MedTEST

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

Our MedTEST system can be designed to provide 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 – 6 kVA
- SC6540 provides automated multi-point testing.
  Most common applications incorporate 8 or 16 port multiplexers

*Choose from APT 300XAC, 7000 or 6000 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 – 6 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 300XAC, 7000 or 6000 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.