

POWER QUALITY / ENERGY ANALYZERS, METERS & LOGGERS

POWER & ENERGY LOGGER PEL 52



Pending

MODEL PEL 52

Time/date stamped electrical measuring instrument to understand and improve electrical consumption



DataView®



SCAN TO
LEARN
MORE

DataViewSync™

PRODUCT INCLUDES

CAT. #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.

CAT. #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.

| 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 = (100 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 = (100 to 600) V I = (5 to 120) % Inom | 0.001 and ±0.02% | ±0.5 % Reading ±2.5 % 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 / Relative Humidity | (-4 to 122) °F (-20 to 50) °C / (10 to 85) % RH | | |
| Storage Temperature | (-40° to 158) °F (-40 to 70) °C / (0 to 95) % RH w/out battery | | |
| SAFETY | | | |
| Electro-Magnetic- Compatibility (EMC) | EN 61326-1 for emission and immunity | | |
| Safety Rating / CE Rating | IEC / EN 61010-2-30 (600 V CAT III) / Yes | | |
| IP Rating | IP54 per IEC 60529 | | |

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

| CAT. # | 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 QUALITY / ENERGY ANALYZERS, METERS & LOGGERS

POWER & ENERGY LOGGER PEL 52

FEATURES

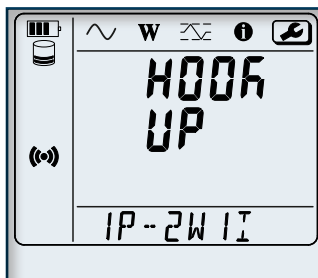
- Low cost, simple-to-use, portable, single- and dual- (*split-phase*) power & energy data logger
- Wide backlit LCD display
- Vital energy data is easily measured, recorded and analyzed
- TRMS voltage and current measurement up to 600 V
- Powered via the measuring phase
- Measurement of the AC phase currents (I1, I2) (*dependent on sensor*)
- RMS AC measurements (50 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 min to 1 h
- 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 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
- Capable of performing load studies in compliance with NEC 220.87
- Includes FREE DataView® software for configuring, data retrieval, real-time measurement display, data analysis and report generation
- Compact casing with built-in magnet 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

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.

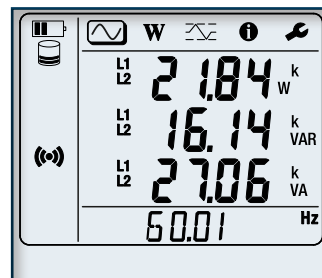
Large Functional Displays

INFORMATION MODE



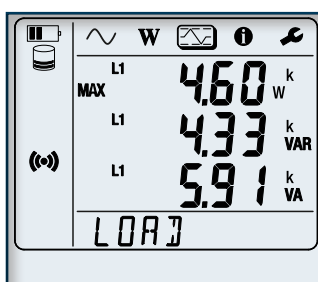
Hook up, Wi-Fi, aggregation period, can be configured from the front panel of the PEL 52. Current ratios and number of turns need to be configured via the PEL Transer software based on the current sensor type.

MEASUREMENT MODE (2P-3W2I)



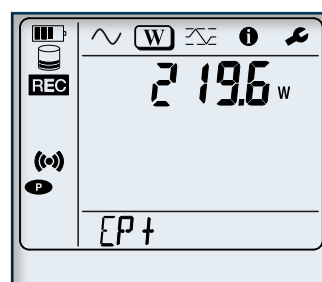
Real-time updates are displayed for voltage (V), current (A) active power (P), reactive power (Q), apparent power (S), frequency (Hz), power factor (PF).

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")

ACCESSORIES/REPLACEMENTS

CAT. #2140.32 AC Current Probe Model MN93-BK

CAT. #2140.33 AC Current Probe Model SR193-BK

CAT. #2140.34 AmpFlex® Sensor 24 in Model 193-24-BK

CAT. #2140.35 AmpFlex® Sensor 36 in Model 193-36-BK

CAT. #2140.36 AC Current Probe Model MN193-BK

CAT. #2140.48 MiniFlex® Sensor 10 in Model MA193-10-BK

CAT. #2140.50 MiniFlex® Sensor 14 in Model MA193-14-BK

CAT. #2140.80 MiniFlex® Sensor 24 in Model MA194-24-BK







CAT. #2140.81 AC Current Probe Model MN94

CAT. #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)

CAT. #2140.45 Set of (12) color-coded Input ID Markers

CAT. #5000.43 Magnetized Voltage Probe Set of (2) color-coded (red/black) magnetized voltage probes (Rated 600 V CAT IV, 1000 V CAT III)

POWER QUALITY / ENERGY ANALYZERS, METERS & LOGGERS OPTIONAL ACCESSORIES

| MODEL | MAX CONDUCTOR SIZE | ACCURACY (TYPICAL) | TYPICAL ERROR ON Φ AT (50 / 60) HZ | CURRENT RANGE | USED WITH MODEL | CAT. # |
|--|--|-----------------------|---|--|---|---------------------------|
| MiniFlex® Model MA193-10-BK* & MiniFlex® Model MA193-14-BK* & MiniFlex® Model MA194-24-BK*  | 2.75 in (70 mm) (10 in sensor) | ± 1 % | 0.5 ° | 100 mA to 12,000 A _{AC} ⁽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) | | | | | 2140.50 (14 in sensor) |
| | 7.64 in (194 mm) (24 in sensor) | | | | | 2140.80 (24 in sensor) |
| AC / DC Current Probe Model MR193-BK  | 1.6 in (41 mm) | ± 2.5 % | -0.80 ° | (1 to 1000) A _{AC} (1 to 1300) A _{DC} | 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) A _{AC} | 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) A _{AC} | 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 % | 0.5 ° | 100 mA to 12,000 A _{AC} ⁽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 % | 0.5 ° | 100 mA to 12,000 A _{AC} ⁽¹⁾ | PEL 52 PEL 102 PEL 103 PEL 105 8333 8336 8436 8345 | 2140.35 |

POWER QUALITY / ENERGY ANALYZERS, METERS & LOGGERS OPTIONAL ACCESSORIES

| MODEL | MAX CONDUCTOR SIZE | ACCURACY (TYPICAL) | TYPICAL ERROR ON ϕ AT (50 / 60) HZ | CURRENT RANGE | | USED WITH MODEL | CAT. # |
|--|---------------------------------|--------------------|---|-------------------------------------|-------------------|---|---------|
| AC Current Probe Model MN193-BK  | 0.78 in (20 mm) | $\pm 1\%$ | 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) | $\pm 1\%$ | 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) | $\pm 1\%$ | 0 ° | 100 mA to 12,000 Aac ⁽¹⁾ | | PEL 105 8436 | 2140.79 |
| AC Current Probe Model MN94  | 0.25 in (7 mm) | $\pm 0.2\%$ | 0.1 ° | 50 mA to 200 Aac | | PEL 52 8345 | 2140.81 |
| AC / DC Current Probe Model E94  | .464 in (11.8 mm) | $\pm 3\%$ | 1.5 ° | 10 A | 100 mA to 10 Aac | 8345 | 2140.82 |
| | | $\pm 4\%$ | 1 ° | 100 A | 500 mA to 100 Aac | | |

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

All current sensors can be used with Models PEL 105 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.

POWER QUALITY / ENERGY ANALYZERS, METERS & LOGGERS SELECTION CHART

| MODEL | CAT. # | INPUT TERMINALS | CHANNELS | RMS VOLTAGE MAX PHASE-TO- NEUTRAL | RMS VOLTAGE MAX PHASE-TO- PHASE | PEAK VOLTAGE MAX PHASE-TO- NEUTRAL | PEAK VOLTAGE MAX PHASE-TO- PHASE | DC VOLTAGE MAX | AC CURRENT MAX (PROBE DEPENDENT) | DC CURRENT MAX (PROBE DEPENDENT) | RATIOS VOLT | RATIOS AMPERE |
|---------|---------|--------------------|-----------|---|---|--|--|----------------------|--|---|----------------|------------------|
| 8333 | 2136.10 | 4 V / 3 I | 3 V / 4 I | 1000 Vrms | 2000 Vrms | 1414 Vpk | 2828 Vpk | 1200 V _{DC} | 10,000 A _{AC} | 1300 A _{DC} | | Yes |
| 8336 | 2136.30 | 5 V / 4 I | 4 V / 4 I | 1000 Vrms | 2000 Vrms | 1414 Vpk | 2828 Vpk | 1200 V _{DC} | 10,000 A _{AC} | 5000 A _{DC} | | Yes |
| 8345 | 2136.35 | 5 V / 4 I | 4 V / 4 I | 1000 Vrms | 2000 Vrms | 1414 Vpk | 2828 Vpk | 1200 V _{DC} | 10,000 A _{AC} | 5000 A _{DC} | | Yes |
| 8436 | 2136.43 | 5 V / 4 I | 4 V / 4 I | 1000 Vrms | 2000 Vrms | 1414 Vpk | 2828 Vpk | 1200 V _{DC} | 10,000 A _{AC} | 5000 A _{DC} | | Yes |
| PEL 52 | 2137.71 | 2 V / 2 I | | 600 Vrms | 1200 Vrms | — | | | 3600 A _{AC} | — | No | Yes |
| PEL 102 | 2137.51 | 4 V / 3 I | 3 V / 3 I | 1000 Vrms | 1700 Vrms | 1414 Vpk | 2400 Vpk | 1000 V _{DC} | 12,000 A _{AC} | 5000 A _{DC} | | Yes |
| PEL 103 | 2137.52 | 4 V / 3 I | 3 V / 3 I | 1000 Vrms | 1700 Vrms | 1414 Vpk | 2400 Vpk | 1000 V _{DC} | 12,000 A _{AC} | 5000 A _{DC} | | Yes |
| PEL 105 | 2137.57 | 5 V / 4 I | 4 V / 4 I | 1000 Vrms | | 1414 Vpk | 2400 Vpk | 1000 V _{DC} | 12,000 A _{AC} | 5000 A _{DC} | | Yes |

| MODEL | CAT. # | DISTRIBUTION SYSTEMS | PHASE ROTATION | WAVEFORM MODE | TRANSIENT MODE | TRUE INRUSH [®] MODE / TYPE / DURATION | ALARM MODE | SNAPSHOT MODE | HARMONIC MODE / INTERHARMONIC MODE | TYPE LCD | POWER SOURCE |
|---------|---------|---|-------------------|------------------|-------------------|---|---|-----------------------------------|--|--|--|
| 8333 | 2136.10 | 1 P-2 W, 2 P-3 W, 3 P-3 W, 3 P-4 W | | Yes | | No | 10 types / up to 2 active / 4662 recorded | Yes (12) | Yes / No | TFT - 5.7 in diagonal 320 x 240 resolution | External adapter with internal NiMH battery pack |
| 8336 | 2136.30 | 1 P-2 W, 1 P-3 W, 2 P-2 W, 2 P-3 W, 2 P-4 W, 3 P-3 W, 3 P-4 W, 3 P-5 W | | Yes | | Yes (RMS+PEAK & RMS) up to 1 & 10 min | 40 types / up to 7 active / 16,362 recorded | Yes (50) | Yes / No | TFT - 5.7 in diagonal 320 x 240 resolution | External adapter with internal NiMH battery pack |
| 8345 | 2136.35 | 1 P-2 W, 1 P-3 W, 2 P-2 W, 2 P-3 W, 2 P-4 W, 3 P-3 W, 3 P-4 W, 3 P-5 W | | Yes | | Yes (RMS+PEAK & RMS) up to 10 & 30 min | 40 types / 20,000 w / email notifications | Yes (no limit with SD card) | DC to 127 th order; < 3 % U _{din} / 0 to 62 nd order; < 0.5 % U _{din} | 7 in color LCD touch screen: 800 x 480 (WVGA) | External adapter with Li-ion battery pack |
| 8436 | 2136.43 | 1 P-2 W, 1 P-3 W, 2 P-2 W, 2 P-3 W, 2 P-4 W, 3 P-3 W, 3 P-4 W, 3 P-5 W | | Yes | | Yes (RMS+PEAK & RMS) up to 1 & 10 min | 40 types / up to 7 active / 16,362 recorded | Yes (50) | Yes / No | TFT - 5.7 in diagonal 320 x 240 resolution | Line Power with internal NiMH battery pack |
| PEL 52 | 2137.71 | 1 P-2 W, 2 P-3 W, 1 P-3 W | Yes | | | No | | | | Monochrome LCD | Power phase input with internal NiMH battery pack |
| PEL 102 | 2137.51 | 1 P-2 W, 1 P-3 W, 3 P-3 W D2, 3 P-3 W O2, 3 P-3 W Y2, 3 P-3 W D3, 3 P-3 W O3, 3 P-3 W Y, 3P-3 W DB, 3 P-4 W Y, 3 P-4 W YB, 3 P-4 W Y2 1/2, 3 P-4 W D, 3 P-4 WOD, DC-2 W DC-3 W, DC-4 W | Yes | | | No | | | Yes / No | None | Line Power with internal NiMH battery pack |
| PEL 103 | 2137.52 | 1 P-2 W, 1 P-3 W, 3 P-3 W D2, 3 P-3 W O2, 3 P-3 W Y2, 3 P-3 W D3, 3 P-3 W O3, 3 P-3 W Y, 3P-3 W DB, 3 P-4 W Y, 3 P-4 W YB, 3 P-4 W Y2 1/2, 3 P-4 W D, 3 P-4 WOD, DC-2 W DC-3 W, DC-4 W | Yes | | | No | | | Yes / No | Monochrome LCD | Line Power with internal NiMH battery pack |
| PEL 105 | 2137.57 | 1 P-2 W, 1 P-3 W, 3 P-3 W D2, 3 P-3 W O2, 3 P-3 W Y2, 3 P-3 W D3, 3 P-3 W O3, 3 P-3 W Y, 3P-3 W DB, 3 P-4 W Y, 3 P-4 W YB, 3 P-4 W Y2 1/2, 3 P-4 W D, 3 P-4 WOD, DC-2 W DC-3 W, DC-4 W | Yes | | | No | | | Yes / No | Monochrome LCD | Power phase input or external adapter with internal NiMH battery pack |

POWER QUALITY / ENERGY ANALYZERS, METERS & LOGGERS

DataView[®] Data Analysis and Reporting Software

Configure all functions:

- 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 available on our website www.aemc.com



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.

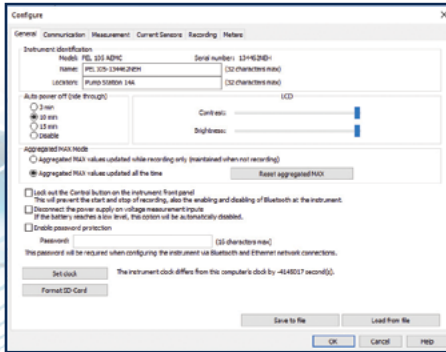


POWER QUALITY / ENERGY ANALYZERS, METERS & LOGGERS

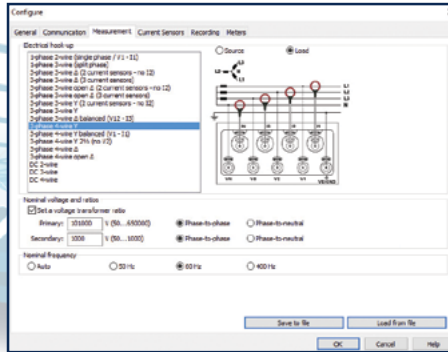
DataView® Data Analysis and Reporting Software



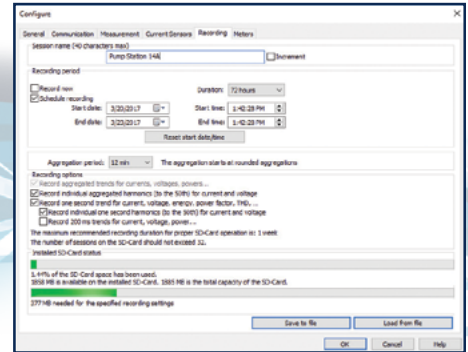
DataView® software, user manual and quick start guide are included in the USB Drive



Configure 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, and nominal frequency.

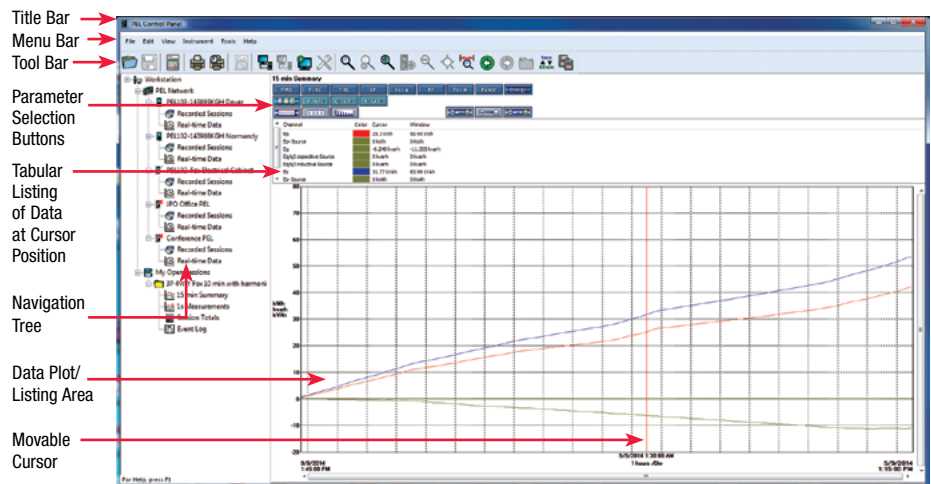


In the Recording tab, configure the instrument to measure (*and record*) over a user selectable recording period. Select demand intervals and view available memory for data storage.

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.



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