RMS Current Loggers
Model OM-SL-L100
Model OM-SL-L110

USER MANUAL

M-3437/0899

OMEGA®

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit should malfunction, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by it will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/ DISCLAIMER language, and additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS/ INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. P.O. number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY REPAIRS**, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. P.O. number to cover the COST of the repair,
2. Model and serial number of product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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Table of Contents

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 Safety Specifications section prior to using the current probe. 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 recorder to the probe before clamping the probe onto the sample being tested.
- ALWAYS inspect the instrument and lead prior to use. Replace any defective parts immediately.
- NEVER use the Models OM-SL-L100 and L110 on electrical conductors rated above 600 V in overvoltage category III (CAT III).
- ALWAYS use probes rated for 600 V working voltage.

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.

For more information about the Logger, refer to disk 2: MAIN MANUAL

Receiving Your Shipment

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

Packaging

The Loggers OM-SL-L100 and OM-SL-L110 include the following:

- User manual
- One 9 V battery
- Two 3½" disks containing the window-based download and graphic software and a generic user manual
- Six ft. long RS232 cable
- Set of velcro mounting pads

Specifications

ELECTRICAL

Number of Channels: 1

Measurement Range: 0 to 10,000 Arms
(Requires optional current probe)

Input: 0 -1 Vrms (L100)
0 - 1 Arms (L110)

Input Connection: Recessed Safety Banana Jacks

***Accuracy:** 1% Readings + Resolution + Probe accuracy

Resolution : 8 Bits

Scale Range	Maximum Input	Resolution
100%	1 A or 1 V	0.004 A or V
50%	0.5 A or 0.5 V	0.002 A or V
25%	0.25 A or 0.25 V	0.001 A or V
12.5%	0.125 A or 0.125 V	0.0005 A or V

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: 1 year continuous recording @ 25°C

Output: RS-232 via 9 pin "D" shell

INDICATORS

Operation Mode Indicator: One Red LED

- Single Blink in stand-by mode
- Double Blink in RECORD mode
- Continuously on: Overload condition
- No Blinks in OFF mode

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

CONTROLS:

One button used to start and stop recording sessions and to turn the data logger on and OFF.

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

MECHANICAL

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

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

Mounting: Base plate mounting holes or Velcro® pads

SAFETY

CE

Working Voltage: IEC1010-1, 600V, Cat III

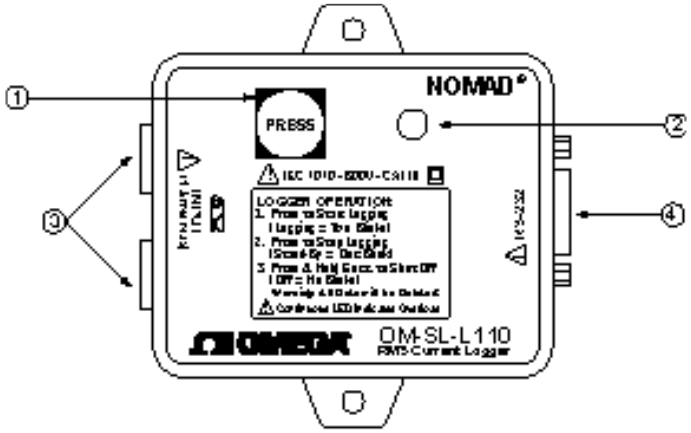
ORDERING INFORMATION

RMS Current Logger, 0 - 1 V AC .....Model OM-SL-L100
RMS Current Logger, 0 - 1 A AC.....Model OM-SL-L110

Accessories:

Flexible Current Probe 24" 1-500 A AC .....Model HHM806
Flexible Current Probe 24" 1-1000 A AC .....Model HHM808
Flexible Current Probe 24" 10-6000 A AC .....Model HHM812
Flexible Current Probe 36" 10-6000 A AC .....Model HHM812-36
Flexible Current Probe 24" 10-10000 A AC.....Model HHM814
Flexible Current Probe 36" 10-10000 A AC.....Model HHM814-36
Flexible Current Probe 48" 1-10000 A AC .....Model HHM814-48
Replacement 6ft RS232 cable with DB9F OM-SL-RS232-DB9

Features



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

Indicators and Buttons

The data logger has only one button and one indicator. Both are located on the front panel.

The button is used to start and stop recordings and to turn the data logger on and off. The red LED indicates the status of the data logger; OFF, STANDBY or RECORDING. When the LED is lit continuously it indicates an Overload condition.

Inputs and Outputs

The left side of the data logger incorporates 2mm safety banana jacks input connectors compatible with the current probes for which your data logger was designed.

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

Mounting

Your data 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 data logger and the surface to which the data logger will be mounted.

Battery Installation

Under normal conditions, the battery will last up to a year of continuous recording unless the logger is re-started 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 light blinking) and all inputs are disconnected.
2. Turn the data logger upside down. Remove the four Phillips head screws from the base plate of the data logger and take off the base plate.
3. Locate the two wire (red/black) battery connector and attach the 9 V 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. Re-attach the base plate using the four screws removed in step two.

Your data 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

Connect the current probe to the Logger and position the probe around the conductor to be measured. Make sure that the jaws are firmly closed before beginning the recording session. (Probe output can not be more than 1V AC for Model OM-SL-L100 and 1A AC for the Model OM-SL-110).

Next, press the start/stop button on the front 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.

Unclamp the probe from the conductor and connect the Logger to the computer for data downloading. See Section 2 page 19 of the main manual for downloading.

SOFTWARE

MINIMUM COMPUTER REQUIREMENTS

Processor: 386 or higher

RAM Storage: 4 MB minimum

Hard Drive Space:
100K for application, approximately 200K for each stored file

Environment: Windows 3.1 or Windows 95

Port Access: 1 available 9 pin serial port
1 parallel port for printer support

INSTALLATION

Your data logger software is supplied on a single 3½" floppy disk. To install the program on your Windows based computer, proceed as follows: The software is Multilanguage. A prompt will ask you to select the language at the end of the installation process.

Windows 3.1 Systems

1. Insert the floppy disk containing the data logger software in your computer's floppy drive (usually Drive A).
2. From the Program Manager select "File" on the command line.
3. Select "Run" from the pull-down menu and type **a:setup** in the dialog box then click on "OK".
4. The set up program will temporarily load onto your computer.
5. Next the setup program will offer C:\DATALOG as location where the software will be installed. Click on "Next" to use this directory or type in a new name, then click on "Next".
6. A bar graph will appear showing the progress of installation. When installation is complete a message screen will appear stating that the program has been installed. Click on "OK". You are now ready to use the data logger software.

Windows 95 Systems

1. Insert the floppy disk containing the data logger software in your computer's floppy drive (usually Drive A).
2. Click on the "Start" button on the bottom left side of the screen.
3. Select "Run" from the menu and type a:setup in the dialog box then click on "OK".
4. The setup program will temporarily load onto your computer.

5. Next the setup program will offer C:\DATALOG as location where the software will be installed. Click on “Next” to use this directory or type in a new name, then click on “Next”.
6. A bar graph will appear showing the progress of installation. When installation is complete a message screen will appear stating that the program has been installed. Click on “OK”. You are now ready to use the data logger software.

USING THE SOFTWARE

Launch the software and connect the RS232 cable from your computer from the logger.

Select “FILE”, “Baud rate” and “1200”, then select “PORT”, Com1, Com2, Com3 or Com4 (see your computer manual). The logger must now communicate with your computer (ID number of the logger and number of points recorded displayed).

Select “FUNCTION”, then Logger L100 or L110 to choose your probe ratio. Select download to display the graph. (Download takes about 90 seconds)

Function

The FUNCTION command allows you to select the correct engineering units for the recorded data.

When you click on Function, a pull-down window will appear with all the choices supported by the version of software you have installed. This menu will only appear if a data logger is connected to the COM port.

Simply click on the desired group and then select the proper units from the window that opens. Depending on which type of logger is connected, the pull-down menu under Function may be empty. You will be returned to the main screen and the graph Y axis scale will be recalculated using the choice you made here.

Future downloads will use the units selected here for graphing as well. The data logger communicates to the software its basic configuration. Therefore, you will only be offered choices that are compatible to the data logger.

Cleaning

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

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