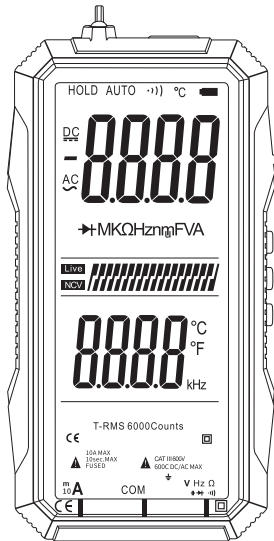


FS899C DIGITAL MULTIMETER

A Heavy Duty Multi Tester



User Manual

WARNING

Please Read This Manual Carefully Before Using This Product.

Safety Considerations


- The reading on the meter will grow unstable and even produce serious errors when the meter is used in the vicinity of the equipment that produces strong electromagnetic interferences.
- Don't operate the meter whose appearance is damaged.
- The safety function of the meter will become null if the meter is not properly operated.
- The meter must be operated with great care when working in the vicinity of an exposed conductor or bus line.
- The meter is prohibited from being used in the vicinity of any explosive gas, vapor or dust.
- The measurement must be made with correct input terminals and functions and within the allowable measuring range.
- To prevent the meter from being damaged, the value to be input shall not exceed the extremes allowed by each measuring range.
- The operator is prohibited from touching the input terminal that is not in service when the meter has already been connected to the line being measured.
- The operator shall be careful enough to avoid electric shock when the voltage measured exceeds 60V DC or 30V AC (valid value).
- Place your fingers behind its protective ring when making measurement with a test lead.
- Be sure that test lead has already been taken off the measured circuit when switching to another measuring range.
- For all DC functions, to prevent potential electric shock as a result of incorrect reading, please first use AC functions to check the absence of any AV voltage. Then, select DC voltage measurer range equivalent to or greater than that for AC voltage.

- The operator must cut off the power supply to the circuit to be measured before the tests on electric resistance, diode, capacitor or continuity, and discharge all high-voltage capacitors within the circuit to be measured.
- The electric resistance measurement or continuity test cannot be carried out in any live electrical circuit.
- The operator must first examine the protective tube of the meter Before the current measurement.
- The operator must first power off the aforesaid circuit before connecting the meter to the circuit to be measured.
- The operator must be careful enough to prevent high amplitude voltage impulse from damaging the meter before repairing TV sets or measuring power switching circuit.
- The batteries must be replaced immediately when "■■■■" appears. The low level of a battery will result in incorrect reading on the meter, which is likely to bring electric shock or personal injury to the operator.
- The meter shall not be in service if its case (or part of its case) is dismantled.

Overview

- The FS899C looks like a smartphone with 4.8" super full screen which provides a clear displaying for better user experience, but it is a hand-held 6000 counts auto range digital multimeter integrating voltmeter, ammeter and ohmmeter with high reliability and safety, as such is easy to read and more practical than other multimeters. Also it's an advanced multi tester ensure safe operation in CAT III 600V, designed to be used safely and accurately by electricians at work places or the people who need more capabilities than the standard measuring tool. It brings you not only practical, but also simple, convenient and fast with these powerful functions which measure AC/DC voltage, DC/AC current, resistance, capacitance and temperature (Environmental Temperature Only).

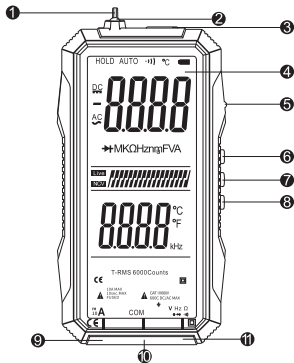
- The meter is powered by the 200mah rechargeable battery of the built-in instrument. It takes only 2 hours to be fully charged and can work continuously for more than 8 hours, which solves the problem of frequent battery replacement for users.
- In addition, it has more functions, such as NCV test, live line test, diode test, continuity detect, battery test, data hold, auto shut-off, backlight LCD, flash light and etc. which is widely-used in home, school, office and factory.

General Specifications	
Material	ABS+Electric Parts
Color	Grey+Red
Dimensions of Body	75mm × 25mm × 147mm
Weight of Body	120g
Size of LCD Screen	45mm × 110mm(4.8")
Counts	6000
Display	LCD Screen with Backlight
Messurement Mode	Double Integral A/D Conversion
Sampling Rate	3 times/second
Reading Mode	±(Reading a%+Least Significant Digit)
Over Range Indication	The LCD Screen Displaying "0L"
Power Supply	200mAh Rechargeable Battery
Low Battery Reminder	The LCD Screen Displaying "  "
Work Environment	0°C-40°C,Relative Humidity < 80%
Accessories	1 × FS899C Digital Multimeter
	2 × Test Leads(Black+Red)
	1 × USB Type-A to Micro-USB Charge Cable
	1 × User Manual
	1 × Colorful Package Box
Warranty	1 Year

Measurement, Detection and Test	
DC Voltage Measurement	✓
AC Voltage Measurement	✓
DC Current Measurement	✓
AC Current Measurement	✓
Resistance Measurement	✓
Capacitance Measurement	✓
Frequency Measurement	✓
Environmental Temperature Measurement	✓
Diodes Measurement	✓
NCV Detection	✓
Live Line Detection	✓
Continuity Test	✓

Funcions	
Auto Range	✓
Over Range Protection	✓
Work Indicator	✓
Data Hold	✓
LCD Screen with Backlight	✓
Low Battery Reminder	✓
Flashlight	✓
Power By Rechargeable Battery	✓
Auto Power Off	✓

Components Introduction



- 1 NCV Detection Sensing Needle
- 2 Flashlight
- 3 Charger Port
- 4 4.8" LCD Screen
- 5 Work Indicator
- 6 NCV/Flashlight Key
- 7 Data Hold/Backlight Key
- 8 ON/OFF/Select Key
- 9 Test Lead Jack for Measuring Current (Red Test Lead)
- 10 COM Jack of Test Lead (Black Test Lead)
- 11 Test Lead Jack for Measuring Voltage/Resistance/Capacitance/Frequency/Diodes and Testing Continuity (Red Test Lead)

How to Measure DC Voltage?

Step 1. Press and hold the "⏻" for two seconds to turn on the multimeter and the LCD screen will show as shown in Figure 1.

Step 2. Insert the black test lead into the "COM" jack, the red test lead into the "V Ω Hz" jack. Connect the test leads with load in parallel. The LCD screen will show as shown in Figure 2.



(Figure 1)



(Figure 2)

Step 3. Wait a few seconds until the measured value stabilizes, then read the reading on the LCD screen displaying.

Technical Parameters

Range	Accuracy	Resolution
DC 6V	$\pm(0.5\%+3)$	0.001V
DC 60V		0.01V
DC 600V		0.1V

Notes

- The meter will compare the AC component and DC component, take the larger component signal when the measured voltage is greater than 0.6V, whether it is AC voltage or DC voltage, and then switch between 6V/60V/600V ranges automatically according to the measured value, and then the reading will be displayed on the LCD screen.
- Do not measure the voltage over 600Vrms, or it may expose users to electric shock and damage the device.
- Please pay extra attention when measure high voltage in order to avoid electric shock.

How to Measure AC Voltage and Frequency?

Step 1. Press and hold the “ ⏻ ” for two seconds to turn on the multimeter and the LCD screen will show as shown in Figure 1.

Step 2. Insert the black test lead into the “COM” jack, the red test lead into the “ $\text{V}\frac{\text{Hz}\Omega}{\text{---}}$ ” jack. Connect the test leads with load in parallel. The LCD screen will show as shown in Figure 3



(Figure 3)

Step 3. Wait a few seconds until the measured value stabilizes, then read the reading AC voltage and frequency on the LCD screen displaying.

Technical Parameters(AC Voltage)

Range	Accuracy	Resolution
DC 6V	$\pm(0.5\%+3)$	0.001V
DC 60V		0.01V
DC 600V		0.1V

Technical Parameters(Frequency)

Range	Accuracy	Resolution
10Hz-10MHz	$\pm(0.5\%+3)$	0.1Hz

Notes

- The meter will compare the AC component and DC component, take the larger component signal when the measured voltage is greater than 0.6V, whether it is AC voltage or DC voltage, and then switch between 6V/60V/600V ranges automatically according to the measured value, and then the reading of AC voltage and frequency will be displayed on the LCD screen together.
- Do not measure the voltage over 600Vrms, or it may expose users to electric shock and damage the device.

- Please pay extra attention when measure high voltage in order to avoid electric shock.

How to Measure DC Current?

Step 1. Press and hold the “ ⏻ ” for two seconds to turn on the multimeter and the LCD screen will show as shown in Figure 1.

Step 2. Insert the black test lead into the “COM” jack, the red test lead into the “ $\text{V}\frac{\text{Hz}\Omega}{\text{---}}$ ” jack. Connect the test leads with tested circuit. The LCD screen will show as shown in Figure 4



(Figure 4)

Step 3. Read the reading on the LCD screen displaying.

Technical Parameters

Range	Accuracy	Resolution
DC 6A	$\pm(0.5\%+3)$	0.001A
DC 10A		0.01A

Notes

- The meter will compare the AC component and DC component, take the larger component signal when the measured current is greater than 20mA, whether it is AC current or DC current, and then switch between 6A/10A ranges automatically according to the measured value, and then the reading will be displayed on the LCD screen.
- Please switch off the power supply of the circuit and carefully check the input terminal and range position before measuring.
- Please do not connect the test leads with any circuit in parallel when measuring, otherwise there is a risk of damage to the device and get an electric shock.
- If the measured current is over 10A, the measurement time should be less than 10 seconds and the next test should be after 15 minutes.

How to Measure AC Current?

Step 1. Press and hold the “ \mathcal{U} ” for two seconds to turn on the multimeter and the LCD screen will show as shown in Figure 1.

Step 2. Insert the black test lead into the “COM” jack, the red test lead into the “ $\frac{VHz\Omega}{\leftarrow \rightarrow}$ ” jack. Connect the test leads with tested circuit. The LCD screen will show as shown in Figure 5



(Figure 5)

Step 3. Read the reading on the LCD screen displaying.

Technical Parameters

Range	Accuracy	Resolution
AC 6A	$\pm(2\%+30)$	0.001A
AC 10A		0.01A

Notes

- The meter will compare the AC component and DC component, take the larger component signal when the measured current is greater than 20mA, whether it is AC current or DC current, and then switch between 6A/10A ranges automatically according to the measured value, and then the reading will be displayed on the LCD screen.
- Please switch off the power supply of the circuit and carefully check the input terminal and range position before measuring.
- Please do not connect the test leads with any circuit in parallel when measuring, otherwise there is a risk of damage to the device and get an electric shock.
- If the measured current is over 10A, the measurement time should be less than 10 seconds and the next test should be after 15 minutes.

How to Measure Capacitance?

Step 1. Press and hold the “ \mathcal{U} ” for two seconds to turn on the multimeter and the LCD screen will show as shown in Figure 1.

Step 2. Press the “ \mathcal{U} ” for one time to enter the “Capacitance Measurement” and the LCD screen will show as shown in Figure 6.

Step 3. Insert the black test lead into the “COM” jack, the red test lead into the “ $\frac{VHz\Omega}{\leftarrow \rightarrow}$ ” jack. Connect the test leads with tested circuit. The LCD screen will show as shown in Figure 7

Step 4. Wait more than 5 seconds until the measured value stabilizes, then read the reading on the LCD screen displaying.



(Figure 1)



(Figure 6)



(Figure 7)

Technical Parameters

Range	Accuracy	Resolution
10nF	$\pm(3.5\%+20)$	10pF
100nF		100pF
1 μ F		1nF
10 μ F		10nF
100 μ F		1 μ F
1mF		10 μ F
10mF	$\pm(5\%+3)$	100 μ F
60mF		

Notes

- The meter will select the capacitance range automatically according to the measured capacitance, and then the reading will be displayed on the LCD screen.
- Please discharge the capacitor fully before measuring the capacitance, otherwise the instrument will enter "voltage measurement"
- It will take a few seconds to obtain steady readings when measuring large capacitors.
- The meter will display a fixed value (intrinsic capacitance) when no input.
- The measured value must be subtracted from intrinsic capacitance for small capacitance measurement, to ensure measurement.

How to Measure Resistance?

Step 1. Press and hold the "⏻" for two seconds to turn on the multimeter and the LCD screen will show as shown in Figure 1.

Step 2. Insert the black test lead into the "COM" jack, the red test lead into the " $\frac{V}{H}\Omega$ " jack. Connect the test leads with load in parallel. The LCD screen will show as shown in Figure 8

Step 3. Wait more than 3 seconds until the measured value stabilizes, then read the reading on the LCD screen displaying.



(Figure 8)

Technical Parameters

Range	Accuracy	Resolution
600 Ω	$\pm(0.8\%+5)$	0.1 Ω
6k Ω	$\pm(0.8\%+3)$	1 Ω
60k Ω		10 Ω
600k Ω		100 Ω
6M Ω		1k Ω
60M Ω	$\pm(2.5\%+3)$	10k Ω

Notes

- The meter will select the capacitance range automatically according to the measured capacitance, and then the reading will be displayed on the LCD screen.
- Please switch off the power supply of the circuit and fully discharge all capacitors before measuring resistance.
- Please check if test leads are loosened or damaged when the resistance is more than 0.5 Ω for the probes are shorted.
- The test leads will produce 0.1 Ω -0.2 Ω measurement error when measure low resistance, so the measured value should subtract the value displayed when the two test leads are shorted for measuring accurately.
- It's normal to take a few seconds to steady the readings when measure high resistance above 1M Ω . In order to quickly obtain steady data, please use short test leads to measure high resistance.

How to Measure Environmental Temperature?

- Press and hold the "⏻" for two seconds to turn on the multimeter and the LCD screen will show as shown in Figure 1, the meter will measure environmental temperature automatically with no operation.

How to operate NCV detection?

Step 1. Press and hold the "⏻" for two seconds to turn on the multimeter and the LCD screen will show as shown in Figure 1.

Step 2. Press the "NCV" key for one time to enter NCV detection, The LCD screen will show as shown in Figure 9.

Step 3. Put the NCV detection sensing probe is close to the test point (within 5mm), the bar in the screen will increase or decrease and the buzzer will also emit buzzes of different frequencies with the detected voltage.

Step 4. Judge the live line, zero line and breakpoint on the live line according to the strength of the signal.



(Figure 1)



(Figure 9)

Notes

- Please pull out the test leads from the jacks to avoid electric shock when operating NCV detection.
- Even if the meter not detect any signal, the measured object may be charged, so do not touch it.
- It may be disturbed by external environmental factors, resulting in inaccurate detection results and NCV alarm when detecting voltage with NCV detection function.

How to open the Data Hold function?

- Press the “H” key for one time to open Data “Hold”, press the “H” key again to turn off this function.


How to light the backlight of LCD screen?

- Press and hold the “☀” key for two seconds to light the backlight, press and hold the “☀” key for two seconds again to turn off the light.

How to turn on the flashlight?

- Press and hold the “☾” key for two seconds to turn on flashlight, press and hold the “☾” key for two seconds again to turn off it.

How to charge the meter?

Step 1. It's ready to charge the meter when the power of battery is low (“” displaying)

Step 2. Turn off the meter and pull out all test leads from the jacks.

Step 3. Take out the USB charger cable (USB Type-A to Micro-USB), find a 5V/1A power output interface and connect the interface and meter with USB charger cable.

Notes

- The work indicator will show red when charging and it shows green when fully charged.
- It will take about two hours for the meter to be fully charged