battery leaks to damage the parts.

Ⅲ. Features

3.1General Features

3.1.1 take the CMOS big scale integrated circuit as the core, in AC / DC voltage, the AC/DC electric current, the resistance, the frequency and the electric capacity measure it can automatically transform the measuring range, making it more convenient.

3.1.2 greatest display: 6000 Counts or 9999 Counts .

3.1.3 has the function of back light, data hold, the maximum/ minimum value hold measure.

3.1.4 automatic cathode display: Displays " - "

3.1.5 batteries insufficient display: Displays "⊟+ ".

3.1.6 Auto power OFF

After turning on the instrument and without turning the function switch or pressing any button, the instrument will automatically enter into sleep mode after 15 minutes, to save battery power. when it is in the sleep mode you can press the any button to wake up the instrument. If you don't need the automatic sleep mode, you should hold down the ⇥⊣⊢Hz button to turn on the instrument, and then the symbol "⏻" will not be display on the LCD.

3.1.7 working condition：0℃~40℃，75%RH（max）

3.1.8 storage environment：-10℃~50℃，80%RH（max）

3.1.9 battery：AAA1.5V×2

3.1.10 Fuse: F 10A/250V (size Φ5×20mm).

3.1.11 external dimensions ： 152(L) 73(W) 48（H）mm

3.1.12 weight：approximately 227g（contain battery）

3．2 technical index

3．2．1 DCV

Range	Accuracy	Resolution
6V	±(0.5% of rdg + 5 digit)	1mV
60V		10mV
600V		100mV
Auto Recognition:1V~600V		

Input resistance：about 10MΩ。

Overload protection :DC/AC peak value 600V。

3．2．2 ACV

Range	Accuracy	Resolution
6V	±(1.2% of rdg + 5 digit)	1mV
60V		10mV
600V		100mV
Auto Recognition: 1V~600V		

Input resistance：about 10MΩ。

Overload protection :DC/AC peak value 600V。

Input resistance ： about10MΩ。 Frequency：10Hz~1kHz。

display：TRUE RMS(sinusoidal waveform RMS calibration)。

Overload protection: AC/DC peak value 600V。

3.2.3 DCA

range	Accuracy	Resolution
1A	±(2.5% of rdg + 5 digit)	0.1mA
10A		10mA
Auto Recognition: 2mA~10A		

Overload protection F10 A/250V with fuse。

⚠greatest input current：10A（less than 10 seconds）。

3.2.4 ACA

range	Accuracy	Resolution
1A	±(2.5% of rdg + 5 digit)	0.1mA
10A		10mA
Auto Recognition: 8mA~10A		

Overload protection F10 A/250V with fuse。

⚠ greatest input current：10A（less than 10 seconds）。

Frequency ： 10Hz~1kHz (Warning ： Frequency for square wave accuracy is specified from 10Hz to 400Hz)。

display：TRUE RMS(sinusoidal waveform RMS calibration)。

⚠ greatest input electric current：10A（less than 10 seconds）。

3.2.5 resistance Ω

range	Accuracy	Resolution
600Ω	±(0.8% of rdg + 5 digit)	0．1Ω
6KΩ		1Ω
60KΩ		10Ω
600KΩ		100Ω
6MΩ		1KΩ
60MΩ	±(2% of rdg + 5 digit)	10KΩ
Auto Recognition:0Ω~60MΩ		

Overload protection ： 250Vvirtual value.

3.2.6 CAP

Range	Accuracy	Resolution
10nF	±(3% of rdg + 30 digit)	0.001nF
100nF	±(3% of rdg + 5 digit)	0.01nF
1uF		0.1nF
10uF		1 nF
100uF		10nF
1000uF		100nF
10mF	±(5% of rdg + 15 digit)	1uF
100mF		10uF

Overload protection ： 250Vvirtual value.

3.2.7 FREQ

Range	Accuracy	Resolution
100Hz	±(0.5% of rdg + 3digit)	0.01Hz
1kHz		0.1 Hz
10kHz		1 Hz
100kHz		10 Hz
1MHz		100 Hz

Overload protection ： 250Vvirtual value, input delicacy:2V。

3．2．8 Diode positive voltage

Display of similar diode positive voltage. Measuring condition：positive DC electric current 2mA，reverse DC voltage approximate 3.9V。

3．2．9 Continuity Test

When the transited resistance is smaller than about 50Ω,the buzzer beeps.

Ⅳ．Application method

4.1.1 ⏻ Power button, press and hold this button to turn it on, then press and hold the button to turn it off.

4.1.2 button

The function selection button: select diode. Continuity test, capacitance, frequency, auto recognition。

4.1.3 Data hold - backlight and flashlight light

4.1.3.1 DH

Data hold are maintained In the trigger mode, when the button is touched, the displayed value is Holding, the word "DH" on the unchanged display; when touch this button, the lock is the state is released and enters the normal measurement state.

4.1.3.2 Backlight control

4.1.4 NCV

See manual 4.8 for details.

4.2 DC/AC voltage measure

The instrument is preset to the automatic recognition function and displays the ATUO. Insert the black test lead into the "COM" jack and the red test lead into the "VΩ" jack. Connect the test leads to both ends of the circuit under test to directly read the readings on the LCD.

4.3 Measurement of DC/AC current

Insert the red test lead into the "mA/A" jack, the black test lead into the "COM" jack, and the meter display becomes the current measurement function. Connect the test leads to the circuit under test to directly read the readings on the LCD screen;

The measurement time of 10A gear should be less than 10 seconds to avoid the accuracy of line heating.

The current jack does not measure the alarm for 4 seconds, reminding you not to operate it by mistake.

4.4 Resistances

Insert the black test lead into the "COM" jack and the red test lead into the "VΩ" jack. Connect the test leads to both ends of the test circuit or component and read the resistance value. When the measured resistance value is less than about 50Ω, the buzzer will make a sound.

4.5 Measurement of forward voltage of diode and Continuity Testing

Push the function selection button( ) to switch to the diode measurement function. Insert the black test lead into the "COM" jack and the red test lead into the "VΩ" jack (the red test lead polarity is "+"). Connect the test leads to both ends of the diode under test and read the forward voltage drop volts. When the diode is reversed, the display will show OL. The meter can measure the working voltage of the LED.

On-off measurement: When the measured resistance value is less than about 40Ω, the buzzer will make a sound.

note:

The circuit under test must check the continuity when the power is off, because any load signal will cause the buzzer to sound, resulting in an erroneous judgment.

4. 6 Capacitance measure

⚠Warning！When measure the electric capacity, must guarantee the measured capacitor has sent the electricity out, if the big electric capacity contains the oversized non- electric capacity ingredient, possibly affects the measuring accuracy.

Press the function selection button( ) to switch to "⊣⊢"position .Insert the red lead to "VΩ" jack，insert black lead to "COM" jack. connect the test leads to the two ends of the measured capacitor，could get the capacity value. capacity position can not set the measuring range manually, no simulation strip display. when the capacity value is big, This measure may take a few seconds. When the capacitance is not measured, if the display does not return to zero, you can tap DH to enter the relative value measurement. The ▲ symbol is displayed at this time.

4．7 frequency measure

Press the function selection button (to switch to Hz position. Insert the black test lead into the "COM" jack and the red test lead into the "VΩ" jack. Connect the test leads to both ends of the circuit under test to directly read the readings on the LCD.

⚠Note: Do not measure the amplitude greater than 20V, can display the measurement value may be inaccurate due to the clipping of the protection circuit. If you want measure the high voltage frequency, please reduce the voltage amplitude below 20V and measure again. Stop the damage to the meter.

4.8 NON CONTACT VOLTAGE TESTING

Push the NCV button to switch to NCV position, then the LCD display "EF", without using test leads, place the upper NCV sensing probe close to the electric line, switch, or socket , o nce it detected the AC voltage, the meter will displays "EF". Once it de tected higher voltage, more "-" will be displayed, the sounds of buzzer and flash light will be more frequently and denser simultaneously.

⚠Caution:

1. Even if there is no indication, voltage may still exist. Do not judge the wire whether there is voltage absolutely through the non contact voltage testing, the testing may be effected by many factors such as the socket design, the insulation thickness and types etc.

2. Interference source of external environment, such as flash, motor etc, may false trigged the non contact voltage testing.

Ⅴ．Maintenance

⚠warning！before open the cover or the battery cover, cut off the power source and test pen and any input signal, in case electric shock.

5．1 when the meter displays "", must replace the battery. Open the battery cover, replace with the same type new battery to keep it work well.

5．2 keep the meter and test pen clean, dry and not damaged, could use the clean cloth or cleanser to clean the cover，do not use abrasive or solvent.

5．3 avoid damage, shake, shock，avoid high temperature and strong magnetic field.

5．4 should be corrected at least once per year

Ⅵ． Accessories

6.1 Test lead: 1 set

6.2 users manual: 1 piece