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range or full load as programmed

user through the

Measurements

or Page Title Mode Selection **Display Bar**

into the PEL by the

DataView[®] software

POWER & ENERGY LOGGER PEL 100 Series

Mk%

VA

Mk%Hz

WVAR

35 Vantage Point Drive // Rochester, NY 14624 // Call 1.800.800.5001





Measurement Units

► 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 guadrant 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 50th 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[®] 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)			
P ← 1Q+ ↓Q	Power Quadrant Indication			

BOTTOM DISPLAY BAR

\bigcirc	Measurement Mode (Real-time values)
W	Power and Energy Mode
	Harmonics Mode
	Min/Max Mode
0	Information Mode
	Not used



PRODUCT INCLUDES

Models PEL 102 & PEL 103

Models PEL 102 and PEL 103 include: Small Classic Tool Bag, Three MiniFlex® 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® and User Manual.



POWER & ENERGY LOGGER PEL 100 Series

► SPECIFICATIONS

Models PEL 102 & PEL 103

GENEKAL					
Sampling Frequency	128 samples	s per cycle; 50/60Hz (16 samples/cy	cle 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	V, I, W, V/	A, var, PF, Tan, Wh, Vah, varh, THD (V	and I),		
(Single- and Poly-Phase)	Individual harmonics (fro	om 1 through 50 per phase); Crest F	actor (CF), Cos f / DPF		
Event Log	Tracks and records stat	us changes and error messages alor	ng 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	$\pm 0.2\%$ Rdg $\pm 0.2V$		
Phase-to-Phase RMS Voltages	100 to 2000Vrms	0.1 to 1V	$\pm 0.2\%$ Rdg $\pm 0.4V$		
400Hz	340 to 460Hz	-	_		
Single-Phase RMS Voltages	100 to 600Vrms	0.1V	$\pm 1\%$ Rdg $\pm 1V$		
Phase-to-Phase RMS Voltages	200 to 1200Vrms	0.1 to 1V	$\pm 1\%$ Rdg $\pm 1V$		
DC	100 to 1000V	0.1V	$\pm 1\%$ Rdg $\pm 3V$ (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	Programm	able from 1:1 to 25,000:1 (probe de	pendent)		
POWER MEASUREMENTS					
Active Power (P)*	-2 to 2GW	0.001W	$\pm 0.5\%$ Rdg $\pm 0.005\%$ Pnom		
Reactive Power (Q)*	-2 to 2Gvar	0.001var	$\pm 1\%$ Rdg $\pm 0.01\%$ Qnom		
Apparent Power (S)*	0 to 2GVA	0.001VA	$\pm 0.5\%$ Rdg $\pm 0.005\%$ Snom		
Power Factor	-1 to +1	0.001	± 0.05		
Tangent $\boldsymbol{\varphi}$ (active/reactive power ratio)	-3.2 to +3.2	0.001	± 0.02		
ENERGY MEASUREMENTS					
Active Energy (EP)	0 to 4 x 10 ¹⁸	1Wh	±0.5% Rdg		
Reactive Energy (EQ)	0 to 4 x 10 ¹⁸	1 varh	±2% Rdg		
Apparent Energy (ES)	0 to 4 x 10 ¹⁸	1 Vah	±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				
Back-Up Power Source / Charge Time	Rechargeable 8.4V NiMH battery pack / Approximately 5 hours				
Battery Life	Provides u	p to 30 minute ride through upon po	wer loss		
MECHANICAL					
Communication Ports	USB 2.0, E	thernet (RJ45), Wireless <i>Bluetooth</i> C	lass 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 / Ke	nsington anti-theft system		
DISPLAY					
Display Type for Model PEL 103	2.63 x 2.16" (67 x 55mm), four lin	e, monochrome, backlit LCD with ad	justable brightness and contrast		
ENVIRONMENTAL / SAFETY		-,,			
Operating Temperature / Relative Humidity	32	e° to 122°F (0° to 50°C) / up to 85%			
Storage Temperature	-4° to 122°F (-20° to 50°C) with hatteries: -4° to 158°F (-20° to 70°C without hatteries)				
Safety Rating / CE Rating	Complies with IEC 61010-1:Ed3. and IEC	61010-2-030:Ed1 for 1000V CAT II	/ 600V CAT IV, Pollution Dearee 2 / Yes		
* Maximum value is current probe dependent _** Comp	uters with Class II Bluetooth will restrict range to A	Off Computers without Rivetooth wi	Il require a Class Lor Class II <i>Bluetooth</i> radio		
adapter. *** Maximum current reduced by a factor of	2 for 400Hz fundamental frequency.	on computere without <i>Directouri</i> wi	in require a class i of class if <i>Didetoeth</i> radio		

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)	

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