# Power & Energy Logger
# Model PEL 115



# POWER & ENERGY LOGGERS

# Statement of Compliance

Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments certifies that this instrument has been calibrated using standards and instruments traceable to international standards.

We guarantee that at the time of shipping your instrument has met the instrument's published specifications.

**An NIST traceable certificate may be requested at the time of purchase, or obtained by returning the instrument to our repair and calibration facility, for a nominal charge.**

The recommended calibration interval for this instrument is 12 months and begins on the date of receipt by the customer. For recalibration, please use our calibration services. Refer to our repair and calibration section at www.aemc.com/calibration.

**Serial #:** _____

**Catalog #:**   **2137.56, 2137.58**

**Model #:**      **PEL 115**

Please fill in the appropriate date as indicated:

Date Received: _____

Date Calibration Due: _____



Chauvin Arnoux®, Inc.
d.b.a AEMC® Instruments
**www.aemc.com**

# PRODUCT PACKAGING



Power & Energy Logger
Model PEL 115
**Cat. #2137.56 (no sensors)**
**Cat. 2137.58 (sensors)**



(5) Black Leads - 10 ft (3 m)
(waterproof cap)
with (5) Black Alligator Clips
**Cat. #2140.73**
*Replacement is Qty of (1).*



Extra Large Carrying Bag
with Rubber Bottom
**Cat. #2133.76**



Power Adapter 110/230 V
w/ US Power cord
**Cat. #5000.19 (CA PA30W)**



Cable - 5 ft USB
*Replacement is 10 ft USB
Cable Type A to Type B*
**Cat. #2136.80**



(1) Set of (12) Color
Input ID Markers
**Cat. #2140.45**



USB SD - card reader
**Cat. #5000.45**
SD-card (8 GB)
(Formatted & Installed**)**



USB Drive
(DataView® and
User Manual)



(4) AmpFlex® Sensor 24"
Waterproof, IP67
Model 196A-24-BK
**Cat. #2140.75**
*(Only Shipped with PEL 115
Cat. 2137.58)*

## Also Included:

- 9.6 V NiMH Battery (Installed)
- Measuring Instrument Safety
  Data Sheet (Multilingual)
- Declaration of Conformity
- Test Report
- Quick Start Guide



Set of (4) large and (5) small
Caps (watertight)
**Cat. #5000.67**

Thank you for purchasing an AEMC® Instruments **Power & Energy Logger Model PEL 115**. The user manual is included on the provided USB Drive along with the DataView® software. It is also available on our website at **www.aemc.com**.

For best results from your instrument and for your safety, read the enclosed operating instructions carefully and comply with the precautions for use. Only qualified and trained operators should use this product.

## ⚠ PRECAUTIONS BEFORE USE

This instrument complies with safety standard IEC/EN 61010-2-030, the leads comply with IEC/EN 61010-031 for voltages of 1000 V in measurement CAT IV and the current sensors comply with IEC/EN 61010-2-032.

Carefully read and understand all required precautions when using this instrument. Failure to comply with these safety instructions can create a risk of electric shock, fire, and explosion; resulting in destruction of the instrument, injury to the user, and damage to the facility. If the instrument is used other than as specified in this manual, the protection provided by the instrument may be impaired.

- Do not use the instrument in an explosive atmosphere or in the presence of flammable gas or smoke.

- Do not use the instrument on electrical networks with a rated voltage or category higher than those listed for the instrument.

- Respect the maximum rated voltages and currents between terminals and in relation to ground/earth.

- Do not use the instrument if it seems to be damaged, incomplete, or poorly closed.

- Before each use, check the condition of the insulation of the leads, the instrument, and all accessories. Any insulation that appears damaged (even partially) must be taken out of service for repair or disposal.

- Use leads and accessories for voltage according to IEC 61010-031 and measurement categories at least equal to those of the instrument. An accessory with a lower category reduces the category of the combined instrument/accessory combination to that of the accessory.

- Respect the environmental conditions of use listed in this manual.

- Do not modify the instrument or replace components using substitute parts. Repairs and adjustments must be performed by AEMC® Instruments.

- Use personal protection equipment when dictated by conditions.

- Keep hands and fingers away from unused terminals and behind the physical guard when handling the leads, test probes, and alligator clips.
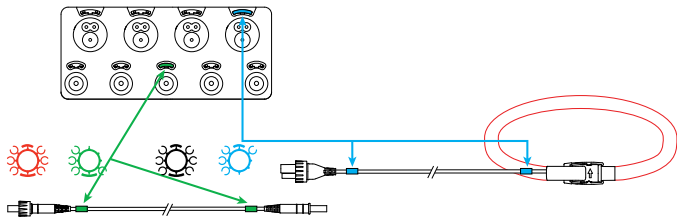
## FRONT PANEL



All connectors have attached elastomer watertight (IP67) caps.

| 1 | QR Code |
|---|---|
| 2 | Status Indicators: (7) indicators provide status information for external power, battery, phase order, overload of measurement range, SD-card, Wi-Fi, recording and power. |
| 3 | External Power Connector: For optional power supply for charging the battery. It is not essential as the battery is charged whenever the instrument is connected (if supply via voltage inputs not deactivated). |
| 4 | RJ45 Ethernet Connector (⊟). |
| 5 | USB Connector (⇔•). |
| 6 | SD-card Slot (**SƆ**). |
| 7 | LCD Unit |
| 8 | Directional Keypad: (4) Navigation Buttons and (1) Enter Button |
| 9 | Control Button<br>Press the **Control** button and hold it down.<br>The **REC** and •)) indicators light one by one, for 3 s each.<br>Release the **Control** button while the desired function is lit.<br>  - If you release it while the **REC** indicator is lit, recording starts or stops<br>  - If you release while the •)) indicator is lit, Wi-Fi is activated or deactivated. |
| 10 | Power Button<br>  - To put the instrument into operation, connect the terminals.<br>  - To stop the instrument, disconnect the terminals and press the<br>    **Power** button for several seconds.<br>**Note**: You cannot turn the PEL OFF while it is connected to a power source or while a recording is in progress or pending. |
| 11 | Bag to stow the (5) small & (4) large watertight terminal caps. |

## INSTALLING THE COLOR-CODED INPUT ID MARKERS

For multiple-phase measurements, start by marking the current sensors, voltage leads and terminals using the color-coded input ID markers.

- Detach the appropriate inserts and place them in the holes provided over the terminals (larger inserts for current terminals, smaller inserts for voltage terminals).
- Clip rings of the same color to ends of the lead that will be connected to the terminal.



## STATUS INDICATORS

| Indicator | Color | Status |
|---|---|---|
|  | Green | **External Power**<br>- Indicator lit green: instrument is ON and currently running on external AC power<br>- Indicator OFF: instrument is running on battery or phase power |
|  | Orange/ Red | **Battery**<br>- Indicator OFF: battery is fully charged (connected or not connected to external AC power)<br>- Indicator lit orange: battery is charging<br>- Indicator blinking orange: battery is recovering from a full discharge<br>- Indicator blinking red: battery is low and no external AC power is connected. |
|  | Red | **Phase Order**<br>- Indicator OFF: phase rotation order correct<br>- Indicator binking red: phase rotation order incorrect |
| *OL* | Red | **Overload of the Measurement Range**<br>- Indicator lit red: load is outside of limits<br>- Indicator OFF: no input overload<br>Note: Other conditions show **OL** as well. For example, no current sensors connected. |
|  | Red/ Green | **SD-card**<br>- Indicator lit red: SD-card is locked, unrecognized, or not present<br>- Indicator blinking red: SD-card is initializing<br>- Indicator blinking alternating red and green: SD-card is full<br>- Indicator lit green: SD-card is present, recognized, and unlocked<br>- Indicator blinking light green: SD-card will be full before the end of the progress or pending recording |

| Indicator | Color | Status |
|---|---|---|
| •))) | **Green** | **Wi-Fi**<br>- Indicator lit green: Wi-Fi is enabled but not currently transmitting<br>- Indicator blinking green: Wi-Fi is enabled and transmitting<br>- Indicator OFF:  Wi-Fi is disabled |
| (ethernet icon) | **Green/ Yellow** | **Ethernet**<br>Green Indicator<br>- Indicator OFF: ethernet link is not activated<br>- Indicator blinking green: ethernet link is activated<br><br>Yellow Indicator<br>- Indicator OFF: the stack has not been initialized<br>- Indicator blinking yellow: the stack has been initialized correctly<br>- Indicator rapid blinking yellow: acquisition of the new IP address is complete<br>- Indicator blinks yellow twice and stops: the IP address assigned for the DHCP server is not valid<br>- Indicator lit yellow: ethernet link is transmitting |
| **REC** | **Red** | **Recording**<br>- Indicator OFF: not recording<br>- Indicator blinking red: recording session programmed<br>- Indicator lit red: recording session in progress |
| (power icon) | **Green/ Orange** | **Power Supply**<br>- Indicator lit green: instrument is running on power supplied by the line voltage inputs<br>- Indicator blinking orange:<br>  ■ instrument is powered by the battery<br>  ■ supply by the voltage inputs is either deactivated or the supply voltage is too low |

## SD MEMORY CARD

Data recording sessions are stored on an SD-card. The PEL accepts SD and SDHC cards, FAT32 formatted up to a capacity of 32 GB.

The PEL 115 is delivered with a formatted and installed SD-card.

To install a different SD-card:

- Check the new SD-card to verify that it is not locked.
- Format the SD-card using the PEL Control Panel (recommended), or using a PC.
- Open the elastomer cap marked **SD** which is located on the front panel.

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(i) **NOTE: DO NOT** remove existing SD-card if a recording is in progress.

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- Press existing SD-card further inward to release it from the card slot and remove.
- Insert the new SD-card into the card slot with the metal contacts facing up.
- Press the protective elastomer cap back onto the card slot to ensure the instrument is waterproof.

# INSTALLING DATAVIEW® SOFTWARE

**(i) NOTE: DO NOT connect the instrument to the PC before installing the software and drivers.**

- DataView software is included on the supplied USB Drive. Insert the USB Drive into an available USB port (wait for driver to be installed).

- If Autorun is enabled, an AutoPlay window appears on your screen. Click **Open folder to view files** to display the DataView folder. If Autorun is not enabled or allowed, use Windows Explorer to locate and open the USB Drive labeled **DataView**.

- When the DataView folder is open, find the file **Setup.exe** in the USB Drive root directory and **double-click** it to run the installation program.

- The DataView setup screen appears. In the upper left section of the screen, choose **the language for the setup program UI**. Then select **DataView** in the Options list and click **Install**.

- Click **OK** at the Confirm Setup screen. The InstallShield Wizard welcome screen appears. The InstallShield Wizard leads you through the installation process. As you complete these screens, be sure to click **Power Energy Logger** when prompted to select the Control Panel(s) to install.

- When you have completed all screens, click **Finish** to leave the InstallShield Wizard. Then close the DataView Setup screen. The DataView folder now appears on your computer desktop, within this folder is the **PEL** Control Panel icon .

**(i) NOTE:** For more information on installing/using DataView, or the PEL Control Panel refer to the PEL 115 user manual that is included on the supplied USB Drive or refer to the Help file within the software.

## CONNECTING TO COMPUTER

Before you can use the PEL Control Panel to communicate with your PEL 115, you must establish a connection between the instrument and the computer.

To begin, ensure that you have installed DataView with the PEL Control Panel. Also **ensure that the required communication and connection drivers are installed** on your computer. These drivers are installed as part of the DataView installation process.

**(i) NOTE:** For connection options and more information on connecting to the computer, refer to the PEL 115 user manual which is included on the supplied USB Drive or refer to the Help file within the software.

## CONFIGURING INSTRUMENT

To configure your PEL, select the **instrument** in the PEL Network directory. Open the **Configure the instrument** dialog box by clicking on the

**Configure** ⚒ icon in the toolbar, in the **Instrument** menu, or in the **Status** zone.

This dialog box has several tabs:

- **General:** Contains fields used to assign a name to the instrument, along with auto-off command, LCD unit command, operating button, clock setting, and SD-card formatting options.
- **Communication:** Options concerning the Wi-Fi link and the Ethernet network.
- **Measurement:** Selection of the distribution system, voltage ratio, and frequency.
- **Current sensor:** Detection of the current sensors and choice of the nominal primary current.
- **Recording:** Parameter options.
- **Meters:** Reset of the meters and partial energy meter reset options.
- **Alarms:** Programming of the alarms.
- **Nominal values:** Define the nominal values .
- **Report:** Configure reports and send them by email.

When finished, **click** on **OK** to transfer the new configuration to the instrument.

## SETTING DATE AND TIME

To change the date/time, open the PEL Control Panel and do the following:

- Ensure that the instrument is connected by checking its status in the PEL Network frame (a green check mark appears next to its name). If not, reconnect it by highlighting the instrument, selecting Instrument in the menu bar, and clicking **Reconnect Instrument**.
- Select the **Instrument**, and click **Instrument** in the menu bar.
- Select **Configure**. This displays the Configure Instrument dialog box.
- Click the **Set Clock** button. This displays a dialog for setting the date and time on the instrument.
- You can synchronize the instrument's clock with the computer's clock, or use the Date and Time fields to select another date and time.
- Click **OK** to save the changes.

## STARTING RECORDING (START/STOP)

Before starting a recording, ensure that the instrument is not currently locked. If locked, the word **LOCK** appears on the screen in Configuration mode. The instrument is locked when:

- Being configured via the PEL Control Panel.
- Has been disabled through an option in the PEL Control Panel.
- A recording session is already in progress. Note that in this case the Control ⟲ button remains active so you can stop the recording. However, you cannot start a new recording if one is in progress.

If any of these situations are in effect take appropriate action as necessary to unlock the instrument. If the SD-card ⛁ LED is green, the SD-card is ready to store recordings.

To START recording, do one of the following:

- **In the PEL Control Panel:** Select the appropriate option in the Recording tab of the Configuration dialog box. The instrument can be configured to start recording either at some future date and time, or immediately after recording is configured on the instrument.
- **On the instrument:** Press the **Control** button and hold it down until the **REC** indicator lights, then release. The instrument starts recording as it was previously configured to do.

To **STOP** recording, do one of the following:

- **In PEL Control Panel:** In the menu, select **Instrument > Stop recording** 🔴.
- **On the instrument:** Press the **Control** button and hold it down until the **REC** indicator lights, then release.

## VIEWING RECORDING

The recorded data can be transferred to the PC in two ways and then be displayed there and used to create reports:

- The SD-card can be withdrawn from the instrument and connected to the PC using the SD-card reader provided.
  - Start the PEL Control Panel, select the **Open** command in the File menu, **point to the ICP file** bearing the desired session number on the SD-card, and select **Open**.
- Direct connection between the PC and the PEL (USB, Ethernet or Wi-Fi).
  - Start the PEL Control Panel, open a connection to the instrument, select the **instrument** (make sure that it is connected) in the tree, then select **Recorded Sessions**. Double-click on the desired **recorded session**. When the download is over, select the **downloaded test** and click on the **Open** button in the Download dialog box.

In both cases, the session is added to **My open sessions** in the tree. The data can then be displayed.

## REPAIR AND CALIBRATION

To ensure that your instrument meets factory specifications, we recommend that it be sent back to our factory Service Center at one-year intervals for recalibration or as required by other standards or internal procedures.

**For instrument repair and calibration:**

You must contact our Service Center for a Customer Service Authorization Number (CSA#). Send an email to **repair@aemc.com** requesting a CSA#, you will be provided a CSA Form and other required paperwork along with the next steps to complete the request. Then return the instrument along with the signed CSA Form. This will ensure that when your instrument arrives, it will be tracked and processed promptly. Please write the CSA# on the outside of the shipping container. If the instrument is returned for calibration, we need to know if you want a standard calibration or a calibration traceable to N.I.S.T. (includes calibration certificate plus recorded calibration data).

**Ship To:**  Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments
15 Faraday Drive ▪ Dover, NH 03820 USA
Phone: (800) 945-2362 (Ext. 360) / (603) 749-6434 (Ext. 360)
Fax: (603) 742-2346 ▪ E-mail: **repair@aemc.com**

**(Or contact your authorized distributor.)**

Contact us for the costs for repair, standard calibration, and calibration traceable to N.I.S.T.

(i)  **NOTE:** You must obtain a CSA# before returning any instrument.

## TECHNICAL ASSISTANCE

If you are experiencing any technical problems or require any assistance with the proper operation or application of your instrument, please call, e-mail or fax our technical support team:

Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments
Phone:   (800) 343-1391 (Ext. 351)
Fax:      (603) 742-2346 ▪ E-mail: **techsupport@aemc.com**
                    **www.aemc.com**

## LIMITED WARRANTY

The instrument is warrantied to the owner for a period of two years from the date of original purchase against defects in manufacture. This limited warranty is given by AEMC® Instruments, not by the distributor from whom it was purchased. This warranty is void if the unit has been tampered with, abused, or if the defect is related to service not performed by AEMC® Instruments.

**Full warranty coverage and product registration is available on our website at www.aemc.com/warranty.html.**

**Please print the online Warranty Coverage Information for your records.**

**What AEMC® Instruments will do:**

If a malfunction occurs within the warranty period, you may return the instrument to us for repair, provided we have your warranty registration information on file or a proof of purchase. AEMC® Instruments will repair or replace the faulty material at our discretion.

## WARRANTY REPAIRS

**To return an instrument:** First, send an email to **repair@aemc.com** requesting a Customer Service Authorization Number (CSA#) from our Service Department. You will be provided a CSA Form and other required paperwork along with the next steps to complete the request. Then return the instrument along with the signed CSA Form. Please write the CSA# on the outside of the shipping container. Return the instrument, postage or shipment prepaid to:

> Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments
> 15 Faraday Drive, Dover, NH 03820 USA
> Phone: (800) 945-2362 (Ext. 360) / (603) 749-6434 (Ext. 360)
> Fax: (603) 742-2346 ▪ E-mail: **repair@aemc.com**

**Caution: To protect yourself against in-transit loss, we recommend that you insure your returned material.**

(i) **NOTE:** You must obtain a CSA# before returning any instrument.

## QUICK START GUIDE TRANSLATIONS

Visit our website to view and download a PDF version of this Quick Start Guide:

**Español**               **Français**

**NOTES:**

**NOTES:**

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