

DIGITAL C METER OPERATION MANUAL

1. SUMMARIZE

The meter is a stable multimeter with 3 2/1 LCD display, Totally of nine ranges from 200pF to 20000uF ,accurate readings and wide measuring range. It includes all the capacitance used in lab ,factory and school ,and can be used to check tolerance value ,category value and select precision values as well as measuring the capacitance of electric cable, switch and PCB . It is a portable instrument with light weight , exquisite structure and driven by battery. With low power consumption, LCD liquid crystal display, the reading is convenient, accurate, even in bright places can get clear reading, high measurement accuracy, wide range of capacitance measurement, and the application of large scale integrated circuit provides a high reliability and durability of the instrument, battery low voltage display and fast sampling, etc.

2.SPECIFICATIONS

2-1.GENERAL SPECIFICATIONS

- Display :LCD (Liquid Crystal Display) Max. Indication 1999.
- Range :single 9 position, whole range value (from 0.1pF to 20000uF)
- Overload protection :Display “1” .
- Calibrate Adjustment :Have two internal adjustment. One is panel Zero adjustment.
- Zero Adjustment :Manual (range:±20pF)
- Over range indication : Display “1” .
- Sampling Time :0~5second
- Operating Temp :0°C~40°C.
- Operating Humidity :80% MAX.R.H.
- Power Supply : standard 9 volt battery. NEDA 1604IEC6F22
- Battery Life :Basicity type approx.: 200 hours.
Zinc-Carbon type approx.: 100 hours
Typical consumption current :3~4mA (RANGE:200pF~200uF)
- Standard Accessorie : Test alligator clips (red & black)...1 pair.
Instruction manual.....1 pc.

2-2. ELECTRICAL SPECIFICATION

Accuracy is ±(percentage of reading + number of digit) at 23±5°C,<80%RH.

Range	Resolution	Test Frequency	Max indication value
200pF	0.1pF	800Hz	199.9pF
2nF	1pF	800Hz	1.999nF
20nF	10pF	800Hz	19.99nF
200nF	100pF	800Hz	199.9nF
2uF	1000pF	800Hz	1.999uF

20uF	0.01uF	80Hz	19.99uF
200uF	0.1uF	8Hz	199.9uF
2000uF	1uF	8Hz	1999uF
20000uF	10uF	8Hz	1999(×10)uF

pF= Pico Farad(10^{-12} F), nF= nan Farad(10^{-9} F), uF= micro Farad(10^{-6} F)

Ensure the accuracy of temperature range: (23±5) °C

Accuracy:200pF~200uF range: ±0.5% full value +1 digit.

2000uF range: ±2% full value +1 digit.

20000uF range: ±2% full value +2 digit.

Excitave voltage: Max.2.8Vrms

Zero Adjustment: be limited to 20pF.

Overload protection: Protection by a 0.1A/36V fuse. Charging less than 50V

DCV of the capacitor will not damage the instrument.

3.CONSIDERATION OF MEASUREMENT

- (1) This C METER is intended for measuring the capacitance value of a capacitor. It is not intended for determining the “Q” factor for above reactive components. Misleading readings may be obtained if the measurement of capacitance of a resistor is attempted.
- (2) When measuring components within circuit that circuit must be switched off and de-energized before connecting the test leads.
- (3) Do not close (black & red) test leads.
- (4) Instruments used in dusty environments should be stripped and cleaned periodically.
- (5) Do not leave the instrument exposed to direct heat from the sun for long periods.
- (6) Before removing the battery and fuse compartment cover, ensure that the instrument is disconnected with any circuit and the power switch is in the off position.
- (7) For all measurements, should connect BLACK test lead into “-” terminal and RED test lead into “+” terminal.

5.CAPACITANCE(C) MEASURING PROCEDURE

- (1) Press POWER key, turn on the power,Select the range switch for the maximum expected capacitance.
- (2) Check "0" indication: If test range is 200pF, 2nF, 20nF, should check "0" indication before test.

NOTE:

- (a) If the capacitance value is unmarked, start with the 200pF range and keep increasing until the over-range indication goes off and a reading is obtained.
- (b) A shorted capacitor will read over-range on all ranges. A capacitance with low voltage leakage will read over range, or a much higher value than normal.
An open capacitor will read zero on all ranges (possibly a few pF on 200pF range, due to stray capacitance of the instrument).
- (c) Measure of very low capacitance should be performed using extremely short

leads in order to avoid introducing any stray inductance.

(d) When using the optioned test leads, remember that the leads introduce a measurable capacitance to the measurement. As a first approximation, the test lead capacitance may be measured by opening the leads at the trips, recording the open circuit value and subtracting that value.

(e) Capacitors, especially electrolytic, often have notoriously wide tolerances. Do not be surprised if the measured value is greater than the value marked on the capacitor, unless it is a close tolerance type.However,value are seldom drastically below the rated value.

(f) If changing range, measured value will be changed, leakage-voltage capacitors will be checked also. Leakage-resistance will be decreased in lower range.

6. MAINTENANCE

DO NOT try to verify the circuit for it's a precision meter.

- 1.Beware of waterproof, dustproof and shockproof.
- 2.Do not operate and store the meter in the circumstance of high temperature, high humidity, and flammability, explosive and strong magnetic field.
- 3.Use the damp cloth and soft solvent to clean the meter, do not use abrasive and alcohol.
4. If do not operate it for a long time, should take out the battery
5. 9-Volt battery replacement
 - a. Ensure the instrument is not connected to any external circuit. Set the selector switch to OFF position and remove the test leads from terminals.
 - b. Remove the screw on the bottom case and lift the bottom case.
 - c. Remove the spent battery and replace it with a battery of the same type.
6. Fuse replacement
 - a. Ensure the instrument is not connected to any external circuit. Set the selector switch to OFF position and remove the test leads from terminals.
 - b. Remove the screw on the botom case and lift the bottom case.
 - c. Replace the fuse with the same type and rating: 5×20mm, 200mA/250V, fast-blow fuse or as the replacements.

- The specifications are subject to change without notice.
- The content of this manual is regarded as correct, error or omits Pls. contact with factory.
- We hereby will not be responsible for the accident and damage caused by improper operation.
- The function stated for this User Manual cannot be the reason of special usage.