

HYPOTULTRA[®] III

Fully-Automated Dielectric Analyzers

For Safety Agency Production Line
Compliance Testing

**SmartGFI[®]
inside**



CE

U.S. Patent Nos. (6,549,385, 6,515,484, 6,054,865, 5,828,222, 5,936,419, 5,548,501) Other patents pending



Safety agency listed.

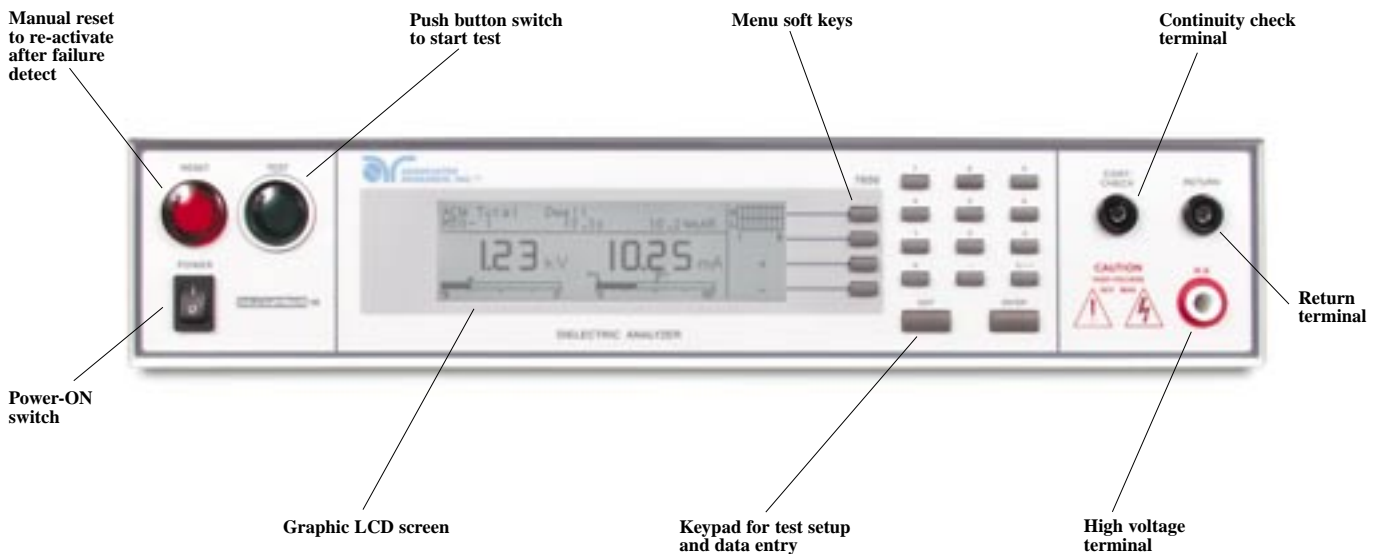


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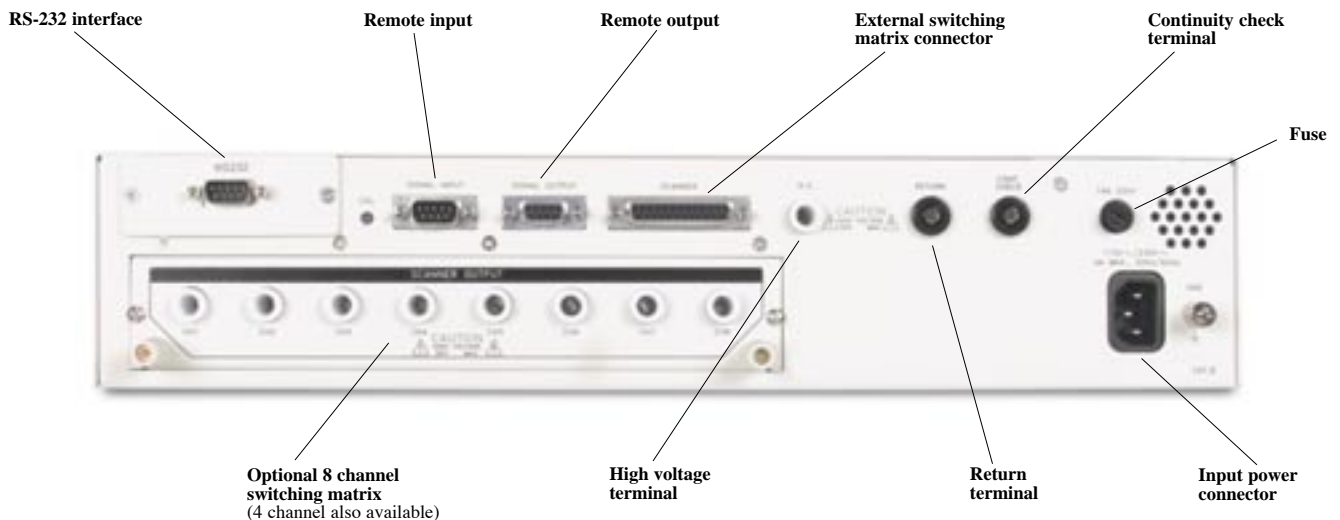
OPERATOR-FRIENDLY FEATURES

- **Graphic Liquid Crystal Display**
- **SmartGFI® Circuit**
- **Exclusive Prompt Function**
- **RS-232, GPIB & Printer Port**
- **Compact 2U Rack Mount Cabinet**
- **Dual Continuity Test Modes**
- **Optional Internal 4 or 8 Channel Switching Matrix Plus External Switching Matrix Interface**
- **Patented Technologies**
- **Single DUT Connection**

FRONT PANEL



BACK PANEL



FEATURES & BENEFITS



ENHANCED GRAPHIC LCD WITH ANALOG BAR GRAPH

This provides the operator with complete test setup and results in an easy-to-use interface. Plus the analog bar graph can be used to monitor test results versus limit settings. The graphic display makes testing safer, easier and more reliable than ever before.

FEATURE Complete all-in-one system

BENEFIT HypotULTRA[®]III combines the four most common electrical safety tests as required by safety agencies (AC Hipot, DC Hipot, IR and Ground Continuity test) into a 2U single 19 inch rack mount cabinet that takes up less space and enables a single DUT connection.

FEATURE Built-in CAL-ALERT[®] function

BENEFIT This feature automatically alerts the user when the instrument is due for re-calibration. This eliminates the need for manual tracking of calibration dates.

FEATURE Dual Continuity test modes

BENEFIT The user can select whether to perform a low current continuity test simultaneously with the hipot test, or use the separate continuity test mode to perform an independent continuity test. In this mode the range is adjustable from 0.01 to 2000 ohms. In addition, point-to-point continuity tests can be run through the optional built-in or external switching matrix.

FEATURE Patented SmartGFI[®] safety circuit

BENEFIT The SmartGFI provides maximum operator protection. If the circuit detects excessive leakage to ground it shuts down the high voltage in less than 1 millisecond. SmartGFI is automatically activated if the DUT is not grounded. The operator does not need to make the decision whether to activate the SmartGFI.

FEATURE Built-in Security settings

BENEFIT This allows the instrument to be setup to allow for different levels of access to the instruments setup programs. Users can setup passwords for restricting access to certain parts of the menu.

FEATURE Storage of up to 50 setups with 30 steps per setup

BENEFIT A real benefit for manufacturers that test different products. Each setup can store up to 30 steps, which can be configured to perform any of the safety tests. Each setup can be stored and named any combination of alphanumeric characters so it can be easily identified for recall.

FEATURE Real Current measurement

BENEFIT HypotULTRA III allows for simultaneous monitoring of real and total current in AC Hipot mode. This allows the user to monitor real current rather than measuring total current and then excluding AC reactive current from the measurement.

FEATURE Exclusive prompt and hold function

BENEFIT HypotULTRA III allows users to setup prompts in the test cycle so that the test can be paused. During the pause, a user-configured message is displayed instructing the test operator on the action they need to perform before continuing with the test. This is a very convenient feature for applications where test leads need to be moved or when DUT switches need to be activated as part of the test cycle.

FEATURE Patented CHARGE LO and RAMP HI testing

BENEFIT These features allow for more effective DC Hipot testing. RAMP HI allows the user to set a higher trip rate during the ramp to allow for quick charging of the product without nuisance tripping thereby increasing throughput when testing with DC. CHARGE LO provides the user with the capability to ensure that the device under test is connected correctly.

FEATURE Max output current 30 mA AC and 10 mA DC

BENEFIT HypotULTRA III has enough output current to test even highly capacitive loads while allowing it to be versatile enough to monitor leakage current of items with very low leakage measurement requirements. Additionally it has resolutions of 1 microamp in AC and 0.1 microamps in DC.

FEATURE Digitally controlled arc detection system

BENEFIT Allows the operator to select whether low-level arcs should be detected and provides the operator with the ability to digitally select and program multiple sensitivity levels.

FEATURE Electronic ramping (up and down)

BENEFIT This provides a gradual and timed method to increase or decrease output voltage to the DUT, which minimizes any damage from quick high voltage changes to sensitive DUT's.

FEATURE Built in VERI-CHEK[®] self verification system

BENEFIT Some safety agencies require that the hipot tester be checked and verified at various intervals. VERI-CHEK (patent pending) is a menu driven process by which the instruments failure detectors are proven to be functioning properly, "Verifying" the functionality of the electrical safety tester and connected accessories.

FEATURE Extended IR measurement range

BENEFIT The Insulation Resistance measurement range allows for measurements up to 50 Gigohms. This extended range is useful for component and material testing.

SPECIFICATIONS

| INPUT SPECIFICATIONS | |
|----------------------|--|
| VOLTAGE | 115 / 230 VAC \pm 10%, automatically selected |
| FREQUENCY | 50/60 Hz \pm 5% |
| FUSE | 4 Amp 250 V Slo-Blo |

| DIELECTRIC WITHSTAND TEST MODE | |
|---------------------------------|---|
| OUTPUT RATING | 5 KV @ 30 mA AC 5 KV @ 10 mA DC* |
| VOLTAGE DISPLAY | Range: 0.00 - 5.00 KV Full Scale Resolution: 10 volts Accuracy: \pm (2% of reading + 2 counts) |
| MAXIMUM & MINIMUM LIMIT | AC Total Range: 0.000 - 30.00 mA AC Real Range: 0.000 - 30.00 mA DC* Range: 0 - 10000 μ A |
| CURRENT DISPLAY | AC Total Range: 0.000 mA - 30.00 mA AC Real Range: 0.000 mA - 30.00 mA DC* Range: 0.0 μ A - 9.99 mA |
| RAMP HI | 12 mA peak maximum, ON/OFF selectable |
| CHARGE LO | Range: 0.0 - 350.0 μ A DC or Auto Set |
| ARC DETECTION | Range: 1 - 9 |
| FAILURE DETECTOR | Audible and Visual |
| DC OUTPUT RIPPLE* | \leq 4% Ripple RMS at 5 KV DC @ 10 mA, Resistive Load |
| DISCHARGE TIME | \leq 200 ms |
| MAXIMUM CAPACITIVE LOAD DC MODE | 1 μ F < 1 KV 0.08 μ F < 4 KV 0.75 μ F < 2 KV 0.04 μ F < 5 KV 0.5 μ F < 3 KV |
| AC OUTPUT WAVE FORM | Sine Wave, Crest Factor = 1.3 - 1.5 |
| OUTPUT FREQUENCY | Range: 50 or 60 Hz, User Selectable Accuracy: \pm 0.1% |
| OUTPUT REGULATION | \pm (1% of output + 5 V) from no load to full load and over input voltage range. |

| DIELECTRIC WITHSTAND TEST MODE cont. | |
|--------------------------------------|---|
| DWELL TIMER | Range: 0.0, 0.4 - 999.9 sec (0 = Continuous) Resolution: 0.1 sec Accuracy: \pm (0.1% + 0.05 sec) |
| RAMP TIMER | Range: Ramp-Up: 0.1 - 999.9 sec Ramp-Down: AC 0.0 - 999.9 sec DC 0.0, 1.0 - 999.9 sec* 0.0 = OFF Resolution: 0.1 sec Accuracy: \pm (0.1% + 0.05 sec) |
| GROUND CONTINUITY | Current: DC 0.1 A \pm 0.01 A, fixed* Max. ground resistance: 1 Ω \pm 0.1 Ω , fixed |
| GROUND FAULT INTERRUPT | GFI Trip Current: 450 μ A max (AC or DC) HV Shut Down Speed: < 1ms |

| INSULATION RESISTANCE TEST MODE* | |
|----------------------------------|---|
| VOLTAGE SETTING | Range: 50 - 1000 Volts DC Resolution: 1 volt Accuracy: \pm (2% of reading + 2 volts) |
| SHORT CIRCUIT CURRENT | Maximum: 12 mA peak |
| RESISTANCE DISPLAY | Range: 0.05 M Ω - 50000 M Ω (5 Digit, Auto Ranging) Accuracy: 50 - 499 V 0.05 M Ω - 999.9 M Ω , \pm (7% of reading + 2 counts) 500 - 1000 V 0.10 M Ω - 999.9 M Ω , \pm (2% of reading + 2 counts) 1000 M Ω - 9999 M Ω , \pm (5% of reading + 2 counts) 10000 M Ω - 50000 M Ω , \pm (15% of reading + 2 counts) |
| CHARGE LO | Range: 0.000 - 3.500 μ A or Auto Set |
| MAXIMUM & MINIMUM LIMIT | Range: 0.05 M Ω - 50000 M Ω Accuracy: Same as resistance display accuracy |
| RAMP TIMER | Range: Ramp-Up: 0.1 - 999.9 sec Ramp-Down: 0.0, 1.0 - 999.9 sec Resolution: 0.1 sec Accuracy: \pm (0.1% + 0.05 sec) |
| DELAY TIMER | Range: 0.0, 1.0 - 999.9 sec 0 = Continuous Resolution: 0.1 sec Accuracy: \pm (0.1% + 0.05 sec) |
| GROUND FAULT INTERRUPT | GFI Trip Current: 450 μ A max HV Shut Down Speed: < 1 ms |

SPECIFICATIONS & OPTIONS

| CONTINUITY TEST MODE | |
|------------------------------------|--|
| OUTPUT CURRENT | DC 0.1 A \pm 0.01 A Total Resistance 0.00 - 33.0 Ω DC 0.01 A \pm 0.001 A Total Resistance 31.0 - 330 Ω DC 0.001 A \pm 0.0001 A Total Resistance 310 - 2000 Ω |
| RESISTANCE DISPLAY | Range: 0.0 - 2000 Ω Accuracy: 0.00 - 19.99 Ω \pm (1% of reading + 0.05 Ω) 20.0 - 199.9 Ω \pm (1% of reading + 0.2 Ω) 200.0 - 2000 Ω \pm (1% of reading + 2 Ω) |
| MAXIMUM & MINIMUM LIMIT | Range: 0.00 - 2000 Ω Accuracy: 0.00 - 19.99 Ω \pm (1% of reading + 0.05 Ω) 20.0 - 199.9 Ω \pm (1% of reading + 0.2 Ω) 200.0 - 2000 Ω \pm (1% of reading + 2 Ω) |
| DWELL TIMER | Range: 0.0, 0.3 - 999.9 sec (0 = Continuous) |
| MILLIOHM OFFSET | Range: 0.00 - 2.00 Ω |

| OPTIONS | |
|--------------------------|---|
| OPT-01 (INTERNAL) | 8 channel high voltage switching matrix. |
| OPT-03 (INTERNAL) | 4 channel high voltage switching matrix. |
| HS-8A (EXTERNAL) | 8 channel high voltage and high current switching matrix. |
| HS-16 (EXTERNAL) | 16 channel high voltage and high current switching matrix with RS-232 and GPIB interface. |
| OPT-08 | Printer port interface. |
| OPT-10 | GPIB interface. |
| AUTOWARE 7600 | Software designed to store, analyze and retrieve data. |

| GENERAL SPECIFICATIONS | |
|-----------------------------|--|
| PLC REMOTE CONTROL | Input: Test, Reset, Interlock, Recall Memory 1 - 10 Output: Pass, Fail, Test-in-Process & Reset |
| REMOTE OUTPUT RELAYS | 125 VAC @ 1 AAC, 30 VDC @ 0.5 ADC* |
| SAFETY | Built-in SmartGFI® circuit, fast auto discharge, interlock circuit, redundant safety circuits. |
| MEMORY | 50 memories, 30 step/memory |
| INTERFACE | RS-232 standard or select GPIB or Printer Port with time & date stamp. |
| SECURITY | Tamper proof front panel with programmable password lockout avoids unauthorized access to test setup programs. |
| GRAPHIC DISPLAY | 240 x 64 dot resolution, monographic LCD |
| ALARM VOLUME SETTING | 10 ranges set by the numeric keys on the front panel. |
| CALIBRATION | Adjustments are made through the front panel. CAL-ALERT® function to signal operator when calibration is due. |
| ENVIRONMENTAL | Temperature: 0 - 40° C Humidity: 0 - 80% |
| MECHANICAL | Bench or rack mount (2U height) with tilt up front feet. Dimensions: (W x H x D) 16.9 x 3.5 x 19.7 inches (430 x 89 x 500 mm) |
| WEIGHT | 31.38 lbs (14.23 kgs) varies with options |

| MODEL NUMBERS | |
|-------------------|---|
| MODEL 7620 | AC Hipot with optional 4 channel or 8 channel switching matrix. |
| MODEL 7650 | 3-in-1 system with AC Hipot, DC Hipot Insulation Resistance and optional 4 channel or 8 channel switching matrix. |

*Model 7650 only.

ACCESSORIES

| ACCESSORIES: | | |
|---------------------------------|---|-----------------|
| RESISTOR KIT | Precision 1% resistor is ideal as a load to set current trip points. Meets 120 k ohm requirements. | 35445 |
| FOOT SWITCH | Ideal for applications where an operator needs to start a test "hands off" the instrument. | 35822 |
| RETRACTABLE PROBE | High voltage retractable probe for safe testing and application of high voltage. | 38081 |
| RETRACTABLE RETURN PROBE | This retractable probe is used on the return side of the instrument. | 38082 |
| SAFE-T-PROBE® | Test gun with trigger that controls retractable probe and activates instruments high voltage circuit. | 38083-01 |
| ADJUSTABLE RESISTOR BANK | Provides test loads from 120 K to 2.148 k ohms, 6 terminals with 12 settings. Helps to verify regulation. | 36956 |

At Associated Research, Safety Compliance Testing Is Our Only Focus!

The Industry's Most Complete Line of Instruments for Electrical Safety Compliance Testing



autoware

Software designed to store, analyze and retrieve data on automated Associated Research instruments, while performing Line Leakage, Insulation Resistance, Dielectric Withstand, Ground Bond and Functional Run tests. Autoware also allows for bar coding inputs and provides basic statistical analysis graphs.



QUADCHEK II

4-in-1 Electrical Safety Compliance Analyzers include AC/DC Hipot, Insulation Resistance, Ground Bond tester and optional built-in switching matrix in a single instrument. Complete with IEEE-488 (GPIB), RS-232 or printer interface. Available in 500 VA output versions.



SWITCHING MATRIX

The HS-8A is an 8 channel and the HS-16 is a 16 channel matrix. Both models are high voltage and high current matrices for multi-point or multi-product testing. (For use with QUADCHEK®II, HypotULTRA®III or OMNIA®.)



HYPOTPLUS II

The first semi-automated microprocessor controlled Dielectric Withstand testers available in AC or AC/DC versions. All models include enhanced PLC control, remote memory recall, advanced failure detection systems. Available optional 10 V analog signal and real current.



HYPOT III

The first Manual Dielectric Withstand Testers with an enhanced graphic LCD for production line safety agency compliance testing. Available in AC, AC/DC and AC/DC/IR versions.



OMNIA

The first fully-automated, multi-function Electrical Safety Compliance Analyzer with an enhanced graphic LCD. OMNIA provides 4-in-1, 5-in-1 and 6-in-1 models that include AC Hipot, DC Hipot, Insulation Resistance, Ground Bond, Functional Run and Line Leakage testing. All models available with IEEE-488 (GPIB), RS-232 or printer interface.



LINECHEK

Designed to automate line leakage testing in production line or lab environments. The 510L is a stand-alone system and the 520L can interconnect with other AR safety testers to form a complete automated testing system.



RUNCHEK

The 905D functional run test system powers and runs a product while measuring current, voltage, power factor and watts. It can be interconnected to our safety testers so all tests can be performed through a single DUT connection. Available with standard GPIB or RS-232 interface.



HYAMP II

30 Amp Ground Bond tester that works as a stand-alone instrument or can be interconnected to the HypotPLUS®II to form a semi-automated test system with a single DUT connection.



HYAMP III

The first 30 Amp and 60 Amp Ground Bond testers with an enhanced graphic LCD that work stand-alone or interconnected to the Hypot III to form a complete mid-range test system with a single DUT connection.

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