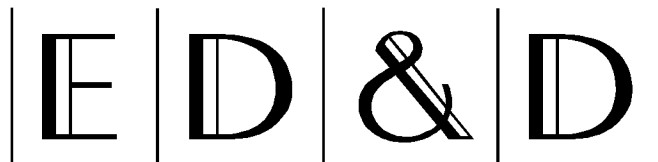


Millennium Series
HP-1000
AUTOMATIC AC HIPOT TESTER

OPERATION MANUAL

Important: Please Read These Instructions Prior To Use!



INTRODUCTION

Your NEW hipot tester is specifically designed for ease-of-use. As such, you will find that there are very few instructions needed to operate this piece of equipment.

HOWEVER, you should note that the hipot test (AKA dielectric voltage withstand test, high potential test) involves HAZARDOUS VOLTAGES which can present a safety hazard! Proper precautions should be taken to prevent contact with the product under test, or the cord to the product under test, when the red "TESTING" light is illuminated. *You are responsible for providing a safe environment in which to perform this test!*

DANGER !

THE HIPOT TEST INVOLVES HAZARDOUS VOLTAGE. NEVER TOUCH THE PRODUCT UNDER TEST OR THE CABLE TO THE PRODUCT UNDER TEST WHILE THE "TESTING" LIGHT IS ON !

AC vs. DC HIPOT TESTING

Many safety standards specify AC testing only. This is typical for appliances, lighting equipment, tools, etc. which do not incorporate power line filters. Safety standards for products such as Information Technology Equipment, Medical Equipment, and Laboratory Equipment anticipate that these products may incorporate power line filters for EMC purposes. **Products which incorporate power line filters SHOULD NOT be tested with an AC Test Voltage.** Due to the line to ground capacitance incorporated in products with power line filters, DC Hipot testing should be done on these types of products. Damage may arise to the line to ground capacitors in power line filters if subjected to high voltage AC hipot testing. *Refer to your product safety standards and check with your safety agency engineer when in doubt.*

SPECIFICATIONS

Test Voltage	HP1000 100-3000 VAC True RMS	HP2000 100-3000 VAC True RMS 100-4250 VDC
Failure Indication	ARC Detection Trip Current Limit 10mA	
Test Time	1 second / 60 second selectable	
Output Receptacle	"Universal" Receptacle accepts NEMA 5-15, 5-20, 6-15 and 6-20 plug configurations (U.S./Canadian 120V & 240V, 15A & 20A)	
Input Voltage	Wired for 100-120 or 220-240 VAC	
Input Current	1 A	
Input Frequency	50-60 Hz	
Accuracy	± 2%	
Weight	16 lbs.	
Dimensions	12"W x 11"D x 5"H	

SET-UP / OPERATING INSTRUCTIONS

- 1) Your tester is factory wired for an input voltage of either 100-120 VAC or 220 – 240 VAC. See the label on the rear of your hipot tester to determine which voltage range your tester is pre-wired. (Contact ED&D if you need to change the input voltage configuration for your hipot tester.) Plug the Hipot tester into the appropriate power source.
- 2) The hipot tester is designed to indicate FAIL when the output voltage is less than 100 volts. Therefore, before pressing START, verify that the voltage knob is set to at least 20 degrees above the fully counterclockwise zero position.
- 3) Turn the Hipot tester on. At this time, the “ready” light will not turn on (a safety feature).
- 4) Plug the product you wish to test into the receptacle on the front of your hipot tester.
- 5) Connect the GND SENSE lead to a grounded part of the chassis of the product under test. The “ready” light on the hipot tester should now be on. If the ready light is not on, check the connection of the GND SENSE lead. The GND Sense lead checks for ground continuity to the product under test before enabling the high voltage section of the hipot tester.

NOTE – If at any time you wish to stop the test, press the red STOP/RESET button. Wait until the TESTING light has turned off before making physical contact with the product under test.

- 6) The next step is to set the test voltage and test duration. Verify that the voltage knob is set as specified in Step 2. Set the test time to 60 seconds by pressing the 1/60 SEC button until the 60 SEC light is on. For model HP2000, also set the test voltage to AC or DC by pressing the AC/DC button until the appropriate light is on.
- 7) Now press the blue START button. The TESTING light should come on and the test voltage will be displayed. The tester should display a test voltage above 100 volts. **NOTE – If at any time you wish to stop the test, press the red STOP/RESET button. Wait until the TESTING light has turned off before making physical contact with the product under test.**
- 8) Turn the test voltage knob slowly to the right (clockwise) until the desired test voltage is displayed. Your test voltage is now “set”. Push the STOP/RESET button to stop the test. The test voltage knob may be left in this position for repeated testing of the same product at the same test voltage.
- 9) The PASS light will turn on at the completion of the test indicating that no dielectric breakdown has occurred during the test. If the FAIL light turns on, a dielectric breakdown has occurred. Wait until the TESTING light has turned off before examining the product under test. **WARNING – always disconnect the product under test from the hipot tester before touching the product under test.**
- 10) You are now set-up and ready for repeated testing at this test voltage. To change the test voltage, repeat steps 1-8. Remember, the hipot tester READY light means that ground continuity has been confirmed through the GND SENSE lead and you are ready to start the hipot test.

TROUBLESHOOTING

Basically, what we are going to do is get the Hipot tester to test itself. If it can not pass itself, there is a problem with the tester. Likewise, if the Hipot tester passes itself, the problem is most likely with the product under test.

- 1) Plug in the Hipot tester but DO NOT plug a product under test into it (nothing plugged into the front receptacle). Turn on the Hipot tester. At this point, the READY light should not be on. If it is on, there is a problem with the tester.
 - 2) Connect the "Ground Sense" lead on the front of the unit to the ground stud on the rear of the unit. At this point, you have tricked the hipot tester into thinking there is "ground continuity". As such, the testers READY light should come on. If the READY light is not on, there is a problem with the tester.
 - 3) Turn the voltage knob up all the way (maximum test voltage).
 - 4) Put the tester into 60 second mode. (Push the 1/60 SEC switch until the 60 SEC light is on).
 - 5) For the HP1000, go to step 6. For the HP2000, put the tester into AC mode. (Push the DC/AC switch until the AC TEST light is on).
 - 6) Hit the Start switch = The testing light should come on. If the TESTING light does not come on, there is a problem with the tester.
 - 7) During the test period, there should be no indication of a test failure. If the FAILURE light comes on, there is a problem with the tester.
 - 8) After 60 seconds, the TESTING light should turn off and the PASS light should turn on. The READY light should also come on again. If the PASS and READY lights do not turn on, there is a problem with the tester.
 - 9) Repeat steps 6-9 for the 1 second mode (note that the test time in step 8 test is now 1 second).
 - 10) For HP2000 Only: Repeat steps 6-9 for the DC TEST mode.
- If your tester reached this point without problems, you should repeat testing on your test sample. If a failure is noted on your test sample during testing, you should evaluate your product for the source of the test failure.
 - If your tester failed one of the above steps, please indicate which step it failed and call ED&D for additional technical support.

DANGER !

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SERVICE INSTRUCTIONS

- 1) Do NOT attempt to repair or adjust any electrical or mechanical functions on this unit. Doing so will void the warranty.
- 2) If you have any questions regarding this unit's operation or believe any repair is necessary, please call 1-800-806-6236 or 1-919-469-9434 to speak with a Customer Service Representative.
- 3) If you need to exchange the unit, please return it in its original carton to our main location in Research Triangle Park (Morrisville, NC). If you are returning the unit more than 30 days after the date of purchase, please see the enclosed warranty.
- 4) If you have any other questions or comments, feel free to write us:

Customer Service Dept.
ED&D, Inc.
Research Triangle Park
2200 Gateway Centre Blvd.
Morrisville, NC 27560 USA

techsupport@productsafet.com