

# POWER QUALITY/ENERGY ANALYZERS, METERS & LOGGERS

## THREE-PHASE POWER QUALITY ANALYZERS



### POWERPAD® III MODELS 8333 & 8336

*SD card for trend recordings and data storage,  
extensive memory for high snapshot quantity,  
captured transients/inrush and alarm events*

### SPECIFICATIONS

MODEL	8333	8336
Input Terminals	4 voltage / 3 current	5 voltage / 4 current
Inputs	3 voltage / 3 current	4 voltage / 4 current
Voltage (TRMS AC+DC)	2 to 1000V	
Voltage Ratio	up to 500kV	
Current (TRMS AC+DC)	MN93: 500mA to 200Aac; MN193: 0.005 to 100Aac SR193 Clamp: 1A to 1000Aac AmpFlex® or MA193 Clamps: 100mA to 10000Aac MR193 Clamp: 1A to 1000Aac/1300Aac SL261 Clamp: 50mA to 100Aac/dc Current Ratio: up to 60KA	
Frequency (Hz)	40 to 69Hz	
Distribution Systems	1P 2W, 1P 3W, 2P 2W, 2P 3W, 2P 4W, 3P 3W, 3P, 4W, Split-Phase 2W & 3W and Aron meters	1P 2W, 1P 3W, 2P 2W, 2P 3W, 2P 4W, 3P 3W, 3P, 4W and 3P 5W, 2 ½ Element and Aron meters
Power Values	W, VA, var, VAD, PF, DPF, cos ϕ, tan ϕ	
Energy Values	Wh, varh, VAh, VADh	
Harmonics	1st to 50th, Direction, Sequence; THD: 0 to 50, phase	
Transients	up to 51	up to 210
Flicker (Pst/Pit)	Yes/No	Yes/Yes
Unbalance	Yes	
Recording	Yes	
Alarm Mode	10 types; 4000 recorded	40 types; 16,000 recorded
Peak	Yes	
Phasor Display	Automatic	
Display	Color ¼ VGA TFT screen (320 x 240) diagonal 5.82" (148mm)	
Snapshots	12	50
Languages	> 27	
Communication Interface	USB	
<b>MECHANICAL</b>		
Battery Life	≤10 hrs, ≥15 hrs in Record Mode	
Power Supply	9.6V NiMH rechargeable battery pack (included) External AC supply: 110/230Vac ±10% (50/60Hz)	
Dimensions / Weight	9.8 x 7.8 x 2.6" (240 x 180 x 55mm) / 4.3 lbs (1.95kg)	
<b>SAFETY</b>		
Safety Rating / IP	IEC 61010, 1000V CAT III; 600V CAT IV / IP53	

### KIT OPTIONS

**8333**  
AS ABOVE WITH AMPFLEX®  
193 FLEXIBLE CURRENT PROBE  
(10KA) CATALOG # 2136.11  
24", RATED 600V CAT IV

OR

AS ABOVE, MN193 CURRENT  
PROBE (5A/100A)  
CATALOG # 2136.12  
Rated 600V CAT III

**8336**  
AS ABOVE WITH AMPFLEX®  
193 FLEXIBLE CURRENT PROBE  
(10KA) CATALOG # 2136.31  
24", RATED 600V CAT IV

OR

AS ABOVE, MN193 CURRENT  
PROBE (5A/100A)  
CATALOG # 2136.32  
Rated 600V CAT III



### PRODUCT INCLUDES

#### 8333

(4) black 10 ft voltage leads, 5 ft USB cable, (4) black alligator clips, (12) color-coded input ID markers, NiMH battery, 110/240V power adapter with US power cord, carrying bag, soft carrying pouch, and USB drive supplied with a product user manual and DataView® software.



#### 8336

(5) black 10 ft voltage leads, (5) black alligator clips, (12) color-coded input ID markers, USB cable, NiMH battery, 110/240V power adapter with US power cord, large classic tool bag, soft carrying pouch, quick start user guide, and USB drive supplied with a product user manual and DataView® software.



# POWER QUALITY/ENERGY ANALYZERS, METERS & LOGGERS

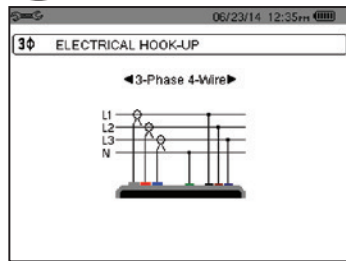
## THREE-PHASE POWER QUALITY ANALYZERS

*Captures and Records  
Transients, Events & Waveforms  
Simultaneously!*

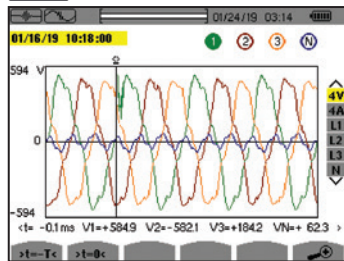
### MODELS 8333 & 8336

### Large Functional Displays

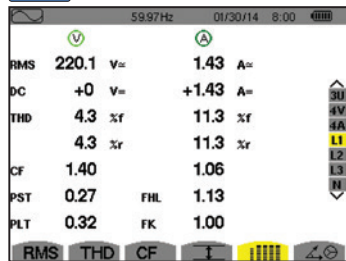
#### CONFIGURATION



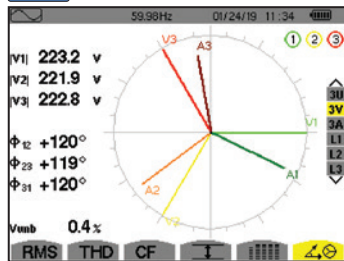
#### TRANSIENT MODE



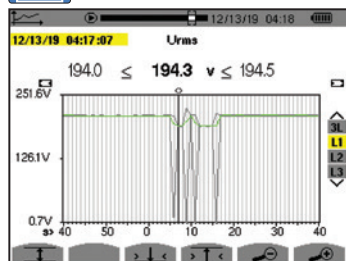
#### POWER AND ENERGY MODE



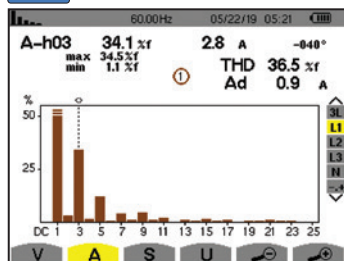
#### PHASOR DIAGRAM



#### RECORDING MODE



#### HARMONICS MODE



### FEATURES

- True RMS single-, two- and three-phase measurements at 256 samples/cycle, plus DC
- Real-time color waveforms
- Easy-to-use on-screen setup
- Automatic current probe recognition and scaling
- True RMS voltage and current measurement
- Measures DC volts, amps and power
- Displays and captures voltage, current and power harmonics to 50<sup>th</sup> order, including direction, in real-time
- Captures transients down to 1/256<sup>th</sup> of a cycle
- Stores comprehensive data base of logged data
- Phasor diagram display
- kVA, kvar and kW per phase and total
- kVAh, kvarh and kWh per phase and total
- Neutral current calculated and displayed for three-phase
- Transformer K-Factor display (8220 and 8230)
- Transformer Factor K display (8333, 8336, 8436)
- Power Factor, displacement PF display
- Captures up to 210 transients (8336 and 8436)
- Short term (8333) and Long term (8336 and 8436) flicker display
- Phase unbalance (current and voltage)
- Harmonic Distortion (total and individual) from 1st to 50<sup>th</sup>
- Alarms, surges and sags
- Screen snapshot function captures waveforms or other information on the display
- Includes FREE DataView® software for configuring, data retrieval, real-time display, analysis and report generation

### ACCESSORIES/REPLACEMENTS




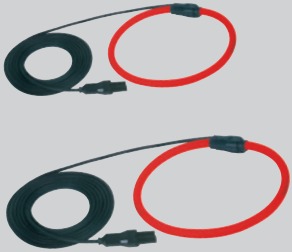

- CATALOG #2133.73** Extra Large Classic Tool Bag (18x9x12")
- CATALOG #2140.28** AC/DC Current Probe Model MR193-BK
- CATALOG #2140.32** AC Current Probe Model MN93-BK
- CATALOG #2140.33** AC Current Probe Model SR193-BK
- CATALOG #2140.34** AmpFlex® Sensor 24" Model 193-24-BK
- CATALOG #2140.35** AmpFlex® Sensor 36" Model 193-36-BK
- CATALOG #2140.36** AC Current Probe Model MN193-BK

- CATALOG #2140.40** BNC Adapter for AC/DC Current Probe Model SL261 and models for use with 8220, 8333, 8335, 8336, 8435, 8436 & PEL Series
- CATALOG #2140.44** (1) 10 ft (3M) Black Lead w/Black Alligator Clip (Lead rated 600V CAT IV 10A, Clip rated 1000V CAT IV ,UL)
- CATALOG #2140.48** MiniFlex® Sensor 10" Model MA193-10-BK
- CATALOG #2140.50** MiniFlex® Sensor 14" Model MA193-14-BK
- CATALOG #2140.77** Phase Power Adapter (8333 & 8336)

CATALOG NO.	DESCRIPTION
2136.10	PowerPad® III Model 8333 (no probes)
2136.11	PowerPad® III Model 8333 w/3 193-24-BK AmpFlex® Sensors
2136.12	PowerPad® III Model 8333 w/3 MN193-BK Probes
2136.30	PowerPad® III Model 8336 (no probes)
2136.31	PowerPad® III Model 8336 w/4 193-24-BK Sensors
2136.32	PowerPad® III Model 8336 w/4 MN193-BK Probes

# POWER QUALITY/ENERGY ANALYZERS, METERS & LOGGERS

## OPTIONAL ACCESSORIES



SENSOR TYPE	CURRENT RANGE	ACCURACY (TYPICAL)	TYPICAL ERROR ON $\phi$ AT 50/60HZ	MAX CONDUCTOR SIZE	USED WITH MODEL	CATALOG NUMBER
<b>MiniFlex® MA193-BK*</b>  10,14 or 24" sensor	100mA to 3000Aac	±1%	0°	2.75" (70mm)	PEL 102 PEL 103 PEL 105 8333 8336	2140.48 (10" sensor)
						2140.50 (14" sensor)
<b>MR193-BK</b>  Battery operated	1 to 1000Aac 1 to 1300Adc	±2.5%	-0.80°	1.6" (41mm)	PEL 102 PEL 103 PEL 105 8333 8336	2140.28
<b>SR193-BK</b> 	1 to 1200Aac	±0.3%	0.2°	2.05" (52mm)	PEL 102 PEL 103 PEL 105 8333 8336	2140.33
<b>AmpFlex® 193-BK*</b>  24" or 36" sensor	100mA to 12,000Aac	±1%	0°	7.64" (190mm) or 11.46" (290mm)	PEL 102 PEL 103 PEL 105 8333 8336	2140.34 (24" sensor)
						2140.35 (36" sensor)
<b>AmpFlex® 196-BK*</b>  Waterproof, IP67 14 or 24" sensor	100mA to 3000Aac (10,000A)	±1%	0°	2.75" (70mm)	PEL 105 8436	2140.79 (14" sensor)
	200mA to 10,000Aac (12,000A)	±2%		7.64" (190mm)		2140.75 (24" sensor)

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

All current sensors can be used with Models PEL 105, 8435 and 8436. However, only the MA196-14-BK and 196A-24-BK flexible sensors are waterproof.

# POWER QUALITY/ENERGY ANALYZERS, METERS & LOGGERS

## OPTIONAL ACCESSORIES

SENSOR TYPE	CURRENT RANGE		ACCURACY (TYPICAL)	TYPICAL ERROR ON $\Phi$ AT 50/60HZ	MAX CONDUCTOR SIZE	USED WITH MODEL	LIMITED RANGE IF USED WITH MODEL	CATALOG NUMBER
MN93-BK 	0.5 to 240Aac		$\pm 1\%$	$0.8^\circ$	0.78" (20mm)	PEL 102 PEL 103 PEL 105 8333 8336	N/A	2140.32
MN193-BK 	100A	200mA to 120Aac	$\pm 1\%$	$0.75^\circ$	0.78" (20mm)	PEL 102 PEL 103 PEL 105 8333 8336	N/A	2140.36
	5A	5mA to 6Aac	$\pm 1\%$	$1.7^\circ$				
SL261 	100A	5 to 100Aac/dc	$\pm 4\%$	$\pm 0.5^\circ$	0.46" (11.8mm)	PEL 102 PEL 103 PEL 105 8333 8336	N/A	1201.51
	10A	50mA to 10Aac/dc	$\pm 3\%$	$\pm 1^\circ$				

All current sensors can be used with models PEL 105 and 8436. However, only the MA196-14-BK and 196A-24-BK flexible sensors are waterproof.

### ACCESSORIES/REPLACEMENTS

**CATALOG #1201.51**  
AC/DC Current Probe  
Model SL261 (BNC)



**CATALOG #2137.83**  
600V Power Adapter for use with  
Models PEL 102 and PEL 103 only



**CATALOG #2140.28**  
AC/DC Current Probe  
Model MR193-BK



**CATALOG #2140.32**  
AC Current Probe  
Model MN93-BK



**CATALOG #2140.33**  
AC Current Probe  
Model SR193-BK



**CATALOG #2140.34**  
AmpFlex® Sensor 24"  
Model 193-24-BK



### ACCESSORIES/REPLACEMENTS

**CATALOG #2140.35**  
AmpFlex® Sensor 36"  
Model 193-36-BK



**CATALOG #2140.36**  
AC Current Probe  
Model MN193-BK



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



**CATALOG #2140.48**  
MiniFlex® Sensor 10" Model MA193-10-BK



**CATALOG #2140.50**  
MiniFlex® Sensor 14" Model MA193-14-BK



**CATALOG #2140.75**  
AmpFlex® Sensor 24" (Waterproof - IP67)  
Model 196A-24-BK



**CATALOG #2140.79**  
MiniFlex® Sensor 14" Waterproof - IP67  
Model MA196-14-BK

# POWER QUALITY/ENERGY ANALYZERS, METERS & LOGGERS SELECTION CHART

AEMC MODEL NUMBER	AEMC CATALOG NUMBER	INPUT TERMINALS	CHANNELS	RMS VOLTAGE MAX PHASE-TO-NEUTRAL	RMS VOLTAGE MAX PHASE-TO-PHASE	PEAK VOLTAGE MAX PHASE-TO-NEUTRAL	PEAK VOLTAGE MAX PHASE-TO-PHASE	DC VOLTAGE MAX	AC CURRENT MAX (PROBE DEPENDENT)	DC CURRENT MAX (PROBE DEPENDENT)	RATIOS VOLT	RATIOS AMPERE
8333	2136.10	4V/3I	3V/4I	1000Vrms	2000Vrms	1414Vpk	2828Vpk	1200Vdc	10,000Aac	5000Adc		Yes
8336	2136.30	5V/4I	4V/4I	1000Vrms	2000Vrms	1414Vpk	2828Vpk	1200Vdc	10,000Aac	5000Adc		Yes
PEL 102	2137.51	4V/3I	3V/3I	1000Vrms	1700Vrms	1414Vpk	2400Vpk	1000Vdc	10,000Aac	5000Adc		Yes
PEL 103	2137.52	4V/3I	3V/3I	1000Vrms	1700Vrms	1414Vpk	2400Vpk	1000Vdc	10,000Aac	5000Adc		Yes
PEL 105	2137.57	5V/4I	4V/4I	1000Vrms		1414Vpk	2400Vpk	1000Vdc	10,000Aac	5000Adc		Yes

AEMC MODEL NUMBER	AEMC CATALOG NUMBER	DISTRIBUTION SYSTEMS	PHASE ROTATION	WAVEFORM MODE	TRANSIENT MODE	TRUE INRUSH MODE/TYPE/ DURATION	ALARM MODE	SNAPSHOT MODE	HARMONIC MODE	TYPE LCD	POWER SOURCE
8333	2136.10	1P-2W, 2P-3W, 3P-3W, 3P-4W		Yes		No	10 types/ up to 2 active/ 4662 recorded	Yes (12)	Yes	TFT - 5.7" diagonal 320 x 240 resolution	External adapter with internal NiMH battery pack
8336	2136.30	1P-2W, 1P-3W, 2P-2W, 2P-3W, 2P-4W, 3P-3W, 3P-4W, 3P-5W		Yes		Yes (RMS+PEAK & RMS) up to 1 & 10 mins	40 types/ up to 7 active/ 16,362 recorded	Yes (50)	Yes	TFT - 5.7" diagonal 320 x 240 resolution	External adapter with internal NiMH battery pack
PEL 102	2137.51	1P-2W, 1P-3W, 3P-3W D2, 3P-3W O2, 3P-3W Y2, 3P-3W D3, 3P-3W O3, 3P-3W Y, 3P-3W DB, 3P-4W Y, 3P-4W YB, 3P-4W Y2 1/2, 3P-4W D, 3P-4WOD, DC-2W DC-3W, DC-4W	Yes			No			Yes	None	Line Power with internal NiMH battery pack
PEL 103	2137.52		Yes			No			Yes	Mono-chrome LCD	Line Power with internal NiMH battery pack
PEL 105	2137.57		Yes			No			Yes	Mono-chrome LCD	Power phase input or external adapter with internal NiMH battery pack