Simple Logger®
RMS Voltage Module
Model L220

USER MANUAL

Requires software version 6.11 or higher

Limited Warranty

The Model L220 is warranted 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.

For full and detailed warranty coverage, please read the Warranty Coverage Card, which is attached to the Warranty Registration Card. Please keep the Warranty Coverage Card with your records.

What AEMC® Instruments will do:

If a malfunction occurs within the warranty period, you may return the instrument to us for repair or replacement free of charge, provided we have your REGISTRATION CARD on file. AEMC® Instruments will, at its option, repair or replace the faulty material.

If a registration card is not on file, we will require a dated proof of purchase, as well as your REGISTRATION CARD accompanied by the defective 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:

> Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments
> 15 Faraday Drive • Dover, NH 03820 USA
> Tel: (800) 945-2362 (Ext. 360)
>   (603) 749-6434 (Ext. 360)
> Fax: (603) 742-2346 or (603) 749-6309
> repair@aemc.com

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

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

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⚠ **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 the safety information before attempting to use or service 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 inspect the instrument and leads prior to use. Replace any defective parts immediately.

- NEVER use the Simple Logger® Model L220 on electrical conductors rated above 300V in overvoltage category III (CAT III).

International Electrical Symbols

▣ This symbol signifies that the loggers are protected by double or reinforced insulation. Use only specified replacement parts when servicing the instrument.

⚠ This symbol signifies CAUTION! and requests that the user refer to the user manual before using the instrument.

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.

Packaging

The Simple Logger® Model L220 includes the following:

- User manual
- One 9V battery
- USB drive containing the Windows® 95, 98, ME, 2000, NT and XP download and graphic software, a generic user guide, product specific manual and the Simple Logger® catalog.
- Six ft long RS-232 cable

Specifications

ELECTRICAL

Number of Channels: 1

Measurement Range:
0 to 255Vrms line to neutral or neutral to ground, switch selectable

Input Connection: 3 prong US AC wall plug

Input Impedance: 2MΩ

*Accuracy: 1% Readings + Resolution

Resolution: 8 Bit (125mV max)

Scale Range	Maximum Input	Resolution
100%	255V	1V
50%	127.5V	0.5V
25%	63.75V	0.25V
12.5%	31.875V	0.125V

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 continuous recording @ 25°C

Output: RS-232 via DB9 connector, 1200 Bps

INDICATORS
Operation Mode Indicator: One Red LED
- Single Blink: Stand-by mode
- Double Blink: RECORD mode
- No Blinks: OFF mode

CONTROLS:
One button used to start and stop recording sessions and to turn the data logger ON and OFF.

SWITCHES:
Line-to-neutral or neutral-to-ground, switch selectable.

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

Storage Temperature: -4 to + 174°F (-20 to +80°C)

Relative Humidity: 5 to 95% non-condensing

Temperature Influence: 5cts.

MECHANICAL
Size: 2-1/4 x 4-1/8 x 1-7/16" (57 x 105 x 36.5mm)

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

Mounting:
Base plate mounting holes matches to wall receptacle cover for locking

Case Material: Polystyrene UL V0

SAFETY
Working Voltage: 300V, Cat III
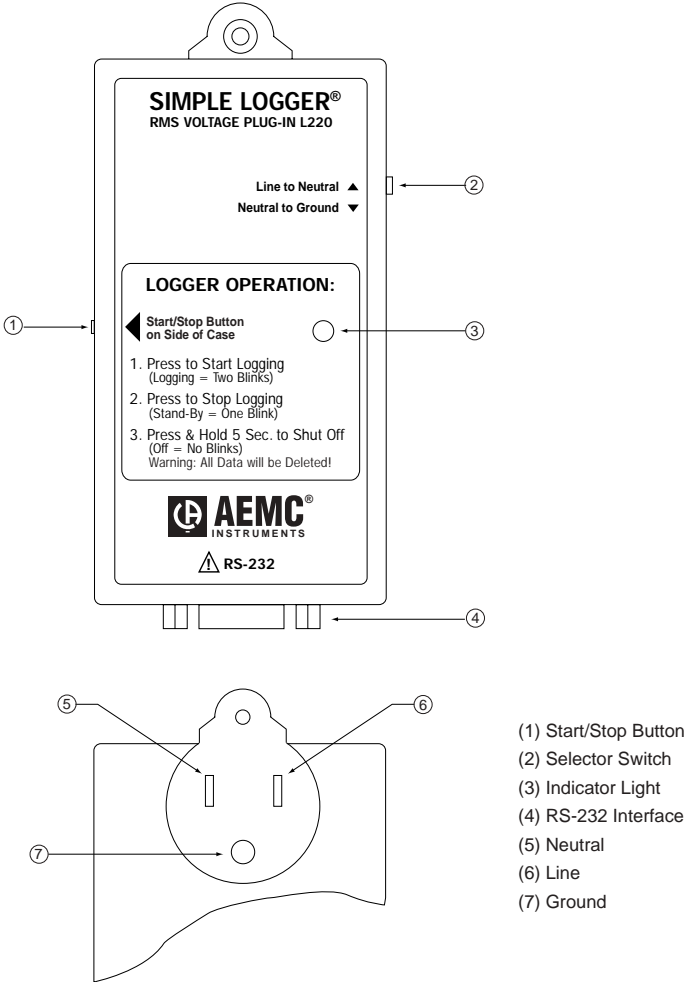
ORDERING INFORMATION
Simple Logger® Model L220 .... **Cat. #2113.95**

Accessories:
Replacement 6 ft RS-232 cable with DB9F .... **Cat. #2114.27**

*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%

Features

Model L220:

(1) Start/Stop Button
(2) Selector Switch
(3) Indicator Light
(4) RS-232 Interface
(5) Neutral
(6) Line
(7) Ground

Indicators and Buttons

The Simple Logger® has one start/stop button, one indicator, and one selector switch (line to neutral – neutral to ground).

The button is used to start and stop recordings and to turn the logger on and off. The red LED indicates the status of the Simple Logger®; **OFF, STANDBY** or **RECORDING**.

Inputs and Outputs

The bottom of the Simple Logger® has a female 9-pin "D" shell serial connector used for data transmission from the data logger to your computer.

Mounting

The Model L220 is a plug-in module for direct connection to a standard 110V US plug.

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 lift the cover off.
3. Locate the battery holder and insert the 9V battery (make sure that you observe polarity by lining up the battery posts to the proper terminals on the holder).
4. If the unit is not in record mode after installing the new battery, disconnect it and press the button twice then reinstall the battery.
5. Reattach the cover using the four screws removed in step two.

Your Simple Logger® is now recording (LED blinking). Press the test button for 5 seconds to stop the instrument.

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

Operation

Measurement Selection - Prior to the start of a recording session, the operator must determine whether line-to-neutral voltage will be recorded or if stray, neutral-to-ground, voltage is to be recorded. Slide the measurement selector switch on the right side of the unit to the proper position (Line to Neutral or Neutral to Ground) for recording.

Next, plug the Model L220 RMS voltage logger into the wall receptacle to be tested. Then press the start/stop button (the button is recessed to avoid accidental depression) on the left side of the unit to begin the recording session. The indicator light will double blink to indicate that the recording session has started. When the recording session has been completed, press the start/stop button to end the recording. The indicator light will single blink to indicate that the recording session has ended and the unit is in stand-by. Remove the logger from the wall receptacle and transport it to the computer for data downloading.

SOFTWARE

This model requires software version 6.11 or higher.

MINIMUM COMPUTER REQUIREMENTS

Processor: 486 or higher

RAM Storage: 8MB

Hard Drive Space: 8MB for application, approx. 400K for each stored file

Environment: Windows® 95, 98, 2000, ME, NT and XP

Port Access: (1) 9-pin serial port and (1) parallel port for printer support

INSTALLATION

Your Simple Logger® software is supplied on a USB drive. To install the program, perform the following steps:

Auto Run Disabled: If Auto Run is disabled, insert the Simple Logger® drive into the USB slot, then select **Run** from the **Start Menu**. In the dialog box that appears, type: **D:\setup**, then click the **OK** button.

NOTE: In this example, your drive is assumed to be drive letter D. If this is not the case, substitute the appropriate drive letter.

Auto Run Enabled: If Auto Run is enabled, insert the Simple Logger® drive into the USB slot drive and follow the on-screen prompts to complete the setup.

- Select <u>Exception Logger EVL 6.00</u> for the Exception Voltage Logger Model L215

- Select <u>Simple Logger 6.11</u> for all other Simple Logger® Models

- Select <u>Acrobat Reader</u> to install Acrobat Reader version 5.0

- Select <u>Explore Drive</u> view the User Guide, Simple Logger® Catalog or user specific manuals in PDF format.

To view the documents included on the drive, you must have Acrobat Reader installed on your machine. If you do not have it installed, you can install it from the Simple Logger® Software drive.

Installing Acrobat Reader: Select **Run** from the **Start Menu**. In the dialog box that appears, type: **D:\Acrobat\setup**, then click **OK**.

NOTE: In this example, your drive is assumed to be drive letter D. If this is not the case, substitute the appropriate drive letter.

<u>USING THE SOFTWARE</u>

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

Note: The first time the program is launched you will need to select a language.

Select "Port" from the menu bar and select the Com port 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).

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.

━━━━━━━━━ **Repair and Calibration** ━━━━━━━━━

To ensure that your instrument meets factory specifications, we recommend that it be submitted 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).

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> 15 Faraday Drive
> Dover, NH 03820 USA
> Tel: (800) 945-2362 (Ext. 360)
>   (603) 749-6434 (Ext. 360)
> Fax: (603) 742-2346 or (603) 749-6309
> repair@aemc.com

(Or contact your authorized distributor)

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

NOTE: All customers 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 hotline:

> 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
> techsupport@aemc.com
> www.aemc.com

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

AEMC®
INSTRUMENTS

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www.aemc.com