

FlowInspector™

Software Guide for Seametrics Data Logger
(DL76, Logging Meters, Rate/Total Indicators, and Flanged Magmeters)
Version 2.5



Seametrics

Install FlowInspector

Hardware/Software Requirements..... Page 3
 Installation Instructions..... Page 3

Set Up Your Logger

First Time Logger Setup..... Page 4
 Initialize Logger..... Page 5

Download Data From the Logger

Download Data..... Page 8

Customize Display

Selecting Flow Rate and Total Units..... Page 9
 Selecting Time Period to View..... Page 10
 Averaging Data Points..... Page 11

View and Print Data

Viewing Current Values..... Page 12
 Viewing Raw Data Table..... Page 12
 Viewing Day Report..... Page 12
 Printing Graphed Data..... Page 12

Manage Files

Selecting a File to View..... Page 13
 Naming Conventions..... Page 13
 Appending a File..... Page 13

Export and Analyze Data

Exporting Data for Analysis..... Page 14
 Opening Exported Files..... Page 14

Warranty

Seametrics Limited Warranty..... Page 15

All information presented in this manual is copyrighted ©2008-2018
 by Seametrics of Kent, WA U.S.A.

All rights are reserved. All information is proprietary, is subject to change,
 and should not be construed as a commitment by Seametrics.

Seametrics and FlowInspector are trademarks of Seattle Metrics, Inc.
 All other products or name brands mentioned are the property of their respective holders.

Printed in the U.S.A.

FlowInspector software is designed as part of the Seametrics Data Logger systems that include the DL76 standalone Data Loggers as well as Logging Meters (WMX or AG2000) and newer generation magmeters and rate totalizers (AG3000, iMAG 4700, or FT400). FlowInspector is used to set up the Logger, to download and manage data files, and to analyze and export data.

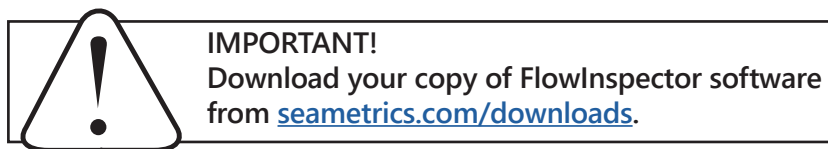
Hardware/Software Requirements

Use of FlowInspector Version 2.5 requires the following hardware/software:

- Seametrics DL76 Data Logger, Logging Meters (WMX or AG2000), or newer generation magmeters and rate totalizers (AG3000, iMAG 4700, or FT400)
- Seametrics Data Logger Cable
 - DC3, DC3-USB
 - 3 pin cable for DL76, AG2000/WMX (not IP68)
 - DC3S, DC3S-USB
 - 4 pin cable for AG2000/WMX meters that are IP68 rated
 - DC4-USB
 - 4 pin cable for AG3000/iMAG4700/FT400
 - This cable operates at a different voltage than the DC3S cable and is not interchangeable with DC3S cables
- PC computer with Windows® 7, Windows® 8, and Windows® 10
- USB or Serial connection port

Note: If you have a USB connection port and a DC3 or DC3S serial data cable, a USB-to-Serial adapter cable will be required.

Installation Instructions




1. Close all other programs running on your computer.
2. Download FlowInspector 2.5 from the Seametrics web site: seametrics.com/downloads.
3. Run the Setup file. (Depending on your operating system and security settings, you may need admin permission to run the installer.)
4. If you have an earlier copy of FlowInspector 2.5.0 on your computer, follow instructions to Uninstall it. Once it has been uninstalled, you will need to run the Setup file again to install.
5. You are given the option of installing just the application or the application and release notes. Make your selection from the dropdown box, and then click Next.
6. At the "Ready to Install" screen, review your selections, use Back to make corrections as necessary. Click Install.
7. At "Completed" screen, click Finish.

After installation is complete, FlowInspector will be stored in the Seametrics FlowInspector folder in your computer's Start menu.


First-Time Logger Set-Up

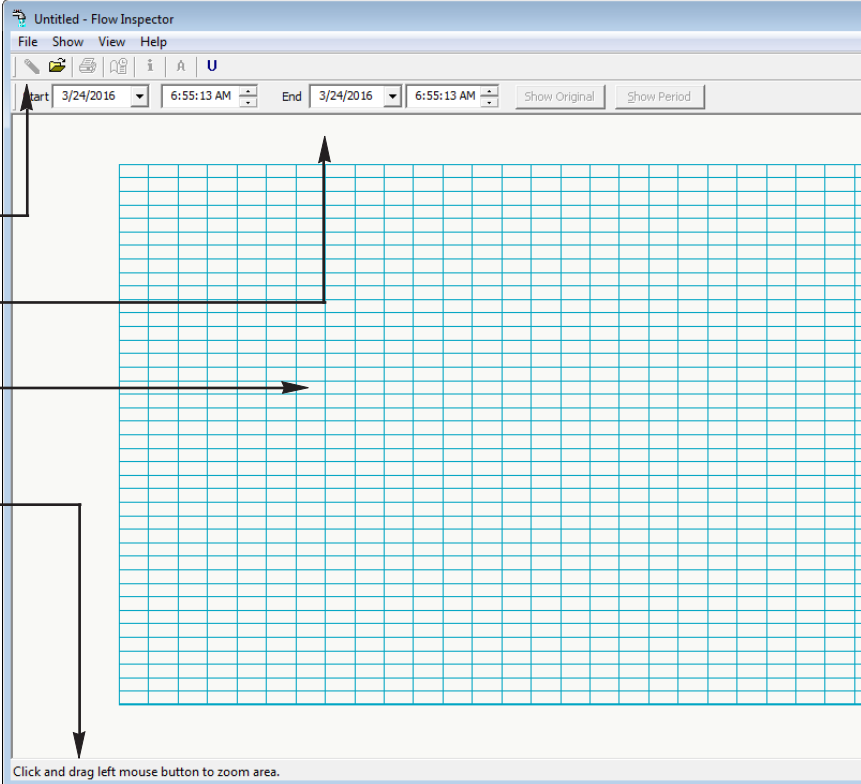
The following instructions apply to **first-time set-up only**. Re-setting procedures are the same except that you must first download any data you wish to save.



CAUTION. To prevent data loss, if you are re-setting a Logger that has been previously used, follow the procedure for first time set-up EXCEPT that you must first download any data you wish to save. Any prior data will be erased during set-up.

Open FlowInspector

To open FlowInspector, double click on the  icon on your computer desktop or in the Programs in your Start menu. The FlowInspector Main Screen will open.



- **Menu bar** (File, Show, View, Help)
- **Tool bar** (commonly-used functions)
- **Time bar** (for setting the period for analysis)
- **Grid** (displays graphic information in selected time period)
- **Status bar** (shows current status)

Click and drag left mouse button to zoom area.

Connect Hardware

Connect the round end of your Seametrics data cable to the matching socket on your meter or data logger. Connect the other end of the cable into your computer, either the USB port or the serial port, depending on cable type.

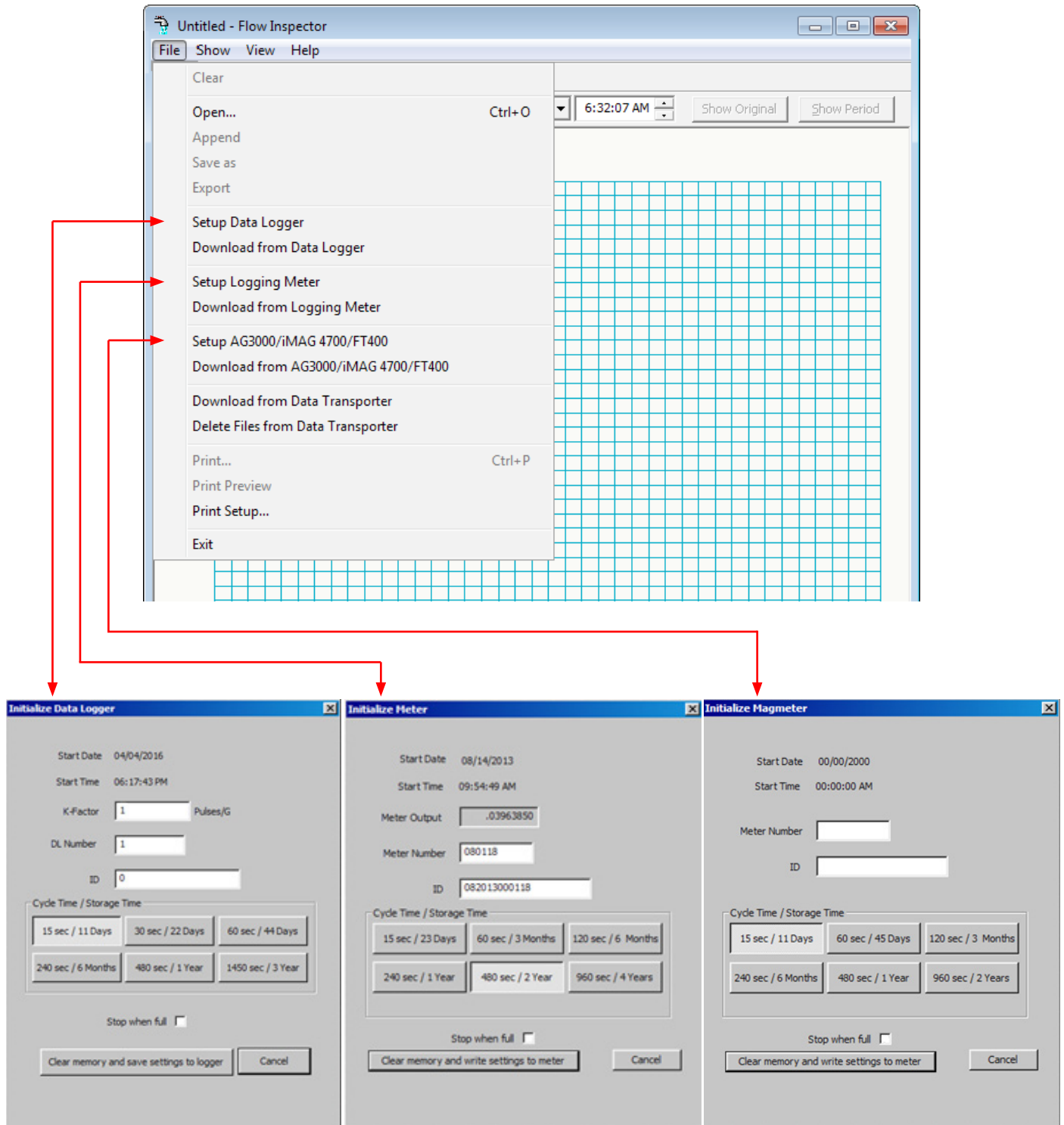
DC4-USB driver download

The first time any DC4-USB cable is connected to a computer, the drivers for that cable will be downloaded from the internet. You will need an internet connection for this, and the download may take as long as 5 minutes. When the dialog box for 'downloading drivers' pops up on your computer, we recommend clicking on that box and following the progress, not doing so will almost always lead to the user attempting to use the cable before the download completes. If the computer asks for permission to 'find drivers', select that option.



Initialize Logger

With FlowInspector open and the data cable connected, click on File, and then select either *Setup Data Logger* (for DL76), *Setup Logging Meter* (for WMX, AG2000), or *Setup AG3000/iMAG 4700/FT400* for (iMAG 4700, AG3000, or FT400).



Start Date / Start Time (All units)

The date/time that the Logger was initialized is based on the real time clock of the computer used, formatted according to its regional date/time conventions (e.g., month/day/year vs. day/month/year and 12-hour vs. 24-hour clock). **Date and time cannot be changed manually**, but will be automatically updated when you “save settings” at the end of the set-up procedure. **Any data logger with a start date of 00/00/2000 has not been initialized.**

K-Factor (Data Loggers only)

The K-Factor is the number of pulses per gallon produced by the Seametrics meter your Data Logger is reading from. Find the K-Factor number in one of three places (depending on meter type): on the meter fitting, in the meter instruction manual, or in the K-Factor calculator on the Seametrics website (www.seametrics.com). **Enter this number** into the Initialize Data Logger screen. (Note: Use the technical bulletin “Field Calibration of Seametrics Meters” on our website Downloads page if you wish to field-calculate your own K-factor. If you use this method, be sure to set the K-Factor in pulses-per-gallon, since this is standard for all meters. You will still be able to select other units for viewing and analyzing the data if you wish.)

Meter Output (Logging Meters only)

Meter output of Logging Meters is set on the meter itself in customer-selected units (e.g., gallons-per-pulse, liters-per-pulse) and displayed here.

DL Number (Data Loggers) or Meter Number (All other units)

The DL Number or Meter Number you assign here will be included in the Logger file name to differentiate it from other Loggers when you analyze your data. Assign any number you choose, up to six digits.

ID (All units)

This is an optional field in which you may enter an alphanumeric string that will help to easily differentiate one Logger from another during data analysis (e.g., Pump Station 3).

Cycle Time / Storage Time (All units)

There is an inverse relationship between the frequency of data collection (cycle time) and maximum capacity (storage time). Shorter cycle times provide a more detailed flow curve but shorten the number of days until the logger memory is full. Longer cycle times give less detailed data over a longer time period. **Select the cycle time and storage time best suited to your application.**

Cycle Time (in seconds)	Storage Time
15	11 days
30	22 days
60	44 days
240	6 months
480	1 year
1450	3 years

DL76 Standalone Data Loggers

Cycle Time (in seconds)	Storage Time
15	23 days
60	3 months
120	6 months
240	1 year
480	2 years
960	4 years

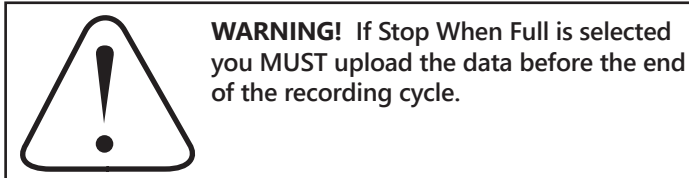
Logging Meters (WMX, AG2000)

Cycle Time (in seconds)	Storage Time
15	11 days
60	45 days
120	3 months
240	6 months
480	1 year
960	2 years

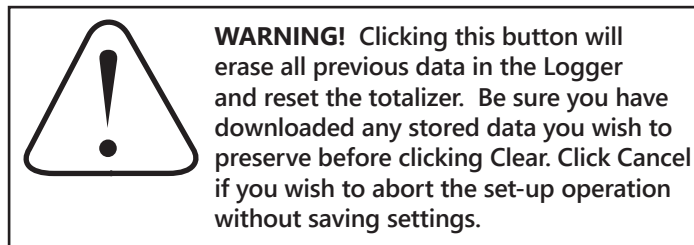
AG3000, iMAG 4700, FT400

Stop When Full (All units)

When the Logger's memory is full, it can either 1) stop recording data, or 2) return to the beginning of the recorded data and begin overwriting the earliest measurement data points. In the first case, the total will stop accumulating until the Logger has been manually cleared and reset. In the second case, the running total will continue to accumulate even though the earlier specific data points are overwritten. **Choose which condition you prefer by checking or unchecking the "Stop When Full" box.**

**Clear Memory and Save Settings to Logger (All units)**

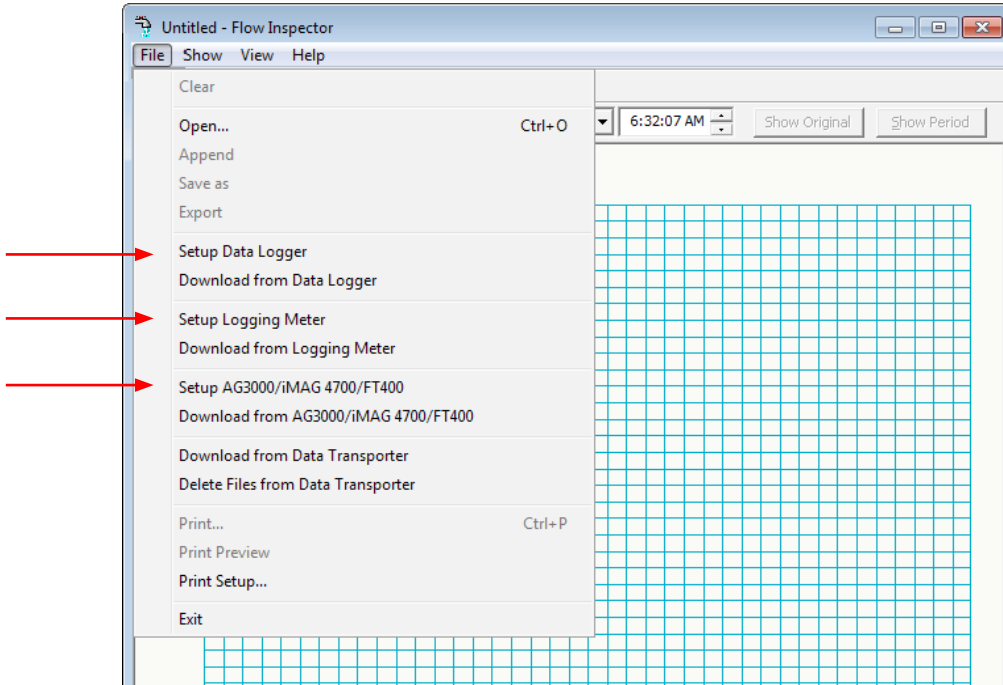
Clicking this button will save your chosen settings and end Setup.

**Cancel (All units)**

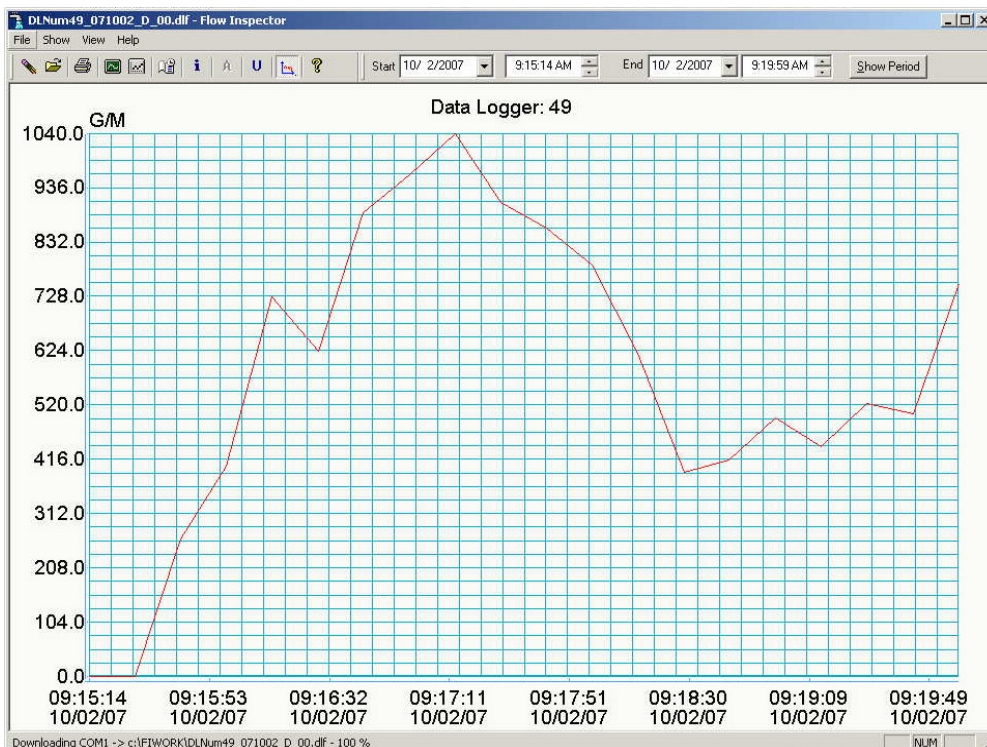
Click this button to exit the screen without saving changes to your Logger settings. Use this button when you have changed your mind about resetting your Logger.

DOWNLOAD DATA

Open FlowInspector and **Connect Hardware** as described in Set-Up section. Click on File and then select either *Download from Data Logger* (for DL76), *Download from Logging Meter* (for WMX or AG2000), or *Download from AG3000/iMAG 4700/FT400* (for AG3000, iMAG 4700, or FT400). FlowInspector automatically names your file (see Naming Convention, in File Management section). If you download twice from the same Logger on the same date, you will have a choice of overwriting the first data set or incrementing the file name to save both data sets.



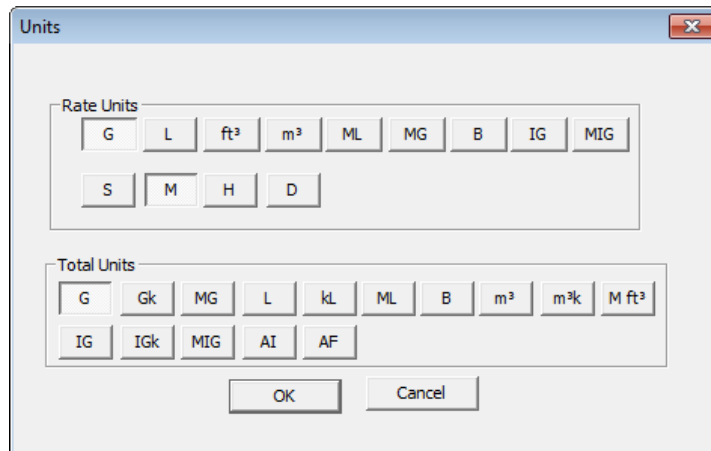
When your download is complete, a graph line will appear on the empty grid.



With FlowInspector, you can customize your flow graph, including the flow rate units (displayed on the X axis), the flow total units, and the portion of the data collection period that you wish to view (displayed on the Y axis).

Selecting Flow Rate and Total Units

The Flow Rate is expressed as a volume of flow over a period of time. FlowInspector allows you to choose from a list of volume units, and a list of time units, to express your flow rate in the most useful format for your application. From the Main Screen, click on Show, then Units (or click the **U** button on the Tool Bar), to bring up this screen:



Units screen, showing Flow Rate setting of Gal/Min and Total Flow in Gallons.

On the Units screen, select Units, referring to the abbreviations below.

Rate Units			
Volume		Time	
G	Gallons	S	Seconds
L	Liters	M	Minutes
ft ³	Cubic Feet	H	Hours
m ³	Cubic Meters	D	Days
ML	Megaliter		
MG	Million Gallons		
B	Barrels (42 gal.)		
IG	Imperial Gallons		
MIG	Million Imperial Gallons		

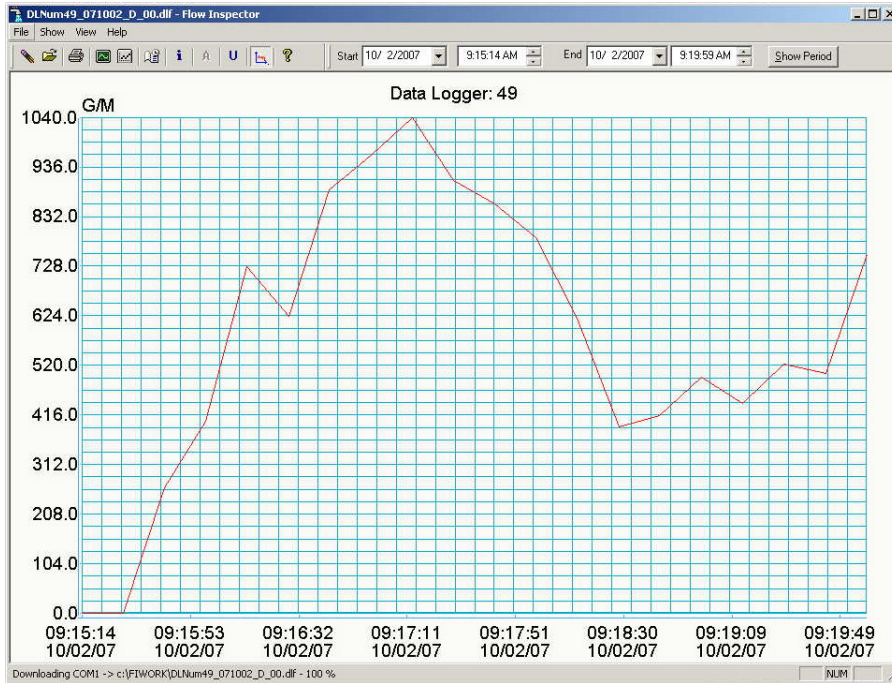
Total Units			
Volume		Volume	
G	Gallons	m ³ k	Cubic Meters x 1000
Gk	Gallons x 1000	M ft ³	Million Cubic Feet
MG	Million Gallons	IG	Imperial Gallons
L	Liters	IGk	Liters
kL	Kiloliters	MIG	Million Imperial Gallons
ML	Megaliters	AI	Acre-Inches
B	Barrels (42 gal.)	AF	Acre-Feet
m ³	Cubic Meters		

When your Flow Rate and Flow Total units have been selected, **Click OK**. Your data will now display in the rate and total units you have selected. At any time, these choices can be changed and the data viewed with different units of your choice. If you wish to exit the screen without selecting or changing units, **Click Cancel**. No data will be lost.

Selecting a Time Period to View

There are several ways to select and refine the desired portion of your collected data to view.

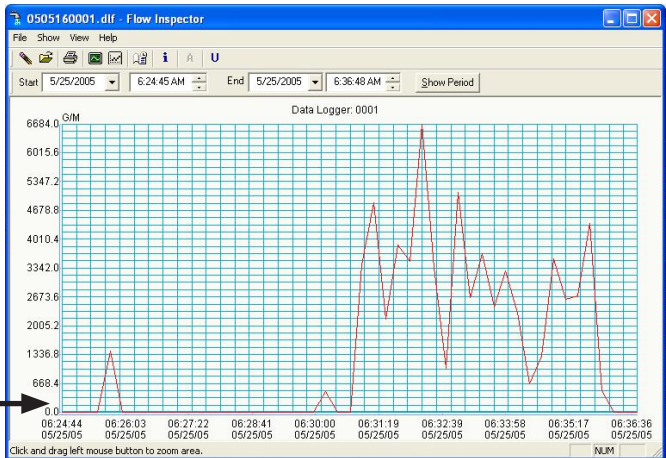
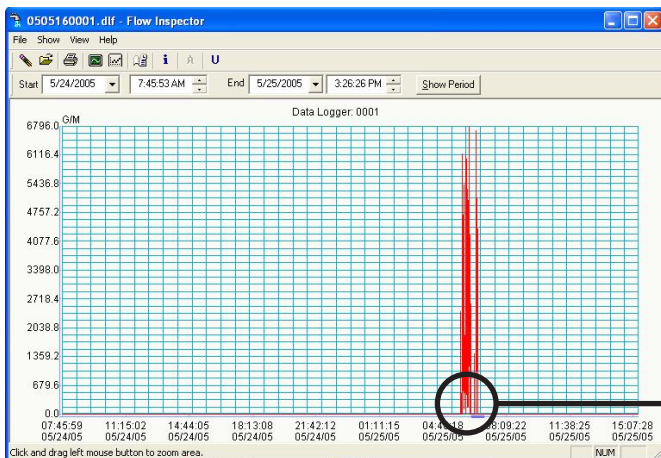
Viewing the Entire Time Period: When you download your data, a graph line will appear on the empty grid. On the Time Bar, click on Show Original to be sure that the entire file is displayed.



Depending on how much data was collected over what time period, the graph may have a spiky appearance and be difficult to read. If more detail is desired, it will be important to select a smaller portion of the data to view, by one of the methods described on the following page.

If your data is too condensed to read...

Zoom in on a time period for improved readability.




Shortening Time Period (Selecting by Zoom): The simplest and most intuitive way to select a smaller time period is by using the Zoom feature. Choose the approximate start date and time desired, position your cursor at that point on the baseline of the main grid, left-click the mouse and hold the button down as you drag to the right. As you drag the mouse, a blue line will expand until you reach the desired end point, then release. The time period defined by the blue line will expand to fill the entire grid. You can repeat this process several times, to narrow your view to as short a time period as you wish (down to a minimum of two data points). [NOTE: You may return to the full time period by clicking on Show Original at any time.]

Shortening Time Period (Selecting by Date/Time Entry): This is the preferred method if the desired time period is known precisely. Locate the date and time boxes at the top of the screen. Define the period you want to view in the Start and End Date/Time boxes, and click the Show Period button on the Time Bar. FlowInspector will select data collection points nearest your chosen Start and End selections, and the selected time period will appear on the main grid. FlowInspector will prevent you from selecting a date/time outside of your data set. [NOTE: Use Show Original to return to the full time period.]

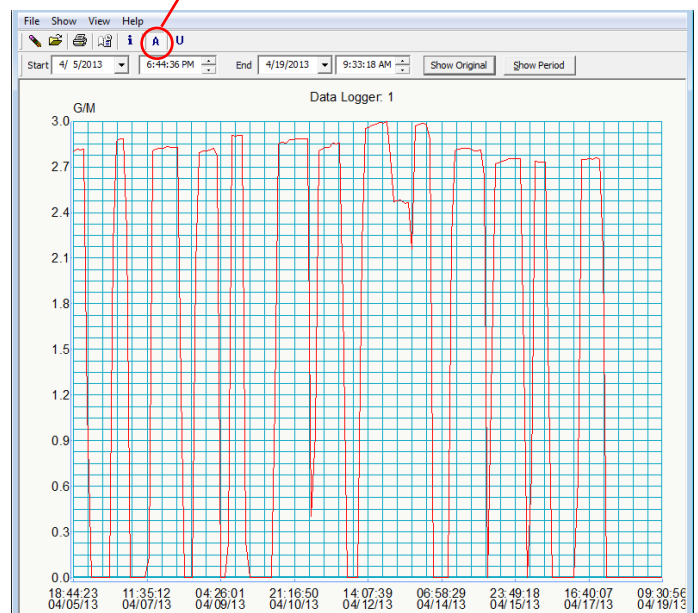
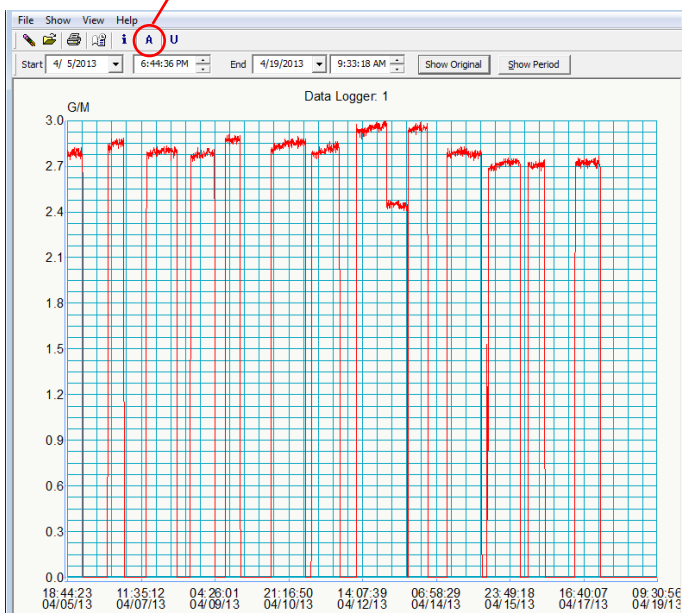
Averaging Data Points (Filtering)

When it is more important to see trends than details, the Averaging Filter can be employed. With the filter turned on, a selected time period can be viewed with individual data points averaged to create a smoother curve. The user can choose the "smoothness" of the curve by selecting the number of data points that are averaged together.

To use the filter, select the Show menu, then Averaging Filter. Choose the number of data points you wish to average together, click OK. (You may need to adjust this number a few times to achieve the best curve for your purposes.) The graph will adjust accordingly. Note that the Filter button  on the main screen now appears activated; clicking on this button will turn the filter off and on, toggling between the raw data and the averaged data.

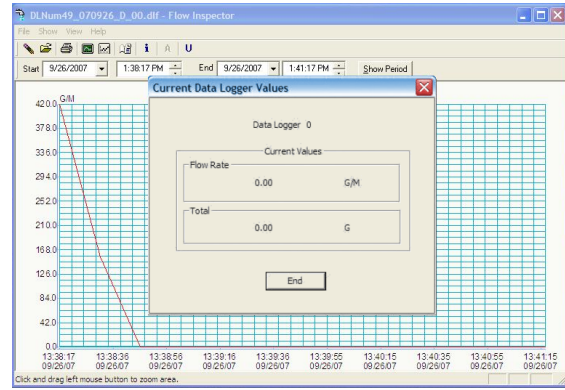
Averaging Filter "Off"

Averaging Filter "On"



Viewing Current Values

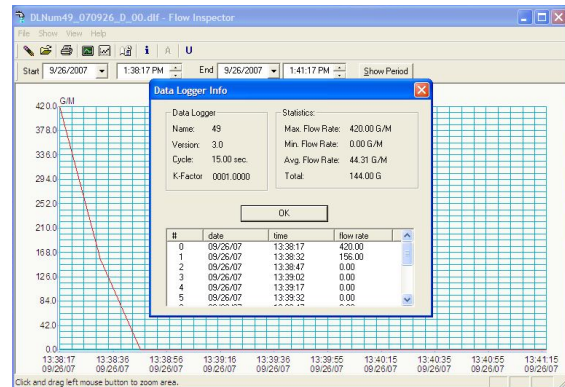
If all you need is a quick look at the current status of your Logger, click Show/Current Data Logger Values to view real-time flow rates and totals. This feature allows you to read data in the field without downloading first. See illustration at right.



Viewing Raw Data Table

To view the raw data that underlies the graphic presentation, click on Show/Data Logger Info (or the **i** button on the Tool Bar). This brings up a box that displays the set-up parameters (upper left), flow statistics (upper right), and individual data points (bottom window) over the time period currently displayed on the graph. Click OK to close window.

[NOTE: The version number on this screen refers to the logging device, not to the FlowInspector software.]

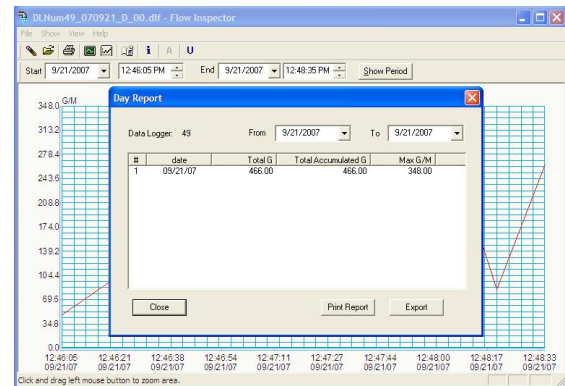


Viewing Day Report

The Day Report shows daily flow totals and maximum rates. Access the screen by clicking on Show/Day Report (or the **📄** button on the Tool Bar). Use the "From" and "To" boxes to change the time period you wish to view. The data can be printed or exported as a .csv or .txt file.

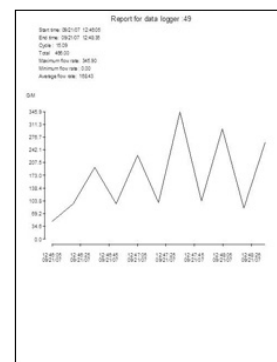
Printing Day Report

The Day Report can be printed in table form, showing daily total, daily maximum flow rate, and accumulated total flow to date. With the Day Report on the screen, click Print Report.



Printing Graphed Data

The graphed data from the main screen can be printed using the File/Print menu or the printer icon on the Tool Bar. This graphic representation also includes the time period; cycle time; total flow; and maximum, minimum and average flow rates.



Selecting a File to View

Unless you have instructed it otherwise, FlowInspector has automatically saved your data in a folder called FIWORK on your C drive. From the main screen, click on File, then Open. The FIWORK folder will open and you will see all your data files. Select the file you wish to work with, click Open. When it opens, click on the Show/Original menu to assure that you are viewing the complete file.

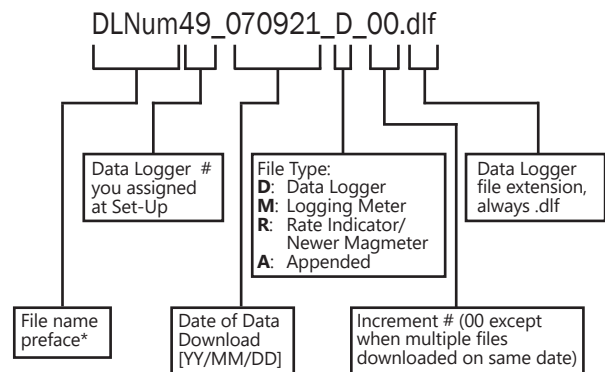
Accessing your FIWORK folder directly through your C drive may not be successful. Always access your files from the FlowInspector main screen by clicking on File then on Open.

Naming Convention

Understanding the file naming convention will allow you to easily select the file you wish to view. See diagram at right.


* Different meter types have different file name prefaces:

- DLNum:** Data Logger (DL76)
- MTNum:** Logging Meter (WMX, A2000)
- RTMNum:** Rate Indicator/Newer Magmeter (iMAG 4700, AG3000, FT400)



Appending a File

Sometimes it is convenient to combine two or more data files from the same Logger to create a single continuous data set over a long period of time.

- From a clear graph screen (use File/Clear or the  button on the Tool Bar if necessary), click on File/Open to select the oldest file you wish to combine (either the older date, or if same date, earlier increment – see file naming convention above). Click Open. The first data set appears as a graph on your main screen.
- Now open the next file you wish to combine, using the File/Append menu. Select the file, click Open. The graph will include both data sets.
- You may continue to append additional files in the same way. When you have appended all the files you wish, click on the Show/Original menu to be certain you are viewing the entire file.

The resulting graph contains all the data points from the appended files, with flat lines in the interim periods when no data was being recorded. *At the top of the graph, notice that the Logger number is now followed by a plus sign (+), indicating that this is an appended file.*

The newly appended file will be automatically saved in the FIWORK folder, with a new file name that includes the date of the last appended file, and File Type A (appended). NOTE that it can infrequently happen that appended file names might duplicate each other; in this case, you can choose to increment number in the file name. (See Naming Convention, above.)

If you do not wish to save the Appended file, you may delete it after you are done working with the data. It can always be recreated as long as you save the original Logger files from which it was constructed. If you do save the Appended file, you may add another Logger file to it in the future.

File Save As

Occasionally a user may find a Data Logger file that when renamed by use of the 'Save As' function will alter the time frame of the file. In this case, the file can still be renamed without any shift in data as follows.

- Open the FIWORK file by clicking on 'File', then 'Open', find the original data file, RIGHT click on the file, and 'Copy' then RIGHT click anywhere in the FIWORK and 'Paste'.
- RIGHT click on that 'File Name - Copy' and 'Rename'. This will preserve the original file and rename the file.

Exporting the Data for Analysis

Sometimes it is desirable to create a spreadsheet using the raw flow readings; data exported to a spreadsheet can be manipulated to produce a wide variety of reports. With FlowInspector, you can export data in two formats: 1) .csv (automatically recognized by Excel) or 2) .txt (read by Notepad or convertible to Excel or other spreadsheet programs).

Exporting the Day Report (i.e., saving it with a different file extension)

1. Start with the main screen open to the graphed data that you want to capture and export.
2. Click Show/Day Report.
3. Click Export button. The FIWORK folder will open to the data file you are working with.
4. The "File Name" box will be auto-filled with a file named according to the convention described earlier, with the word "day" inserted into the name to indicate "day report".
5. In the "Save as Type" box at the bottom of the screen, use the arrow to select either .csv or .txt.
[NOTE: Excel versions 2003 and earlier were limited to only 65536 data points. If exporting to one of these earlier versions, you will receive a pop-up message if your file contains more than 65536 records. Click OK if you wish to continue exporting the file in full, realizing that when the file is opened in Excel, only the first 65536 records will be there. Alternatively, click CANCEL, use the Averaging Filter to reduce the number of data points in your file, and try exporting the file again.]
6. Click Save. Your data file is now saved to your computer in the format you chose.

Exporting the Graphed Data (i.e., saving it with a different file extension)

1. Start with the main screen open to the graphed data that you want to capture and export.
2. Click on the File/Export menu.
3. The "File Name" box will be auto-filled with a file named according to the convention described earlier.
4. In the "Save as Type" box at the bottom of the screen, use the arrow to select either .csv or .txt.
5. Click Save. Your data file is now saved to your computer in the format you chose.

Opening Exported Files

Opening .csv Files

Open your copy of Excel. Using the Excel File/Open menu, locate your exported .csv file in the FIWORK folder on the C drive of your computer. Select the file you wish to analyze, click Open. The .csv file will open directly in Excel.

Opening .txt Files

To open the .txt file in Notepad, locate the file in the FIWORK folder on your C drive; doubleclick on the file name.

To open the .txt file in Excel or another spreadsheet, first open your spreadsheet program. Using the spreadsheet's File/Open menu, locate your exported .txt file in the FIWORK folder on the C drive of your computer. Select the file you wish to analyze, click Open. A Text Import Wizard box will open. You will need to navigate through a series of screens. The only change you need to make to the defaults on these screens is to select the "Comma" box at one point. *Only experienced spreadsheet users should use the .txt option.*

Analyzing the Data

The spreadsheet will format in columns (date, time, flow rate, incremental volume, totalized volume). All normal spreadsheet functions can be used on this data, for instance, custom averaging and oddtime totalization (average flow rate and multiple by time span). Refer to Excel instructions on performing various functions. A representative spreadsheet page appears at right.

Index	Date	Time	Flow Rate(G/M)	Incremental Volume(G)	Totalized Volume(G)
2	0	9/21/2007	12:46:05	49	12
3	1	9/21/2007	12:46:20	96	24
4	2	9/21/2007	12:46:35	196	49
5	3	9/21/2007	12:46:50	96	24
6	4	9/21/2007	12:47:05	229	57
7	5	9/21/2007	12:47:20	100	25
8	6	9/21/2007	12:47:35	348	87
9	7	9/21/2007	12:47:50	104	26
10	8	9/21/2007	12:48:05	200	75
11	9	9/21/2007	12:48:20	84	21
12	10	9/21/2007	12:48:35	264	66
13	11	9/21/2007	12:48:50	0	0
14	12	9/21/2007	12:49:05	0	0
15	13	9/21/2007	12:49:20	0	0
16	14	9/21/2007	12:49:35	0	0
17	15	9/21/2007	12:49:50	0	0
18	16	9/21/2007	12:50:05	0	0
19	17	9/21/2007	12:50:20	0	0
20	18	9/21/2007	12:50:35	0	0
21	19	9/21/2007	12:50:50	0	0
22	20	9/21/2007	12:51:05	0	0
23	21	9/21/2007	12:51:20	0	0
24	22	9/21/2007	12:51:35	0	0
25	23	9/21/2007	12:51:50	0	0
26	24	9/21/2007	12:52:05	0	0
27	25	9/21/2007	12:52:20	0	0
28	26	9/21/2007	12:52:35	262	63
29	27	9/21/2007	12:52:50	392	98
30	28	9/21/2007	12:53:05	124	31

Problems with Exported Data

How the data logger works:

When recording data, the data logger does not keep track of the actual time and date. When the data logger is initialized, the current time and date are recorded from the set-up computer and this time and date are assigned to the first data point recorded as seen in the "Log File Info" under the "Show" tab.

When data is downloaded from the data logger, the time and date are recorded from the download computer and all the data points collected are divided into the elapsed time from set up until download.

Although the data logger will only keep values for a maximum of 65,535 data points, it will keep track of the total, and how many data points have been collected since initialization.

However, since the data logger does not know the actual time and date, if all power is lost to the meter (external and battery) the data logger will stop recording. If power is reestablished, the data logger does not know how long the power was off for, so it cannot fill in the lost time frame, and therefore will not record any other data until it is re-initialized.

If the data logger is not reinitialized after power is lost, the same number of data points will continue to be divided into an ever-increasing time frame which will give the impression of an active data logger, but closer examination will show that data from the same previously recorded times will show different values during different downloads

Be aware that the symptom here is that data for the same time frame will be different when viewed during different downloads, or the data logger will show flow when the user knows there was no flow, or the Total from the printed download screen never changes

To see if this has happened:

Click on the "Show" tab and select "Log File Info", under "Data Logger", check the "Cycle:" time. This is the time in seconds selected in the "Setup" screen (this can be checked at any time you are connected to the meter.) This cycle time in seconds should match within 0.01 seconds. If it is wildly off, the data logger has stopped and will need to be reinitialized.

The skewed data up to the point of power loss can be recovered.

In the Log File Info screen, divide the cycle time into the number of samples to determine the actual elapsed time and add that to the start time. Then change the time on a computer to match this time and date and download the data again. The result should be very close to accurate. Remember to change the time on the computer back to actual, or auto set the time.

Also, be certain to reinitialize the data logger.

Persistent error messages:

When downloading data, if a dialog box tells you "problem reading meter", "No meter (or data logger) found", check the date on the set-up screen to be certain the data logger was initialized (does not say the date is 00/00/2000)

If the data logger has been initialized but gives the error messages "data can't download", "problem downloading from meter", or "timeout error", retry a few times but if the error persists, cycle power (external and battery) and you should be able to download the data.

Be sure to reinitialize the meter as soon as data is downloaded because data collection stops when power is lost.

If Flow inspector will not communicate with your meter after initialization, cycle all power (external and battery) and reinitialize, then verify communications.

The limited warranty set forth below is given by Seametrics, with respect to Seametrics brand products purchased in the United States of America.

Seametrics warrants that products manufactured by Seametrics, when delivered to you in new condition in their original containers and properly installed, shall be free from defects in material and workmanship. **Seametrics products are warranted against defects for a minimum period of two (2) years from date of installation, unless otherwise specified, with proof of install date. If no proof of install date can be provided, warranty period will be two (2) years from date of shipment from Seametrics, as defined on Seametrics' invoice.** Seametrics' obligation under this warranty shall be limited to replacing or repairing the part or parts, or, at Seametrics' option, the products, which prove defective in material or workmanship. The following are the terms of Seametrics' limited warranty:

- a. Buyer must give Seametrics prompt notice of any defect or failure and satisfactory proof thereof.
- b. Any defective part or parts must be returned to Seametrics' factory or to an authorized service center for inspection.
- c. Buyer will prepay all freight charges to return any products to Seametrics' factory, or another repair facility, as designated by Seametrics.
- d. Defective products, or parts thereof, which are returned to Seametrics and proved to be defective upon inspection, will be repaired to factory specifications.
- e. Seametrics will deliver repaired products or replacements for defective products to the buyer (ground freight prepaid) to the destination provided in the original order.
- f. Products returned to Seametrics for which Seametrics provides replacement under this warranty shall become the property of Seametrics.
- g. This limited warranty covers all defects encountered in normal use of Seametrics products, and does not apply to the following cases:
 - i. Loss of or damage to Seametrics product due to abuse, mishandling, or improper packaging by buyer
 - ii. Failure to follow operating, maintenance, or environmental instructions prescribed in Seametrics' instruction manual
 - iii. Products not used for their intended purpose
 - iv. Alterations to the product, purposeful or accidental
 - v. Electrical current fluctuations
 - vi. Corrosion due to aggressive materials not approved for your specific product
 - vii. Mishandling, or misapplication of Seametrics products
 - viii. Products or parts that are typically consumed during normal operation
 - ix. Use of parts or supplies (other than those sold by Seametrics) which cause damage to the products, or cause abnormally frequent service calls or service problems
- h. A new warranty period will be established for repaired products, or products replaced during the original warranty period.
- i. In the event that equipment is altered or repaired by the buyer without prior written approval by Seametrics, all warranties are void. Damage caused by equipment or accessories not manufactured by Seametrics may void the product's warranty.
- j. SOFTWARE: The Seller grants the user a non-exclusive license to use Seametrics' software, according to the following limitations and conditions:
 - i. The user may install the software on one or more desktop or laptop computers.
 - ii. All title and intellectual rights to the software are owned by Seametrics.
 - iii. No copies may be made or distributed except as described above.
 - iv. The user may not modify or reverse-engineer the software.

THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, WHETHER ORAL, WRITTEN, EXPRESSED, IMPLIED OR STATUTORY. NO IMPLIED WARRANTY, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, APPLIED TO THE PRODUCTS AFTER THE APPLICABLE PERIOD OF THE EXPRESS LIMITED WARRANTY STATED ABOVE, AND NO OTHER EXPRESS WARRANTY OR GUARANTY, EXCEPT AS MENTIONED ABOVE, GIVEN BY ANY PERSON OR ENTITY WITH RESPECT TO THE PRODUCTS, SHALL BIND SEAMETRICS. SEAMETRICS SHALL NOT BE LIABLE FOR LOSS OF REVENUES, OR PROFITS, OR INCONVENIENCES, EXPENSE FOR SUBSTITUTE EQUIPMENT OR SERVICE, STORAGE CHARGES, LOSS OF DATA, OR ANY OTHER SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGE CAUSED BY THE USE OR MISUSE OF, OR INABILITY TO USE THE PRODUCTS, REGARDLESS OF THE LEGAL THEORY ON WHICH THE CLAIM IS BASED, AND EVEN IF SEAMETRICS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL RECOVERY OF ANY KIND AGAINST SEAMETRICS BE GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT SOLD BY SEAMETRICS AND CAUSING THE ALLEGED DAMAGE. WITHOUT LIMITING THE FOREGOING, YOU ASSUME ALL RISK OF LIABILITY FOR LOSS, DAMAGE, OR INJURY TO YOU AND YOUR PROPERTY AND TO OTHERS AND THEIR PROPERTY ARISING OUT OF USE OR MISUSE OF, OR INABILITY TO USE THE PRODUCTS NOT CAUSED DIRECTLY BY THE NEGLIGENCE OF SEAMETRICS.

SOME STATES DO NOT ALLOW LIMITATIONS ON THE DURATION OF AN IMPLIED WARRANTY, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. SIMILARLY, SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATIONS OF CONSEQUENTIAL DAMAGE, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS; HOWEVER, YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

