



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®



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 SmartGFI® safety circuit protects the operator from shock hazards
- Patented VERI-CHEK® feature prompts users through steps to validate the instrument's operation
- Patented prompt and hold function provides a safe and easy method for performing steps during a test cycle
- Patented CAL-ALERT® alerts the operator that the OMNIA is due for re-calibration.
- True Line Leakage tester with 7 different measuring devices and RMS or PEAK leakage measurements
- 4 wire measurement and milliohm offset for accurate Ground Bond test results
- 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 or GPIB automation interfaces available. Use your own software or our stand alone test software



Input Specifications

Voltage	115 / 230 V selectable, ± 10% variation
Frequency	50/60 Hz ± 5%
Fuse	115 VAC, 230 VAC - 6.3 A Slow-Blo 250 VAC

Dielectric Withstand Test Mode

Output Rating	5 KV @ 40 mA AC 5 KV @ 20 mA DC 50/60 Hz user selectable
HI and LO-Limit/ AC Total Current Display AC Real DC	Range: 0.000 mA - 40.00 mA Range: 0.000 mA - 40.00 mA Range: 0.0 - 20,000 µA
Ramp HI	>20 mA peak maximum, ON/OFF selectable
Charge LO	Range: 0.000 - 350 µA or Auto Set
DC Output Ripple	≤ 4% Ripple RMS at 5 KV DC @ 20 mA, Resistive Load
Discharge Time	≤ 200 ms
Maximum Capacitive Load DC Mode	1 µF < 1 KV 0.08 µF < 4 KV 0.75 µF < 2 KV 0.04 µF < 5 KV 0.5 µF < 3 KV
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	Range: AC 0.4 - 999.9 sec (0 = Constant) DC 0.3 - 999.9 sec (0 = Constant)
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
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: < 1ms

Continuity Test Mode

Output Current	DC 0.1A ± 0.01A, fixed
Resistance Display/ HI and LO-Limit	Range: 0.00 - 10.00 Ω
Dwell Timer	Range: 0.0, 0.3 - 999.9 sec (0 = Constant)
Milliohm Offset	Range: 0.00 - 2.00 Ω

Ground Bond Test Mode

Output Voltage (Open Circuit Limit)	Range: 3.00 - 8.00 VAC 50/60 Hz, user selectable
Output Current	Range: 1.00 - 40.00 A, Resolution: 0.01 A
Output Regulation	Accuracy: ± (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 - 30.00A, 0 - 200 mΩ 30.01 - 40.00A, 0 - 150 mΩ
Ohmmeter Display/ HI and LO Limit	0 - 150 mΩ for 30.01 - 40.00 A 0 - 200 mΩ for 10.01 - 30.00 A 0 - 600 mΩ for 6.00 - 10.00 A Accuracy: ± (2% of reading + 2 mΩ) 0 - 600 mΩ for 1.00 - 5.99 A Accuracy: ± (3% of reading + 3 mΩ)
Milliohm Offset	Range: 0 - 200 mΩ

Insulation Resistance Test Mode

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

Insulation Resistance Test Mode (Continued)

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

General Specifications

Mechanical Dimensions	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)
Weight	51.68 lbs (23.44 kgs) varies with option
Interface	RS-232 standard or select GPIB or Printer Port with time and date stamp.
Safety	Built-in SmartGFI® circuit
Memory	50 memories, 30 step/memory

OMNIA 8105 and 8106 Functional Run Test Mode

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

Trip Point Settings and Metering

Voltage Volt-Hi/Volt-LO	Range: 0.0 - 277.0 VAC (one hot and one neutral)
Current Amp-HI/Amp-LO	Range: 0.1 - 15.00 AAC
Watts Watt-HI/Watt-LO	Range: 0 - 4200 W
Power Factor PF-HI/PF-LO	Range: 0.000 - 1.000
Leakage Current Leak-HI/Leak-LO	Range: 0.00 - 10.00 mA (0 = OFF)
Timer Display	Range: 0.0 - 999.9 seconds

OMNIA 8106 Line Leakage Test Mode (DUT Power)

Voltage	0 - 277 VAC
Current	15 AAC max. continuous
Short Circuit Protection	23 AAC, Response Time < 3 sec

Leakage Current

Current Display RMS or PEAK	Range 1: 0.0 µA - 999.9 µA Range 2: 1000 µA - 6000 µA
Accuracy RMS	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)
Accuracy PEAK	
Measuring Device	A UL544 Non Patient B UL544 Patient C IEC601-1, UL2601, EN60601-1 D UL1563 E IEC1010, UL3101, IEC950, UL1950, IEC60990 FIG. 4 - U2 H IEC60990 FIG. 5 - U3 I IEC60990 FIG. 3 - U1
MD A-D and HI components	Accuracy: Resistance ± 1%, Capacitance ± 5%
MD E components	Accuracy: Resistance ± 0.1%, Capacitance ± 1%
MD Voltage Limit	Maximum 30 V peak or 30 VDC
HI and LO-Limit	Range: 0 - 6000 µA (0 = OFF)
Delay Timer	Range: 0, 1.0 - 999.9 sec (0 = Constant)



- Customer support & technical services
- 5-Year extended warranty*
- 24-Hour turn-around on calibrations
- Industry seminars, expert training & education programs
- Local sales offices throughout the world

*With annual calibration from Associated Research.