

- SIMPLE LOGGER®  
EXCEPTION VOLTAGE MODULE

# L215



**Owner's Record**

The serial number for the Model L215 is located on the side of the case. Please record this number and purchase date for your records.

**EXCEPTION VOLTAGE LOGGER MODEL L215**

**CATALOG #:** 2116.07

**SERIAL #:** \_\_\_\_\_

**PURCHASE DATE:** \_\_\_\_\_

**DISTRIBUTOR:** \_\_\_\_\_

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## **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 Safety Specifications section prior to using the instrument. 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 logger to the voltage leads before connecting the leads to the service being tested.
- ALWAYS inspect the instrument and lead prior to use. Replace any defective parts immediately.
- NEVER use the Model L215 on electrical conductors rated above 300V in overvoltage category III (CAT III).
- ALWAYS use leads rated for 300V working voltage.

### **1.1 International Electrical Symbols**



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



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.

## 1.2 Definition of Measurement Categories

**DW RUPHDXUHPHWSHUIRUPHDWWHSULPDUHOHFWULFDXSSO**  
( $<1000V$ ) such as on primary overcurrent protection devices, ripple control units, or meters.

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

## 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.

### 1.3.1 Instructions Before Use

- Before using the L215 for the first time, install the battery as described in § 5.1.
- Next, turn off the L215, then turn it back on again.



**WARNING:** Not performing the preceding steps will result in the inability to set the trip points.

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## 1.4 Ordering Information

**Exception Voltage Logger Model L215** (0 to 250V<sub>AC</sub> Input)... **Cat. #2116.07**

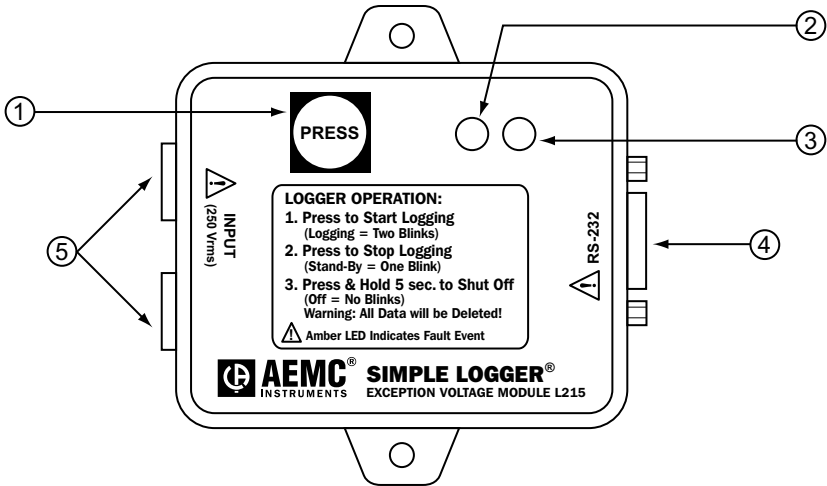
*Includes software (CD-ROM), 6 ft DB-9 RS-232 cable, 9V Alkaline battery, 5 ft voltage lead set and user manual.*

### 1.4.1 Accessories and Replacement Parts

110V US Outlet Adaptor with Banana Jacks ..... **Cat. #2118.49**

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

## **PRODUCT FEATURES**



- |                         |                        |
|-------------------------|------------------------|
| (1) Start/Stop Button   | (4) RS-232 Interface   |
| (2) Red LED Indicator   | (5) Input Safety Plugs |
| (3) Amber LED Indicator |                        |

### **2.1 Indicators and Buttons**

The Simple Logger® has one button and two indicators, located on the front panel.

The button is used to start and stop recordings and to turn the logger on and off.

The **Red LED** indicates the status - OFF, STANDBY or RECORDING.

The **Amber LED** indicates an EXCEPTION event.

## **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:**

0 to 250V

**Overvoltage Range:**

290V, one hour maximum (F.S. reading of 255.75V recorded)

**Input:**

250V, Programmable Event Window

**Input Connection:**

Recessed Safety Banana Jacks

**Accuracy:**

1% Reading  $\pm$  0.5V

**Resolution:**

10 Bit (0.25V)

**Sample Rate:**

60 samples @ 100 ms/sample

**Data Storage:**

73,620 readings

**Data Storage Technique:**

60 samples per Event

**Power Source:** 9V Alkaline NEDA 1604, 6JF22, 6LR61

**Battery Life Recording:** Up to 1 year recording @ 77°F (25°C)  
with input greater than 40 Volts

**Output:** RS-232 @ 4800bps via DB-9 connector

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



## **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

## **3.3 Environmental Specifications**

**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 max

## **3.4 Safety Specifications**

**Working Voltage:** EN 61010, 300V, Cat III

*\*All specifications are subject to change without notice*

# OPERATION

## 4.1 Software Installation

### Minimum Computer Requirements

- Windows® 7, 8, 8.1, 10
- 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.

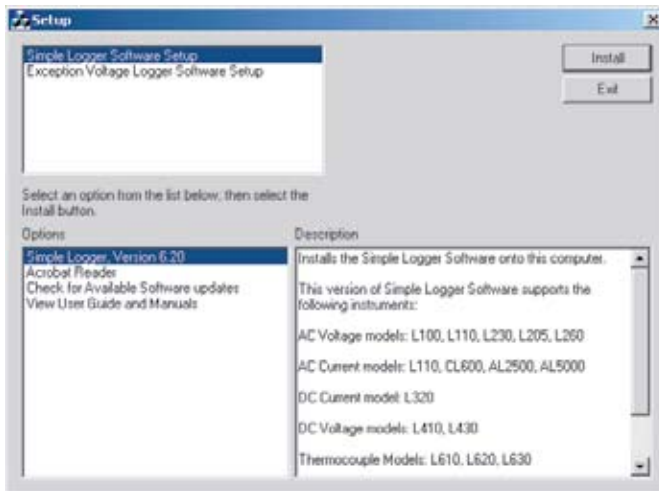


Figure 1

There are a several options to choose from. Some options<sup>(\*)</sup> require an internet connection.

- **Exception Logger Software Version 6.xx** - Installs the Simple Logger<sup>®</sup> software to the computer.
  - **\*Acrobat Reader** - Links to the Adobe<sup>®</sup> web site to download the most recent version of Adobe<sup>®</sup> 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<sup>®</sup> Explorer for viewing of documentation files.
3. To install the software, select **Exception Voltage Logger Software Setup** in the top section of the Set-up window, then select **Exception Logger Software, Version 6.xx** in the Options section.



**NOTE:** Make sure to select the Exception Voltage Logger Software option. **DO NOT** select *Simple Logger Software Setup (this version is used with all other Simple Logger models)*

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4. Click the **Install** button and follow the on-screen prompts to install the software.

## 4.2 Recording Data

- Connect the logger to the circuit to be monitored by inserting test leads into the banana jack inputs and then to the circuit under test.



**Caution:** If the circuit under test has line voltage present, use insulated safety clips only or disconnect service before installing the logger.

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- Once the installation is complete, and the service is reapplied, press the **PRESS** button on the front of the unit to begin the recording session. Be sure to restart the logger if a logging session was initiated without the circuit connected.



**NOTE:** The Red LED will double-blink to indicate that the recording session has started. If the Amber LED is blinking, the logger must be downloaded in order to reset the unit.

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*If during the recording a Fault event has occurred, the Amber LED will begin to blink. A Fault event is any measured voltage that has a magnitude within the Exception zone defined by the user. (See §4.4 for more details)*

- When the recording session has been completed, press the **PRESS** button once to end the recording. The Red LED will single-blink to indicate that the recording session has ended and the unit is in Stand-by. Remove the logger and connect it to a computer for data downloading.

### 4.3 Downloading Data

- To download recorded event(s), connect the 9-pin serial cable from the computer to the logger and start the Exception Logger software (see §4.4). Within 10 seconds, the logger will identify itself in the communication window at the top of the screen.
- Once the logger is communicating, the user may now select **DOWNLOAD** from the menu bar.
- Click on **OK** for the time set feature and the download will begin. The download progress will be indicated at the bottom of the screen by a bar graph indicator. If the software appears to stop progressing with the download, the logger may have lost communication with the software and a software restart will be necessary.
- Once the information has been downloaded to the computer, a graph of the recorded data will be displayed. The graph can be annotated and saved at this time.
- The Amber LED will be reset for the next logging session only after the data has been downloaded. To erase the previously downloaded data, restart the logger from the OFF position.

### 4.4 Using the Software

Launch the software, then with the logger in record or stand-by connect the RS-232 cable from your computer to the logger.

The communication window will display the current information stored in the unit.

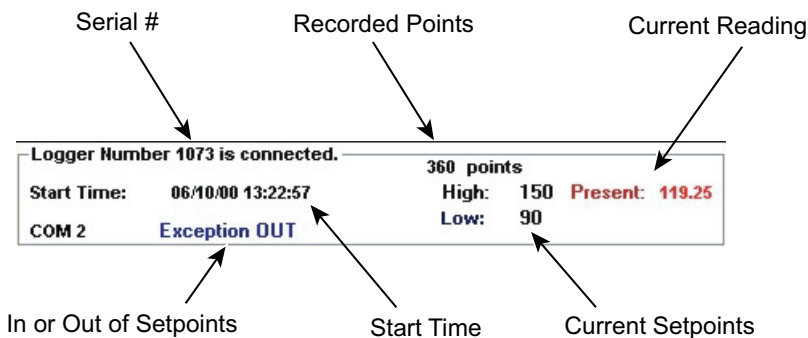


Figure 2

The logger will communicate with the computer every 10 seconds.

If the logger does not communicate, verify the correct port by selecting "PORT", Com1, Com2, Com3 or Com4 (see your computer manual).

**To configure the instrument for a recording session**, establish communication with the Exception Voltage Logger and select **Setup** from the menu bar. The following menu will be displayed.

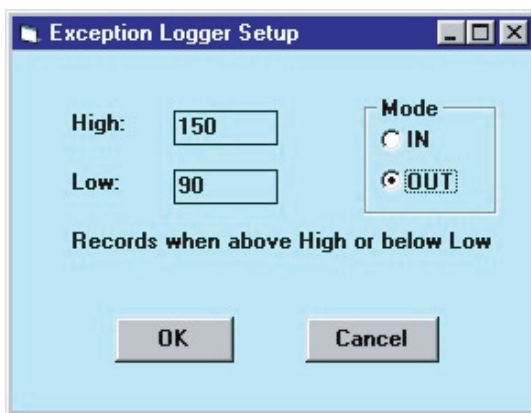


Figure 3

From this menu the user may establish the Exception parameters. When the new parameters are defined, selecting **OK** will update the logger, clear the memory and restart the instrument. Shut down the logger and install it as defined in §4.2.

To download previously recorded information, select **Download** to retrieve the data and display the graph. (Download time will vary with the total number of samples taken.)

## **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.

<b>A</b>	<b>B</b>
<b>8</b>	<b>Arms</b>
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.

<b>A</b>	<b>B</b>	<b>C</b>
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](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.**

## **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)  
[www.aemc.com](http://www.aemc.com)

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

## **Limited Warranty**

The Simple Logger® Model L215 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 Information, which is attached to the Warranty Registration Card (if enclosed) or is available at [www.aemc.com](http://www.aemc.com). Please keep the Warranty Coverage Information 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, 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](http://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](mailto: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.**



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