Quick Start Guide
ENGLISH

AEMC® INSTRUMENTS
CHAUVIN ARNOUX GROUP

Clamp-On Ground Resistance Tester

Model 6417

GROUND RESISTANCE TESTER

Measure Up
WITH AEMC INSTRUMENTS®

Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments
15 Faraday Drive • Dover, NH 03820 USA
Phone: (603) 749-6434 or (800) 343-1391 • Fax: (603) 742-2346

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 #: **2141.02**

Model #: **6417**

Please fill in the appropriate date as indicated:

Date Received: _____

Date Calibration Due: _____

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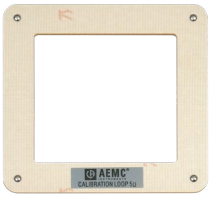
d.b.a AEMC® Instruments
www.aemc.com

PRODUCT PACKAGING

Shipping Contents:

Clamp-on Ground Tester
Model 6417
Cat. #2141.02

Hard Accessory Case
Cat. #2141.50



5 Ω Calibration Loop
Cat. #2141.51

Bluetooth Adapter
Cat. #2126.45

Also Included:

(4) 1.5 V AA Batteries
(1) Wrist Strap
(1) Safety Sheet (20 languages)
(1) Quick Start Guide
(1) USB Drive with User Manual & DataView® Software

Thank you for purchasing an **AEMC® Instruments Clamp-on Ground Tester Model 6417.**

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.

International Electrical Symbols

	Signifies that the instrument is protected by double or reinforced insulation.
	**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.
	Application or withdrawal authorized on conductors carrying dangerous voltages. Type A current sensor as per IEC 61010-2-032.
	Refers to a type B current sensor. Application or withdrawal not authorized on conductors carrying dangerous voltages. Type B current sensor as per IEC 61010-2-032.
	Indicates Important information to acknowledge
	This product complies with the Low Voltage & Electromagnetic Compatibility European directives.
	The product has been declared recyclable.
	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.

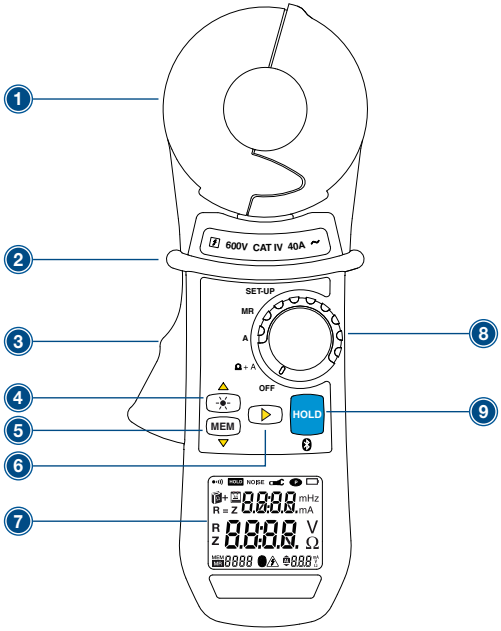
Precautions For Use ⚠

This instrument and its accessories comply with safety standards EN 61010-1, EN 61010-030, and EN 61010-2-032 for voltages of 600 V in CAT IV at an altitude below 2000 m with a pollution degree of 2 or less.

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

- The operator and the 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 be 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 appears damaged, incomplete, or poorly closed.
- Before each use, check the condition of the housing's insulation. If the insulation is deteriorated (even partially) on any item, it must be set aside for repair or scrapping.
- Use personal protection equipment when appropriate.
- 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 to the measurement head, particularly the air gap.
- Keep the surfaces of the air gap clean; the slightest contaminant could 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 use the instrument to twist or pry the ground electrode or ground wire away from the grounded equipment.

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 the display backlight ON/OFF.
5. **MEM:** Stores measurements into memory.
6. **►:** Navigates and validates measurement displays.
7. **OLED Display:** Crisp, clean, and bright display.
8. **Rotary Switch:** Selects the measurement functions and instrument **SET-UP**.
9. **HOLD:** Freezes the last measured value on the display.
   Turns the Bluetooth ON/OFF (when the switch is set to **MR** or **SET-UP**).

Rotary Switch Functions

Range	Description
OFF	Instrument is powered **OFF**.
Ω+A	Simultaneous selection of the Loop Impedance measurement and the Leakage Current measurement.
A	Current measurement.
MR	Memory Recall.
SET-UP	Access to the instrument's configuration and deletion of stored measurements.

Button Functions

Button	Description
▲ 	**When the rotary switch is set to Ω+A or A:** • Increases the brightness of the OLED display. - Makes it easier to read the display in an environment with strong background illumination. Highlighting is activated for 30 seconds. **When the rotary switch is set to SET-UP or MR:** • Serves as the ▲ arrow when browsing in the menus and values. • The brightness does not change when set to **SET-UP** or **MR**.
MEM ▼	**When the rotary switch is set to Ω+A or A:** • Records the measured value. All data is recorded in the Standard or Advanced mode. **When the rotary switch is set to SET-UP or MR:** • Serves as the ▼ arrow when browsing in the menus and values.
▶	**When the rotary switch is set to Ω+A (Advanced Mode):** • *Short Press:* Switches the display through the following 3 modes: - Display of the impedance recalculated at the selected frequency. - Display of the contact voltage (product Z*I). - Display of R and L. • *Long Press:* Activates or deactivates the audible alarms. **When the rotary switch is set to SET-UP:** • Validates when browsing in the menus and values. **When the rotary switch is set to MR (Advanced Mode):** • Switches the display through the measurement screens and the measurement date/time.
HOLD **&** **AUTO-HOLD**	**When the rotary switch is set to Ω+A:** • Freezes the measurement display for while the **HOLD** button is pressed. • The NOISE, clamp open (C), and alarm overshoot (AL) icons are visible if they were active. **When the rotary switch is set to MR or SET-UP:** • Activates or deactivates the Bluetooth connection. **Auto-Hold Function:** • If activated during **SET-UP,** opening the clamp will freeze the measurement display while the clamp is open, which makes it easy to freeze the measurement with one hand. • Closing the clamp will automatically exit the **AUTO-HOLD** mode if the **HOLD** button is not pressed during this time.

Audible Signals

Four types of audible signals can be generated:

Type	Duration	Description
Low-pitched	Short	Normal use (button pressed).
	Permanent	Over- or undershoot of a measurement alarm threshold.
High-pitched	Short	Abnormal use (for example, memory full).
	Permanent	Overshoot of a safety alarm threshold (V).

Instrument Configuration (SET-UP)

The **SET-UP** position allows the user to set the following parameters in the instrument's 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 (Ω).
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.

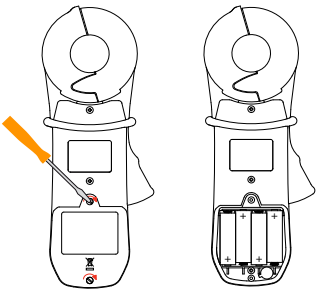
Selecting a Specific Menu

Use the following buttons to select a specific menu item:

Button	Action
▲	Moves up in the menu tree.
▼	Moves down in the menu tree.
►	Selects the menu displayed or return to the previous menu.

■ Refer to § 4.4 in the user manual for complete details on **SET-UP** menu items.

Inserting the Batteries



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

Turning the Instrument ON

- Set the rotary switch to any position, except **OFF,** with the clamp closed and not clamped around any conductor.
- All icons on the display will light up for approximately two seconds.

Turning Bluetooth ON

1. Turn the rotary switch to the **MR** or **SET-UP** position.
2. Then, press and release the **HOLD** / ᛒ button.
   - When Bluetooth (BT) is ON, you will see the Bluetooth icon (ᛒ) at the bottom of the display.
3. Once Bluetooth is ON, you can rotate the rotary switch to any position (except **OFF**) and Bluetooth will remain ON.

- To turn Bluetooth OFF, repeat the steps above.

NOTE: You may be prompted to enter a pass code on the PC when setting up the Bluetooth connection. If so, enter 1234 for the pass code.

Setting the Date and Time

The clock can be set the first time the instrument is used or after more than 2 minutes without battery power. Setting the clock allows time-stamping of the measurements.

1. Set the function switch to **Ω+A**.
   - All icons on the display will light up for approximately two seconds.
2. 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**.

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 mode and alarm thresholds are configured in **SET-UP**.

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 **Ω+A** and **A** measurement modes, provided that memory locations are free. The data is stored as soon as the **MEM** button is pressed. A long audible signal will confirm the storage.

Displaying Stored Measurements

The type of displayed data depends on the mode selected during **SET-UP**.

■ Set the function switch to the **MR** position to display the stored measurements.

Installing DataView®

WARNING: Do not connect the instrument to the PC before installing the software and drivers.

1. Insert the USB drive into an available USB port (wait for the driver to install).
   - If Autorun is enabled, an AutoPlay window will appear.
   - If Autorun is disabled, use Windows Explorer to locate and open the USB drive labelled **DataView**.
2. In the AutoPlay window, select **Open folder to view files.**
3. Double-click on **Setup.exe** to launch the Dataview® setup program.

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 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.

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.

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)
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.

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

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