

# OMNIA II



## The most advanced electrical safety compliance analyzers in the industry.

Our OMNIA II series is a complete line of multi-function electrical safety compliance analyzers designed to satisfy even the most demanding application requirements. We've included exclusive productivity-enhancing features and the latest in safety technology to make this product line the envy of the industry. With 6 models to choose from, a multi-language menu system, and a variety of automation interfaces available, the OMNIA II is ready for global deployment.

Safety agency listed.



Warranty

Choose from the following at no charge:



	AC Hipot	DC Hipot	Insulation Resistance	40A Ground Bond	Ground Continuity	Line Leakage	Functional Run	Built-in AC Power	apt power source recommended
<b>8204</b>	✓	✓	✓	✓	✓				
<b>8254</b>	500 VA*	✓	✓	✓	✓				
<b>8206</b>	✓	✓	✓	✓	✓	✓	✓		✓
<b>8256</b>	500 VA*	✓	✓	✓	✓	✓	✓		✓
<b>8207</b>	✓	✓	✓	✓	✓	✓	✓	✓	
<b>8257</b>	500 VA*	✓	✓	✓	✓	✓	✓	✓	

\*meets 200 mA short circuit requirements

## PRODUCTIVITY-ENHANCING FEATURES

Customize your own shortcut menu	Simultaneous Hipot and Ground Bond	Continuous power during test steps	Includes foreign language menus	Basic PLC relay control	Includes preset verification tests	Tracks and alerts for calibration	Reduce ramp time during DC Hipot	Confirms proper DUT connection	High frequency filter for corona detection	Available with HV/HC scanning matrix	Compatible with SC6540 scanning matrix	Use with automation control software	Accredited calibration options available

## SAFETY FEATURES

Provides on-screen instructions between tests	Automatic operator shock protection	Easily disable HV output



Request a Live Web Demo

### Input Specifications

Voltage	115 / 230 V auto-range, $\pm 15\%$ variation
Frequency	50/60 Hz $\pm 5\%$
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: $\pm (2\% \text{ of setting} + 5 \text{ volts})$
Ramp HI DC	>20 mA peak maximum, ON/OFF Selectable
Charge LO DC	Range: 0.0 – 350.0 $\mu\text{A}$ 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: $\pm (2\% \text{ of setting} + 2 \text{ counts})$ 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: $\pm (3\% \text{ of setting} + 50 \mu\text{A})$ DC Range: 0.0 – 999.9 $\mu\text{A}$ Resolution: 0.1 $\mu\text{A}$ Range: 1000 – 20000 $\mu\text{A}$ Resolution: 1 $\mu\text{A}$ Accuracy: $\pm (2\% \text{ of setting} + 2 \text{ counts})$
Arc Detection	Range: 1 – 9
Ground Continuity	Current: DC 0.1 A $\pm 0.01$ A, fixed Max. ground resistance: 1 $\Omega \pm 0.1 \Omega$ , fixed
Ground Fault Interrupt	GFI Trip Current: 0.4 mA - 5.0 mA (AC or DC) HV Shut Down Speed: < 1 ms
DC Output Ripple	$\leq 4\%$ Ripple RMS at 400 mA - 5 mA adjustable
Discharge Time	$\leq 50$ ms no load, < 100 ms for capacitive load
Max Capacitive Load DC Mode	1 $\mu\text{F}$ < 1 kV    0.08 $\mu\text{F}$ < 4 kV 0.75 $\mu\text{F}$ < 2 kV    0.04 $\mu\text{F}$ < 5 kV 0.5 $\mu\text{F}$ < 3 kV
AC Output Waveform	Sine Wave, Crest Factor = 1.3 – 1.5
Output Frequency	Range: 60 or 50 Hz, User Selection (400/800 Hz optional) Accuracy: $\pm 0.1\%$
Output Regulation	$\pm (1\% \text{ of output} + 5 \text{ V})$ 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: $\pm (0.1\% + 0.05 \text{ sec})$
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: $\pm (0.1\% + 0.05 \text{ sec})$
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 $\mu\text{A}$ or Auto Set
HI and LO-Limit	Range: 0.05 M – 99.99 M $\Omega$ 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: 0.4 mA - 5.0 mA (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: $\pm (2\% \text{ of setting} + 0.02 \text{ A})$
Output Regulation	Accuracy: $\pm (1\% \text{ of output} + 0.02 \text{ A})$ Within maximum load limits, and over input voltage range.
Maximum Loading	1.00 – 10.00 A, 0 – 600 m $\Omega$ 10.01 – 30.00 A, 0 – 200 m $\Omega$ 30.01 – 40.00 A, 0 – 150 m $\Omega$
HI and LO-Limit	Range: 0 – 150 m $\Omega$ for 30.01 – 40.00 Amps 0 – 200 m $\Omega$ for 10.01 – 30.00 Amps 0 – 600 m $\Omega$ for 1.00 – 10.00 Amps Resolution: 1 m $\Omega$ Accuracy: $\pm (2\% \text{ of reading} + 2 \text{ m}\Omega)$ Range: 0 – 600 m $\Omega$ for 1.00 – 5.99 Amps Resolution: 1 m $\Omega$ Accuracy: $\pm (3\% \text{ of reading} + 3 \text{ m}\Omega)$
Dwell Timer	Range: 0.5 – 999.9 sec (0 = Continuous) Resolution: 0.1 sec Accuracy: $\pm (0.1\% + 0.05 \text{ sec})$
Milliohm Offset	Range: 0 – 200 m $\Omega$ Resolution: 1 m $\Omega$ Accuracy: $\pm (2\% \text{ of setting} + 2 \text{ m}\Omega)$

### Continuity Test Mode

Output Current	DC 0.01 A $\pm 0.00001$ A
Resistance Display	Range: 0.00 – 10000 $\Omega$
HI and LO-Limits	Range 1: 0.00 – 10.00 $\Omega$ Resolution: 0.01 $\Omega$ Accuracy: $\pm (1\% \text{ of reading} + 3 \text{ counts})$ Range 2: 10.1 – 100.0 $\Omega$ Resolution: 0.1 $\Omega$ Accuracy: $\pm (1\% \text{ of reading} + 3 \text{ counts})$ Range 3: 101 – 1000 $\Omega$ Resolution: 1 $\Omega$ Accuracy: $\pm (1\% \text{ of reading} + 3 \text{ counts})$ Range 4: 1001 – 10000 $\Omega$ Resolution: 1 $\Omega$ Accuracy: $\pm (1\% \text{ of reading} + 10 \text{ counts})$ (Max Limit: 0 = OFF)
Dwell Timer	Range: 0.0, 0.3 – 999.9 sec (0 = Continuous)
Milliohm Offset	Range: 0.00 – 10.00 $\Omega$

## 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	10,000 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	(WxHxD) 16.93 x 5.24 x 19.69 in. (430 X 133 X 500 mm)
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 Current: 16 AAC max continuous Range: 0.0 – 277.0 VAC Full Scale Resolution: 0.1 V Accuracy: $\pm$ (1.5% of reading + 0.2 V), 30.0 – 277.0 VAC Short Circuit Protection: 23 AAC, Response Time < 3s
Delay Time	Range: 0.2 – 999.9 seconds
Setting	Resolution: 0.1 second Accuracy: $\pm$ (0.1% + 0.05 sec)
Dwell Time	Range: 0.1 – 999.9 seconds (0 = Continuous)
Setting	Resolution: 0.1 second Accuracy: $\pm$ (0.1% + 0.05 sec)
Trip Point	Voltage: Volt-Hi
Settings	Volt-LO Range: 30.0 – 277.0 VAC Resolution: 0.1 V Accuracy: $\pm$ (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: $\pm$ (2.0% of setting + 2 Counts)
Watts: Power-HI	Power-LO Range: 0 – 4500 W Resolution: 1 W Accuracy: $\pm$ (5.0% of setting + 3 Counts)
Power Factor:	PF-HI
	PF-LO Range: 0.000 – 1.000 Resolution: 0.001 Accuracy: $\pm$ (8% of setting + 2 Counts)
Leakage Current:	Leak-HI
	Leak-LO Range: 0.00 – 10.00 mA (0 = OFF) Resolution: 0.01 mA Accuracy: $\pm$ (2% of setting + 2 Counts) Leakage current measuring resistor MD=2K $\Omega$ $\pm$ 1%

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

Voltmeter	Range: 0.0 – 277.0 VAC Resolution: 0.1 V Accuracy: $\pm$ (1.5% of reading + 2 Counts), 30.0 – 277 VAC
Ammeter	Range: 0.0 – 16.00 AAC Resolution: 0.01 A Accuracy: $\pm$ (2.0% of reading + 2 Counts)
Wattmeter	Range: 0 – 4500 W Resolution: 1 W Accuracy: $\pm$ (5% of reading + 3 Counts)
Power Factor	Range: 0.000 – 1.000 Resolution: 0.001 Accuracy: $\pm$ (8% of reading + 2 Counts)
Leakage Current	Range: 0.00 – 10.00 mA Resolution: 0.01 mA Accuracy: $\pm$ (2% of reading + 2 Counts) Leakage current measuring resistor MD = 2K $\Omega$ $\pm$ 1%
Timer display	Range: 0.0 – 999.9 seconds Resolution: 0.1 second Accuracy: $\pm$ (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: $\pm$ (1.5% of reading + 0.2 V), 30.0 – 277.0 VAC Short Circuit Protection: 23 AAC, Response Time < 3 s
Reverse Power	Reverse polarity switch setting select ON/OFF/AUTO
Switch	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	Range: 0.0 uA ~ 999.9 uA 1000 uA ~ 10.00 mA
High Limit (RMS)	Resolution: 0.1 uA / 1 uA / 0.01 mA
Touch Current	Range: 0.0 uA - 999.9 uA 1000 uA ~ 10.00 mA
Low Limit (RMS)	Resolution: 0.1 uA/ 1 uA/ 0.01 mA
Touch Current	Range: 0.0 uA - 999.9 uA 1000 uA - 10.00 mA
High Limit (Peak)	Resolution: 0.1 uA/ 1 uA/ 0.01 mA
Touch Current	Range: 0.0 uA - 999.9 uA 1000 uA - 10.00 mA
Low Limit (Peak)	Resolution: 0.1 uA/ 1 uA/ 0.01 mA

## Line Leakage Test Mode

### (Models 82X6 and 82X7 Only) (continued)

Touch Current Range 1: 0.0 uA ~ 32.0 uA, frequency DC, 15 Hz - 1 MHz  
 Display (RMS) 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:  $\pm(2\%$  of reading + 3 counts)  
 100 KHz < f < 1 MHz:  $\pm 5\%$  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:  $\pm(2\%$  of reading + 3 counts)  
 100 KHz < f < 1 MHz:  $\pm 5\%$  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:  $\pm 5\%$  of reading (0.01 mA - 10.00 mA)

Touch Current Range 1: 0.0 uA ~ 32.0 uA, frequency DC - 1 MHz  
 Display (Peak) 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:  $\pm(2\%$  of reading + 2 uA)  
 15 Hz < f < 1 MHz:  $\pm 10\%$  of reading + 2 uA  
 Range 4: 400 uA ~ 2100 uA, frequency DC - 1 MHz  
 Range 5: 1800 uA ~ 8500 uA, frequency DC - 1 MHz  
 Resolution for Ranges 4, 5: 1 uA  
 Accuracy for Ranges 4, 5:  
 DC:  $\pm(2\%$  of reading + 2 uA)  
 15 Hz < f < 1 MHz:  $\pm 10\%$  of reading + 2 uA  
 Range 6: 8.0 mA ~ 10.00 mA, frequency DC - 100 KHz  
 Resolution: 0.01 mA  
 Accuracy: DC:  $\pm(2\%$  of reading + 3 counts)  
 15 Hz < f < 100 KHz:  $\pm 10\%$  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.  
 MD8: IEC60990/60950 Fig4 U1

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 (82x7 Only)

### 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:  $\leq 1\%$  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:  $\leq 0.5\% + 5V$  (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:  $\pm (1.5\%$  of setting + 2 counts)  
 Frequency:  
 Range: 45.0 Hz - 99.9 Hz  
 Resolution: 0.1  
 Accuracy:  $\pm 0.1\%$  of setting  
 Range: 100 Hz - 500 Hz  
 Resolution: 1  
 Accuracy:  $\pm 0.1\%$  of setting  
 A-Hi-limit:  
 Range: 4.20 A/2.10 A  
 Resolution: 0.01  
 Accuracy:  $\pm (2\%$  of reading + 2 counts)  
 OC Fold Current:  
 Range: 4.20 A/2.10 A  
 Resolution: 0.01  
 Accuracy:  $\pm (2\%$  of reading + 2 counts)  
 Response Time: < 1500 ms

### Measurement: Voltage:

Range: 0.0-277.0 V  
 Resolution: 0.1  
 Accuracy:  $\pm (1.5\%$  of reading + 2 counts)  
 Current:  
 Range: 0.00-16.00 A  
 Resolution: 0.01  
 Accuracy:  $\pm (2\%$  of reading + 2 counts)  
 Power: 0-4500  
 Resolution: 1  
 Accuracy:  $\pm (5\%$  of reading + 3 counts) for PF>0.100  
 Power Factor: 0.000-1.000  
 Resolution: 0.001  
 Accuracy:  $\pm (8\%$  of reading + 5 counts)  
 Frequency: 45-500 Hz  
 Resolution: 0.1  
 Accuracy:  $\pm 0.1$  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

### Why We Use Counts

Associated Research publishes some specifications using "counts" which allows us to provide a better indication of the tester'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 = 2V.

Specifications subject to change without notice.