

OMNIA® II

The Most Advanced Electrical Safety Compliance Analyzer 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.



Find the Model that Fits Your Testing Needs



AC Hipot



DC Hipot



Ground Bond



Ground Continuity



Insulation Resistance



Leakage Current



Functional Run



Built-in AC Power



Power Source Recommended



Model	AC Hipot	DC Hipot	Ground Bond	Ground Continuity	Insulation Resistance	Leakage Current	Functional Run	Built-in AC Power	Power Source Recommended
8204	•	•	•	•	•	•	•	•	•
8254	500 VA*	•	•	•	•	•	•	•	•
8206	•	•	•	•	•	•	•	•	•
8256	500 VA*	•	•	•	•	•	•	•	•
8207	•	•	•	•	•	•	•	•	•
8257	500 VA*	•	•	•	•	•	•	•	•

*Meets 200 mA short circuit requirements

AVAILABLE INTERFACES



USB



RS-232



Ethernet
(Optional)



GPIB
(Optional)

SAFETY & PRODUCTIVITY FEATURES



SmartGFI®
Automatic operator shock protection



Remote Safety Interlock
Easily disable HV output



Prompt & Hold
Provides alerts & instructions between tests



Multiple Languages
Multi-Language user interface



Active Link®
Continuous power during test steps



My Menu
Customize your own shortcut menu



DualCHEK®
Simultaneous Hipot and Ground Bond



Internal Multiplexer
Available with optional HV multiplexer (8 ports)



Modular Multiplexer
Compatible with SC6540 multiplexers



PLC Remote
Basic PLC relay control



FailCHEK™
Confirms failure detection



Cal-Alert®
Tracks and alerts for calibration



Ramp-HI®
Reduce ramp time during DC Hipot



Charge-LO®
Confirms proper DUT connection



Arc Detection
High frequency filter for corona detection



WithStand®
Automation Software



Accredited Cal
Accredited calibration options available



Ground Bond Voltage Drop
Monitor voltage drop vs resistance

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	Resolution: Accuracy:	1 V ± (1.5% of setting + 5 volts)		
HI and LO-Limit	AC Total	Range: Resolution:	0.000 – 9.999 mA 0.001 mA	
		Range: Resolution:	10.00 – 50.00 mA (100.00 mA, models 825X) 0.01 mA	
		Accuracy:	± (2% of setting + 2 counts)	
	AC Real	Range: Resolution:	0.000 – 9.999 mA 0.001 mA	
		Range: Resolution:	10.00 – 50.00 mA (100.00 mA, models 825X) 0.01 mA	
		Accuracy:	± (3% of setting + 50 µA)	
	DC	Range: Resolution:	0 – 999.9 µA 0.1 µA	
		Range: Resolution:	1,000 – 20,000 µA 1 µA	
		Accuracy:	± (2% of setting + 2 counts)	
	Arc Detection	Range:	1 – 9 (9 is most sensitive)	
	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: 0.4 mA – 5.0 mA (AC or DC) HV Shut Down Speed: < 1 ms		
DC Output Ripple	≤ 4% Ripple rms at 5 kVDC at 20 mA Resistive Load			
Discharge Time	≤ 50 ms No Load, < 100 ms for Capacitive Load			
Max Capacitive Load, DC Mode	1 µF < 1 kV 0.08 µF < 4 kV 0.75 µF < 2 kV 0.04 µF < 6 kV 0.5 µF < 3 kV			
AC Output Waveform	Sine Wave, Crest Factor = 1.3 – 1.5			
Output Fre- quency	Range:	60 or 50 Hz, User Selection (400/800 Hz optional)		
Output Regu- lation	± (1% of output + 5 V) from no load to full load and over input voltage range			
Dwell Timer	Range: Range:	AC 0.4 – 999.9 sec (0=Continuous) DC 0.3 – 999.9 sec (0=Continuous)		
Ramp Timer	Ramp-up: Ramp-Down:	AC 0.1 – 999.9 sec, DC 0.4 – 999.9 sec AC 0.0 – 999.9 sec, DC 0.0 , 1.0 – 999.9 sec (0=Continuous)		
INSULATION RESISTANCE TEST MODE				
Voltage Setting	Range:	30 – 6000 VDC		
HI and LO-Limit	Range: Resolution:	0.05 MΩ – 99.99 MΩ 0.01 MΩ		
	Range: Resolution:	100.0 MΩ – 999.9 MΩ 0.1 MΩ		
	Range: Resolution:	1,000 MΩ – 50,000 MΩ 1 MΩ (HI-Limit: 0=OFF)		
	Ramp Timer	Ramp-up: Ramp-Down:	0.1 – 999.9 sec 0.0, 1.0 – 999.9 sec (0=Continuous)	
Delay Timer	Range:	0.5 – 999.9 sec (0=Continuous)		

GROUND BOND TEST MODE		
Output Voltage (Open Circuit Limit)	Range:	3.00 – 8.00 VAC
Output Fre- quency	Range:	60 or 50 Hz, User Selectable
Output Current	Range: Resolution: Accuracy:	1.00 – 40.00 A 0.01 A ± (2% of setting + 0.02 A)
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 A 0 – 200 mΩ for 10.01 – 30.00 A 0 – 600 mΩ for 1.00 – 10.00 A
	Resolution: Accuracy:	1 mΩ ± (2% of reading + 2 mΩ)
	Range: Resolution: Accuracy:	0 – 600 mΩ for 1.00 – 5.99 A 1 mΩ ± (3% of reading + 3 mΩ)
Dwell Timer	Range:	0.5 – 999.9 sec (0=Continuous)
Milliohm Offset	Range:	0 – 200 mΩ
CONTINUITY TEST MODE		
Output Current	DC 0.01 A ± 0.00001 A	
Resistance Display	Range:	0.00 – 10000 Ω
HI and LO-Limit	Range: Resolution:	0.00 – 10.00 Ω 0.01 Ω
	Range 2: Resolution:	10.1 – 100.0 Ω 0.1 Ω
	Range 3: Resolution: Accuracy:	101 – 1,000 Ω 1 Ω ± (1% of reading + 3 counts)
	Range 4: Resolution: Accuracy:	1,001 – 10,000 Ω 1 Ω ± (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
RUN TEST MODE (Models 82X6 & 82X7 only)		
DUT Power	Voltage: Current: Range: Resolution: Accuracy:	0 – 277 VAC single phase unbalanced 16 AAC max continuous 0.0 – 277.0 VAC Full Scale 0.1 V ± (1.5% of reading + 0.2 V), 30.0 – 277.0 VAC Short Circuit Protection: 23 AAC, Response Time < 3 sec
Delay Time Setting	Range:	0.2 – 999.9 seconds
Dwell Time Setting	Range:	0.1 – 999.9 seconds (0=Continuous)

OMNIA® II Series

RUN TEST MODE CONTINUED (Models 82X6 & 82X7 only)			
Trip Point Settings & Metering	Voltage		
	Volt-Hi Volt-LO	Range: Resolution: Accuracy:	30.0 – 277.0 VAC 0.1 V ± (1.5% of setting + 0.2 V), 30.0–277 VAC
	Current		
	Amp-HI Amp-LO	Range: Resolution: Accuracy:	0.0 – 16.00 AAC 0.01 A ± (2.0% of setting + 2 counts)
	Watts		
	Power-HI Power-LO	Range: Resolution: Accuracy:	0 – 4,500 W 1 W ± (5.0% of setting + 3 counts)
	Power Factor		
	PF-HI PF-LO	Range: Resolution: Accuracy:	0.000 – 1.000 0.001 ± (8% of setting + 2 counts)
	Leakage Current		
	Leak-HI Leak-LO	Range: Resolution: Accuracy:	0.00 – 10.00 mA (0=OFF) 0.01 mA ± (2% of setting + 2 counts)
Timer Display	Range: Resolution: Accuracy:	0.0 – 999.9 seconds 0.1 second ± (0.1% of reading + 0.05 seconds)	
LEAKAGE CURRENT TEST MODE (Models 82X6 & 82X7 only)			
DUT Power	Voltage: Current:	0 – 277 VAC 16 AAC max continuous	
	Voltage Display	Range: Resolution: Accuracy:	0.0 – 277.0 VAC Full Scale 0.1 V ± (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		
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: Resolution:	0.0 µA ~ 999.9 µA 1000 µA ~ 10.00 mA 0.1 µA / 1 µA / 0.01 mA	

LEAKAGE CURRENT TEST MODE CONTINUED (Models 82X6 & 82X7 only)			
Touch Current Display (rms)	Range 1:	0.0 µA ~ 32.0 µA, frequency DC, 15 Hz – 1 MHz	
	Range 2:	28.0 µA ~ 130.0 µA, frequency DC, 15 Hz – 1 MHz	
	Range 3:	120.0 µA ~ 550.0 µA, frequency DC, 15 Hz – 1 MHz	
	Resolution for Ranges 1, 2, 3:	0.1 µA	
	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 µA – 999.9 µA)	
	Range 4:	400 µA ~ 2100 µA, frequency DC, 15 Hz – 1 MHz	
	Range 5:	800 µA ~ 8500 µA, frequency DC, 15 Hz – 1 MHz	
	Resolution for Ranges 4 & 5:	1 µA	
	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 µA – 8500 µA)	
	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 µA ~ 32.0 µA, frequency DC – 1 MHz
		Range 2:	28.0 µA ~ 130.0 µA, frequency DC – 1 MHz
Range 3:		120.0 µA ~ 550.0 µA, frequency DC – 1 MHz	
Resolution for Ranges 1, 2, 3:		0.1 µA	
Accuracy for Ranges 1, 2, 3:		DC: ± (2% of reading + 2 µA) 15 Hz < f < 1 MHZ : ± 10% of reading + 2 µA	
Range 4:		400 µA ~ 2100 µA, frequency DC – 1 MHz	
Range 5:		1800 A ~ 8500 µA, frequency DC – 1 MHz	
Resolution for Ranges 4 & 5:		1 µA	
Accuracy for Ranges 4 & 5:		DC: ± (2% of reading + 2 µA) 15 Hz < f < 1 MHZ: ±(10% of reading + 2 µA)	
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, IEC62368-1, IEC60335-1, IEC60598-1, IEC60065, IEC61010 MD6: IEC60990 Fig5 U3, IEC60598-1 MD7: IEC62368-1, IEC61010-1 FigA.2 (2K ohm) for Run function MD8: IEC60990/IEC62368-1 Fig4 U1		
	External MD	Basic measuring element 1 kΩ	
	Scope Output Interface	BNC type connector on rear panel for Oscilloscope connection	

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:	≤ 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% + 5 V (resistive load), from no load to full load and Low Line to High Line (combined regulation)
	Crest Factor:	> 3
	Test Timing:	< 350 ms at start and between
	Limit:	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 V
		Accuracy: ± (1.5% of setting + 2 counts)
	Frequency	Range: 45.0 Hz – 99.9 Hz Resolution: 0.1 Hz Accuracy: ± 0.1% of setting
		Range: 100 Hz – 500 Hz Resolution: 1 Hz Accuracy: ± 0.1% of setting
	A-HI-Limit	Range: 4.20 A / 2.10 A Resolution: 0.01 A Accuracy: ± (2% of reading + 2 counts)
Measurement	Voltage	Range: 0.0 – 277.0 V Resolution: 0.1 V Accuracy: ± (1.5% of reading + 2 counts)
	Current	Range: 0.00 – 16.00 A Resolution: 0.01 A Accuracy: ± (2% of reading + 2 counts)
	Power	Range: 0 – 4500 Resolution: 1 Accuracy: ± (5% of reading + 3 counts) for PF > 0.100
	Power Factor	Range: 0.000 – 1.000 Resolution: 0.001 Accuracy: ± (8% of reading + 5 counts)
	Frequency:	Range: 45 – 500 Hz Resolution: 0.1 Hz Accuracy: ± 0.1 Hz

GENERAL SPECIFICATIONS		
PLC Remote Control	Input: Test, Reset, Interlock, Recall File 1 through 3 Output: Pass, Fail, Test-in-Process	
Safety	Built-in SmartGFI circuit	
Memory	10,000 Steps	
Interface	Standard: USB/RS-232 Optional: Ethernet or GPIB	
Security	Advanced security system with access levels and username/password requirements	
Dimensions (W x H x D)	16.93" x 5.24" x 19.69" (430 x 133 x 500 mm)	
Weight	8204/8254:	92 lbs (42 kg)
	8206/8207:	103 lbs (47 kg)
	8256/8257:	103 lbs (47 kg)

For reading specifications, please refer to the user manual.

Why We Use Counts

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

The default of the Adapter Box accessory come in L-N polarity. N-L polarity is available upon request.

Specifications subject to change without notice.