

■ QUICK START USER GUIDE

# 6417



## PRODUCT PACKAGING

### Shipping Contents:



(1) Clamp-on Ground Tester  
Model 6417  
Cat. #2141.02



Hard Accessory Case  
Cat. #2141.50



5 $\Omega$  Calibration Loop  
Cat. #2141.51



USB Stick with  
DataView® Software & User Manual



Bluetooth Adapter  
Cat. #2126.45

### Also Included:

- (4) 1.5V AA Batteries
- (1) Wrist Strap
- (1) Safety Sheet (20 languages)



Quick Start Guide

**USB STICK:** DataView® software and complete user manual for the Model 6417 can be located on the USB stick supplied with the instrument.

# Statement of Compliance

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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 its 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](http://www.aemc.com).

**Serial #:** \_\_\_\_\_

**Catalog #:** 2141.02

**Model #:** 6417

Please fill in the appropriate date as indicated:

Date Received: \_\_\_\_\_

Date Calibration Due: \_\_\_\_\_













**AEMC**®  
INSTRUMENTS

Chauvin Arnoux®, Inc.  
d.b.a AEMC® Instruments  
[www.aemc.com](http://www.aemc.com)

Thank you for purchasing the AEMC Clamp-on Ground Resistance Tester.

For best results from your instrument and for your safety, read the enclosed operating instructions carefully and comply with the precautions for use. These products must be only used by qualified and trained users.

	WARNING, risk of DANGER! The operator must refer to these instructions whenever this danger symbol appears.
	CAUTION! Risk of electric shock. The voltage at the parts marked with this symbol may be dangerous.
	Application or withdrawal authorized on conductors carrying dangerous voltages. Type A current sensor as per IEC 61010-2-032.
	Must not be applied to or removed from conductors at dangerous voltages. Type B current sensor as per IEC 61010-2-032.
	Equipment is protected by double insulation.
	The product has been declared recyclable after analysis of its life cycle in accordance with the ISO14040 standard.
	Important instructions to read and to fully understand.
	Useful information or tip to read.
	The CE marking guarantees conformity with European directives and with regulations covering EMC.
	The trash can with a line through it means that in the European Union, the product must undergo selective disposal for the recycling of electric and electronic material, in compliance with Directive WEEE 2002/96/EC.

## Definition of Measurement Categories (CAT)

**CAT IV** Measurement category IV corresponds to measurements taken at the source of low-voltage installations.

Example: power feeders, counters and protection devices.

**CAT III** Measurement category III corresponds to measurements on building installations.

Example: distribution panel, circuit-breakers, machines or fixed industrial devices.

**CAT II** Measurement category II corresponds to measurements taken on circuits directly connected to low-voltage installations.

Example: power supply to domestic electrical appliances and portable tools.



## **Precautions for Use**



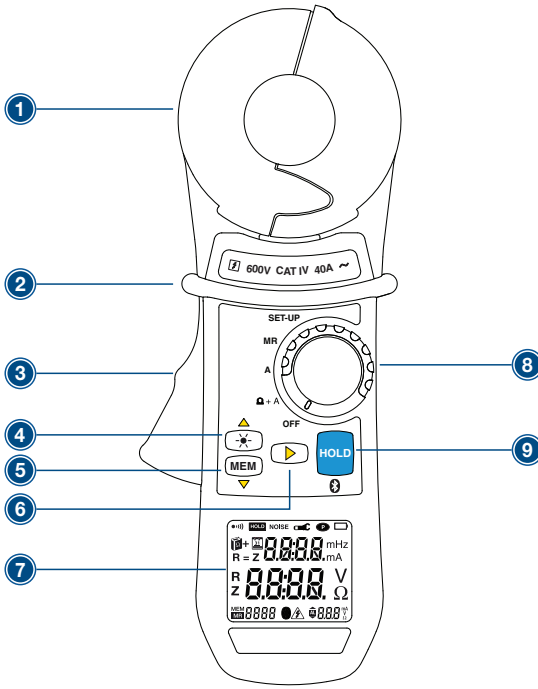
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This instrument and its accessories comply with safety standards EN 61010-1, EN 61010-030, and EN 61010-2-032 for voltages of 600V in Category IV at an altitude of less than 2000m with a pollution degree of not more than 2.

Failure to observe the safety instructions may result in electric shock, fire, explosion, and destruction of the instrument and of the installations.

- The operator and/or the responsible authority must carefully read and clearly understand the various precautions to be taken in use. Sound knowledge and a keen awareness of electrical hazards are essential when using this instrument.
- If you use this instrument other than as specified, the protection it provides may be compromised, thereby endangering you.
- Do not use the instrument on networks of which the voltage or category exceeds those mentioned.
- Do not use the instrument if it seems to be damaged, incomplete, or poorly closed.
- Before each use, check the condition of the insulation on housing. Any item of which the insulation is deteriorated (even partially) must be set aside for repair or scrapping.
- Use personal protection equipment systematically.
- When handling the instrument, keep your fingers behind the physical guard.
- All troubleshooting and metrological checks must be performed by competent and accredited personnel.
- Avoid impacts on the measurement head, in particular the air gap.
- Keep the surfaces of the air gap clean; even a little dirt can cause the clamp to malfunction.
- All metal objects or wires connected to the electrical system should be assumed to be lethal until tested. Grounding systems are no exception.
- Use extreme caution when using the instrument around energized electrical equipment.
- Never attempt to use the instrument to twist or pry the ground electrode or ground wire away from the equipment being grounded.

## Control Features




- 1. Head Assembly:** Consists of two individually shielded magnetic cores.
- 2. Guard:** Safety guard; do not place hands above this guard
- 3. Lever:** Opens or closes jaws.
- 4. ☀:** Toggles display backlight on/off
- 5. MEM:** Store measurements into memory
- 6. ►:** Navigates and validates measurement displays
- 7. OLED Display:** Crisp, clean and bright (Organic Light Emitting Diode) display
- 8. Rotary Switch:** Selects measurement functions and instrument SET-UP
- 9. HOLD:** Freezes last measured value on the display  
Turns Bluetooth ON/OFF (when switch is set to **MR** or **SET-UP**)

## Rotary Switch Functions

Range	Description
<b>OFF</b>	Instrument is powered OFF
<b>Ω+A</b>	Simultaneous selection of the Loop Impedance measurement and the Leakage Current measurement
<b>A</b>	Current measurement
<b>MR</b>	Memory Recall
<b>SET-UP</b>	Access to the instrument configuration and deletion of stored measurements (for complete details on the various SET-UP parameters that can be configured, refer to § 4.4 in the user manual supplied on the USB stick).

## Button Functions

Button	Description
	<ul style="list-style-type: none"> <li>• <b>When the rotary switch is set to <math>\Omega</math>+A or A:</b> Increases the brightness of the OLED display; makes it easier to read the display in an environment with strong background illumination. Highlighting activated for 30 seconds.</li> <li>• <b>When the rotary switch is set to SET-UP or MR:</b> Serves as ▲ arrow when browsing in the menus and values. The brightness of the display does not change when device is set to SET-UP or MR.</li> </ul>
MEM ▼	<ul style="list-style-type: none"> <li>• <b>When the rotary switch is set to <math>\Omega</math>+A or A:</b> Records the measured value. All of the data is recorded in the Standard or Advanced mode.</li> <li>• <b>When the rotary switch is set to SET-UP or MR:</b> Serves as ▼ arrow when browsing in the menus and values.</li> </ul>
►	<ul style="list-style-type: none"> <li>• <b>When the rotary switch is set to <math>\Omega</math>+A (Advanced Mode):</b>  <i>Short Press:</i> Switches the display through the following 3 modes:               <ul style="list-style-type: none"> <li>- Display of the impedance recalculated at the selected frequency.</li> <li>- Display of the contact voltage (product <math>Z^*I</math>).</li> <li>- Display of R and L.</li> </ul> <i>Long Press:</i> Activates or deactivates the audible alarms.             </li> <li>• <b>When the rotary switch is set to SET-UP:</b> <ul style="list-style-type: none"> <li>- Validation when browsing in the menus and values.</li> </ul> </li> <li>• <b>When the rotary switch is set to MR (Advanced Mode):</b> <ul style="list-style-type: none"> <li>- Switches the display through the measurement screens and the measurement date/time.</li> </ul> </li> </ul>
HOLD & AUTO-HOLD	<ul style="list-style-type: none"> <li>• <b>When the rotary switch is set to <math>\Omega</math>+A:</b> <ul style="list-style-type: none"> <li>- Freezes the measurement display for as long as the HOLD button is pressed. The NOISE, clamp open (C), and alarm overshoot (AL) icons are visible if they were active.</li> </ul> </li> <li>• <b>When the rotary switch is set to MR or SET-UP:</b> <ul style="list-style-type: none"> <li>- Activates or deactivates the Bluetooth® connection.</li> </ul> </li> <li>• <b>Auto-Hold Function:</b>            If the AUTO-HOLD mode was activated during instrument SET-UP, opening the clamp places the device in an identical state to the HOLD mode for as long as the clamp is open. The benefit of this function is that it makes it easy to freeze the measurement with one hand, when access to the HOLD button is difficult. If the HOLD button is not pressed during this time, closing the clamp automatically exits the AUTO-HOLD mode.         </li> </ul>

## Audible Signals

Four types of audible signals can be generated:

Type	Duration	Description
Low-pitched	Short	Normal use (button pressed).
	Permanent	Over(under)-shoot of a measurement alarm threshold ( $\Omega$ , A).
High-pitched	Short	Abnormal use (for example, memory full).
	Permanent	Overshoot of a safety alarm threshold (V).

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## Instrument Configuration (SET-UP)

The **SET-UP** position gives access to the following options to set user defined parameters for instrument configuration (**NOTE:** These parameters can also be configured in DataView):

No.	Function
1	Erases stored measurements.
2	Enables/disables the buzzer.
3	Enables/disables Auto Power OFF
4	Sets the impedance alarm threshold ( $\Omega$ ).
5	Sets the voltage alarm threshold (V).
6	Sets the current alarm threshold (I).
7	Sets the date.
8	Sets the time.
9	Selects the Standard or Advanced operating mode.
10	Selects the test frequency for the impedance.
11	Enables/disables the AUTO-HOLD mode.
12	Displays the version number.
13	Not used.

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## Selecting a Specific Menu

Use the buttons as follows to select a specific menu item:

Button	Action
▲	Move up in the menu tree.
▼	Move down in the menu tree.
▶	Select the menu displayed or return to the previous menu.



**NOTE:** For complete details on the configurable SET-UP menu items, refer to § 4.4 in the user manual supplied on the USB stick.

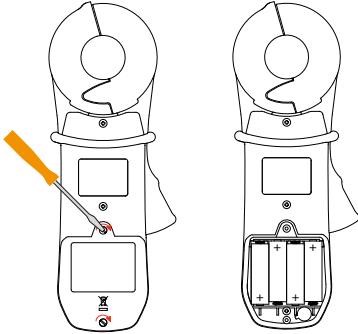
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## Getting Started

### Inserting the Batteries



- Disconnect the instrument from any connections and turn the rotary switch to the OFF position.
- Use a Phillips head screwdriver to unscrew the 2 attachment screws and remove the battery compartment cover.
- Remove the old batteries and replace them with 4 new batteries (LR6, AA, 1.5V), observing the polarities.
- Close the battery compartment cover and screw the two screws back in.
- Check the proper operation of the device.



**WARNING:** Do not clamp onto a conductor during a measurement.


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### Turning the Instrument ON

With the clamp closed and not clamped around any conductor, set the rotary switch to a position other than OFF. All icons on the display light for approximately two seconds, before possible entry of the date and time.

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### Turning Bluetooth ON

- Turn the rotary switch to the MR or Setup position., then press and release the **HOLD** /  button.

When Bluetooth (BT) is ON you will see the Bluetooth icon () at the bottom of the display.

To turn Bluetooth OFF, repeat the steps above. Once Bluetooth is ON you can rotate the rotary switch to any position (except OFF) and Bluetooth will remain ON.

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**NOTE:** When setting up the Bluetooth connection between the instrument and your PC, you may be prompted to enter a pass code on the PC. If so, enter 1234 for the pass code.

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### Setting the Date and Time

Setting the clock, which allows time-stamping of the measurements, is done only the first time the device is used or after the device has been without battery power for more than 2 minutes.

Set the function switch to  **$\Omega$ +A**. All icons on the display light for approximately two seconds. Enter the date and time of the device using the **▲**, **▼**, and **▶** buttons.

The date and time can also be configured before a measurement in **SET-UP**.

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## Standard and Advanced Modes

The Ground Resistance Tester has two modes:

- **Standard Mode:** Makes the standard loop resistance/impedance and current clamp measurements.
- **Advanced Mode:** Used to refine and complete the measurements:
  - Impedance referred to the selected frequency.
  - Contact voltage.
  - Resistive and inductive fractions of the loop impedance.

The choice of the Standard or Advanced mode and the alarm thresholds are configured in **SET-UP**.

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## Storing Measurements into Memory

The values displayed during the measurements can be stored in memory and read later. Storage of the data is available in both the  **$\Omega$ +A** and **A** measurement modes, provided that memory locations are free. Data is stored as soon as the **MEM** button is pressed. A long audible signal confirms the storage.

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## Displaying Stored Measurements

- Set the function switch to the **MR** position.
  - The type of data that is displayed is dependent on whether Standard or Advanced mode was selected during **SET-UP**.
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## Installing DataView®



**DO NOT CONNECT THE INSTRUMENT TO THE PC BEFORE INSTALLING THE SOFTWARE AND DRIVERS.**

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1. Insert the USB stick into an available USB port (wait for the driver to be installed). If Autorun is enabled, an AutoPlay window appears. If Autorun is disabled, open Windows Explorer, then locate and open the USB stick drive labeled **DataView**.
  2. In the AutoPlay window, select **Open folder to view files**.
  3. Double-click on **Setup.exe** to launch the DataView® setup program.
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**NOTE:** For more information on using the DataView® software, refer to the Model 6417 user manual supplied on the USB stick.

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**NOTE:** You can retrieve and analyze measurement results with the DataView® software or with an Android app through the Bluetooth communication port.

## Repair and Calibration

To ensure that your instrument meets factory specifications, we recommend that it be scheduled 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#). 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 or (603) 749-6309  
E-mail: [repair@aemc.com](mailto:repair@aemc.com)

(Or contact your authorized distributor)

Costs for repair, standard calibration, and calibration traceable to N.I.S.T. are available.

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

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## Technical and Sales Assistance

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

Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments  
200 Foxborough Boulevard, Foxborough MA 02035 USA  
Phone: (800) 343-1391 • (508) 698-2115  
Fax: (508) 698-2118  
E-mail: [techsupport@aemc.com](mailto:techsupport@aemc.com)

**NOTE:** Do not ship instruments to our Foxborough, MA address.

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## Limited Warranty

The Model 6417 is warranted to the owner for a period of one year 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 registration is available on our website: [www.aemc.com/warranty.html](http://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 one-year 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, at its option, repair or replace the faulty material.

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## Warranty Repairs

What you must do to return an Instrument for Warranty Repair: First, request a Customer Service Authorization Number (CSA#) by phone or by fax from our Service Department (see address below), 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:

**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 or (603) 749-6309  
E-mail: [repair@aemc.com](mailto:repair@aemc.com)

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



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