



# Advanced Test Equipment Rentals

www.atecorp.com 800-404-ATEC (2832)

## POWER & ENERGY LOGGER PEL 100 Series

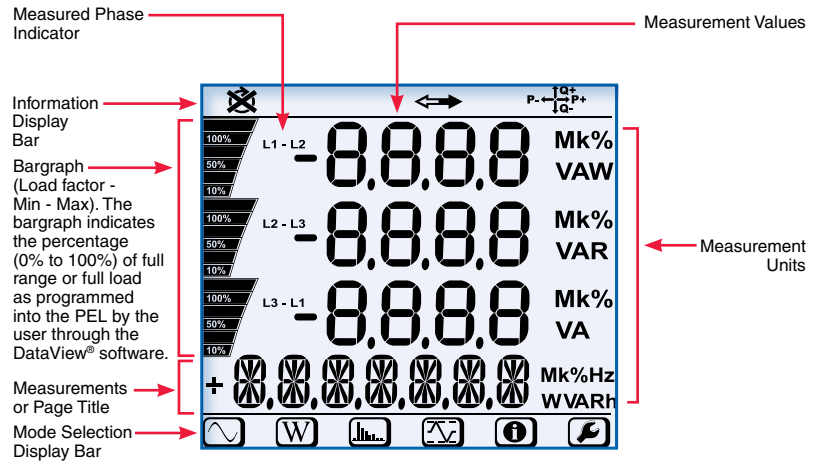
## Models PEL 102 & PEL 103



Economical, compact and simple to use!



### KEY FEATURES OF THE PEL 103 DISPLAY



### FEATURES

- Simple to use, single-, dual- (split-phase) and three-phase (Y, Δ) power & energy loggers
- Provides all the necessary functions for Power and Energy data logging for 50Hz, 60Hz, 400Hz and DC distribution systems
- Current measurements from 200mA up to 10,000A using flexible current sensors
- Automatic recognition of the connected current sensors/probes
- Power measurements: VA, W and var
- Energy measurements VAh, Wh (source/load indication) and varh (including quadrant indication)
- Record cost of energy usage
- Power Factor (PF), Cos (φ), Tan (Φ) and DPF
- Total Harmonic Distortion (THD) for voltages and currents
- Harmonics up to the 50<sup>th</sup> order for 50/60Hz voltages and currents and 7th order for 400Hz
- Simultaneous RMS measurements of each phase @ 128 samples/cycle and DC
- Bright blue, four line LCD on Model PEL 103 (3 phases shown simultaneously)
- Storage of measured and calculated values on a SD-Card or SDHC-Card
- Configuration of current and voltage ratios to external PT and CT ratios
- USB, LAN, and *Bluetooth* communication
- Includes DataView<sup>®</sup> software for data storage, real-time display, analysis and report generation with supplied pre-defined or custom templates

### TOP AND BOTTOM DISPLAY BARS INDICATE THE FOLLOWING

TOP DISPLAY BAR	
ICON	DESCRIPTION
	Phase Sequence reversal indicator or missing phase (displayed in 3-Phase distribution systems)
	Data available for recording (non-display indicates possible internal problem)
	Power Quadrant Indication

BOTTOM DISPLAY BAR	
ICON	DESCRIPTION
	Measurement Mode (Real-time values)
	Power and Energy Mode
	Harmonics Mode
	Min/Max Mode
	Information Mode
	Not used



### PRODUCT INCLUDES

#### Models PEL 102 & PEL 103

**Models PEL 102 and PEL 103 include:**  
 Small Classic Tool Bag, Three MiniFlex<sup>®</sup> MA193-10-BK Sensors (included with select models), 5 ft USB Cable, Four Black Test Leads and Alligator Clips, Power Cord, 12 Color-coded ID Markers, Multifix Mounting System, Safety Card for the PEL, Sensor Compliance Sheet, 2 GB SD-Card with USB-SD-Card Reader, Quick Start User Guide and USB Stick with DataView<sup>®</sup> and User Manual.



GENERAL				
Sampling Frequency	128 samples per cycle; 50/60Hz (16 samples/cycle 400Hz)			
Data Storage Rate	1 per second			
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 $\phi$ / 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	2GB SD card (included) is used for storage. SD cards (up to 2GB); SDHC cards (4 to 32GB) formatted FAT32 are supported			
INPUTS	Voltage	3 voltage input channels via 4mm safety banana jacks		
	Current	3 current input channels via custom 4 pin jacks that accept AEMC® probes and sensors		
ELECTRICAL				
VOLTAGE MEASUREMENT		RANGE	RESOLUTION	* ACCURACY (% of Reading)
	50/60Hz	42.5 to 69Hz	—	±0.1Hz
Single-Phase RMS Voltages		100 to 1000rms	0.1V	±0.2% Rdg ± 0.2V
Phase-to-Phase RMS Voltages		100 to 2000Vrms	0.1 to 1V	±0.2% Rdg ± 0.4V
	400Hz	340 to 460Hz	—	—
Single-Phase RMS Voltages		100 to 600Vrms	0.1V	±1% Rdg ± 1V
Phase-to-Phase RMS Voltages		200 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 65,0000V	0.01V to 0.1V	—
CURRENT MEASUREMENT				
Current Probe: MiniFlex® Sensor MA193***		200mA to 100Arms	1 to 100mA	±1% ± 50mA
		20 to 400Arms	10 to 100mA	±1% ± 0.2A
		100 to 2000Arms	0.1 to 1A	±1% ± 1A
		500 to 10,000Arms	0.1 to 1A	±1%
CT Ratios		Programmable from 1:1 to 25,000:1 (probe dependent)		
POWER MEASUREMENTS				
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 $\phi$ (active/reactive power ratio)		-3.2 to +3.2	0.001	± 0.02
ENERGY MEASUREMENTS				
Active Energy (EP)		0 to 4 x 10 <sup>18</sup>	1Wh	±0.5% Rdg
Reactive Energy (EQ)		0 to 4 x 10 <sup>18</sup>	1varh	±2% Rdg
Apparent Energy (ES)		0 to 4 x 10 <sup>18</sup>	1Vah	±0.5% Rdg
THD			± 65%	
Individual Harmonics		1 to 50 displayed in percentage; 1 to 7 at 400Hz		
External Supply		110V/250V (10%) @ 50/60Hz; 400Hz		
Back-Up Power Source / Charge Time		Rechargeable 8.4V NiMH battery pack / Approximately 5 hours		
Battery Life		Provides up to 30 minute ride through upon power loss		
MECHANICAL				
Communication Ports		USB 2.0, Ethernet (RJ45), Wireless Bluetooth Class 1 **		
Dimension/Weight		10.08 x 4.92 x 1.46" (256 x 125 x 37mm) / <1kg		
Case / Index of Protection		Double insulated, rubber over-molded, polycarbonate UL94 V1 rated / IP54 non operating		
Mounting / Security		Embedded magnets on back side, keyhole slot on back side / Kensington anti-theft system		
DISPLAY				
Display Type for Model PEL 103		2.63 x 2.16" (67 x 55mm), four line, monochrome, backlit LCD with adjustable brightness and contrast		
ENVIRONMENTAL / SAFETY				
Operating Temperature / Relative Humidity		32° to 122°F (0° to 50°C) / up to 85%		
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, Pollution Degree 2 / Yes		

\* 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.

CATALOG NO.	DESCRIPTION
2137.51	Power & Energy Logger Model PEL 102 (no LCD, w3 MA193-10-BK sensors)
2137.52	Power & Energy Logger Model PEL 103 (with LCD, w3 MA193-10-BK sensors)
2137.61	Power & Energy Logger Model PEL 102 (no LCD, no sensors)
2137.62	Power & Energy Logger Model PEL 103 (with LCD, no sensors)