

BM500A OPERATOR'S MANUAL

I. Overview

Welcome to use the product!

500A is a digital insulating resistance tester. Output test voltage can be switched among 250V/500V/1000V, The measurement range of the meter can reach up to 1999M Ω . The product is applicable to measurement of the insulating resistance of various insulating materials and electric equipments such as transformers, motors, cables, switches, and electric apparatuses. It is also applicable to maintenance, test, and inspection of various electric equipments. It is compact in structure, convenient to carry, and an ideal electrical and electronic testing meter of yours.

II. Safety information

(1) Description of safety marks:

 Warning: important safety information the user must read!

 Danger: high-voltage electric shock is present!

 Double-insulated protection

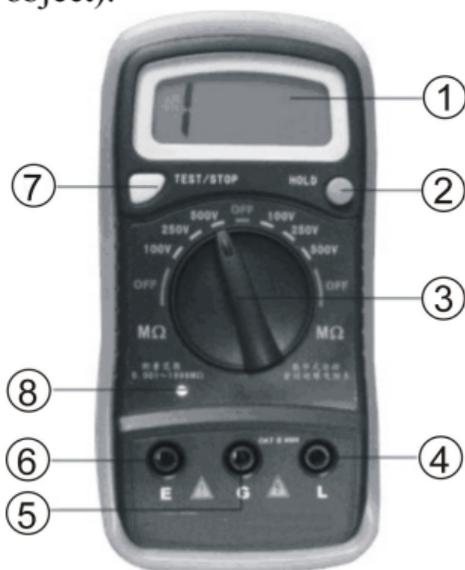
(2) Read the operating instructions carefully before use the meter.

- (3) It is strictly prohibited to use the meter before its rear cover is put in place. Otherwise, it might cause an electric shock.
- (4) Check and make sure the insulating layer of the test cable is in good condition without any breakage.
- (5) To avoid electric shock, do not touch the test cable and the circuit under test when performing a test.
- (6) Make sure one end of the test cable is securely inserted into the terminal.
- (7) During test, any range must not exceed its specified maximum input value.
- (8) During test, do not operate the switch knob for changing a range to avoid damaging the meter.
- (9) Before performing insulation test, make sure the range selection switch has been set within an appropriate voltage range.
- (10) Do not perform insulating resistance test in a combustible environment. Spark may cause explosion.
- (11) Stop using the meter, if its case or test cable is broken during use and the metal is exposed
- (12) When open the rear cover for changing battery, make sure the test cable has been removed out of the test terminal and the range switch switched to OFF position.
- (13) Take the battery out when the meter will not be used for a long time.
- (14) When “” is displayed in the meter, it is necessary to change the battery in $\frac{1}{2}$ time to ensure measurement

accuracy.

III. Name and function of parts (see the figure)

1. LCD
2. Data-hold Switch (HOLD)
3. Rotary Switch: use this switch to select functions and ranges
4. **L (LINE)** input terminal (connected to line terminal of the to-be-tested object).



5. **G** input terminal: shielded terminal of the insulating resistance.

6. **E (EARTH)** input terminal (connected to EARTH terminal of the o-be-tested object)

7. **TEST/STOP key**: it is used to measure the insulating resistance to-be-tested object)

8. Indicator light of high voltage

IV. General characteristics

- (1) Auto range: “1” will be displayed for overload.
- (2) Display mode: Liquid crystal display; maximum display: 1999;
- (3) Sampling rate: 2.5 times per second;
- (4) The meter can display actual insulation test voltage. LED light is used to indicate high voltage output status;
- (5) Operating environment: 0°C-40°C, less than 75%RH;
- (6) Storage environment:-10°C-60°C, less than 80%RH;
- (7) Indication for insufficient battery capacity: “” is displayed;
- (8) Power Supply: 9V battery, 6F22 or NEDA 1604
- (9) Operating Temp.: 0°C to 40°C (relative humidity <75%)
- (10) Storage Temp.: -10°C to 50°C ((relative humidity <85%)
- (11) Dimension: 69x138x31mm(with holster)
- (12)Weight: approx. 170g (including battery)

V. Technical characteristics and operating description of the insulation tester

Accuracy is specified for a period of year after calibration and at 18°C to 28°C (64°F to 82°F) with relative humidity to 75%.

VI. Usage for insulating resistance measurement

 **Danger:** If there is any measurement error, it may cause personal injury and meter failure. Operate it only after read the operating instructions carefully and thoroughly. Our company will take no responsibility for the accident not caused due to any reason of our company.

Operating description

1. Safety information

1) Watch out for high-voltage electric shock. When completing the insulating resistance test, remove the test cable only after making sure high voltage across the tested object is less than 50V.

2) During measurement, do not touch the object under test and watch out for high-voltage electric shock. 3) When test the insulating resistance, the object should not be electrified. Make sure the to-be-tested object is securely earthed. Before test, it is necessary to short-circuit and discharge two test

Rated voltage	250V/500V/1000V
Open circuit voltage	90%~110% of the rated voltage
Measurement range	0.001~1999M Ω
Minimum Resolution	0.001 M Ω
Accuracy	$\pm(5\%RDG+5)$
The measurement resistance value that can maintain lower limit of the rated voltage	250V: about 500k Ω
	500V: about 1.5M Ω
	1000V: about 5M Ω
short circuit current	Not less than 1.5mA

terminals of the to-be-tested object.

4) When test the insulating resistance, make sure no external voltage is applied to the test circuit.

5) Before starting test, make sure position of the range switch knob is correct and the test cable is securely connected.

6) After press the high voltage key, high voltage from 250V to 1000V will be output between L terminal and E terminal (depending on different models and positions). Here, be sure not to touch the meter and exposed part of the object under test. Otherwise, danger of electric shock would occur.

2. Insulating resistance test

1) Connection of the test terminals

Insert one red the test pen into L terminal socket of the meter. Insert one end of the test cable with a red test clamp into E terminal socket of the meter. Insert one end of the test cable with a black test clamp into G terminal socket of the meter. Make a good connection respectively.

2) Test connecting cable

Connecting cable of E terminal socket of the meter is earthing cable;

Connecting cable of L terminal socket of the meter is circuit cable;

Connecting cable of G terminal socket of the meter is shielding cable and connected to surface of the to-be-tested object to prevent surface leakage and affect impedance test.

3) Rated voltage selection

Select a rated voltage you need in the insulating

resistance test. Turn the range switch knob to a corresponding voltage position.

- 4) Connect pen of the test bar to another terminal of the to-be-tested object. Press high voltage switch (TEST/STOP). Here, the red indicator light turns on, indicating high voltage output for test is connected. Actual high voltage value can be displayed in the meter. After the test is started, numerical value is displayed in the meter.

Attention: do not short-circuit the two test pens with high voltage output or take measurement of insulating resistance after high voltage is output. The improper operation is very easy to generate spark, cause fire disaster, and damage the meter.

Special attention in operation:

Before test, make sure the to-be-tested circuit is not electrified. Do not take measurement of any electrified equipment or electrified circuit. During test, dangerous voltage output exists in the meter. Be sure to operate it carefully. Ensure the to-be-tested object is securely clamped and keep your hands away from the test clamp before press TEST key to output high voltage.

Attention in operation:

When use 500V measurement voltage to measure resistance less than $1.5M\Omega$, 1000V to measure resistance less than $5M\Omega$, measurement time must not exceed 10 seconds.

- 5) Power off

After the test, the release of high-voltage switch (TEST / STOP), put out the red indicator light, said high-voltage output has been disconnected.

Range will switch to the OFF position rotation, LCD screen shows no. The capacitive load, should be first tested on the target residual charge-finished, to prevent residual discharge wounding charge, and then removed the test line, testing completed

VII. Maintenance of the meter

Warning! It is necessary to turn the power off and disconnect test pens before open the case of the meter or battery cover to prevent danger of electric shock.

1. When the sign “” is displayed in the meter, the battery needs to be changed. Open the battery cover, and replace the old battery with a new one of the same type to ensure the meter works normally.
2. Keep the meter and the test pens clean, dry, and undamaged. Use a clean cloth or eradicator to clean the case of the meter. Do not use abrasive or organic solvent.
3. Avoid mechanical damage, shock, and impact; avoid exposure to high temperature and strong magnetic field.

VIII. Accessories

1. Test cable: one set.
2. Operating instructions: one copy
3. Conformity certificate/Warranty card: one piece