

Metrix+™ DCM1501 Digital Capacitance

Meter Instructions

1. General description

DCM1501 type digital capacitance meter is pocket, convenient operation, accurate numerical reading, low-consumption, driven by battery, and showing numbers in a big LCD. Being accurate in measuring, it covers 9 measuring sections, a wide range from 0.1pF to 20,000 μ F. It can be used in testing error testing, numerical analysis, selecting capacitance, measuring unknown capacitance, matching capacitance, and measuring the capacitance of cable, switch and printing electrocircuit.

2. Features

1. It is applied with CMOS double-bevel A/D convertor that is automatic in zeroing and polar selection, and makes instruction for beyond measuring range.
2. Wide measuring range, covering 9 measuring sections from 0.1pF to 20,000 μ F that includes nominal value of any capacitance.
3. Biggest display value: 1999 (3 1/2).
4. Reading: 2-3 readings/sec.
5. Zeroing: There is a zeroing knob on the front, easy for operation.
6. Temperature for accurate measuring: 25°C ±5°C
7. Temperature range: working temperature: 0°C to 40°C Storage temperature: -10°C to 50°C
8. Relative humidity: <80%
9. Power: a 9V laminated battery
10. Instruction for low voltage of battery: showing “” signal on the left-upper of the LCD.
11. Dimension: 186x86x41mm
12. Weight: Approx.330g

3. Technical specifications

Accuracy: ±(%reading±digits) Quality guarantee: one year

Environment temperature: 25°C ±5°C

Relative humidity: <80%

| Range | Accuracy | Definition | Testing frequency |
|---------|---------------------|------------|-------------------|
| 200PF | ±0.5%reading±1digit | 0.1pF | 800Hz |
| 2000pF | ±0.5%reading±1digit | 1 pF | 800Hz |
| 20nF | ±0.5%reading±1digit | 10pF | 800Hz |
| 200nF | ±0.5%reading±1digit | 0.1 μ F | 800Hz |
| 2 μ F | ±0.5%reading±1digit | 1nF | 800Hz |
| 20 μ F | ±0.5%reading±1digit | 10nF | 80Hz |
| 200 μ F | ±0.5%reading±1digit | 0.1 μ F | 8Hz |

| | | | |
|----------|--------------------|--------|-----|
| 2000 μ F | ±1%reading±1digit | 1 μ F | 8Hz |
| 20mF | ±2%reading±2digits | 10 μ F | 8Hz |

4. Operation

Firstly, check a 9V battery whether its electric voltage is short that will show “” signal on the left-upper of the LCD. Secondly, pay attention to the polarity of the capacitance to be tested. Thirdly, recharge the capacitance before measuring.

1. Select proper measuring section according to the capacitance to be tested.
2. Check and use the zeroing knob on the front of the meter to adjust the value to zero before measuring.
3. Insert the black sensor into the jack with “-” signal and the red sensor into the jack with “+”.
4. Connect the capacitance to be tested with the two sensors. Pay attention to the polarity of the capacitance! Read capacitance numerical value displayed.

Notes:

- a. If you don't know the approximate value of a capacitance, you should select measuring section of 200pF and then make relevant adjusting according to practical situation.
- b. If the capacitance is in short circuit, the meter shows “beyond measuring range”. If the capacitance is in electric leakage, the meter shows “beyond measuring range” or “much bigger than the normal value”. If the capacitance is open-circuit, the meter shows “Zero” or “several pF”.
- c. In testing small capacitance, directly insert the capacitance into the jack instead of using the sensors for better accuracy.

5. Maintenance

The meter is of highly accurate electronic apparatus. Don't change its internal circuit rashly for no damage to the meter.

1. Don't exert electric voltage upon the jack parts of the meter for no damage to the meter.
2. Don't test the sensors in short circuit, or the battery will be consumed out quickly.
3. Don't use a meter whose back cover doesn't cover the meter well.
4. Always replace battery and fuse after taking sensors out of a meter that is switched off. First, screw bolts in the back cover out. Second, take off the back cover. Third, Replace battery and fuse according to specification provisioned in the operation manual. Suitable fuse for this meter is F100mA/250V, which external dimension is φ 5x20mm.