

Fully-Automated, Multi-Functional Electrical Safety Compliance Analyzers

HYPOTULTRA® II



QUADCHEK® II

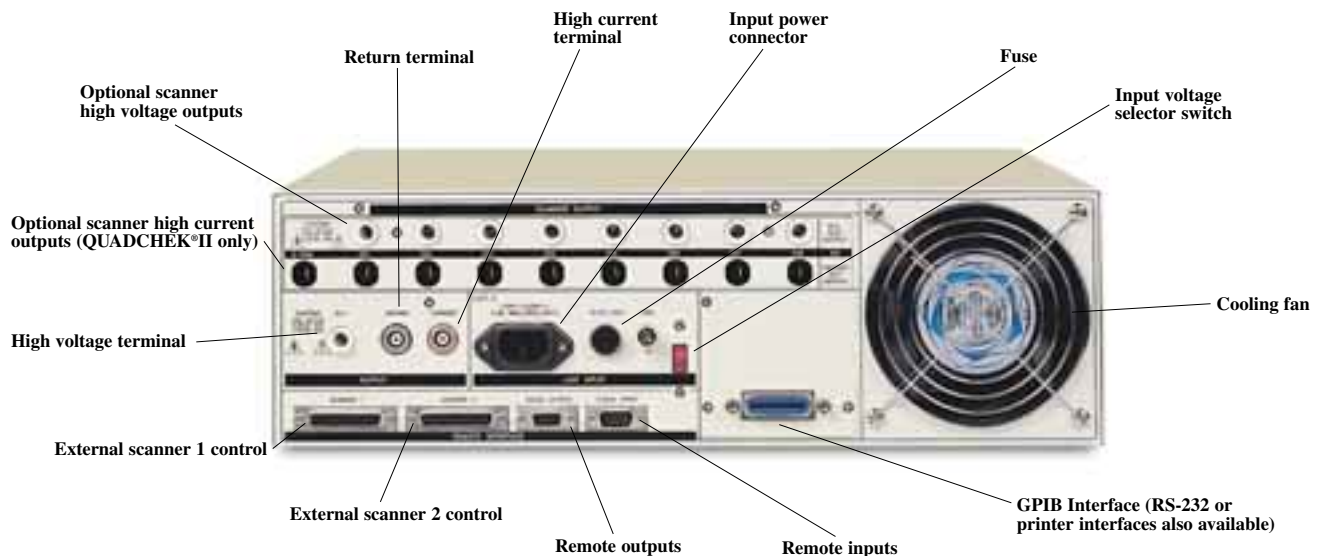
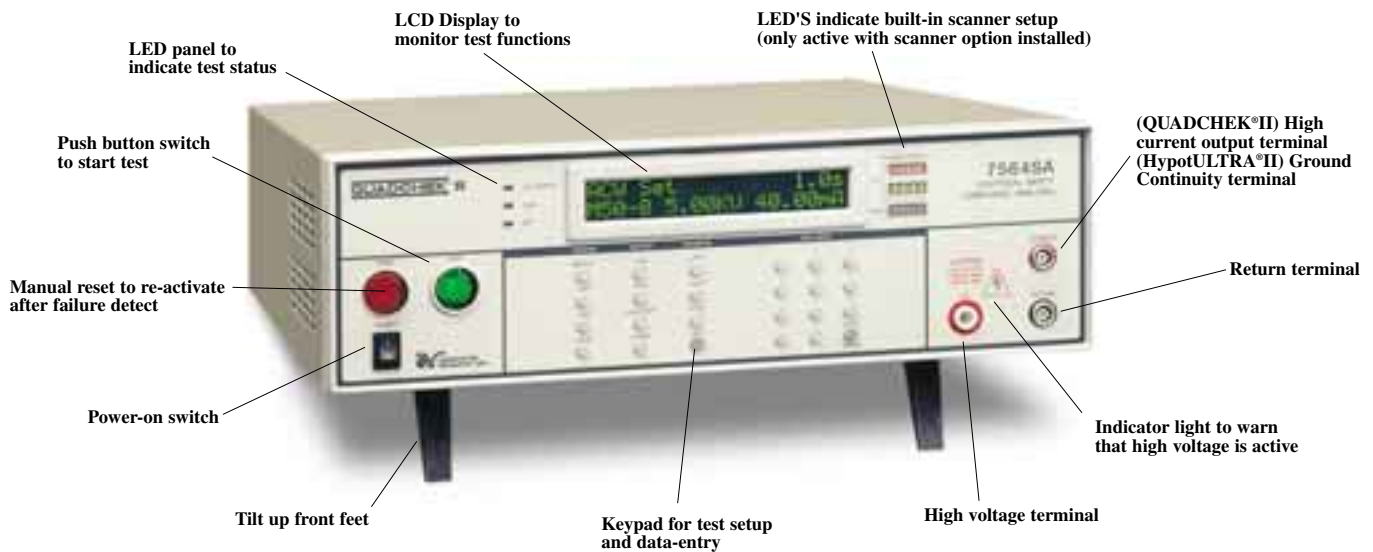


Designed to Meet Safety Agency
Standards such as UL, CSA, IEC,
VDE, TÜV and the European
Norms including the Low Voltage
Directive 73/23/EEC



OPERATOR-FRIENDLY FEATURES

- **GPIB (IEEE-488), RS-232 or Printer Interfaces**
- **Available in 500 VA Output Versions**
- **Optional Built-In & External Scanner Capabilities**
- **Output of all Test Data can be Viewed Through a Single LCD Display**
- **Interconnects to the RUNCHEK™ Functional Run Test System or the LINECHEK™ Line Leakage Tester to Form a Complete Test System**
- **Patented RAMP HI/CHARGE LO Circuit for Efficient DC Testing**
- **Perform all Tests Through a Single DUT (Device Under Test) Connection**



FEATURES & BENEFITS



HYPOTULTRA® II

3-in-1 AC, DC or AC/DC Hipot & Insulation Resistance Tester with Ground Continuity Check

QUADCHEK® II

4-in-1 AC/DC Hipot, Insulation Resistance & Ground Bond Tester

FEATURE BENEFIT **The first complete multi-function systems**
HypotULTRA®II combines the three most common dielectric safety tests (AC Hipot, DC Hipot & IR test) required by agencies such as UL, CSA, IEC, VDE, TÜV, BABT and others into a single 19" rack mount cabinet which takes up less rack space and allows for testing through a single DUT (Device Under Test) connection. QUADCHEK®II includes the same tests as HypotULTRA®II along with a high current Ground Bond test for applications requiring a test of the safety ground circuit.

FEATURE BENEFIT **GPIB (IEEE-488), RS-232 or printer interfaces**
All the functions of the instruments can be programmed over a GPIB, RS-232 or printer interface which makes them adaptable to any automated production environment.

FEATURE BENEFIT **Optional built-in and external scanner capabilities**
Both instruments offer the option of a built-in 8 port scanner and an interface to control up to 2 external 8 port scanners. These optional scanner configurations are ideal for multi-point testing of a single item or multiple product testing. The high voltage outputs of either the internal or external scanner can be set as high, low or off. A front panel display shows the status of each scanner output port. The scanner for use with the QUADCHEK®II also offers 8 ports for high current Ground Bond testing.

FEATURE BENEFIT **Interconnection to LINECHECK™ or RUNCHECK™**
Both the HypotULTRA®II and the QUADCHEK®II can be interconnected to the LINECHECK™ line leakage tester or the RUNCHECK™ functional run test system to form a complete, fully-automated testing system that can perform all tests through a single DUT connection.

FEATURE BENEFIT **Single 2 x 20 LCD display**
This single easy-to-view and simple-to-interpret LCD display provides the operator with a clear indication of all test results and setup parameters.

FEATURE BENEFIT **Easy-to-use setup parameter adjustments**
The operator is provided with a safe way to set trip currents and output voltages using a simple menu driven program with hot keys that quickly access all functions. This allows all parameters to be set without high voltage activated. The easy to follow menu ensures that the operator correctly sets up each test mode.

FEATURE BENEFIT **Storage of up to 50 setups with 8 steps per setup**
A real benefit for manufacturers that test different products. Each setup can store up to 8 steps which can be configured to perform any of the safety tests. In addition each setup can be linked to the next for setting up as many as 400 steps in sequence.

FEATURE BENEFIT **Exclusive, patented RAMP HI and CHARGE LO testing**
The RAMP HI (U.S. Patent No. 5,828,222) feature allows the user to set a higher trip rate during the ramp cycle to allow for quick charging of the product without nuisance tripping thereby increasing throughput when testing with DC. The CHARGE LO (U.S. Patent No. 5,936,419) feature provides the user with the ability to ensure that the device under test is connected.

FEATURE BENEFIT **Programmable security password system**
Avoids tampering with settings by only allowing authorized personnel with a user programmable security password to change test parameters.

FEATURE BENEFIT **Line and Load regulation**
Maintains the output voltage to within 1% of setting even if the load or the line voltage varies. This ensures that the test results remain consistent and within safety agency requirements.

FEATURE BENEFIT **PLC remote inputs & outputs**
This allows the user to remotely select and execute setups stored in memory through simple PLC control. Basic failures and test conditions can also be monitored through the PLC outputs.

FEATURE BENEFIT **High output current**
Up to 40mA (up to 100mA in 500 VA models) of current is available in AC Hipot mode and 10mA in DC Hipot mode with resolutions of 10 microamps in AC and 1 microamp in DC. These instruments have enough output current to test even highly capacitive loads while allowing them to be versatile enough to monitor leakage current of items with very low leakage measurement requirements.

FEATURE BENEFIT **Digitally controlled arc detection system**
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 or to turn off arc detection independently of breakdown indication.

FEATURE BENEFIT **Four wire measurement and milliohm offset**
These features minimize the effect of test lead resistance in the Ground Bond testing mode. The four wire measurement (Kelvin Method) technique eliminates test lead resistance when using the standard test leads. The milliohm offset function allows the use of longer test leads and test fixtures without compromising test results in the Ground Bond mode.

SPECIFICATIONS

INPUT SPECIFICATIONS

VOLTAGE	115/230 V AC \pm 15%, Single Phase, User selectable
FREQUENCY	47 - 63 Hz
FUSE	6.3 Amp 250 V Slo-Blo

DIELECTRIC WITHSTAND TEST MODE

OUTPUT RATING (7550DT/7564SA) (7500DT/7504SA) (7530DT) (7520DT)	5 KVAC @ 40 mA, 6KV DC @ 10 mA 5 KVAC @ 100 mA, 6KV DC @ 10 mA (500 VA) 5 KVAC @ 20 mA, 6 KV DC @ 10 mA 5 KVAC @ 20 mA
OUTPUT ADJUSTMENT	Range: 0 - 5 KV AC or 0 - 6 KV DC Resolution: 1 volt/steps Accuracy: \pm (2% of Setting + 5 volts)
RAMP HI (DC)	Range: 12 mA peak maximum, ON/OFF selectable
CHARGE LO (DC)	Range: 0.0 - 350 μ A or auto set
HI-LIMIT (AC)	Range: 0.00 - 40.00 mA (7550DT/7564SA) 0.00 - 100.00 mA (7500DT/7504SA) 0.00 - 20.00 mA (7520DT/7530DT) Resolution: 0.01 mA/steps Accuracy: \pm (2% of Setting + 2 counts)
HI-LIMIT (DC)	Range: 0 - 9999 μ A Resolution: 1 μ A/steps Accuracy: \pm (2% of Setting + 2 counts)
LO-LIMIT (AC)	Range: 0.000 - 9.999 mA Resolution: 0.001 mA/steps Accuracy: \pm (2% of setting + 2 counts)
LO-LIMIT (DC)	Range: 0.0 - 999.9 μ A Resolution: 0.1 μ A/steps Accuracy: \pm (2% of setting + 2 counts)
ARC DETECTION	Range: 1 - 9
FAILURE DETECTOR	Audible and Visual
DC OUTPUT RIPPLE	\leq 4% Ripple RMS at 6 KV DC @ 3.5 mA, Resistive Load
AC OUTPUT WAVE FORM	Sine Wave, Crest Factor = 1.3 - 1.5
OUTPUT FREQUENCY	Range: 60 or 50 Hz, User Selectable Accuracy: \pm 1%
OUTPUT REGULATION	\pm (1% of setting + 5 volts) from no load to full load
DWELL TIMER	Range: 0, 0.3 - 999.9 sec. (0 = Constant) Resolution: 0.1 sec. increments Accuracy: \pm (0.1% + 0.05 sec.)
RAMP TIMER	Range: AC 0.1 - 999.9 sec. DC 0.4 - 999.9 sec. Resolution: 0.1 sec. increments Accuracy: \pm (0.1% + 0.05 sec.)
GROUND CONTINUITY (7550DT/7530DT 7520DT&7500DT)	Current: DC 0.1 A \pm 0.01 A, fixed Max. ground resistance: 1 Ω \pm 0.1 Ω , fixed

INSULATION RESISTANCE TEST MODE

Models 7564SA, 7504SA, 7550DT, 7530DT & 7500DT Only

OUTPUT VOLTAGE	Range: 100 - 1000 V DC Resolution: 1 volt/steps Accuracy: \pm (2% of setting + 2 volts)
SHORT CIRCUIT CURRENT	Maximum: 12 mA peak
VOLTAGE DISPLAY	Range: 0 - 1000 V Resolution: 1 volt/steps Accuracy: \pm (2% of reading + 2 counts)
CHARGE LO	Range: 0.000 - 3.500 μ A or Auto Set
HI-LIMIT	Range: 0 - 9999 M Ω (0 = Off)
LO-LIMIT	Range: 1 - 9999 M Ω
DELAY TIMER	Range: 0, 0.5 - 999.9 sec. (0 = Constant) Resolution: 0.1 sec./steps Accuracy: \pm (0.1% + 0.05 sec.)

GROUND BOND TEST MODE

Models 7564SA & 7504SA Only

OUTPUT VOLTAGE (Open Circuit Limit)	Range: 3.00 - 8.00 V AC Resolution: 0.01 volt/steps Accuracy: \pm (2% of Setting + 0.03 V)
OUTPUT FREQUENCY	Range: 60 or 50 Hz, User Selectable Accuracy: \pm 1%
OUTPUT CURRENT	Range: 3.00 - 30.00 Amps AC Resolution: 0.01 Amp/steps Accuracy: \pm (2% of Setting + 0.02 A)
CURRENT DISPLAY	Range: 0.00 - 30.00 Amps Resolution: 0.01 Amp/steps Accuracy: \pm (3% of Reading + 0.03 A)
RESISTANCE DISPLAY	Range: 0 - 600 m Ω Resolution: 1 m Ω /steps Accuracy: \pm (2% of Reading + 2 m Ω)
HI/LO-LIMIT	Range: 0 - 600 m Ω for 3 - 10 Amps 0 - 150 m Ω for 3 - 30 Amps Resolution: 1 m Ω /steps Accuracy: \pm (2% of Setting + 2 m Ω)
DWELL TIMER	Range: 0, 0.5 - 999.9 sec. (0 = Constant) Resolution: 0.1 sec./steps Accuracy: \pm (0.1% + 0.05 sec.)
MILLIOHM OFFSET	Max. Offset Capability: 200 m Ω Resolution: 1 m Ω /steps Accuracy: \pm (2% of Setting + 2 m Ω)

GENERAL SPECIFICATIONS

INTERFACE CAPABILITY	1. GPIB, RS-232 or printer interfaces. 2. Basic remote control: Input-Test, Reset, Recall memory #1, #2, and #3 Output-Pass, Fail, Test-in-Process (Scanner 1, Scanner 2 option)
MEMORY	Allows storage of up to 50 groups of test programs and 8 steps per memory.
SECURITY	Programmable password lockout capability to avoid unauthorized access to test setup program.
LCD CONTRAST SETTING	9 ranges set by numeric keys on the front panel.
BUZZER VOLUME SETTING	10 ranges set by numeric keys on the front panel.
CALIBRATION	All adjustments made through front panel.
MECHANICAL	Bench or rack mount with tilt up front feet.
DIMENSIONS 7550DT & 7564SA 7504SA & 7500DT 7530DT & 7520DT	(WxHxD) 17x5.8x20.3in. (432x147x515mm) (WxHxD) 17x5.8x16.5in. (432x147x418.2mm) (WxHxD) 17x5.8x12in. (432x147x305mm)
WEIGHT	7564SA 52.5 lbs. (24 Kgs) 7504SA 69 lbs. (31.47 Kgs) 7550DT 50.5 lbs. (23 Kgs) 7500DT 61.65 lbs. (28.07 Kgs) 7530DT 24.8 lbs. (11.27 Kgs) 7520DT 24.8 lbs. (11.27 Kgs)
TWO BUILT-IN SCANNER PORTS	2 port scanner maximum including the built-in scanner. Not available on 7530DT or 7520DT
BUILT-IN SCANNER OPTION	High Voltage x 8 ports (7564SA/7550DT only) Ground Bond x 8 ports (7564SA only)

OPTIONS & ACCESSORIES

Scanning Systems

Scanning systems are ideal for applications where multiple points of the same item need to be tested and for high volume multiple item testing. We offer 2 different models so you can configure a scanning system that meets your specific needs.

The HS-8A scanner interconnects directly to either the QUADCHEK®II models 7564SA, 7504SA or the HypotULTRA®II models 7550DT, 7500DT and is powered by the controlling instrument through the interconnect control cable. This connection enables the HS-8A to test up to 8 High Voltage and 8 Ground Bond points. The operator selects which output port to activate through the controlling instrument setup program and has the choice of activating all outputs simultaneously or in sequential order. Each high voltage output is setup through the controlling instrument to be HIGH, LOW or OFF, which offers the flexibility of testing to various configurations on a single item.

The HS-16 scanner includes RS-232 and GPIB (IEEE-488) interfaces for use in automated systems that require 16 or more outputs. It can be setup through either a GPIB or RS-232 software program to select the outputs. The GPIB bus allows for connection of up to 15 instruments with a total of up to 14 HS-16's and either a HypotULTRA®II or QUADCHEK®II that can be connected to a single GPIB card.



SYSTEM 9000

System 9000 is the only test system in the industry that provides a turnkey solution for Electrical Safety Compliance Testing. It includes hardware and software for performing the 4 most common safety tests (Dielectric Withstand, Insulation Resistance, Ground Bond, and Line Leakage) through a single DUT connection. This fully-automated system was designed for manufacturers who need to comply with safety agency standards as well as EN norms such as the Low Voltage Directive 73/23/EEC, and the Medical Directive 93/42/EEC amongst others. Additionally, it speeds up throughput and increases test reliability while providing a safe testing environment for the operator. Complete data logging capability is provided via RS-232 or GPIB interfaces. Finally, with the installation of our Autoware™ custom software package onto your PC, automated testing can be performed quickly and easily.



ACCESSORIES:

Resistor Kit	Precision 1% resistor is ideal as a load to set current trip points. Meets 120 k ohm requirements.	35534
Black Stationary Probe	Provides an insulated fixed metallic contact point to a DUT for a return path.	35539
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
Ground Bond Probe	A fixed tip probe with 2 separate test buttons for ease of use in various positions. (7504SA & 7564SA only)	38084
Adjustable Resistor Bank	Provides test loads from 120 K to 2.148 k ohms. 6 terminals with 12 settings. Helps verify regulation.	36956

ADAPTER BOXES:

	HV (75xxDT models)	HV & HC (7504SA & 7564SA)
USA	36544	36541
USA 240 V	36544 Opt. 01	36541 Opt. 01
European	36544 Opt. 05	36541 Opt. 05
Universal-US Polarity	36544 Opt. 06	36541 Opt. 06
Universal-UK Polarity	36544 Opt. 06	36541 Opt. 06

OPTIONAL EQUIPMENT:

	Option#
8 Port Scanner	01
Real Current	02
Grounded Return	04
RS-232 Interface	05
Dual Remote Test	06
Printer Port	08
Interlock	11

Accessories and optional equipment not available on all models. For more information on specific availability contact us at, 1-800-858-8378 or visit our web site at www.asresearch.com.

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.



SWITCHING MATRIX

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



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 and optional 10 V analog signal.



HYPOT II

Dielectric Withstand testers with simple PLC control for production line safety agency compliance testing. Available in AC, AC/DC, AC/DC/IR and 500 VA versions.



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 measures 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 JR.

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

For Over 60 Years,
We've Provided...



State-Of-The-Art
Electrical Safety
Compliance
Testing
Instruments



Knowledgeable
Customer Support
And Expert
Technical Services
At 1-800-858-TEST



Informative
Industry Seminars
And Professional
Training And
Educational
Programs



24-Hour
Turn-Around On
All Instrument
Calibrations



Local Sales Offices
Throughout The
World To Serve You
More Efficiently



**ASSOCIATED
RESEARCH, INC.®**

13860 West Laurel Dr.

Lake Forest, IL 60045-4546

Tel: 847-367-4077 • Fax: 847-367-4080

E-mail: info@asresearch.com

For more information visit our web site at:

www.asresearch.com

and **ORDER ON-LINE!**

Or contact us toll-free at:

1-800-858-TEST (8378)