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E D & D



USER'S MANUAL

GROUND IMPEDANCE TESTER

MODEL GC-1000

Educated Design & Development, Inc.
2200 Gateway Centre Blvd., Suite 215
Morrisville, NC 27560
Phone: (919) 469-9434 Fax (919) 469-5743
Web: www.productsafet.com

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INTRODUCTION

Your NEW high current ground impedance 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 ground impedance tester (AKA ground continuity tester or earthing tester) involves HIGH CURRENT, 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 GROUND IMPEDANCE TEST INVOLVES HIGH CURRENT. AVOID TOUCHING THE PRODUCT UNDER TEST OR THE CABLE TO THE PRODUCT UNDER TEST WHILE THE "TESTING" LIGHT IS ON !

BASIC OPERATING THEORY

The GC1000 Automatic Ground Impedance Tester utilizes high current for measuring the grounding circuit impedance of a product. The GC1000 applies a constant AC test current (25A or 30A) and measures the voltage drop across the grounding path being tested. The resulting impedance is displayed with a 0.10 ohm pass/fail trip limit. The test current is provided in the series path from the ground pin of the front panel receptacle, through the grounding path being tested, to the RETURN lead.

SPECIFICATIONS

Test Current	25A or 30A AC-TRMS selectable
Failure Indication	Impedance trip limit 0.1 ohms
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	2 A
Input Frequency	50-60 Hz
Accuracy	± 2%
Weight	12 lbs.
Dimensions	12"W x 11"D x 5"H

SET-UP AND 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 ground impedance 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 ground impedance tester.) Plug the Ground impedance tester into the appropriate power source.
2) Turn the Ground impedance tester on. At this time, the "ready" light will turn on and the display will indicate "OL" (overload – due to the open test circuit).

3) Select 25A or 30A test current and 1 or 60 second test time by pushing the appropriate front panel button. See below for use of the "zero" feature. Note that the zero light "on" means that the RETURN lead impedance has been zeroed and stored into memory. If the light is off, there is no impedance "zeroed". If the zero light is on and you do not wish to use the zero feature, see the steps for removing the zero.

4) Plug the product you wish to test into the receptacle on the front of your ground impedance tester.

5) Connect the RETURN lead to the grounded part of the chassis that you wish to test. Make sure that the part being tested (where you are connecting the RETURN lead) is part of the grounding system for the product under test.

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 contacting the product under test.

6) Now press the blue START button. The TESTING light should come on and the measured grounding impedance will be displayed throughout the test. **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 contacting the product under test.**

7) The PASS light will turn on at the completion of the test indicating that the grounding circuit impedance has not exceeded 0.1 ohms. At the completion of the test, the measured impedance will remain displayed until you push the start button again. This gives you unlimited time to write down your results before continuing with another test.

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8) If the FAIL light turns on and the display indicates “FAIL”, the impedance measured has exceeded 0.1 ohms. Wait until the TESTING light has turned off before examining the product under test. WARNING – always disconnect the product under test from the ground impedance tester before touching the product under test. IF YOU GET FAILING RESULTS, see the section below titled “Zeroing Out Lead Impedance”.

9) You are now set-up and ready for repeated testing. To change the test current or test time, repeat step 4. Remember – if you have a failing result, make sure you have zeroed out the RETURN lead impedance. Likewise, if you are not getting failing results without the RETURN lead impedance zeroed, you don’t need to use the zero feature.

DANGER!

THE GROUND IMPEDANCE TEST INVOLVES HIGH CURRENT. AVOID TOUCHING THE PRODUCT UNDER TEST OR THE CABLE TO THE PRODUCT UNDER TEST WHILE THE “TESTING” LIGHT IS ON!

ZEROING OUT LEAD IMPEDENCE

A unique feature of the GC1000 is the ability to remove the test lead impedance from the measurement (RETURN lead impedance). Note that you really only need to zero out the lead impedance if you are getting failing data (over 0.1 ohms) without the zero feature.

During the zeroing process, the GC1000 measures the lead impedance and stores this data in memory. Then, during each test, the cord impedance is automatically subtracted from the overall impedance to display only the products’ grounding circuit impedance. If you need this feature, follow the steps below:

To clear the “zero”:

- Quickly push and release the zero button. The zero light should turn off meaning there is no “zero” in memory.

To set the “zero”:

1. Clear the previous zero by quickly pushing and releasing the zero button. The zero light should be off.

2. Connect the RETURN lead to the metal lug on the rear panel of the GC1000. This lug is located just below the power cord entry module.

3. Depress and hold the zero button until the test current light begins flashing (25A or 30A light). Once this light begins to flash, you no longer need to hold the zero button

4. When the test current light quits flashing, the zero light will stay lit indicating that the zero has been stored in memory. The display will read “OL” after completing the zero process.

5. The RETURN lead impedance is now stored in memory and will not be included in all future measurements until the zero is removed from memory. You may disconnect the RETURN lead from the rear panel grounding lug.

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 and ask to speak with an Engineer in our Technical Department.

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., Suite 215
Morrisville, NC 27560 USA

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