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U.S. Patents: 6,744,259, 6,549,385, 6,515,484, 6,054,865, 6,011,398, 5,936,419, 5,828,222, 5,548,501. Other patents pending.

**OMNIA®**



Safety agency listed.

**Fully-Automated  
 Multi-Function  
 Electrical Safety  
 Compliance  
 Analyzer**

**Model 8104**

AC and DC Hipot, Insulation Resistance, Ground Bond/Continuity With Optional HV and HC Scanner

**Model 8105**

AC and DC Hipot, Insulation Resistance, Ground Bond/Continuity and Functional Run Test

**Model 8106**

AC and DC Hipot, Insulation Resistance, Ground Bond/Continuity, Functional Run Test and Line Leakage Test

**Features and Benefits**

- Patented SmartGR® safety circuit protects the operator from shock hazards
- Patented Prompt and Hold function provides a unique method for performing multiple steps during a test cycle
- True Line Leakage tester with 7 different measuring devices and RMS or PEAK leakage measurements
- Multiple interconnection capabilities provide flexibility in configuring a test system. Interconnect to Associated Research SC6540 scanning matrix, AC1000 Power Source, or 620L Line Leakage tester.
- Cold Resistance Feature for Line to Neutral Continuity Testing
- Patented CAL-ALERT® and VERI-CHEK® features help to ensure that your instrument is calibrated and stays within specs
- Data storage card available for storing and transferring test data without a connection to a PC
- Real Current measurement allows operators to monitor reactive and real current on a single screen
- 50 Memories with 30 steps per memory that can be stored and recalled in any alphanumeric combination
- Patented RAMP HI and CHARGE LO testing for more effective DC Hipot testing
- Perform Hipot/Line Leakage without changing test leads
- Patented Graphic LCD and intuitive menu system to simplify the entire testing process from set-up to results
- RS-232, GPIB, or Ethernet automation interfaces available. Use your own software, or our Autaware software



**ASSOCIATED RESEARCH, INC.®**

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1.800.858.TEST (83781)

## Input Specifications

<b>Voltage</b>	115/230 V selectable, ± 10% variation
<b>Frequency</b>	50/60 Hz ± 5%
<b>Fuse</b>	115 VAC, 230VAC – 10A Slow-Blo 250VAC

## Dielectric Withstand Test Mode

<b>Output Rating</b>	5 KV @ 40 mA AC 5 KV @ 20 mA DC 50/60 Hz user selectable
<b>HI and LO-Limit/ AC Total Current Display AC Real DC</b>	Range: 0.000 mA - 40.00 mA Range: 0.000 mA - 40.00 mA Range: 0.0 - 20,000 µA
<b>Ramp HI</b>	>20 mA peak maximum, ON/OFF selectable
<b>Charge LO</b>	Range: 0.000 - 350 µA or Auto Set
<b>DC Output Ripple</b>	4% Ripple RMS at 5 KV DC @ 20 mA, Resistive Load
<b>Discharge Time</b>	200 ms
<b>Maximum Capacitive Load DC Mode</b>	1 µF < 1 KV                      0.08 µF < 4 KV 0.75 µF < 2 KV                  0.04 µF < 5 KV 0.5 µF < 3 KV
<b>AC Output Waveform</b>	Sine Wave, Crest Factor = 1.3 - 1.5
<b>Output Regulation</b>	± (1% of output + 5 V) from no load to full load and over input voltage range.
<b>Dwell Timer</b>	Range: AC 0.4 - 999.9 sec (0 = Constant) DC 0.3 - 999.9 sec (0 = Constant)
<b>Ramp Timer</b>	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
<b>Ground Continuity</b>	Current: DC 0.1 A ± 0.01 A, fixed Max. Ground Resistance: 1 ± 0.1 Ω, fixed
<b>Ground Fault Interrupt</b>	GFI Trip Current: 450 µA max (AC or DC) HV Shut Down Speed: < 1ms

## Continuity Test Mode

<b>Output Current</b>	DC 0.1A ± 0.00001A
<b>Resistance Display/ HI and LO-Limit</b>	Range: 0.00 – 10000.00Ω
<b>Dwell Timer</b>	Range: 0.0, 0.3 - 999.9 sec (0 = Constant)
<b>Milliohm Offset</b>	Range: 0.00 – 10.00Ω

## Ground Bond Test Mode

<b>Output Voltage (Open Circuit Limit)</b>	Range: 3.00 - 8.00 VAC 50/60 Hz, user selectable
<b>Output Current</b>	Range: 1.00 - 40.00 A, Resolution: 0.01 A
<b>Output Regulation</b>	Accuracy: ± (1% of output + 0.02 A) Within maximum load limits, and over input voltage range
<b>Maximum Loading</b>	1.00 - 10.00 A,                      0 - 600 m 10.01 - 30.00A,                    0 - 200 m 30.01 - 40.00A,                    0 - 150 m
<b>Ohmmeter Display/ HI and LO Limit</b>	0 - 150 m for 30.81 - 40.80 A 0 - 200 m for 10.01 - 30.90 A 0 - 600 m for 6.50 - 10.00 A Accuracy: ± (2% of reading + 2 m) 0 - 600 m for 1.00 - 5.99 A Accuracy: ± (3% of reading + 3 m)
<b>Milliohm Offset</b>	Range: 0 - 200 µ

## Insulation Resistance Test Mode

<b>Voltage Setting</b>	Range: 50 - 1000 VAC
<b>Charging Current</b>	Maximum >20 mA peak
<b>Resistance Display/ HI and LO Limit</b>	Range: 0.05 M - 50000 M (4 Digit, Auto Ranging) Accuracy: 50 - 499 V 0.05 M - 999.9 M, ± (7% of reading +2 counts) 500 - 1000 V 0.05 M - 999.9 M, ± (2% of reading +2 counts) 1000 M - 9999 M, ± (5% of reading +2 counts) 10000 M - 50000 M, ± (15% of reading +2 counts)

<b>Charge LO</b>	Range: 0.000 - 3.500 µA or Auto Set
<b>Ramp Timer</b>	Range: Ramp-Up: 0.1 - 999.9 sec Ramp-Down: 0.0, 1.0 - 999.9 sec
<b>Delay Timer</b>	Range: 1.0 - 999.9 sec (0 = Constant)
<b>Ground Fault Interrupt</b>	GFI Trip Current: 450 µA max (AC or DC) HV Shut Down Speed: < 1 ms

## General Specifications

<b>PLC Remote Control</b>	Input: Test, Reset, Interlock, Recall 1 - 10 Output: Pass, Fail, Test-in-Process
<b>Mechanical Dimensions</b>	Bench or rack mount with tilt up front feet 3U (WxHxD) 17 x 5.8 x 20.3 in. (432 x 147 x 515 mm)
<b>Weight Interface</b>	51.68 lbs (23.44 kgs) varies with option RS-232 Standard, GPIB, Ethernet, Data Storage, Printer Port optional.
<b>Safety Memory</b>	Built-in SmartGFI circuit 50 memories, 30 step/memory

## OMNIA 8105 and 8106 Functional Run Test Mode

<b>Delay Time Setting</b>	Range: 0.2 - 999.9 seconds
<b>Dwell Time Setting</b>	Range: 0.1 - 999.9 seconds (0 = constant)

## Trip Point Settings and Metering

<b>Voltage</b> Volt-HI/Volt-LO	Range: 0.0 - 277.0 VAC
<b>Current</b> Amp-HI/Amp-LO	Range: 0.0 - 15.00 AAC
<b>Watts</b> Watt-HI/Watt-LO	Range: 0 - 4200 W
<b>Power Factor</b> PF-HI/PF-LO	Range: 0.000 - 1.000
<b>Leakage Current</b> Leak-HI/Leak-LO	Range: 0.00 - 10.00 mA (0 = OFF)
<b>Timer Display</b>	Range: 0.0 - 999.9 seconds

## OMNIA 8106 Line Leakage Test Mode (DUT Power)

<b>Voltage</b>	0 - 277 VA Single Phase Unbalanced
<b>Current</b>	15 AAC max. continuous
<b>Short Circuit Protection</b>	23 AAC, Response Time < 3 sec

## Leakage Current

<b>Current Display</b> RMS or PEAK	Range 1: 0.0 µA - 999.9 µA Range 2: 1000 µA - 6000 µA
<b>Accuracy RMS</b>	DC to 100 kHz, ± (1.5% of reading+ 3 counts) >100 k to 1 MHz ± 5% of reading, (10.0 µA - 6000 µA) DC to 1 MHz, ± (10% of reading + 2 µA)
<b>Accuracy PEAK</b>	
<b>Measuring Device</b>	A UL544 Non Patient B UL544 Patient C UL2601-1, UL60601-1, IEC601-1 IEC60601-1 EN60601-1 D UL1563 E UL1950, UL3101, UL61010, IEC950, IEC1010, IEC 60950, IEC61010, IEC60335-1, IEC60990 Fig4-U2 H IEC60990 FIG. 5 - U3 I IEC60990 FIG. 3 - U1
<b>MD A-D and H-I components</b>	Accuracy: Resistance ± 1%, Capacitance ± 5%
<b>MD E components</b>	Accuracy: Resistance ± 0.1%, Capacitance ± 1%
<b>MD Voltage Limit</b>	Maximum 30 V peak or 30 VDC
<b>HI and LO-Limit</b>	Range: 0 - 6000 µA (0 = OFF)
<b>Delay Timer</b>	Range: 0, 1.0 - 999.9 sec (0 = Constant)



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