OMNIA® II

The Most Advanced Electrical Safety Compliance Analyzer in the Industry

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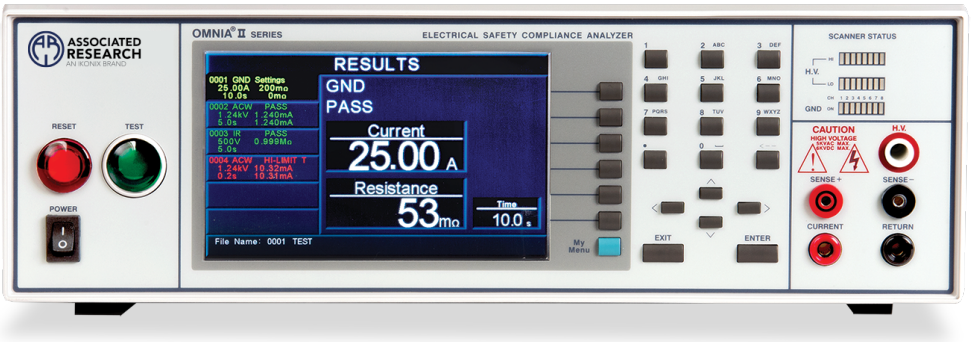
CE UKCA TÜV Rheinland of North America RoHS 3 COMPLIANT 2015/863/EU EN 50191 COMPLIANT

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 (40A)	Ground Continuity	Insulation Resistance	Leakage Current	Functional Run	Built-in AC Power	Power Source Recommended	EN 50191 COMPLIANT
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 (4 or 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 0.75 µF < 2 kV 0.5 µF < 3 kV	0.08 µF < 4 kV 0.04 µF < 6 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)	
Output Regulation	± (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 Frequency	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: Resolution: Accuracy:	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 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:	1: 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)

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, 62368-1, IEC60335-1, IEC60598-1, IEC60065, IEC61010 MD6: IEC60990 Fig5 U3, IEC60598-1 MD7: 62368-1, IEC61010-1 FigA.2 (2K ohm) for Run function MD8: IEC60990/62368-1 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: Resolution: Accuracy:	45.0 Hz – 99.9 Hz 0.1 Hz ± 0.1% of setting
		Range: Resolution: Accuracy:	100 Hz – 500 Hz 1 Hz ± 0.1% of setting
	A-HI-Limit	Range: Resolution: Accuracy:	4.20 A / 2.10 A 0.01 A ± (2% of reading + 2 counts)
Measurement	Voltage	Range: Resolution: Accuracy:	0.0 – 277.0 V 0.1 V ± (1.5% of reading + 2 counts)
		Current Range: Resolution: Accuracy:	 0.00 – 16.00 A 0.01 A ± (2% of reading + 2 counts)
		Power: Resolution: Accuracy:	0 – 4500 1 ± (5% of reading + 3 counts) for PF > 0.100
		Power Factor: Resolution: Accuracy:	0.000 – 1.000 0.001 ± (8% of reading + 5 counts)
		Frequency: Resolution: Accuracy:	45 – 500 Hz 0.1 Hz ± 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: 8206/8207: 8256/8257:	82 lbs (37 kg) 92 lbs (42 kg) 83 lbs (38 kg) 103 lbs (47 kg)

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.

Specifications subject to change without notice.

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