Quick Start Guide
ENGLISH

AEMC® INSTRUMENTS
CHAUVIN ARNOUX GROUP

PowerPad® IV
Model 8345

POWERPAD IV Class A

POWER QUALITY ANALYZER

Measure Up WITH AEMC INSTRUMENTS®

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 #: **2136.35 / 2136.36 / 2136.37**

Model #: **8345**

Please fill in the appropriate date as indicated:

Date Received: _____

Date Calibration Due: _____

AEMC® INSTRUMENTS
CHAUVIN ARNOUX GROUP

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

PRODUCT PACKAGING (2136.35)

PowerPad® IV Model 8345

(1) Carrying Bag
Cat. #2133.76

(1) 5.8 A·h 61.9 W·h Li-ion Battery Pack
Cat. #2960.47

(12) Color-coded ID Markers
Cat. #2140.45

(1) Cable - 5 ft USB
Cat. #2140.46

(5) 10 ft (3 m) Black Leads with Alligator Clips
Cat. #2140.43

(1) 1000 V PA32ER Power Supply
(Includes Power Plug Adapter)
Cat. #5100.15

Also included:

(1) Quick Start Guide

(1) SD Card

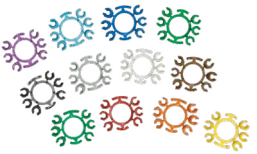
(1) USB Drive with user manual and application software

PRODUCT PACKAGING (2136.36)

PowerPad® IV Model 8345

(1) Carrying Bag
Cat. #2133.76

(4) MiniFlex® Sensor Model MA194-24-BK
Cat. #2140.80



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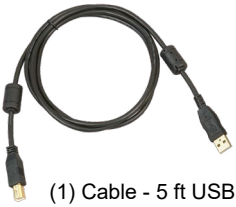

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PRODUCT PACKAGING (2136.37)

PowerPad® IV Model 8345

(1) Carrying Bag
Cat. #2133.76

(4) AmpFlex® Sensor Model 193-24-BK
Cat. #2140.34

(12) Color-coded ID Markers
Cat. #2140.45

(1) 5.8 A·h 61.9 W·h Li-ion Battery Pack
Cat. #2960.47

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(1) 1000 V PA32ER Power Supply
(Includes Power Plug Adapter)
Cat. #5100.15

Also included:

(1) Quick Start Guide

(1) SD Card

(1) USB Drive with user manual and application software

Thank you for purchasing an AEMC® Instruments **PowerPad® IV Model 8345**.

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.

Symbols & Definitions

	CAUTION - Risk of Danger! Indicates a **WARNING**. Whenever this symbol is present, the operator must refer to the user manual before operation.
	Indicates a risk of electric shock. The voltage at the parts marked with this symbol may be dangerous.
	USB socket
	Kensington anti-theft lock
	Ethernet connector (RJ45)
	Ground/Earth
	Indicates important information to acknowledge.
	SD card
	This product has been declared recyclable.
	This product complies with the Low Voltage & Electromagnetic Compatibility European directives.
	In the European Union, this product is subject to a separate collection system for recycling electrical and electronic components in accordance with directive WEEE 2012/19/EU.

Definition of Measurement Categories (CAT)

CAT IV: Corresponds to measurements performed at primary electrical supply (< 1000 V).

Example: primary overcurrent protection devices, ripple control units, and meters.

CAT III: Corresponds to measurements performed in the building installation at the distribution level.

Example: hardwired equipment in fixed installation and circuit breakers.

CAT II: Corresponds to measurements performed on circuits directly connected to the electrical distribution system.

Example: measurements on household appliances and portable tools.

⚠ Precautions Before Use

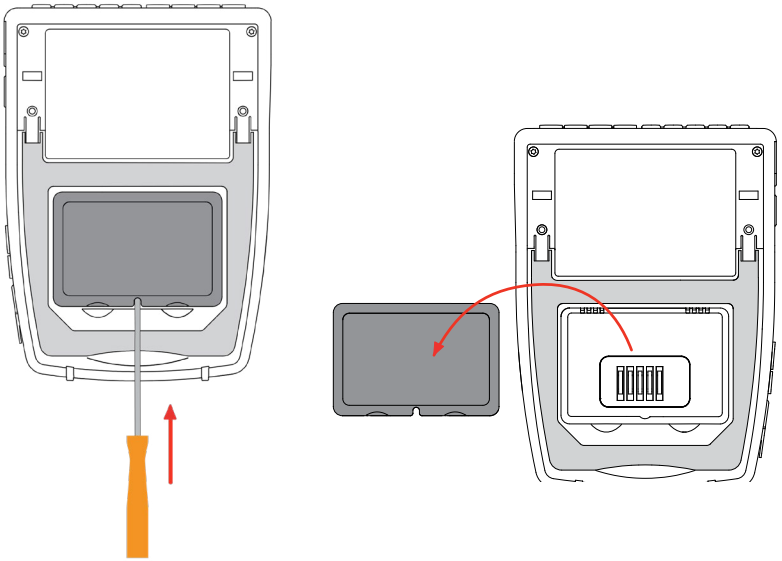
This instrument complies with safety standard IEC/EN 61010-2-030 or BS EN 61010-2-030. The leads comply with IEC/EN 61010-031 or BS EN 61010-031. The current sensors comply with IEC/EN 61010-2-032 or BS EN 61010-2-032 for up to 600 V in CAT IV.

Failure to observe the precautions for use may create a risk of electric shock, fire, explosion, or destruction of the instrument and installations.

- Only competent and accredited personnel may perform troubleshooting or metrological checks.
- The operator and responsible authority must read and understand the various precautions to take before and during use.
- The operator must have knowledge and awareness of electrical hazards when using this instrument.
- Do not use the instrument in an unspecified manner; otherwise, the protection that the instrument provides may become compromised and endanger you.
- Do not use the instrument on networks that exceed the instrument's specifications for voltage or category.
- Do not use the instrument if it seems to be damaged, incomplete, or improperly closed.
- Do not use the instrument without its battery.
- Before each use, check the condition of the insulation on the leads, housing, and accessories. Any item with deteriorated insulation (even partially) must be set aside for repair or scrapping.
- Ensure that your instrument is completely dry before use. If it is wet, you must dry it completely before connecting or using it.
- Use only the supplied leads and accessories. If you use any leads or accessories with lower voltage or category ratings, you are limited to lowest voltage or category rating.
- Use personal protection equipment when appropriate.
- Keep your hands away from the instrument's terminals.
- Keep your fingers behind the physical guards when handling the leads, test probes, and alligator clips.
- Use only the manufacturer-provided power supply unit and battery pack because these items have specific safety components.
- At hazardous voltages, certain current sensors must not be placed on or removed from bare conductors. Please refer to each sensor's data sheet and comply with their handling instructions.

Removing The Battery Pack

1. Disconnect anything connected to the instrument.
2. Turn the instrument over and insert a flat-head screwdriver into the battery release recess.
3. Push down on the screwdriver to release the battery.
4. Use the notches to extract the battery from its compartment.
5. Remove the plastic film between the battery and instrument. The plastic film is used for shipping only.
6. Press the battery down until you hear the click of the locking mechanism.



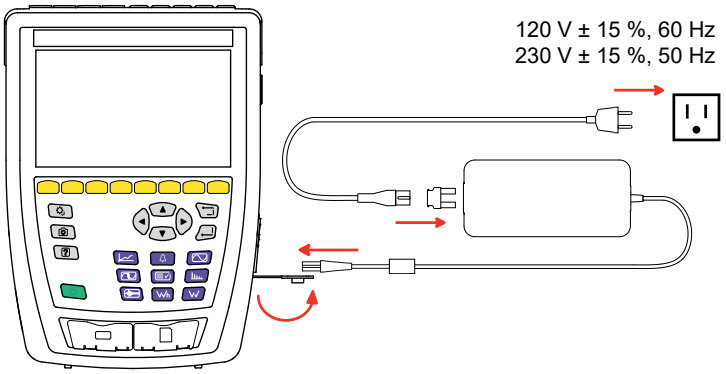
Do not treat old batteries as household waste. Take them to the appropriate collection point for recycling.

Without a battery, the instrument's internal clock will continue to operate for at least 17 hours.

Charging the Battery

Following shipping safety protocols this unit's battery is charged to only 30 %. Before using the instrument, you must fully charge the battery.

1. Connect the power cord to the power supply unit using the supplied adapter.
2. Plug the power cord into an outlet.
3. Open the elastomer cover that protects the power socket.
4. Connect the power supply's 4-point connector to the instrument.



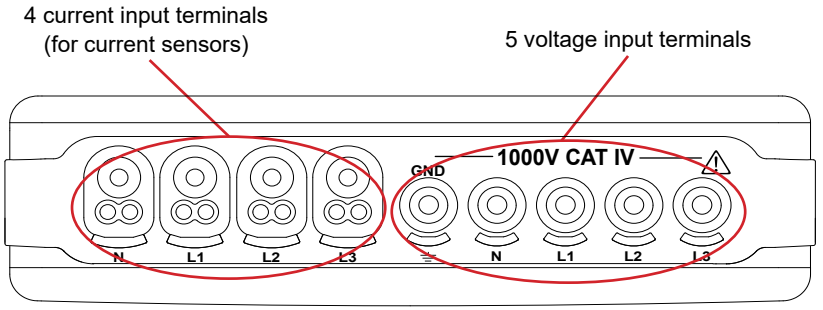
The ON/OFF button will blink while charging, and the display will indicate the charging status.

When the battery is fully depleted, the charging time is approximately 6 hours.

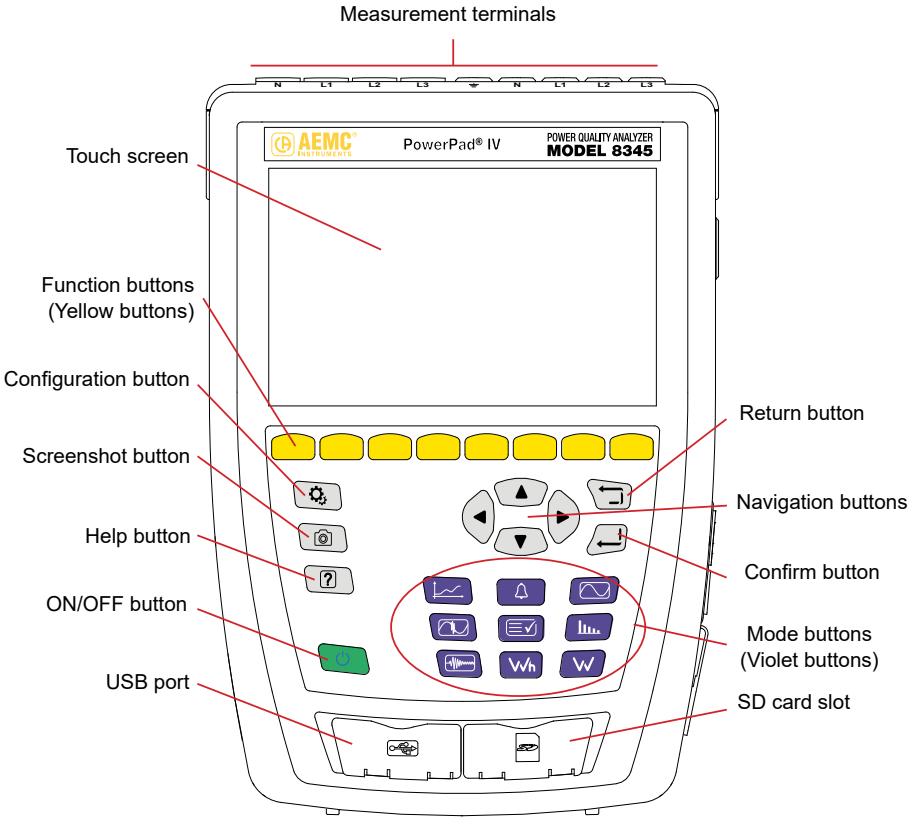
The ON/OFF button will glow steady green when the battery is fully charged.

Description

Measurement Terminals

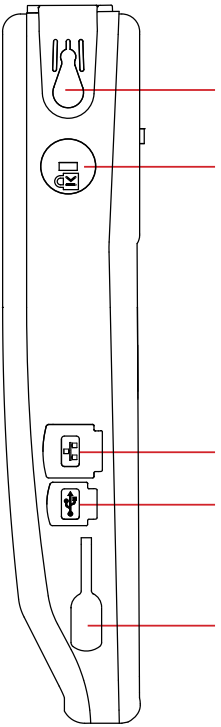


Overall View

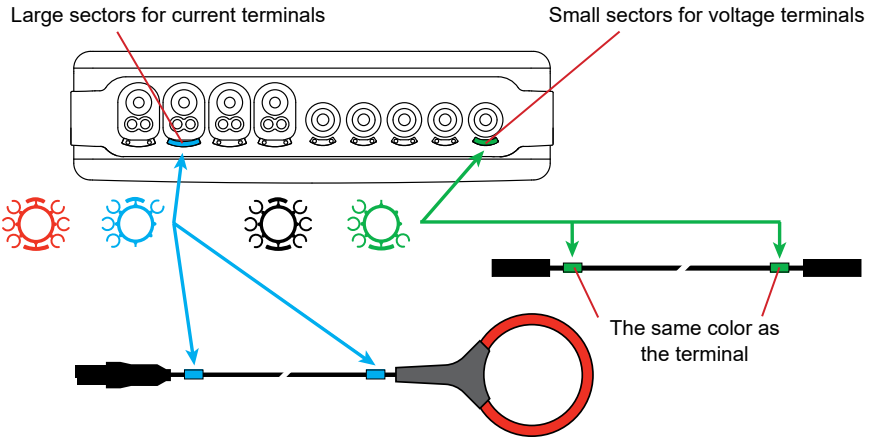


	Button	Function
Real-Time Modes		Waveform mode
		Harmonic mode
		Power mode
		Energy mode
Recording Modes		Trend mode
		Transient mode
		Inrush Current mode
		Alarm mode
		Monitoring mode

Side Connectors

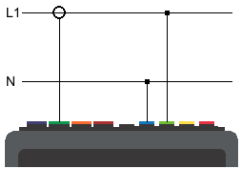


Installing the Color Codes

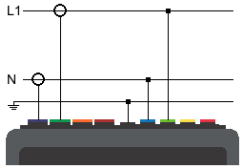


Distribution Systems and Types of Connections

Connections on a single-phase network

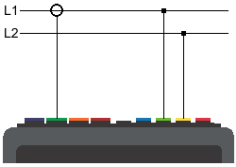


Single-phase
2 wires
(L1 and N)

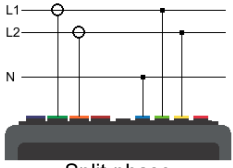


Single-phase
3 wires
(L1, N, and earth)

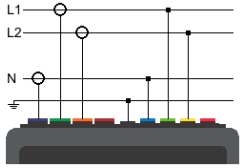
Connections on a split-phase network



Split-phase
2 wires
(L1 and L2)

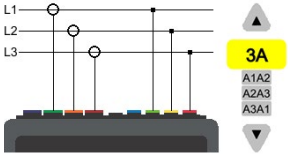


Split-phase
3 wires
(L1, L2, and N)

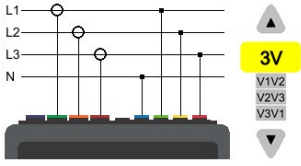


Split-phase
4 wires
(L1, L2, N, and earth)

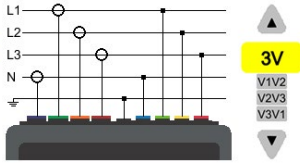
Connections on a three-phase network



Three-phase
3 wires
(L1, L2, and L3)



Three-phase
4 wires
(L1, L2, L3, and N)



Three-phase
5 wires
(L1, L2, L3, N, and earth)

For three-phase, 3-wire networks, you must indicate the connected current sensors: all 3 sensors (3A) or only 2 (A1 and A2, or A2 and A3, or A3 and A1).

For three-phase, 4- and 5-wire networks, you must indicate the connected voltages: all 3 voltages (3V) or only 2 (V1 and V2, or V2 and V3, or V3 and V1).

Instrument Configuration Buttons

Button	Purpose
	to access the configuration screen
	to access the instrument configuration options
	to select the language for the device
	to set the date and time
	to configure the display
	to choose the colors for the voltage curves
	to choose the colors for current curves
	to adjust the display's brightness and auto off
	to manage the contents of the external memory
	to configure the network communication of the instrument
	to configure the Ethernet link
	to configure the Wi-Fi link
	to configure the email notifications
	to configure test measurements *We recommend utilizing DataViewSync™ for configuring test measurements, and directly connecting to a PC for generating reports involving large packets of data.*
	to check if an embedded software update is available and to update your instrument
	to check the instrument's information

Measurement Configuration Buttons

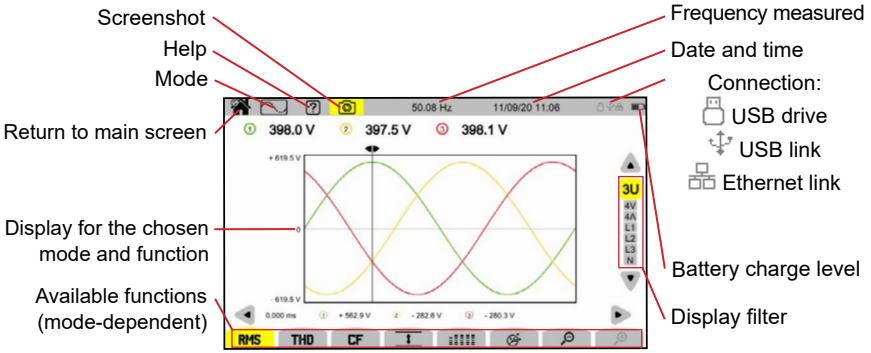
Button	Purpose
	to access the configuration screen
	to access the measurement configuration options
	to specify the calculation methods
	to specify the nominal frequency (50 or 60) Hz, nominal voltage (with neutral), and nominal voltage between phases
	to choose the real-time values to display
	to specify the waveform mode
	to specify the reference of levels of harmonics and mains signalling voltage
	to specify the curve of maximum MSV voltages as a function of frequency. There are 5 preset points that you can modify
	to choose the connection of the instrument according to the distribution network
	to specify the voltage ratios, the current sensor ratios, and the range of the sensor
	to choose the ratios of phase-to-neutral voltages (with neutral)
	to choose the ratios of phase-to-phase voltages (without neutral)
	to choose the ratios and range of current sensors
	to reverse the current sensors
	to configure the Energy mode
	to configure the Trend mode (choice of values to record)
	to configure the Transient mode (choice of triggering levels)
	to configure the Inrush Current mode (choice of triggering levels)
	to configure the alarms (choice of thresholds)
	to enter the Monitoring mode, which is configured using the application software

Taking Screenshots

You have two ways to take a screenshot:

- Hold the button until the symbol in the status bar turns yellow and then black . Then, release the button
- Press the symbol in the status bar at the top of the display. The symbol in the status bar will turn yellow and then black

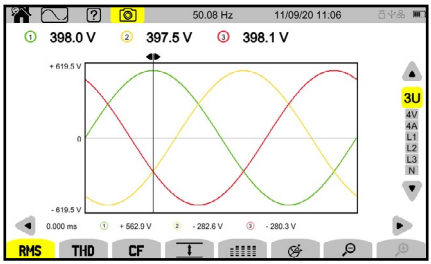
Display



Real-Time Modes

Waveform Mode

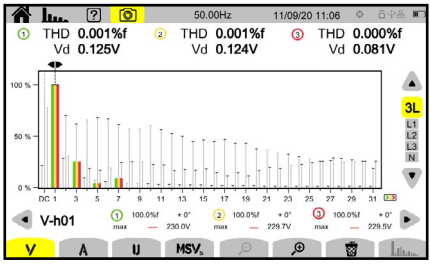
- Press the button to enter Waveform mode



The Waveform mode displays voltage curves, current curves, and values calculated from the voltage and currents, except harmonics, powers, and energies.

Harmonic Mode

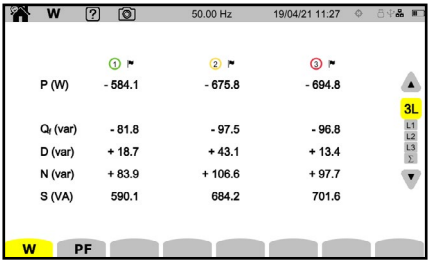
- Press the button to enter Harmonics mode



The Harmonics mode displays a bargraph that represents the harmonics of the voltage, current, and mains signaling voltage (MSV).

Power Mode

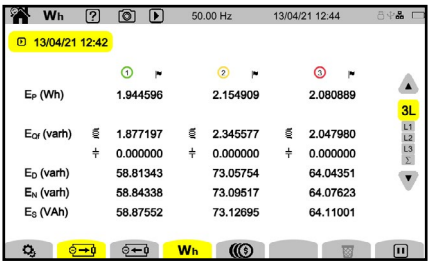
- Press the button to enter Power mode



The Power mode displays power measurements (**W)** and power factor calculations (**PF)**.

Energy Mode

- Press the button to enter Energy mode

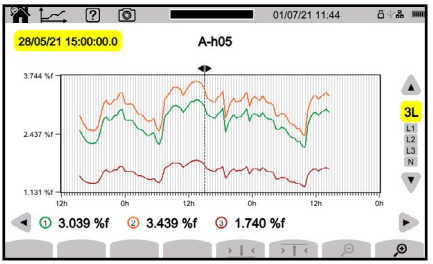


The Energy mode is used to meter generated and consumed energy over a period and indicate the corresponding price.

Recording Modes

Trend Mode

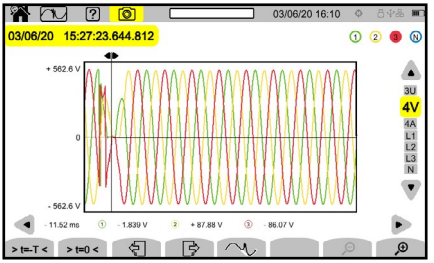
- Press the button and select a recording from the list to view the associated Trend measurements.



The Trend mode records the evolution of the quantities selected in the configuration for a specified duration.

Transient Mode

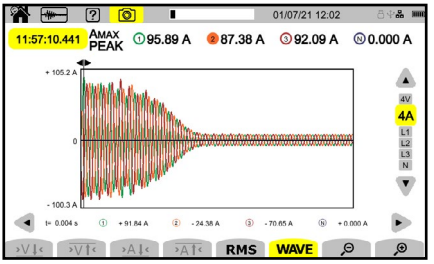
- Press the button and select a recording from the list to view the associated Transient measurements.



The Transient mode records voltage or current transients for a specified duration determined by the selected configuration. It also records shock waves, which are very high voltages for a very short time.

Inrush Current Mode

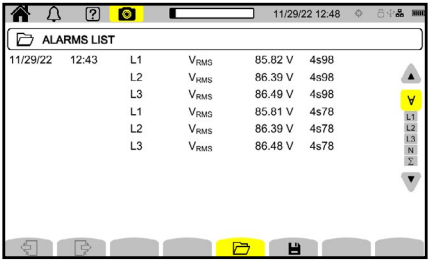
- Press the button and select a recording from the list to view the associated Inrush Current measurements.



The Inrush Current mode is used to capture and record inrush currents for a duration specified by the selected configuration.

Alarm Mode

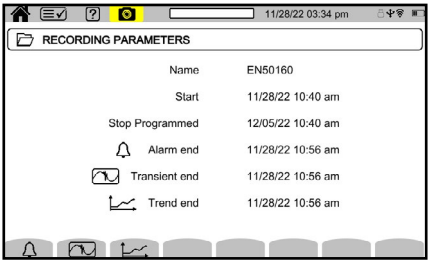
- Press the button and select a recording from the list to view the associated Alarm measurements.



The Alarm mode detects and records overshoots of the selected quantities in configuration for a specified duration.

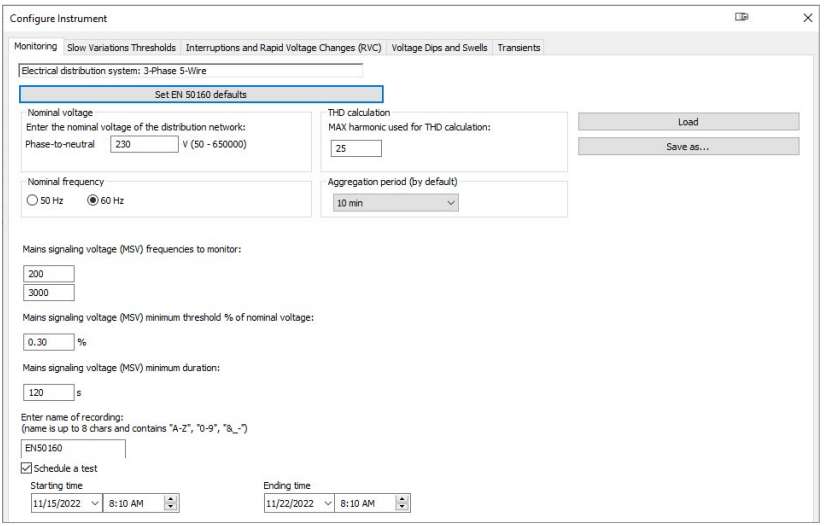
Monitoring Mode

- Press the button to and select a recording from the list to view the associated Monitoring mode measurements.



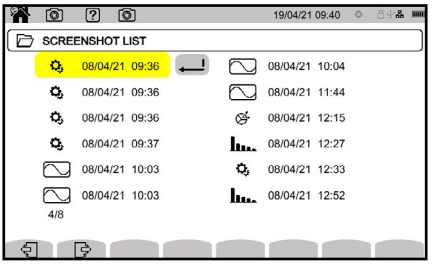
The Monitoring mode is used to check the voltage's conformity for a specified duration. Use the application software to configure the Monitoring mode.

The Monitoring mode monitors electrical networks per standard EN 50160. In this mode, the 8345 detects slow variations, rapid variations and interruptions, voltage dips, temporary voltage swells, and transients. The monitoring mode is configured using the application software as shown in the below image.



Screenshot Mode

- Press the button to view the previously-recorded screenshots



The screenshots are recorded on the SD card in the directory 8345\Photograph. You can read the screenshots on a PC via the application software or an SD card reader (not provided).

Help Mode

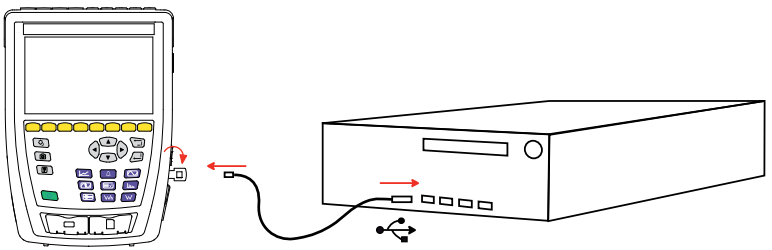
- Press the button for information about the in-progress display mode's various button functions and symbols

Application Software

The application software is available on the provided USB drive or on our website at www.aemc.com/dataview-software.

Go to the **Support** tab and search for the application software by name, then download it.

Remove the cover that protects the USB connector on the instrument and connect the instrument to the PC using the provided USB cord.



NOTE: USB 3.1 Gen 2 Super Speed is not supported on some PCs using Windows 10 operating system. In this situation, we recommend switching to either a lower speed USB port or ethernet connection.

SS 10
USB 3.1 Gen 2

Start the application software.

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)
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.

NOTE: You must obtain a CSA# before returning any instrument.

Technical Support

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

Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments
Phone: (800) 343-1391 (Ext. 351)
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

IMPORTANT WARRANTY NOTE:

By registering online within 30 days of the purchase date, your warranty will be extended to **3 years**.

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.

REGISTER ONLINE AT: www.aemc.com/warranty.html

Warranty Repairs

What you must do to return an Instrument for Warranty Repair:

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 pre-paid 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)
E-mail: repair@aemc.com

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

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:

CHAUVIN ARNOUX GROUP

AEMC® INSTRUMENTS
CHAUVIN ARNOUX GROUP

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AEMC® Instruments
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