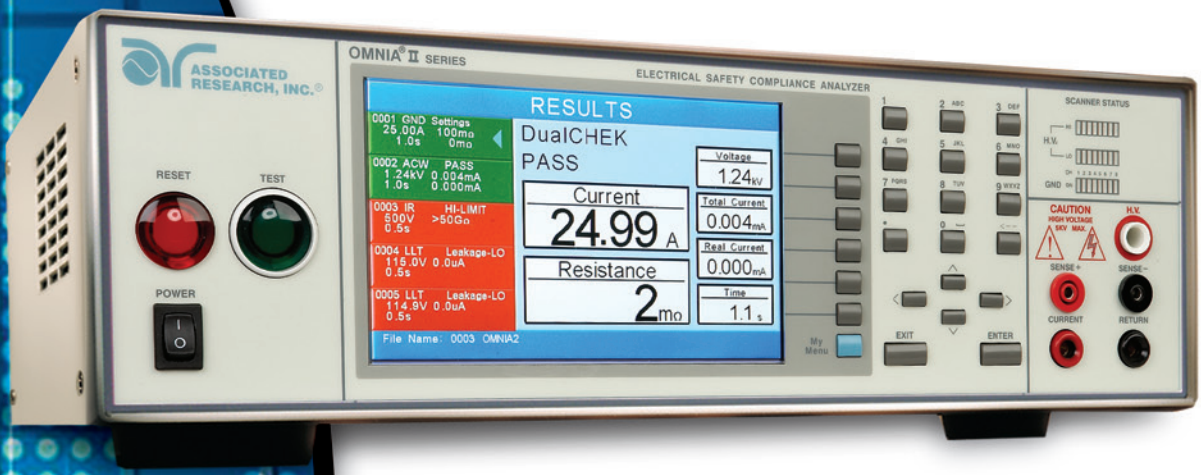
INSTRUMENTS FOR

ELECTRICAL SAFETY COMPLIANCE TESTING



- HIPOT TESTERS
- GROUND BOND TESTERS
- INSULATION RESISTANCE TESTERS
- LINE LEAKAGE TESTERS
- MEDICAL TEST SYSTEMS
- HV/HC SCANNING MATRICES
- SOFTWARE SOLUTIONS
- FUNCTIONAL RUN TESTERS
- CUSTOM INSTRUMENTS

IEC TÜV C UL US CE

ASSOCIATED RESEARCH, INC.®

NEW!

OMNIA® II

An Electrical Safety Compliance Analyzer That Is As Unique As Your Application!

OMNIA® II, our next generation of Electrical Safety Compliance Analyzers is designed around the way you test. We understand that every testing application is unique and finding the right tester can be difficult. OMNIA II provides you with customizable features and unmatched functionality.

Model 8204 - **5 kV @ 50 mAAC, 6 kV @ 20 mADC, IR Test, 40 Amp Ground Bond & Optional HV & HC Scanner**

Model 8254 - **5 kV @ 100 mAAC (500 VA), 6 kV @ 20 mADC, IR Test, 40 Amp Ground Bond & Optional HV & HC Scanner**

Model 8206 - **5 kV @ 50 mAAC, 6 kV @ 20 mADC, IR Test, 40 Amp Ground Bond, Functional Run Test & Line Leakage Test**

Model 8256 - **5 kV @ 100 mAAC (500 VA) , 6 kV @ 20 mADC, IR Test, 40 Amp Ground Bond, Functional Run Test & Line Leakage Test**

Model 8207 - **5 kV @ 50 mAAC, 6 kV @ 20 mADC, IR Test, 40 Amp Ground Bond, Functional Run Test, Line Leakage Test & Built-in AC Power Source**

Model 8257 - **5 kV @ 100 mAAC (500 VA), 6 kV @ 20 mADC, IR Test, 40 Amp Ground Bond, Functional Run Test, Line Leakage Test & Built-in AC Power Source**

Features and Benefits

- 800 x 480 Color TFT display makes setting up test files, viewing results, and performing tests easier than ever before. Choose from 3 different color schemes to match your preference.
- Expanded Test Memories allows users to link a total of 10,000 test steps. This allows users to create and save even the most complex test setups.
- My Menu interface allows operators to personalize menu settings by creating shortcuts to favorite screens and preferences.
- Patented Prompt and Hold function provides a unique method for performing multiple steps during a test cycle.
- DualCHEK® feature allows the user to perform a simultaneous Hipot and Ground Bond Test. This can safely increase productivity and throughput on the production line.
- Patented CAL-ALERT® and VERI-CHEK® features help to ensure that your instrument is calibrated and stays within specs.
- USB/RS-232, GPIB, Ethernet, or RS-485 automation interfaces available.
- Multiple Language Settings available for OMNIA II. Users can select to view the menu in English or Traditional Chinese.
- RAMP HI® and CHARGE LO® features for more effective DC Hipot Testing.
- Patented SmartGFI® safety circuit protects the operator from shock hazards.
- Cold Resistance Feature for Line to Neutral Continuity Testing.
- Line Leakage Tester with seven different measuring devices, RMS or PEAK leakage measurements, and a 500 VA Power Source built-in.
- AC/DC offset feature allows users to offset hipot test leakage current.
- Meets 200 mA Short Circuit Requirements (825X Models)

apt APT AC Power Source Compatible
www.aspowertechnologies.com

CE

EN 61010-1
EN 61010-31

TÜV Rheinland of North America, Inc. US

Safety agency listed.

Input Specifications

Voltage	115 / 230 V auto-range, ± 15 % variation
Frequency	50/60 Hz ± 5%
Fuse	115 VAC, 230 VAC – 10 A Slow Blow 250 VAC

Dielectric Withstand Test Mode

Output Rating		5 kV @ 50 mAAC 5 kV @ 100 mAAC (Models 825x) 6 kV @ 20 mADC
Voltage Setting		Range: 0–5000 VAC 0–6000 VDC Resolution: 1 V Accuracy: ± (2% of setting + 5 volts)
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	Range: 0.000 – 9.999 mA Resolution: 0.001 mA Range: 10.00 – 50.00 mA (100.00 mA, Models 825x) Resolution: 0.01 mA Accuracy: ± (2% of setting + 2 counts)
	AC Real	Range: 0.000 – 9.999 mA Resolution: 0.001 mA Range: 10.00 – 50.00 mA (99.99 mA, Models 825x) Resolution: 0.01 mA Accuracy: ± (3% of setting + 50 µA)
	DC	Range: 0.0 – 999.9 µA Resolution: 0.1 µA Range: 1000 – 20000 µA Resolution: 1 µA Accuracy: ± (2% of setting + 2 counts)
Arc Detection		Range: 1 – 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: 450 µA max (AC or DC) HV Shut Down Speed: < 1 ms
DC Output Ripple		≤ 4% Ripple RMS at 5 kVDC @ 20 mA, Resistive Load
Discharge Time		≤ 50 ms no load, < 100 ms for capacitive load
Max Capacitive Load DC Mode		1 uF < 1 kV 0.08 uF < 4 kV 0.75 uF < 2 kV 0.04 uF < 5 kV 0.5 uF < 3 kV
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)
Short Circuit Protection		Minimum current 100 mA peak (200 mA, Models 825x) at short circuit, response time < 2 ms

Insulation Resistance Test Mode

Voltage Setting	Range: 30 – 1000 VDC
Charging Current	Maximum >20 mA peak
Charge-LO	Range: 0.000 – 3.500 µA or Auto Set
HI and LO-Limit	Range: 0.05 M – 99.99 MΩ Resolution: 0.01 M Range: 100.0 M – 999.9 M Resolution: 0.1 M Range: 1000 M – 50000 M Resolution: 1 M (HI – Limit: 0 = OFF)
Ramp Timer	Ramp-Up: 0.1 – 999.9 sec Ramp-Down: 0.0, 1.0–999.9 sec
Delay Timer	Range: 0.5 – 999.9 sec (0 = Continuous)
Ground Fault Interrupt	GFI Trip Current: 450 µA max (AC or DC) HV Shut Down Speed: < 1 ms

Ground Bond Test Mode

Output Voltage (Open Circuit Limit)	Range: 3.00 – 8.00 VAC
Output Frequency	Range: 60 or 50 Hz, user selectable
Output Current	Range: 1.00 – 40.00 A Resolution: 0.01 A Accuracy: ± (2 % of setting + 0.02 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 – 30.00 A, 0 – 200 mΩ 30.01 – 40.00 A, 0 – 150 mΩ
HI and LO-Limit	Range: 0 – 150 mΩ for 30.01 – 40.00 Amps 0 – 200 mΩ for 10.01 – 30.00 Amps 0 – 600 mΩ for 1.00 – 10.00 Amps Resolution: 1 mΩ Accuracy: ± (2% of reading + 2 mΩ) Range: 0 – 600 mΩ for 1.00 – 5.99 Amps Resolution: 1 mΩ Accuracy: ± (3% of reading + 3 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 – 200 mΩ Resolution: 1 mΩ Accuracy: ± (2 % of setting + 2 mΩ)

Continuity Test Mode

Output Current	DC 0.01 A ± 0.00001 A
Resistance Display	Range: 0.00 – 10000 Ω
HI and LO-Limits	Range 1: 0.00 – 10.00 Ω Resolution: 0.01 Ω Accuracy: ± (1 % of reading + 3 counts) Range 2: 10.1 – 100.0 Ω Resolution: 0.1 Ω Accuracy: ± (1 % of reading + 3 counts) Range 3: 101 – 1000 Ω Resolution: 1 Ω Accuracy: ± (1 % of reading + 3 counts) Range 4: 1001 – 10000 Ω Resolution: 1 Ω Accuracy: ± (1 % of reading + 10 counts) (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

PLC Remote Control	Input: Test, Reset, Interlock, Recall File 1 through 3 Output: Pass, Fail, Test-in-Process
Safety	Built-in Smart GFI circuit
Memory	1000 steps
Interface	Standard USB/RS-232, Ethernet, or GPIB
Security	Advanced security system with access levels and username/password requirements
Graphic Display	800 x 480 digital TFT LCD display
Mechanical	Bench or rack mount with tilt up front feet.
Dimensions	3U (WxHxD) (430 X 133 X 500 mm) (16.93" x 5.24" x 19.69")
Weight	8204 82 lbs (37 kg) 8254 92 lbs (42 kg) 8206/8207 83 lbs (38 kg) 8256/8257 103 lbs (47 kg)

Run Test Mode (Models 82X6 and 82X7)

DUT Power
- Voltage: 0 – 277 VAC Single Phase Unbalanced (One Hot or Line conductor and One Neutral)
- Current: 16 AAC max continuous
- Range: 0.0 – 277.0 VAC Full Scale
- Resolution: 0.1 V
- Accuracy: ± (1.5% of reading +0.2 V), 30.0 – 277.0 VAC
- Short Circuit Protection: 23 AAC, Response Time < 3s

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: 30.0 – 277.0 VAC
- Resolution: 0.1 V
- Accuracy: ± (1.5% of setting + 0.2 V), 30.0–277 VAC

Current: Amp-HI

Amp-LO
- Range: 0.0 – 16.00 AAC
- Resolution: 0.01 A
- Accuracy: ± (2.0% of setting + 2 Counts)

Watts: Power-HI

Power-LO
- Range: 0 – 4500 W
- Resolution: 1 W
- Accuracy: ± (5.0% of setting + 3 Counts)

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 + 2 Counts)

Leakage current measuring resistor MD=2KΩ ± 1%

Run Test Mode (Models 82X6 and 82X7) (continued)

Voltmeter
- Range: 0.0 – 277.0 VAC
- Resolution: 0.1 V
- Accuracy: ± (1.5% of reading + 2 Counts), 30.0 – 277 VAC

Ammeter
- Range: 0.0 – 16.00 AAC
- Resolution: 0.01 A
- Accuracy: ± (2.0% of reading + 2 Counts)

Wattmeter
- Range: 0 – 4500 W
- Resolution: 1 W
- Accuracy: ± (5% of reading + 3 Counts)

Power Factor
- Range: 0.000 – 1.000
- Resolution: 0.001
- Accuracy: ± (8% of reading + 2 Counts)

Leakage Current
- Range: 0.00 – 10.00 mA
- Resolution: 0.01 mA
- Accuracy: ± (2% of reading + 2 Counts)
- Leakage current measuring resistor MD = 2KΩ ± 1%

Timer display
- Range: 0.0 – 999.9 seconds
- Resolution: 0.1 second
- Accuracy: ± (0.1% of reading + 0.05 seconds)

Line Leakage Test Mode (Models 82X6 and 82X7 Only)

DUT Power
- Voltage: 0 – 277 VAC
- Current: 16 AAC max continuous
- Voltage Display Range: 0.0 – 277.0 VAC Full Scale
  - Resolution: 0.1 V
  - Accuracy: ± (1.5% of reading +0.2 V), 30.0 – 277.0 VAC
- Short Circuit Protection: 23 AAC, Response Time < 3 s

Reverse Power Switch
- Reverse polarity switch setting select ON/OFF/AUTO
- ON: Reverse power
- OFF: Normal
- AUTO: Automatic Reverse Polarity. With AUTO mode, the polarity switches for normal conditions in one step setting menu but will run two steps for both conditions. In this mode, the unit only records and displays the maximum leakage current value.

Neutral Switch
- ON/OFF selection for single fault condition

Ground Switch
- ON/OFF selection for Class I single fault condition

Probe Setting
- Surface to Surface (PH – PL)
- Surface to Line (PH – L)
- Ground to Line (G – L)

Touch Current High Limit (RMS)
- Range: 0.0 uA ~ 999.9 uA 1000 uA ~ 10.00 mA
- Resolution: 0.1 uA / 1 uA / 0.01 mA

Touch Current Low Limit (RMS)
- Range: 0.0 uA - 999.9 uA 1000 uA ~ 10.00 mA
- Resolution: 0.1 uA/ 1 uA/ 0.01 mA

Touch Current High Limit (Peak)
- Range: 0.0 uA - 999.9 uA 1000 uA - 10.00 mA
- Resolution: 0.1 uA/ 1 uA/ 0.01 mA

Touch Current Low Limit (Peak)
- Range: 0.0 uA - 999.9 uA 1000 uA - 10.00 mA
- Resolution: 0.1 uA/ 1 uA/ 0.01 mA

Line Leakage Test Mode (Models 82X6 and 82X7 Only) (continued)

Touch Current Display (RMS)	Range 1:	0.0 uA ~ 32.0 uA, frequency DC, 15 Hz - 1 MHz
	Range 2:	28.0 uA ~ 130.0 uA, frequency DC, 15 Hz - 1 MHz
	Range 3:	120.0 uA ~ 550.0 uA, frequency DC, 15 Hz - 1 MHz
	Resolution for Ranges 1, 2, 3: 0.1 uA	
	Accuracy for Ranges 1, 2, 3:	
		DC , 15 Hz < f <100 KHz: ±(2% of reading + 3 counts)
		100 KHz < f < 1 MHZ : ±5% of reading (10.0 uA - 999.9 uA)
	Range 4:	400 uA ~ 2100 uA, frequency DC, 15 Hz - 1 MHz
	Range 5:	1800 uA ~ 8500 uA, frequency DC, 15 Hz - 1 MHz
	Resolution for Ranges 4, 5: 1 uA	
	Accuracy for Ranges 4, 5:	
		DC , 15 Hz < f <100 KHz: ±(2% of reading + 3 counts)
		100 KHz < f < 1 MHZ : ±5% of reading (10 uA - 8500 uA)
	Range 6:	8.00 mA ~ 10.00 mA, frequency DC, 15 Hz – 100 kHz
	Resolution: 0.01 mA	
	Accuracy:	DC, 15 Hz < f < 100 KHz: ±5% of reading (0.01 mA -10.00 mA)
Touch Current Display (Peak)	Range 1:	0.0 uA ~ 32.0 uA, frequency DC - 1 MHz
	Range 2:	28.0 uA ~ 130.0 uA, frequency DC - 1 MHz
	Range 3:	120.0 uA ~ 550.0 uA, frequency DC - 1 MHz
	Resolution for Ranges 1, 2, 3: 0.1 uA	
	Accuracy for Ranges 1, 2, 3:	
		DC : ±(2% of reading + 2 uA)
		15 Hz < f < 1 MHZ : ±10% of reading + 2 uA
	Range 4:	400 uA ~ 2100 uA, frequency DC - 1 MHz
	Range 5:	1800 A ~ 8500 uA, frequency DC - 1 MHz
	Resolution for Ranges 4, 5: 1 uA	
	Accuracy for Ranges 4, 5:	
		DC : ±(2% of reading + 2 uA)
		15 Hz < f < 1 MHZ : ±10% of reading + 2 uA
	Range 6:	8.0 mA ~10.00 mA, frequency DC – 100 KHz
	Resolution: 0.01 mA	
	Accuracy:	DC : ±(2% of reading + 3 counts)
		15 Hz < f < 100 KHz : ±10% of reading + 2 counts
MD Circuit Module	MD1: UL544NP, UL484 , UL923, UL471, UL867, UL697	
	MD2: UL544P	
	MD3: IEC 60601-1	
	MD4: UL1563	
	MD5: IEC60990 Fig4 U2, IEC 60950-1, IEC60335-1, IEC60598-1, IEC60065, IEC61010	
	MD6: IEC60990 Fig5 U3, IEC60598-1	
	MD7: IEC60950, IEC61010-1 FigA.2 (2K ohm) for Run function.	
External MD	Basic measuring element 1k ohm	
Scope Output Interface	BNC type connector on rear panel for Oscilloscope connection	
MD Voltage Limit	Maximum 70 VDC	
MD Component Accuracy	Capacitors = 5%	
	Resistors = 1%	

AC Power Source

Output:

Power:	630 VA and 500 W Maximum
Voltage:	0 - 150.0 V / 0 - 277.0 V
Current	4.20 A maximum for 0-150 V range / 2.10 A maximum 0-277 V range
Distortion:	≤ 1% at 45-500 Hz and output voltage within the 80~140 VAC at Low Range or the 160~277 VAC at High Range. (Resistive Load)
Regulation:	≤ 0.5% + 5V (Resistive Load), From no load to full load and Low Line to High Line (combined regulation)
Crest Factor:	> 3
Test timing limit:	< 350 mS at start and between steps when internal AC source is ON

Settings:

Voltage:
Low Range: 0.0 - 150.0 V
High Range: 0.0 - 277.0 V
Resolution: 0.1
Accuracy: ± (1.5% of setting + 2 counts)

Frequency:
Range: 45.0 Hz - 99.9 Hz
Resolution: 0.1
Accuracy: ±0.1% of setting
Range: 100 Hz - 500 Hz
Resolution: 1
Accuracy: ±0.1% of setting

A-Hi-limit:
Range: 4.20 A/2.10 A
Resolution: 0.01
Accuracy: ± (2 % of reading +2 counts)

OC Fold Current:
Range: 4.20 A/2.10 A
Resolution: 0.01
Accuracy: ± (2 % of reading +2 counts)
Response Time: < 1500 ms

Measurement:

Voltage:
Range: 0.0-277.0 V
Resolution: 0.1
Accuracy: ± (1.5 % of reading +2 counts)

Current:
Range: 0.00-16.00 A
Resolution: 0.01
Accuracy: ± (2 % of reading +2 counts)

Power: 0-4500
Resolution: 1
Accuracy: ± (5% of reading +3 counts) for PF>0.100

Power Factor: 0.000-1.000
Resolution: 0.001
Accuracy: ± (8 % of reading +5 counts)

Frequency: 45-500 Hz
Resolution: 0.1
Accuracy: ±0.1 Hz

General:

Over Current Fold Back:
On/Off, When the output current exceeds the A-Hi value it will fold back output voltage to keep constant output current at A-Hi value.

Protection: OCP, OTP, OVP, OPP and Alarm

Specifications subject to change without notice.

Accredited calibration service available. Includes ISO 17025, ANSI Z540.1-1994, CTL & Denan's Law requirements.

For more information on testing to a specfic standard, refer back to the Common Safety Standard Reference Chart.

We have local sales offices throughout the world to serve you more efficiently.

To find your nearest representative visit the "Local Sales Offices" section of our web site at www.asresearch.com or call us toll-free at 1-800-858-8378

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