

Dual Independent Footwear Tester Installation, Operation and Maintenance



Figure 1. Semtronics Dual Independent Footwear Tester and Dual Foot Plate

Description

The Semtronics Dual Independent Footwear Tester is a 6-state touch tester designed for fast and frequent testing of ESD personnel footwear. This tester can be used to verify that the ESD footwear resistance circuit is within the proper limits. By depressing the electrode button once, the Dual Independent Footwear Tester tests the resistance path limits of both worn ESD footwear independently within three seconds. It can be setup to test a 100 kilohms (10E5) - 1 megohm (10E6) circuit (foot grounders) or a 10 megohms (10E7) - 1 gigohm (10E9) circuit (dissipative shoes).

This unit can be used as one of the tools to fulfill the ANSI/ESD S20.20 Section 6.1.3.2 Compliance Verification Plan. "Verification should include routine checks of the Technical Requirements of the Plan." The Dual Footwear Tester incorporates a unique dual test circuit design which improves test accuracy.

ESD TR1.0-01-01 section 1.0 Introduction
"Since people are one of the greatest sources of static electricity and ESD, proper grounding is paramount."

ESD SP9.2 APPENDIX B - Foot Grounder Usage Guidance
"Compliance verification should be performed prior to each use (daily, shift change, etc.). The accumulation of insulative materials may increase the foot grounder system resistance. If foot grounders are worn outside the ESD protected area testing for functionality before re-entry to the ESD protected area should be considered."

The Semtronics Dual Independent Footwear Tester is available in one model:

Model	Voltage	Power Adapter
62106	120 VAC	USA

Packaging

- 1 Dual Independent Footwear Tester
- 1 Dual Foot Plate
- 1 Power Adapter ††
- 1 Stereo Plug to Stereo Plug Cord
- 1 Banana Plug to Ring Terminal Cord
- 1 Certificate of Calibration

Installation

The resistance limits for footwear tester is controlled by the DIP switches located on the left-side of the tester (see Figure 2). See the following tables for the DIP switch settings and their corresponding test values.

FOOTWEAR RESISTANCE

DIP switches 1 and 2 control the "HIGH" test limit.

Switch 1	Switch 2	HIGH Limit Resistance
ON	ON	10 Megohms (1 X 10E7)
OFF	OFF	35 Megohms (3.5 X 10E7)*
ON	OFF	100 Megohms (1 X 10E8)
OFF	ON	1 Gigohm †

DIP switches 3 and 4 control the "LOW" test limit.

Switch 3	Switch 4	LOW Limit Resistance
ON	OFF	100 Kilohms (1 X 10E5)
OFF	ON	1 Megohm (1 X 10E6)*

* Default Setting

† NOTE: At 1 Gigohm high limit resistance, a dirty foot plate could result in a false pass. Be sure to keep the foot plate clean particularly when using this setting.

†† NOTE: This unit must be used with the correct power adapter - a steady 12V adapter with positive center, 0.5 amp, 3.5mm phone plug. Many 220V power adapters are not regulated, so you will see 15 to 18 VDC at the tip. Our adapters regulate the output to almost exactly 12VDC.

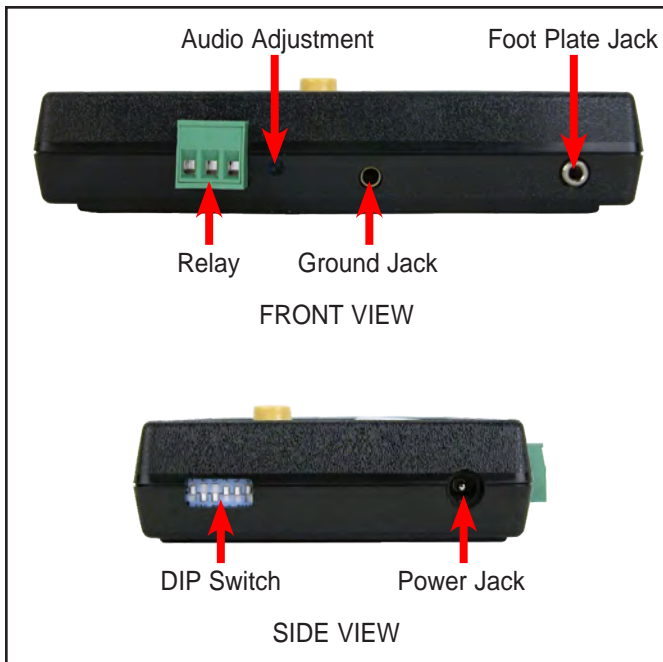


Figure 2. Dual Independent Footwear Tester side views

INSTALLING THE TESTER AND FOOT PLATE

Mount the tester at the desired location using the four mounting holes in the corners of the yellow mounting plate. Set the foot plate below the tester. Insert one end of the Stereo Plug to Stereo Plug cord into the stereo jack located at the bottom of the tester (see Figure 2). Insert the other end of the cord into the stereo jack at the back of the foot plate. Use the cable guide on the bottom of the foot plate to route the cord out the side of the foot plate (see Figure 3).

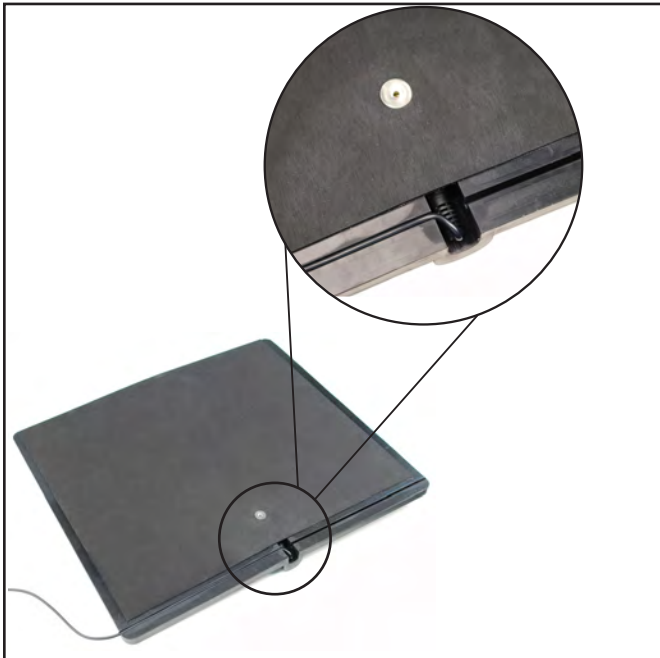


Figure 3. Recessed jack with cable route guide to prevent unintentional disconnect

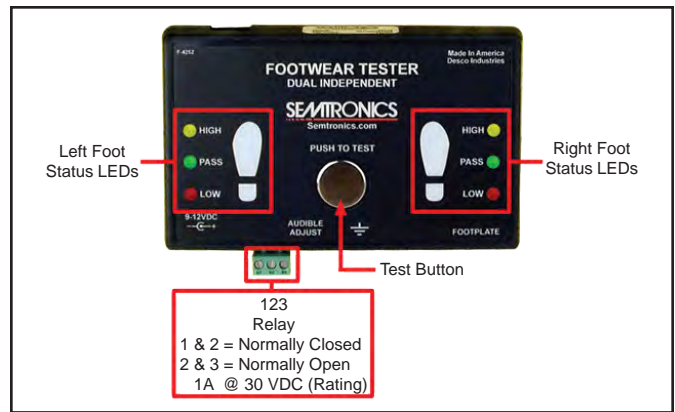


Figure 4. Dual Independent Footwear and Wrist Strap Tester features and components

Insert the banana plug end of the Banana Plug to Ring Terminal cord into the ground jack located at the bottom of the tester (see Figure 2). Connect the ring terminal end of the cord to earth ground. This connection will remove any static charge from the user before the test. **NOTE: Failure to correctly ground the tester may result in damage not covered under warranty.**

Insert the power supply plug into the power jack located on the left-side of the tester (see Figure 2). Plug the power supply into an appropriate power outlet.

RELAY TERMINAL

A relay with both “normally open” and “normally closed” contacts is included for your convenience. Going from left to right, the terminal block on the bottom of the tester has terminals for “normally closed,” “common,” and “normally open” (see Figure 4). The relay can be used for opening an electric lock to an ESD sensitive area. The maximum contact rating is: 1A@30VDC.

Operation

Upon power up, the alarm will sound and all of the LEDs for the activated tests will be illuminated. The tester is now ready for use.

Pushing the touch plate on the front panel starts the test. During the test all LEDs will turn off to indicate that a test is in progress. The touch plate must remain depressed until the test results are displayed. Depending on the configuration of the tester, the test could require up to three (3) seconds. The resistance is checked from the touch plate to the corresponding foot plate for each foot.

The LED(s) will turn off while the test is in progress. The test results for each foot will then be displayed for approximately three (3) seconds. If all tests result in a “PASS” condition, the internal relay will activate.

If any of the test results fail “HIGH” or “LOW,” an audible alarm will sound. The LED(s) indicating the failed test will be displayed for approximately three (3) seconds, and the internal relay will not activate.

