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

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage</th>
<th>Power Adapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>62106</td>
<td>120 VAC</td>
<td>USA</td>
</tr>
</tbody>
</table>

Packaging

1. Dual Independent Footwear Tester
2. Dual Foot Plate
3. Power Adapter ††
4. Stereo Plug to Stereo Plug Cord
5. Banana Plug to Ring Terminal Cord
6. 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.

<table>
<thead>
<tr>
<th>Switch 1</th>
<th>Switch 2</th>
<th>HIGH Limit Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON</td>
<td>ON</td>
<td>10 Megohms (1 X 10^7)</td>
</tr>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>35 Megohms (3.5 X 10^7)*</td>
</tr>
<tr>
<td>OFF</td>
<td>ON</td>
<td>100 Megohms (1 X 10^8)</td>
</tr>
<tr>
<td>OFF</td>
<td>ON</td>
<td>1 Gigohm †</td>
</tr>
</tbody>
</table>

DIP switches 3 and 4 control the “LOW” test limit.

<table>
<thead>
<tr>
<th>Switch 3</th>
<th>Switch 4</th>
<th>LOW Limit Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON</td>
<td>OFF</td>
<td>100 Kilohms (1 X 10^5)</td>
</tr>
<tr>
<td>OFF</td>
<td>ON</td>
<td>1 Megohm (1 X 10^6)*</td>
</tr>
</tbody>
</table>

* 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.
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.
Specifications
Rated tester voltage:
12 VDC, 600 mA, (2.5 mm connector - center positive)
Relay contact rating:
1 A @ 30 VDC max
Temperature range:
41°F - 104°F (5°C - 40°C)
Operating conditions:
Indoor use only at altitudes less than 6500 ft. (2 km).
Maximum relative humidity of 80% up to 88°F (31°C)
decreasing linearly to 50% @ 104°F (40°C).
Pollution degree:
2 per IEC 644

Calibration
The Semtronics Dual Independent Footwear Tester is calibrated to standards traceable to NIST. Frequency of recalibration should be based on the critical nature of those ESD sensitive items handled and the risk of failure for the ESD protective equipment and materials. In general, we recommend that calibration be performed annually.

The accuracy of the Dual Independent Footwear Tester is specified as:
• ±5% for 1 Megohm and lower resistance ranges
• ±10% for 1 Megohm and higher resistance ranges

A periodic check (once every 6 to 12 months) using a precision resistance box should be performed to verify proper operation.

The 50422 Limit Comparator is available for the convenient periodic testing of the Dual Independent Footwear Tester (see Figure 5).

The Limit Comparator allows the customer to perform NIST traceable calibration on a number of Semtronics Testers including the 62106. The Limit Comparator can be used on the shop floor within a few minutes virtually eliminating downtime, verifying that the Dual Independent Footwear Tester is operating within tolerances.

LIMITED WARRANTY
Semtronics expressly warrants that for a period of one (1) year from the date of purchase, Semtronics Dual Independent Footwear Testers will be free of defects in material (parts) and workmanship (labor). Within the warranty period, a unit will be tested, repaired, or replaced at our option, free of charge. Call Customer Service at 909-627-8178 (Chino, CA) or 508-485-7390 (Marlboro, MA) for Return Material Authorization (RMA) and proper shipping instructions and address. Include a copy of your original packing slip, invoice, or other proof of date of purchase. Any unit under warranty should be shipped prepaid to the Semtronics factory.

Warranty replacements will take approximately two weeks. If your unit is out of warranty, Semtronics will quote repair charges necessary to bring your unit up to factory standards. Call Customer Service at 909-627-8178 for proper shipping instructions and address. Ship your unit freight prepaid.

WARRANTY EXCLUSIONS
THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE SPECIFICALLY DISCLAIMED. The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean or repair products.

LIMIT OF LIABILITY
In no event will Semtronics or any seller be responsible or liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.

Using the 50422 Limit Comparator
Footwear Operation Test
I. Insert the Limit Comparator’s test plug into the phono jack located on the Dual Foot Plate.
II. Select the appropriate FAIL LOW setting on the Limit Comparator.
III. Press and hold the touch plate of the tester until the test is completed. The tester should indicate a FAIL LOW condition for both feet.
IV. Select the appropriate PASS LOW setting on the Limit Comparator and repeat the test. The tester should indicate a PASS condition for both feet.
V. Select the appropriate PASS HIGH setting on the Limit Comparator and repeat the test. The tester should indicate a PASS condition for both feet.
VI. Select the appropriate FAIL HIGH setting on the Limit Comparator and repeat the test. The tester should indicate a FAIL HIGH condition for both feet.

Figure 5. 50422 Limit Comparator

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