

# POWER QUALITY ANALYZERS, METERS & LOGGERS

## POWER & ENERGY LOGGERS PEL 100 SERIES

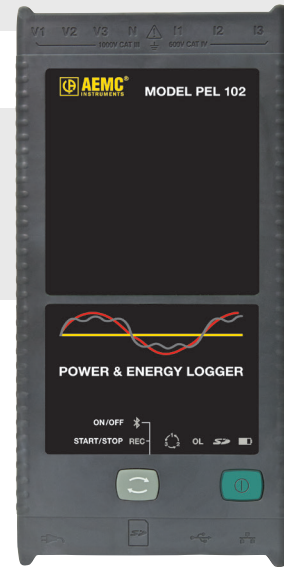
### MODEL PEL 102

Monitor your energy usage & costs locally or from anywhere in the world!

### FEATURES

- Simple-to-use, single-, dual- (split-phase) and three-phase (Y, Δ) power & energy loggers
- Designed to work in 1000V CAT III and 600V CAT IV environments and fits in many distribution panels
- Power measurements: kVA, kW and kvar
- Energy measurements: kVAh, kWh (source, load) and kvarh (quadrant indication)
- Updated features in DataView® software for configuring real-time communication with a PC and report generation with pre-defined or user defined templates
- 8GB SD card supplied, can be upgraded up to 32GB
- USB, LAN, Ethernet and Bluetooth (Class 1 wireless communication, up to 300ft away)
- Satisfies the monitoring requirements of NEC Code 220.87
- Power adapter allows the PEL 102 to be powered from a phase measurement input
- Provides all the necessary functions for power and energy data logging for 50Hz, 60Hz, 400Hz and DC distribution systems
- Automatic recognition of the connected current sensors/probes
- Magnetic case – can be mounted inside power panel

Special product features



### CAT #2137.51 INCLUDES

#### PEL 102 KIT

Small classic tool bag, three MiniFlex® MA193-10-BK sensors, 5ft USB cable, four black test leads and alligator clips, power cord, twelve color-coded ID markers, safety data sheet, compliance sheet, SD-Card with USB-SD-Card reader, quick start user guide, and USB drive supplied with DataView® software and user manual.



#### ANDROID™ APP AVAILABLE

### FOR PEL 102, 103 & 105!

Configure Measurements and Recordings

Display Data in Real-Time

For Use on Devices with an Android Platform



# POWER QUALITY ANALYZERS, METERS & LOGGERS

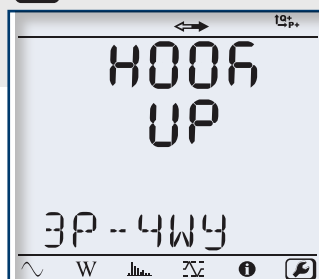
## POWER & ENERGY LOGGERS PEL 100 SERIES



### MODEL PEL 103

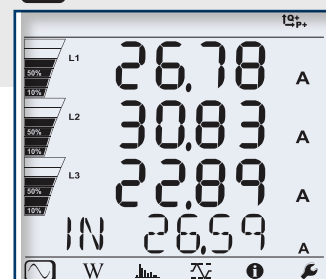
#### Large Functional Displays

##### INFORMATION MODE



Hook up, voltage and current ratios and aggregation period can be configured from the front panel of the PEL 103.

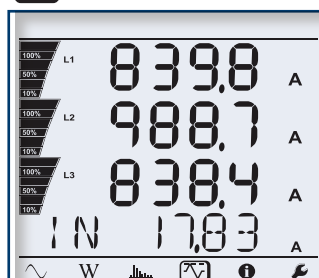
##### MEASUREMENT MODE



Real-time updates are displayed for voltage, current, power, frequency, power factor and tangent.

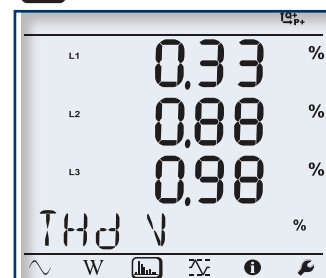


##### MAX MODE



Max values for voltage, current (including neutral current), power and harmonics.

##### HARMONIC MODE



Total Harmonic Distortion (THD) can be displayed by phase or phase to phase. Neutral current THD can also be displayed.

## FEATURES

- Simple-to-use, single-, dual- (split-phase) and three-phase (Y,  $\Delta$ ) power & energy loggers
- Designed to work in 1000V CAT III and 600V CAT IV environments and fits in many distribution panels
- Power measurements: kVA, kW and kvar
- Energy measurements: kVAh, kWh (source, load) and kvarh (quadrant indication)
- Updated features in DataView® software for configuring real-time communication with a PC and report generation with pre-defined or user defined templates
- 8GB SD card supplied, can be upgraded up to 32GB
- USB, LAN, Ethernet and Bluetooth (Class 1 wireless communication, up to 300ft away)
- Satisfies the monitoring requirements of NEC Code 220.87
- PEL 103 can be configured from front panel, DataView® control panel or the FREE Android™ application
- Provides all the necessary functions for power and energy data logging for 50Hz, 60Hz, 400Hz and DC distribution systems
- Automatic recognition of the connected current sensors/probes
- Magnetic case – can be mounted inside power panel
- Supports 17 network configurations

## CAT #2137.52 INCLUDES

### PEL 103 KIT (W/ LCD)

Small classic tool bag, three MiniFlex® MA193-10-BK sensors, 5ft USB cable, four black test leads and alligator clips, power cord, twelve color-coded ID markers, safety data sheet, compliance sheet, SD-Card with USB-SD-Card reader, quick start user guide, and USB drive supplied with DataView® software and user manual.



\*ADAPTER SOLD SEPARATELY

# POWER QUALITY ANALYZERS, METERS & LOGGERS

## POWER & ENERGY LOGGERS PEL 100 SERIES

### MODEL PEL 105

Three-Phase Power and Energy Logger  
Watertight...great for outdoor use!



### CAT #2137.59 INCLUDES

#### PEL 105 Kit

Extra-large tool bag, accessory pouch, 5ft USB cable, five 10ft black voltage leads (watertight cap) with alligator clips, power adapter 110/230V with US power cord, four water-tight AmpFlex® 196A-24-BK (not included with Cat. #2137.57), 9.6V NiMH battery, 8GB SD-card, USB SD-card reader, twelve color-coded input ID markers, quick start guide, and a USB drive supplied with DataView® software and user manual.



cover closed

### FEATURES

- Simple-to-use, single-, dual- (split-phase) and three-phase (Y, Δ) power & energy loggers
- Designed to work in 1000V CAT III and 600V CAT IV environments
- Supports 17 different network connections
- Power measurements: kVA, kW and kvar
- Energy measurements: kVAh, kWh (source, load) and kvarh (four quadrant indication)
- Includes DataView® software for configuring, real-time display, analysis and report generation
- 8GB SD card supplied, can be upgraded up to 32GB
- USB, LAN, Ethernet, Wi-Fi and Bluetooth communication (Class 1 wireless communication, up to 300ft away)
- Satisfies the monitoring requirements of NEC Code 220.87
- PEL 105 can be configured from front panel, DataView® control panel or the FREE Android™ application
- Provides all the necessary functions for power and energy data logging for 50Hz, 60Hz, 400Hz and DC distribution systems
- Automatic recognition of the connected current sensors/probes
- Powers directly from phase input
- Pole mountable

### ACCESSORIES

#### POLE MOUNTING KIT

Catalog #2137.82 (optional)  
Set of two, with hardware



CATALOG NO.	DESCRIPTION
2137.51	Power & Energy Logger Model PEL 102 (no LCD w/3 MA193-10-BK Sensors)
2137.52	Power & Energy Logger Model PEL 103 (with LCD w/3 MA193-10-BK Sensors)
2137.57	Power & Energy Logger Model PEL 105 w/o Sensors (Watertight IP67)
2137.59	Power & Energy Logger Model PEL 105 w/4 196A-24-BK (AmpFlex® - Watertight IP67)
2137.61	Power & Energy Logger Model PEL 102 (no LCD or Sensors)
2137.62	Power & Energy Logger Model PEL 103 (with LCD, no Sensors)

**Accessories/Replacement - available on website store from [www.aemc.com](http://www.aemc.com) See pages 112 & 113 for more optional current probes**

2137.77	Adapter-Power Adapter for use with Models PEL 102 & PEL 103
2137.82	Pole Mounting Kit

# SPECIFICATIONS

MODELS		PEL 102, PEL 103 & PEL 105		
GENERAL				
Sampling Frequency		128 samples per cycle; 50/60Hz (16 samples/cycle 400Hz)		
Data Storage Rate		1 per second (200ms also available on PEL 105)		
Demand Period Storage Rate		User selectable (1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30 and 60 minutes)		
Recorded Parameters (Single- and Poly-Phase)		V, I, W, VA, var, PF, Tan, Wh, VAh, varh, THD (V and I), Individual harmonics (from 1 through 50 per phase); Crest Factor (CF), Cos f / DPF		
Event Log		Tracks and records status changes and error messages along with recorded data		
Front Panel Indicator LEDs		Bluetooth active, recording in progress, phase connection reversal, overload, battery charging and SD Card status		
Storage Capacity		8GB SD card included / SD cards up to 32GB formatted FAT32 are supported		
INPUTS	Voltage	PEL 102/103 – 3 input channels; PEL 105 – 4 input channels via 4mm safety banana jacks		
	Current	PEL 102/103 - 3 input channels; PEL 105 – 4 input channels via custom 4 pin jacks that accept AEMC <sup>®</sup> probes and sensors		
ELECTRICAL				
VOLTAGE MEASUREMENT		RANGE	RESOLUTION*	ACCURACY*
50/60Hz		42.5 to 69Hz	–	±0.1Hz
Single-Phase RMS Voltages		10 to 1000Vrms	0.1V	±0.2% Rdg ±0.2V
Phase-to-Phase RMS Voltages		17 to 1700Vrms	0.1 to 1V	±0.2% Rdg ±0.4V
400Hz		340 to 460Hz	–	–
Single-Phase RMS Voltages		10 to 600Vrms	0.1V	±1% Rdg ±1V
Phase-to-Phase RMS Voltages		17 to 1200Vrms	0.1 to 1V	±1% Rdg ±1V
DC		100 to 1000V	0.1V	±1% Rdg ±3V (typical)
PT Ratios		Programmable from 50V to 650,000V	–	0.01 to 0.1V
CURRENT MEASUREMENT		A193*** (PEL 102/103)	196A*** (PEL 105)	
Nominal range for current probes supplied with kit. See chart on Pages 26 and 27 for other probes		200mA to 10,000A	200mA to 10,000A	–
CT Ratios		Programmable from 1:1 to 25,000:1 (probe dependent)		
POWER MEASUREMENTS		RANGE	RESOLUTION*	ACCURACY*
Active Power (P)*		-2 to 2GW	0.001W	±0.5% Rdg ±0.005% Pnom
Reactive Power (Q)*		-2 to 2Gvar	0.001var	±1% Rdg ±0.01% Qnom
Apparent Power (S)*		0 to 2GVA	0.001VA	±0.5% Rdg ±0.005% Snom
Power Factor		-1 to 1	0.001	±0.05
Tangent (active/reactive power ratio)		-3.2 to 3.2	0.001	±0.02
ENERGY MEASUREMENTS		RANGE	RESOLUTION*	ACCURACY*
Active Energy (EP)		0 to 4 x 10 <sup>9</sup> Wh	1Wh	±0.5% Rdg
Reactive Energy (EQ)		0 to 4 x 10 <sup>9</sup> varh	1varh	±2% Rdg
Apparent Energy (ES)		0 to 4 x 10 <sup>9</sup> Vah	1Vah	±0.5% Rdg
THD		±655%		
Individual Harmonics		1 to 50 displayed in percentage; 1 to 7 at 400Hz		
External Supply		110V/250V (10%) @ 50/60Hz; 400Hz		
Power From Phase Measurement		PEL 102/103 requires optional Power Adapter Cat #2137.77; PEL 105 Internal up to 1000Vac		
Back-Up Power Source/Charge Time		Rechargeable 8.4V NiMH battery pack / Approximately 5 hours		
Battery Life		30 minutes minimum, 60 minutes typical		
MECHANICAL				
Communication Ports		USB 2.0, Ethernet (RJ45), Wireless Bluetooth Class 1 **/ Wi-Fi (PEL 105 only)		
Dimension/Weight		10.08 x 4.92 x 1.46" (256 x 125 x 37mm) / 2.20lbs (1kg) (PEL 102 & PEL 103); 9.8 x 7.8 x 2.6" (250 x 200 x 67mm) / 8.8lbs (4kg) (PEL 105)		
Case		Double insulated, rubber over-molded, polycarbonate UL94 V1 rated		
DISPLAY				
Display Type for Model PEL 103 / PEL 105		2.63 x 2.16" (67 x 55mm), four line, monochrome, backlit LCD with adjustable brightness and contrast		
ENVIRONMENTAL / SAFETY				
Operating Temperature/Relative Humidity		50° to 122°F (10° to 50°C) / up to 85%; 32° to 108.5°F (0° to 42.5°C) / up to 85% (PEL 103 & PEL 105)		
Storage Temperature		-4° to 122°F (-20° to 50°C) with batteries; -4° to 158°F (-20° to 70°C) without batteries		
Safety Rating/CE Rating		Complies with IEC 61010-1: Ed3, and IEC 61010-2-030: Ed1 for 1000V CAT III / 600V CAT IV (PEL 102 & PEL 103) & 1000V CAT IV (PEL 105), Pollution Degree 2 / Yes		
Index of Protection		IP54 non operating (PEL 102 & PEL 103) / IP67 with cover closed (PEL 105)		

\* Maximum value is current probe dependent.

\*\* Computers with Class II Bluetooth will restrict range to 40ft. Computers without Bluetooth will require a Class I or Class II Bluetooth radio adapter.

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