



HYPOTULTRA® III

Fully-Automated Dielectric Withstand Analyzer

HypotULTRA®III is a multi-function dielectric analyzer with an enhanced graphic LCD. It features two testers: the 7620 AC Hipot tester and the 7650 AC/DC/IR tester. Both testers include an optional 4-port or 8-port built-in scanner. An additional external modular scanner is available for use with both testers. All testers come standard with RS-232 and USB interfaces. Ethernet, GPIB, and RS-485 interfaces are also available.

Model 7620 - 5 KV AC Hipot Tester. Internal 4 or 8 Port Scanning Matrix available

Model 7650 - 5 KV AC Hipot Tester, 5 KV DC Hipot Tester & Insulation Resistance Tester. Internal 4 or 8 Port Scanning Matrix available

Features and Benefits

- Patented SmartGFI® safety circuit protects the operator from shock hazards
- Patented VERI-CHEK® feature prompts the users through steps to validate the instrument's operation
- Patented Prompt and Hold function provides a unique method for performing multiple steps during a test cycle
- Patented CAL-ALERT® alerts the operator when the HypotULTRA III is due for re-calibration
- RAMP HI and CHARGE LO for more effective DC Hipot testing
- Two Continuity Test modes allow for simultaneous continuity tests during Hipot testing as well as point-to-point continuity testing
- RS-232/USB, GPIB, Ethernet, or RS-485 automation interfaces available
- Data Storage card available for storing and transferring test data without a connection to a PC
- Graphic LCD and intuitive menu system to simplify the entire testing process from set-up to results
- 50 memories with 30 steps per memory that can be stored and recalled in any alphanumeric combination
- Real current measurement allows operators to monitor total and real current on a single screen
- Advanced functionality available with an optional 4 or 8 port internal scanner
- Autaware Testing Software available for complete Automation Control

U.S. Patents: 6,054,865 - 5,828,222 - 5,936,419.
Other patents pending.



Safety agency listed.

Input Specifications

Voltage	115 / 230 VAC ± 10%, Automatically Selected
Frequency	50/60 Hz ± 5%
Fuse	4 Amp 250V Slo-Blo

Dielectric Withstand Test Mode

Output Rating	5 KV @ 30 mA AC 5 KV @ 10 mA DC for 7650 only
Output Adjustment	Range: 0 – 5000V AC 0 – 5000V DC for 7650 only Resolution: 1 Volt Accuracy: ± (2% of setting + 5 volts) (Can be adjusted during operation. Disabled when key lockout is active.)
Ramp-HI	12mA peak maximum, ON/OFF selectable
Charge-LO	Range: 0.0 - 350.0 µA DC or Auto set
Maximum & Minimum Limits	AC Total Range 1: 0.000 – 9.999 mA Resolution: 0.001 mA Range 2: 10.00 – 30.00 mA Resolution: 0.01 mA Accuracy: ± (2% of setting + 2 counts) AC Real Range 1: 0.000 – 9.999 mA Resolution: 0.001 mA Range 2: 10.00 – 30.00 mA Resolution: 0.01 mA Accuracy: (3% of setting + 0.05 mA) All Ranges PF > 0.1 V > 250 VAC DC Range 1: 0.0 – 999.9 µA for 7650 only Resolution: 0.1 µA Range 2: 1000 – 10000 µA for 7650 only Resolution: 1 µA Accuracy: ± (2% of setting + 2 counts)
Arc Detection	Range: 1 - 9
Voltage Display	Range: 0.00 - 5.00 KV Full Scale Resolution: 10 Volts Accuracy: ± (2% of setting + 2 counts)
Current Display	Auto Range AC Total Range 1: 0.000 mA – 3.500 mA Resolution: 0.001 mA Range 2: 3.00 – 30.00 mA Resolution: 0.01 mA Accuracy: ± (2% of reading + 2 counts) AC Real Range : 0.000 mA – 30.00 mA Resolution: 0.001 mA or 0.01 mA Accuracy: ± (3% of reading + 0.05 mA) All Ranges PF > 0.1 V > 250 VAC

Dielectric Withstand Test Mode (continued)

Current Display	DC Range 1: 0.0 µA – 350.0 µA for 7650 only Resolution: 0.1 µA Range 2: 0.300 mA – 3.500 mA for 7650 only Resolution: 0.001mA Range 3: 3.00 mA – 9.99 mA for 7650 only Resolution: 0.01 mA Accuracy: ± (2% of reading + 2 counts)
DC Output Ripple	≤ 4% Ripple RMS at 5 KV DC @ 10 mA, Resistive Load
Discharge Time	≤ 200 ms
Maximum Capacitive Load in DC Mode	1µF----< 1KV 0.08µF----< 4KV 0.75µF----< 2KV 0.04µF----< 5KV 0.5µF----< 3KV
AC Output Wave Form	Sine Wave, Crest Factor = 1.3 - 1.5
Output Frequency	Range: 60 or 50 Hz, User Selection Accuracy: ± 0.1%
Output Regulation	± (1 % of output + 5 V) From no load to full load and over input voltage range
Dwell Timer	Range: 0.0, 0.4 - 999.9 sec (0 = Continuous)
Ramp Timer	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
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: 450 µA max (AC or DC) HV Shut Down Speed: < 1 ms

Insulation Resistance Test Mode (Model 7650 Only)

Output Voltage	Range: 50 - 1000 Volts DC Resolution: 1 Volt Accuracy: ± (2% of reading + 2 counts)
Short Circuit Current	Maximum: 12 mA peak
Voltage Display	Range: 0 – 1000 V Resolution: 1 Volt Accuracy: ± (2% of reading + 2 counts)

Insulation Resistance Test Mode Model 7650 Only (continued)

Resistance Display	Range:	0.05 MΩ - 50000 MΩ (5 Digit, Auto Ranging)	
	Resolution:	500 VDC	1000 VDC
		MΩ	MΩ
		0.001	0.050 - 9.999
		0.01	1.00 - 99.99
		0.1	10.0 - 999.9
		1	100 - 50000
	Accuracy:	50 - 499 V	
		0.05 MΩ - 999.9 MΩ	
		± (7% of reading + 2 counts)	
		500 - 1000 V	
		0.10 MΩ - 999.9 MΩ	
		± (2% of reading + 2 counts)	
		1000 MΩ - 9999 MΩ	
		± (5% of reading + 2 counts)	
		10000 MΩ - 50000 MΩ	
		± (15% of reading + 2 counts)	
Charge-LO	Range:	0.000 - 3.500 μA or Auto Set	
Maximum and Minimum Limits	Range:	0.0, 0.05 MΩ - 99.99 MΩ	
	Resolution:	0.01 MΩ	
	Range:	100.0 MΩ - 999.9 MΩ	
	Resolution:	0.1 MΩ	
	Range:	1000 MΩ - 50000 MΩ	
	Resolution:	1 MΩ	
	(Max Limit: 0 = OFF)		
	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	
Delay Timer	Range:	0.0, 1.0 - 999.9 sec 0 = Continuous	
Ground Fault Interrupt	GFI Trip Current:	450 μA max	
HV Shut Down Speed:		< 1 ms	

Continuity Test Mode (continued)

Maximum and Minimum Limits	Range 1:	0.00 - 99.99 Ω
	Resolution:	0.01 Ω
	Accuracy:	± (1% of setting+0.05 Ω)
	Range 2:	100.0 - 999.9 Ω
	Resolution:	0.1 Ω
	Accuracy:	± (1% of setting+0.2 Ω)
	Range 3:	1000 - 2000 Ω
	Resolution:	1 Ω
	Accuracy:	± (1% of setting+2 Ω)
	(Max Limit: 0 = OFF)	
Dwell Timer	Range:	0.0, 0.3 - 999.9 sec (0 = Continuous)
Milliohm Offset	Range:	0.00 - 10.00 Ω

General Specifications

Mechanical	Bench or rack mount (2U height) with tilt up front feet
Dimensions:	(w x h x d) 16.92 x 3.50 x 15.75 in (430 x 89 x 400 mm)
Weight	31.38 Lbs (14.23 kgs) variable with options
Interface	Standard RS-232/USB Optional Ethernet, GPIB, Data Storage (RS-485) or Printer Port with Date and Time Stamp
Memory	50 memories, 30 steps/memory

Specifications subject to change without notice.

Continuity Test Mode

Output Current	DC 0.1 A ± 0.01 A Total Resistance*: 0.00-33.0 Ω
	DC 0.01 A ± 0.001 A Total Resistance*: 31.0-330 Ω
	DC 0.001 A ± 0.0001 A Total Resistance*: 310-2000 Ω
Resistance Display	Range 1: 0.00 - 19.99 Ω
	Resolution: 0.01 Ω
	Accuracy: ± (1 % of reading + 0.05 Ω)
	Range 2: 20.0 - 199.9 Ω
	Resolution: 0.1 Ω
	Accuracy: ± (1 % of reading + 0.2 Ω)
	Range 3: 200 - 2000 Ω
	Resolution: 1 Ω
	Accuracy: ± (1 % of reading + 2 Ω)

*Total Resistance of Test Leads, Fixture and DUT.

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