

► 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 ϕ / 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	SD card included / SD cards up to 32 GB formatted FAT32 are supported
Inputs	Voltage PEL 102/103: 4 input channels; PEL 105: 5 input channels via 4mm safety banana jacks Current PEL 102/103: 3 current input channels ; PEL 105: 4 input channels via custom 4 pin jacks that accept AEMC [®] probes and sensors

ELECTRICAL

VOLTAGE MEASUREMENT	PEL 102/103 RANGE	PEL 105 RANGE	RESOLUTION/ACCURACY*
50/60Hz	42.5 to 69Hz	42.5 to 69Hz	±0.1Hz
Single-Phase RMS Voltages	10 to 1000Vrms	10 to 1000Vrms	0.1V/±0.2% R _{dg} ± 0.2V
Phase-to-Phase RMS Voltages	17 to 1700Vrms	17 to 1000Vrms	0.1 to 1V/±0.2% R _{dg} ± 0.4V
400Hz	340 to 460Hz	340 to 460Hz	—
Single-Phase RMS Voltages	10 to 600Vrms	10 to 600Vrms	0.1V/±1% R _{dg} ± 1V
Phase-to-Phase RMS Voltages	17 to 1200Vrms	17 to 600V	0.1 to 1V/±1% R _{dg} ± 1V
DC	100 to 1000V	10 to 1000V	0.1V/±1% R _{dg} ± 3V (typical)
PT Ratios	Programmable from 50 to 650,000V	—	0.01 to 0.1V
CURRENT MEASUREMENT	A193***	196A***	
Nominal range for current probes supplied with kit. See chart on pg 11 for other probes	200mA to 3000Arms	200mA to 10,000A	—
CT Ratios	Programmable from 1:1 to 25,000:1 (probe dependent)		
POWER MEASUREMENTS	RANGE	RESOLUTION	
Active Power (P)* $E = 10^{18}$	-2 to 2GW	0.001W	±0.5% R _{dg} ± 0.005% P _{nom}
Reactive Power (Q)*	-2 to 2Gvar	0.001var	±1% R _{dg} ± 0.01% Q _{nom}
Apparent Power (S)*	0 to 2GVA	0.001VA	±0.5% R _{dg} ± 0.005% S _{nom}
Power Factor	-1 to +1	0.001	± 0.05
Tangent ϕ (active/reactive power ratio)	-3.2 to +3.2	0.001	± 0.02
ENERGY MEASUREMENTS			
Active Energy (EP)	0 to 4 x 10 ¹⁰ ; 4Ewh	1Wh	±0.5% R _{dg}
Reactive Energy (EQ)	0 to 4 x 10 ¹⁰ ; 4Evarh	1varh	±2% R _{dg}
Apparent Energy (ES)	0 to 4 x 10 ¹⁰ ; 4EVAh	1Vah	±0.5% R _{dg}
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: 100V to 1000V _{ac}		
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 **/ PEL 105 only: Wi-Fi
Dimension/Weight	PEL 102/103: 10.08 x 4.92 x 1.46" (256 x 125 x 37mm) / 2.20lbs (1kg); PEL 105: 10.6 x 7.1 x 9.65" (270 x 180 x 245mm) / 8.8lbs (4kg)
Case	PEL 102/103: Double insulated, rubber over-molded, polycarbonate UL94 V1 rated / PEL 105: Polycarbonate UL94 V1 rated
Mounting/Security	PEL 102/103: Kensington anti-theft system / Embedded magnets on back side, keyhole slot on back side
DISPLAY	
Display Type	PEL 102/103: 2.63 x 2.16" (67 x 55mm), four line, monochrome, backlit LCD with adjustable brightness & contrast PEL 105: 4.2 x 3.3" (107 x 84mm), four line, monochrome, backlit LCD with adjustable brightness & contrast
ENVIRONMENTAL / SAFETY	
Operating Temperature/Relative Humidity	PEL 102/103: 50° to 122°F (10° to 50°C) / 45 to 75%RH; PEL 105: -4° to 122°F (-20° to 50°C) / 45 to 75%RH
Storage Temperature	PEL 102/103: -4° to 122°F (-20° to 50°C) with batteries; -4° to 158°F (-20° to 70°C without batteries) PEL 105: -40° to 95°F (-40° to 35°C from 0 to 95%HR); -40° to 158°F (-40° to 70°C from 0 to 75%HR)
Safety Rating / CE Rating	PEL 102/103: Complies with IEC 61010-1:Ed3, and IEC 61010-2-030:Ed1 for 1000V CAT III / 600V CAT IV, Pollution Degree 2 / PEL 105: 1000V CAT IV, Pollution Degree 4 (closed) / Yes
Index of Protection	PEL 102/103: IP54 non operating / PEL 105: IP67 with cover closed

* Maximum value is current probe dependent. ** Computers with Class II Bluetooth will restrict range to 40 ft. 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.