■ SIMPLE LOGGER®
RMS VOLTAGE MODULE

L205
L230
L260

ENGLISH **User Manual**

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 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**.

Serial #: _____

Catalog #: 2116.05 / 2113.93 / 2113.94

Model #: L205 / L230 / L260

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

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CHAPTER 1

INTRODUCTION

⚠ Warning ⚠

These safety warnings are provided to ensure the safety of personnel and proper operation of the instrument.

- Read the instruction manual completely and follow all safety information before operating this instrument.
- Use caution on any circuit: Potentially high voltages and currents may be present and may pose a shock hazard.
- Read the specifications section prior to using the data logger. Never exceed the maximum voltage ratings given.
- Safety is the responsibility of the operator.
- For maintenance, use only original replacement parts.
- NEVER open the back of the instrument while connected to any circuit or input.
- ALWAYS connect the leads to the logger before inserting the leads to the test voltage
- ALWAYS inspect the instrument and leads prior to use. Replace any defective parts immediately.
- NEVER use the Simple Logger® Models L205, L230, L260 on electrical conductors rated above 600V in overvoltage category III (CAT III).

1.1 International Electrical Symbols

	This symbol signifies that the instrument is protected by double or reinforced insulation.
	This symbol on the instrument indicates a WARNING and that the operator must refer to the user manual for instructions before operating the instrument. In this manual, the symbol preceding instructions indicates that if the instructions are not followed, bodily injury, installation/sample and product damage may result.
	Risk of electric shock. The voltage at the parts marked with this symbol may be dangerous.
	In conformity with WEEE 2002/96/EC

1.2 Definition of Measurement Categories

Cat. I: For measurements on circuits not directly connected to the AC supply wall outlet such as protected secondaries, signal level, and limited energy circuits.

Cat. II: For measurements performed on circuits directly connected to the electrical distribution system. Examples are measurements on household appliances or portable tools.

Cat. III: For measurements performed in the building installation at the distribution level such as on hardwired equipment in fixed installation and circuit breakers.

Cat. IV: For measurements performed at the primary electrical supply (<1000V) such as on primary overcurrent protection devices, ripple control units, or meters.

1.3 Receiving Your Shipment

Upon receiving your shipment, make sure that the contents are consistent with the packing list. Notify your distributor of any missing items. If the equipment appears to be damaged, file a claim immediately with the carrier and notify your distributor at once, giving a detailed description of any damage. Save the damaged packing container to substantiate your claim.

1.4 Ordering Information

Simple Logger® Model L205, Stray Voltage with Leads (0 to 25.5VAC Input)..... **Cat. #2116.05**

Simple Logger® Model L230, RMS Voltage with Leads (0 to 300VAC Input)..... **Cat. #2113.93**

Simple Logger® Model L260, RMS Voltage with Leads (0 to 600VAC Input)..... **Cat. #2113.94**

All include software (CD-ROM), 6 ft DB-9 RS-232 cable, 9V alkaline battery, 5 ft lead set, and user manual.

1.4.1 Accessories and Replacement Parts

Set of Two Safety Grip Probes ..... **Cat. #2111.31**

110V US Outlet Adaptor with Banana Jacks (L230/L260)... **Cat. #2118.49**

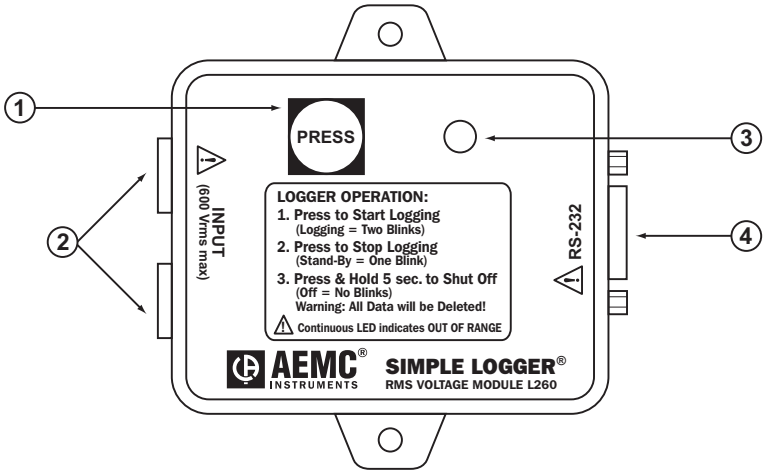
One 6 ft RS-232 cable with DB9F ..... **Cat. #2114.27**

Two 5 ft Voltage Leads with clips..... **Cat. #2118.51**

Order Accessories and Replacement Parts Directly Online
Check our storefront at **www.aemc.com/store** for availability

PRODUCT FEATURES

Models L205, L230 and L260:



(1) Start/Stop Button
(2) Input Safety Plugs
(3) Red LED Indicator
(4) RS-232 Interface

2.1 Indicators and Buttons

The Simple Logger® has one button and one indicator. Both are located on the front panel. The PRESS button is used to start and stop recordings and to turn the logger on and off.

The Red LED indicates the status of the logger:

- **Single Blink:** STAND-BY mode
- **Double Blink:** RECORD mode
- **Continuously On:** OVERLOAD condition
- **No Blinks:** OFF mode

2.2 Inputs and Outputs

The left side of the logger incorporates 4mm safety banana jack input connectors compatible with the current probes for which your Simple Logger® was designed.

The right side has a female 9-pin “D” shell serial connector used for data transmission from the logger to your computer.

2.3 Mounting

Your Simple Logger® is equipped with clearance holes in the base plate tabs for mounting. For less permanent mounting, the Velcro® pads (supplied loose) can be attached to the logger and the surface to which the logger will be mounted.

SPECIFICATIONS

3.1 Electrical Specifications

Number of Channels: 1

Measurement Range: L205: 0 - 25Vrms (stray voltage)
L230: 0 - 300Vrms
L260: 0 - 600Vrms

Input: L205: 0 - 25Vrms
L230: 0 - 300Vrms
L260: 0 - 600Vrms

Input Connection: Recessed Safety Banana Jacks

Input Impedance: L205: 1MΩ
L230 and L260: 2MΩ

Resolution: 8 Bit

L205

Scale Range	Maximum Input	Resolution
100%	25V	0.1V
50%	12.5V	0.05V
25%	6.25V	0.025V
12.5%	3.125V	0.0125V

L230

Scale Range	Maximum Input	Resolution
100%	300V	2V
50%	250V	1V
25%	125V	.5V
12.5%	62.5V	.25V

L260

Scale Range	Maximum Input	Resolution
100%	600V	4V
50%	300V	2V
25%	250V	1V
12.5%	125V	0.5V

Reference condition: 23°C ± 3K, 20 to 70% RH, Frequency 50/60Hz, No AC external magnetic field, DC magnetic field ≤ 40A/m, battery voltage 9V ± 10%.

Accuracy: 1% ± Resolution

Sample Rate: 4096/hr max; decreases by 50% each time memory is full

Data Storage: 8192 readings

Data Storage Technique: TXR™ Time Extension Recording™

Power: 9V Alkaline NEDA 1604, 6LF22, 6LR61

Battery Life Recording: Up to 1 year of recording @ 77°F (25°C)

Output: RS-232 via DB9 connector (1200 Baud)

3.2 Mechanical Specifications

Size: 2-7/8 x 2-5/16 x 1-5/8" (73 x 59 x 41mm)

Weight (with battery): 5 oz (140g)

Mounting: Base plate mounting holes or Velcro® pads

Case Material: Polystyrene UL V0

3.3 Environmental Specifications

Operating Temperature: -4 to 158°F (-20 to 70°C)

Storage Temperature: -4 to 176°F (-20 to 80°C)

Relative Humidity: 5 to 95% non-condensing

3.4 Safety Specifications

CE

Working Voltage: EN 61010 600V Cat III

**All specifications are subject to change without notice*

OPERATION

4.1 Software Installation

Minimum Computer Requirements

- Windows® 98/2000/ME/NT and XP
- Processor - 486 or higher
- 8MB of RAM
- 8MB of hard disk space for application, 400K for each stored file
- One 9-pin serial port; one parallel port for printer support
- CD-ROM drive

1. Insert the Simple Logger® CD into your CD-ROM drive.
If auto-run is enabled, the Setup program will start automatically. If auto-run is not enabled, select Run from the Start menu and type in **D:\SETUP** (if your CD-ROM drive is drive D. If this is not the case, substitute the appropriate drive letter).

2. The **Set-up** window will appear.

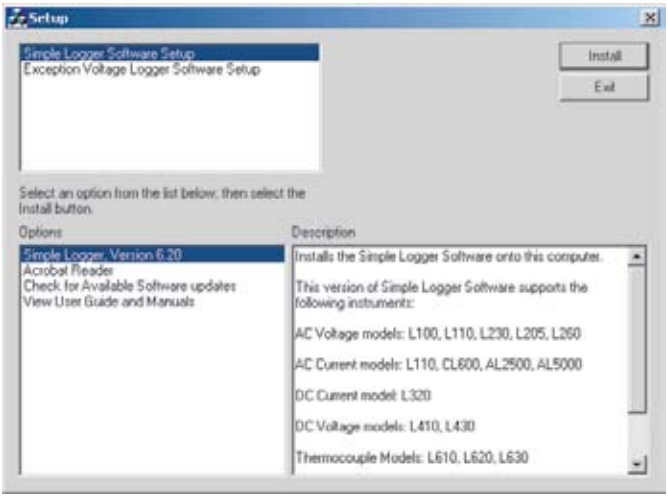


Figure 1

There are a several options to choose from. Some options(*) require an internet connection.

- **Simple Logger, Version 6.xx** - Installs the Simple Logger® software to the computer.
- ***Acrobat Reader** - Links to the Adobe® web site to download the most recent version of Adobe® Acrobat Reader. *Acrobat Reader is required for viewing PDF documents supplied on the CD-ROM.*
- ***Check for Available Software Updates** - Opens the AEMC Software update web site, where updated software versions are available for downloading, if necessary.
- **View User Guide and Manuals** - Opens Windows® Explorer for viewing of documentation files.

3. To install the software, select **Simple Logger Software Setup** in the top section of the Set-up window, then select **Simple Logger, Version 6.xx** in the Options section.
4. Click the **Install** button and follow the on-screen prompts to install the software.

4.2 Recording Data

- Connect the leads to the logger and the other end of the leads to the conductor to be measured.

⚠ **Overload Warning:** If the LED is continuously lit, disconnect your logger immediately

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- Press the **PRESS** button on the top of the logger to begin the recording session. The LED indicator will double-blink to indicate that the recording session has started.
- When the recording session has been completed, press the **PRESS** button to end the recording. The LED indicator will single-blink to indicate the recording session has ended and the logger is in Stand-by.
- Disconnect the leads from the conductor and connect the logger to the computer for data downloading. See the User Guide on the CD-ROM for downloading instructions.

4.3 Using the Software

Launch the software and connect the RS-232 cable from your computer to the logger.

NOTE: A language will need to be selected the first time the program is launched.

Select ***Port*** from the menu bar and select the Com port (COM 1, 2 3 or 4) you will be using (see your computer manual). Once the software automatically detects the baud rate, the logger will communicate with the computer. (ID number of the logger and number of points recorded displayed).

Select ***Download*** to display the graph (download takes about 90 seconds).

MAINTENANCE

5.1 Battery Installation

Under normal conditions, the battery will last up to a year of continuous recording unless the logger is restarted very frequently.

In the OFF mode, the logger puts almost no load on the battery. Use the OFF mode when the logger is not in use. Replace the battery once a year in normal use.

If the logger will be used at temperatures below 32°F (0°C) or is frequently turned on and off, replace the battery every six to nine months.

1. Make sure your logger is turned off (no blinking light) and all inputs are disconnected.
2. Turn the logger upside down. Remove the four Phillips head screws from the base plate, then take off the base plate.
3. Locate the two-wire (red/black) battery connector and attach the 9V battery to it. Make sure that you observe polarity by lining up the battery posts to the proper terminals on the connector.
4. Once the connector is plugged onto the battery, insert the battery into the holding clip on the circuit board.
5. If the unit is not in record mode after installing the new battery, disconnect it and press the button twice then reinstall the battery.
6. Reattach the base plate using the four screws removed in Step 2.

Your logger is now recording (LED blinking). Press the **PRESS** button for five seconds to stop the instrument.

NOTE: For long-term storage, remove the battery to prevent discharge effects.

5.2 Cleaning

The body of the logger should be cleaned with a cloth moistened with soapy water. Rinse with a cloth moistened with clean water. Do not use solvent.

APPENDIX A

Importing .TXT Files into a Spreadsheet

Opening a Simple Logger .TXT file in Excel

The following example used with Excel Ver. 7.0 or higher.

1. After opening the Excel program, select *"File"* from the main menu and then select *"Open"*.
2. In the dialog box that appears, browse and open the folder where your logger .TXT files are stored. This will be located in **C:\Program Files\Simple Logger 6.xx** if you accepted the default choice offered by the logger installation program.
3. Next, change the file type to *"Text Files"* in the field labeled Files of Type. All the .TXT files in the logger directory should now be visible.
4. Double-click on the desired file to open the Text Import Wizard.
5. Review the selections in the first wizard screen and make sure that the following choices are selected:

Original Data Type:	Delimited
Start Import at Row:	1
File Origin:	Windows (ANSI)

6. Click the *"NEXT"* button at the bottom of the Wizard dialog box. The second wizard screen will appear.
7. Click on *"Comma"* in the Delimiters box. A check mark should appear.
8. Click the *"NEXT"* button at the bottom of the Wizard dialog box. The third wizard screen will appear.
9. A view of the actual data to be imported should appear in the lower section of the window. Column 1 should be highlighted. In the Column Data Format window, select *"Date".*
10. Next, click on *"Finish"* to complete the process and import the data.
11. The data will now appear in your spreadsheet in two columns (A and B) and will look similar to that shown in Figure A-1.

A	B
8	Arms
35401.49	3.5
35401.49	5
35401.49	9
35401.49	13.5
35401.49	17
35401.49	20
35401.49	23.5
35401.49	27.5
35401.49	31
35401.49	34.5
35401.49	38

Figure A-1. Sample Data Imported into Excel.

Formatting the Date and Time

Column 'A' contains a decimal number that represents both date and time. Excel can convert this number directly as follows:

1. Click on column 'B' at the top of the column to select the data, then click on *"Insert"* from the main menu and select *"Columns"* from the drop-down menu.
2. Next, click on column 'A' at the top of the column to select the data, then click on "*Edit"* from the main menu and select *"Copy"* to copy the entire column.
3. Click on cell 1 of column 'B' and then click on *"Edit"* and select *"Paste"* to insert a duplicate of column 'A' into column 'B'. This is necessary if you want to show the date and time in two separate columns.
4. Next, click on the top of column 'A', then click on *"Format"* and select *"Cells"* from the drop-down menu.

5. In the dialog box that opens, select the *"Date"* option from the category list on the left. Select the date format you desire and click on *"OK"* to format the column.

6. Click on the top of column 'B', then click on *"Format"* and select *"Cells"* from the drop-down menu.

7. In the dialog box that opens, select the *"Time"* option from the category list on the left. Select the time format you desire and click on *"OK"* to format the column.

Figure A-2 shows a typical spreadsheet with date, time and value displayed. It may be necessary to change the column width to see all the data.

A	B	C
12/02/04	11:45 AM	17
12/02/04	11:45 AM	20
12/02/04	11:45 AM	23.5
12/02/04	11:45 AM	27.5
12/02/04	11:45 AM	31
12/02/04	11:45 AM	34.5
12/02/04	11:45 AM	38
12/02/04	11:45 AM	41.5
12/02/04	11:45 AM	45.5
12/02/04	11:46 AM	49
12/02/04	11:46 AM	52

Figure A-2. Shows Date, Time and Value

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

(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.

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
www.aemc.com

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

Limited Warranty

The Simple Logger® Model L205/L230/L260 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.

For full and detailed warranty coverage, please read the Warranty Coverage Information, which is attached to the Warranty Registration Card (if enclosed) or is available at www.aemc.com. Please keep the Warranty Coverage Information with 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.

REGISTER ONLINE AT:
www.aemc.com

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

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

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

05/08

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