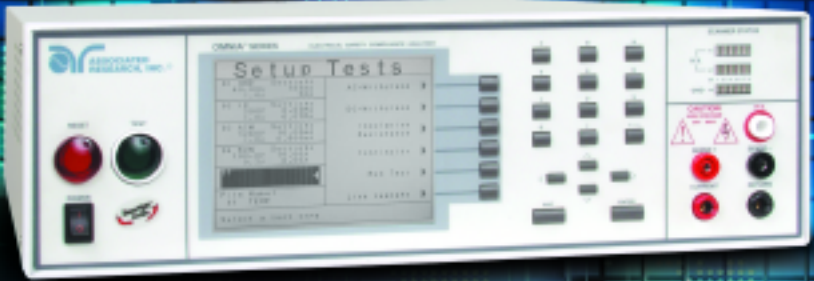


OMNIA®

QUICKSTART GUIDE



For the following models:

8104
8105
8106

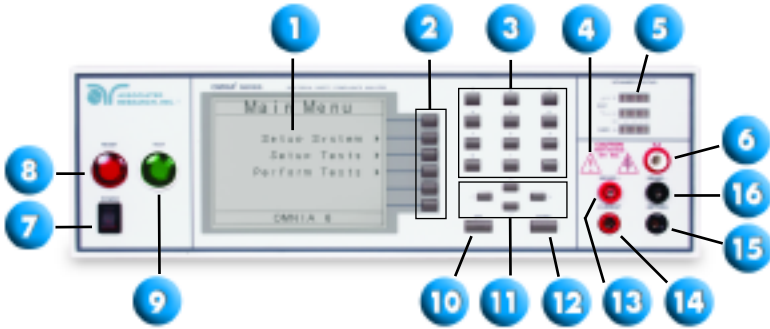
SAFETY CHECKLIST

- KEEP** unqualified/unauthorized personnel away from test area
- ARRANGE** test stations in a safe and orderly manner
- NEVER** touch products or connections during a test
- TURN OFF** high voltage first in the event of a problem
- NEVER** perform a test on energized circuitry or equipment
- BE SURE** to always connect the return test lead first
- HANDLE** test clips by insulation only, never touch clips directly



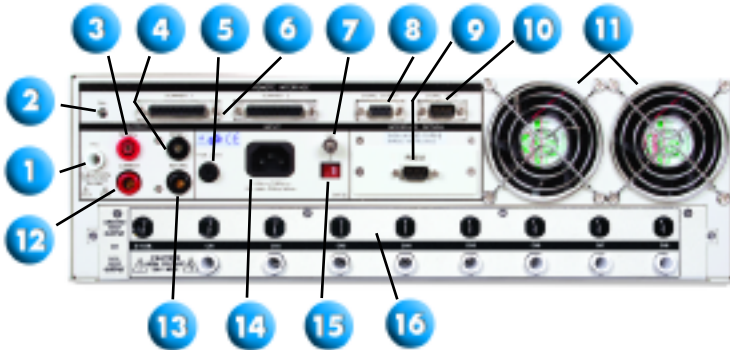
WARNING: THIS GUIDE WAS CREATED FOR OPERATORS HAVING SOME FAMILIARITY WITH HIPOT AND ELECTRICAL SAFETY TESTING. A HIPOT TESTER PRODUCES VOLTAGES AND CURRENTS THAT CAN CAUSE HARMFUL OR FATAL ELECTRIC SHOCK. TO PREVENT ACCIDENTAL INJURY OR DEATH, THESE SAFETY PROCEDURES MUST BE STRICTLY OBSERVED WHEN HANDLING AND USING A TEST INSTRUMENT.

FRONT PANEL CONTROLS



- 1. GRAPHIC LCD:** 320 X 240 monographic LCD.
- 2. SOFT KEYS:** Multi-function parameter selection keys used to select screen and change parameters.
- 3. NUMERIC DATA ENTRY:** Keys used to enter numeric data.
- 4. HIGH VOLTAGE ON INDICATOR:** Flashing indicator to warn the operator high voltage is present.
- 5. SCANNER STATUS LED'S:** Color coded LED's that indicate the status of the 8 high voltage and 8 high current channels on the internal scanner.
- 6. HIGH VOLTAGE OUTPUT TERMINAL:** Connector used to attach the red high voltage test lead or adapter box high voltage lead to the instrument.
- 7. POWER SWITCH:** Rocker style power switch with International ON (I) and OFF (O) markings.
- 8. RESET BUTTON:** Red momentary contact switch used to reset the instrument in case of a failure or to proceed to the next test. Also serves as an abort signal to stop any test in progress.
- 9. TEST BUTTON:** Green momentary contact switch used to start tests.
- 10. EXIT KEY:** Key used to escape from parameter editing and returning to prior screens.
- 11. UP, DOWN, LEFT, AND RIGHT ARROW KEYS:** Keys used to scroll the highlighted area or cursor in the specified direction.
- 12. ENTER KEY:** Key used to finalize parameter entries. The ENTER key may also be used to scroll the highlighted area to different parameters in the parameter setting screens.
- 13. SENSE (+) TERMINAL:** Connector used to attach the current test lead to the instrument. Provides positive Kelvin voltage sensing for the instrument.
- 14. CURRENT OUTPUT TERMINAL:** Connector used to attach the high current output lead, adapter box high current lead, or test fixture high current lead to the instrument. Provides output current for ground bond and continuity.
- 15. RETURN OUTPUT TERMINAL:** Connector used to attach the return test lead or test fixture to the instrument. This connector provides the return current path for the high voltage, ground bond and continuity current.
- 16. SENSE (-) TERMINAL:** Connector used to attach the return test lead or test fixture to the instrument. Provides negative Kelvin voltage sensing for the instrument.

BACKPANELCONTROLS



8104 BACK PANEL CONTROLS

- 1. HIGH VOLTAGE OUTPUT TERMINAL :** Connector used to attach the high voltage test lead, adapter box high voltage lead, or test fixture high voltage lead to the instrument. The connector is recessed for safety.
- 2. CALIBRATION BUTTON :** Used to put the instrument into calibration mode.
- 3. SENSE (+) TERMINAL :** Connector used to attach the current test lead or test fixture to the instrument. Provides positive Kelvin voltage sensing for the instrument.
- 4. SENSE (-) TERMINAL :** Connector used to attach the return test lead or test fixture to the instrument. Provides negative Kelvin voltage sensing for the instrument.
- 5. FUSE RECEPTACLE :** Socket for the input power fuse. See operation and service manual for ratings and replacement instructions.
- 6. SCANNER INTERFACE :** For connection of up to 2 external scanning matrixes.
- 7. CHASSIS GROUND (EARTH) TERMINAL :** This terminal should be connected to a good earth ground before operation.
- 8. REMOTE SIGNAL OUTPUT :** 9-pin D subminiature female connector for monitoring PASS, FAIL and PROCESSING output relay signals.
- 9. BUS INTERFACE :** Standard connector for interconnection of the RS-232 Bus interface. Optional IEEE-488 interface or Ethernet Interface may be substituted for RS-232.
- 10. REMOTE SIGNAL INPUT :** 9-pin D subminiature male connector for remote control of TEST, RESET and INTERLOCK functions as well as remote program file selection.
- 11. THERMAL COOLING FANS :** Thermally switched cooling fans.
- 12. CURRENT OUTPUT TERMINAL :** Connector used to attach the high current output lead, adapter box high current lead, or test fixture high current lead to the instrument. Provides output current for ground bond and continuity.

BACKPANELCONTROLS

- 13. RETURN OUTPUT TERMINAL :** Connector used to attach the return test lead or test fixture to the instrument. This connector provides the return current path for the high voltage, ground bond and continuity current.
- 14. INPUT POWER RECEPTACLE :** Standard IEC 320 connector for connection to a standard NEMA style line power (mains) cord.
- 15. INPUT POWER SWITCH :** In the left position line voltage is set for 115 volt operation, in the right position line voltage is set for 230 volt operation.
- 16. SCANNER OUTPUTS :** Optional scanner matrix that provides 8 High Voltage/Return connections and 8 Ground Bond connections (8104 only).

8105/8106 BACK PANEL CONTROLS



- 1. DUT POWER INPUT CONNECTOR :** Connector provides line and neutral input power connections. The input is rated for 0 - 277 volts 50/60 hertz.
- 2. L:** Output terminal where the line power connection from the adapter box is plugged into the run test or line leakage test.
- 3. N:** Output terminal where the neutral power connection from the adapter box is plugged into the run test or line leakage test.
- 4. CASE:** Terminal connected to the DUT case or dead metal and provides the return for the Ground Bond, Dielectric Withstand, and Insulation Resistance tests.
- 5. GND:** Terminal where the ground or earth terminal from the adapter box is connected.
- 6. PROBE HI:** Terminal input to one side of the measuring device (MD) and will be enabled during a line leakage test whenever Probe HI has been selected at setup. This terminal is provided for performing enclosure leakage or applied part leakage tests.
- 7. PROBE LO:** Terminal input to one side of the measuring device (MD) and will be enabled during a line leakage test whenever Probe LO has been selected at setup. This terminal is provided for performing applied part leakage tests and is always used in conjunction with the Probe HI terminal.
- 8. EXTERNAL MEASURING DEVICE :** This compartment contains an external measuring device PCB. When selected, this device will be enabled during a line leakage test.

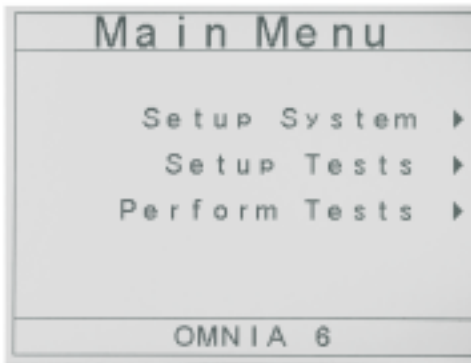
INSTRUMENT SETUP



WARNING: LOCATE A SUITABLE TESTING AREA WITH A THREE-PRONG, GROUNDED OUTLET. BE SURE THAT YOUR THREE-PRONG OUTLET HAS BEEN TESTED FOR PROPER WIRING. ALSO, MAKE SURE YOU READ THE SAFETY CHECKLIST OF THIS GUIDE BEFORE STARTING TO TEST.

1. Choose the correct input line voltage on the rear panel of the instrument, either 115V AC or 230V AC.
2. Connect the line cord into the rear of the instrument and plug the male end of the cord into a grounded power source.
3. Plug the interlock connector into the Signal Input connector on the rear panel of the instrument. OMNIA is equipped with a Remote Interlock feature, which utilizes a set of closed contacts to enable the instrument's output. In order to perform a test, the interlock connector must be plugged into the Signal Input connection of the rear panel of the instrument.
4. Turn the POWER switch to ON.

The initialization screen will appear. After three seconds the Main Menu screen will appear as shown below. (See Figure 1.)



(Figure 1. Main Menu Screen)

The OMNIA comes pre-loaded with one default test file. The file is an AC withstand test loaded with default parameters.

CHANGING THE TYPE OF TEST

ADDING NEW TESTS

From the Main Menu screen, press the "Setup Tests" soft key.

On the Setup Tests screen, the test and step number will be highlighted.

Press the "Add" soft key and specify the type of test with the soft key options given (ACW, DCW, IR, Continuity for 8104 and Run Test or Line Leakage Test for 8105 and 8106).

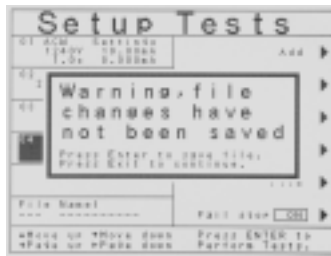
Once the test has been added, the parameters for the chosen test type will appear. Use the soft keys to edit parameters on the right side of the screen (examples: frequency, arc detect, continuity and DUT output).

Use the arrows (up, down, left, right) to scroll between test parameters on the left side of the screen (examples: voltage, Hi-Limit T, Lo-Limit T, dwell time, ramp time, etc.).

Use the number keypad to change a parameter value. Once the desired value has been entered, press exit to go back to the Setup Tests screen.

If default parameters are acceptable, press exit to go back to the Setup Tests screen.

To save the test program, press Exit from the Setup Test screen. You will see the following prompt. (See Figure 2)



(Figure 2. Setup Tests Prompt Screen)

Press EXIT to continue without saving. Press ENTER to save.

Adding multiple tests to the same screen automatically creates a multiple step test sequence. The tests will run in sequential order unless Single Step control is initiated. To perform single steps, press the PERFORM TEST soft key from the Main Menu screen. On the right hand side of the Perform Test screen, there is a selection named Single Step. Press the Single Step soft key to turn Single Step on. The tests will now run individually. Press Exit to go back to the Main Menu screen.

CHANGING TEST SETTINGS AND DELETING TESTS

Test parameters on OMNIA are fully adjustable. Common parameters that can be adjusted include voltage, Hi-Limit, Lo-Limit, ramp up, dwell time, ramp down, Hi-Limit R and Lo-Limit R among others.

From the Main Menu screen, press the "Setup Tests" soft key.

Use the arrow keys (up, down) to highlight the test to be edited and hit the "Edit" soft key.

Use the soft keys to edit parameters on the right side of the screen. Use the arrows (up, down, left, right) to scroll between test parameters on the left side of the screen.

Use the number keypad to change a parameter value. Once the desired value has been entered, press exit to go back to the Setup Tests screen.

Press Exit to go back to the Setup Tests screen. Then Press Exit to go back to the Main Menu screen. you will be prompted to save your test file.

Deleting a test step is also done from the Setup Tests screen. Highlight the test to be deleted and hit the delete soft key

Press Enter and the step will be deleted. Press Exit and the step will not be deleted.

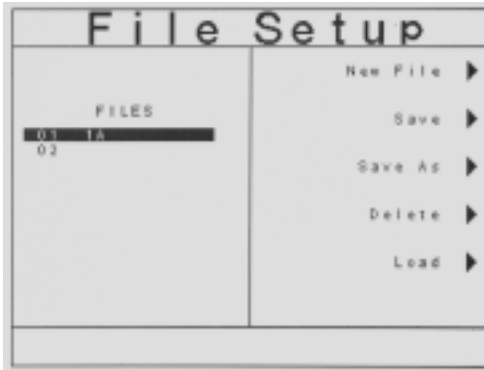
CHANGING THE TYPE OF TEST

SAVING AND LOADING TEST FILES

Test Programs can be saved in files for easy recall of test conditions.

From the Main Menu screen, press the "Setup Tests" soft key.

Hit the "File" soft key from the Setup Tests window. The files currently on the system will be displayed. (See Figure 3)



(Figure 3. File Setup Screen)

Using the up and down arrow keys, highlight the number of the file slot where the test sequence is to be saved. Hit the "Save As" soft key and the Create File screen will appear.

Use the arrow keys (up, down, left, right) to select letters on the virtual keypad or use the numeric keypad to enter numbers for the file name. When the correct characters are chosen, use the "Select" soft key to enter the character. When finished, hit the ENTER key. The system will exit back to the "Setup Tests" screen with the current file now loaded.

To recall any test file, hit the "File" soft key from the Setup Tests screen.

Use the up and down arrow keys to select the file to be loaded. Hit the "Load" soft key and the test sequence associated with the file will automatically be loaded.

PERFORMING A TEST

TEST CONNECTIONS (8104):

The adapter box is an easy way to connect a Device Under Test (DUT) that terminates in either a two or three-prong line cord. The following diagram shows how to connect the adapter box to the instrument and the DUT. (See Figure 4) If you are testing a Class I product, you may elect to perform a ground bond test on the ground circuit of the DUT along with the hipot test.

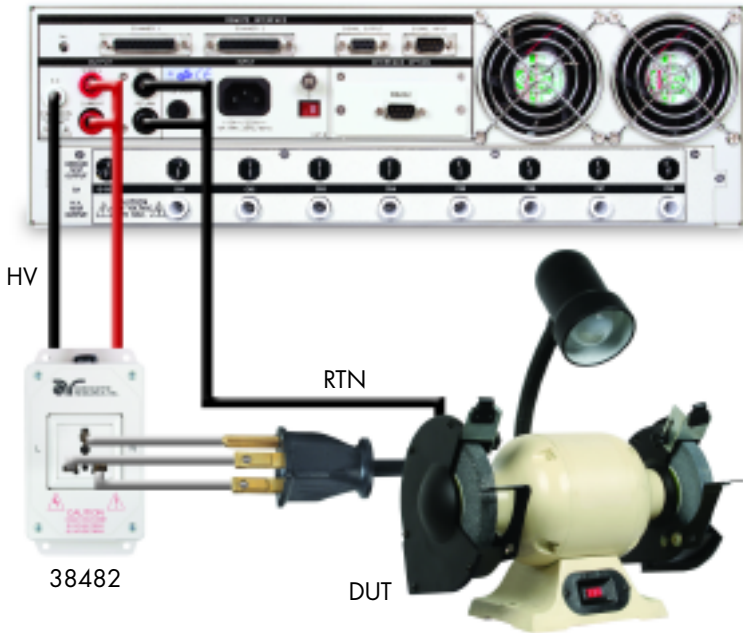
Under the output ports on the back panel, plug the black high voltage lead in the high voltage terminal. This acts as a line and neutral together.

Plug the Kelvin lead into the Sense (+) jack and the high current test lead into the current jack. These two red leads act as the ground connection.

Connect the ground return clip to dead metal on the chassis of the DUT. Plug the Kelvin lead into the Sense (-) jack and the return lead into the return jack. Always check to make sure a good connection is made between the DUT and the return clip.

Plug the line cord of the DUT into the adapter box receptacle.

If you are testing a Class I product, you may elect to perform a ground bond test on the ground circuit of the DUT along with the hipot test.



(Figure 4. Adapter Box Connection)
8104

PERFORMING A TEST

TEST CONNECTIONS (8105 & 8106):

Under the DUT output ports on the back panel, plug the line lead from the adapter box into the L terminal and the neutral lead into the N terminal.

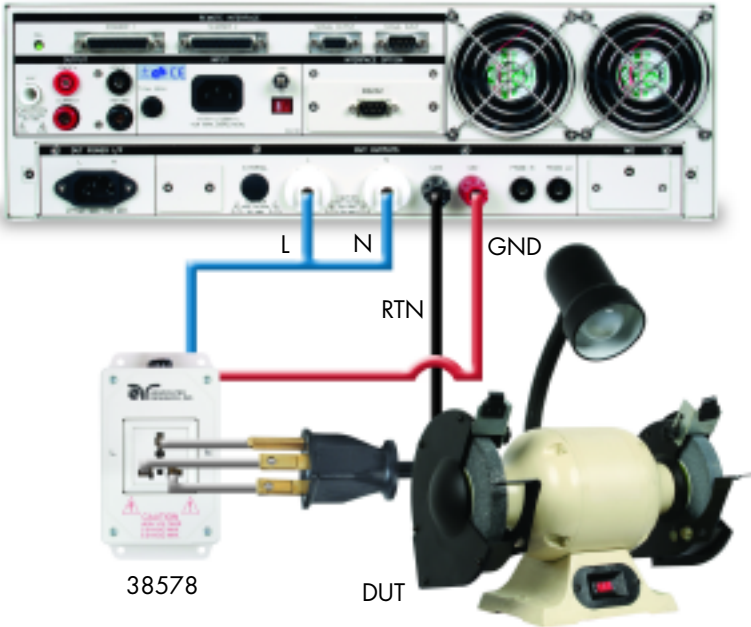
Next attach the red ground lead from the adapter box to the GND terminal.

Attach the black case return lead into the case terminal.

Connect the ground return clip to dead metal on the chassis of the DUT.

Plug the line cord to the DUT into the adapter box receptacle.

Only the rear output connections may be used for connecting the adapter box on the 8105 and 8106 models. (See Figure 5)



(Figure 5. Adapter Box Connection)
8105, 1806



WARNING: DO NOT TOUCH THE DEVICE UNDER TEST ONCE THE TEST HAS BEEN STARTED.

PERFORMING A TEST

TEST CONNECTIONS

There is no ground circuit on the DUT of a Class II product. Therefore, test leads may be utilized to connect the OMNIA to a DUT. (See Figure 6)

Plug the black return lead into the Return terminal and the black Kelvin lead into the Sense (-) lead. Then connect the high voltage lead terminated in a red clip into the (H.V.) terminal on the front panel of the instrument.

Attach the clip-terminated end of the return lead to the dead metal on the chassis of the DUT. If necessary, a 10 x 20 cm piece of foil can be attached to the enclosure to simulate a full hand contact to the DUT. This foil acts as the return point. The Return and Sense (-) jack are attached to the foil. Always check to make sure a good connection is made between the DUT and the return clip.

Attach the high voltage lead to the current-carrying conductors of the DUT.

If performing a ground test on a Class I product (connection not shown), connect the red high current lead into the Current terminal and the red Kelvin lead into the Sense (+) jack. The clip at the other end will connect to the ground pin of the DUT plug.



(Figure 6, Test Lead Connection)

INITIATING A TEST

To perform a test, you should save steps, return to the main menu and hit the correlating soft key for "Perform Tests." You can now initiate a test through the front panel by pressing the green TEST button. The red RESET button will abort a test in process.

TEST RESULTS

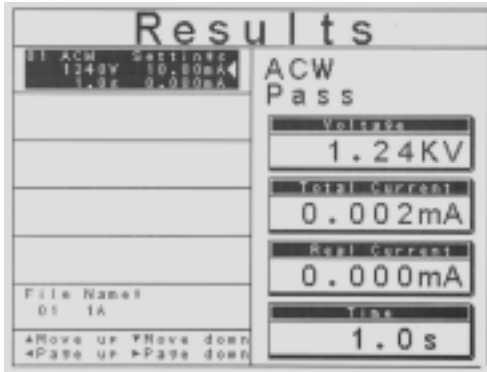
VIEWING TEST RESULTS

From the Perform Tests screen, press the "Results" soft key. (See Figure 7)

Use the up and down arrows to select the test to be reviewed or use the left and right arrows to page up and page down.

Results are displayed on the right hand side of the screen including the test type, reason for failure and test parameter results.

Press the EXIT key to go back to the PerformTests screen and hit EXIT again to go back to the Main Menu.



(Figure 7. Results Screen)

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For more support materials and testing information on OMNIA please visit us online at www.asresearch.com. You can also refer to the Operation and Service Manual.



For additional information about these and other key features of the OMNIA, please consult the full Operation and Service Manual or call us toll-free 1-800-858-TEST (8378) or +1-847-367-4077