

The World Leader in Vibrating Wire Technology

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User's Guide
LogWare Software
Version 2.1

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Y2K Compliance Statement

Geokon LogWare was released as **Year 2000 Compliant** with version 1.0M, released March 1999.

For the purpose of this statement, the Standards for Year 2000 shall mean that:

- 1. No value for current date will cause any interruption in operation
- 2. Date-based functionality will behave consistently for dates prior to, during and after the year 2000.
- 3. In all interfaces and data storage, the century in any date will be specified explicitly, e.g. "98" is not recognized as a valid year while "1998" is. Windows users should make sure their date format is set to display dates in four digits.
- 4. Year 2000 will be recognized as a leap year.

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Section 1 Overview, Specifications and Technical Support

1.1 Overview

LogWare has been designed to make the job of datalogger configuration, monitoring, data collection and reduction easier and faster.

It includes many advanced features such as:

- Intuitive easy-to-use mouse driven interface.
- Context sensitive on-line help system.
- Comprehensive configuration options.
- Two types of real-time monitoring, text and graphically based.
- Terminal emulation for troubleshooting and monitoring.
- True 32-bit application designed for Windows[®] 95/98/ME/NT/2000/XP.

1.2 Specifications

Features:

- LogWare is an object oriented design implemented in 32-bit Delphi 5.0
- Charting component, TeeChart, by TeeMach, Ltd.
- Windows multiple document interface (MDI) application.
- Developed in a 32-bit environment for native functionality in Windows[®] 95/98/ME/NT/2000/XP.
- Help system developed using ForeHelp by ForeFront, Inc.

Requirements:

Platform: Windows[®] 95/NT Minimum memory: 16 MB (Win95/98), 32 MB (WinNT) Recommended memory: 32 MB (Win95/98), 48 MB (WinNT) Disk space required: 10 MB

1.3 Technical Support

Please contact Geokon if you encounter problems with the software, require assistance with installation or operation, or have helpful suggestions. Geokon may be contacted by one of the following means:

Phone: (603) 448-1562 Fax: (603) 448-3216 e-mail: info@geokon.com

Visit us on the web at http://www.geokon.com



Section 2 - LogWare Installation and Removal

2.1 LogWare Installation

The software is installed by running the setup program on the first disk. Put the disk into the drive, click the Windows[®] 95 **Start | Run** and then type **a:\setup.exe** <ENTER>. The Setup program will start.

Setup	×
;	LogWare Satup is preparing the InstallShield(r) Wizard which will guide you through the rest of the setup process. Please wait.
	34 %

The Welcome displays after the Setup program has loaded.



Click **Next>** to continue.

oftware Li	icense Agreement	×
;	Please read the following License Agreement. Press the PAGE DOWN key to see the rest of the agreement.	
delivered date of po express o for a parti defective or conse	IMER OF WARRANTY. Geokon warrants that the media on which the software is d shall be free of defects in material and workmanship for a period of 90 days from the burchase. Except for the foregoing, the software is provided "as is" and without warranty, or implied, including without limitation the implied warranty of merchantability or fitness ticular purpose. Our sole obligation under our warranty shall be to repair or replace the e media, at our option. Under no circumstances shall we be liable for special, incidental, equential damages, including loss of profits, regardless of whether we have been that such damages may be incurred.	
You may •use the •use the	OF GRANT. y: Software on one or more computers; Software on a network, provided that each person accessing the Software through the must have a copy licensed to that person	-
	accept all the terms of the preceding License Agreement? If you choose No, Setup will io install LogWare, you must accept this agreement.	_
	< <u>B</u> ack <u>Y</u> es <u>N</u> o	

Please read the license agreement in using LogWare. When you have finished click Yes to continue.

Section 2 - LogWare Installation and Removal

User Information	Туре усля в	ame below. You mus	t also type the nar	me of the company
	you work for			ine en and company
	N <u>a</u> me:	User		
	<u>C</u> ompany:	Company O		
		< <u>B</u> ack	Next >	Cancel

Enter your name and company in the User Information screen. Click Next> to continue.



The default destination of Program Files\LogWare should be used but if you would like the software installed to another directory click **Browse.** Click **Next>** to continue.

The default group LogWare should be used but if you would like to install the icons in another group select it using the list box. Click **Next>** to continue.

Start Copying Files		×
_	Setup has enough information to start copying the program fill you want to review or change any settings, click Back. If you a satisfied with the settings, click Next to begin copying files.	
	Current Settings:	
	Setup Type: Complete	<u> </u>
	Target Folder C:\Program Files\LogWare	
	User Information Name: User Company: Company Q	
	I	V
	< <u>B</u> ack <u>N</u> ext Car	icel

Click **Next>** after verifying the installation settings. First the Setup program will determine which files need to be installed. If the software had been previously installed on your machine only the updated files of LogWare will be copied.



Files to be installed will be copied to your hard drive then decompressed. Insert disks as required by the setup program.

Decompressing Files In C:\Program Files\LogWare logware.hlp			
14 %			
Cancel			

Once the copy process is complete the files will be registered, icons will be created and the initialization files will be updated.



Click Finish to complete the installation. You are now ready to run LogWare!

2.2 Windows[®] Removal

LogWare can be uninstalled from your system by selecting **LogWare** in the Windows[®] Control Panel Add/Remove Programs and then clicking Add/Remove. Click **Start | Settings | Control Panel | Add/Remove Programs | LogWare | Add/Remove.**

Add/Remove	Programs Properties	?	×	
Install/Uninst	Install/Uninstall Windows Setup Startup Disk			
	To install a new program from a floppy disk or CD-ROM drive, click Install.			
	Install			
्	The following software can be automatically removed by Windows. To remove a program or to modify its installed components, select it from the list and click Add/Remove.			
HP Deskto InstallShie Intel RSX 3	ld Express 2			
Macromedia FGS 7 Microsoft Office Professional Microsoft® Plus! for Windows® 95 Netscape Communicator Professional Edition				
	Add/ <u>B</u> emove			
	OK Cancel Apply	/		

Section 3 - Getting Started, Configuration, Collecting Data and Monitoring

3.1 Getting Started

Once the installation is complete the software can be started by clicking **Start | Programs | LogWare** and then double-clicking the **LogWare** icon. Alternately you may put a shortcut to the program on your desktop by right clicking your desktop then **New | Shortcut** then enter the path to the software (if the default paths were used for the installation it would be **\Program Files\Logware\Logware.exe**, or use the **Browse...** button), **Next | Finish**.

	_ 🗆 🗵
Help	
Bep Image: Configure Measurements - default.cfg Measurements Intervals Connection Data Configuration Configuration Start the Monitor Image: Configuration Image: Configuration Description: Sensor Description: Sensor Description: Sensor Description: Sensor Description: Sensor Units Conversion Units Sensor Description: Sensor	
Units Conversion Units Type: Default Input Units: None Coefficient A: 1.00000 Coefficient B: 1.00000	
	Configure Measurements - default.cfg Measurements Intervals Configuration File: default.cfg Datalogger Model Geokon LC-1 Use Yerify Settings Start the Monitorl Terminal Configuration Gage Configuration Linear Polynomial Linear Polynomial Linear Coefficients Zero Reading: 0.0000 Gage Type: Vibrating Wire Model 4000 Conversion Units Conversion Units Type: Default Input Units: None Polynomial Coefficient A: 1.00000 Coefficient A: 1.00000

By default, LogWare loads the last configuration file that was saved, after installation it is the file **default.cfg**. The configuration file stores information regarding the datalogger setup such as the measurement type, conversions and intervals. Connection information and data collection options and status are also stored in the configuration file. The **Project Path** indicates the folder where the configuration file and all related files will be stored.

You can see that the configuration form has 7 tabs across the top. The first two tabs, **Measurements** and **Intervals** describe what the datalogger will read and how often. These settings are stored in the configuration file. Tabs three and four, **Connection** and **Collect Data**, describe how the connection is made to the datalogger and the method and status of data collection. The last three tabs, **Monitor**, **Graphical Monitor** and **Terminal**, are used to connect to the datalogger and communicate.

You can load another configuration (after closing the one currently open) by using the **File** menu or right clicking on the background of the main form. When right clicking on the background a small menu will pop up as shown:

If multiple data files and a configuration file are all open at once they can be arranged using the **Window** menu. The LogWare help system is available using

New configuration file New data file	
Open configuration file Open data file	
Open setup file	
Exit	

Section 3 - Getting Started, Configuration, Collecting Data and Monitoring the Help menu.

3.2 Measurements Configuration

The first tab, **Measurements**, defines what type of instrument the datalogger will be reading and the conversions to be applied.

Configure Measurements - default.cfg Measurements Intervals Connection Data Collect	tion Monitor Graphical Monitor Terminal
Configuration File: default.cfg Datalogger Model: Geokon LC-1 Datalogger ID: DL1 Project Path: C:\Program Files\LogWare\	✓ Verify Settings Start the Monitor! Jse Ise
Gage Configuration Label: Sensor Description: Sensor Gage Type: Vibrating Wire Model: 4000	Conversion Method Cuinear O Polynomial Linear Coefficients Zero Reading: 0.0000 Gage Factor: 1.0000 Offset: 0.0000
Units Conversion Units Type: Default Input Units: None Output Units: None	Polynomial Coefficients Coefficient A: 1.00000 Coefficient B: 1.00000 Coefficient C: 1.00000

Configuration File

The configuration file stores the measurement and interval configuration for a given datalogger

The edit box displays the currently loaded file.

Load a different configuration file using the button.

Save the current configuration to the default file or to a new file by pressing the 🖩 button.

Datalogger Model

Select the datalogger you are using with the list box.

Note: Some features may not be available depending on the model selected. For example, when using the Geokon 8500/8510 datalogger the **Polynomial** Conversion Method will be disabled.

Datalogger ID

The datalogger ID is a character string that is used to identify the datalogger you are using and form the root of the data file names that are used to store collected data. This feature is not supported when using the Geokon model 8500/8510 dataloggers. When using the Geokon LC-1 the ID is limited to 16 alpha-numeric characters.

If using the Geokon LC-1 with firmware version 1.6 or higher (check the logger status while the monitor mode is active or use the terminal emulation to check the software version) click the "Use" box to download the ID to the datalogger when running the Update Settings procedure. When the ID is being used the datalogger will precede each array of data being transmitted with the ID. <u>Do not use any commas in the ID</u>.

For example, transmitted arrays with no ID;

1997,197,1827,37,2.85,26.9,239.3748,26.2,53796 1997,197,1827,47,2.85,26.9,239.3726,26.2,14876

Transmitted arrays with the ID "Well#1" being used;

Well#1,1997,197,1827,37,2.85,26.9,239.3748,26.2,53796 Well#1,1997,197,1827,47,2.85,26.9,239.3726,26.2,14876

As can be seen from the examples above the ID is useful where more than one datalogger is being used on a project and there is concern that during the data reduction if may be difficult to separate the data of one logger from another.

Project Path

The Project Path informs you of the default folder where the configuration file was saved to or loaded from. In addition this path will be used for all files that are related to a configuration and monitoring session. To change this path you must open a new configuration file or save your current configuration to a new folder.

The following files will be created and stored in the Project Path:

File Type	Extension	Description
Configuration File	.cfg	Contains all your datalogger & connection settings.
Data File	.dat	Contains data that you collect.
Data Capture File	.dat	Contains data written while the monitor mode is active.
Temp Data File	.dat	A temporary data file used during data collection.
Chart Template	.tee	The template used for your Graphical Monitor.
Com Trace File	.trc	An event oriented report of communication activity.
Com Log File	.log	A time oriented report of communication activity.

Label

The Label is 16 character identifier for the instrument. The Label will automatically be set as a prefix for the instrument **Reading** and **Temperature** fields on the Text Monitor tab.

Description

Instruments connected to the datalogger may have a description associated with them, this is designed to allow you to enter helpful information about the instrument, it's location, serial number, etc.

Gage Type

Select the gage type for the particular channel using the list box.

Note: Available gage types will depend on the datalogger model selected. Add new gage types and model numbers by editing the setup file. See section 5 in this manual for more information on editing the setup file.

Model

Select the model number of the instrument attached to the input channel using the list box.

Note: Available model numbers will depend on the Datalogger Model and Gage Type selected. Add new gage types and model numbers by editing the setup file. See section 5 in this manual for more information on editing the setup file.

Conversion Method

Select Linear to use the Linear Coefficients for converting the instrument reading to engineering units.

Select **Polynomial** to use the Polynomial Coefficients for converting the instrument reading to engineering units.

Note: When using the Geokon 8500/8510 dataloggers the Polynomial button will be disabled because the datalogger does not support this feature.

Linear Coefficients

When **Linear** is selected as the Conversion Method the **Zero Reading**, **Gage Factor** and **Offset** entered will be used to convert the raw instrument reading to engineering units. The equation follows this form;

Output = ((Zero Reading - R) x GageFactor) + Offset

The **Zero Reading** and **Gage Factor** are normally included on the instrument calibration certificate. They can also be generated with a spreadsheet program by performing a linear regression on the output units versus reading. **R** represents the current instrument reading, **Offset** represents a value to be applied to adjust the Output to some designed units, ie adjust a water level calculation to sea level by entering the instrument elevation as an Offset.

If the **Input Units** and **Output Units** feature is being used then the **Gage Factor** <u>and</u> **Offset** will be multiplied by the appropriate factor to complete the conversion.

Note: The Zero Reading that is entered will actually be rounded to the nearest 1/10 of a digit, i.e. a reading of 9734.16 will be rounded to 9734.2 before updating the datalogger. Likewise, when the verify function is run the value retrieved from the datalogger will be rounded and compared to the rounded value stored as the Zero Reading.

Polynomial Coefficients

When **Polynomial** is selected as the Conversion Method the three coefficients entered as **Coefficient A**, **Coefficient B** and **Coefficient C** will be used to convert the raw instrument reading to engineering units. The equation follows this form;

$$Output = (R^2 \times A) + (R \times B) + C$$

The **A**, **B** and **C** coefficients are normally included on the instrument calibration certificate. They can also be generated with a spreadsheet program by performing a linear regression on the output units versus reading and reading squared. **R** represents the current instrument reading.

When using the Polynomial conversion method the default reading units for a vibrating wire instrument is the frequency squared multiplied by 10^-6. For example, an instrument reading 3000Hz will output a value of "9.000" when A is entered as "0", B is "1" and C is "0". However, typically the calibration units for vibrating wire instruments is frequency squared multiplied by 10^-3. To adjust for this discrepancy between LC-1 expected units and calibration units **multiply the A coefficient by 1,000,000 and B coefficient by 1000!** The A & B coefficients can be found on the supplied calibration certificate. The C coefficient is used as is.

Note: The C coefficient can be used to "zero-out" the instrument readings. Enter the appropriate A and B coefficients in the edit boxes and set the C coefficient to 0. Update the datalogger with the modified settings and note the reading displayed. This value can then be entered as the C coefficient. **Remember to enter the value with the same magnitude but opposite sign!**

If the **Input Units** and **Output Units** feature is being used then all of the coefficients will be multiplied by the appropriate factor to complete the conversion.

Units Type

The Units Type defines the category of engineering units conversions currently in use. For example, **Pressure**, **Load** and **Distance** are the standard categories. Select **None** to disable the conversion of the gage reading as defined by the **Input Units** and **Output Units**.

Note: Additional engineering units categories can be added by editing the setup file of LogWare. See section 5 in this manual for more information on editing the setup file.

Input Units

Defines the units of the calibration constants. Consult the calibration sheet for the instrument to determine the units of the Linear Coefficients or Polynomial Coefficients.

Output Units

Defines how the instrument reading will be converted. New **Units Types**, **Input Units** and **Output Units** can be added by editing the setup file. See section 5 in this manual for more information on editing the setup file.



Use the <u>Verify Settings</u> button to check the current datalogger configuration against the LogWare configuration. At the end of the verify process a list will display indicating any discrepancies. Before running **Verify Settings** check your connection settings as indicated on the **Connection** tab. During the verify process a dialog will display showing you the progress. You may also abort the verify at any time by pressing **Abort**.

Update Settings

Use the **Description** button to match the datalogger configuration to the current LogWare measurements and intervals configuration. If the start time feature is disabled logging will start as soon as the update process is complete. Before running **Update Settings** check your connection settings as indicated on the **Connection** tab. During the update process a dialog will display showing you the progress. You may also abort the update at any time by pressing **Abort**.

Start the Monitor!

Use the Start the Monitor button to start the text and graphical monitoring modes. See sections 3.6 and 3.7 for more information on the monitor modes. Before running **Start the Monitor!** check your connection settings as indicated on the **Connection** tab. During the monitor start process a dialog will display showing you the progress. You may also abort the monitor start by pressing **Abort**.

Zero Reading

Use the Lise the datalogger to record a zero reading by automatically setting the zero reading to 0 and the gage factor to −1. The resultant measurement is then automatically saved to the Zero Reading location on the Measurements tab. Before running **Zero Reading** check your connection settings as indicated on the **Connection** tab. During the zero reading mode start process a dialog will display showing you the progress. You may also abort the zero reading start by pressing **Abort**.

Note: The Zero Reading is rounded to the nearest 1/10 of a digit. See Linear Coefficients for more information on the format of the Zero Reading.



Please waitVerifying configuration	×
Checking logging status	
50%	
X Abort	

70%

🗙 Abort

25%

🗙 Abort

lease wait...Updating configurat

Please wait...Starting the monitor mode.

Getting logger status...

Updating log intervals...

3.3 Intervals Configuration

The Intervals tab defines when readings are taken. A single interval can be used or logarithmic intervals using the values entered in the table. Start and stop times can also be used to only record data for certain periods or to synchronize the logging of multiple dataloggers.

😟 Configure Intervals - DL1	
Measurements Intervals Connection Data Co	llection Monitor Graphical Monitor Terminal
Interval Type	Logarithmic Intervals Table
 Single Interval: 60 (seconds) 	Length Iterations
C Logarithmic Intervals (see table)	Log Interval #2: 6 9
Start and Stop Times	Log Interval #3: 10 54
Use Start Time: 12:00	Log Interval #4: 30 180 Log Interval #5: 240 225
Use Stop Time: 12:00	Log Interval #6: 3600 0

Interval Type

Specify whether the **Single Interval** (as shown in box at right) or the **Logarithmic Intervals** (as shown in the table) are used to schedule readings.

When using the **Single Interval** the seconds entry will be used to schedule readings. If the seconds entry divides evenly into the time then readings will be synchronized with the real-time (unless the **Start Time** feature is being used). For example, entering 3600 will synchronize readings on the hour and every hour. The maximum interval length is 86400 seconds, the minimum is 1 second.

When using the Logarithmic Intervals the Logarithmic Intervals Table will be used to schedule readings. Enter up to 6 different interval lengths and iterations.

Start and Stop Times

To enable either the Start Time or Stop Time check the corresponding box. The respective time entered will be used. The time format is 24 hour. For example, to start the datalogger recording at 8 PM enter a start time of "20:00". To stop the datalogger recording at 9:30 PM enter a stop time of "21:30". The time format entered <u>must be HH:MM</u>.

This feature is useful for synchronizing the start of recording for more than one datalogger.

Logarithmic Intervals Table

If the Logarithmic Intervals are enabled the **Length** and **Iterations** table will be used to schedule readings. See the following guidelines for the **Length** and **Iterations** entries.

<u>Length</u> - The units are seconds. The maximum interval length is 86,400 seconds or one set of readings per day. The minimum interval length is 1 second. An entry of 0 is not allowed. The intervals <u>do not</u> synchronize with real time.

<u>Iterations</u> - The repetitions of each interval length. The maximum is 255. Entering 0 will repeat the interval length indefinitely.

3.4 Connection Configuration

Defines how the connection is made to the datalogger. Select the appropriate COM port, baud rate and connection device.

🛱 Configure Connection - default.cfg	
Measurements Intervals Connection Data Collection M	Ionitor Graphical Monitor Terminal
Use Network Address: 1	Make the <u>C</u> onnection!
Connection Settings COM Port: Baud Rate: © Direct COM1	
C Modem	Phone Number:
O TCP/IP	
8002 Modem	
Wakeup Configuration Enable Auto Wakeup Cell Wakeup Time: 00:00 Cell Sleep Time: 00:00	✓ ⊻erify Settings ☞ Update Settings ✓ Set Modern Clock Last Clock::

Network Address

Check the box to enable the network addressing when using the Geokon LC-1 datalogger. Use the list box to select the address, 1-32, of the datalogger.

Note: The datalogger must contain the necessary hardware and the DIP switches must be configured with a corresponding address.

Connection Settings

Specify how the connection will be made to the datalogger.

LogWare supports 3 types of devices:

- Direct Typically a serial port on the PC, but transparent devices such as wireless modems, shorthaul modems and certain RS-485 adaptors may also be used.
- Modem Typically a phone modem installed in the connecting PC. Connections over land line phone systems or cellular phone systems are possible using a phone modem.
- TCP/IP Typically a serial server, or serial port to TCP/IP networking device. Connections over a LAN/WAN or the Internet are possible using TCP/IP.

See the individual sections for more information on each device and it's configuration options.

Direct – COM Port

Select the COM port that is being used to communicate with the datalogger. This list is derived by checking the system to see which ports are installed.

Note: The list may include ports that are assigned to other communication devices installed in the PC, such as phone modems.

See Baud Rate for configuring the Port.

Direct – Baud Rate

Select the speed of communications for the connection to the datalogger. The default is 9600.

Modem – Device

Specify which **Device**, typically an installed modem, is to be used for communication with the datalogger. The drop-down list will contain a list of all installed TAPI devices, if your modem does not appear in the list then check the modem installation. Use the **Control Panel | Phone and Modem Options** for the modem configuration of the PC.

See Phone Number for configuring the Modem.

Modem – Phone Number

Enter the **Phone Number** to be dialed to establish the connection with the remote datalogger.

Note: Remember to include any additional codes to access outside lines. Also, use the comma character to provide delay between the code for accessing the outside line and the actual dialing of the number, e.g. **9**,,,**555** 1212

TCP/IP – Address

TCP/IP devices require an **Address**, expressed as 4 octets, or 4 8-bit values (0-255). The **Address** is entered in the form xxx.xxx.xxx where periods are used to separate the octects. Be sure to avoid leading zero's when entering the Address, e.g. enter **127.0.0.1**, NOT **127.000.000.001**

See Port for additional configuration when using TCP/IP.

TCP/IP – Port

The **Port** is a 16-bit value (0-65535) used in addition to the Address to establish the connection with the datalogger. The Port setting must match the configuration of the serial server used for the TCP/IP connection.

8002 Modem

The Model 8002 Modem is a low cost, battery powered and easy to use modem (v.34) designed specifically for applications involving remote connection to the Geokon model LC-1 Single Channel Datalogger and MICRO-10 datalogging systems.

See the Model 8002 Instruction Manual for more information on this modem.

LogWare can be used to configure the Model 8002 Modem, using the **8002 Modem** group on the **Connection** tab of the Configuration form.

NOTE: These configuration options can only be set if the 8002 Modem is installed and connected to an LC-1 datalogger. To set these options using a direct connection with Hyperterminal see the Model 8002 Instruction Manual.

Wakeup Configuration

When equipped with a cell phone the modem can automatically wake up the cell phone to provide a once-per-day communications window. This is designed to limit power consumption of the cell phone equipment, particularly an issue when the system is operated strictly from battery power.

- Enable Auto-Wakeup Check to enable the daily wakeup function.
- Cell Wakeup Time Enter the time (in 24-hour format) to wake the cell phone up which will allow incoming calls.
- Cell Sleep Time Enter the time (in 24-hour format) to put the cell phone to sleep which will disable incoming calls.

The buttons have the following functions:

🛛 🎸 🗸 erify Settings

Press to verify the settings shown match the 8002 Modem settings.

Press to update the 8002 Modem with the settings shown.

Set Modem Clock Press to set the 8002 Modem clock to match the PC.

The Last Clock will update with the 8002 Modem clock after pressing the Set Modem Clock button.

Make the Connection!

Use the <u>Make the Connection</u> button to verify the connection to the datalogger.

Any devices specified in the **Connection Settings** will be used to establish the connection.

Once the connection is established the **Make the Connection!** button will change to **Drop the Connection**.

Press Press to terminate the connection to the datalogger.

3.5 Collect Data

Specify what data you would like to collect and the format of the file. Press **Collect the Data!** to execute the selections you have made.

🏟 Download Data - default.dat	
Measurements Intervals Connection Data Colle	ection Monitor Graphical Monitor Terminal
Last Data Collection:	[™] <u>C</u> ollect the Data!
Collect Options	Data File Options
O Data Recorded Since Last Collection	 Append to Data File
All Data	🔿 Overwrite Data File
O Number of Arrays	C Create New Data File
Arrays: 250 (1-7999)	Data <u>F</u> ile: default.dat
File Format Options	Temperature Correction
Comma Delineated ASCII	Apply Temperature Correction
Comma Delineated ASCII (Y1900 date)	Initial Temp: 0.00
Single Well Solutions (Time, Drawdown)	Temp Factor: 1.00
About Single Well Solutions	Convert Temperature to Fahrenheit

Last Data Collection

If there was a previous successful data collection the date will be stored in this edit box.

Collect the Data!	
Press the Scollect the Data! button to execute the data	Please waitCollecting data
collection as defined by the Collect Options, File Format Options and Data File Options . While the data collection is proceeding a dialog box displays showing you the status. Press Abort to cancel the collection.	Collecting dataArray 1385 of 7999 collected
During the data collection the data are stored in the file tempfile.dat . If the data collection completes without error this file will be renamed or the data appended into an existing file as determined by the Data File Options setting.	Abort

Collect Options

▶ <u>Data Recorded Since Last Collection</u> - Select this option to use the pointers recorded at the Last Data Collection to determine how many arrays need to be collected. If there was no previous data collection ALL arrays in the dataloggers memory will be collected.

• <u>All Data</u> - Select this option to always collect all data stored in the datalogger's memory.

• <u>Number of Arrays</u> - Select this option to collect a specific number of arrays at each data collection.

Note: The collected arrays of data are handled as dictated by the File Format Options and the Data File Options.

File Format Options

This setting determines the format of the stored arrays.

▶ <u>Comma Delineated ASCII</u> - This is a standard format for importing into spreadsheets and other data processing programs. Values in the array are separated by commas.

Example array; 1996,239,1209,0,2.86,21.78,110.2425,12.89,34129

• <u>Comma Delineated ASCII (Y1900 Date)</u> - Values in the array are separated by commas and the year, month, day, hours, minutes and seconds are converted to a single fractional value to indicate the time that has elapsed from January 1st, 1900. This is commonly referred to as the Year 1900 date format. This date format is more easily manipulated when the data files will be imported into a spreadsheet program such as Microsoft Excel.

Example array; 1996,35910.341256,2.86,21.78,110.2425,12.89,34129

▶ <u>Single Well Solutions (Time, Drawdown)</u> - The arrays recorded consist of the time in minutes elapsed since the start of the test and the drawdown. This format is designed to be imported into the Single Well Solutions software for analyzing well response using water level data recorded during a drawdown test. The time 0 recorded in the data file corresponds with the time of the data collection. To insure that time 0 corresponds to the start of the test be sure to clear the memory of the datalogger prior to starting the test.

Note: When using the Single Well Solutions data file format the Output Units must be set to 'feet H20' to insure compatibility with the Single Well Solutions software!

Press the **About Single Well Solutions** button to display information on the Single Well Solutions software.

Example arrays;	0.0000,12.3451
	0.0833,12.1911
	0.1667,11.9827

Data File Options

When data collection is initiated and successful the collected arrays are copied to the file name in one of the following ways;

▶ <u>Append to Data File</u> - The collected arrays of data will be appended to the data file named in the data file edit box below.

▶ <u>Overwrite Data File</u> - The collected arrays of data will overwrite the data file named in data file edit box below.

• <u>Create New Data File</u> - A new file name will be generated (if the Datalogger ID is being used the file name will consist of the ID plus a 3 digit sequence number, if the Datalogger ID is NOT being used then the root name of your configuration file is used with a 3 digit sequence number) and then collected arrays of data will be stored to this file. If the file exists prior to collection the 3 digit sequence number will be increased until the file name is unique.

Select a new data file to store data to by typing the name in the data file edit box or clicking the button.

Note: If the data collection is aborted by the user, or otherwise does not complete, the data file named will not be modified. During data collection the file **tempfile.dat** is used to store the collected arrays. After an unsuccessful data collection this file may be saved for later review by renaming it.

Temperature Correction

Correction for temperature change may be applied to collected readings by checking **Apply Temperature Correction**.

When **Apply Temperature Correction** is enabled you may enter an **Initial Temp** and **Temp Factor** to be used for the correction.

The formula used follows this form:

Corrected Reading = Gage Reading - ((Current Temp - Initial Temp) * Temp Factor)

Note: The units for the Initial Temp and Temp Factor are degrees Celsius.

The Corrected Reading value may also be converted to degrees Fahrenheit by checking **Convert Temperature to Fahrenheit**.

3.6 Monitor

Display this tab for the text based monitoring screen.

🔅 Monitor Logger - DL1 📃 🔍		
Measurements Intervals Connection Data Collect	stion Monitor Graphical Monitor Terminal	
Current Reading		
Monitor Stopped Sensor Re	ading: pressure	
Sensor	Temp: C	
Stop the Monitor!	Temp: C Battery	
Clear Datalogger! Logger B	attery: volts Empty 0% Full	
Monitor the Clock Datalogger Clock: Computer Clock:	Logging Status Logging Status: Log Intervals Status: Current Scan Interval: second(s) Comparison Start Logging Stop Logging	
Data Capture Options Write Data File: monitor.dat Append File Overwrite File	Logger Status Software Version: Signature: Signature: System Resets: System Reset	

Press the Start the Monitor! button to establish the connection to the datalogger and begin monitoring. The next screen shot illustrates a typical active monitoring display. See the sections following describing the various features of the display. While working to establish the monitor mode a dialog displays showing the progress. Press **Abort** to end attempts to begin the monitor mode.

Please	waitStarting the monitor mode	×
Getti	ng logger status	
	60%]
	× Abort	_

Measurements Intervals Connection Data Collection Monitor Graphical Monitor Terminal Current Reading Sensor Reading: -6.9376 pressure Start the Monitor! Sensor Temp: 27.2 °C Stop the Monitor! Logger Temp: 26.1 °C Battery Image: Clear Datalogger! Logger Battery: 2.66 volts Empty Monitor the Clock 7/14/03.3:38:00 PM Cogging Status: Logging status: Logging status: Logging status: Log intervals disabled. Computer Clock: 7/14/03.3:38:12 PM Image: Status: Log intervals status: Log intervals status: Log intervals disabled. Computer Clock: 7/14/03.3:38:12 PM Image: Status: Stat Logging Stop Logging Set Datalogger Clock Stat Logging Stop Logging Stop Logging Data Capture Options Image: Status Software Version: 3.2 Signature: 65224 System Resets: 57088	🏟 Monitor Logger - DL1	
Monitor Started Sensor Reading: -6.9376 pressure Start the Monitor! Sensor Temp: 27.2 *C Start the Monitor! Logger Temp: 26.1 *C Battery Clear Datalogger! Logger Battery: 2.66 volts Empty 612 Monitor the Clock Conguer Clock: 7/14/03,3:38:00 PM Logging Status: Logging status: Logging status: Log Intervals Status: Log Intervals disabled. Computer Clock: 7/14/03,3:38:12 PM Start Logging Stop Logging Set Datalogger Clock Start Logging Stop Logging Data Capture Options Logger Status Software Version: 32 Signature: 65224 Write Data File: monitor.dat Software Version: 57088 Stop Logging	Measurements Intervals Connection Data C	ollection Monitor Graphical Monitor Terminal
Start the Monitor! Sensor Temp: 27.2 *C Stop the Monitor! Logger Temp: 26.1 *C Battery Clear Datalogger! Logger Battery: 2.66 volts Empty Empty Monitor the Clock: Datalogger Clock: 7/14/03.3:38:00 PM Logging Status: Logging statud. Log Intervals Status: Log Intervals disabled. Computer Clock: 7/14/03.3:38:12 PM Current Scan Interval: 30 second(s) Start Logging Start Logging Stop Logging Data Capture Options Logger Status Software Version: 32 Write Data File: monitor.dat Software Version: 32 Signature: E5224 Sustem Besets: 57088	-	
Stop the Monitor! Logger Temp: 26.1 °C Battery Image: Clear Datalogger! Logger Battery: 2.66 volts Empty 61 Full Monitor the Clock Datalogger Clock: 7/14/03,3:38:00 PM Logging Status: Logging status: Logging status: Log Intervals Status: Log Intervals Status: Log Intervals disabled. Computer Clock: 7/14/03,3:38:12 PM Image: Status: Imag	Monitor Started Sensor	Reading: -6.9376 pressure
Image: Construction of the construc	Start the Monitor! Sens	or Temp: 27.2 °C
Monitor the Clock Conging Status Logging Status Datalogger Clock: 7/14/03,3:38:00 PM Logging Status: Logging status: Computer Clock: 7/14/03,3:38:12 PM Log Intervals Status: Log intervals disabled. Computer Clock: 7/14/03,3:38:12 PM Status: Log intervals disabled. Computer Clock: 7/14/03,3:38:12 PM Status: Log intervals disabled. Current Scan Interval: 30 second(s) Stat Capture Options Software Version: 3.2 Write Data File: Monitor.dat Software Version: 3.2 Signature: 65224 Sustem Besets: 57088	Stop the Monitor!	er Temp: 26.1 °C Battery
Datalogger Clock: 7/14/03,3:38:00 PM Computer Clock: 7/14/03,3:38:12 PM Computer Clock: Start Logging Start Logging Stop Logging Computer Clock: Stop Logging	Clear Datalogger! Logge	r Battery: 2.66 volts Empty
Datalogger Clock: 7/14/03,3:38:00 PM Computer Clock: 7/14/03,3:38:12 PM O Set Datalogger Clock Current Scan Interval: Start Logging Stop Logging Data Capture Options Cogger Status Write Data File: monitor.dat Append File Software Version: Sugarture: 65224 Sugarture: 57088	Monitor the Clock	
Computer Clock: 7/14/03,3:38:12 PM Computer Clock: 7/14/03,3:38:12 PM Current Scan Interval: 30 second(s) Start Logging Stop Logging Data Capture Options Software Version: 3.2 Write Data File: Software Version: 3.2 Signature: 65224 Sustem Besets: 57088	Datalogger Clock: 7/14/03 3:38:00 PM	
Set Datalogger Clock Start Logging Stop Logging Data Capture Options Logger Status Write Data File: monitor.dat Software Version: 3.2 • Append File Signature: 65224 System Besets: 57088		
Data Capture Options Logger Status Write Data File: monitor.dat Software Version: 3.2 Image: Software Version: Signature: 65224 Sustem Besets: 57088		cullent scan interval. [50 second(s)
Write Data File: monitor.dat Software Version: 3.2 Signature: 65224 Sustem Reset: 57088	🔗 Set Datalogger Clock	Start Logging 🚫 Stop Logging
Write Data File System Besets: 57088	Data Capture Options	Logger Status
Append File Signature: 65224 Sustem Besets: 57088	Write Data File: monitor.dat	Software Version: 3.2
System Besets: 157088		Signature: 65224
		System Resets: 57088

Current Reading Panel

See the following descriptions for each item in the **Current Reading** section.

- Monitor Stopped Displays the current status of the monitor mode.
- 🔁 Start the Monitor! Press to activate the monitor mode.
- Stop the Monitor! Press to deactivate the monitor mode.
- 🝈 <u>C</u>lear Datalogger! Press to clear the datalogger memory. Use with caution!
- Sensor Reading: The last recorded instrument reading.
- Sensor Temperature: The last recorded instrument temperature.
- ▶ Logger Temperature: The last recorded datalogger temperature.
- ► Logger Battery: The last recorded datalogger battery voltage.

Displays the current status of the datalogger's batteries. When the capacity drops below 15% the batteries should be replaced.

Note: When the Start the Monitor function is activated the last array of data will be retrieved and displayed, the Datalogger Clock edit will display the date/time stamp of this array of data.

Monitor the Clock

Datalogger Clock - Displays the last date and time information received from the datalogger (the monitor) mode must be active).

Computer Clock - Displays the current computer clock. When the monitor mode is active the date and time information updates every second.

🕝 S<u>e</u>t Datalogger Clock

Press to set the datalogger's clock to match the computer. Note: Due to communication constraints it is not unusual to see 1-2 second differentials between the datalogger and computer clocks even after pressing the Set Datalogger Clock button.

Data Capture Options

The arrays of data that are displayed while the monitor mode is active can be saved to a data file by checking Write Data File. The data will be stored to the file displayed in the edit box. Select a new file using the button or typing the name directly into the edit box.

Check **Append File** to add the data to the end of the file named in the edit box.

Check **Overwrite File** to overwrite the file named in the edit box with the arrays displayed since the monitor mode was started.

Logging Status

▶ *Logging Status:* Describes the current status of logging. Only updated if the monitor mode is active.

▶ <u>Log Intervals Status</u>: Describes the current status of the log intervals. Only updated if the monitor mode is active.

• <u>Current Scan Interval</u>: If logging is started this will display the current recording interval. Only updated if the monitor mode is active.

Press.	🕃 St <u>a</u> rt Logging	to start the datalogger program and/or recording of data.
Press.	Stop Logging	to stop the datalogger program and/or recording of data.

Logger Status

Displays the following information about the datalogger currently being monitored;

▶ <u>Software Version</u> - The firmware version operating in the datalogger. Contact the factory for the latest versions available.

Signature - The signature of the firmware operating in the datalogger. This is a unique number calculated from the contents and order of the program memory which is used to verify the integrity of the firmware. Contact the manufacturer of the datatlogger for the signature values and corresponding software versions.

System Resets - The number of times the datalogger has been reset due to a program error, noise or other transient.

Note: The monitor mode must be started for the Logger Status information to be updated.

3.7 Graphical Monitor

In addition to the text based monitoring a chart is created while the monitoring mode is active using the configuration shown above the chart. When monitoring is stopped the chart displays with no data as shown below.



The screen shot below illustrates the graphical monitor while actively creating a chart. Following are explanations regarding customizing the data displayed and using the charting toolbar to customize the chart.



Х

Select the x-axis data to plot the series data against. The following options are available;

- <u>Sequence</u> The number of data points. The maximum is 1000.
- <u>Year</u> The year as reported by the datalogger.
- ▶ Julian Day The julian day as reported by the datalogger.
- *<u>Time</u>* The time of the reading as reported by the datalogger.
- <u>Seconds</u> The seconds of the reading as reported by the datalogger.

▶ <u>Decimal Day</u> - The decimal day as calculated from the datalogger data. It is calculated using the following equation:

Decimal Day = ((((Seconds/60) + Minutes)/60 + Hours)/24) + JulianDay-1)/365.25

To convert to the Decimal Year add the year to the result of the Decimal Day calculation.

- ▶ *Elapsed Days* The elapsed days from the start of graphing.
- ▶ *Elapsed Hours* The elapsed hours from the start of graphing.
- ▶ *Elapsed Minutes* The elapsed minutes from the start of graphing.
- *Elapsed Seconds* The elapsed seconds from the start of graphing.

Note: Use the charting toolbar to adjust the X axis scales.

Series

Select the data to plot on the chart. The following options are available;

- None No data will be plotted.
- ▶ <u>Logger Battery</u> The voltage of the datalogger batteries.
- ▶ <u>Logger Temp</u> The internal temperature of the datalogger.
- <u>Sensor Reading</u> The current sensor reading.
- ▶ <u>Sensor Temp</u> The current sensor temperature.

Note: Use the charting toolbar to customize the Y axis display.

Y

Select whether the series data is plotted on the left (Y1) or the right (Y2) of the graph.

Note: Use the charting toolbar to set the Y1 and Y2 scales.

Charting Toolbar

The toolbar at the top of the chart provides access to the functions of the charting tool, in addition to allowing customization of many of the charting options.



The following section will provide brief explanations for the button functions and chart functionality.

Allows zoomina in on select portions of the chart or scrolling the chart. To zoom in on a section of the chart hold the left mouse button and drag down to the lower right. You will see a box outline display over the chart. When the left mouse button is released the boxed section will be



expanded to fill the chart area. To revert back to the original size simply hold the left mouse button and drag to the upper left, you will again see a boxed section display, release the left mouse button to revert back to the original size. To scroll hold the right mouse button and drag left-right or up-down. Dragging left-right will scroll the X-axis, dragging up-down will scroll the Y-axis. Release the button to hold the scroll position.

Click to activate the Rotate function. Hold the left mouse button and drag left-right to rotate in the left to right plane, drag up-down to rotate in the up and down plane. The degree of rotation for each orientation is shown on the status line to the right of the toolbar, as shown.



Activate the Move function. Hold the left mouse button and drag left-right or up-down to move the chart. Offset values will display to indicate in pixels how far the chart has been moved, as shown.



 \odot Activates Zoom, to scale the size of the chart. Hold the left mouse button and drag up-down to decrease the size of the chart. Drag down-up to increase the size of the chart. Drag left-right or rightleft to decrease the size of the chart. The Zoom factor will show on the status line.

Adjust 3-D depth. Hold the left mouse button and drag left-right to increase the depth, drag right-left to decrease the depth. The 3-D depth will be shown in the status line, as shown.



3D Toggle the 3-D display. If the button is depressed 3-D is enabled, otherwise the chart is shown without 3-D, as shown. The previous 3-D settings, included the depth, rotation and position are retained so pressing 3-D again will revert the chart.



Display the Chart Editor. This provides access to all of the configuration options of the charting tool, of which there are many. Scales may be changed, titles added, and a myriad other modifications made to the display of the chart, including access to all the configuration options discussed so far. These settings will be saved in a chart template file, you will need to save your configuration file after adjusting the chart settings to save this template file. By saving the template file (it will be named using the root name of your configuration file with the extension .tee) you will be able to re-load the settings the next time you load this configuration file.



Note the **1** button located in the

upper right corner of the form. Press this button and then click on the chart editor option to display the help topic for that option. This manual will not provide further information on the chart editor, most options are self explanatory but consult the on-line help for further information.

Display the Print Preview form, as shown. You may change the default printer, setup of the printer, margins and other options prior to printing. Press **Print** to print the chart. Press **Close** to exit the Print Preview form.

Copy the current chart image as a bitmap to the Windows clipboard. This image may then be pasted into other Windows applications using the Paste button.

Save the current chart image in one of 4 formats,



Teechart Pro (template file, extension .tee), Enhanced Metafile (graphic format, extension .emf), Metafile (graphic format, extension .wmf) or Bitmap (graphic format, extension .bmp).

3.8 Terminal

The datalogger may be communicated with via the built in terminal emulation. Commands may be issued or the sequence of software generated commands and responses may be monitored. Consult the appropriate datalogger instruction manual for a list of the commands available using the terminal emulation.

To enable the terminal window simply click with the mouse pointer located in the window. The communication port will be opened and the terminal enabled.

The window shown below illustrates the terminal enabled and dialog with the datalogger.

🔅 Terminal Emulation - DL1 📃 📃 🔀
Measurements Intervals Connection Data Collection Monitor Graphical Monitor Terminal
*S MS:8000 OP:4587 UP:4587 GT: 1 ZR: 9000.000 GF: 0.01230 GO: 0.00000 Scan interval: 10 second(s). Logging started.
Log intervals disabled. Monitor mode disabled. *SP
Logging stopped. *SC30
Scan interval: 30 second(s). *ME
Monitor mode enabled. *ST
Logging started. 2000,182,0424,50,2.66,25.7,-6.9160,27.7,47887
*2000,182,0425,0,2.66,25.7,-6.9160,27.7,32347 2000,182,0425,30,2.66,25.7,-6.9169,27.7,64285 2000,182,0426,0,2.66,25.7,-6.9169,27.7,45258
2000,182,0426,30,2.66,25.7,-6.9188,27.6,57827 2000,182,0427,0,2.66,25.7,-6.9214,27.6,22457 2000,182,0427,30,2.66,25.7,-6.9214,27.6,32799
2000,182,0428,0,2.66,25.7,-6.9214,27.5,61802

Section 4 - Data File Editor, Spreadsheet and Charting

4.1 Data File Editor

The data file editor allows you to load the data files that have been collected, edit them as needed, resave them, or use them to quickly generate charts using the same charting component as exists in the configuration form.

The File option on the main menu can be used to open a data file or right click on the background. Select **Open... | Data file...** to display the open data file dialog. Select **sample1.dat** and press **Open**.

Open		?	×
Look <u>i</u> n:	🔄 LogWare 🗾 🖻	<u>*</u>	
LogWare	1		
	•		
, File name:	sample1.dat	<u>O</u> pen	
-	Data files		
Files of type:		Cancel	
	C Open as read-only		

The screen shot below depicts the editor with the file **sample1.dat** loaded.

Edit Data File - sample1.dat	_ 🗆 ×
Data Editor Select Chart Data Charting Tool	
1996,141,0300,0,3.07,25.1,319,9090,25.9,11362	
1996,141,0320,0,3.07,24.9,319.8999,25.9,36221	
1996,141,0340,0,3.07,24.7,319.8921,25.9,62508	
1996,141,0400,0,3.06,24.3,319.8853,25.9,14755	
1996,141,0420,0,3.07,24.2,319.8797,25.9,44485	
1996,141,0440,0,3.06,24.0,319,8741,25.9,30105	
1996,141,0500,0,3.06,23.7,319.8673,25.9,64585	
1996,141,0520,0,3.06,23,4,319,8583,25,9,65024	
1996,141,0540,0,3.06,23.2,319.8493,25.9,7379 1996,141,0600,0,3.06,22.9,319.8437,25.9,2677	
1996,141,0600,0,3.06,22,9,319,8457,23,9,2677	
1996,141,0640,0,3,06,22,9,319,8324,25,9,5715	
1996,141,0700,0,3.06,22,9,319,8234,25.9,17835	
1996,141,0720,0,3.06,23.1,319.8177,25.9,2636	
1996,141,0740,0,3,06,23,5,319,8121,25,9,8147	
1996,141,0800,0,3.07,24.9,319,8084,25.9,49716	
1996,141,0820,0,3.07,26.7,319.8016,25.9,33612	
1996,141,0840,0,3.07,28.2,319.8027,25.9,61472	
1996,141,0900,0,3.07,29.6,319.8016,25.9,47338	
1996,141,0920,0,3.08,30.8,319.7959,25.9,2378	
1996,141,0940,0,3.08,31.5,319,7971,25.9,16532	
1996,141,1000,0,3.08,31.9,337.6684,25.9,38105	
1996,141,1020,0,3.08,33.6,342.6578,26.1,21536	
1996,141,1040,0,3.09,36.2,346,2509,26.4,63780 1996,141,1100,0,3.09,38.0,348,6284,26.6,43855	
1936,141,1100,0,3.03,38.0,348.6284,26.6,43833 1996,141,1120,0,3.09,39.0,349.9852,26.8,49725	
1996,141,1140,0.3,09,39,0,335,0509,27,0,60031	
1996.141,1200.0.3.09.36.0.334.1707,27.0.14668	
1996.141,1220,0,3.09,35.3,348.9944,27.0,15853	
1996 141 1240 0 3 09 37 9 351 5249 27 1 58352	•
Lines: 438 Size: 20437 bytes	
, , , , ,	

There are three tabs arranged across the top of the form explained in the following sections.

Section 4 - Data File Editor, Spreadsheet and Charting

Toolbar functions are as follows:



Press to open another data file. If the current file has been modified you will be prompted to save your changes or discard.

□ Press to save the current data file. If a new file you will be prompted for a file name. If a previously loaded file the loaded file name will be used.

- \bigcirc Press to save the current data file using a different file name.
- I → Press to print the current data file to the default printer.
- 🕼 🐰 Cut the current selection to the clipboard.
- 🗇 🛅 Copy the current selection to the clipboard.
- 🗇 🛱 Paste the clipboard contents to the current cursor position.
- \bigcirc **X** Delete the current selection.
- 🗇 🖬 Select the entire currently loaded data file.
- The second secon
- Bytes: Displays the size in bytes of the currently loaded data file.

4.2 Select Chart Data

Press this tab to select the data for the charting component. This can be used to generate charts of your data in seconds.

Select Chart Data - untitled.cht		- D ×
Data Editor Select Chart Data Charti	ng Tool	
⊤Select X-axis Data Julian Day	Select 1st Series Sensor Reading	
Date Format © Julian Day © Month, Day	Select 2nd Series	
C Hour, Minute	Select 3rd Series	
	Select 4th Series	

See the following sections regarding the various options.

Select X Series Data

See the explanation in section 3.7

Date Format

Defines how the date has been recorded in the data arrays. The Geokon LC-1 datalogger has the option of storing the date as month, day instead of the Julian day, by setting a DIP switch on the printed circuit board.

The default setting is "Julian Day".

Time Format

Defines how the time has been recorded in the data arrays. The Geokon LC-1 datalogger has the option of storing the time as hour, minute instead of the 24 hour format, by setting a DIP switch on the printed circuit board.

The default setting is "24 Hour".

Select Series

See the explanation in section 3.7

Y1/Y2

See the explanation in section 3.8

4.3 Charting Tool

Once you have finished specifying the configuration of the chart click this tab to automatically copy the data from your data file to the chart. While the chart is being generated a dialog will display showing you the progress. Click **Abort** to abort the chart generation and return to the **Select Chart Data** tab.



When all the data has been loaded the chart will display.



See the **Charting Toolbar** portion in section 3.7 for information on modifying the appearance of the chart.

Section 5 – LogWare Setup File

5.1 Setup File Editor

The setup file, **logware.ini**, defines certain features such as the startup file, units conversions, and gage types.

🚼 Edit Setup File - logware.ini	_ 🗆 ×
[Startup] Load Config=true Last Config=default.cfg	^
[Chart] Max Points=1000 Redraw=true	
[Terminal] Font=Terminal Size=8	
[Baud Rates] Rate#1=300 Rate#2=1200 Rate#3=9600	
[Units] Conversion#1=DefaultNone,None,1.0 Conversion#2=Pressure,psi,psi,1.0 Conversion#3=Pressure,psi,inches H2O,27.730 Conversion#4=Pressure,psi,feet H2O,2.3108 Conversion#5=Pressure,psi,millimeters H2O,704.32	

Setup File Editor Toolbar



The Press to open another setup file. If the current file has been modified you will be prompted to save your changes or discard.

🐨 🖬 Press to save the current setup file. If a new file you will be prompted for a file name. If a previously loaded file the loaded file name will be used.

 \bigcirc Press to save the current setup file using a different file name.

The Press to print the current setup file to the default printer.

- 🐨 👗 Cut the current selection to the clipboard.
- 🗇 🛅 Copy the current selection to the clipboard.
- 🗇 🖺 Paste the clipboard contents to the current cursor position.
- \bigcirc **X** Delete the current selection.
- 🗇 🗃 Select the entire currently loaded setup file.

Section 5 – LogWare Setup File

Setup File Features

[Startup]

The two settings under this topic determine whether a configuration file will be loaded at startup and, if so, which specific configuration file. The two keys are **Load Config=** and **Last Config=**. If the value for the **Load Config=** key is "true" then the file specified by the **Last Config=** key will be loaded at startup. Set to "false" to disable loading of the last configuration file. The last configuration file edited by LogWare is recorded as the **Last Config=** key.

[Chart]

The two keywords are **Max Points=** and **Redraw=**. Max Points defines the maximum number of data points that will be plotted in the graphical monitor. Enter and integer between 100 and 1000. The default is 200. Redraw indicates whether the entire chart will be redraw each time a point is added or the data is just tacked on to the end of the chart. Specify "true" or "false". When Redraw is false it is common that a portion of the chart on the right will not display any data points.

[Terminal]

The font style and font size used in the terminal emulator window are configured by the **Font=** and **Size=** keywords.

[Baud Rates]

The available baud rates used to connect to the datalogger are listed as keywords. The defaults rates are 300, 1200 and 9600.

[Units]

The [Units] topic defines the contents of the Units Type, Input Units and Output Units lists. These lists configure the conversion of the gage reading to other engineering units. For example, assume the calibration of a piezometer is in psi but the datalogger should record the level of water in a well in terms of feet or meters of water. In this case, the calibration coefficients for the piezometer would be entered in terms of psi but the Units Type would be set to "Pressure", the Input Units to "psi" and the Output Units to "feet H20" or "meters H20". The datalogger output will now be in terms of feet or meters of water.

Each Units Type is entered in the setup file preceded by "Conversion#=" where # is the sequence. The options of "Pressure", "psi", "feet H20" and "meters H20" are all defined in the setup file under the [Units] topic. For example, the "Pressure" type is entered as "Conversion#2=Pressure,psi,psi,1.0". Each conversion for Pressure is listed preceded by the "Pressure" type. The format is: Units Type, Input Units, Output Units, conversion factor. For example, the entry for Units Type of "Pressure", Input Units of "psi" and Output Units of "feet H20" is "Conversion#4,psi,feet H20,2.3108". Other Units Type, Input Units and Output Units can be entered in the setup file by following the format described above. When adding conversions to the list be sure to increment the sequence number following the "Conversion#" keyword!

[8500/8510 Gage Types]

Enter the Gage Types and Models that will list when the Geokon 8500/8510 datalogger is selected as the Datalogger Model. Use this format for entering additional gage types: **Type#n=Gage Type, Model, units, gage type number**.

The **Gage Type** and **Model** are used to populate the list boxes on the measurements tab. The **units** is a description of the gage reading that follows the reading displayed in the Monitor Mode. The **gage type number** corresponds to the setting in the datalogger for that instrument type. See the Geokon Model 8500/8510 Instruction Manual for a list of available gage type numbers.

For example, the Geokon Model 4000 is entered as Type#1,Vibrating Wire,4000,microstrain,3

When adding gage types to the list be sure to increment the sequence number following the 'Type#' keyword!

[LC-1 Gage Types]

Enter the Gage Types and Models that will list when the Geokon LC-1 datalogger is selected as the Datalogger Model. Use this format for entering additional gage types: **Type#n=Gage Type, Model, units, gage type number**.

The **Gage Type** and **Model** are used to populate the list boxes on the measurements tab. The **units** is a description of the gage reading that follows the reading displayed in the Monitor Mode. The **gage type number** corresponds to the setting in the datalogger for that instrument type. See the Geokon Model 8001 Instruction Manual for a list of available gage type numbers.

For example, the Geokon Model 4000 is entered as Type#1,Vibrating Wire,4000,microstrain,3

When adding gage types to the list be sure to increment the sequence number following the 'Type#' keyword!