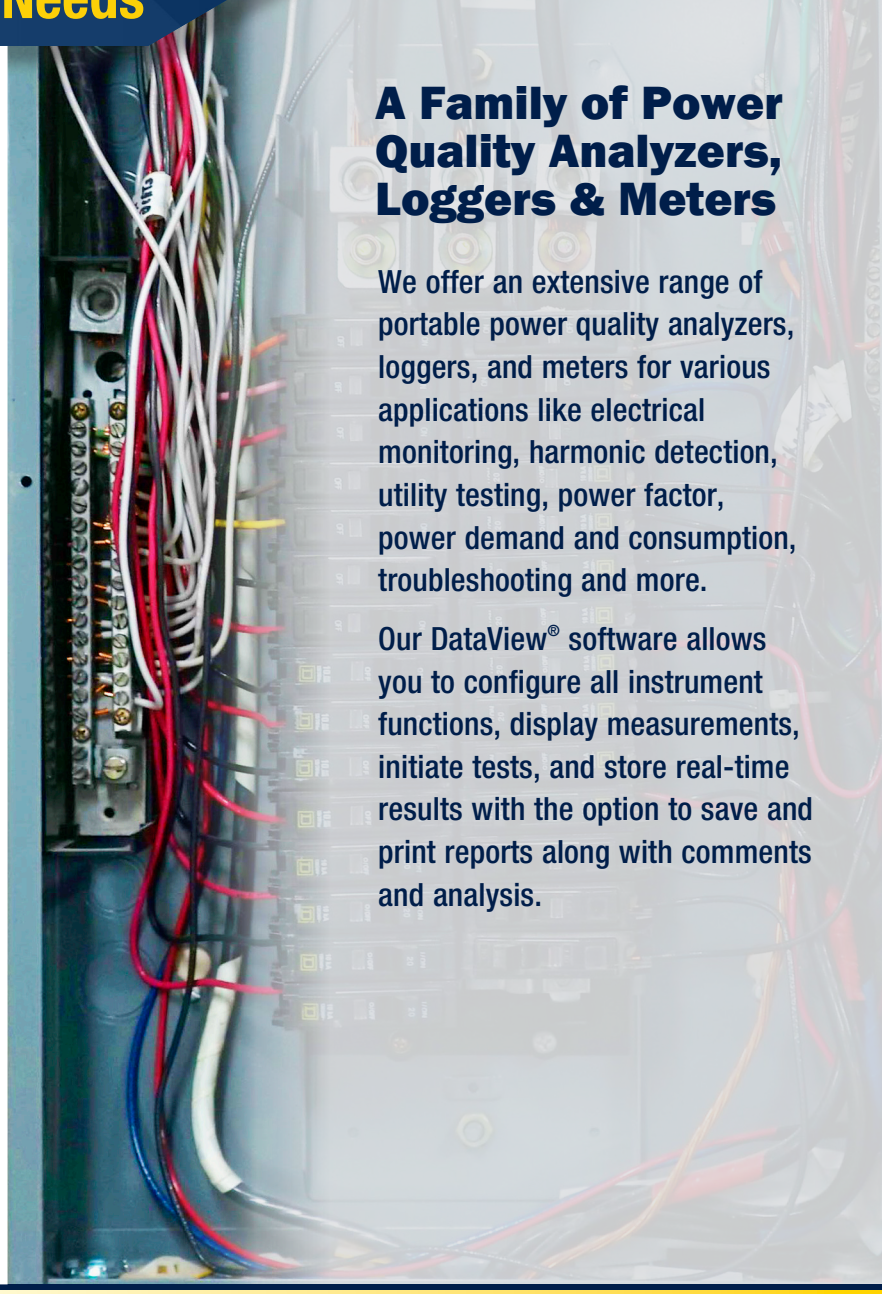
POWER QUALITY

For All Your Power Quality Needs



A Family of Power Quality Analyzers, Loggers & Meters

We offer an extensive range of portable power quality analyzers, loggers, and meters for various applications like electrical monitoring, harmonic detection, utility testing, power factor, power demand and consumption, troubleshooting and more.

Our DataView® software allows you to configure all instrument functions, display measurements, initiate tests, and store real-time results with the option to save and print reports along with comments and analysis.

Our products are backed by over 130 years of experience in test and measurement equipment, and encompass the latest international standards for quality and safety.

1.800.561.8187 www.itm.com information@itm.com

POWER & ENERGY LOGGER Model PEL 52

IP 54 | 600 V CAT III | WEB SERVER | CE

Pending

Introducing the Compact Powerhouse: Smaller in Size but Equal in Performance!

MODEL	PEL 52		
GENERAL			
Inputs	2V / 2I		
Types of installations	Single phase, split phase or 2 single-phase channels		
Recording / Data Storage Rate	Unlimited duration (4 GB max recording size) / 1 s to 1 h (Min/Avg/Max)		
Network Frequency	(45 to 65) Hz		
Voltage	(10 to 600) V		
ELECTRICAL			
VOLTAGE	**RANGE**	**RESOLUTION**	**ACCURACY**
Vrms	(10 to 600) V P to N	0.1 V	± 0.2 % Reading ± 0.2 V
Urms	(20 to 1200) V P to P	0.1 V	± 0.2 % Reading ± 0.4 V
CURRENT MEASUREMENT @ (50 and 60) HZ	**RANGE**	**RESOLUTION**	**ACCURACY**
Amps (1 V nominal) (excluding clamp accuracy)	Probe dependent (0.2 % < I < 120 % Inom)	Probe dependent	± 0.2 % Reading ± 0.02 Inom
POWER	**RANGE**	**RESOLUTION**	**ACCURACY**
Watts P-Q-S (W-var-VA)	V = (10 to 600) V I = (5 to 120) % Inom	Probe dependent	± 0.3 % R ± 0.003 % Pnom ± 1 % R ± 0.01 % Qnom ± 0.3 % R ± 0.003 % Snom
Power Factor	-1 to 1	0.001	± 0.02 %
Cos φ (DPF)	-1 to 1	0.001	± 0.05 %
ENERGY	**RANGE**	**RESOLUTION**	**ACCURACY**
Ep-Eq-Es (Wh, varh, VAh)	V = (10 to 600) V I = (5 to 120) % Inom	0.001 and ± 0.02%	± 0.5 % Reading ± 1.5 % Reading ± 0.5 % Reading
MECHANICAL			
Communication	Wi-Fi (access point and hot spot)		
Data Storage	8 GB SD-Card (included); expandable to 32 GB		
Dimension	(7.08 x 3.46 x 1.45) in (180 x 88 x 37) mm		
Weight	14.10 oz (400 g)		
Case	Compact and rugged, shock and vibration IEC 61010		
Display Type	LCD with blue backlight		
Real-Time Clock	Time and date stamp for Trend mode		
Power Supply	From phase 1 (90 to 660) V battery backup when power OFF		
Battery Life	3 h without Wi-Fi, 1 h typical with Wi-Fi enabled		
ENVIRONMENTAL			
Operating Temperature	(-4 to 122) °F (-20 to 50) °C		
Relative Humidity	(10 to 75) % RH		
Storage Temperature	(-40 to 158) °F (-40 to 70) °C / (45 to 75) % RH w/out battery		
SAFETY			
Electro-Magnetic-Compatibility (EMC)	EN 61326-1 for emission and immunity		
Safety Rating	IEC/EN 61010-2-30 (600 V CAT III)		
IP Rating	IP54 per IEC 60529		

* Minimum and maximum values are current probe dependent.
Consult factory for NIST Calibration prices

AUTOMATIC REPORT GENERATION

DataView®
DataViewSync™

PRODUCT INCLUDES

CATALOG #2137.69 (WITH PROBES)
Soft carrying bag, (2) MiniFlex® MA193-10-BK sensors, (3) black test leads and alligator clips, 110 V US power Cord, (1) adapter for power cord, 8 GB SD card, USB SD card reader, (2) AAA rechargeable batteries, quick start guide, and USB drive with DataView® software and user manual.

CATALOG #2137.71 (NO PROBES)
Soft carrying bag, (3) black test leads and alligator clips, 110 V US power Cord, (1) adapter for power cord, 8 GB SD card, USB SD card reader, (2) AAA rechargeable batteries, quick start guide, and USB drive with DataView® software and user manual.

Download the user manual for complete specifications

CATALOG NO.	DESCRIPTION
2137.69	Power & Energy Logger Model PEL 52 (w/LCD, w/2 MA193-10-BK sensors)
2137.71	Power & Energy Logger Model PEL 52 (w/LCD, no sensors)

POWER & ENERGY LOGGER Model PEL 52

FEATURES

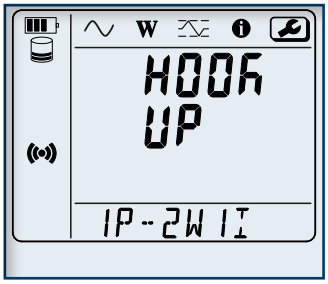
- Low cost, simple-to-use, portable, single- and dual- (split-phase) power & energy data logger
- Wide backlit LCD display
- Install without cutting off the electrical network being monitored
- Vital energy data is easily measured, recorded and analyzed
- TRMS voltage and current measurement up to 600 V
- Powered via the measuring phase
- Measurement of the AC phase currents (I1, I2) *(dependent on sensor)*
- RMS AC measurements (50 Hz and 60 Hz), aggregation every second without missing measurements
- Easy to use, automatic recognition of current sensors
- W, VA and var (P, Q, S, N and D) power measurements
- Calculation of the Cos φ and Power Factor (DPF)
- Aggregation measurements over a period from 1 minute to 1 hour
- Storage of the 1 s and aggregated measurements on SD/SDHC card; data can be read directly on a PC
- Remote connectivity via DataViewSync™
- Integrated web server for for remote viewing *(Android™, iOS, Windows, etc.)*
- Wi-Fi offers accessibility to diagnose problems in real-time and/or multi-station operation.
- Data saved on SD card for easier transport
- Includes FREE DataView® software for configuring, data retrieval, real-time measurement display, data analysis and report generation
- Compact casing with built-in magnets to facilitate mounting for easier implementation in electrical cabinets
- 2-year warranty
- ECO-DESIGN - environmental aspects considered during product development to make the lowest possible environmental impact throughout the product life cycle

ACCESSORIES/REPLACEMENTS

CATALOG #2140.32 AC Current Probe Model MN93-BK
CATALOG #2140.33 AC Current Probe Model SR193-BK
CATALOG #2140.81 AC Current Probe Model MN94 (200 AAC)
CATALOG #2140.34 AmpFlex® Sensor 24 in Model 193-24-BK
CATALOG #2140.35 AmpFlex® Sensor 36 in Model 193-36-BK
CATALOG #2140.36 AC Current Probe Model MN193-BK
CATALOG #2140.48 MiniFlex® Sensor 10 in Model MA193-10-BK
CATALOG #2140.50 MiniFlex® Sensor 14 in Model MA193-14-BK
CATALOG #2140.80 MiniFlex® Sensor 24 in Model MA194-24-BK
CATALOG #2140.44 (1) 10 ft (3 M) Black Lead w/(1) Black Alligator Clip (Lead rated 1000 V CAT IV 15 A, Clip rated 1000 V CAT IV 15 A, UL)
CATALOG #2140.45 Set of (12), color-coded Input ID Markers
CATALOG #5000.43 Magnetized Voltage Probe Set of (2) color-coded (Red/Black) magnetized voltage probes (Rated 600 V CAT IV, 1000 V CAT III)

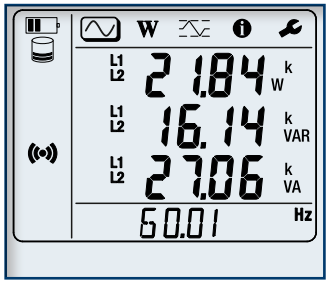
LARGE FUNCTIONAL DISPLAYS

INFORMATION MODE



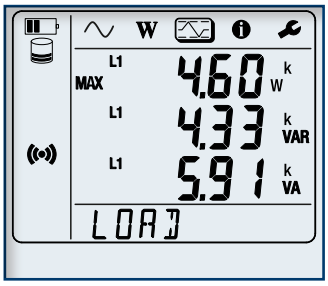
Hook up, Wi-Fi, aggregation period, can be configured from the front panel of the PEL 52. Current ratios and number of turns need to be configured via the PEL Transer software based on the current sensor type.

MEASUREMENT MODE (2P-3W2I)



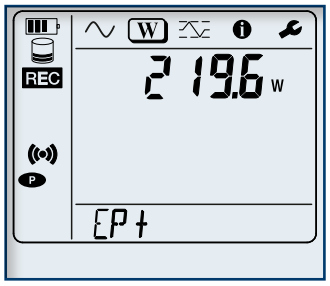
Real-time updates are displayed for voltage (V), current A) active power (P), reactive power (Q), apparent power (S), frequency (Hz), power factor (PF).

MAX MODE (1P-2W1I)



Max aggregated values of measurements and energy.

ENERGY MODE



Active energy (Wh), reactive energy (varh), apparent energy (VAh). The energies displayed are the total energies, of the source or of the load. (The "h" symbol is not displayed on the screen. You will see W, VA, var for Wh,VAh and varh. Downloaded recordings will show the "h")

Effortlessly Perform Load Study Analysis Meeting the NEC 220.87 Requirements with the new DataView® Control Panel Feature!

APPLICATIONS

- Load surveys - Find out how much energy each item of equipment consumes operating at its min/max power level.
- Energy analysis - Estimate energy consumption before and after the improvements.
- Energy surveys - The measurements for energy surveys must be performed at several locations on the evaluation site. Starting with the main power, compare the power and energy measurements on the electricity meter and bills. Sub metering can then be performed on downstream of the installation.

POWER & ENERGY LOGGERS PEL 100 SERIES

IP 54 | 1000 V CAT III | WEB SERVER | ETL | CE | Double Insulated | Android | Bluetooth

for all PEL 100 Models

IP 67 cover closed | Phase Powered

for Model PEL 105

600 V CAT IV | ETL

for Models PEL 102 & PEL 103

MODEL PEL 102, PEL 103 & PEL 105

Three-Phase Power and Energy Loggers

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

FEATURES

- Simple-to-use, single-, dual- (split-phase) and three-phase (Y, Δ) power & energy loggers
- Power measurements: kVA, kW and kvar
- Designed to work in 1000 V CAT III and 600 V CAT IV environments
- Automatic recognition of the connected current sensors/probes
- Energy measurements: kVAh, kWh (source, load) and kvarh (four quadrant indication)
- Includes DataView® software for configuring, real-time display, analysis and report generation
- 8 GB SD card supplied, can be upgraded up to 32 GB
- USB, LAN, Ethernet, Wi-Fi and Bluetooth communication (Class 1 wireless communication, up to 300 ft away)
- Satisfies the monitoring requirements of NEC Code 220.87
- Power adapter allows the PEL 102 to be powered from a phase measurement input
- Supports 17 different network connections (PEL103 and PEL105)
- PEL103 & 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 (50, 60, 400) Hz and DC distribution systems
- Automatic recognition of the connected current sensors and probes

PEL 102 & PEL 103 INCLUDE

Small classic tool bag, 5 ft USB cable, four 10 ft black voltage leads and alligator clips, power cord, 12 color-coded ID markers, MultiFix mounting system, safety card for the PEL, 8.4 V NiMH battery, sensor compliance sheet, 8 GB SD-Card with USB SD-Card reader, quick start user guide and USB drive supplied with DataView® software and user manual.

Download the user manual for complete specifications

PEL 105 INCLUDES

Extra-large tool bag, accessory pouch, 5 ft USB cable, five 10 ft black voltage leads (waterproof cap) with alligator clips, power adapter 110/230 V with US power cord, four water-tight AmpFlex® 196A-24-BK (included with Cat. #2137.59 only), 9.6 V NiMH battery, 8 GB 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.

Download the user manual for complete specifications

POWER ADAPTER FOR PEL 102 & 103

CAT. # 2137.90

Powers from phase to neutral (110 to 277) VAC or phase to phase (110 to 480) VAC

ADAPTER SOLD SEPARATELY

POLE MOUNTING KIT FOR PEL 105

CAT. # 2137.82

Set of (2) with hardware

SOLD AS AN ACCESSORY

POWER & ENERGY LOGGERS PEL 100 SERIES

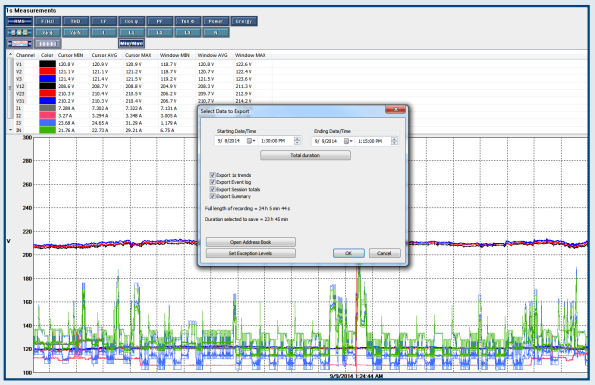
ANDROID™ APP AVAILABLE!

- Configure measurements and recordings
- Display data in real-time
- For use on devices with Android™ platform
- ***New*** software sensors offer complete and immediate data on various electrical parameters of motors, including rotational speed, efficiency, and torque.

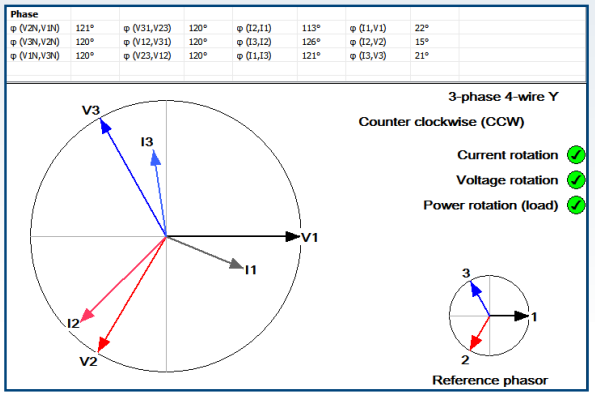
SCAN TO LEARN MORE

ANDROID APP ON Google play

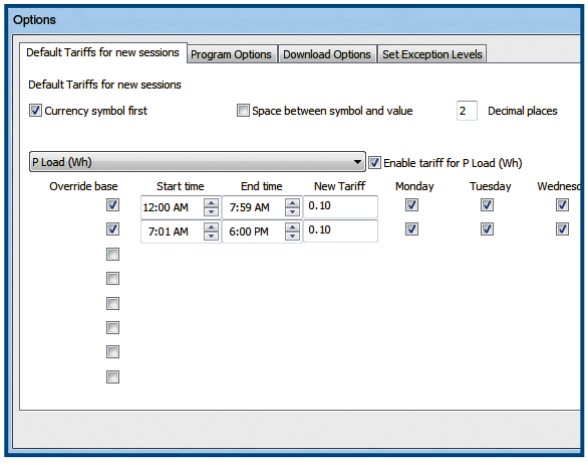
PEL 103 & 105 can be configured directly from the front panel, DataView® control panel or the Android™ App



Export 1 Second Data: Create DataView® reports from 1 s data (200 ms for PEL 105), as well as aggregate data



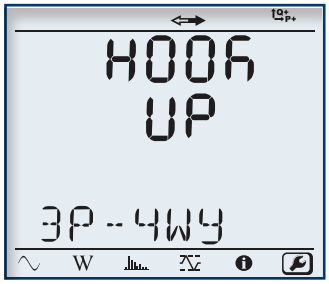
Updated Phasor Diagram Screen: Now shows actual and reference diagrams and indicates whether voltage, current and/or power orientations are as expected



Time of Use Selection: Program up to 8 different tariffs for energy cost based on day of week and time of day

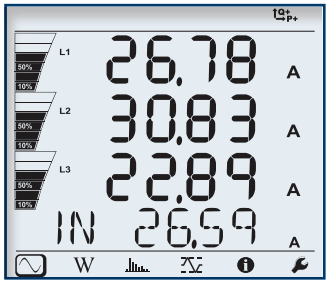
PEL 103 LARGE FUNCTIONAL DISPLAYS

INFORMATION MODE



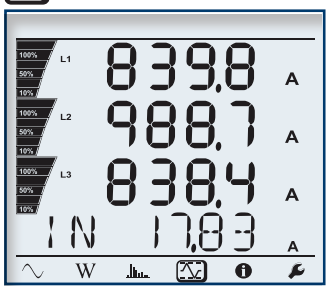
Hook up, voltage and current ratios and aggregation period can be configured from the front panel of the PEL 103

MEASUREMENT MODE



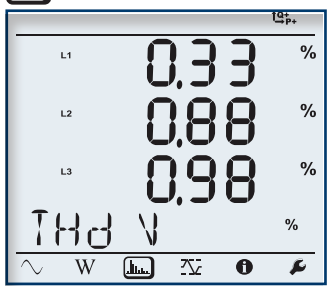
Real-time updates are displayed for voltage, current, power, frequency, power factor and tangent

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

Effortlessly Perform Load Study Analysis Meeting the NEC 220.87 Requirements with the new DataView® Control Panel Feature!

POWER & ENERGY LOGGERS PEL 100 SERIES

MODELS	PEL 102, PEL 103 & PEL 105		
GENERAL			
Sampling Frequency	128 samples per cycle; (50/60) Hz 16 samples/cycle 400 Hz		
Data Storage Rate	1 per second (200 ms also available on PEL 105)		
Demand Period Storage Rate	User selectable (1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30 and 60) min		
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	8 GB SD card included / SD cards up to 32 GB formatted FAT32 are supported		
INPUTS Voltage	PEL 102/103: 3 input channels / PEL 105: 4 input channels via 4 mm safety banana jacks		
Current	PEL 102/103: 3 input channels PEL 105: 4 input channels via custom 4 pin jacks that accept AEMC® Instruments probes and sensors		
ELECTRICAL			
VOLTAGE MEASUREMENT	RANGE	RESOLUTION*	ACCURACY*
(50/60) Hz	(42.5 to 69) Hz	–	± 0.1 Hz
Single-Phase RMS Voltages	(10 to 1000) Vrms	0.1 V	± 0.2 % Reading ± 0.2 V
Phase-to-Phase RMS Voltages	(17 to 1700) Vrms	(0.1 to 1) V	± 0.2 % Reading ± 0.4 V
400 Hz	(340 to 460) Hz	–	
Single-Phase RMS Voltages	(10 to 600) Vrms	0.1 V	± 1 % Reading ± 1 V
Phase-to-Phase RMS Voltages	(17 to 1200) Vrms	(0.1 to 1) V	± 1 % Reading ± 1 V
DC	(100 to 1000) V	0.1 V	± 1 % Reading ± 3 V (typical)
PT Ratios	Programmable from (50 to 650,000) V	–	(0.01 to 0.1) V
CURRENT MEASUREMENT	A193 A*** (PEL 102/103)	196 A*** (PEL 105)	–
Nominal range for current probes supplied with kit.	200 mA to 10,000 A		–
CT Ratios	Programmable from 1:1 to 25,000:1 (probe dependent)		
POWER MEASUREMENTS	RANGE	RESOLUTION*	ACCURACY*
Active Power (P)*	(-2 to 2) GW	0.001 W	± 0.5 % Reading ± 0.005 % Pnom
Reactive Power (Q)*	(-2 to 2) Gvar	0.001 var	± 1 % Reading ± 0.01 % Qnom
Apparent Power (S)*	(0 to 2) GVA	0.001 VA	± 0.5 % Reading ± 0.005 % Snom
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	RANGE	RESOLUTION*	ACCURACY*
Active Energy (EP)	4 EWh	1 Wh	± 0.5 % Reading
Reactive Energy (EQ)	4 Evarh	1 varh	± 2 % Reading
Apparent Energy (ES)	4 EVAh	1 VAh	± 0.5 % Reading
THD	± 655 %		
Individual Harmonics	1 to 50 displayed in percentage; 1 to 7 at 400 Hz		
External Supply	110/250 V (10 %) @ (50/60) Hz; 400 Hz		
Power From Phase Measurement	PEL 102/103: Requires optional 600 V Power Adapter / PEL 105: Internal up to 1000 VAC		
Back-Up Power Supply/Charge Time	Rechargeable 8.4 V NiMH battery pack / Approximately 5 h		
Battery Life	30 m minimum, 60 m typical		
MECHANICAL			
Communication	USB 2.0, Ethernet (RJ45), Wireless Bluetooth Class 1 **/ Wi-Fi (PEL 105)		
Dimension/Weight	PEL 102/103: (10.08 x 4.92 x 1.46) in (256 x 125 x 37) mm / 2.20 lb (1 kg) PEL 105: (9.8 x 7.8 x 2.6) in (249 x 198 x 66) mm / 8.8 lb (4 kg)		
Case	Double insulated, rubber over-molded, polycarbonate UL94 V1 rated		
Display Type for Models PEL 103 & 105	(2.63 x 2.16) in (67 x 55) mm, four line, monochrome, backlit LCD with adjustable brightness and contrast		
ENVIRONMENTAL / SAFETY			
Operating Temperature/Relative Humidity	(32 to 108.5) °F (0 to 42.5) °C / up to 85 % RH		
Storage Temperature	(-4 to 122) °F (-20 to 50) °C with batteries; (-4 to 158) °F (-20 to 70) °C without batteries		
Safety Rating	PEL 102/103: Complies with IEC 61010-1, and IEC 61010-2-030 for 1000 V CAT III / 600 V CAT IV PEL 105: 1000 V CAT IV, Pollution Degree 2		
Ingress 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 400 Hz fundamental frequency.

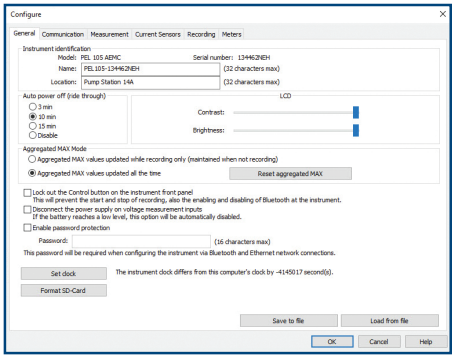
Consult factory for NIST Calibration prices

CATALOG NO.	DESCRIPTION
2137.51	Power & Energy Logger Model PEL 102 (No LCD, w/3 MA193-10-BK Sensors)
2137.61	Power & Energy Logger Model PEL 102 (No LCD, No Sensors)
2137.52	Power & Energy Logger Model PEL 103 (w/LCD, w/3 MA193-10-BK Sensors)
2137.62	Power & Energy Logger Model PEL 103 (w/LCD, No Sensors)
2137.57	Power & Energy Logger Model PEL 105 (No sensors, Waterproof IP67, DataView® Software)
2137.59	Power & Energy Logger Model PEL 105 w/4 196A-24-BK (Waterproof IP67, DataView® Software)

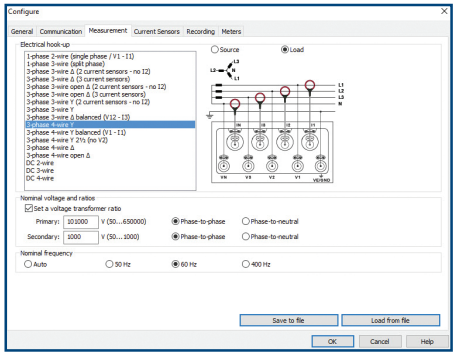
DATAVIEW® SOFTWARE INCLUDED

DataView®
Data Analysis and Reporting Software

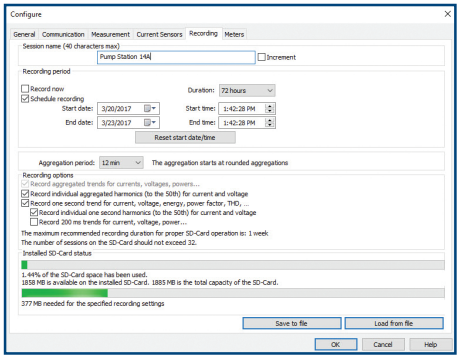
DataView® software, user manual and quick start guide are included on the USB



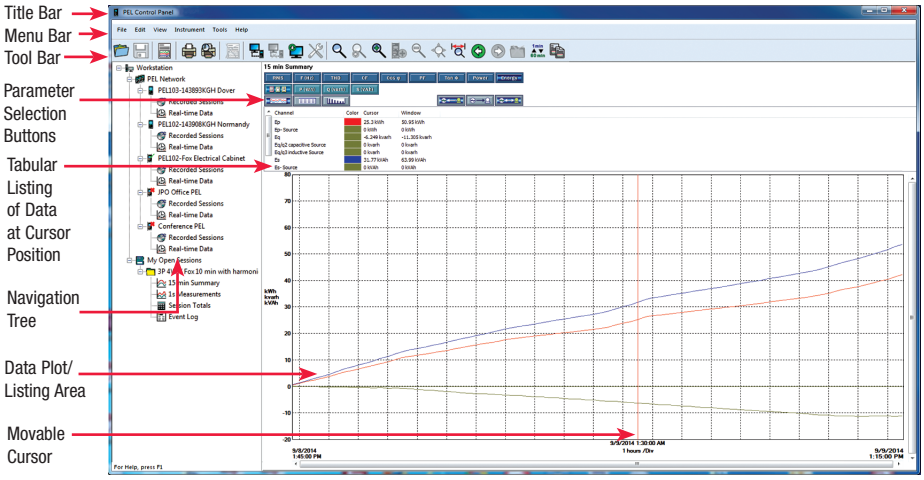
Basic information regarding Auto Power Off, instrument name and location, display contrast and brightness (Models PEL 103 & PEL 105), setting of the real-time clock and SD-card formatting is easily accomplished from the General tab.



The Measurement tab specifies the electrical distribution system, voltage ratios, nominal frequency and current probe options and ratios.



In the Recording tab, configure the instrument to measure (and record) over a user selectable recording period. Select demand intervals and view available memory for data storage.



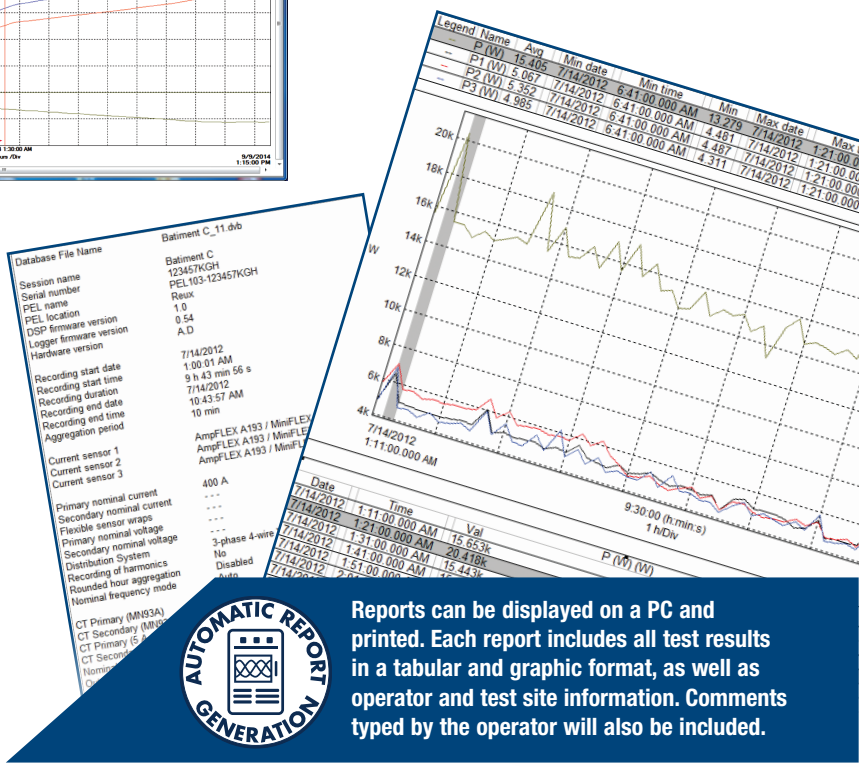
Typical DataView® Functional Digital & Graphical Display

Control Panel Trend View

In the PEL Control Panel you will find all the necessary tools and selection buttons to review recorded data as trend plots or tabular lists.

Configure all functions of the PEL

- Display and analyze real-time data on your PC
- Configure functions and parameters from your PC
- Customize views, templates and reports to your exact needs
- Create and store a complete library of configurations that can be uploaded as needed
- Zoom in and out and pan through sections of the graph to analyze the data
- Download, display and analyze recorded data
- Display waveforms, trend graphs, harmonic spectrums, text summaries,transients, event logs and stored alarms
- Print reports using standard or custom templates you design
- Free updates are available



Reports can be displayed on a PC and printed. Each report includes all test results in a tabular and graphic format, as well as operator and test site information. Comments typed by the operator will also be included.

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

MODELS	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 1000) V	
Voltage Ratio	up to 500 kV	
Current (TRMS AC+DC)	MN93: 500 mA to 200 AAC; MN193: (0.005 to 100) AAC SR193 Clamp: (1 to 1000) AAC AmpFlex® or MA193 Clamps: 100 mA to 10000 AAC MR193 Clamp: (1 to 1000) AAC/1300 ADC SL261 Clamp: 50 mA to 100 AAC/DC Current Ratio: up to 60 kA	
Frequency (Hz)	(40 to 69) Hz	
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,2 P 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/Plt)	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 in (148 mm)	
Snapshots	12	50
Languages	> 27	
Communication Interface	USB	
MECHANICAL		
Battery Life	≤ 10 h, ≥ 15 h in Record mode	
Power Supply	9.6 V NiMH rechargeable battery pack (included) External AC supply: (110/230) VAC ±10 % (50/60) Hz	
Dimensions / Weight	(9.8 x 7.8 x 2.6) in (249 x 198 x 66) mm / 4.3 lb (1.95 kg)	
SAFETY		
Safety Rating / IP	IEC 61010, 1000 V CAT III; 600 V CAT IV / IP53	

Consult factory for NIST Calibration prices

PRODUCT INCLUDES

CAT. # 2136.10 MODEL 8333 (NO PROBES)

Extra large carrying bag, soft carrying pouch, (4) 10 ft black voltage leads with alligator clips, 5 ft USB cable, (12) color-coded input ID markers, 110/240 V power adapter with US power cord, 9.6 V NiMH battery, SD card, printed quick start guide and USB drive with DataView® software and user manual.

CAT. # 2136.30 MODEL 8336 (NO PROBES)

Extra large carrying bag, soft carrying pouch, (5) 10 ft black voltage leads with alligator clips, 5 ft USB cable, (12) color-coded input ID markers, 110/240 V power adapter with US power cord, SD card, 9.6 V NiMH battery, printed quick start guide, and USB drive with DataView® software and user manual.

** 3 YEAR WARRANTY ONLY APPLIES WHEN METER IS REGISTERED WITHIN 30 DAYS OF PURCHASE*

IP 53 | 600 V CAT IV | 1000 V CAT III

3 YEARS WARRANTY * UPON REGISTERING

AUTOMATIC REPORT GENERATION

DataView®

8333

8336

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 50th order, including direction, in real-time
- Captures transients down to 1/256th 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 Factor K display
- Power Factor, displacement PF display
- Captures up to 210 transients (8336)
- Short term (8333) and Long term (8336) flicker display
- Phase unbalance (current and voltage)
- Harmonic Distortion (total and individual) from 1st to 50th
- 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

8333 8336

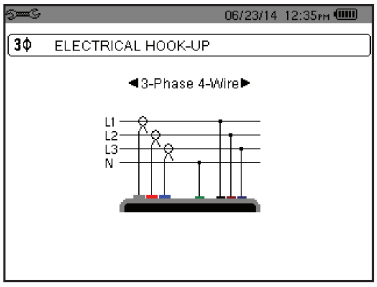
Download the user manuals for complete specifications

THREE PHASE POWER QUALITY ANALYZERS

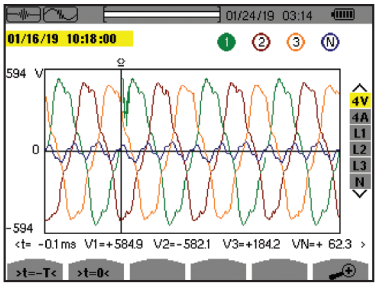
MODELS 8333 & 8336

LARGE FUNCTIONAL DISPLAYS

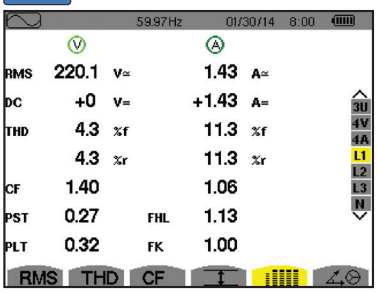
CONFIGURATION



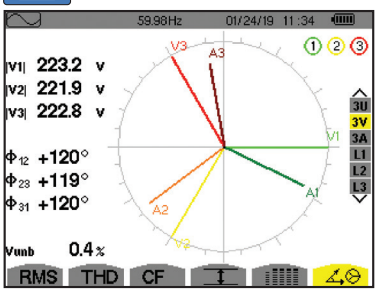
TRANSIENT MODE



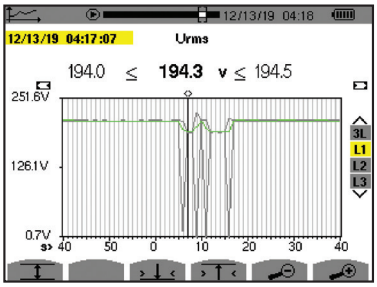
POWER AND ENERGY MODE



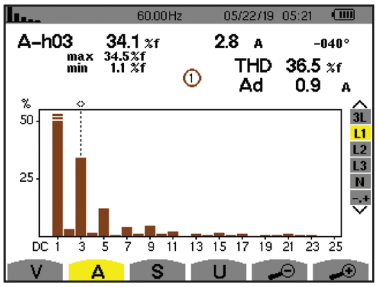
PHASOR DIAGRAM



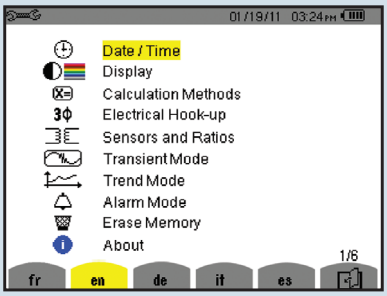
RECORDING MODE

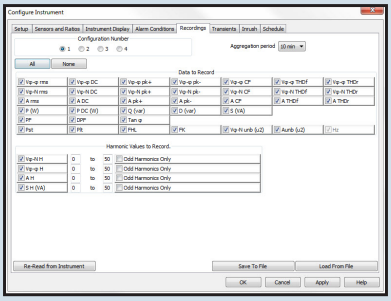


HARMONICS MODE



Quick & Easy Set Up From Device Front Panel or a PC Computer





Configuration menu provides direct access to all configurable parameters on the screen or from a computer.

SCAN TO LEARN MORE

ACCESSORIES/REPLACEMENTS

CATALOG #2133.73 Extra Large Classic Tool Bag (18 x 9 x 12) in
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 in Model 193-24-BK
CATALOG #2140.35 AmpFlex® Sensor 36 in Model 193-36-BK
CATALOG #2140.36 AC Current Probe Model MN193-BK

SEE CHART ON PAGE 18 FOR MORE PROBES AND SENSORS

CATALOG #2140.40 BNC Adapter for AC/DC Current Probe Model SL261 and models for use with 8333, 8336, 8435, 8436 & PEL Series
CATALOG #2140.44 (1) 10 ft (3 M) Black Lead w/(1) Black Alligator Clip (Lead rated 1000 V CAT IV 15 A, Clip rated 1000 V CAT IV 15 A, UL)
CATALOG #2140.48 MiniFlex® Sensor 10 in Model MA193-10-BK
CATALOG #2140.50 MiniFlex® Sensor 14 in Model MA193-14-BK
CATALOG #2140.80 MiniFlex® Sensor 24 in Model MA194-24-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 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

THREE PHASE POWER QUALITY ANALYZER *Model 8436*

POWERPAD® III MODEL 8436

Supplied with an 8 GB SD card for storing up to 2 GB trend recordings

(4) current and (5) voltage input terminals

MODEL	8436
	ELECTRICAL
Sampling Frequency	256 samples/cycle
Data Storage	SD card for trend recording; Additional separate 12.5 MB partitioned memory for snapshots, transient / Inrush & alarms
Voltage (TRMS)	Phase-to-Phase: 2000 V Phase-to-Neutral: 1000 V Voltage Ratio: up to 500 kV
Current (TRMS)	MN Clamp: (0 to 6) A/120 A or (0 to 240) A SR Clamp: (0 to 1200) A MR Clamp: (0 to 1000) AAC, (0 to 1400) ADC MiniFlex®: (10 to 3000) A AmpFlex®: (10 to 10) kA(1) SL261 Clamp: 50 mA to 100 AAC/DC J93: (50 to 3500) AAC/DC Current Ratio: 10 mA to 60 kA
Frequency (Hz)	(40 to 69) Hz
Other Measurements	kW, kvar, kVA, PF, DPF, kWh, kvarh, kVAh, Factor K, Flicker
Harmonics	1st to 50th, Direction, Sequence
Power Supply	9.6 V NiMH rechargeable battery pack (included) (110 to 1000) V DC to 400 Hz
Battery Life	≤ 10 h with display on; ≥ 15 h with display off (record mode)
	MECHANICAL
Communication Port	Optically isolated USB
Display	¼ VGA (320 x 240) color LCD display with adjustable brightness & contrast
Dimensions	(10.6 x 9.8 x 7.1) in (270 x 249 x 180) mm
Weight	8.2 lb (3.7 kg) with batteries
	SAFETY
Safety Rating	EN 61010, 600 V CAT IV(2), 1000 V CAT III

(1) Crest factor at 6500=1

(2) When used with SR193 or AmpFlex® probes 600 V CAT III with MN193 or MR193 probes

Consult factory for NIST Calibration prices

Download the user manual for complete specifications

PRODUCT INCLUDES

8436 KIT CATALOG #2136.44

Extra large tool bag, accessory pouch, 5 ft USB cable, (5) 10 ft black voltage leads with alligator clips, 110 V US power cord, line power cord 110-1000 V DC to 400 Hz, (12) color-coded input ID markers, (4) water-tight AmpFlex® 196A-24-BK sensors (*2136.44 only*), 9.6 V NiMH battery, SD card, printed quick start guide, high-voltage warning card, and a USB drive with DataView® software and user manual.

600 V CAT IV | 1000 V CAT III | IP 67 cover closed

FEATURES

DataView®

- Measurement of TRMS voltages up to 1000 Vrms AC/DC for two-, three-, four- or five-wire systems
- Measurement of TRMS currents up to 10,000 Arms *(sensor dependent)*
- 65 µs sample rate
- Direct measurement of neutral current and voltage
- Record and display trend data as fast as once per second for one month for up to 25 variables
- Transient detection on all V and I inputs *(up to 210)*
- Selectable PT and CT ratios
- Inrush current measurement
- Calculation of Crest Factors for V and A
- Calculation of Factor K for transformers
- Calculation of short and long term flicker and three-phase voltage unbalance
- Measures harmonics *(referenced to the fundamental or RMS value)* for voltage, current or power, up to 50th harmonic
- Displays of harmonic sequencing and direction and calculation of overall harmonics
- Real-time display of phasor diagrams including values and phase angles
- Measurement of active, reactive and apparent power per phase and their respective sum total
- Calculation of power factor, displacement power factor and tangent factor
- Recording, time stamping and characterization of disturbance (swells, sags and interruptions, exceedance of power and harmonic thresholds)
- 2 GB Trend Recording memory; Alarm, Snapshot and Transient/Inrush memories are separate
- Measurement of energy kVAh, kvarh & kWh
- The Max and Min RMS measurements are calculated every half-period
- Includes DataView® software for configuring, real-time display, analysis and report generation

** 3 YEAR WARRANTY ONLY APPLIES WHEN METER IS REGISTERED WITHIN 30 DAYS OF PURCHASE*

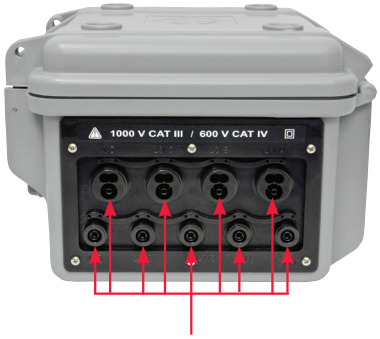
THREE PHASE POWER QUALITY ANALYZER Model 8436

MODEL 8436

LARGE COLOR FUNCTIONAL DISPLAYS

INSTALLATION OF THE LEADS AND CURRENT SENSORS

Color-coded ID markers are supplied with the PowerPad® III to identify the leads and input terminals.



The voltage and current inputs, as well as the power cord connection are constructed with screw on, watertight connectors rated to IP67.

LEAD & ALLIGATOR CLIP
Catalog #2140.73

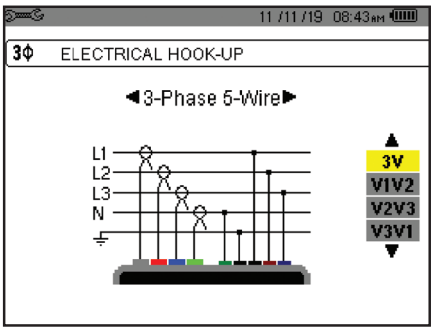
POWER CORD
Catalog #5000.63

AMPFLEX® SENSORS
Catalog #2140.75
(Included with Cat. #2136.44 only)

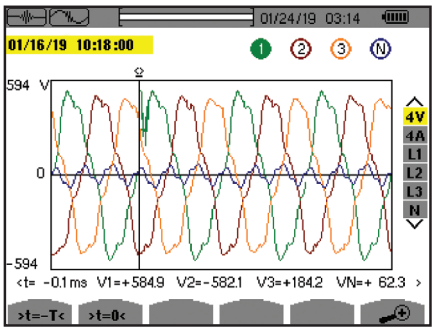
LINE POWER ADAPTER
Catalog #5000.89

POLE MOUNTING KIT
Catalog #2137.82
Set of (2) with hardware

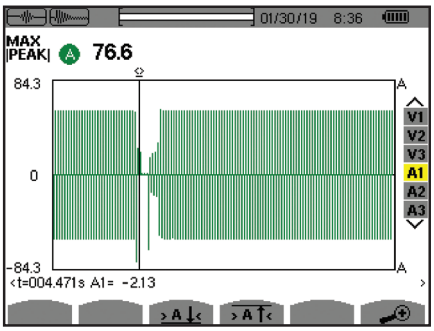
CONFIGURATION



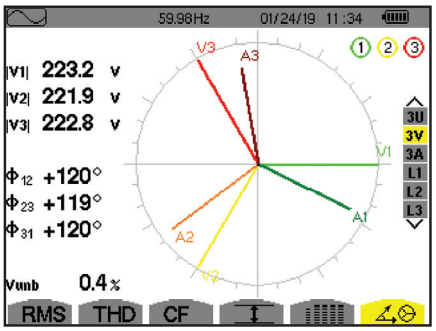
TRANSIENT MODE



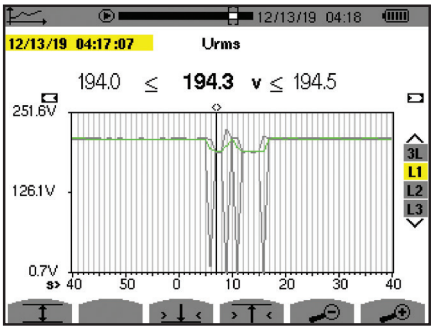
INRUSH PEAK



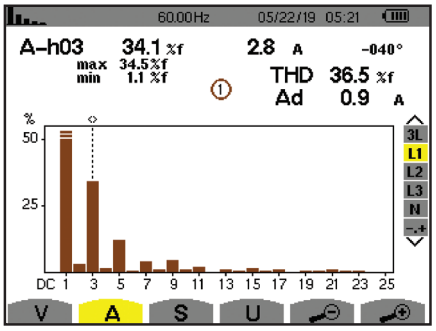
PHASOR DIAGRAM



TREND ANALYSIS



HARMONICS MODE



ACCESSORIES/REPLACEMENTS

CATALOG #2133.73 Extra Large Classic Tool Bag (18 x 9 x 12) in
CATALOG #2137.82 Pole Mounting Kit
CATALOG #2140.19 Replacement - 9.6 V NiMH Rechargeable Battery
CATALOG #2140.45 Set of (12) color-coded Input ID Markers
CATALOG #2140.73 (1) 10 ft (3 M) Black Lead (Waterproof cap) (Rated 1000 V CAT IV) and (1) Black Alligator Clip (Rated 1000 V CAT IV, 15 A, UL)
CATALOG #2140.75 AmpFlex® Sensor 24 in Model 196A-24-BK *(Waterproof - IP67)*
CATALOG #2140.79 MiniFlex® Sensor 14 in Model MA196-14-BK *(Waterproof - IP67)*
CATALOG #5000.43 Probe - Set of (2) Color-coded (Red/Black) Magnetize Voltage Probes (Rated 600 V CAT IV, 1000 V CAT III)
CATALOG #5000.63 Power Cord 110 V for use only with Models 8435 and 8436
CATALOG #5000.77 Cable Reeling Box
CATALOG #5000.89 Line Power Adapter 110-1000 V DC to 400 Hz *(Replacement - for use only with Model 8436)*

CATALOG NO.	DESCRIPTION
2136.43	PowerPad® III Model 8436 (No Sensors - Waterproof IP67)
2136.44	PowerPad® III Model 8436 w/4 196A-24-BK (AmpFlex®- Waterproof IP67)

POWER & ENERGY QUALITY ANALYZER Model 8345

PowerPad® IV Model 8345

The PowerPad moves up a grade - Class A!

POWERPAD IV Class A

MODEL	8345	
ELECTRICAL		
Measurement Frequency	Measurement Range without Ratio (with unity ratio)	
	Min	Max
	42.50 Hz	69.00 Hz
Inputs	5 voltage / 4 current, isolated	
Voltage	5 V to 1,000 V_{AC} and V_{DC}	
Harmonics Mode	DC to 63rd order; < 3% Udin	
Interharmonics Mode	0 to 62nd order; < 0.5% Udin	
Inrush & Transient Capture (number)	No maximum (limited by SD card)	
Shockwaves (Fast transient)	Up to 12 kV sampled every 500 ns	
Flicker (Pst)	< 0,1	
Voltage Unbalance (u0,u2)	(0.5 to 5) % (absolute); ± 0.15 % (absolute)	
Trend Recording (recommended)	> 900 parameters 3 days with a sampling period of 200 ms 15 days with a sampling period of 1 s 45 days with a sampling period of 3 s	
Sampling Rate	Voltage 400 kSps / Current 200 kSps / Surge 2 MSps	
Alarm Mode Types / Number	52 / 20,000 with Email notifications	
Real-time / Power / Energy Modes	Yes / Yes / Yes	
Unbalance Mode	Composite	
Screenshots	No maximum (limited by SD card)	
Power Supply	Power from phase from 100 to 1000 V AC/DC with external supply block (included)	
Carrier Current Detection	Yes	
Battery	5.8 Ah Li-ion battery pack (included) ≤ 6 hrs w/ display on; ≤ 10 hrs w/ display off	
MECHANICAL		
Data Storage	16 GB SD-Card (included) for snapshot, transients, alarms and trend recording	
Display	7 in color LCD touch screen: 800 x 480 (WVGA)	
Clock / GPS	Yes, built-in	
Operating Temperature	(32 to 104) °F (0 to 40) °C	
Communication	USB, Ethernet, Wi-Fi, Web server, DataViewSync™, USB port (type A)	
Dimensions	(7.87 x 11.22 x 2.17) in (200 x 285 x 55) mm	
Weight (meter only)	4.19 lbs (1.9 kg)	
COMPLIANCE & STANDARDS		
Safety / IP	IEC 61010 1000 V CAT IV / IP54	
Environmental	IEC 61557-12 & IEC 62586	
Measurement Standard	IEC 61000-4-30 (Ed 3) Class A (Full)	
EN50160 Monitoring Mode	With DataView® software	
Warranty	*3 years (registration must be done within 30 days of the date of purchase)	

Download the user manual for complete specifications

** 3 YEAR WARRANTY ONLY APPLIES WHEN METER IS REGISTERED WITHIN 30 DAYS OF PURCHASE*

IP 54 | 1000 V CAT IV | WEB SERVER | CE

WARRANTY 3 YEARS WARRANTY
*UPON REGISTERING

True InRush®

AUTOMATIC REPORT GENERATION
DataView

PRODUCT INCLUDES

CAT. # 2136.36 - POWERPAD® IV MODEL 8345
W/4 MA194-24-BK MINIFLEX® SENSORS

Meter, extra-large tool bag, internal carrying pouch, hand strap, (4) MA194-24-BK sensors, USB cable, (5) 10 ft black voltage leads with alligator clips, (12) color-coded input ID markers, power adapter (PA32ER) with US power cord, (2) 6 ft stackable leads, (2) 10 ft black voltage leads with alligator clips for power adapter PA32ER, (1) power plug adaptor for PA32ER, SD card, 5.8 Ah Li-ion battery pack, quick start guide, and a USB stick with DataView® software and user manual.

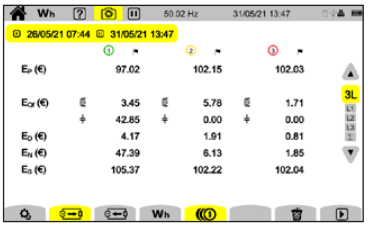
POWER & ENERGY QUALITY ANALYZER Model 8345

FEATURES

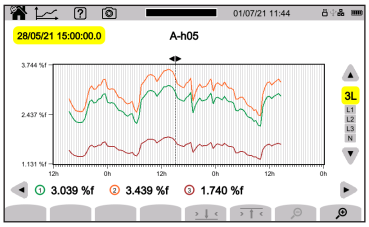
- Full compliance with IEC 61000-4-30 ed. 3.0 Class A functions
- Voltage quality diagnostics
- Records and stores hundreds of parameters in memory every 10/12 periods
- Measurements on all network types: three-phase, Aron connection, single phase, etc.
- Electrical network monitoring with setting of alarms
- Real-time display of color waveforms (5 voltage/4 current) from 1 cycle to 10/12 cycles
- Measurement of Power Parameters (P, N, Q_1, S and D)
- Harmonics (amplitude/phase shift) from DC to the 63rd order
- Built-in GPS for precise synchronization and accurate timestamping of data
- Webserver, Wi-Fi and Ethernet communication for data transfer and remote monitoring
- Trend recording period from 200 ms to 2 h for flexible and long-term recording and analysis
- Intuitive, user-friendly, and multilingual graphical interface with 7-inch color touch screen functionality
- Automatic current sensors recognition to simplify setup and reduce errors
- Data Export and communication with DataView® software for analysis and reporting
- Waveforms at 512 samples per cycle, with Min/Max 2.5 µs
- True InRush® current measurements to study and understand load characteristics
- True RMS voltage and current measurement
- Capture shockwaves up to 12 kV with a resolution of 500 ns to diagnose power quality issues
- Display of phasor diagrams to visualize power characteristics
- USB and external flash drive support for data storage and transfer
- Comprehensive variety of calculations for thorough electrical system analysis
- 2 carrier current frequencies monitored

LARGE FUNCTIONAL DISPLAYS

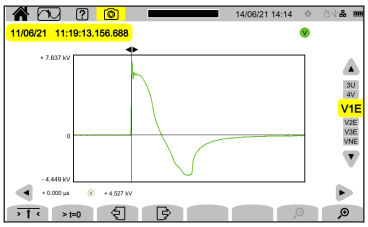
ENERGY EVALUATION



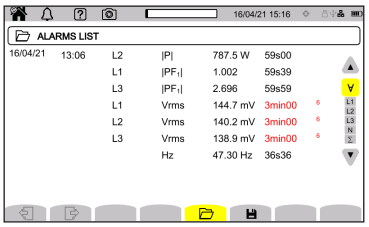
TREND



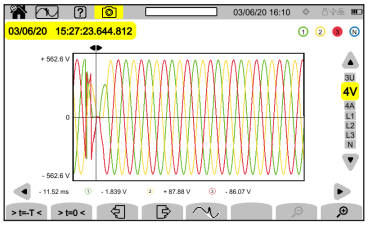
SHOCKWAVES



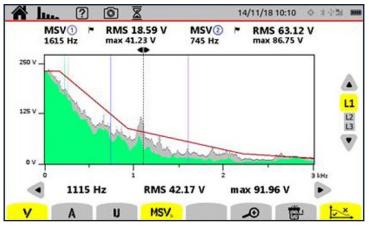
ALARMS



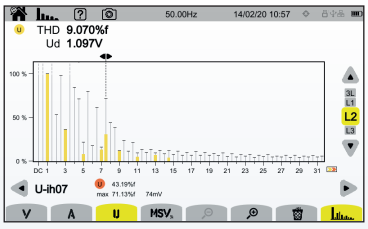
TRANSIENTS



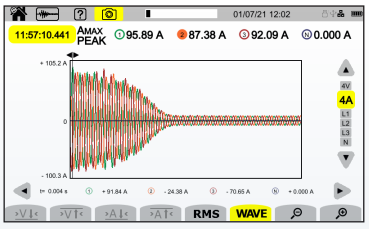
CARRIER CURRENT



INTERHARMONICS (HARMONIC MODE)



TRUE INRUSH®



ACCESSORIES/REPLACEMENTS

CATALOG #2133.76 Carrying Bag

CATALOG #5100.16 Magnetic Hook

CATALOG #2140.43 Lead - Set of 5, 10 ft (3M) Black Leads w/5 Black Alligator Clips (Leads rated 600 V CAT IV 10 A, Clips rated 1000 V CAT IV 15 A, UL)

CATALOG #2140.44 (1) 10 ft (3 M) Black Lead w/(1) Black Alligator Clip (Lead rated 1000 V CAT IV 15 A, Clip rated 1000 V CAT IV 15 A, UL)

CATALOG #2140.81 AC Current Probe Model MN94

CATALOG #2140.82 AC/DC Current Probe Model E94

CATALOG #2140.46 Cable - Replacement 5 ft USB Cable

CATALOG #2960.47 Battery - Replacement 5.8 A·h 61.9 W·h Li-ion Battery Pack

CATALOG #5100.14 Adapter - Replacement Power Plug Adapter for PA32ER

CATALOG #5100.15 Adapter - Replacement 1000 V PA32ER Power Supply

SEE CHART ON PAGE 18 FOR MORE PROBES AND SENSORS

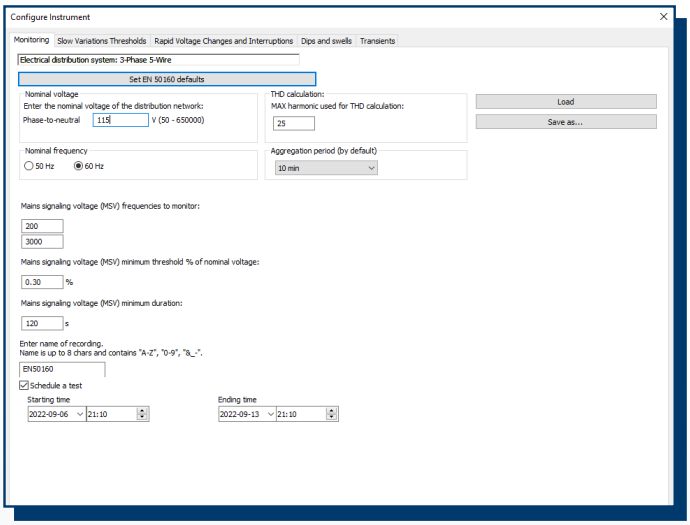
CATALOG NO.	DESCRIPTION
2136.35	PowerPad® IV Model 8345 (no probes)
2136.36	PowerPad® IV Model 8345 w/4 194-24-BK MiniFlex® Sensors
2136.37	PowerPad® IV Model 8345 w/4 193-24-BK Sensors (regular AmpFlex®)

DATAVIEW® SOFTWARE INCLUDED

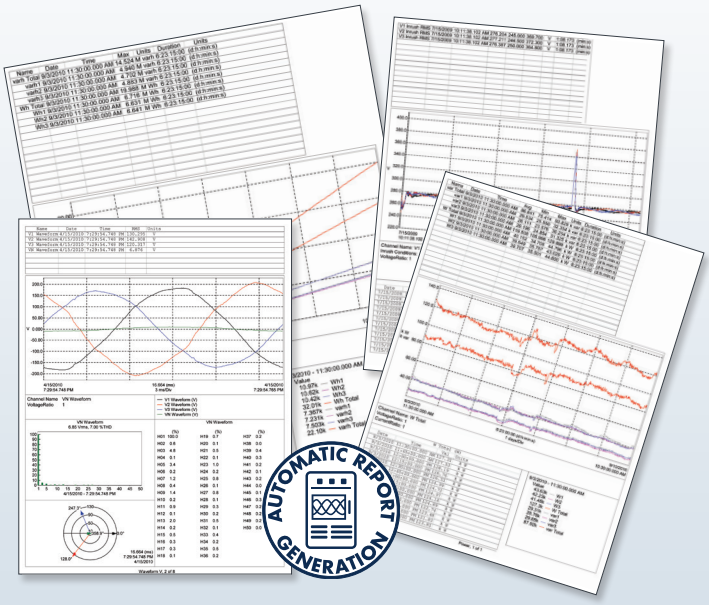
DataView®
Data Analysis and Reporting Software

Configure all functions of the PowerPad® IV Model 8345

- Display and analyze real-time data on a PC
- Configure all PowerPad® functions and parameters from your PC
- Record trend data directly to the PC
- Customize views, templates and reports to meet specific needs
- Create and store a complete library of configurations that can be uploaded to the PowerPad® as needed
- Zoom in and out and pan through sections of the graph to analyze the data
- Display waveforms, trend graphs, harmonic spectrums, text summaries, transients, event logs and stored alarms
- Print reports using standard or user designed custom templates
- Selectively review individual channels, phases on total network recordings
- Keep track of accumulated energy over time
- Create user-specific cover sheets for reports identifying specific data that includes operator, tests site and narrative associated with the data



Monitoring tab allows complete control of Monitoring conditions.

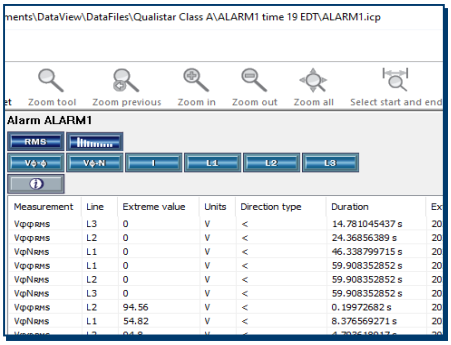


The Control Panel Makes it Easy to:

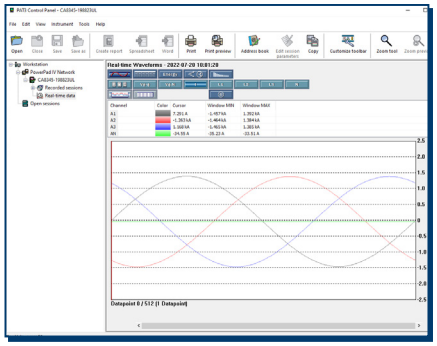
- Name the Monitoring
- Select Aggregation period from 0.0 s to 2 hrs
- Schedule Monitoring by selecting Start and Stop Date/Time
- Load Parameters from a file
- Save all the Parameters to re-load later
- Edit Power Ratios
- Add to the Parameter list
- Edit conditions for any Parameter
- Delete a given Parameter from the list
- Monitor an active recording session or a saved session

DATAVIEW® SOFTWARE INCLUDED

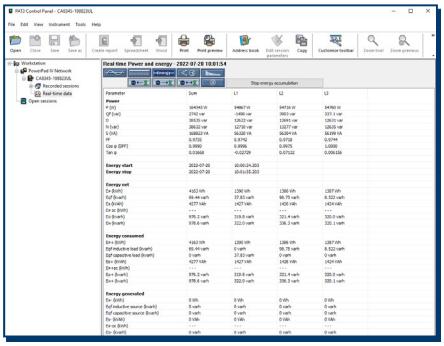
DataView® Data Analysis and Reporting Software



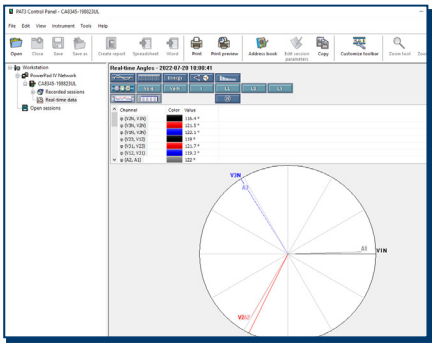
Configure and display alarm parameters, thresholds and tests results.



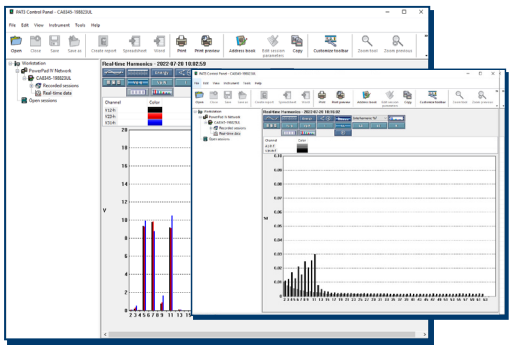
Display real-time waveforms by phase, parameter or total.



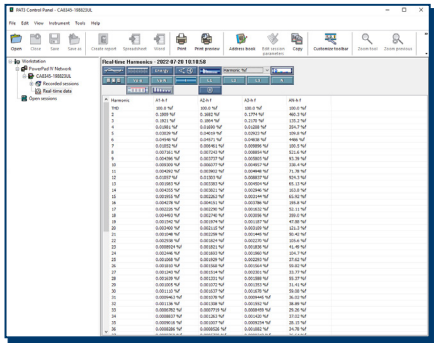
Display power and energy parameters – both instantaneous and total.



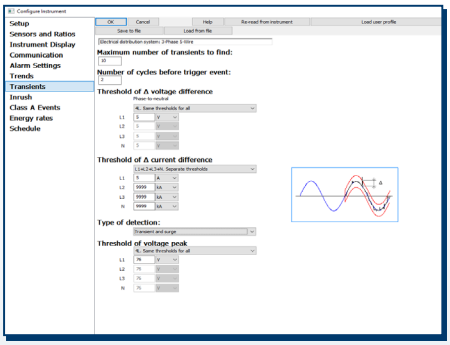
Display real-time phasor diagrams. Includes unbalance for both voltage and current.



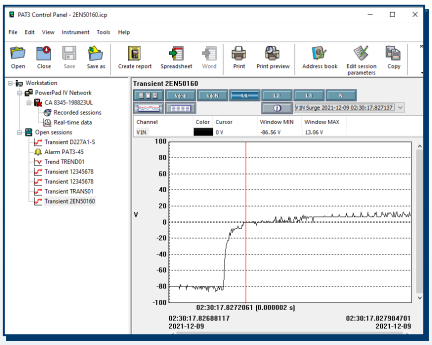
Display all harmonics from 1st to 63rd or interharmonics from 1st to 62nd in bar graph form for voltage, current and power.



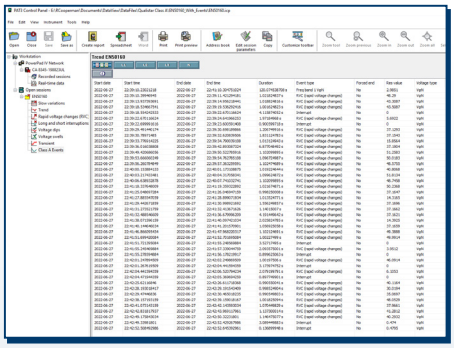
Display harmonics in a text table from harmonic 0 (DC) through the 63rd.



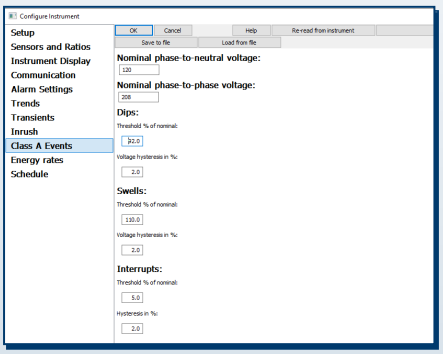
Configure transient voltage peaks and current waveforms.



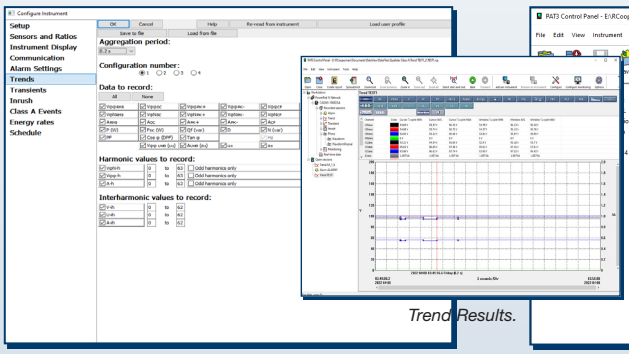
Display surge transient.



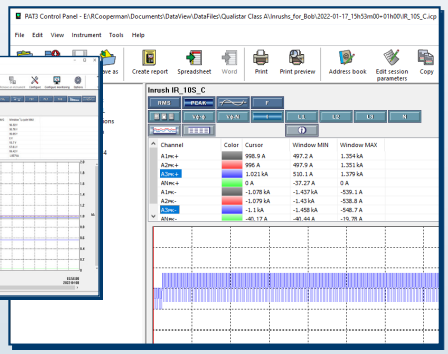
Display Class A list.



Configure Class A events.



Configure trends.



Trend Results.

Display InRush peak.

Power Clamp-On Meters Models 407 & 607

Measures single- and three-phase power (real, reactive and apparent) up to 3 MW with resolution to 1 W

MODELS	407	607
ELECTRICAL		
Measurment Method	TRMS AC/AC + DC/DC	TRMS AC/AC + DC/DC
Autorange	Yes	Yes
Automatic AC/DC Detection	Yes	Yes
A AC	(0.15 to 1000) A (1500 A peak)	(0.15 to 2000) A (3000 A peak)
A DC	(0.15 to 1500) A	(0.15 to 3000) A
A AC+DC	(0.15 to 1000) A (1500 A peak)	(0.15 to 2000) A (3000 A peak)
Best Accuracy	1 % of Reading + 3 cts	
V AC	(0.15 to 1000) V (1400 V peak)	
V DC	(0.15 to 1400) V	
V AC+DC	(0.15 to 1000) V (1400 V peak)	
Best Accuracy	1% of Reading + 3 cts	
Hz	Current: (5.0 to 2000) Hz Voltage: (5.0 to 20.00) kHz	Current: (5.0 to 2000) Hz Voltage: (5.0 to 20.00) kHz
Ohm	0.1 Ω to 99.99 kΩ	
Open Circuit Voltage	≤ 8 V	
Measurement Current	≤ 680 µA	
Audible Continuity	Yes	
Continuity Threshold	40 Ω	
Diode Test (semiconductor junction)	-	
Single-phase and Total Three-phase Power Values	Yes	
Active Power	1 W to 1000 kW	1 W to 2000 kW
Reactive Power	1var to 1000 kvar	1 var to 2000 kvar
Apparent Power	1 VA to 1000 kVA	1 VA to 2000 kVA
FP / DPF	Yes / Yes	
Harmonic Analysis	Yes	
THDf / THDr	Yes / Yes	
Frequency Analysis	25th order	
Phase Rotation (2-wire method)	-	
True InRush® (overcurrent measurement)	Yes	
Motor InRush		
Load Change		
Hold	Yes	
Min / Max	Yes	
Peak+ / Peak	Yes	
RELative ΔX / Differential ΔX/X (%)	Yes	
MECHANICAL		
Jaw Opening	1.89 in (48 mm)	2.36 in (60 mm)
Display Resolution	10,000 cts	
Display Backlighting	Backlit LCD	
Number of Values Displayed	3	
Auto Power Off	Yes	
Data Recording	Yes	
Communication Interface	Bluetooth communication	
Electrical Safety as per IEC 61010	1000 V CAT IV	
Power Supply	Four 1.5 V AA	
Dimensions & Weight	10.70 x 3.62 x 1.61 in (272 x 92 x 41) mm / 600 g	11.65 x 4.37 x 1.61 in (296 x 111 x 41) mm / 640 g

*Three-phase measurements assume balanced load
Consult factory for NIST Calibration prices

IP 40 | 1000 V CAT IV

True InRush®

AUTOMATIC REPORT GENERATION

SCAN TO LEARN MORE

FEATURES

- 1000 V CAT IV Rated
- UL 94 VI flame retardant self-extinguishing
- 10,000-count blue electroluminescent backlit display
- Measures up to 1000 VAC (1400 V peak), 1000 VDC and AC+DC with resolution to 10 mV
- Measures up to 2000 AAC and 3000 ADC (Model 607)
- Measures W, VA, var and PF for 1 Φ & 3 Φ balanced systems
- Measures single- and three-phase power (real, reactive and apparent) up to 3 MW with resolution to 1 W
- Measures frequency to 20 kHz with 0.1 Hz resolution
- Auto selects AC or DC measurement
- True InRush® current measurement with 1mS capture
- Measures harmonics up to the 25th
- Records up to 1000 measurements
- Bluetooth communication (communicates up to 30 ft)
- Includes FREE DataView® software for download and report generation
- Jaw opening up to 1.89 in (48 mm) (Model 407) and up to 2.36 in (60 mm) (Model 607)

PRODUCT INCLUDES

Hard carrying case, set of two color-coded silicone test leads, test probes and alligator clips, Bluetooth USB adapter, four 1.5 V AA batteries, safety information sheet, and USB drive supplied with DataView® software and user manual.

SOFTWARE & REPORTS

DataView® Data Analysis and Reporting Software

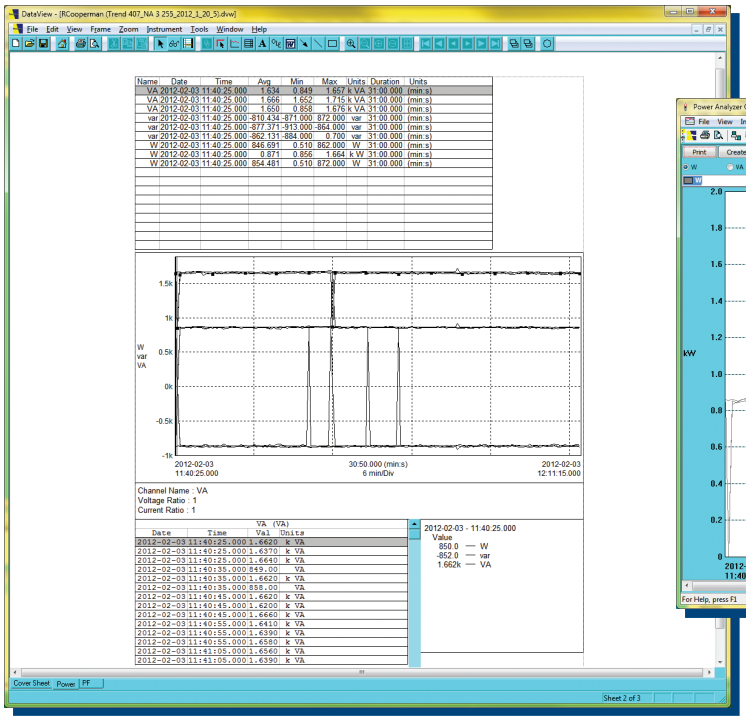
Bluetooth®

AUTOMATIC REPORT GENERATION

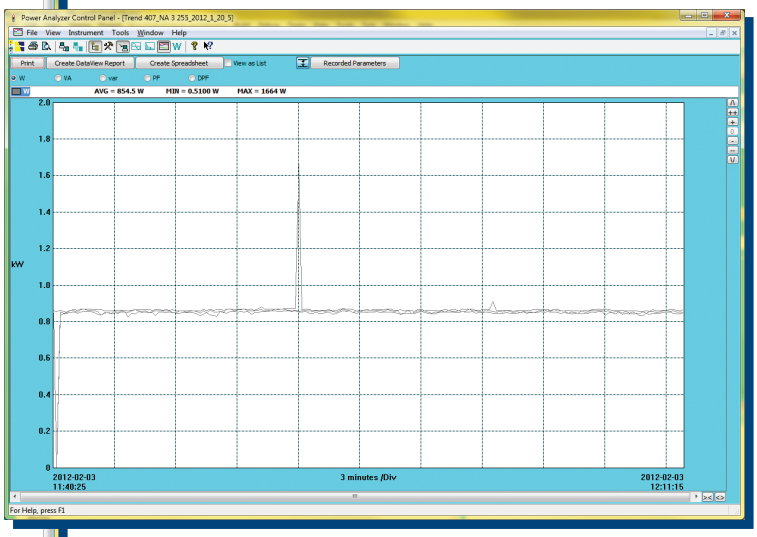
FEATURES

- Download and store recorded data
- Wireless Bluetooth communication
- Print reports using the included default templates or custom templates that you design

DataView® software, user manual and quick start guide are included on the USB



DataView® software report.



Clean, easy-to-read report of test results.

CATALOG NO.	DESCRIPTION
2139.51	Power Clamp-On Meter Model 407 (TRMS, 1000 VAC/DC, 1000 AAC/1500 ADC, Ohms, Continuity, Energy, Harmonics, Power, THD, Recording)
2139.61	Power Clamp-On Meter Model 607 (TRMS, 1000 VAC/DC, 2000 AAC/3000 ADC, Ohms, Continuity, Energy, Harmonics, Power, THD, Recording)

PROBES & SENSORS

MODEL	MAX CONDUCTOR SIZE	ACCURACY (TYPICAL)	TYPICAL ERROR ON Φ AT (50/60) HZ	CURRENT RANGE	USED WITH MODEL	CATALOG NUMBER
MiniFlex® Model MA193-10-BK* & MiniFlex® Model MA194-24-BK*  **10, 14 & 24 in Sensor**	2.75 in (70 mm) (10 in sensor)	± 1 %	0 °	100 mA to 12,000 AAC[1]	PEL 52 PEL 102 PEL 103 PEL 105 8333 8336 8436 8345	2140.48 (10 in sensor)
	3.94 in (100 mm) (14 in sensor)	± 1 %	0 °			2140.50 (14 in sensor)
	7.64 in (194 mm) (24 in sensor)	± 1 %	0 °			2140.80 (24 in sensor)
AC/DC Current Probe Model MR193-BK 	1.6 in (41 mm)	± 2.5 %	-0.80 °	(1 to 1000) AAC (1 to 1300) AAC	PEL 102 PEL 103 PEL 105 8333 8336 8436 8345	2140.28
AC Current Probe Model MN93-BK 	0.78 in (20 mm)	± 1 %	0.8 °	(0.5 to 240) AAC	PEL 52 PEL 102 PEL 103 PEL 105 8333 8336 8436 8345	2140.32
AC Current Probe Model SR193-BK 	2.05 in (52 mm)	± 0.3 %	0.2 °	(1 to 1200) AAC	PEL 52 PEL 102 PEL 103 PEL 105 8333 8336 8436 8345	2140.33
AmpFlex® Sensor 24 in Model 193-24-BK* 	7.64 in (194 mm) (24 in sensor)	± 1 %	0 °	100 mA to 12,000 AAC[1]	PEL 52 PEL 102 PEL 103 PEL 105 8333 8336 8436 8345	2140.34
AmpFlex® Sensor 36 in Model 193-36-BK* 	11.64 in (291 mm) (36 in sensor)	± 1 %	0 °	100 mA to 12,000 AAC[1]	PEL 52 PEL 102 PEL 103 PEL 105 8333 8336 8436 8345	2140.35

PROBES & SENSORS

MODEL	MAX CONDUCTOR SIZE	ACCURACY (TYPICAL)	TYPICAL ERROR ON Φ AT (50/60) HZ	CURRENT RANGE		USED WITH MODEL	CATALOG NUMBER
AC Current Probe Model MN193-BK 	0.78 in (20 mm)	± 1 %	0.75 °	100 A	200 mA to 120 AAC	PEL 52 PEL 102 PEL 103 PEL 105 8333 8336 8436 8345	2140.36
			1.7 °	5 A	5 mA to 6 AAC		
AmpFlex® Sensor 24 in Model 196A-24-BK* (Waterproof - IP67) 	7.64 in (194 mm) (24 in sensor)	± 1 %	0 °	100 mA to 12,000 AAC (1)		PEL 105 8436	2140.75
MiniFlex® Sensor 14 in Model MA196-14-BK* (Waterproof, IP67) 	3.9 in (99 mm) (14 in sensor)	± 1 %	0 °	100 mA to 12,000 AAC (1)		PEL 105 8436	2140.79
AC Current Probe Model MN94 	0.25 in	± 0.2 %	0.1 °	50 mA to 200 AAC		PEL 52 8345	2140.81
AC/DC Current Probe Model E94 	.464 in (11.8 mm)	± 3 %	1.5 °	**10 A**	100 mA to 10 AAC	8345	2140.82
		± 4 %	1 °	**100 A**	500 mA to 100 AAC		
AC/DC Current Probe Model SL261 	0.46 in (12 mm)	± 3 %	± 1 °	**10 A**	50 mA to 10 AAC/DC	PEL 52 PEL 102 PEL 103 PEL 105 8333 8336 8436 8345	1201.51
		± 4 %	± 0.5 °	**100 A**	(5 to 100) AAC/DC		

*Maximum current reduced by a factor of 2 for 400 Hz 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.
(1) Current range may be limited by sensor size or meter type.
Consult factory for NIST Calibration prices