

Model 8220

A measurement tool for electrical parameters and distribution network disturbances

SPECIFICATIONS

MODEL	8220
ELECTRICAL	
Voltage (TRMS)	Phase-to-Phase: 660V; Phase-to-Neutral: 600V
Current (TRMS)	MN Clamp: 0.2 to 6A/120A or 2 to 240A MR Clamp: 10 to 1000Aac, 10 to 1400Adc SR Clamp: 3 to 1200A MiniFlex®: 10 to 1000A AmpFlex®: 10 to 6500A ⁽¹⁾
Frequency (Hz)	40 to 70Hz
Other Measurements	kW, kvar, PF, DPF, VA, kWh, kvarh, VAh, Phase Rotation, Temperature, RPM, Resistance, Continuity, Diode Test
Harmonics	1 st to 50 th
Sampling Frequency	256 samples / cycle
Data Storage	Stores nine sets of readings totaling up to 99 snapshots for volts, amps, power and harmonics
Power Source	Six 1.5V AA Alkaline batteries (included)
Battery Life	≥8 hrs with display on ≥40 hrs with display off (recording mode)
MECHANICAL	
Communication Port	Optically isolated USB
Display	Three-line backlit color LCD digital display with custom icons and adjustable brightness & contrast
Dimensions	8.3 x 4.3 x 2.4" (211 x 108 x 60mm)
Weight	1.9 lbs (0.88kg)
Safety Rating	EN 61010, 600V CAT III, IP54, Pollution Degree 2

⁽¹⁾Crest factor at 6500 = 1

KIT OPTION INCLUDES

8220 Kit

One user selectable current probe with 10 ft lead and black connector, black and red 10 ft voltage leads and alligator clips, optical USB cable, six 1.5V batteries, two safety test probes, carrying bag, and USB stick supplied with DataView® software and user manual.



8230 Kit

Current probe with 10 ft lead and black connector, black and red 10 ft voltage leads and alligator clips, optical USB cable, NiMH battery, 120V US wall charger, carrying bag, and USB stick supplied with DataView® software and user manual.



FEATURES

- Measures up to 660Vrms or Vdc
- Measures up to 6500Aac or 1400Adc (probe dependent)
- Displays Min, Max and Average Volts and Amps, Crest Factor, Peak Value and K-Factor
- Calculates and displays Watts, vars and VA, Power Factor and Displacement Power Factor for single-phase and balanced three-phase
- Measures and records power systems (kW, VA, kvar)
- Energy metering (kAh, varh, kWh)
- Displays total harmonic distortion (THD-F and THD-R) for voltage and current
- Displays individual harmonic values and % for volts and amps through the 50th harmonic
- The Max and Min RMS measurements are calculated every half-period
- Captures and displays inrush current
- Calculates and displays phase rotation and RPM
- Displays temperature in both °F and °C
- Displays resistance up to 2000Ω
- Conducts continuity and diode tests
- Stores up to nine complete sets of readings for all volt, amp, power and harmonic measurements
- Operates on batteries or optional power adapter
- Download stored data snapshots to DataView® software via optical USB port (included)
- Includes FREE DataView® software for configuring data storage, real-time waveform display, analysis and report generation

CATALOG NO.	DESCRIPTION
2130.90	Power Quality Meter Model 8220 (no probes)
2130.91	Power Quality Meter Model 8220 w/MN93-BK
2130.93	Power Quality Meter Model 8220 w/24" 193-24-BK (AmpFlex®)
2130.96	Power Quality Meter Model 8220 w/MN193-BK



PowerPad® Jr. Model 8230

Measure and carry out diagnostic work and power quality work on single- or three-phase balanced load networks

SPECIFICATIONS

MODEL	8230
ELECTRICAL	
Voltage (TRMS)	Phase-to-Phase: 660V; Phase-to-Neutral: 600V
Current (TRMS)	MN Clamp: 0.2 to 6A/120A or 2 to 240A MR Clamp: 10 to 1000Aac, 10 to 1400Adc SR Clamp: 3 to 1200A MiniFlex®: 10 to 1000A AmpFlex®: 10 to 6500A ⁽¹⁾
Frequency (Hz)	40 to 70Hz
Other Measurements	kW, kvar, PF, DPF, kWh, kvarh, kVAh, K-Factor, Flicker, Harmonic Phase Shift, Phase Rotation
Harmonics	THD-R, THD-F, V, A, VA, 1 st to 50 th , Direction, Sequence
Sampling Frequency	256 samples/cycle
Data Storage	1.5MB partitioned for waveforms, alarms and trend recording
Power Source	NiMH rechargeable battery pack (included) AC Supply: 120/230VAc (50/60Hz)
Battery Life	≥8 hrs with display on ≥40 hrs with display off (recording mode)
MECHANICAL	
Communication Port	Optically isolated USB
Display	¼ VGA (320 x 240) color LCD digital & graphical display with adjustable brightness & contrast
Dimensions	8.3 x 4.3 x 2.4" (211 x 108 x 60mm)
Weight	1.9 lbs (0.88kg)
Safety Rating	EN 61010, 600V CAT III, IP54, Pollution Degree 2

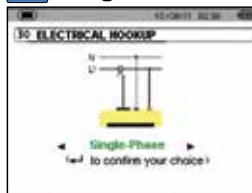
⁽¹⁾Crest factor at 6500 = 1



FEATURES

- Measures up to 660Vrms or Vdc
- Measures up to 6500Aac or 1400Adc (probe dependent)
- Displays Min, Max and Average Volts and Amps, Crest Factor, Peak Value and K-Factor
- Calculates and displays Watts, vars and VA, Power Factor and Displacement Power Factor for single-phase and balanced three-phase
- Measures and records power systems (kW, VA, kvar)
- Energy metering (kAh, varh, kWh)
- Displays total harmonic distortion (THD-F and THD-R) for voltage and current
- Displays individual harmonic values and % for Volts and Amps through the 50th harmonic
- Captures, displays and stores inrush current waveforms and statistics
- Stores up to eight screen captures
- Stores up to 1MB of trend recorded data
- Configurable from DataView® software or front panel
- Download stored data to DataView® software via optical USB port (included)
- Captures up to 4096 alarm events from up to 10 different thresholds
- Displays and records up to 17 different power quality parameters
- Includes FREE DataView® software for configuring data storage, real-time waveform display, analysis and report generation
- The Max and Min RMS measurements are calculated every half-period

Configuration



Recording Setup



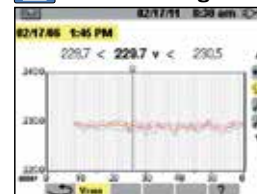
Inrush Mode



Waveform Mode



Trend Recording



Harmonics Mode

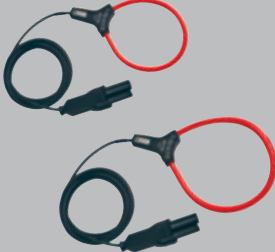


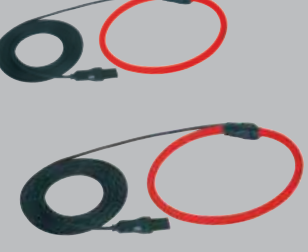



CATALOG NO.	DESCRIPTION
2130.81	PowerPad® Jr. Model 8230 (no probes)
2130.82	PowerPad® Jr. Model 8230 w/MN93-BK
2130.87	PowerPad® Jr. Model 8230 w/MN193-BK







POWER QUALITY ANALYZERS, METERS & LOGGERS

Optional Accessories

SENSOR TYPE	CURRENT RANGE	ACCURACY (TYPICAL)	TYPICAL ERROR ON Φ AT 50/60HZ	MAX CONDUCTOR SIZE	USED WITH MODEL	LIMITED RANGE IF USED WITH MODEL	CATALOG NUMBER
MiniFlex® MA193-BK *  10" or 14" sensor	100mA to 3000A _{AC}	±1%	0°	2.75" (70mm)	PEL 102 PEL 103 PEL 105 8333 8336	8220 8230 8435	2140.48 (10" sensor)
							2140.50 (14" sensor)
MR193-BK  Battery operated	1 to 1000A _{AC} 1 to 1300A _{DC}	±2.5%	-0.80°	1.6" (41mm)	8220 8230 PEL 102 PEL 103 PEL 105 8333 8336 8435	N/A	2140.28
SR193-BK 	1 to 1200A _{AC}	±0.3%	0.2°	2.05" (52mm)	8220 8230 PEL 102 PEL 103 PEL 105 8333 8336 8435	N/A	2140.33
AmpFlex® 193-BK *  24" or 36" sensor	100mA to 12,000A _{AC}	±1%	0°	7.64" (190mm) or 11.46" (290mm)	PEL 102 PEL 103 PEL 105 8333 8336	8220 8230 8435	2140.34 (24" sensor)
							2140.35 (36" sensor)
AmpFlex® A196  24" sensor IP67	10 to 10,000A _{AC}	±2%	0°	5.73" (145mm)	PEL 105 8435	N/A	2140.75 (24" sensor)

* Maximum current reduced by a factor of 2 for 400Hz fundamental frequency.

SENSOR TYPE	CURRENT RANGE		ACCURACY (TYPICAL)	TYPICAL ERROR ON Φ AT 50/60HZ	MAX CONDUCTOR SIZE	USED WITH MODEL	LIMITED RANGE IF USED WITH MODEL	CATALOG NUMBER
MN93-BK 	0.5 to 240Aac		±1%	0.8°	0.78" (20mm)	PEL 102 PEL 103 PEL 105 8333 8336 8435	8220 8230	2140.32
MN193-BK 	100A	200mA to 120Aac	±1%	0.75°	0.78" (20mm)	8220 8230 PEL 102 PEL 103 PEL 105 8333 8336 8435	N/A	2140.36
	5A	5mA to 6Aac	±1%	1.7°				
SL261 **  Battery operated	100A	5 to 100Aac/dc	±4%	±0.5°	0.46" (11.8mm)	8220 8230 PEL 102 PEL 103 PEL 105 8333 8336 8435	N/A	1201.51
	10A	50mA to 10Aac/dc	±3%	±1°				
J93  Battery operated	50 to 3500Aac 50 to 5000Adc		±1%	±1°	2.83" (72mm) Busbar: 5 x 1.69" (127 x 43mm)	PEL 102 PEL 103 PEL 105 8333 8336 8435	N/A	2140.49

Note: Refer to the Power Meter's product user manual for complete specifications.

All current sensors can be used with the Models 8435 and PEL 105. However, only the A196 flexible sensors are waterproof.

** AC/DC Current Probe BNC Adapter for Model SL261 only
Catalog #2140.40



CATALOG NO.	DESCRIPTION
1201.51	AC/DC Current Probe Model SL261 (BNC)
2140.37	Adapter – US 110V Power Adapter (eliminates need for batteries) 8220 & 8230 only
2140.28	AC/DC Current Probe Model MR193-BK
2140.32	AC Current Probe Model MN93-BK
2140.33	AC Current Probe Model SR193-BK
2140.34	AmpFlex® Sensor 24" Model 193-24-BK
2140.35	AmpFlex® Sensor 36" Model 193-36-BK
2140.36	AC Current Probe Model MN193-BK
2140.48	MiniFlex® Sensor 10" Model MA193-10-BK
2140.49	AC/DC Current Probe Model J93-BK
2140.50	MiniFlex® Sensor 14" Model MA193-14-BK
2140.75	AmpFlex® Sensor 24" (waterproof - IP67) Model A196-24-BK

DataView®

Data Analysis and Reporting Software



Configure all functions of the Power & Energy Loggers

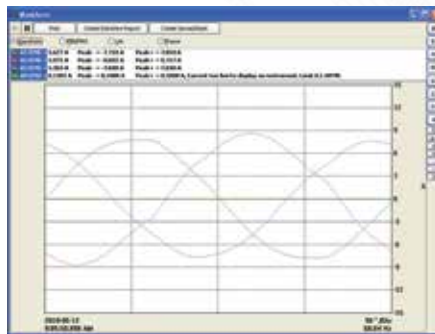


- Display and analyze real-time data on your PC
- Configure functions and parameters from your PC
- Customize views, templates and reports to your exact needs
- Create and store a complete library of configurations that can be uploaded as needed
- Zoom in and out and pan through sections of the graph to analyze the data
- Download, display and analyze recorded data
- Display waveforms, trend graphs, harmonic spectrums, text summaries, transients, event logs and stored alarms
- Print reports using standard or custom templates you design
- Free updates are available on our website www.aemc.com

Typical DataView® Functional, Digital & Graphical Displays



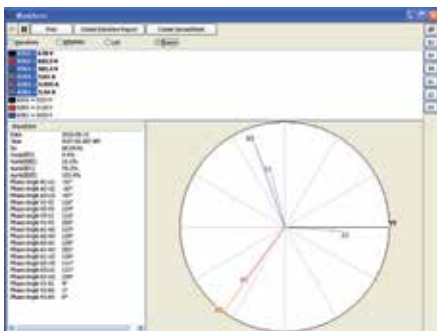
Clear and easy setup of all functions from one tabbed dialog box.



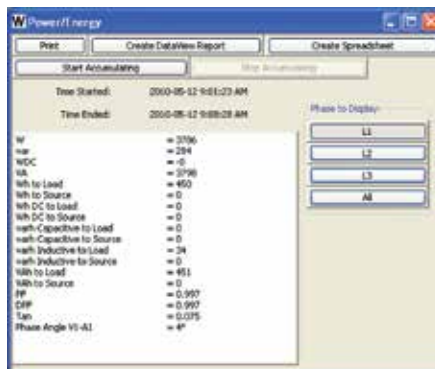
Display real-time waveforms by phase, parameter or total.



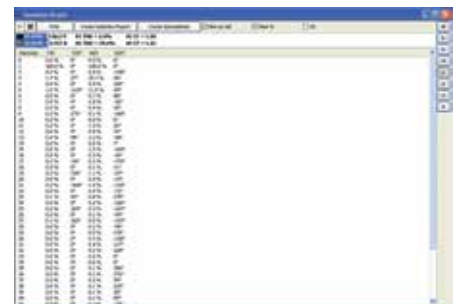
Display all harmonics from 1st to 50th in bargraph form for voltage, current and power.



Display real-time Phasor diagrams. Includes unbalance for both voltage and current.



Display power and energy parameters – both instantaneous and total.



Display harmonics in a text table from harmonic 0 (DC) through the 50th.