

Dear Client

Thank you for Purchasing our **HT2565 Pointer Insulation Resistance Tester**. Please read the manual in detail prior to first use, which will help you use the equipment skillfully.



Our aim is to improve and perfect the company's products continually, so there may be slight differences between your purchase equipment and its instruction manual. You can find the changes in the appendix. Sorry for the inconvenience. If you have further questions, welcome to contact with our service department.



The input/output terminals and the test column may bring voltage, when you plug/draw the test wire or power outlet, they will cause electric spark. PLEASE

CAUTION RISK OF ELECTRICAL SHOCK!

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◆ **SERIOUS COMMITMENT**

All products of our company carry one year limited warranty from the date of shipment. If any such product proves defective during this warranty period we will maintain it for free. Meanwhile we implement lifetime service. Except otherwise agreed by contract.

◆ **SAFETY REQUIREMENTS**

Please read the following safety precautions carefully to avoid body injury and prevent the product or other relevant subassembly to damage. In order to avoid possible danger, this product can only be used within the prescribed scope.

Only qualified technician can carry out maintenance or repair work.

--To avoid fire and personal injury:

Use Proper Power Cord

Only use the power wire supplied by the product or meet the specification of this produce.

Connect and Disconnect Correctly

When the test wire is connected to the live terminal, please do not connect or disconnect the test wire.

Grounding

The product is grounded through the power wire; besides, the ground pole of the shell must be grounded. To prevent electric

shock, the grounding conductor must be connected to the ground.

Make sure the product has been grounded correctly before connecting with the input/output port.

Pay Attention to the Ratings of All Terminals

To prevent the fire hazard or electric shock, please be care of all ratings and labels/marks of this product. Before connecting, please read the instruction manual to acquire information about the ratings.

Do Not Operate without Covers

Do not operate this product when covers or panels removed.

Use Proper Fuse

Only use the fuse with type and rating specified for the product.

Avoid Touching Bare Circuit and Charged Metal

Do not touch the bare connection points and parts of energized equipment.

Do Not Operate with Suspicious Failures

If you encounter operating failure, do not continue. Please contact with our maintenance staff.

Do Not Operate in Wet/Damp Conditions.

Do Not Operate in Explosive Atmospheres.

Ensure Product Surfaces Clean and Dry.

— **Security Terms**

Warning: indicates that death or severe personal injury may result if proper precautions are not taken

Caution: indicates that property damage may result if proper precautions are not taken.

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I. Overview

Our HT2565 uses embedded industrial microcontroller real-time operating system , digital-analog pointer and digital segment display perfect combination, this series products with a variety of output voltage level (2500V , 5000V, 10000V) , strong anti-interference, analog pointer with digital synchronous display, available for both AC and DC, simple operation , automatically save measurement results. It is the ideal test instrument for measuring insulation resistance for transformers, mutual inductors, generators, high-voltage motors, and arresters.

II. Product Introduction

1. Performance characteristics

1) Output voltage (2500V/5000V/10000V), resistance measurement range 0~ 400GΩ.

2) Two ways synchronous display resistance value. The variation range of the insulation resistance can be easily observed by analog pointer, digisplay can easily read the test results.

3) Uses embedded industrial microcontroller real-time operating system. With high automation degree, strong anti-interference ability, auto saves test results.

4) Friendly interface, various measurement results against power failure function, can store the measurement results for 19 times.

5) If the instrument with high voltage, there will be prompt tone and with corresponding display.

6) AC/DC dual-use, built-in rechargeable battery and AC adapter.

7) Portable design, convenient for field operation.

8) High voltage short circuit current $\geq 1\text{mA}$, it is an ideal insulation resistance tester to measure transformer, instrument transformer, generator, high voltage motor, power capacitor, power cable, arrester, etc.

2. Technique specifications

Output voltage		2500V DC	5000V DC	10000V DC
Accuracy	Temperature	23°C ± 5°C		
	Insulation resistance	5M~100G ±5%	10M~200G ±5%	20M~400G ±5%
		Other ranges: ±10%		
Temperature	2.5M~100G 0~+10%	5M~200G 0~+10%	10M~400G 0~+10%	
HV short-circuit current		≥1mA		
Power supply		8 AA batteries(8 AA rechargeable batteries, external charger)		
Work environment		Temperature: -10°C~40°C Relative humidity: ≤85 %		
Storage environment		Temperature: -20°C~60°C Relative humidity: ≤90 %		
Insulation performance		When the voltage between circuit and shell body is 1000V DC, the maximum resistance is 2000MΩ.		
Withstand voltage properties		When apply 3kv/50Hz sine wave voltage between circuit and shell body, withstand voltage time is 1 minute.		
Dimension		230×190×90mm (L×W×H)		
Weight		2.5kg		
Accessory		Test wire, manual, certificate, charge adapter, power cord, AA batteries		

Table 1 technical specifications

III. Instrument structure

1. Panel layout

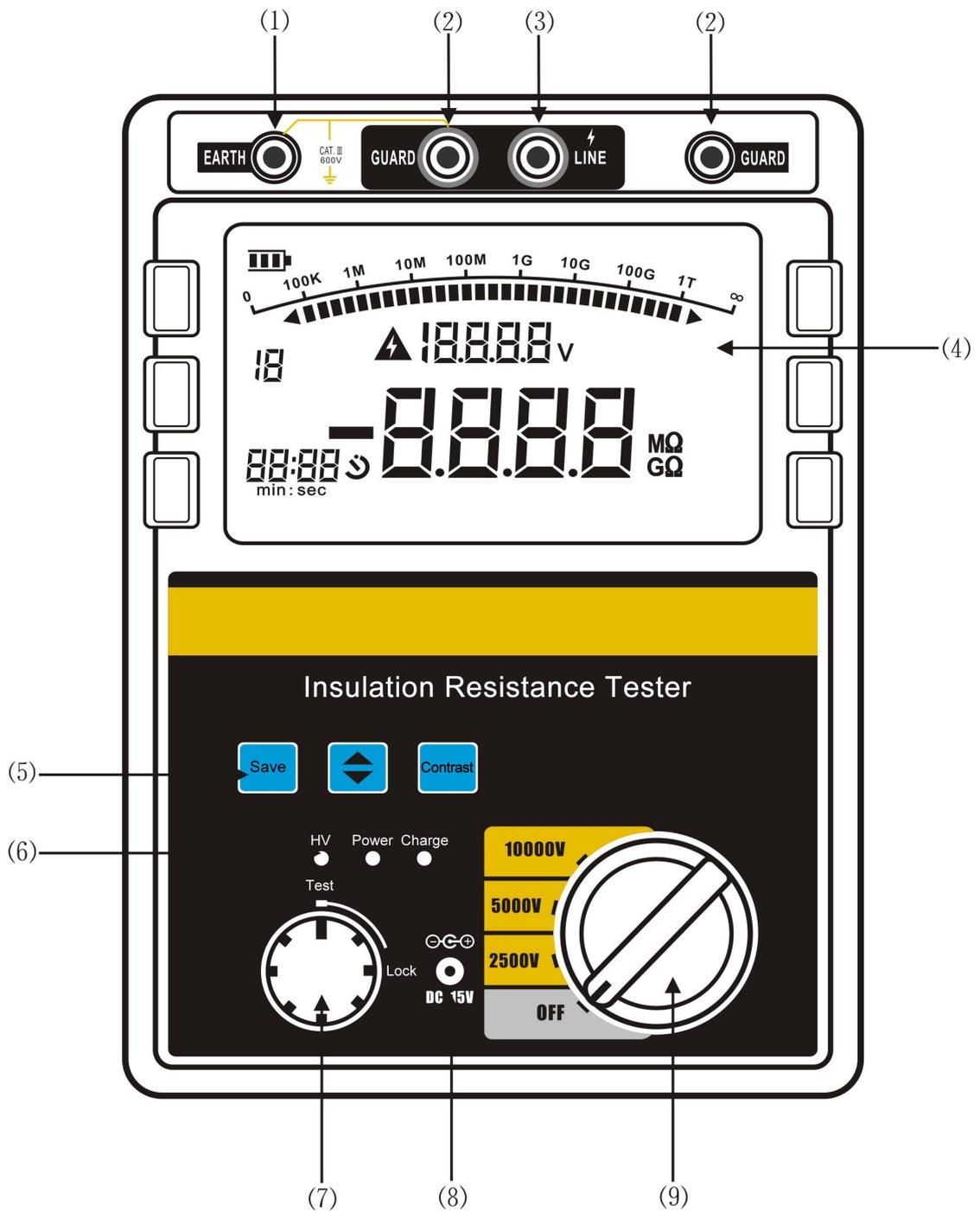


Figure 1 panel layout

No.	Name	Direction
(1)	Earth	Connect to the shell of measured device or the ground.
(2)	Line	HV output terminal, connect to the HV conductor of measured device.
(3)	Guard	Connect HV guard ring of measured device to eliminate the effect of surface leakage current.
(4)	LCD	Display the test results
(5)	Keys	Save: inquire historical data, press 3 seconds, and delete all historical data. Up and down: review the last and next test data. Contrast: adjust the LCD.
(6)	Indicator light	Display HV output, power supply status, charging status and other information.
(7)	Test	Press "test" key, if clockwise rotating this button will lock this button.
(8)	Charge jack	Input 15-19V DC
(9)	Band switch	Output voltage selection, power switch function.

Table 2 panel instruction

2. LCD instruction

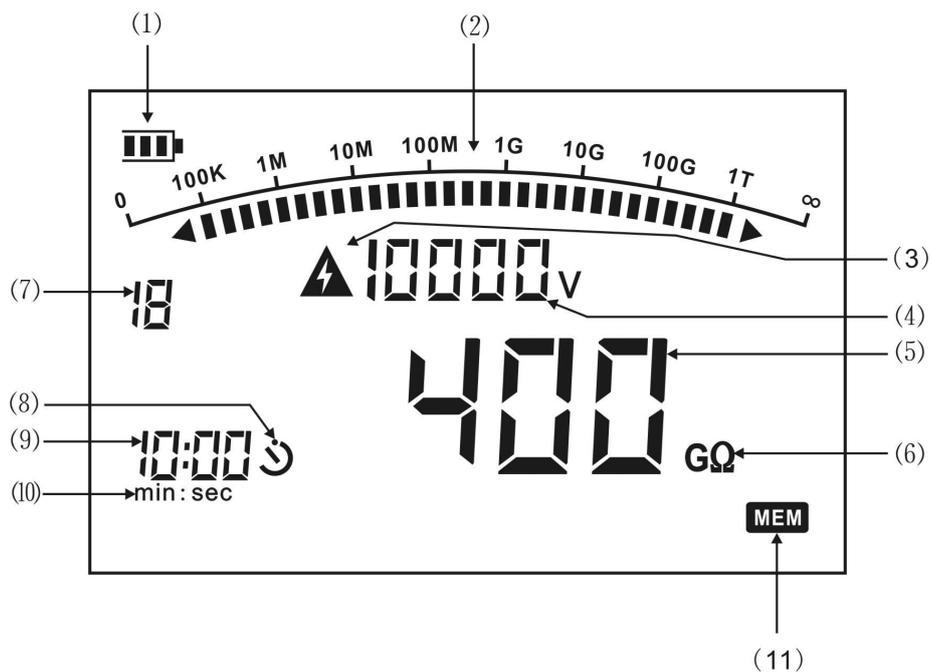


Table 3 LCD instruction

No.	Name	Direction
(1)	Battery status	If use battery during the test, this symbol is on, if it was flashing, the battery is running out.
(2)	Analog resistance scale	The resistance range.
(3)	HV warning	After press “test”, and with high voltage output, this symbol is on.
(4)	High voltage value	Output high voltage value.
(5)	Test result	Test results, effective figure: 3 digit, Infinity: “---”
(6)	Unit	Unit of the results: MΩ,GΩ
(7)	Test no. (times)	Can save 1-19 times test results.
(8)	Timing symbol	If it flashing during the test, it being timed.
(9)	Test time	Display the test time
(10)	min: sec	Time format: min: sec
(11)	MEM	If this is flashing, the memory is full (saved 19 test results.) if it was off, the tester ready to test or being test.

IV. Instruction Method

1. Preparation work

Note: When you first use the meter, please charge it for 6 hours. Otherwise the meter does not work. Details refer to “battery charge” relevant content.

1) Before test, please disconnect measured equipment power supply and remove all external connections. Let the measured target ground and discharge 1minute, the measured target with larger capacitance should discharge at least 2min in order to avoid electric shock and impact to the measurement results.

2) Use a clean dry cloth to wipe off the surface dirt of measured object, if necessary, you can wash the casing with gasoline to eliminate the surface

leakage current to affect test results.

3) Connect HV test lead (red terminal) into line terminal (3) LINE , (green terminal) into line terminal (2)GUARD, the other terminal connect to or hang on HV conductor of measured equipment; Connect test lead (green) to (2) GUARD (right hand side), the other terminal connect to HV protection rings of measured equipment to eliminate the effect of surface leakage currents (details see "shield terminal (GUARD) instruction" related content). Connect black test lead to earth terminal (EARTH) ① , the other terminal connect to the shell of measured device or the ground.

Note: As wiring, pay special attention to the connections of LINE (red) and GUARD (green), do not let them short circuit.

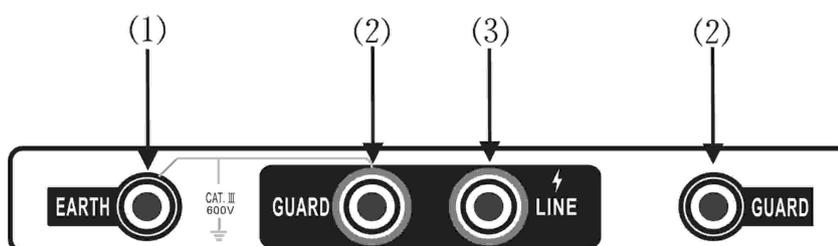


Figure 3 test wiring

2. Start test

1) Adjust band switch (9) to required voltage, if the power is normal, the indicator (6) will be on, if under-voltage, the indicator will be in red.

2) Instrument began self-test and initialization.

3) Press or lock "test" key (7) to start the test. At this time HV output indicator light (6) will glow and built-in buzzer will sound which indicating LINE terminal (3) having high-voltage output, time signal (8) flash.

Warning: During test, it is forbidden to touch the front exposed part of probe to avoid the risk of electric shock.

4) LCD enters test mode display, as shown in figure 4.

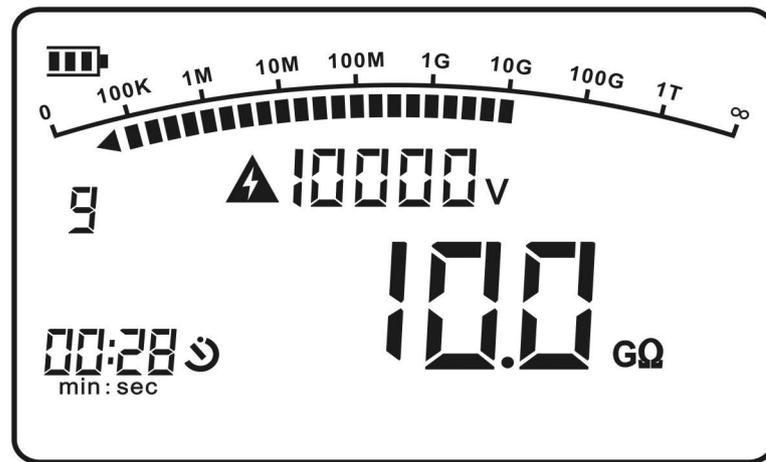


Figure 4 LCD display

5) Instrument sounds at certain time intervals (15 seconds, 1 minute, 10 minutes).

Note: the max measurement time is 10 minutes, over this time, the tester will auto stop the test. If you need test again, loosen or unlock the test button and press or lock again.

6) If stop the test, loosen or press counter-clockwise rotation to 12' clock direction and loosen test key (7). Here instrument stop HV output, display the test results.

Warning: after measurement finished or re-test, short circuit the measured equipment and discharge well to ensure the people safety and measurement accuracy of next test.

7) If you need consecutively do the second test, press (no loosen) or press clockwise rotation button to lock status test key (7), please refer to the above 4-6 items.

Note: the instrument can store 19 times test results, if more than 19 times, the MEM signal on LCD will flash, cannot save more data, unless press save key (5) more than 3 seconds, empty the memory, re-save data.

3. Query test results

- 1) Turn band switch to any voltage gear, at this time the power turned on.
- 2) Press save key (5) to display the test results (at this time MEM signal on which indicating there was test results to query.)

- 3) Press up/down key (5) select number to query related test results (measurement voltage, time and insulation value), see figure 5.
- 4) After review the results, re-press save key, exit query status.

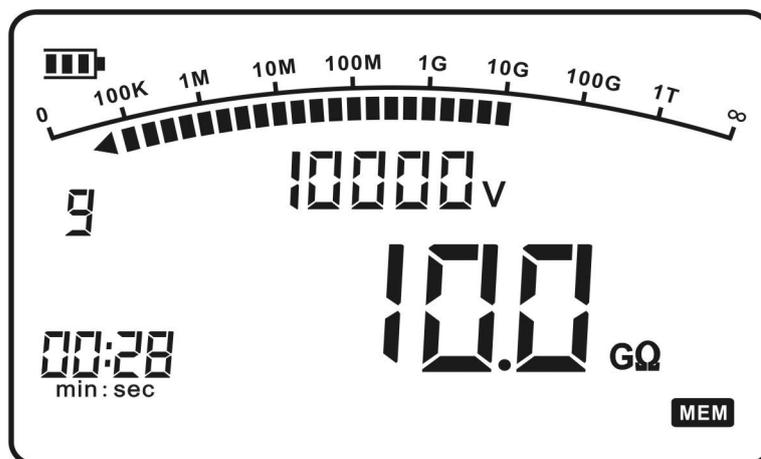


Figure 5 results query

4. Delete test results

- 1) Turn band switch to any voltage gear, at this time the power turned on.
- 2) Press save key (5) more than 3 seconds, then test number 9 to be 0, all test results cleared.

5. Instruction of guard terminal

When measuring insulation resistance of power cables or having external electromagnetic interference, in order to eliminate the effect of surface leakage current and external electromagnetic interference to the measurement results accuracy, in actual measurement process, using guard terminal of the instrument to eliminate leakage current and shielding interference.

For two or more measured objects such as arresters, coupling capacitor, please wiring as shown in Figure 6. Connect guard terminal to a flange of measured arrester, so that the interference current caused by high voltage lines is shielded by guard terminal, thus prevent interference on the main current. Connect the top flange of arrester to earth terminal, then let the instrument earth, so that interfere current can directly be connected to the earth. But the latter cannot completely eliminated interference.

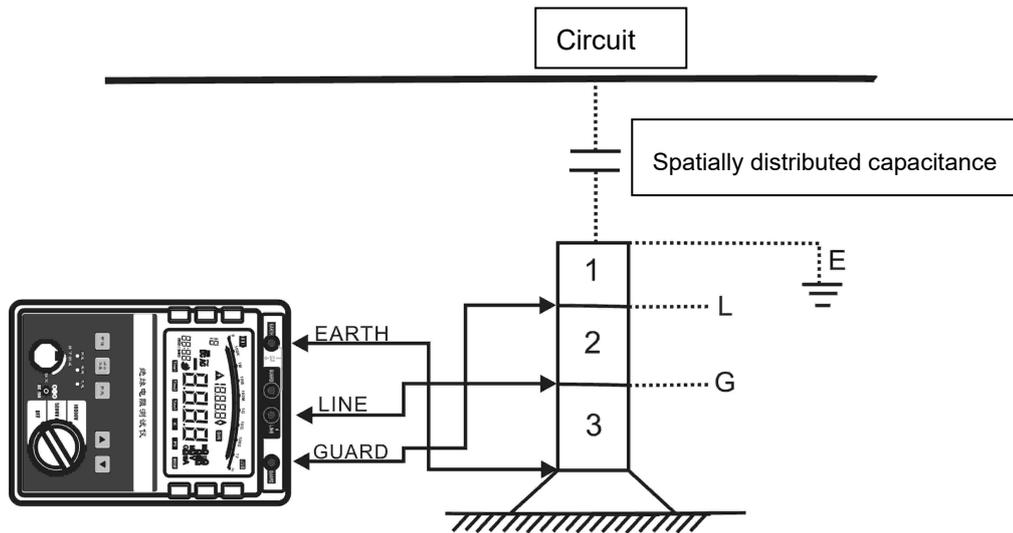


Fig.6 Use guard terminal to shield interfere

Other applications may refer to this method.

6. Battery charge

Note: When power on, the instrument power red light will flash which indicates that the battery is running out, should immediately charge.

1) The instrument use AC-DC power supply. On site test if there were strong interferences or power supply is unstable, it is recommended to use battery power.

2) When you first use the meter, please charge it for 6 hours. Otherwise the meter does not work.

3) Charging circuit using a special intelligent charging management module that can realize automatically stop charging.

Note: AC input voltage range of charging adapter is $220V \pm 15\%$, which can avoid unnecessary losses caused by wrong connection.

4) Connect DC terminal of charging adapter to power supply jack (8), connect the other terminal to AC power, charging indicator light (red) glows, fast charging begins.

5) When the battery is nearly full, the charge indicator (green) glows and the fast charging is finished, at this time we can appropriate to extend the charging time.

Note: When not in use, please make sure the selection rotation is in off status to avoid exhausting battery.

Note: if the instrument cannot power on, please charge or replace the battery or use AC power.