3. Specifications and Controls

3.1. Omnia Functional Specifications

INPUT	
Voltage	115 / 230V selectable, ± 10 % variation
Frequency	50/60 Hz ± 5%
Fuse	115 VAC, 230VAC – 6.3A Slow-Blo 250VAC
DIELECTRIC WITHSTAND TEST MODE	
Output Rating	5KV @ 40mA AC 5KV @ 20 mA DC
Voltage Setting	Range: 0–5000V AC 0–5000V DC Resolution: 1 V Accuracy: ± (2% of setting + 5 volts)
Voltage Display	Range: 0.00 – 5.00KV Full Scale Resolution: 0.01 KV Accuracy: ± (2% of reading + 10 V)
Ramp-HI DC	>20 mA peak maximum, ON/OFF Selectable
Charge-LO DC	Range: 0.0 – 350.0 µA DC or Auto set
HI and LO-Limit AC Total AC Real DC	 Range: 0.000 – 9.999mA Resolution: 0.001mA Range: 10.00 – 40.00mA Resolution: 0.01mA Accuracy: ± (2% of setting + 2 counts) Range: 0.000 – 9.999mA Resolution: 0.001mA Range: 10.00 – 40.00mA Resolution: 0.01mA Accuracy: ± (3% of setting + 50 µA) Range: 0.0 – 999.9µA Resolution: 0.1µA Range: 1000 – 20000µA Resolution: 1µA Accuracy: ± (2% of setting + 2 counts)
Arc Detection	Range: 1 – 9
Ground Continuity	Current : DC 0.1 A ± 0.01A, fixed Max. ground resistance : 1 Ω ± 0.1Ω, fixed
Ground Fault Interrupt	GFI Trip Current: 450 µA max (AC or DC) HV Shut Down Speed: < 1mS

DIELECTRIC WITHSTAND TEST MODE (cont.)			
Current Display	Auto Range		
AC Total	Range 1:	0.000 mA – 3.500 mA	
	Resolution:	0.001 mA	
	Range 2	3.00 mA – 40.00 mA	
	Resolution:	0.01 mA	
	Accuracy:	± (2% of reading + 2 counts) All Ranges	
AC Real	Range 1:	0.000 mA – 9.999 mA	
	Resolution:	0.001 mA	
	Range 2:	10.00 mA – 40.00 mA	
	Resolution:	0.01 mA	
	Accuracy:	± (3% of reading + 50µA) All Ranges	
		PF > 0.1	
		V > 250VAC	
DC	Range 1:	0.0 µA – 350.0 µA	
	Resolution:	0.1 µA	
	Range 2	0.300 mA –3.500 mA	
	Resolution:	0.001 mA	
	Range 3	3.00 mA – 20.00 mA	
	Resolution:	0.01 mA	
	Accuracy:	± (2% of reading + 2 counts) All Ranges	
DC Output Ripple	≤ 4% Ripple RMS at 5 KV DC @ 20mA, Resistive Load		
Discharge Time	≤ 200 ms		
Maximum Capacitive Load DC Mode	1uF < 1KV 0.75uF < 2KV 0.5uF < 3KV	0.08uF < 4KV 0.04uF < 5KV	
AC Output Waveform	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:	AC 0.4 –999.9 sec (0 = Continuous)	
	Range:	DC 0.3 –999.9 sec (0 = Continuous)	
	Resolution:	0.1 sec	
	Accuracy:	± (0.1% + 0.05 sec)	
Ramp Timer	Range:	Ramp-Up:	AC 0.1 – 999.9 sec
			DC 0.4 – 999.9 sec
		Ramp-Down:	AC 0.0 – 999.9 sec
			DC 0.0 , 1.0 – 999.9 sec
	Resolution:	0.1 sec	
	Accuracy:	± (0.1% + 0.05 sec)	

INSULATION RESISTANCE TEST MODE			
Voltage Setting	Range: 50 – 1000 VDC Resolution: 1 V Accuracy: ± (2% of setting + 2 counts)		
Charging Current	Maximum >20mA peak		
Voltage Display	Range: 0 – 1000 V Resolution: 1 V Accuracy: ± (2% of reading + 2 counts)		
Resistance Display	Range: 0.05MΩ – 50000 MΩ (4 Digit, Auto Ranging)		
	Resolution:	50 – 499 VDC	500 – 1000VDC
	MΩ	MΩ	MΩ
	0.001	0.050 – 1.999	0.050 – 9.999
	0.01	2.00 – 19.99	10.00 – 99.99
	0.1	20.0 – 199.9	100.0 – 999.9
	1	200 – 50000	1000 – 50000
	Accuracy: 50 – 499V 0.05M – 999.9M, ± (7% of reading +2 counts) 500 – 1000V 0.05M – 999.9M, ± (2% of reading +2 counts) 1000M – 9999M ± (5% of reading +2 counts) 10000M – 50000M, ± (15% of reading +2 counts)		
Charge-LO	Range: 0.000 – 3.500µA or Auto Set		
HI and LO–Limit	Range: 0.05M – 99.99MΩ Resolution: 0.01M Range: 100.0M – 999.9M Resolution: 0.1M Range: 1000M – 50000M Resolution: 1M (HI – 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 Resolution: 0.1 sec Accuracy: ± (0.1% + 0.05 sec)		
Delay Timer	Range: 1.0 – 999.9 sec (0 = Continuous) Resolution: 0.1 sec Accuracy: ± (0.1% + 0.05 sec)		
Ground Fault Interrupt	GFI Trip Current: 450 µA max (AC or DC) HV Shut Down Speed: < 1mS		

GROUND BOND TEST MODE	
Output Voltage (Open Circuit Limit)	Range: 3.00 – 8.00 VAC Resolution: 0.01 V Accuracy: ± (2 % of setting + 0.03V) O.C. Condition
Output Frequency	Range: 60 or 50 Hz, user selectable Accuracy: ± 0.1%
Output Current	Range: 1.00 – 30.00 A Resolution: 0.01 A Accuracy: ± (2 % of setting + 0.02 A)
Output Regulation	Accuracy: ± (1% of output + 0.02A) Within maximum load limits, and over input voltage range.
Maximum Loading	1.00 – 9.99A, 0 – 600mΩ 10.00 – 30.00A, 0 – 200mΩ
Current Display	Range: 0.00 – 30.00 A Resolution: 0.01 A Accuracy: ± (3 % of setting + 0.03 A)
Resistance Display	Range: 0 – 600mΩ Accuracy: 1 – 2.99 A, ± (3 % of reading + 3 mΩ) 3 – 30 A, ± (2 % of reading + 2 mΩ) Resolution: 1 mΩ
HI-Limit	Range: 1.00 – 9.99A, 0 – 600mΩ 10.00 – 30.00A, 0 – 200mΩ Accuracy: 1 – 2.99 A, ± (3 % of reading + 3 mΩ) 3 – 30 A, ± (2 % of reading + 2 mΩ) Resolution: 1 mΩ
LO-Limit	Range: 1.00 – 9.99A, 0 – 600mΩ 10.00 – 30.00A, 0 – 200mΩ Accuracy: 1 – 2.99 A, ± (3 % of reading + 3 mΩ) 3 – 30 A, ± (2 % of reading + 2 mΩ) Resolution: 1 mΩ
Dwell Timer	Range: 0.5 – 999.9 sec (0 = Continuous) Resolution: 0.1 sec Accuracy: ± (0.1% + 0.05 sec)
Milliohm Offset	Range: 0 – 200mΩ Resolution: 1 mΩ Accuracy: ± (2 % of setting + 2 mΩ)

CONTINUITY TEST MODE	
Output Current	DC 0.1A ± 0.01A, fixed
Resistance Display	Range: 0.00 – 10.00 Ω Resolution: 0.01 Ω Accuracy: ± (3 % of reading + 0.02 Ω)
HI-Limit	Range: 0.00 – 10.00 Ω (0 = OFF) Resolution: 0.01 Ω Accuracy: ± (3% of setting + 0.02 Ω)
LO-Limit	Range: 0.00 – 10.00 Ω Resolution: 0.01 Ω Accuracy: ± (3% of setting + 0.02 Ω)
Dwell Timer	Range: 0.0, 0.3 – 999.9 sec (0 = Continuous) Resolution: 0.1 sec Accuracy: ± (0.1% + 0.05 sec)
Milliohm Offset	Range: 0.00 – 2.00Ω Resolution: 0.01 Ω Accuracy: ± (3 % of reading + 0.02 Ω)

GENERAL SPECIFICATIONS	
PLC Remote Control	Input: Test, Reset, Interlock, Recall File 1 through 10
	Output: Pass, Fail, Test-in-Process
Safety	Built-in Smart GFI circuit
Memory	50 memories, 30 step/memory
Interface	Standard RS-232, Optional Printer Port with Date and Time Stamp or GPIB.
Security	Programmable password lockout capability to avoid unauthorized access to test set-up program.
Graphic Display	320 X 240 Monographic LCD
LCD Contrast Setting	Range: 1 – 9; 1 is lightest character, 9 is darkest character.
Alarm Volume Setting	Range: 0 – 9; 0 = OFF, 1 is softest volume, 9 is loudest volume.
Calibration	Adjustments are made through the front panel. Automatic Calibration alert function to signal operator when calibration is due.
Mechanical	Bench or rack mount with tilt up front feet.
Dimensions	(W x H x D) 3U (430 x 133 x 400 mm) (16.93” x 5.24” x 15.75”)
Weight	23.44kgs (51.68lbs) variable with options
OPTIONS	
Scanning Matrix	8 channel high voltage and high current switching matrix

RUN TEST MODE (OMNIA 5, OMNIA 6)	
DUT POWER	
Voltage	0 – 277 VAC Single Phase Unbalanced (One Hot or Line conductor and One Neutral)
Current	15AAC max continuous
Voltage Display	Range: 0.0 – 277.0 VAC Full Scale Resolution: 0.1 V Accuracy: ± (1.5% of reading +0.2V), 30.0 – 277.0VAC
Short Circuit Protection	23 AAC, Response Time < 3s
DELAY and DWELL TIMER SETTINGS	
Delay time setting	Range: 0.2 – 999.9 seconds Resolution: 0.1 second Accuracy: ± (0.1% + 0.05 sec)
Dwell time setting	Range: 0.1 – 999.9 seconds (0 = Continuous) Resolution: 0.1 second Accuracy: ± (0.1% + 0.05 sec)
TRIP POINT SETTINGS	
Voltage: Volt-Hi Volt-LO	Range: 0.0 – 277.0 VAC Resolution: 0.1 V Accuracy: ± (1.5% of setting + 0.2 V), 30.0 – 277VAC
Current: Amp-HI Amp-LO	Range: 0.0 – 15.00 AAC Resolution: 0.01 A Accuracy: ± (2.0% of setting + 0.02A)
Watts: Watt-HI Watt-LO	Range: 0 – 4200 W Resolution: 1 W Accuracy: ± (5.0% of setting + 3W)
Power Factor: PF-HI PF-LO	Range: 0.000 – 1.000 Resolution: 0.001 Accuracy: ± (8% of setting + 2 Counts)
Leakage Current: Leak-HI Leak-LO	Range: 0.00 – 10.00 mA (0 = OFF) Resolution: 0.01 mA Accuracy: ± (2% of setting + 0.02mA) Leakage current measuring resistor MD=2KΩ ± 1%
METERING	
Voltmeter	Range: 0.0 – 277.0 VAC Resolution: 0.1 V Accuracy: ± (1.5% of reading + 0.2 V), 30.0 – 277VAC
Ammeter	Range: 0.0 – 15.00 AAC Resolution: 0.01 A Accuracy: ± (2.0% of reading + 0.02A)
Wattmeter	Range: 0 – 4200 W Resolution: 1 W Accuracy: ± (5% of reading + 3 W)

RUN TEST MODE (OMNIA 5, OMNIA 6)		
Power Factor	Range: Resolution: Accuracy:	0.000 – 1.000 0.001 ± (8% of reading + 2 Counts)
Leakage Current	Range: Resolution: Accuracy: Leakage current measuring resistor MD = 2KΩ ± 1%	0.00 – 10.00 mA 0.01 mA ± (2% of reading + 0.02 mA)
Timer display	Range: Resolution: Accuracy:	0.0 – 999.9 seconds 0.1 second ± (0.1% of reading + 0.05 seconds)

LINE LEAKAGE TEST MODE (OMNIA 6 Only)		
DUT POWER		
Voltage	0 – 277 VAC	
Current	15AAC max continuous	
Voltage Display	Range:	0.0 – 277.0 VAC Full Scale
	Resolution:	0.1 V
	Accuracy:	± (1.5% of reading +0.2V), 30.0 – 277.0VAC
Short Circuit Protection	23 AAC, Response Time <3s	
LEAKAGE CURRENT		
Current Display	Range 1:	0.0 µA – 999.9 µA
	Resolution:	0.1 µA/step
	Range 2:	1000 µA – 6000 µA
	Resolution:	1 µA/step
Accuracy	DC to 100 kHz	± (1.5% of reading + 3 counts)
	>100k to 1 MHz	± 5% of reading, (10.0 µA – 6000 µA)
Measuring Device	A	UL544 Non Patient
	B	UL544 Patient
	C	IEC601-1, UL2601, EN60601-1
	D	UL1563
	E	IEC1010, UL3101, IEC950, UL1950
MD A - D components	Accuracy:	Resistance ± 1% Capacitance ± 5%
MD E components	Accuracy:	Resistance ± 0.1% Capacitance ± 1%
MD Voltage Limit	Maximum 30V peak or 30VDC	
HI-Limit:	Range:	0 – 6000 µA
	Resolution	0.1µA
Accuracy:	Same as Leakage Current Display Accuracy	
LO-Limit:	Range:	0 – 6000 µA
	Resolution	0.1µA
Accuracy:	Same as Leakage Current Display Accuracy	
Delay Timer:	Range:	0, 1.0 – 999.9 sec (0 = Continuous)
	Resolution:	0.1 sec/step
	Accuracy:	± (0.1% + 0.05 sec)