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ESTTA Tracking number: **ESTTA1149471**

Filing date: **07/27/2021**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

Proceeding	92070823
Party	Defendant Ikonix USA LLC
Correspondence Address	THOMAS J MOORE BACON & THOMAS PLLC 201 N. UNION ST., STE. 430 ALEXANDRIA, VA 22314-2649 UNITED STATES Primary Email: mail@baconthomas.com Secondary Email(s): tjmoore@baconthomas.com, jmiller@baconthomas.com 703-683-0500
Submission	Other Motions/Submissions
Filer's Name	Thomas J. Moore
Filer's email	mail@baconthomas.com, tjmoore@baconthomas.com
Signature	/Thomas J. Moore/
Date	07/27/2021
Attachments	2021-07-27 Declaration of Braverman cert serv signed.pdf(2049920 bytes) 2021-07-27 Exhibit A to Declaration of Braverman pp. 1-10.pdf(5732137 bytes) 2021-07-27 Exhibit A to Declaration of Braverman pp. 11-20.pdf(3804173 bytes) 2021-07-27 Exhibit A to Declaration of Braverman pp. 21-34.pdf(3419066 bytes)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

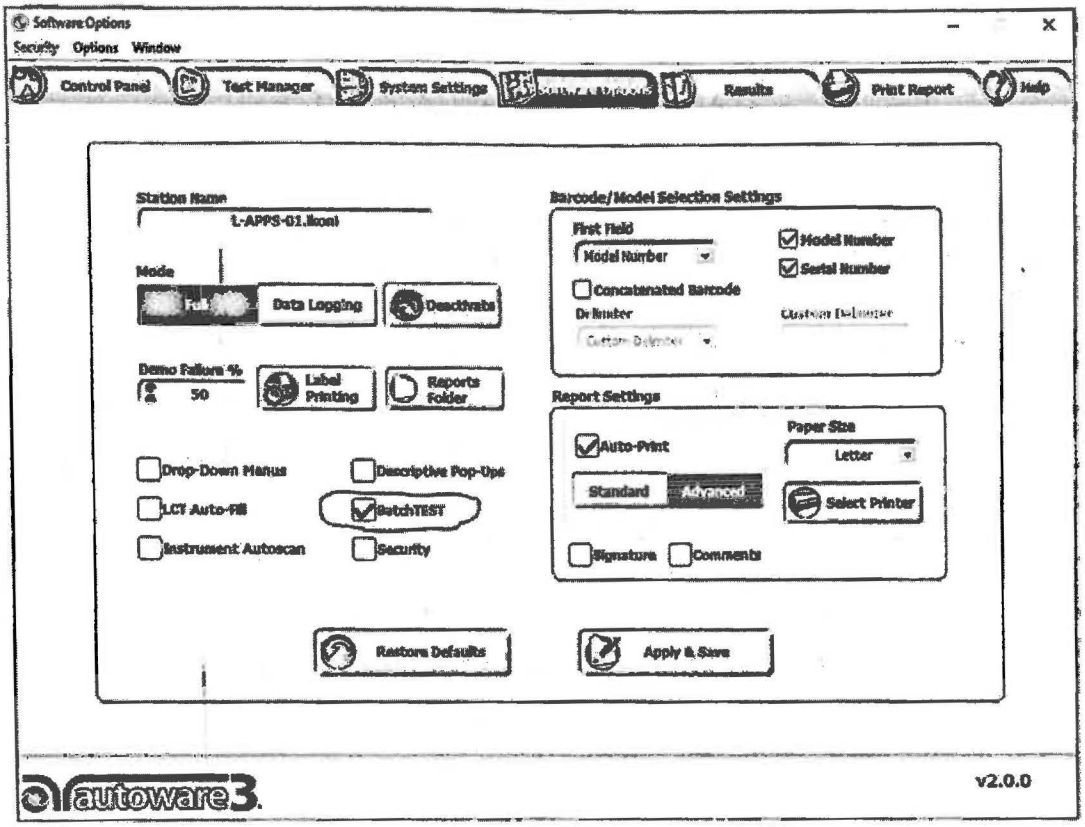
ICware Systems, Inc. dba BatchTest Corporation, and BatchTest Corporation, Petitioner, v. Ikonix USA, LLC, Respondent	Cancellation No. 92070823

DECLARATION OF BRAVERMAN

The undersigned, being hereby warned that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001, and may jeopardize the validity of the application or any registration resulting therefrom, declares that: all statements made herein of my own knowledge are true, and all statements made on information and belief are believed to be true.

The trademark BatchTEST has been used in commerce by Ikonix USA, LLC, as shown on pages 18 and 28 of the catalog submitted herewith (AR Catalog - Low Res.pdf) as Exhibit A.

The trademark BatchTEST has been used in commerce by Ikonix USA, LLC, as shown on the display screen of the Software Options as shown below:



Respectfully signed,

July 27, 2021

Adam Braverman
Vice President
Ikonix USA, LLC

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of this document is being served on Petitioner by emailing it on the undersigned date addressed to the correspondence address of record in the TTABVUE database at the website of the U.S. Patent and Trademark Office as follows:

Dinesh Patel
BatchTest Corporation
2118 Walsh Ave, Suite 150
Santa Clara, CA 95050
BatchTest_TM@batchtest.com
btcroot@gmail.com

July 27, 2021

/Thomas J. Moore/
Thomas J. Moore

TJM/IP/ICWA7001/Drafts

Exhibit A to the Declaration of Braverman
July 27, 2021
U.S. Cancellation No. 92070823

ASSOCIATED RESEARCH
A DIVISION OF IKONIX USA

Instruments for Electrical Safety Compliance Testing

Safety Is Our Only Focus®

Hipot • Ground Bond • Insulation Resistance • Leakage Current • Functional Run
Medical Test Systems • HV/HC Multiplexers • Software Solutions

CUSTOMER HAPPINESS PROMISE

We aim to provide an amazing experience and quality testers that last a long time. If you're not satisfied with your tester, return it within 45 days for a full refund. Calibrate annually with us, or one of our authorized partners, and we'll extend your warranty an additional year for the service life of your tester, and at least five years after discontinuation. If it breaks during that time, we promise to fix it for free (unless abuse or excessive damage is present). When your tester reaches the end of its service life, we'll responsibly recycle it and give you a discount on a replacement.

*Annual calibration and inspection must be made in each successive year starting one year after the original purchase date in order to remain eligible for extended warranty coverage beyond the standard warranty period (five years).

5 YEAR WARRANTY

Your new tester is warranted to be free from defects in workmanship and material for a period of (5) years from date of shipment.

**5 year warranty is valid on any model purchased in 2021 or after.

ONGOING SUPPORT

We work to provide the best service and support in the industry. With decades of industry experience we are the pros you can trust to help you be compliant to NRTL standards. We'll work closely with you to help you achieve your goals. We've built a worldwide network of knowledgable partners, so you're covered no matter where you are.

OUR MISSION

We build relationships with manufacturers around the globe who trust our products and expertise in electrical safety compliance testing to protect their employees and customers from the dangers of electricity.

A HISTORY OF INNOVATION

1936 Associated Research was founded.

1939 We introduced the first battery operated Megohmmeter, the Vibrotest, in the United States.

1966 We commenced the first Cable Testing/Fault Location school known as ARU. ARU continued for over 25 years.

1993 We introduced the first complete family of microprocessor-controlled electrical safety instruments.

1995 We developed the first multi-function electrical safety compliance analyzer.

1997 We released the first electrical safety instrument with a built-in multiplexer for multi-point testing.

1999 We introduced Autoware, the first software package for automated instrument control, in the EST industry.

2001 We released our patented safety feature, SmartGFI®, to provide our customers with maximum operator protection during high voltage testing.

2012 We launched the first electrical safety compliance analyzer with a built-in AC power source.

2013 We developed the first mobile app in the electrical safety testing industry.

2017 We launched the Applications Consulting program.

2020 We Introduced Withstand, a Software as a Service (SaaS) platform, that is a cloud storage of your tests and data in one platform.

FOCUSED ON EDUCATION

With over 80 years of industry experience, we have the resources and expertise to assist you with your educational needs throughout the life of your product.

- Quick Start Videos
- Quick Start Guides
- On-Site Training
- White Papers & Articles

SERVING THE COMMUNITY

Proud Sponsor of

ESFi

Electrical Safety Foundation International

We donate a portion of our profits to raising awareness about the dangers of electricity.

PRODUCT REFERENCE CHART

	AC Hipot	DC Hipot	Ground Bond	Ground Continuity	Insulation Resistance	Leakage Current	Functional Run	Built-in AC Power
Hypot®								
3805	•			•				
3865	•	•		•				
3870	•	•		•	•			
HypotULTRA®								
7800	500 VA	•		•	•			
7804	•	•	•	•	•			
7820	•			•				
7850	•	•		•	•			
7854	500 VA	•	•	•	•			
OMNIA® II								
8204	•	•	•	•	•			
8254	500 VA	•	•	•	•			
8206	•	•	•	•	•	•	•	
8256	500 VA	•	•	•	•	•	•	
8207	•	•	•	•	•	•	•	•
8257	500 VA	•	•	•	•	•	•	•
HYAMP®								
3240			•					
HypotMAX®								
7705	•							
7710		•						
7715	•							
7720		•						
LINECHEK® II								
620L						•	•	

Not sure which instrument is right for your application?
Use our product selection tool to identify the instrument that satisfies your testing requirements.
Go to **arisafety.com** and follow the link to the **Product Selection Tool.**

	USB	RS-232	Ethernet	GPIB	Internal Multiplexer	Modular Multiplexer	Autoware®3 Compatible	WithStand Compatible	Power Source Recommended
Hypot®									
3805	•							•	
3865	•							•	
3870	•							•	
HypotULTRA®									
7800	•	•	Opt.	Opt.		•	•	•	
7804	•	•	Opt.	Opt.		•	•	•	
7820	•	•	Opt.	Opt.	•	•	•	•	
7850	•	•	Opt.	Opt.	•	•	•	•	
7854	•	•	Opt.	Opt.		•	•	•	
OMNIA® II									
8204	•	•	Opt.	Opt.	•	•	•		
8254	•	•	Opt.	Opt.	•	•	•		
8206	•	•	Opt.	Opt.		•	•		•
8256	•	•	Opt.	Opt.		•	•		•
8207	•	•	Opt.	Opt.		•	•		
8257	•	•	Opt.	Opt.		•	•		
HYAMP®									
3240	•								
HypotMAX®									
7705	•	•		Opt.					
7710	•	•		Opt.					
7715	•	•		Opt.					
7720	•	•		Opt.					
LINECHEK® II									
620L	•	•	Opt.	Opt.		•	•		•

MedTEST is the most comprehensive Electrical Safety Compliance test system in the industry designed exclusively for medical applications. Customize it to meet your specific medical safety testing needs in order to comply with standards such as UL60601, IEC60601-1, EN60601-1, UL2601, and IEC601-1. See page 24 for more details.

Hypot®

Production Line Hipot Testing at its Finest

Our Hypot® Series raises the bar for production line Hipot testing. Improve traceability with onboard data storage and easily transfer test result data and test settings via convenient front panel USB. Take the guesswork out of your production line with the direct barcode connection to quickly associate products with pre-programmed test files. We've included advanced features like improved security and a touch screen interface that provides custom pop-up prompts displayed before each test step. We've dramatically reduced the weight and footprint of the Hypot® Series to make safety compliance a less strenuous ordeal. Quickly interconnect with the HYAMP® Series to form a complete safety compliance system.

Find the Model that Fits Your Testing Needs

	AC Hipot	DC Hipot	Ground Continuity	Insulation Resistance	EN 50191 COMPLIANT
3805	•		•		•
3865	•	•	•		•
3870	•	•	•	•	•

AVAILABLE INTERFACES

- USB

SAFETY & PRODUCTIVITY FEATURES

- **SmartGFI®** Automatic operator shock protection
- **Remote Safety Interlock** Easily disable HV output
- **Data Transfer** Easily import/ export test files and data via USB
- **Barcode Capability** Direct barcode connection
- **Multiple Languages** Multi-Language user interface
- **PLC Remote** Basic PLC relay control
- **Prompt & Hold** Provides alerts & instructions between tests
- **Advanced User Security** Customize ID & password protection
- **Interconnection** Interconnect with HYAMP® to form a complete test system
- **Ramp-HI®** Reduce ramp time during DC Hipot
- **Charge-LO®** Confirms proper DUT connection
- **FailCHEK™** Confirms failure detection
- **Accredited Cal** Accredited calibration options available
- **My Menu** Customize your own shortcut menu
- **On Board Data Storage** Save up to 1,500 Test Results on-board

INPUT SPECIFICATIONS

Voltage	100 – 120 VAC / 200 – 240 VAC ± 10% Auto Range
Frequency	50/60 Hz ± 5%
Fuse	3.15 A, Fast Blow 250 VAC

DIELECTRIC WITHSTAND TEST MODE

Output Rating	3805/3865/3870	5 kVA @ 20 mAAC 6 kVA @ 7.5 mADC (3865/3870 only)		
Maximum Limit	3805/3865/3870	AC	Range: Resolution:	0.00 – 20.00 mA 0.01 mA
		DC	Range: Resolution: Accuracy:	0 – 7500 µA 1 µA AC and DC ± (2% of setting + 2 counts)
Minimum Limit	3805/3865/3870	AC	Range: Resolution:	0.000 – 9.999 mA 0.001 mA
		DC	Range: Resolution: Accuracy:	0.0 – 999.9 µA 0.1µA AC and DC ± (2% of setting + 2 counts)
Arc Detection	Range:	1-9, ON/OFF Select		
Ground Fault Interrupt	GFI Trip Current: 450 µA max (AC or DC), Fixed			
	HV Shut Down Speed: < 1 msec			
Current Display	3805/3865/3870	AC	Range 1: Range 2:	0.000 – 4.000 mA 3.50 – 20.00 mA
		DC	Range 1: Range 2: Range 3:	0.0 µA – 400.0 µA 0.350 mA – 4.000 mA 3.50 mA – 7.50 mA
			Accuracy:	All Ranges ± (2% of reading + 2 counts)
DC Output Ripple	≤ 5% Ripple rms at 6 kVDC @ 7.5 mA Resistive Load			
RAMP-HI Selectable	Range: 0.0 – 7,500 µA, User Selectable			
Charge-LO	0 – 350 µA DC or Auto Set			
Discharge Time	< 50 msec for no load, < 100 msec for capacitive load **The maximum capacitive load vs. output voltage:** 1µF < 1KV 0.08µF < 4KV 0.75µF < 2KV 0.04µF < 5KV 0.5µF < 3KV 0.015uF < 6KV			
AC Voltage Waveform/ Frequency	Sine Wave, Crest Factor = 1.3 – 1.5			
	Range:	50 or 60 Hz, User Selectable		
Dwell Timer	Range:	AC 0, 0.2-999.9 sec (0=Continuous) DC 0, 0.4-999.9 sec (0=Continuous)		
Ramp Timer	Range:	Ramp-Up: 0.1 – 999.9 sec Ramp-Down: AC 0.0 – 999.9 sec DC 0, 1.0 – 999.9 sec, (0=OFF)		
Ground Continuity Current	DC 0.1A ± 0.01 A, fixed			

Ground Continuity Maximum Limit Minimum Limit	Range: Resolution: Accuracy:	0.00 – 1.50 Ω 0.01 Ω ± (3% of setting + 0.02 Ω)
Ground Continuity Auto Offset	Range: Resolution: Accuracy:	0.00 – 0.50 Ω 0.01 Ω ± (3% of setting + 0.02 Ω)

INSULATION RESISTANCE TEST MODE

Voltage Setting	Range: Resolution: Accuracy:	30 – 1,000 VDC 1 V ± (2% of setting + 5 V)
Resistance Display	Range:	1 – 50,000 MΩ
	Resolution:	30 – 99 VDC / 100 – 499 VDC / 500 – 1000 VDC MΩ / MΩ / MΩ / MΩ 0.001 / 1.000 – 1.999 / 1.000 – 1.999 / 1.000 – 9.999 0.01 / 2.00 – 19.99 / 2.00 – 19.99 / 10.00 – 99.99 0.1 / 20.0 – 199.9 / 20.0 – 199.9 / 100.0 – 999.9 1 / 200 – 10,000 / 200 – 20,000 / 1000 – 50000
	Accuracy:	± (8% of reading+2 counts) at test voltage 30 – 499 V and 1.00–999.9 MΩ
	At test voltage 500-1000 V ± (2% of reading + 2 counts) for 1.00 – 999.9 MΩ ± (5% of reading + 2 counts) for 1000 – 9999 MΩ ± (15% of reading + 2 counts) for 10000 – 50,000 MΩ	
HI & LO-Limit	Range: Resolution:	0, 1.00 – 99.99 MΩ (0=OFF, HI-Limit ONLY) 0.01 MΩ 1000-50000 1 MΩ
	Range: Resolution:	100.0 – 999.9 MΩ 0.1 MΩ
	Accuracy:	At test voltage 500-1000 V ± (2% of setting + 2 counts) for 1.00 – 999.9 MΩ ± (5% of setting + 2 counts) for 1000 – 9999 MΩ ± (15% of setting + 2 counts) for 10000 – 50,000 MΩ
Charge-LO	Range:	0.000 – 3.500 µA DC or Auto Set
Ramp Timer	Range:	Ramp-Up: 0.1 – 999.9 sec Ramp-Down: 0, 1.0 – 999.9 sec, (0=OFF)
Delay Timer	Range:	0.5 – 999.9 sec (0=OFF)
Dwell Timer	Range:	0, 0.5 – 999.9 sec (0=continuous)

GENERAL SPECIFICATIONS

Remote Control and Signal I/O	Inputs: Test, Reset, Hardware Interlock, File Recall Outputs: Pass, Fail, Test-in-Process, Reset-Out, Start-Out	
Vmax	Displays the maximum voltage value recorded during a breakdown	
Imax	Displays the maximum leakage current value read during a test	
Memories	50 steps 1500 test results	
Interface	USB standard	
Language	English, Traditional Chinese, Simplified Chinese, Turkish, Portuguese, Spanish, German, French	
Security	Multiple user setups with ID and password	
Dimensions (W x H x D)	3805/3865/3870:	8.5" x 3.5" x 11.9" (215 mm x 88.1 mm x 300 mm)
Weight	3805/3865/3870:	12 lbs (5.46 kgs)

Why We Use Counts
Associated Research publishes some specifications using "counts" which allows us to provide a better indication of the instrument's capabilities across measurement ranges. A count refers to the lowest resolution of the display for a given measurement range. For example, if the resolution for voltage is 1V then 2 counts = 2 V.

Specifications subject to change without notice.

HypotULTRA®

The Most Flexible and Feature-Rich Automated Dielectric Analyzer Available

Our HypotULTRA® models provide all the tools you need to modernize your production line with best-in-class 4-in-1 test capability and a slim 2U design. We've added 40A AC Ground Bond test capability to HypotULTRA's already impressive feature list for manufacturers that aim to adopt best testing practices without sacrificing productivity. Whether you're looking to improve traceability with onboard data storage, increase efficiency with our intuitive touch screen interface and direct barcode scanner connection, or automate with a variety of communication interfaces, HypotULTRA was designed to take your production line to the next level.

Find the Model that Fits Your Testing Needs

	AC Hipot	DC Hipot	Ground Bond	Ground Continuity	Insulation Resistance	EN 50191 COMPLIANT
7800*	500 VA*	•		•	•	
7804	•	•	•	•	•	•
7820	•			•		•
7850	•	•		•	•	•
7854	500 VA*	•	•	•	•	

*Meets 200 mA short circuit requirements

AVAILABLE INTERFACES

- **USB**
- **RS-232**
- **Ethernet** (Optional)
- **GPIB** (Optional)

SAFETY & PRODUCTIVITY FEATURES

- **SmartGFI®** Automatic operator shock protection
- **Remote Safety Interlock** Easily disable HV output
- **Data Transfer** Easily import/ export test files and data via USB
- **Barcode Capability** Direct barcode connection
- **Multiple Languages** Multi-Language user interface
- **Ground Bond Voltage Drop** Monitor voltage drop vs resistance
- **ProVOLT®** Multi-dwell cycles at different voltages for ACW/DCW/IR
- **Internal Multiplexer** Available with optional HV multiplexer (4 or 8 ports)
- **Modular Multiplexer** Compatible with SC6540 multiplexers
- **FailCHEK™** Confirms failure detection
- **Prompt & Hold** Provides alerts & instructions between tests
- **Autoware®3** Advanced Automation Control Software
- **Advanced User Security** Customize ID & password protection
- **Ramp-HI®** Reduce ramp time during DC Hipot
- **Charge-LO®** Confirms proper DUT connection
- **PLC Remote** Basic PLC relay control
- **Negative DC Hipot** Reverse polarity DC Hipot (optional)
- **On Board Data Storage** Save up to 100,000 Test Results on-board

INPUT SPECIFICATIONS

Voltage	100 – 120 VAC / 200 – 240 VAC ± 10% Auto Range	
Frequency	50/60 Hz ± 5%	
Fuse	7804/7820/7850:	6.3A, Slow Blow 250 VAC
	7800/7854:	15A, Fast Blow 250 VAC

AC WITHSTAND TEST MODE (All Models)

Output Voltage	Range: Resolution: Accuracy:	0 – 5,000 VAC 1 VAC ± (2% of setting + 5V)
Output Frequency	50/60 Hz ± 0.1%, User Selection	
Output Waveform	Sine Wave, Crest Factor = 1.3 – 1.5	
Output Regulation	± (1% of output + 5V)	
HI and LO-Limit Total	**Total** Range: Resolution: Range: Resolution: Accuracy:	0.000 – 9.999 mA 0.001 mA 10.00 – 30.00 mA (10 – 99.99 mA, Models 7800/7854) 0.01 mA ± (2% of setting + 2 counts) 7804/7820/7850 ± (2% of setting + 6 counts) 7800/7854
	Real Range: Resolution: Range: Resolution: Accuracy:	0.000 – 9.999 mA 0.001 mA 10.00 – 30.00 mA (10 – 99.99 mA 7800/7854) 0.01 mA ± (3% of setting + 50 µA)
Ramp Up Timer	Range:	0.1 – 999.9 sec
Ramp Down Timer	Range:	0.0 – 999.9 sec
Dwell Timer	Range:	0, 0.2 – 999.9 sec (0=Continuous)
Ground Continuity	Current: DC 0.1A ± 0.01A, fixed	
Current	Max. Ground Resistance: 1.0 Ω ± 0.1 Ω	
Arc Detection	Range:	1 – 9 ranges (9 is most sensitive)

DC WITHSTAND TEST MODE (Models 7800/7804/7850 & 7854 Only)

Output Voltage	Range: Resolution: Accuracy:	0 – 6000 VDC 1 V ± (2% of setting + 5 V)
DC Output Ripple	<4% (6 KV/10 mA at Resistive Load)	
HI and LO-Limit	Range: Resolution: Accuracy:	0.0000 – 0.9999 µA 0.0001 µA ± (2% of setting + 10 counts), Low Range is ON
	Range: Resolution: Accuracy:	1.000 – 9.999 µA 0.001 µA ± (2% of setting + 10 counts), Low Range is ON
	Range: Resolution: Accuracy:	10.00 – 99.99 µA 0.01 µA ± (2% of setting + 10 counts), Low Range is ON
	Range: Resolution: Accuracy:	100.0 – 999.9 µA 0.1 µA ± (2% of setting + 2 counts)
	Range: Resolution: Accuracy:	1,000 – 20,000 µA range (7804/54) 1,000 – 10,000µA range (7800/50) 1 µA ± (2% of setting + 2 counts)
Ramp Up Timer	Range:	0.4 - 999.9 sec, Low Range is OFF 0.5 – 999.9 sec, Low Range is ON
Ramp Down Timer	Range:	0.0, 1.0 – 999.9 sec (0=OFF)
Dwell Timer	Range:	0, 0.4 – 999.9 sec (0=Continuous) 0, 1.0 – 999.9 sec, Low Range is ON
Ramp-HI Selectable	Range:	0 – 20 mA selectable
Charge-LO	Range:	0.0 – 350.0 µA DC or Auto Set
Discharge Time	< 50 ms for no load, < 100 ms for capacitive load	
Maximum Capacitive Load DC Mode	1µF < 1kV 0.75 µF < 2 kV 0.5 µF < 3 kV	0.0 µF < 4 kV 0.04 µF < 5 kV 0.015 µF < 6 kV
Arc Detection	Range:	1 – 9 ranges (9 is most sensitive)

INSULATION RESISTANCE MODE (Models 7800/7804/7850 & 7854 Only)

Output Voltage, DC	Range: Resolution: Accuracy:	10 – 1,000 VDC 1 VDC ± (2% of setting + 2 counts)
	Range: Resolution: Accuracy:	1,001 – 6,000 VDC 1 VDC ± (2% of setting + 5 V)

INSULATION RESISTANCE MODE (Models 7800/7804/7850 & 7854 Only)

Charging Current HI and LO-Limit	Maximum > 20 mA peak	
	Range: Resolution: Accuracy:	0.10 MΩ – 99.9 MΩ (HI-Limit: 0=OFF) 0.01 MΩ ± (2% of setting + 2 counts)
	Range: Resolution: Accuracy:	100.0 MΩ – 999.9 MΩ 0.1 MΩ 1,000 – 9,999 ± (5% of setting + 2 counts)
	Range: Resolution: Accuracy:	1,000 MΩ – 50,000 MΩ 1 MΩ 10,000 – 50,000 ± (15% of setting + 2 counts)
Ramp Up Timer	Range:	0.1 – 999.9 sec
Ramp Down Timer	Range:	1.0 – 999.9 sec
Dwell Timer	Range:	0.5 – 999.9 sec (0=Continuous)
Delay Timer	Range:	0.5 – 999.9 sec
Charge-LO	0.000 – 3.500 µA or Auto Set	

CONTINUITY TEST MODE (All Models)

Output Current, DC	1 A for 0.000 – 1.000 Ω, 0.1 A for 1.01 – 10.00 Ω 0.01 A for 10.01 – 100 Ω, 0.001 A for 101 – 1,000 Ω 0.0001 A for 1001 – 10,000 Ω, 1 A is Max	
Resistance Display Max & Min Max-Lmt	Range: Resolution: Accuracy:	0.000 – 1.000 Ω 0.001 Ω ± (1% of setting + 3 counts)
	Range: Resolution: Accuracy:	1.01 – 10.00 Ω 0.01 Ω ± (1% of setting + 3 counts)
	Range: Resolution: Accuracy:	10.1 – 100.0 Ω 0.1 Ω ± (1% of setting + 3 counts)
	Range: Resolution: Accuracy:	101 – 1,000 Ω 1 Ω ± (1% of setting + 3 counts)
	Range: Resolution: Accuracy:	1,001 – 10,000 Ω 1 Ω ± (1% of setting + 10 counts)
Dwell Timer	Range:	0, 0.4 – 999.9 sec (0=Continuous)
Resistance Offset	Range:	0.000 – 10.00 Ω

GROUND BOND TEST MODE (Models 7804 & 7854 Only)

Output Voltage (Open Circuit Voltage)	Range: Resolution: Accuracy:	3.00 – 8.00 VAC 0.01 VAC ± (2% of setting + 3 counts) Open Circuit
Output Current	Range: Resolution: Accuracy:	1.00 – 40.00 A 0.01 A ± (2% of setting + 2 counts)
Maximum Loading	1.00 – 10.00 A, 0 – 600 mΩ 10.01 – 30.00 A, 0 – 200 mΩ 30.01 – 40.00 A, 0 – 150 mΩ	
HI and LO-Limit	Range: Resolution: Accuracy:	0 – 150 mΩ for 30.01 – 40.00 A 0 – 200 mΩ for 10.01 – 30.00 A 0 – 600 mΩ for 1.00 – 10.01 A 1 mΩ ± (2% of setting + 2 counts)
	Range: Resolution: Accuracy:	0 – 600 mΩ 1 mΩ ± (3% of setting + 3 counts)
Dwell Timer	Range:	0, 0.5 – 999.9 sec (0=Continuous)
Milliohm Offset	0 – 200 mΩ	
Voltage Offset	0.0 - 6.0 V	

GENERAL SPECIFICATIONS

Memory	2,000 steps, 200 steps per test file max 100,000 test results
Mechanical	Bench or rackmount (2U height) with feet
Interface	Standard: USB, RS-232 Optional: GPIB (IEEE-488.2), Ethernet or USB Printer
SmartGFI®	0, 0.4 – 5.0 mA (0=OFF)
Dimensions (W x H x D)	16.92" x 3.50" x 15.75" (430 x 88.1 x 400mm)
Weight	7800: 45 lbs (20.4 kg) 7804: 41 lbs (18.6 kg) 7820: 34 lbs (15.4 kg) 7850: 35 lbs (15.9 kg) 7854: 46.3 lbs (21 kg)

OMNIA® II

The Most Advanced Electrical Safety Compliance Analyzer in the Industry

Our OMNIA® II Series is a complete line of multi-function electrical safety compliance analyzers designed to satisfy even the most demanding application requirements. We've included exclusive productivity-enhancing features and the latest in safety technology to make this product line the envy of the industry. With 6 models to choose from, a multi-language menu system and a variety of automation interfaces available, the OMNIA® II is ready for global deployment.

Find the Model that Fits Your Testing Needs

	AC Hipot	DC Hipot	Ground Bond	Ground Continuity	Insulation Resistance	Leakage Current	Functional Run	Built-in AC Power	Power Source Recommended	EN 50191 COMPLIANT
8204	•	•	•	•	•					•
8254	500 VA*	•	•	•	•					
8206	•	•	•	•	•	•	•		•	•
8256	500 VA*	•	•	•	•	•	•		•	
8207	•	•	•	•	•	•	•	•		•
8257	500 VA*	•	•	•	•	•	•	•		

*Meets 200 mA short circuit requirements

AVAILABLE INTERFACES

- **USB**
- **RS-232**
- **Ethernet** (Optional)
- **GPIB** (Optional)

SAFETY & PRODUCTIVITY FEATURES

- **SmartGFI®** Automatic operator shock protection
- **Remote Safety Interlock** Easily disable HV output
- **Prompt & Hold** Provides alerts & instructions between tests
- **Multiple Languages** Multi-Language user interface
- **Active Link®** Continuous power during test steps
- **My Menu** Customize your own shortcut menu
- **DualCHEK®** Simultaneous Hipot and Ground Bond
- **Internal Multiplexer** Available with optional HV multiplexer (4 or 8 ports)
- **Modular Multiplexer** Compatible with SC6540 multiplexers
- **PLC Remote** Basic PLC relay control
- **FailCHEK™** Confirms failure detection
- **Cal-Alert®** Tracks and alerts for calibration
- **Ramp-HI®** Reduce ramp time during DC Hipot
- **Charge-LO®** Confirms proper DUT connection
- **Arc Detection** High frequency filter for corona detection
- **Autoware®3** Advanced Automation Control Software
- **Accredited Cal** Accredited calibration options available
- **Ground Bond Voltage Drop** Monitor voltage drop vs resistance

INPUT SPECIFICATIONS

Voltage	115/230 V Auto Range, ± 15 % Variation
Frequency	50/60 Hz ± 5%
Fuse	115 VAC, 230 VAC – 10 A Slow Blow 250 VAC

DIELECTRIC WITHSTAND TEST MODE

Output Rating	5 kV @ 50 mAAC 5 kV @ 100 mAAC (Models 825X) 6 kV @ 20 mADC		
Voltage Setting	Resolution: Accuracy:	1 V ± (2% of setting + 5 volts	
HI and LO-Limit	**AC Total**	Range: Resolution:	0.000 – 9.999 mA 0.001 mA
		Range: Resolution:	10.00 – 50.00 mA (100.00 mA, models 825X) 0.01 mA
		Accuracy:	± (2% of setting + 2 counts)
	AC Real	Range: Resolution:	0.000 – 9.999 mA 0.001 mA
		Range: Resolution:	10.00 – 50.00 mA (100.00 mA, models 825X) 0.01 mA
		Accuracy:	± (3% of setting + 50 µA)
	DC	Range: Resolution:	0 – 999.9 µA 0.1 µA
		Range: Resolution:	1,000 – 20,000 µA 1 µA
		Accuracy:	± (2% of setting + 2 counts)
Arc Detection	Range:	1 – 9 (9 is most sensitive)	
Ground Continuity	Current: DC 0.1 A ± 0.01 A, fixed Max. Ground Resistance: 1 Ω ± 0.1 Ω, fixed		
Ground Fault Interrupt	GFI Trip Current: 0.4 mA – 5.0 mA (AC or DC) HV Shut Down Speed: < 1 ms		
DC Output Ripple	≤ 4% Ripple rms at 5 kVDC at 20 mA Resistive Load		
Discharge Time	≤ 50 ms No Load, < 100 ms for Capacitive Load		
Max Capacitive Load, DC Mode	1 µF < 1 kV 0.75 µF < 2 kV 0.5 µF < 3 kV	0.08 µF < 4 kV 0.04 µF < 6 kV	
AC Output Waveform	Sine Wave, Crest Factor = 1.3 – 1.5		
Output Frequency	Range:	60 or 50 Hz, User Selection (400/800 Hz optional)	
Output Regulation	± (1% of output + 5 V) from no load to full load and over input voltage range		
Dwell Timer	Range: Range:	AC 0.4 –999.9 sec (0=Continuous) DC 0.3 –999.9 sec (0=Continuous)	
Ramp Timer	Ramp-up: Ramp-Down:	AC 0.1 – 999.9 sec, DC 0.4 – 999.9 sec AC 0.0 – 999.9 sec, DC 0.0 , 1.0 – 999.9 sec (0=Continuous)	

INSULATION RESISTANCE TEST MODE

Voltage Setting	Range:	30 – 1000 VDC
HI and LO-Limit	Range: Resolution:	0.05 MΩ – 99.99 MΩ 0.01 MΩ
	Range: Resolution:	100.0 MΩ – 999.9 MΩ 0.1 MΩ
	Range: Resolution:	1,000 MΩ – 50,000 MΩ 1 MΩ (HI-Limit: 0=OFF)
Ramp Timer	Ramp-up: Ramp-Down:	0.1 – 999.9 sec 0.0, 1.0 – 999.9 sec (0=Continuous)
Delay Timer	Range:	0.5 – 999.9 sec (0=Continuous)

GROUND BOND TEST MODE

Output Voltage (Open Circuit Limit)	Range:	3.00 – 8.00 VAC
Output Frequency	Range:	60 or 50 Hz, User Selectable
Output Current	Range: Resolution: Accuracy:	1.00 – 40.00 A 0.01 A ± (2% of setting + 0.02 A)
Maximum Loading	1.00 – 10.00 A, 0 – 600 mΩ 10.01 – 30.00 A, 0 – 200 mΩ 30.01 – 40.00 A, 0 – 150 mΩ	
HI and LO-Limit	Range: Resolution: Accuracy:	0 – 150 mΩ for 30.01 – 40.00 A 0 – 200 mΩ for 10.01 – 30.00 A 0 – 600 mΩ for 1.00 – 10.00 A 1 mΩ ± (2% of reading + 2 mΩ)
	Range: Resolution: Accuracy:	0 – 600 mΩ for 1.00 – 5.99 A 1 mΩ ± (3% of reading + 3 mΩ)
Dwell Timer	Range:	0.5 – 999.9 sec (0=Continuous)
Milliohm Offset	Range:	0 – 200 mΩ

CONTINUITY TEST MODE

Output Current	DC 0.01 A ± 0.00001 A	
Resistance Display	Range:	0.00 – 10000 Ω
HI and LO-Limit	Range: Resolution:	1: 0.00 – 10.00 Ω 0.01 Ω
	Range 2: Resolution:	10.1 – 100.0 Ω 0.1 Ω
	Range 3: Resolution: Accuracy:	101 – 1,000 Ω 1 Ω ± (1% of reading + 3 counts)
	Range 4: Resolution: Accuracy:	1,001 – 10,000 Ω 1 Ω ± (1% of reading + 10 counts) (Max Limit: 0=OFF)
Dwell Timer	Range:	0.0, 0.3 – 999.9 sec (0=Continuous)
Milliohm Offset	Range:	0.00 – 10.00 Ω

RUN TEST MODE (Models 82X6 & 82X7 only)

DUT Power	Voltage: Current: Range: Resolution: Accuracy:	0 – 277 VAC single phase unbalanced 16 AAC max continuous 0.0 – 277.0 VAC Full Scale 0.1 V ± (1.5% of reading +0.2 V), 30.0 – 277.0 VAC Short Circuit Protection: 23 AAC, Response Time < 3 sec
Delay Time Setting	Range:	0.2 – 999.9 seconds
Dwell Time Setting	Range:	0.1 – 999.9 seconds (0=Continuous)

RUN TEST MODE CONTINUED (Models 82X6 & 82X7 only)			
Trip Point Settings & Metering	**Voltage**		
	Volt-Hi Volt-LO	Range: Resolution: Accuracy:	30.0 – 277.0 VAC 0.1 V ± (1.5% of setting + 0.2 V), 30.0–277 VAC
	Current		
	Amp-HI Amp-LO	Range: Resolution: Accuracy:	0.0 – 16.00 AAC 0.01 A ± (2.0% of setting + 2 counts)
	Watts		
	Power-HI Power-LO	Range: Resolution: Accuracy:	0 – 4,500 W 1 W ± (5.0% of setting + 3 counts)
	Power Factor		
	PF-HI PF-LO	Range: Resolution: Accuracy:	0.000 – 1.000 0.001 ± (8% of setting + 2 counts)
	Leakage Current		
	Leak-HI Leak-LO	Range: Resolution: Accuracy:	0.00 – 10.00 mA (0=OFF) 0.01 mA ± (2% of setting + 2 counts)
Timer Display	Range: Resolution: Accuracy:	0.0 – 999.9 seconds 0.1 second ± (0.1% of reading + 0.05 seconds)	

LEAKAGE CURRENT TEST MODE (Models 82X6 & 82X7 only)		
DUT Power	Voltage: Current:	0 – 277 VAC 16 AAC max continuous
	Voltage Display	Range: 0.0 – 277.0 VAC Full Scale Resolution: 0.1 V Accuracy: ± (1.5% of reading +0.2 V), 30.0 – 277.0 VAC
	Short Circuit Protection:	23 AAC, Response Time < 3 s
Reverse Power Switch	Reverse polarity switch setting select ON/OFF/AUTO ON: Reverse power OFF: Normal AUTO: Automatic Reverse Polarity	
Neutral Switch	ON/OFF selection for single fault condition	
Ground Switch	ON/OFF selection for Class I single fault condition	
Probe Setting	Surface to Surface (PH – PL) Surface to Line (PH – L) Ground to Line (G – L)	
Touch Current High Limit (rms)	Range: Resolution:	0.0 µA ~ 999.9 µA 1000 µA ~ 10.00 mA 0.1 µA / 1 µA / 0.01 mA

LEAKAGE CURRENT TEST MODE CONTINUED (Models 82X6 & 82X7 only)		
Touch Current Display (rms)	Range 1:	0.0 µA ~ 32.0 µA, frequency DC, 15 Hz – 1 MHz
	Range 2:	28.0 µA ~ 130.0 µA, frequency DC, 15 Hz – 1 MHz
	Range 3:	120.0 µA ~ 550.0 µA, frequency DC, 15 Hz – 1 MHz
	Resolution for Ranges 1, 2, 3:	0.1 µA
	Accuracy for Ranges 1, 2, 3:	DC: 15 Hz < f <100 KHz: ± (2% of reading + 3 counts) 100 KHz < f < 1 MHZ: ± 5% of reading (10.0 µA – 999.9 µA)
	Range 4:	400 µA ~ 2100 µA, frequency DC, 15 Hz – 1 MHz
	Range 5:	800 µA ~ 8500 µA, frequency DC, 15 Hz – 1 MHz
	Resolution for Ranges 4 & 5:	1 µA
	Accuracy for Ranges 4 & 5:	DC: 15 Hz < f <100 KHz: ± (2% of reading + 3 counts) 100 KHz < f < 1 MHZ: ± 5% of reading (10 µA – 8500 µA)
	Range 6:	8.00 mA ~ 10.00 mA, frequency DC 15 Hz – 100 kHz
	Resolution:	0.01 mA
	Accuracy:	DC: 15 Hz < f < 100 KHz: ± 5% of reading (0.01 mA -10.00 mA)
Touch Current Display (Peak)	Range 1:	0.0 µA ~ 32.0 µA, frequency DC – 1 MHz
	Range 2:	28.0 µA ~ 130.0 µA, frequency DC – 1 MHz
	Range 3:	120.0 µA ~ 550.0 µA, frequency DC – 1 MHz
	Resolution for Ranges 1, 2, 3:	0.1 µA
	Accuracy for Ranges 1, 2, 3:	DC: ± (2% of reading + 2 µA) 15 Hz < f < 1 MHZ : ± 10% of reading + 2 µA
	Range 4:	400 µA ~ 2100 µA, frequency DC – 1 MHz
	Range 5:	1800 A ~ 8500 µA, frequency DC – 1 MHz
	Resolution for Ranges 4 & 5:	1 µA
	Accuracy for Ranges 4 & 5:	DC: ± (2% of reading + 2 µA) 15 Hz < f < 1 MHz: ±(10% of reading + 2 µA)
	Range 6:	8.0 mA ~10.00 mA, frequency DC – 100 KHz
	Resolution:	0.01 mA
	Accuracy:	DC: ± (2% of reading + 3 counts) 15 Hz < f < 100 KHz: ± (10% of reading + 2 counts)
MD Circuit Module	MD1: UL544NP, UL484 , UL923, UL471, UL867, UL697 MD2: UL544P MD3: IEC 60601-1 MD4: UL1563 MD5: IEC60990 Fig4 U2, IEC 60950-1, IEC60335-1, IEC60598-1, IEC60065, IEC61010 MD6: IEC60990 Fig5 U3, IEC60598-1 MD7: IEC60950, IEC61010-1 FigA.2 (2K ohm) for Run function MD8: IEC60990/60950 Fig4 U1	
External MD	Basic measuring element 1 kΩ	
Scope Output Interface	BNC type connector on rear panel for Oscilloscope connection	

AC POWER SOURCE (82X7 only)

Output	Power:	630 VA and 500 W Maximum	
	Voltage:	0 – 150.0 V / 0 – 277.0 V	
	Current:	4.20 A maximum for 0 – 150 V range 2.10 A maximum 0 – 277 V range	
	Distortion:	≤ 1% at 45- 500 Hz and output voltage within the 80 ~ 140 VAC at Low Range or the 160 ~ 277 VAC at High Range (Resistive Load)	
	Regulation:	≤ 0.5% + 5 V (resistive load), from no load to full load and Low Line to High Line (combined regulation)	
	Crest Factor:	> 3	
	Test Timing:	< 350 ms at start and between	
	Limit:	Steps when internal AC source is ON	
Settings	Voltage	Low Range:	0.0 – 150.0 V
		High Range:	0.0 – 277.0 V
		Resolution:	0.1 V
		Accuracy:	± (1.5% of setting + 2 counts)
	Frequency	Range: Resolution: Accuracy:	45.0 Hz – 99.9 Hz 0.1 Hz ± 0.1% of setting
		Range: Resolution: Accuracy:	100 Hz – 500 Hz 1 Hz ± 0.1% of setting
	A-HI-Limit	Range: Resolution: Accuracy:	4.20 A / 2.10 A 0.01 A ± (2% of reading + 2 counts)
Measurement	Voltage	Range: Resolution: Accuracy:	0.0 – 277.0 V 0.1 V ± (1.5% of reading + 2 counts)
		Current Range: Resolution: Accuracy:	 0.00 – 16.00 A 0.01 A ± (2% of reading + 2 counts)
		Power: Resolution: Accuracy:	0 – 4500 1 ± (5% of reading + 3 counts) for PF > 0.100
		Power Factor: Resolution: Accuracy:	0.000 – 1.000 0.001 ± (8% of reading + 5 counts)
		Frequency: Resolution: Accuracy:	45 – 500 Hz 0.1 Hz ± 0.1 Hz

GENERAL SPECIFICATIONS

PLC Remote Control	Input: Test, Reset, Interlock, Recall File 1 through 3 Output: Pass, Fail, Test-in-Process	
Safety	Built-in SmartGFI circuit	
Memory	10,000 Steps	
Interface	Standard: USB/RS-232 Optional: Ethernet or GPIB	
Security	Advanced security system with access levels and username/password requirements	
Dimensions (W x H x D)	16.93" x 5.24" x 19.69" (430 x 133 x 500 mm)	
Weight	8204: 8254: 8206/8207: 8256/8257:	82 lbs (37 kg) 92 lbs (42 kg) 83 lbs (38 kg) 103 lbs (47 kg)

Why We Use Counts
Associated Research publishes some specifications using "counts" which allows us to provide a better indication of the instrument's capabilities across measurement ranges. A count refers to the lowest resolution of the display for a given measurement range. For example, if the resolution for voltage is 1V then 2 counts = 2 V.

Specifications subject to change without notice.

HYAMP®

The Industry Leading Production Line Ground Bond Instrument

Our HYAMP® Series provides manufacturers with data-driven results and greater test flexibility required in today's complex test environment. Quickly collect test data and test settings from the convenient front panel USB port onto a standard USB flash drive. Use the front panel barcode connection to associate products with preprogrammed test files. Test with greater flexibility by performing either AC Ground Bond or DC Ground Bond at a maximum of 40 A of current. The HYAMP® features a drastically reduced weight and footprint making it the ideal lightweight Ground Bond solution for laboratory and production line testing applications. Easily interconnect with the Hypot® Series to form a complete safety compliance system.

Find the Model that Fits Your Testing Needs

40A
Ground Bond

3240	AC/DC

AVAILABLE INTERFACES

USB

SAFETY & PRODUCTIVITY FEATURES

PLC Remote
Basic PLC relay control

Remote Safety Interlock
Easily disable HV output

Data Transfer
Easily import/ export test files and data via USB

Barcode Capability
Direct barcode connection

Multiple Languages
Multi-Language user interface

Ground Bond Voltage Drop
Monitor voltage drop vs resistance

FailCHEK™
Confirms failure detection

Prompt & Hold
Provides alerts & instructions between tests

Advanced User Security
Customize ID & password protection

Accredited Cal
Accredited calibration options available

4-Wire Measurement
More accurate milliohm measurement

Interconnection
Interconnect with Hypot® to form a complete test system

On Board Data Storage
Save up to 1,500 Test Results on-board

INPUT SPECIFICATIONS	
Voltage	100 – 120 VAC / 200 – 240 VAC ± 10% Auto Range
Frequency	50/60Hz ± 5%
Fuse	10 A, Slow Blow 250 VAC

GROUND BOND TEST MODE		
Output Voltage (Open Circuit Voltage)	Range: Resolution: Accuracy:	3.00 – 8.00 VAC/DC 0.01 VAC/DC ± (3% of setting + 3 counts)
Output Frequency	50 or 60 Hz, User Selectable/DC	
Output Current	Range: Resolution: Accuracy:	0 – 150 mΩ for 30.01 – 40.00 A 0 – 200 mΩ for 10.01 – 30.00 A 0 – 600 mΩ for 1.00 – 10.01 A 0.1 A ± (3% of setting + 3 counts)
Maximum Loading	Range: Resolution: Accuracy:	1.00 – 10.00 A, 0 – 600 mΩ 10.01 – 30.00 A, 0 – 200 mΩ 30.01 – 40.00 A, 0 – 150 mΩ 1 mΩ ± (2% of setting + 2 counts)
HI and LO-Limit Resistance	Range: Resolution: Accuracy:	0 – 150 mΩ for 30.01 – 40.00 A 0 – 200 mΩ for 10.01 – 30.00 A 0 – 600 mΩ for 1.00 – 10.01 A 1 mΩ ± (2% of setting + 2 counts)
HI and LO-Limit Voltage	Range: Resolution: Accuracy:	0.00 – 6.00 V 0.01 ± (2% of settings + 2 counts)
Dwell Time Setting	Range:	0, 0.5 – 999.9 sec (0=Continuous)
Ω Offset Capability	Range: Resolution: Accuracy:	0 – 100 mΩ 1 mΩ ± (2% of setting + 2 counts)
V Offset Capability	Range: Resolution: Accuracy:	0.00 – 4.00 V 0.01 V ± (2% of setting + 2 counts)
Current Display	Range: Resolution: Accuracy:	0.00 – 40.00 AAC/DC 0.01 AC/DC ± (3% of reading + 1 count)
Voltage Display	Range: Resolution: Accuracy:	0.00 – 8.00 VAC/DC 0.01 AC/DC ± (2% of reading + 2 counts)
Ohmmeter Display	Range: Resolution: Accuracy:	0 – 600 mΩ for 1.00 – 5.99 A 1 mΩ ± (3% of reading + 3 counts)
	Range: Resolution: Accuracy:	0 – 600 mΩ for 6 – 40 A 1 mΩ ± (2% of reading + 2 counts)

GENERAL SPECIFICATIONS	
Remote Control and Signal I/O	The following input and output signals are provided through two 9 pin D type connectors: Inputs: Test, Reset, Hardware Interlock, File Recall Outputs: Pass, Fail, Test-in-Process, Reset-Out, Start-Out Hardware Interlock (safety)
Memories	50 steps 1500 test results
Interface	USB standard
Language	English, Traditional Chinese, Simplified Chinese, Turkish, Portuguese, Spanish, German, French
Security	Multiple user setups with ID and password
Dimensions (W x H x D)	8.5" x 3.5" x 11.9" (215 x 88.1 x 300 mm)
Weight	11 lbs (5 kg)

Why We Use Counts
Associated Research publishes some specifications using "counts" which allows us to provide a better indication of the instrument's capabilities across measurement ranges. A count refers to the lowest resolution of the display for a given measurement range. For example, if the resolution for voltage is 1V then 2 counts = 2 V.

Specifications subject to change without notice.

HypotMAX®

The Safest and Most Reliable Automated High Voltage Hipot Instrument Available

Our HypotMAX® Series is a complete line of automated Hipot instruments designed to meet the demanding requirements of high voltage applications. We've included our patented SmartGFI® feature for maximum operator safety as well as a variety of advanced features to increase productivity on the production line and in the lab. Set up and run tests with confidence from our intuitive user interface or automate with a PC.

AVAILABLE INTERFACES

- **USB**
- **RS-232**
- **GPIB** (Optional)

SAFETY & PRODUCTIVITY FEATURES

- **PLC Remote** — Basic PLC relay control
- **SmartGFI®** — Automatic operator shock protection
- **Remote Safety Interlock** — Easily disable HV output
- **Arc Detection** — High frequency filter for corona detection
- **Ramp-HI®** — Reduce ramp time during DC Hipot
- **Charge-LO®** — Confirms proper DUT connection
- **Accredited Cal** — Accredited calibration options available
- **Autoware®** — Use with automation software control

Find the Model that Fits Your Testing Needs

	AC Hipot	DC Hipot
7705	•	
7710		•
7715	•	
7720		•

INPUT SPECIFICATIONS			
Voltage	115/130 VAC ± 10%, Single Phase, User Selection		
Frequency	50/60 Hz ± 5%		
Fuse	6.3 A, 250 V Slow Blow		
DIELECTRIC WITHSTAND TEST MODE			
Output Rating	7705: 7710: 7715: 7720:	10 kV @ 20 mAAC 12 kV @ 10 mADC 20 kV @ 10 mAAC 20 kV @ 5 mADC	
HI-Limit and LO-Limit	7705	Range 1: Resolution: Range 2: Resolution:	0.0 – 9.999 mA 0.001 mA 10.00 – 20.00 mA 0.01 mA
	7710	Range 1: Resolution: Range 2: Resolution:	0.00 – 999.9 µA 0.1 uA 1,000 – 9,999 µA 1 µA
	7715	Range: Resolution:	0.00 – 9.999 mA 0.001 mA
	7720	Range 1: Resolution: Range 2: Resolution:	0.0 – 999.9 µA 0.1 µA 1,000 – 5,000 µA 1 µA/step
	77XX	Accuracy:	± (2% of setting + 2 counts)
DC Ramp HI	7710	13 mA peak maximum, 10 mADC, ON/OFF selectable	
	7720	6.75 mA peak maximum, 5 mADC, ON/OFF selectable	
DC Charge LO	7710/7720	Range:	0.0 – 350 µADC or auto set
Arc Detection	7705	1 – 9 at output voltage < 7.00 kV 1 – 8 at output voltage ≥ 7.00 kV	
	7710/7720	1 – 9	
	7715	1 – 9 at output voltage < 15.00 kV 1 – 7 at output voltage ≥ 15.00 kV	
Voltage Display	7705	Range: Accuracy:	0.00 – 10.00 kV Full scale ± (2% of reading + 20 V)
	7710	Range: Accuracy:	0.00 – 12.00 kV Full scale ± (2% of reading + 20 V)
	7715/7720	Range: Accuracy:	0.00 – 20.00 kV Full scale ± (2% of reading + 20 V)
Current Display	7705	Auto Range Range 1: Range 2:	 0.000 – 3.500 mA 3.00 – 20.00 mA
	7710	Auto Range Range 1: Range 2: Range 3:	 0.0 – 350.0 µA 300 – 3500 µA 3,000 – 9,999 µA
	7715	Auto Range Range 1: Range 2:	 0.000 – 3.500 mA 3.00 – 10.00 mA
	7720	Auto Range Range 1: Range 2:	 0.0 – 350.0 µA 300 – 5,000 µA
DC Output Ripple	7710	< 5% Ripple at 12 kV @ 9,999 µA, Resistive Load	
	7720	< 5% Ripple at 20 kV @ 4,999 µA, Resistive Load	
AC Output Waveform	Sine Wave, Crest Factor = 1.3 – 1.5		
Output Frequency	Range:	50/60 Hz, User Selection ± (1% of output + 5 V) from Regulation No load to full load	
Output Regulation	± (1% of output + 10 V) from no load to full load		
Discharge Timer	7710	No load < 400 ms	
	7720	No load < 500 ms	
Dwell Timer		Range: AC Range: DC Range:	0, 0.3 – 999.9 sec (0=Continuous) 0, 0.3 – 999.9 sec or min (0=Continuous) 0, 0.4 – 999.9 sec or min (0=Continuous)
Ramp Timer	7705/7715	Range:	0.3 – 999.9 sec
	7710/7720	Range:	0.4 – 999.9 sec
Ground Continuity	Max. Ground Resistance 1 Ω ± 0.1 Ω, fixed		

DIELECTRIC WITHSTAND TEST MODE	
Ground Fault Interrupt	HV Shut Down Speed < 1 ms GFI Trip Current 1 mA max

GENERAL SPECIFICATIONS		
Memory	50 memories w/ 8 steps per memory	
Mechanical	Tilt-up front feet	
Interface	Standard: USB, RS-232 Optional: GPIB	
Dimensions (W x H x D)	16.93" x 5.24" x 15.75" (430 x 133 x 400 mm)	
Weight	7705/7710: 7710/7720:	61.65 lbs (28 kg) 48.9 lbs (22 kg)

Why We Use Counts
Associated Research publishes some specifications using "counts" which allows us to provide a better indication of the instrument's capabilities across measurement ranges. A count refers to the lowest resolution of the display for a given measurement range. For example, if the resolution for voltage is 1V then 2 counts = 2 V.

Specifications subject to change without notice.

SC6540

The Patented Multiplexer that Revolutionized Production Line and Laboratory Electrical Safety Compliance Testing

Our patented SC6540 multiplexer pioneered the largest productivity improvement in the electrical safety compliance industry in years. With up to 16 independent high voltage or high current channels in a convenient 2U design, the SC6540 can be customized in 10 different configurations for multi-point Hipot, Ground Bond, Insulation Resistance, and Leakage Current testing. Configure the SC6540 according to your needs, and interface with your OMNIA® II, HypotULTRA® or LINECHEK® II instrument to improve production line throughput or expand lab testing capability. Operate from the front panel of your AR instrument or utilize a variety of automation interfaces for direct PC control.

Find the Model that Fits Your Testing Needs

	High Voltage	High Current	8 Channel	16 Channel
HN	•		•	
HH	•			•
HG	•	•		•
GN		•	•	
GG		•		•

Available in both main and secondary configurations

AVAILABLE INTERFACES

USB | **RS-232** | **Ethernet** (Optional) | **GPIB** (Optional)

PRODUCTIVITY ENHANCING FEATURES

BatchTEST®
Simultaneous DUT testing with AW2

Interconnection
Interconnect with the HypotULTRA®, OMNIA® II or LINECHEK® II to form a complete test system

Autoware®3
Advanced Automation Control Software

FOR USE WITH THE FOLLOWING TESTS

AC Hipot | **DC Hipot** | **Ground Bond**

Ground Continuity | **Insulation Resistance** | **Leakage Current**

MODULAR MULTIPLEXER SPECIFICATIONS

Input (Main only)	115 VAC (± 10%), 50/60 Hz, single phase 230 VAC (± 10%), 50/60 Hz, single phase User selectable
Fuse (Main only)	250 V/2 A/fast-blow
PC Control (Main only)	Standard: USB, RS-232 Optional: Ethernet, GPIB
Multiplexer Control	Main: One Multiplexer bus output controls, up to 4 additional secondaries Secondary: One output and one input
Maximum HV Rating	5 kV AC and DC
Maximum HC Rating	40 A
Number of Possible Channels	8 or 16
HV Output	100' reel HV cable rated for up to 30 kV Terminations with 8 HV connectors
GND Output	20 terminals provided, to accept 10/12 AWG Terminations hook-up wire (user supplied wire)
Temperature	32˚ – 104˚ F (0˚ – 40˚ C)
Humidity	0 – 80%
Altitude	6,560 ft. (2,000 m)
Mechanical	2U with tilt-up front feet
Dimensions (W x H x D)	17" x 4.07" x 12.96" (432 x 103 x 329 mm)
Weight	Main: 20.05 lbs. max. (9.09 kg) (with 2 high voltage modules) Secondary: 15.45 lbs. max. (7.01 kg) (with 2 high voltage modules)

CONFIGURATIONS

The modular design can be customize to fit your application. In addition to main or secondary control, the SC6540 can be set up in the following configurations: 8 or 16 high voltage channels, 8 or 16 high current channels, and 8 high voltage channels and/or 8 high current channels. Refer to the images for details.

The different configurations (shown below) are indicated by the following alpha designators

M – Main Multiplexer
H – 8 High Voltage Channels
HH – 16 High Voltage Channels
G – 8 Ground Bond Channels
GG – 16 Ground Bond Channels
N – Empty Module
S – Secondary

MODEL SC6540 HNM*

8 Channel High Voltage Multiplexer

MODEL SC6540 HHM*

16 Channel High Voltage Multiplexer

MODEL SC6540 HGM*

8 Channel High Voltage Multiplexer
8 Channel High Current Multiplexer

MODEL SC6540 GNM*

8 Channel High Current Multiplexer

MODEL SC6540 GGM*

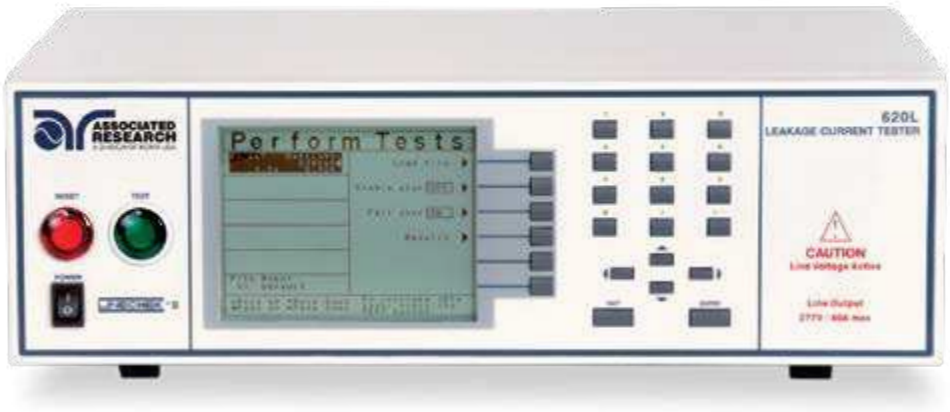
16 Channel High Current Multiplexer

*Also available in secondary configuration

LINECHEK® II

The Fully Automated Leakage Current Instrument that Changed the Industry

Our LINECHEK® II model 620L provides 7 measuring devices (MD's) compliant with international certification bodies as well as a convenient switching network to simulate all 8 required fault conditions, everything you need for full Leakage Current compliance. Utilize the intuitive user interface or control via a PC for more advanced automated applications that require data storage and analysis. The 620L handles up to 40 A of continuous current and can be interfaced to an SC6540 modular multiplexer for multi-point testing. Interconnect the 620L to an OMNIA® II instrument to form a complete electrical safety compliance testing system.



AVAILABLE INTERFACES

- **USB**
- **RS-232**
- **Ethernet** (Optional)
- **GPIB** (Optional)

SAFETY & PRODUCTIVITY FEATURES

- **Prompt & Hold** — Provides alerts & instructions between tests
- **Remote Safety Interlock** — Easily disable HV output
- **Active Link®** — Continuous power during test steps
- **PLC Remote** — Basic PLC relay control
- **Modular Multiplexer** — Compatible with SC6540 multiplexers
- **Interconnection** — Interconnect with OMNIA® II or HypotULTRA® to form a complete test system
- **Cal-Alert®** — Tracks and alerts for calibration

Find the Model that Fits Your Testing Needs

	Leakage Current	Functional Run	Power Source Recommended
620L	•	•	•

INPUT SPECIFICATIONS	
Voltage	115/230 VAC ± 10%, User Selection
Frequency	50/60 Hz ± 5%
Fuse	2 A Slow Blow 250 VAC

LINE CONDITIONS	
Reverse Power Switch	Switch for power polarity reversal
Neutral Switch	Neutral switch on/off selection for single fault
Ground Switch	Ground switch on/off selection for class I single fault

PROBE SETTINGS	
Surface to Surface	(PH – PL)
Surface to Line	(PH – L)
Ground to Line	(G – L)

LEAKAGE LIMIT SETTINGS		
Touch Current High/Low Limit (rms)	Range: Resolution:	0.0 µA – 999.9 µA / 1,000 µA – 9,999 µA / 10.00 mA – 20.00 mA 0.1 µA / 1 µA / 0.01 mA
Touch Current High/Low Limit (Peak)	Range: Resolution:	0.0 µA -999.9 µA / 1,000 uA – 9,999 µA / 10.00 mA – 30.00 mA 0.1 µA / 1 µA / 0.01 mA

DISPLAY		
Touch Current Display (rms)	Range: Resolution: Accuracy:	0.0 µA – 550 µA, frequency DC, 15 Hz – 1 MHz 0.1 µA DC: 15 Hz ≤ f ≤ 100 kHz: ± (2% of reading + 3 counts) 100 kHz ≤ f ≤ 1 MHz: ± 5% of reading (10.0 µA – 999.9 µA)
	Range: Resolution: Accuracy:	400 µA – 8,500 µA, frequency DC, 15 Hz – 1 MHz 1 µA DC: 15 Hz ≤ f ≤ 100 kHz: ± (2% of reading + 3 counts) 100 kHz ≤ f ≤ 1 MHz: ± 5% of reading, (10.0 µA – 8,500 µA)
	Range: Resolution: Accuracy:	8.00 mA – 20.00 mA, frequency DC, 15 Hz – 100 KHz 0.01 mA DC: 15 Hz ≤ f ≤ 100 MHz: ± 5% of reading (0.01 mA – 20.00 mA)
Touch Current Display (peak)	Range: Resolution: Accuracy:	0.0 µA – 550 µA, frequency DC – 1 MHz 0.1 µA ± (2% of reading + 2 µA) 15 Hz ≤ f ≤ 1 MHz, ± 10% of reading + 2 µA
	Range: Resolution: Accuracy:	400 µA – 8,500 µA, frequency DC – 1 MHz 1 µA ± (2% of reading + 2 µA) 15 Hz ≤ f ≤ 1 MHz, ± 10% of reading + 2 µA
	Range: Resolution: Accuracy:	8.00 mA – 30.00 mA, frequency DC – 100 kHz 0.01 mA ± (2% of reading + 3 counts) 15 Hz ≤ f ≤ 100 kHz, ± 10% of reading + 2 counts

MEASURING DEVICE MODULE	
MD1	UL544NP, UL484 , UL923, UL471, UL867, UL697
MD2	UL544P
MD3	IEC 60601-1
MD4	UL1563
MD5	IEC60990 Fig4 U2, IEC60950-1, IEC60335-1, IEC60598-1,IEC60065, IEC61010
MD6	IEC60990 Fig5 U3, IEC60598-1
MD7	IEC60950, IEC61010-1 FigA.2 (2 kohm) for Run function
External MD	Basic measuring element 1 kohm
MD Voltage Limit	70 VDC

DUT POWER		
AC Voltage	0.0 – 277.0 V	
AC Current	40 A max continuous	
AC Voltage High/Low Limit	Range: Resolution:	0.0 – 277.0 V 0.1 V/step
AC Voltage Display	Range: Resolution: Accuracy:	0.0 – 277.0 V 0.1 V/step ± (1.5% of reading + 2 counts), 30.0 – 277.0 V
Delay Time Setting	Range: Resolution:	0.5 – 999.9 sec 0.1 sec
Dwell Time Setting	Range: Resolution: Accuracy:	0, 0.5 – 999.9 sec (0=Continuous) 0.1 sec ± (0.1% of reading + 0.05 seconds)
Failure Protection	On Start-Up – Neutral Voltage Check (Neutral – V) Over current and ground current check (Line – OC)	

GENERAL SPECIFICATIONS	
Memory	50 Memories, 30 steps per each memory File locations can link 900 steps max
Mechanical	Bench or rackmount with tilt-up feet
Interface	Standard: USB, RS-232 Optional: Ethernet, GPIB
Dimensions (W x H x D)	16.93" x 5.24" x 11.81" (430 x 133 x 300 mm)
Weight	26.45 lbs (12 kg)

Why We Use Counts
Associated Research publishes some specifications using "counts" which allows us to provide a better indication of the instrument's capabilities across measurement ranges. A count refers to the lowest resolution of the display for a given measurement range. For example, if the resolution for voltage is 1V then 2 counts = 2 V.

Specifications subject to change without notice.

MedTEST

A Complete Electrical Safety Testing System that Satisfies the Most Demanding Medical Compliance Requirements

Our MedTEST system can be designed to provide a complete test solution for medical device manufacturers in need of conforming to IEC 60601-1 3rd Edition Standard. Customize your MedTEST system to satisfy your individual testing requirements including Hipot, Ground Bond, Insulation Resistance, Functional Run and leakage current testing for all B, BF and CF type applied parts including Mains on Applied Parts (MOAP) tests. Up to 40 A of continuous DUT current combined with our Active Link® technology reduces overall test time and integration with our SC6540 modular multiplexer allows for multi-point sequential testing without the need to change test leads. Get the most from your test system by utilizing our Autoware®3 software for maximum productivity-enhancing benefits.

AC Hipot	DC Hipot	Ground Bond	Ground Continuity	Insulation Resistance	Leakage Current	Functional Run	Power Source Recommended
•	•	•	•	•	•	•	•

AVAILABLE INTERFACES

- **USB**
- **RS-232**
- **Ethernet** (Optional)
- **GPIB** (Optional)

SAFETY & PRODUCTIVITY FEATURES

- **SmartGFI®** Automatic operator shock protection
- **Remote Safety Interlock** Easily disable HV output
- **Prompt & Hold** Provides alerts & instructions between tests
- **Multiple Languages** Multi-Language user interface
- **Active Link®** Continuous power during test steps
- **My Menu** Customize your own shortcut menu
- **DualCHEK®** Simultaneous Hipot and Ground Bond
- **Internal Multiplexer** Available with optional HV multiplexer
- **Modular Multiplexer** Compatible with SC6540 multiplexers
- **FailCHEK™** Confirms failure detection
- **Cal-Alert®** Tracks and alerts for calibration
- **Ramp-HI®** Reduce ramp time during DC Hipot
- **Charge-LO®** Confirms proper DUT connection
- **Autoware®3** Advanced Automation Control Software
- **Accredited Cal** Accredited calibration options available

POPULAR MEDTEST CONFIGURATIONS

OMNIA® II 8207 AND SC6540

- All-in-one testing system (Hipot, Ground Bond, Insulation Resistance, and Leakage Current)
- Built in 500 VA AC power source
- Efficient use of rack space
- SC6540 provides automated multi-point testing
  Most common applications incorporate 8 or 16 port multiplexers

OMNIA® II 8206, SC6540 AND POWERED BY AN apt AC POWER SOURCE

- All-in-one testing system (Hipot, Ground Bond, Insulation Resistance, and Leakage Current)
- Compatible APT power source provides power to DUT*
  Available power ratings: 500 VA – 4 kVA
- SC6540 provides automated multi-point testing.
  Most common applications incorporate 8 or 16 port multiplexers

*Choose from APT 8500 Series.

OMNIA® II 8204, 620L, SC6540 AND POWERED BY AN apt AC POWER SOURCE

- All-in-one testing system (Hipot, Ground Bond, Insulation Resistance, and Leakage Current)
- Compatible APT power source provides power to DUT*
  Available power ratings: 500 VA – 4 kVA
- SC6540 provides automated multi-point testing
  Most common applications incorporate 8 or 16 port multiplexers
- Up to 40 A continuous current capability for applications that draw greater than 16 A of current

*Choose from APT 8500 Series.

LINE CONDITIONS	
Reverse Power Switch	Switch for power polarity reversal
Neutral Switch	Neutral switch on/off selection for single fault
Ground Switch	Ground switch on/off selection for class I single fault

PROBE SETTINGS	
Surface to Surface	(PH – PL)
Surface to Line	(PH – L)
Ground to Line	(G – L)

LEAKAGE LIMIT SETTINGS		
Touch Current High/Low Limit (rms)	Range: Resolution:	0.0 µA – 999.9 µA / 1,000 µA – 9,999 µA / 10.00 mA – 20.00 mA 0.1 µA / 1 µA / 0.01 mA
Touch Current High/Low Limit (Peak)	Range: Resolution:	0.0 µA -999.9 µA / 1,000 uA – 9,999 µA / 10.00 mA – 30.00 mA 0.1 µA / 1 µA / 0.01 mA

MEASURING DEVICE MODULE	
MD1	UL544NP, UL484 , UL923, UL471, UL867, UL697
MD2	UL544P
MD3	IEC 60601-1
MD4	UL1563
MD5	IEC60990 Fig4 U2, IEC60950-1, IEC60335-1, IEC60598-1,IEC60065, IEC61010
MD6	IEC60990 Fig5 U3, IEC60598-1
MD7	IEC60950, IEC61010-1 FigA.2 (2 kohm) for Run function
External MD	Basic measuring element 1 kohm
MD Voltage Limit	70 VDC

DUT POWER		
AC Voltage	0.0 – 277.0 V	
AC Current	40 A max continuous	
AC Voltage High/Low Limit	Range: Resolution:	0.0 – 277.0 V 0.1 V/step
AC Voltage Display	Range: Resolution: Accuracy:	0.0 – 277.0 V 0.1 V/step ± (1.5% of reading + 2 counts), 30.0 – 277.0 V
Delay Time Setting	Range: Resolution:	0.5 – 999.9 sec 0.1 sec
Dwell Time Setting	Range: Resolution: Accuracy:	0, 0.5 – 999.9 sec (0=Continuous) 0.1 sec ± (0.1% of reading + 0.05 seconds)
Failure Protection	On Start-Up – Neutral Voltage Check (Neutral – V) Over current and ground current check (Line – OC)	

DIELECTRIC WITHSTAND TEST MODE			
Output Rating*	5 kV @ 50 mAAC 6 kV @ 20 mADC		
Voltage Setting	Range: Resolution: Accuracy:	0 – 5,000 VAC, 0 – 6,000 VDC 1 V ± (2% of setting + 5 V)	
HI and LO-Limit	**AC Total**	Range: Resolution: Accuracy:	0.000-9.999 mA 0.001 mA ± (2% of setting + 2 counts)
		Range: Resolution: Accuracy:	10.00 – 50.00 mA 0.01 mA ± (2% of Setting + 2 counts)
	AC Real	Range: Resolution: Accuracy:	0.000 – 9.999 mA 0.001 mA ± (3% of setting + 50 µA)
		Range: Resolution: Accuracy:	10.00 – 50.00 mA 0.01 mA ± (3% of setting + 50 µA)
	DC	Range: Resolution: Accuracy:	0.00 – 999.9 µA 0.1 µA ± (2% of setting + 2 counts)
		Range: Resolution: Accuracy:	1,000 – 20,000 µA 1 µA ± (2% of setting + 2 counts)
Ramp HI	> 20 mA peak maximum, ON/OFF selectable		
Charge LO	Range:	0.000 – 350.0 µA or Auto Set	
DC Output Ripple	≤ 4% Ripple rms at 5 kVDC @ 20 mA, Resistive Load		
Discharge Timer	< 50 msec for no load, < 100 msec for capacitor load (All capacitance values in MAX load spec below)		
Maximum Capacitive Load	1 µF < 1 kV 0.75 µF < 2 kV 0.50 µF < 3 kV	0.08 µF < 4 kV 0.04 µF < 6 kV	
Output Frequency	50/60 Hz ± 0.1% , User Selection, 400/800 Hz Option		
AC Output Waveform	Sine Wave, Crest Factor = 1.3 – 1.5		
Output Regulation	± (1% of output + 5 V) from no load to full load and over input voltage range		
Dwell Timer	AC 0, 0.4 – 999.9 sec (0=Continuous) DC 0, 0.3 – 999.9 sec (0=Continuous)		
Ramp Timer	Ramp-Up AC: 0.1 – 999.9 Ramp-Down AC: 0.0-999.9 Ramp-Up DC: 0.4 – 999.9 Ramp-Down DC: 0.0, 1.0-999.9		
Ground Continuity	Current: DC 0.1 A ± 0.01 A, fixed Max. Ground Resistance: 1 Ω ± 0.1 Ω, fixed		
Ground Fault Interrupt	GFI Trip Current: 5.0 mA max HV Shut Down Speed: < 1 ms		

*Output voltage limited to 3.5 kV with 620L option 03

CONTINUITY TEST MODE		
Output Current	DC 0.1 A ± 0.00001 A	
Resistance Display	Range:	0.00 – 10,000.00 Ω
HI and LO-Limit	0.00 – 10,000 Ω	
Dwell Timer	Range:	0.0, 0.3 – 999.9 sec (0=Continuous)
Milliohm Offset	Range:	0.00 – 10.00 Ω

GROUND BOND TEST MODE		
Output Voltage	Range:	3.00 – 8.00 VAC
Output Frequency	50/60 Hz ± 0.1%, User Selection	
Output Current	Range: Resolution: Accuracy:	1.00 – 40.00 A 0.01 A ± (2 % of setting + 2 counts)
Output Regulation	± (1% of output + 0.02 A) Within maximum load limits, and over input voltage range	
Maximum Loading	1.00 – 10.00 A, 0 – 600 mΩ 10.01 – 30.00 A, 0 – 200 mΩ 30.01 – 40.00 A, 0 – 150 mΩ	
HI and LO-Limit	Range:	0 – 150 for 30.01 – 40.00 A
	Range:	0 – 200 for 10.01 – 30.00 A
	Range:	0 – 600 for 6.00 – 10.00 A
	Range:	0 – 600 for 5.99 – 1.00 A
	Resolution:	1 mΩ
	Accuracy:	6.00 – 40.00 A, ± (2% of setting + 2 Counts) 1.00 – 5.99 A, ± (3% of setting + 3 Counts)
Milliohm Offset	Range:	0 – 200 mΩ

INSULATION RESISTANCE TEST MODE		
Output Voltage	Range:	30 – 1,000 VDC
Charging Current	Maximum > 20 mA peak	
HI and LO-Limit	Range: Resolution:	0.05-99.99 MΩ 0.01 MΩ
	Range: Resolution:	100.0 – 999.9 MΩ 0.1 MΩ
	Range: Resolution:	1000 – 50,000 MΩ 1 MΩ
Charge-LO	0.000 – 3.500 µA or Auto Set	
Ramp Timer	Ramp Up: Ramp Down:	0.1 – 999.9 secs 0.0, 1.0 – 999.9 secs
Dwell Timer	0, 0.5 – 999.9 (0=Continuous)	
Delay Timer	0.5 – 999.9 secs	
Ground Fault Interrupt	GFI Trip Current: 5.0 mA max HV Shut down Speed: < 1 ms	

GENERAL SPECIFICATIONS	
Interface	Standard: USB, RS-232 Optional: Ethernet, GPIB
Safety	Built-in SmartGFI® circuit
Memory	620L: 50 memories, 30 steps per memory OMNIA® II: 10,000 steps

AC POWER SOURCE	
AC Power Source	Up-to 4 kVA compatible power sources available
Configuration	AC Power Source configuration depends on application. MedTEST hardware is configured for testing products with one side of the supply mains at earth potential (Fig 10 UL60601-1). MedTEST hardware is configured for unbalanced 0-277 V DUT input power. Custom Configurations available. Contact us for details.

Why We Use Counts
Associated Research publishes some specifications using "counts" which allows us to provide a better indication of the instrument's capabilities across measurement ranges. A count refers to the lowest resolution of the display for a given measurement range. For example, if the resolution for voltage is 1V then 2 counts = 2 V.

Specifications subject to change without notice.

SYSTEMS

Production Line Electrical Safety Compliance in a Convenient Stackable or Rackable Configuration

Interconnect our Hypot® Series Hipot Instrument with our HYAMP® Series Ground Bond instrument to form a complete safety compliance system. Easily operate both instruments from a single point of control on the production line or in a rack. All test systems are safety agency listed, include interconnect cables, and detailed directions on effortlessly interconnecting your system.

	Hypot® 3805	**Hypot® 3865**	**Hypot® 3870**
	AC Hipot	AC Hipot, DC Hipot	AC Hipot, DC Hipot, Insulation Resistance
HYAMP® 3240 40A Ground Bond	System 32-05	System 32-65	System 32-70

APPLICATIONS CONSULTING
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A web-based learning program. Choose from 2 packages; our Consulting on Demand or Customized Digital Package.

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1-4 day on-site, hands-on training for your production line or R&D lab.

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WE WILL HELP MAKE SURE YOUR SYSTEM IS SAFE AND EFFECTIVE

Boost Productivity with our Automation & Data Capturing Software

Compatible with OMNIA® II, HypotULTRA®, LINECHEK® II & SC6540

Discover the benefits of Autoware®3 by taking it for a test drive with our FREE 30 DAY TRIAL
Visit arisafety.com/autoware3 to download today!

Barcode Capability

Increase production throughput by incorporating a barcode scan. Autoware®3 fully supports direct barcode connection which enables the user to scan model and serial numbers that can be recorded in a data file.

BatchTEST®

Shave minutes off your test routines by testing multiple DUT's simultaneously. Combined with a multiplexer, our BatchTEST® feature performs AC/DC Hipot, Continuity and Insulation Resistance tests on a batch of DUT'S in a convenient 1-step test.

FEATURES AND BENEFITS

Comprehensive Data Capture Improve tractability and customize test results from multiple workstations anywhere on your network.

DualCHEK® Print Report Functionality Print Report will show both Ground Bond and ACW/DCW results when DualCHEK® is performed.

Source Code Available Customize Autoware® 3 to fit your needs.

WithStand™

Record, track and store your data with our brand new software as a service.

Compatible with Hypot®
& HypotULTRA®

- Unlimited Users
- Remote Instrument Connection
- Intuitive User Interface
- Immediate Cloud Storage

The platform's interface introduces an intuitive user experience making it easy to setup, run tests and view your reports.

Cloud storage ensures that your tests and data will never be lost or altered – all information is stored immediately to the cloud for access at any time.

Try it out for yourself with a free 30-day trial withstand.ikonixusa.com/auth/signup/create

ESSENTIAL WORKSTATION ACCESSORIES

Test Verification Box TVB-2

The TVB-2 is a go/no-go daily test verification box designed to ensure that the failure detectors of an Associated Research electrical safety testing instrument are functioning properly. We designed the TVB-2 to verify Hipot, Insulation Resistance, Ground Bond, and Ground Continuity test functionality. If you perform daily verifications on your testing equipment, then the TVB-2 is an ideal solution. An accessory cord is available to customers who prefer to verify their test instrument using an adapter box.

TVB-2 Accessory Cord 39514

Accessory line cord for the TVB-2 allows convenient connection to a standard adapter box.

Leakage Current Verification Box LVB-2

Verify the failure detectors of your Associated Research Leakage Current Test instrument are functioning properly with this go/no-go load box.

Red/Green Signal Tower Light 39560

Gives an indication as to the status of the testing area. A green light indicates the Hipot instrument is not outputting high voltage and the test area is safe. A red light indicates that the Hipot instrument is active and to stay clear of the test area.

Magnetic Hipot Return Cable CBLSR-05M

Magnetic Ground Bond Return Cable CBLHR-05M

2 Wire 40A Ground Bond Probe 38539

4 Wire 40A Ground Bond Probe 38538

High Voltage Pistol Probe with Switch 38814

High Voltage Probe 38081

Return Probe 38082

Insulation Mat 39539

Dimensions
36" x 36" (914.4 x 914.4mm)

High Voltage Warning Sign 39538

DUT Enclosure Wood Frame with Foam Interior 39067

Protect your operator from electric shock by enclosing your DUT. Our enclosures automatically disable the instrument's output when the enclosure door is opened. Our DUT Enclosures are designed to protect the operator from electric shock during testing. Interface an enclosure with our Remote Safety Interlock feature to automatically disable the instrument's output when the enclosure door is opened.

Outside dimensions (W x D x H): 24" x 19" x 11.5" (610 x 483 x 293 mm)
Inside dimensions (W x D x H):20" x 16" x 10" (508 x 407 x 254 mm)
3/4" Walls, 3/4" Flame Retardant Foam, 1/4" Plexiglass cover

Dual Palm Remote Switch DPR-01

Prevent your operator from touching a DUT as their hands must stay on the test switches to continue to run a test.

CE

Remote Test Box w/LED Indicators RTB-02

Helps maintain a safe distance between the operator and test instrument when starting and restarting a test. Compatible with all models except SC36540.

E-Stop ESTOP

Immediately stop the flow of electric current to your instrument when the E-Stop is triggered. The E-Stop provides the safest and fastest way for a rescuer to save an operator from injury.

COMMON SAFETY STANDARD REFERENCE CHART

Standard/ Harmonized Standard	Testing Type	Dielectric Withstand			Ground Bond/Continuity			
		Test Voltage	Max I.	Test Time	Test Current	V Limit	Max. R	Test Time
IEC/UL 60601-1 3rd Edition Medical Electrical Equipment	Performance	500 – 4000 VAC or 707 – 5656 VDC	No Breakdown	60 s	10-25 A	≤ 6 V	≤ 0.1 Ω	5 s
	Production*	1000 – 3000 VAC		1 or 60 s	10-25 A	≤ 6 V	≤ 0.1 Ω	5 s
IEC 61730-2 UL 1703 Photovoltaic Modules & Panels	Performance	1000 VAC + 2 x rated V or 2000 VAC + 4 x rated V	50 uA	60 s	2.5 x Max Over Current Protection	≤ 12 V	≤ 0.1 Ω	120 s
	Production	1000 VAC + 2 x rated V or (1000 VDC + 2 x rated V) X 120%	50 uA	1 or 60 s	Continuity			
IEC 60335-1 Household Electrical Appliances	Performance	500 – 2400 VAC x rated V + 2400 VAC	No Breakdown	60 s	≥ 10 A	≤ 12 V	0.1 – 0.2 Ω	≤ 120 s
	Production	400 – 2500 VAC	5-30 mA	1 s	≥ 10 A	≤ 12 V	0.1 – 0.2 Ω	No time specified
UL 60335-1 Household Electrical Appliances	Performance	500V – 2400 VAC x rated V + 2400 VAC	No Breakdown	60 s	40 A	≤ 6.5 V	≤ 0.5 Ω	120 s
	Production	400 – 2500 VAC	5-30 mA	1 s	40 A	≤ 12 V	0.1 – 0.2 Ω	No time specified
IEC 60598-1 Luminaires	Performance	500 – 4 x rated V + 2000 VAC	No Breakdown	60 s	≥ 10 A	≤ 12 V	≤ 0.5 Ω	60 s
	Production	Not Specified – Responsibility of Manufacturer						
UL 1598 Luminaires	Performance	1000 VAC – 1000 VAC x 2 x rated V	No Breakdown	60 s	30 A	≤ 4 V	≤ 0.1 Ω	120 s
	Production	1200 VAC		1 s	Continuity		≤ 0.1 Ω	Continuity
IEC/UL 61010-1 & CSA 22.2 No. 61010-1 Laboratory Control Test & Measurement Equipment	Performance	840 – 11940 VAC or 1200 – 7500 VDC	No Breakdown	5 – 60 s	25 or 30 A	≤ 10 V or ≤ 12 V	≤ 0.1 Ω or < 4 V 0.133 Ω	60 or 120 s
	Production			5 s max ramp up 2 s dwell	Continuity			
EN 60204-1 Electrical Equipment of Machines	Performance	2 x rated V or 1000 VAC	No Breakdown	1 s	0.2 – 10 A	≤ 24 V	Refer to Section 18.2.2	No time specified
	Production	Not Specified – Responsibility of Manufacturer						
UL 2202 Electric Vehicle Charging System Equipment	Performance	500 VAC or 1000 VAC + 2 x rated V	No Breakdown	60 s	≤ 60 A	≤ 12 V	Continuity	120 – 240 s
	Production	1000 – 1700 VAC + 3.4 x rated V		60 or 1 s	Continuity			
IEC 61851-1 Electric Vehicle Conductive Charging System	Performance	1200 VAC + rated V or DC Equivalent	No Breakdown	60 s	Continuity			
	Production	Not Specified – Responsibility of Manufacturer						
UL 45A Portable Electrical Appliances	Performance	1000 VAC + 2 x rated V or DC equivalent	No Breakdown	60 s	Continuity			
	Production	1000 – 3000 VAC		1 s	Continuity			
EN 60950-1 EN 50116 Information Technology Equipment	Performance	1000 – 3000 VAC or 1414 – 4242 VDC	No Breakdown	120 s	30 A	≤ 12 V	≤ 0.1 Ω	60 s
	Production			1 – 4 s	25 A	≤ 12 V	≤ 0.1 Ω	1-4 s
UL 60950-1 CSA 22.2 No. 60950-1 & IEC 62368-1 Audi/Video, Information & Communication Technology Equipment	Performance	1000 – 3000 VAC or 1414 – 4242 VDC	No Breakdown	60 s	≤ 40 A	≤ 12 V	≤ 0.1 Ω	60 s
	Production			1 – 6 s	Continuity			

*As a result of performing risk analysis, many medical device manufacturers are performing leakage tests as part of 100% production line testing.

Earth Leakage		Insulation Resistance			Suggested Model	Testing Type	Standard/ Harmonized Standard
Test Voltage	Max I.	Test Time	V Limit	Min. R	AR Instrument		
110% x rated V	5-10 mA		N/A		8206, 8207, 8256, 8257 or MedTEST	Performance	IEC/UL 60601-1 3rd Edition Medical Electrical Equipment
110% x rated V	5-10 mA		N/A		7804 or 7854	Production*	
Max rated V	10 uA – 1 mA	10 uA – 1 mA	500 VDC or Max rated V	40-400 MΩ	3240, 8206, 8207, 8256, 8257 or MedTEST	Performance	IEC 61730-2 UL 1703 Photovoltaic Modules & Panels
N/A			N/A		3240, 3870 or 7850	Production	
1.06 x rated V	0.25 – 5.0 uA		N/A		8256 or 8257	Performance	IEC 60335-1 Household Electrical Appliances
N/A			N/A		7804	Production	
1.06 x rated V	0.25 – 5.0 uA		N/A		8256 or 8257	Performance	UL 60335-1 Household Electrical Appliances
N/A			N/A		7804	Production	
Rated V	0.5 – 10 mA	60 s	500 VDC	1-4 MΩ	8206, 8207, 8256 or 8257	Performance	IEC 60598-1 Luminaires
Not Specified – Responsibility of Manufacturer					Hypot® or 7850	Production	
N/A		No time specified	500 VDC	≥ 2 MΩ	7804 or 7854	Performance	UL 1598 Luminaires
N/A			N/A		Hypot® or 7850	Production	
< 300 V	0.5 mA		N/A		8256, 8257 or MedTEST	Performance	IEC/UL 61010-1 & CSA 22.2 No. 61010-1 Laboratory Control Test & Measurement Equipment
N/A			N/A		3865 or 7850	Production	
N/A		No time specified	500 V	≥ 1 MΩ	7804 or 7854	Performance	EN 60204-1 Electrical Equipment of Machines
Not Specified – Responsibility of Manufacturer					Hypot® or 7850	Production	
Rated V	0.5 – 0.75 mA or 5 mA		N/A		8206, 8207, 8256, 8257 or MedTEST	Performance	UL 2202 Electric Vehicle Charging System Equipment
N/A			N/A		Hypot® or 7850	Production	
Touch Current Only		60 s	500 V	≥ 1 MΩ or ≥ 7 MΩ	8206, 8207, 8256, 8257 or MedTEST	Performance	IEC 61851-1 Electric Vehicle Conductive Charging System
Not Specified – Responsibility of Manufacturer					Hypot® or 7850	Production	
< 300 V	0.5 – 3.5 mA	60 s	500 V	≥ 50 KΩ	8206, 8207, 8256, 8257 or MedTEST	Performance	UL 45A Portable Electrical Appliances
N/A			N/A		Hypot® or 7850	Production	
< 300 V	0.25 – 3.5 mA	60 s	500 V	≥ 2 MΩ	8206, 8207, 8256, 8257 or MedTEST	Performance	EN 60950-1 EN 50116 Information Technology Equipment
N/A			N/A		7804 or 7854	Production	
< 300 V	0.25 – 3.5 mA	60 s	500 V	≥ 2 MΩ	8206, 8207, 8256, 8257 or MedTEST	Performance	UL 60950-1 CSA 22.2 No. 60950-1 & IEC 62368-1 Audi/Video, Information & Communication Technology Equipment
N/A			N/A		Hypot® or 7850	Production	

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