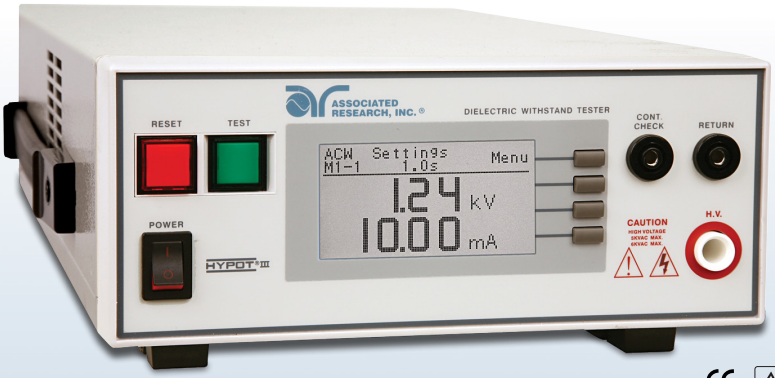
Quick Start Guide for

HYPOT® III

DIELECTRIC WITHSTAND TESTERS



For the following models: 3705, 3765, 3770, 3780

SAFETY CHECKLIST

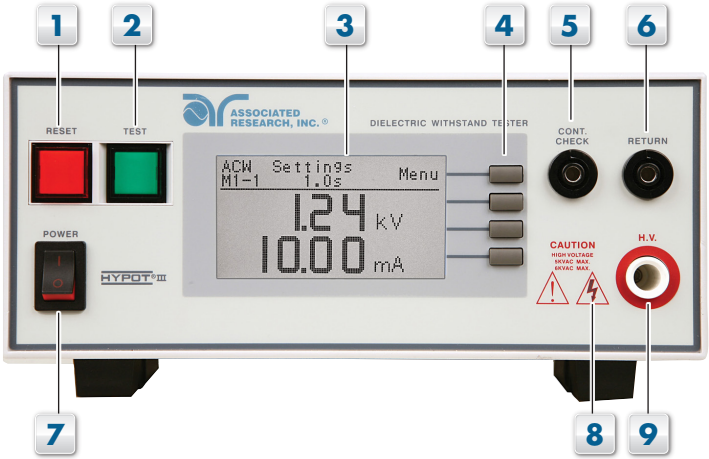
- **KEEP** unqualified/unauthorized personnel away from the test area
- **ARRANGE** test stations in a safe and orderly manner
- **NEVER** touch products or connections during a test
- **STOP** the test first in the event of a problem
- **NEVER** perform a Ground Bond test on energized circuitry or equipment
- **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 ELECTRICAL SAFETY TESTING. AN ELECTRICAL SAFETY 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.

Safety Is Our Only Focus®

ASSOCIATED RESEARCH, INC.®

Front Panel Controls 3705/3765/3770/3780



(3700 Front Panel)

1 **RESET BUTTON:** Red momentary contact switch used to reset the instrument in case of a failure. Also serves as an abort signal to stop any test in progress.

2 **TEST BUTTON:** Starts a test.

3 **GRAPHIC LCD:** 128 X 64 Monographic LCD.

4 **SOFT KEYS:** Multi-function keys used to select screens and change parameters.

5 **CONTINUITY OUTPUT TERMINAL:** Connector used to attach the return test lead, adapter box return lead, or test fixture return lead used during Continuity testing.

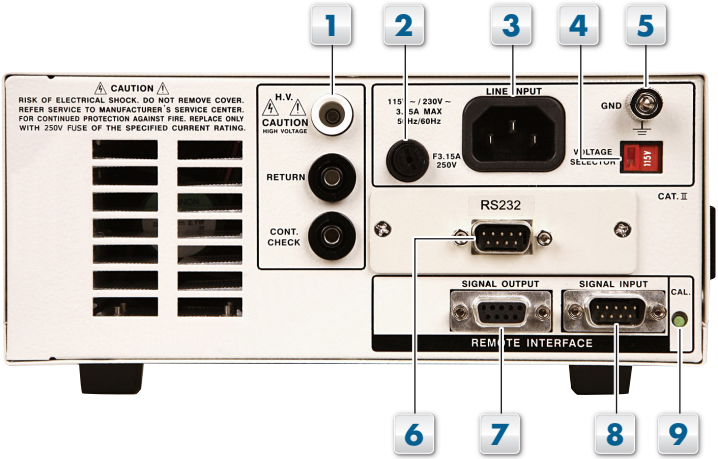
6 **RETURN OUTPUT TERMINAL:** Provides the return current path. Connector used to attach the return test lead, adapter box return lead or test fixture return lead to the instrument.

7 **POWER SWITCH:** Rocker-style switch with international ON (I) and OFF (0) markings.

8 **HIGH VOLTAGE INDICATOR:** Indicator flashes to warn the operator that high voltage is present at the high voltage output terminal.

9 **HIGH VOLTAGE OUTPUT TERMINAL:** Provides the high voltage used during a Hipot test. Connector used to attach the high voltage test lead, adapter box high voltage lead or test fixture high voltage lead to the instrument.

Back Panel Controls 3705/3765/3770



(3700 Back Panel)

1 **REAR PANEL OUTPUT TERMINALS:** Second set of output connectors in parallel with the front panel connectors. For interconnection to a Ground Bond tester or for installation into a rack mount system.

2 **FUSE RECEPTACLE:** To change the fuse, unplug the power (mains) cord and turn the fuse receptacle counterclockwise. The fuse compartment will be exposed. Please replace the fuse with one of the proper rating.

3 **INPUT POWER RECEPTACLE:** Standard IEC 320 connector for connection to a standard NEMA style line power (mains) cord.

4 **INPUT POWER SWITCH:** Line voltage selection is set by the position of the switch. Push the switch to the left for 115 volt operation and set it to the right for 230 volt operation.

5 **CHASSIS GROUND (EARTH) CONNECTION:** This safety terminal should be connected to a good earth ground before operation.

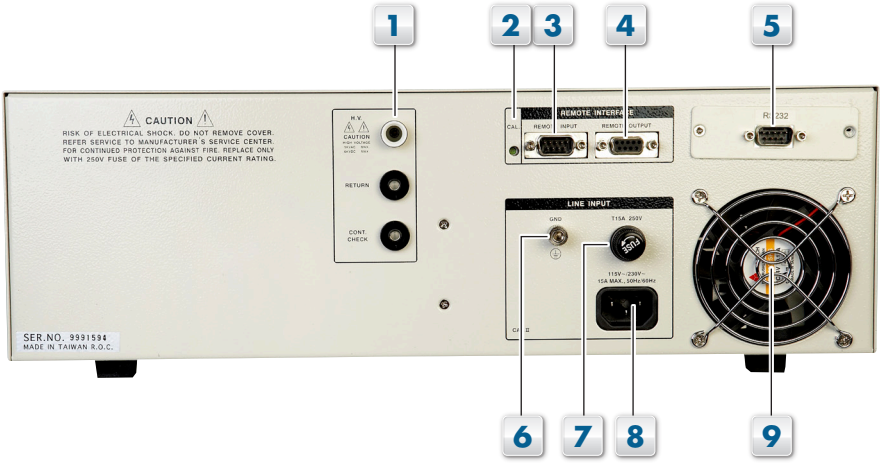
6 **BUS INTERFACE:** Standard connector for interconnection to the RS-232 Bus interface.

7 **REMOTE SIGNAL OUTPUT:** 9-pin D-type subminiature female connector for monitoring PASS, FAIL, and PROCESSING output relay signals.

8 **REMOTE SIGNAL INPUT:** 9-pin D-type subminiature male connector for remote control of TEST, RESET, REMOTE INTERLOCK functions as well as remote memory recall.

9 **CALIBRATION KEY:** Press this key while the instrument is being powered ON to enter calibration mode.

Back Panel Controls 3780



(3780 Back Panel)

1 **REAR PANEL OUTPUT TERMINALS:** Second set of output connectors in parallel with the front panel connectors.

2 **CALIBRATION BUTTON:** To put the instrument into the calibration mode push this button and turn on the power switch simultaneously.

3 **REMOTE SIGNAL INPUT:** 9-pin D-type subminiature male connector for remote control of TEST, RESET, and REMOTE INTERLOCK DISABLE functions, as well as MEMORY SELECTION.

4 **REMOTE SIGNAL OUTPUT:** 9-pin D-type subminiature female connector for monitoring PASS, FAIL, and PROCESSING output relay signals.

5 **BUS INTERFACE:** Standard connector for interconnection to the RS-232 Bus interface.

6 **CHASSIS GROUND (EARTH) CONNECTION:** This terminal should be connected to a good earth ground before operation.

7 **FUSE RECEPTACLE:** To change the fuse, unplug the power (mains) cord and turn the fuse receptacle counter-clockwise. The fuse compartment will be exposed. Please replace the fuse with one of the proper rating.

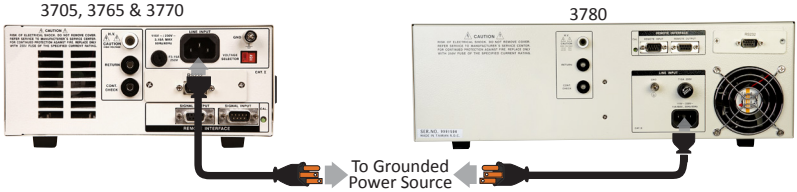
8 **INPUT POWER RECEPTACLE:** Standard IEC 320 connector for connection to a standard NEMA style line power (mains) cord.

9 **THERMAL FAN:** Used to cool the instrument.

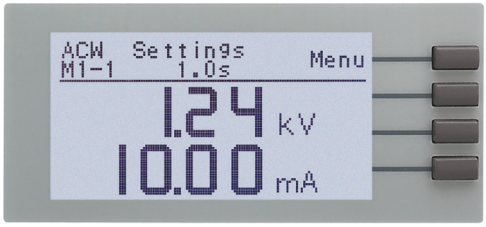
WARNING: LOCATE A SUITABLE TESTING AREA WITH A THREE-PRONG, GROUNDED OUTLET. BE SURE THAT THE THREE PRONG GROUNDED OUTLET HAS BEEN TESTED FOR PROPER WIRING. MAKE SURE YOU READ THE SAFETY CHECKLIST OF THIS GUIDE BEFORE USING THE INSTRUMENT.

1. Adjust the line voltage select switch on the rear panel of the instrument to the appropriate input voltage rating, either 115 VAC or 230 VAC.

2. Connect the female end of the standard NEMA style line power (mains) cord into the input power receptacle on the rear panel of the instrument and plug the male end of the cord into a grounded power source.



3. Turn the instrument power switch ON.



(Figure 1. Perform Test Screen)

Editing System Parameters

Configure the instrument system parameters to your preferences. The instrument system parameters are global and will affect all tests that are performed regardless of memory location and memory step.

1. Press MENU twice from the Perform Test screen to edit the system parameters.

2. Press the SYSTEM key and use the up and down arrow keys to toggle through the system parameters.

3. Press the "+" soft key to change the parameters and press EXIT to save changes.

4. Press EXIT to return to the Perform Test Screen.

Default system parameters are shown below:

PLC Remote	Single Step	Alarm	Contrast	Results	Lock	Memory Lock	Smart GFI	Cal Alert
OFF	OFF	5	5	Last	OFF	ON	ON	ON

Performing A Ground Continuity Test

Many safety standards require a Ground Continuity test to be performed as a routine production line test with a Hipot test. This test is easily performed on Class I products through the use of the adapter box (P/N 36544) provided with the instrument and ground return lead. To enable this function, you will need to set the instrument to run either an AC or DC Hipot test.

1. Press MENU twice from the Perform Test screen to edit the test parameters.

2. Press the TEST key to view the test parameters and use the up and down arrow keys to select CONTINUITY.

3. Press EDIT and use the "+" and "–" soft keys to select ON.

4. Press ENTER to save changes and press EXIT twice to return to the Perform Test screen.

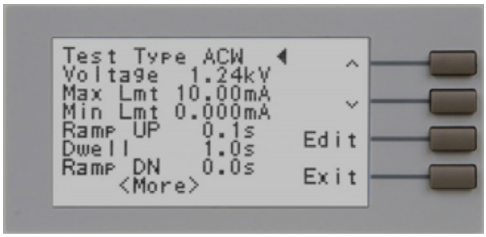
Editing Test Parameters

You may configure your test routine by following the outlined steps:

1. Press MENU twice from the Perform Test screen to edit the test parameters.

2. Press the TEST key and use the up and down arrow keys to highlight the TEST TYPE parameter.

3. Press EDIT and use the "+" and "–" soft keys to toggle the test type between AC, DC and IR. (See Figure 2)



(Figure 2. Perform Test Screen)

4. Press ENTER to save the setting and you may now edit the test parameters if you choose to do so.

5. Use the up and down arrow keys to toggle through the test parameters and press EDIT to change the parameter.

6. When each test parameter has been edited press EXIT twice to save the settings and return to the Perform Test screen.

Default test type parameters are shown below.

AC Hipot Mode

- Voltage: 1.24 kV
- Max LMT: 10.00 mA
- Min LMT: 0.000 mA
- Ramp UP: 0.1 s
- Dwell: 1.0 s
- Ramp DN: 0.0 s
- Arc Sense: 0
- Frequency: 60 Hz
- Continuity: OFF
- Connect: OFF

DC Hipot Mode

- Voltage: 1.50 kV
- Max LMT: 5000 uA
- Min LMT: 0.000 uA
- Ramp UP: 0.1 s
- Dwell: 1.0 s
- Ramp DN: 0.0 s
- Arc Sense: 0
- Continuity: OFF
- Connect: OFF

Insulation Resistance

- Voltage: 1000 V
- Max LMT: 0.0 MΩ
- Min LMT: 1.0 MΩ
- Ramp UP: 0.1 s
- Delay: 1.0 s
- Ramp DN: 0.0 s
- Connect: OFF

Test Connections

Adapter Box Connections

The adapter box may be used for products that are terminated in either a two prong or three prong line cord. It is easy to use the adapter for all test functions.

Note: Be sure the Ground Continuity test has been enabled before moving forward.

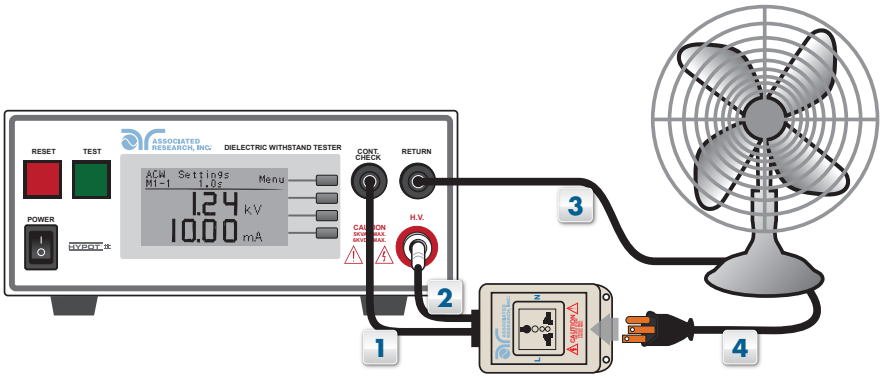
1. Plug the black cord (P/N 2100A-13) from the adapter box into the continuity output terminal located on the front panel.

2. Plug the white cord (P/N 4040A-08) from the adapter box into the high voltage output terminal located on the front panel.

3. Connect the black ground return lead (P/N 2100A-13) to the front panel return output terminal and connect the other end of the lead to the dead metal on the chassis of the DUT. Always check to be sure a good connection has been made between the DUT and the return clip.

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

Note: The rear output terminals on the Hypot III may also be used instead of the front panel output terminals.

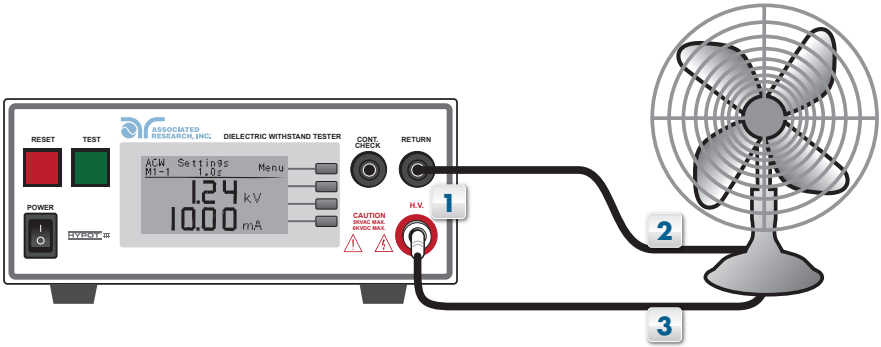


DUT Connections

1. Connect the black ground return lead (P/N 2100A-13) to the return output terminal and the red high voltage lead (P/N 4040A-08) to the high voltage output terminal both located on the front panel.

2. Connect the ground return clip (P/N 2100A-13) to the exposed or dead metal on the chassis. If your chassis does not have any exposed metal, you can wrap the enclosure of the DUT in foil and the return lead can be connected to the foil. Always connect the ground return clip first and double check that it has a solid connection to the DUT.

3. Connect the high voltage clip (P/N 4040A-08) to the current carrying conductors of the DUT's circuitry.



Conducting a Test

The Hypot III is equipped with a Remote Interlock feature which utilizes a set of closed contacts to enable the instrument's output. This feature may be bypassed by using the 9-pin D-subminiature connector (P/N 38075) provided with the instrument.

1. The connector must be plugged into the Signal Input connector on the rear panel of the instrument. This feature must be bypassed for the instrument to conduct a test.

2. With the instrument set to the desired test type and your DUT correctly connected to the instrument, you are now ready to start testing.

3. If the Continuity function is ON and the resistance of the ground circuit is less than the Max Resistance setting, the green TEST button will illuminate.

4. Press the green TEST button on the front panel. The test will be conducted on the DUT for a duration equal to the Ramp and Dwell settings.

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

(Figure 3. Pass/Fail Indication Screen)

PASS: If the DUT passes the test, you will hear a short audible beep and the display will indicate the test results.

FAIL: If a failure occurs, you will hear a long audible alarm and the red flashing indicator will light up. To stop the alarm press the red RESET button.

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ONLINE RESOURCES

To learn more about HYPOT III, scan the QR code with your smartphone or visit www.asresearch.com/H3support

Follow us.

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