AEMC®
INSTRUMENTS
CHAUVIN ARNOUX GROUP

Data Logger
Model L452

DATA LOGGERS

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 #:   **2153.51**

Model #:   **L452**

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

Data Logger Model L452
Cat. #2153.51

Cable - 6 ft USB
Cat. #2138.66

Also Included:

(1) USB Stick with User Manual & DataView® Software

Thank you for purchasing an AEMC® Instruments **Data Logger Model L452**.

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

International Electrical Symbols

| Symbol	Description
▢	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.
✳	Bluetooth enabled
⏚	Ground/Earth
ⓘ	Indicates Important information to acknowledge
🔋	Battery
⎓	Fuse
⊷	USB socket
CE	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 Before Use ⚠

These warnings are provided to ensure the safety of personnel. Please read and comply with these precautions.

This instrument complies with safety standard EN 61010-1 (Ed 3) and IEC 61010.2-030 (Ed 1) for voltages and categories of installation at an altitude below 2000 m (6562 ft) and indoors with a degree of pollution at most equal to 2. The instrument operates at 30 V maximum to ground ($\perp\!\!\!=$).

- Do not use this instrument in an explosive atmosphere or in the presence of flammable gases.
- Observe the maximum voltages and intensities assigned between terminals and ground/earth.
- Do not use the instrument if it appears damaged, incomplete, or improperly closed.
- Before each use, check the condition of the insulation of cables, case, and accessories. Anything that appears damaged (even partially) must be reported for repair or scrapping.
- Use only leads and accessories that meet instrument specifications.
- Observe the environmental specifications for the use of this instrument as specified in § 7 of the User Manual.
- Do not modify the instrument. Use only original replacement parts. Repairs or adjustments must be performed by authorized personnel.
- Replace the batteries when they can no longer hold a charge. Disconnect all cables from the instrument before opening the access door to the batteries as explained in § 8.1.3 of the User Manual.
- Use protective equipment as required by the environment where you are operating this instrument.
- Keep fingers behind the guard when handling probes, probe tips, current sensors, signal conditioners, and alligator clips.

Installing Batteries

The Model L452 can operate on two power sources:

- USB cable connected to an external power source, such as a computer or wall plug adapter.
- Two internal 1.2 V AA 2400 mA·h NiMH rechargeable batteries.

You must insert the batteries into the instrument before use, even if you plan to run the instrument on USB power.

1. Holding the instrument firmly, slide the back cover to the right and remove it.
2. Insert the two batteries, while ensuring the positive and negative ends are properly aligned.

3. Replace the back cover by aligning the tabs in the cover with the corresponding slots in the instrument body and sliding the cover to the left until it locks in place.

⚠️ **WARNING:** If the Model L452 is stored without the batteries installed, the internal clock will need to be reset as instructed in the following section.

Initial Setup

ⓘ **NOTE:** Fully charge the batteries before using the instrument for best results (12 h).

The instrument can be set up two ways:

- DataView Data Logger Control Panel.
- Model L452 Front Panel Interface.

Setup via the DataView® Data Logger Control Panel

Initial setup via the Control Panel requires three steps:

- Install DataView® and the Data Logger Control Panel on your computer.
- Connect the instrument to the computer via USB cable or Bluetooth.
- Configure the instrument's settings in the Control Panel.

Installing DataView® and the Data Logger Control Panel

DataView® installations may differ slightly depending on your operating system. The following instructions are based on a Windows 7 operating system.

1. Ensure that the USB cable is not connected to the computer. Then, insert the USB thumb drive into an available USB port on your computer. If Autorun is enabled, an AutoPlay window will appear 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**.

2. When the DataView folder is open, double-click the file **Setup.exe** in the root directory.

3. The Setup screen will appear and enable you to select the language version of the setup program. You can also select additional install options (each option is explained in the Description field). Make your selections and click **Install**.

4. Click **OK** to confirm setup. The InstallShield Wizard screen will appear. This program leads you through the DataView® install process. As you complete these screens, be sure to check the **Data Loggers option** when prompted to select features to install.

5. When the InstallShield Wizard finishes installing DataView®, the Setup screen will appear. Click **Exit** to close. The DataView folder will appear on your computer desktop.

6. Open the DataView folder on your desktop. This folder contains the DataView, Data Logger Control Panel icons, and any other installed Control Panel(s).

Connecting via USB Cable

The following steps assume that the instrument has not been previously connected to the computer via USB cable:

1. Plug one end of the cable into the instrument and the other end into an available USB port on the computer. Then, press and hold the ① **button** until the message POWER ON appears on the LCD. Wait for driver installation to finish before proceeding to the next step (a message will appear on your computer when driver installation is complete).

2. Open the **Data Logger Control Panel**.

3. In the menu bar at the top of the screen, select **Help**. In the drop-down menu that appears, click the option Help Topics to open the Data Logger Control Panel Help system.

4. Use the Contents window in the Help system to locate and open the topic **Connecting to an Instrument**, which describes how to connect the Model L452 to the computer.

When the instrument is connected, its name will appear under the Data Logger Network in the Control Panel's navigation frame.

Connecting via Bluetooth

Bluetooth® must be enabled and configured on the instrument before you can connect to the computer:

1. At the **home** (Channel 1 & 2 Measurement Data) screen, press ► four times to display the Language and Date/Time Format screen. Then, press ▼ four times to display the Bluetooth Enabled/Visibility screen.

2. To change the Bluetooth setting, press ↵ twice and use the ▲ or ▼ button to toggle between Enabled and Disabled. When the desired option is displayed, press ↵ to save the selection and leave edit mode. When the Enabled option is selected, the Bluetooth icon ⍟ will appear in the icon bar.

3. To change the Visibility setting, press ↵ to initiate selection mode. Then, press ▼ to select the Visibility field. Press ↵ to initiate edit mode and use ▲ or ▼ to toggle between Visible and Invisible. To connect the instrument for the first time, this should be set to Visible. When the desired option is selected, press ↵ to save the setting and leave edit mode.

4. To change the instrument's Bluetooth name, press ▼ at the Bluetooth Enabled/Visibility screen. This will display the Bluetooth Name screen.

5. To change the editable part of the name, press ↵ twice and use ▲ and ▼ to change the selected character. Then, press ► to highlight the next character and use the ▲ and ▼ buttons to make your change. You can also press ◄ to navigate back to a previous character. When finished, press ↵ to save your changes.

With Bluetooth enabled and configured on the instrument, you can connect to the computer. These steps assume the instrument has not been previously connected via Bluetooth:

1. Open the **Bluetooth Devices** dialog on your computer to pair the Model L452 with your computer. Different operating systems have different steps for opening this dialog, so consult your computer's documentation for instructions.

2. Once the dialog is displayed, click **Add a Device**. A dialog box will appear and list the locally available Bluetooth devices.

3. Find the instrument, which will appear listed by its Bluetooth name as displayed in the Model L452's Bluetooth Name screen. If the name does not appear, check the Bluetooth Enabled/Visibility screen on the Model L452 to ensure the Visibility field is set to Visible. Also, ensure the instrument is turned ON. If the name is visible, click the i**nstrument name**.

4. Enter the **pairing code** (0000) and click **Next**. A screen will appear and inform you that the instrument has been successfully connected with the computer. Click **Close** to exit the screen.

5. Open the **Data Logger Control Panel**. In the menu bar at the top of the screen, select **Help**. In the drop-down menu that appears, click the option **Help Topics** to open the Data Logger Control Panel Help system.

6. Use the Contents window in the Help system to locate and open the topic **Connecting to an Instrument**. This topic will explain how to connect the Model L452 to the computer.

When the instrument is connected, its name will appear under Data Logger Network in the Control Panel's navigation frame.

Configuring the Instrument via the Control Panel

1. With the instrument connected, click **its name** under Data Logger Network in the Control Panel.

2. Select Instrument in the menu bar and click **Configure**.

3. In the General tab of the Configure Instrument dialog box, set the instrument's clock, date/time format, and user interface language. Press the **Help** button at the bottom of the dialog box for instructions.

Setup via the Model L452 User Interface

In addition to enabling/disabling and configuring Bluetooth, the following configuration parameters can be set through the instrument's front panel interface:

- Language.
- Date and time.

The **home** screen for the interface is the Channel 1 & 2 Measurement screen.

You can return to this screen at any time by giving the Ⓘ button a short (<2 seconds) press.

Choosing the Interface Language

1. At the **home** screen, press ► four times to display the Language and Date/Time Format screen.

2. Press the **Enter ↵** button twice.

3. Use the ▲ or ▼ button to cycle through the available languages: English, Español, Italiano, Deutsch, and Français.

4. When the desired language choice is displayed, press ↵. The text on all screens will appear in the selected language.

Setting the Instrument Date and Time

1. With the Language and Date/Time Format screen displayed, press ↵. This initiates selection mode; the setting under the Language field will change to blinking reversed text.

2. Press ▼. The setting under Date/Time will appear in blinking reversed text.

3. Press ↵ to initiate edit mode.

4. Press ▲ or ▼ to cycle through the available options for date and time format.

5. After you make your selection, press ↵ to save it. All fields on the Language and Date/Time Format screen should now appear in regular text.

6. Press ▼ three times. The Date and Time screen will appear.

   Press ↵ once to initiate selection mode. The first number in the Date field will blink. To change this number, press ↵ to initiate edit mode. Then, use the ▲ and ▼ buttons to increase/decrease this number until the correct value is displayed.
   To change the other two settings in the Date field, press ► to navigate to the number you want to set. Then, press ▲ or ▼ to change the setting. You can also use ◄ to navigate back to a previous number.

7. To change the Time field, press ► while the last number in the Date field is selected. This highlights the first number in the Time field.
   Alternatively, if you are not in edit mode (for example, you have opened the Date and Time screen and only want to change the time while leaving the date unchanged), press ↵ to initiate selection mode. Then, while the first number in the Date field is blinking, press ▼. The first number in the Time field will blink; press ↵ to initiate edit mode.

8. Change the numbers in the Time field using the buttons as explained in the steps above.

9. When you have finished setting the Date and Time values, press ↵ to save your changes and leave edit mode.

Channel Configuration

Channels can be configured either through the Data Logger Control Panel or the instrument interface:

- Consult the Data Logger Control Panel Help system for information about configuration through the Control Panel.
- Consult **L452 User Interface Screens** later in this Quick Start Guide for a table with all available configuration screens through the user interface. For detailed instructions about how to complete these screens, see the Model L452 User Manual.

When configuring through the instrument's interface, each of the instrument's two channels has its own set of configuration screens; the screens for one channel are essentially identical to the screens for the other. These screens allow you to:

- Enable and disable the channel. When disabled, measurements are neither recorded nor displayed for the channel.
- Select the type of input. This can be analog (voltage or current), pulse, or event. Both channels must have the same input type.
- Define measurement units to use when displaying measurement data.
- Define scaling to establish the relationship between input and measurement units.
- Enable and define alarm triggers to determine if the instrument will report an alarm condition and the circumstances that will trigger an alarm condition.

Channels must be configured before you start a recording session.

Recording Data

Recording sessions can be configured and scheduled via the Data Logger Control Panel, as explained in the Help. The instrument's user interface also includes a set of screens for controlling and configuring a recording session. These screens enable you to:

- Specify the sample and storage periods to be used during the recording session.
- Start a recording session immediately.
- Schedule a recording for a future time.
- Set a length of time for the recording to run.
- Schedule start/stop dates and times for the recording.
- Stop an in-progress recording.
- Cancel a scheduled recording.

The Recording and Duration screen is the starting point for working with recordings. This is the top-level screen for all recording-related activities. To see this screen, display the **home** (Channel 1 & 2 Measurement Data) screen and press ►.

Consult the Model L452 User Manual for detailed information about configuring recording sessions.

Starting a Recording Session

You can start a configured recording session immediately or schedule one for a later date and time. To start a recording immediately:

1. At the **home** screen, press ► to display the Recording and Duration screen. The Duration field on this screen specifies the length of the recording session. By default (assuming no session has been already scheduled), this is 15 minutes. The Duration setting cannot be shorter than the Storage Period setting.

2. To change the duration setting, press ⏎ to initiate selection mode and press ▼ to select the Duration field. Then, press ⏎ to start edit mode and use the buttons to enter a duration period.

   For example, to change the duration from 15 minutes to 3 days, select the **1** in **15 min** and press ⏎ to begin edit mode. Use ▼ to change this to a zero. Then, press ► to highlight the number **5**. Press ▼ twice to change this to **3**. Finally, press ► to select the units and use the ▲ and ▼ buttons to cycle through the available choices. These include s (seconds), min, hours, days, and weeks. Select **days** and press ⏎ to save your change. Alternatively, instead of the Duration field you can use the Stop Date and Stop Time screen to determine how long the recording session will run.

3. To start the recording, press ⏎ three times. The recording session will start immediately using your specified configuration settings. The recording session will end when the time interval defined by the Duration field ends.

When a recording is active, the Recording icon ● will appear as a solid circle in the icon bar at the top of the scree. If you attempt to turn OFF the instrument by pressing ① while a recording is in progress, the message RECORDING ACTIVE will appear on the screen. The ① button is disabled while a recording is in progress.

Scheduling a Recording Session

Instead of starting a recording immediately, you can schedule a recording for a future date and time. You can only schedule one recording at a time. To schedule a new recording, the active recording must run to completion, or you must cancel the earlier recording.

1. At the **home** screen, press ► to display the Recording and Duration screen.

2. Press ▼ twice to display the Start Date/Time screen.

3. Press ⏎ twice. The first number under Start Date will be highlighted. Use the ▲ and ▼ buttons to increase or decrease the number and the ► and ◄ buttons to move from one field to the next. If you press ► when the last number in the Start Date field is selected, the selection will move to the first number in the Start Time field. This will enable you to edit both the date and time in a single editing session. When you have finished entering the start date and time, press ⏎ to save your changes.

4. You have two options for defining when the recording session will end. You can define when the recording session will end by either setting the Duration field in the Recording and Duration screen or through the Stop Date/Time screen

    To set the Duration field, press ▲ twice to return to the Recording and Duration screen. Then, complete the Duration field.

    To set the time and date for the end of the recording, press ▼ at the Start Date/Time screen to display the Stop Date/Time screen.

5. By default, the settings on this screen reflect the Duration setting. For example, if the Duration field is set to 24 hours, the stop date and time will be set to 24 hours after the start date and time. To change this, press ↵ twice. Then, use the buttons to select and change settings, which is similar to setting the start date and time fields as described in step 3 above.

6. When you have finished entering the stop date and time, press ↵ to save your changes. The Duration field in the Recording and Duration screen will be updated to reflect the duration defined by your start date/time and stop date/time.

7. If it is not already displayed, navigate to the Recording and Duration screen. Press ↵ twice. Then, use the ▲ and ▼ buttons to toggle through the options. When Schedule appears, press ↵ to select it.

When a recording is scheduled, the Recording icon ○ will appear as an empty circle in the icon bar at the top of the screen. You can turn OFF the Model L452 with a scheduled recording pending. When the start date and time occurs, the instrument will turn itself back ON for the duration of the recording and automatically turn OFF once the recording is complete.

Stopping or Cancelling a Recording Session

As noted previously, you cannot start or schedule a recording session if a recording is active or another scheduled recording is pending. In either case, you will need to stop or cancel the recording before you can start or schedule another.

To stop an active recording or cancel a scheduled one, display the Recording and Duration screen.

- If a recording is active, the only option available on this screen will be Stop.
- If a recording is scheduled, the only option available on this screen will be Cancel.

In either case, press the ↵ button three times to immediately stop or cancel the recording, depending on the selection. The Recording icon will disappear, which indicates that no recording is currently active or scheduled. In addition, the remaining recording-related screens will become active and enable you to start or schedule a new recording.

L452 User Interface Screens

The primary interface for working with the Model L452 consists of configuration and display screens. These screens appear in the instrument's front-panel LCD. You can use the instrument's buttons to navigate these screens, select options, and enter information.

Screens are grouped into six categories:

- **Measurement Data** screens display data currently being measured on Channel 1 and/or Channel 2.
- **Recording** screens configure, start, schedule, stop, and cancel a recording session.
- **Channel 1 Configuration** screens enable/disable Channel 1, determine what data is recorded by the channel, and how the data is displayed.
- **Channel 2 Configuration** screens are identical to Channel 1 Configuration screens, except they apply to the instrument's Channel 2.
- **Instrument Configuration** screens configure general instrument settings.
- **Instrument Information** screens display read-only settings on the instrument.

Each category has a **top level** screen that is the first screen that appears when you move to the category. The following table displays how the categories and screens are organized.

Measurement Data	Recording	Channel 1 Configuration	Channel 2 Configuration	Instrument Configuration	Instrument Information
Channels 1 & 2 Measurement Data (**Home** screen)	Start/Stop/ Schedule/ Cancel a Recording, and Set Duration	Enabled/ Disabled and Input Type	Enabled/ Disabled and Input Type	Language and Date/Time Format	Model Number, Serial Number, and Firmware Revision
Channel 1 Measurement and Min/Max Data	Sample Period and Storage Period	*Units	*Units	Memory Erase and Min/Max Reset	Instrument Name and Location
Channel 2 Measurement and Min/Max Data	Start Date and Time	**Low Scaling	**Low Scaling	Configuration Reset	Recording Sessions
	Stop Date and Time	**High Scaling	**High Scaling	Date and Time	Recording Name
		**Alarm Trigger	**Alarm Trigger	Bluetooth Enable/Disable and Visibility	
		**Upper Limit and Lower Limit	**Upper Limit and Lower Limit	Bluetooth Name	
		Equivalence (Pulse Input Only)	Equivalence (Pulse Input Only)		
		Trigger (Event Input Only)	Trigger (Event Input Only)		
*Not displayed when input is set to Event.					
**Not displayed when input is set to Event or Pulse.					

Pressing the ► or ◄ button while in navigation mode will move from one category of screens to the next. These buttons work from any screen in a category. For example, pressing ► from any of the three Measurement Data screens displays the top-level Recording screen. The categories are cyclical, so pressing ► at an Instrument Information screen moves to the top-level screen in Measurement Data, while pressing ◄ in a Measurement Data screen displays the top-level Instrument Information screen.

The ▲ and ▼ buttons let you navigate the screens within each category. These are also cyclical; pressing ▲ in a category's top-level screen displays the bottom level screen in that category, while pressing ▼ at the bottom-level screen displays the category's top-level screen.

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 or (603) 749-6309
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 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, 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 or (603) 749-6309
> 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

04/24

99-MAN 100423 v08

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