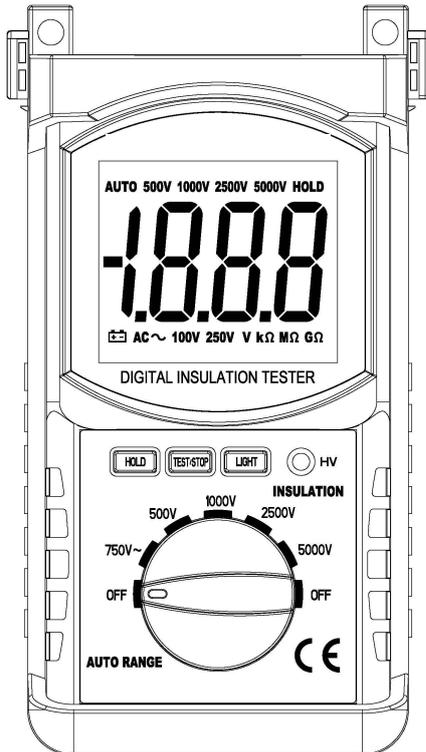


Digital Insulation Resistance Tester

OPERATION MANUAL



1. Summary

The Digital Insulation Resistance Tester series have high performance, and safe configuration and improved electrocircuit. It is one new item which has more fully function, higher precision, and easier operation. It's also one quakeproof, dustproof and dampproof tester and can fit work environment of outdoor.

The output testing voltage can be changed between 100V/250V/500V/1000V/2500V/5000V for different item no. The resistance can reach 200GΩ, the tester also can measure alternating voltage.

This Tester apply for all kinds or electric equipment and insulation materials such as transformer, electromotor, cable, switch, appliance, etc.

It is a perfect electrical testing meter.

2. Safety Notice

- (1) Read this Operation Manual carefully before use it.
- (2) This meter is designed in accordance with IEC publication 1010, pollution degree II and installation category (over voltage category) II.
- (3) Should not use it before close the back lid cause of the danger of electroshock.
- (4) Check the insulation layer of the test pin lead.
- (5) Don't rotate switch when testing.
- (6) When seeing "⚡" on the LCD, means the battery voltage is low. Please replace the battery or charge the battery by the battery charger to insure accurately testing.

3. Electric Symbols

- ⚠ Important hint
- ⚡ Care for high voltage
- Double insulation
- ⚡ Low battery
- V~ AC voltage
- ⊥ Ground (maximum permitted voltage between terminal and ground).

4. Feature

- (1) Low power consumed CMOS double integral A/D transforming IC, auto-checking to zero, auto displaying polarity, displaying when low battery.

- (2) LCD: 3 1/2 digits display with a max. reading of 1999
- (3) Has function of holding data and displaying signal.
- (4) LCD back light.
- (5) Can use rotating switch when testing voltage.
- (6) Voltage below AC 750V can be tested.
- (7) High voltage is on the rails when LED is on.
- (8) Displaying when low battery.
- (9) Drove by Battery not by hand.
- (10) Auto switch the range when resistance measuring.
- (11) With strong load, approx. 1.0mA output short current.
- (12) Perfect circuit protect, preventing damage by voltage shock effectively.
- (13) Size of LCD: 68×55mm (Height of character is 35mm)
- (14) Power: six battery 5# which is 1.5V (R6AA SUM-3) (HP-6688B, C, F)
9.6V Ni-Mh charge battery (HP-6688BR, CR, FR)
- (15) Size of shape: 218×122×75mm.
- (16) Weight: 900g (contain battery).
- (17) Environment:
Working temperature: 0~40°C,
relative humidity <80%.
Storage temperature: -10~50°C,
relative humidity <85%.
Temperature to ensure precision:
23 ± 5°C, relative humidity <75%.

5. Technique Index

Accuracies are ± (% of reading + number in last digit) for one year

Environment temperature: 23 ± 5°C, Relative humidity <75%

Model	HP-6688B/ HP-6688BR	HP-6688F/ HP-6688FR	HP-6688C/ HP-6688CR
Insulation tester	5000V	2500V	1000V
Testing Rating Voltage	500V/1000V/ 2500V/5000V	250V/500V/ 1000V/2500V	100V/250V/ 500V/1000V
Output voltage	90~110% Testing Rating Voltage		
Scale	1MΩ~ 200GΩ	1MΩ~ 20GΩ	1MΩ~ 20GΩ
Accuracy	1MΩ~200MΩ: ± (3.0%+5)		
	200MΩ~10GΩ: ± (5.0%+5)		
	10GΩ~200GΩ: ± (10.0%+5)		
Resolution	20MΩ: 10kΩ, 200MΩ: 100kΩ, 2000MΩ: 1MΩ, 20GΩ: 10MΩ, 200GΩ: 100MΩ		
Scale of AC voltage	1~750V		
Accuracy	± (2.0%+5)		
Resolution	1V		
Frequency response	40~400Hz		

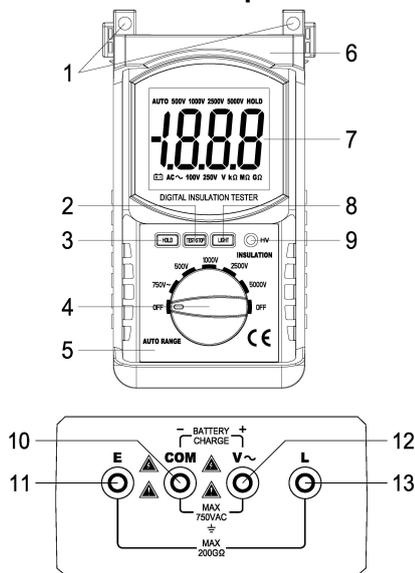
Note: When you measure the resistance is less than 5MΩ in any rating test voltage, the measuring time is not more then 10 seconds.

Remark: fall down resistance

Rating test voltage	fall down resistance
100V	1MΩ
250V	1MΩ
500V	1MΩ
1000V	2MΩ
2500V	2MΩ
5000V	8MΩ

Explaining: Fall down resistance means lower limit value of resistance which it ensure the voltage of two extremity of measuring is less than 90% of rating test voltage.

6. Operation Sketch Map



- (1) Mounting hole
- (2) High voltage startup switch: TEST/STOP
- (3) Data holding key: HOLD
- (4) Rating voltage rotating switch
- (5) Crust of meter
- (6) Protective casing
- (7) LCD
- (8) Back light switch: LIGHT
- (9) High voltage indicator light
- (10) ACV measurement terminal COM
/ Shield input terminal for insulation
/ Battery charge negative pole
- (11) EARTH input terminal (Insulation)
- (12) ACV Input terminal
/ Battery charge positive pole
- (13) LINE input terminal (Insulation)

7. Operating specification

(1) Safety notices

a. There is a possibility of causing an accident of electric shock. After the measurement of insulation resistance is completed, be sure to discharge the high voltage charged in the measuring object.

b. There is a risk of electric shock during the measurement. Be careful not to touch the measuring terminal and measuring object during the measurement.

c. When the circuit is activated, make measurement after disconnecting the power source.

d. Make measurement within the insulation resistance measuring range, and never impress voltage from outside, or the tester will be destroyed.

e. Be sure to confirm the position of rotary switch and the connection of measuring lead with the tester before starting the measurement.

f. When start the high voltage startup switch, there is a high voltage about 100V ~ 5000V between L and E, must not touch the bare part of meet and object be tested cause of the danger of been shocked.

(2) AC voltage test

a. ⚠ Don't test up AC 750V voltage. It is Dangerous!

b. Connect the measuring Leads
Insert the red plug of lead with probe to measuring terminal "V~", and the black plug of AC measuring lead to measuring terminal "COM", respectively.

c. Connect to the measuring object

Using the rotary switch select the "750V~" position. Connect the test pin of lead with probe to the other side of measuring object, and the test pin of AC measuring lead to another part of measuring object.

d. Then the digital display voltage is the AC voltage of the metrical object in fact.

(3) Insulation resistance testing

a. Connection of measuring lead

Insert the big plug of lead with probe to measuring terminal "L", the plug of lead with clip to measuring terminal "E", and the black plug of AC measuring lead with a small clip to measuring terminal "COM", respectively.

b. Testing lead connected

The lead with the big measuring clip is the leads connected with the earth. The lead with the high voltage's probe is the highest-voltage leads. The lead with connecting in "COM" socket is the shield leads meeting on the surface of the testing resource to preventing the surface leak affecting testing resistance. Using the rotary switch select the "OFF" position, connect the clip of lead to the other side of measuring object, and the AC measuring lead's small clip to the surface of measuring object.

c. Rating Voltage select

Select the Rating Voltage adapt to the insulation resistance you want to test .

Turn the rotating switch to the voltage segment needed.

d. Testing

Connect the probe to object, press the button "TEST/STOP", "HV" indicator light, which indicates measuring voltage happen. After testing begins, the number displayed on LCD is the insulation value of object tested.

e. End

After the measurement completed, push down the switch of the "TEST/STOP" once more .When the red LED off, means the output testing high voltage has been cut. Turn the rotary switch to "OFF" position. If measure the contain nature load, please short the residually electric of the testing resource first before move the testing leads.

(4) Data hold

On any range, press the "HOLD" key to lock display value, and the "HOLD" sign will appear on the display, press it again to exit.

(5) Back light

On any range, press the "LIGHT" key to light the back light. The light can wink automatically after approx. 10 seconds.

8. Battery replacement (or battery charge)

1) When the battery voltage drop below proper operation range, the "E" symbol will appear on the LCD display and the battery need to changed (or charge the battery by the charger).

2) Before changing the battery (or charge the battery by the charger), set the selector switch to "OFF" position.

3) Open the cover of the battery cabinet by a screwdriver.

4) Replace the old battery with the same type battery.

5) Close the battery cabinet cover and fasten the screw.

6) When charge the battery by the charger, set the selector switch to "OFF" position, then connect the black plug of the charger to the "COM" socket and the red plug of the charger to the "V~" socket.

7) Connect the charger to the AC power (AC 110V or 220V), the light of the charger will flicker red, it means the battery is charging. The light of the charger will light green when the battery be charged full, then please stop charge.

Caution: Dispose the used batteries according to the rules, which are defined by each community.

9. Maintenance

This is a precise instrument and needs careful maintenance.

a. Don't open the back lid at will. Don't use it if the back lib not fixed.

b. Put it in the place dry and airiness if the meter will be leave unused for long term.

c. Don't change the inner circuit at will or the meter maybe out of use.



1141 Budapest, Fogarasi út 77. 1095 Budapest, Mester utca 34.
Tel.: *220-7940, 220-7814, 220-7959. Tel.: *218-5542, 215-9771, 215-7550,
220-8881, 364-3428 Fax: 220-7940 216-7017, 216-7018 Fax: 218-5542
Mobil: 30 531-5454, 30 939-9989 Mobil: 30 940-1970, 20 949-2688

E-mail: delton@delton.hu Web: www.delton.hu

www.holdpeak.hu