# DATALOGGER SOFTWARE USER GUIDE

February 25, 2021

**NOTE: Fully test all data logging and associated equipment before field installation.**

## LIMITATION OF REMEDIES

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# TABLE OF CONTENTS


SETTING UP YOUR COMPUTER....1
INSTALLING PROLOG 4....1
PROJECTS....2
SETTING YOUR PROJECT OPTIONS....3
ENTERING YOUR KEY CODE....4
CONNECTING YOUR DATALOGGER TO YOUR COMPUTER....5
GENERATION 2 CONNECTION....5
GENERATION 1 CONNECTION....6
CCUSB Cable....6
Serial COM Port....6
USB COM Port....7
DOWNLOADING YOUR DATA....8
WORKING WITH YOUR DATA....9
ACCESSING YOUR STORED DATA....10
WORKING WITH THE GRAPH....11
ZOOMING BY DRAWING BOXES....11
USING THE MOUSE SCROLL WHEEL TO ZOOM AND PAN....12
WORKING WITH A TWO BUTTON MOUSE....12
ANNOTATING THE GRAPH....12
COPYING THE GRAPH TO THE WINDOWS CLIPBOARD....13
WORKING WITH THE DATA IN EXCEL....14
CHECKING THE STATUS OF YOUR DATA LOGGER....14
CHECKING THE SUMMARY SCREEN....15
RESTARTING YOUR DATA LOGGER'S RECORDINGS....16
CHECKING YOUR DATA LOGGER'S BATTERY....17
SETTING THE DATA LOGGER'S CLOCK....18
CHECKING AND LEAVING NOTES ABOUT THE SITE IN THE DATA LOGGER. .19
CHECKING THE SENSORS....20
CHANGING YOUR DATA LOGGER'S CONFIGURATION....22
WHERE TO FIND MORE INFORMATION....25
ACCESSING THE HELP FILES....25
OBTAINING TECHNICAL SUPPORT....25

# SETTING UP YOUR COMPUTER

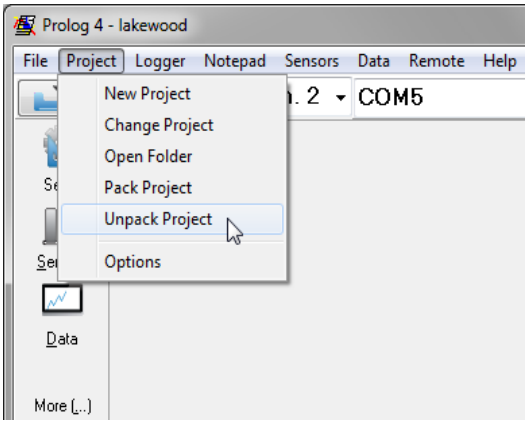
## INSTALLING PROLOG 4

To Install Prolog begin by going to http://lakewooddata.com/downloads/prolog4/ and downloading Prolog-4-X-X.exe. Alternatively if a flash drive was provided, insert the flash drive into your computer and run the Prolog-4-X-X.exe. The Install Wizard will guide you in preparing the software on your computer.

**NOTE: It is recommended that your previous versions of Prolog are uninstalled prior to installing Prolog 4.**

# PROJECTS

A project contains all of the configuration information for Prolog to work with your data loggers. Your project also contains previously downloaded data from your data loggers, and specific software settings for Prolog to use. All of the information is kept in a base folder for the project. Once Prolog is installed on your computer, you can load any projects you may have. By clicking on **Project,** found on the menu bar, you can select a function from the list below.




**PROJECT OPTIONS TAB**

**New Project** – Creates a new project separate from the others.

**Change Project** – Opens a window to allow switching to another existing Project folder.

**Open Folder** – Opens a file explorer window to the Lakewood folder on your hard drive.

**Pack Project** – Saves a project and its settings into a compressed file ending in .ppf that can be easily transferred between computers.

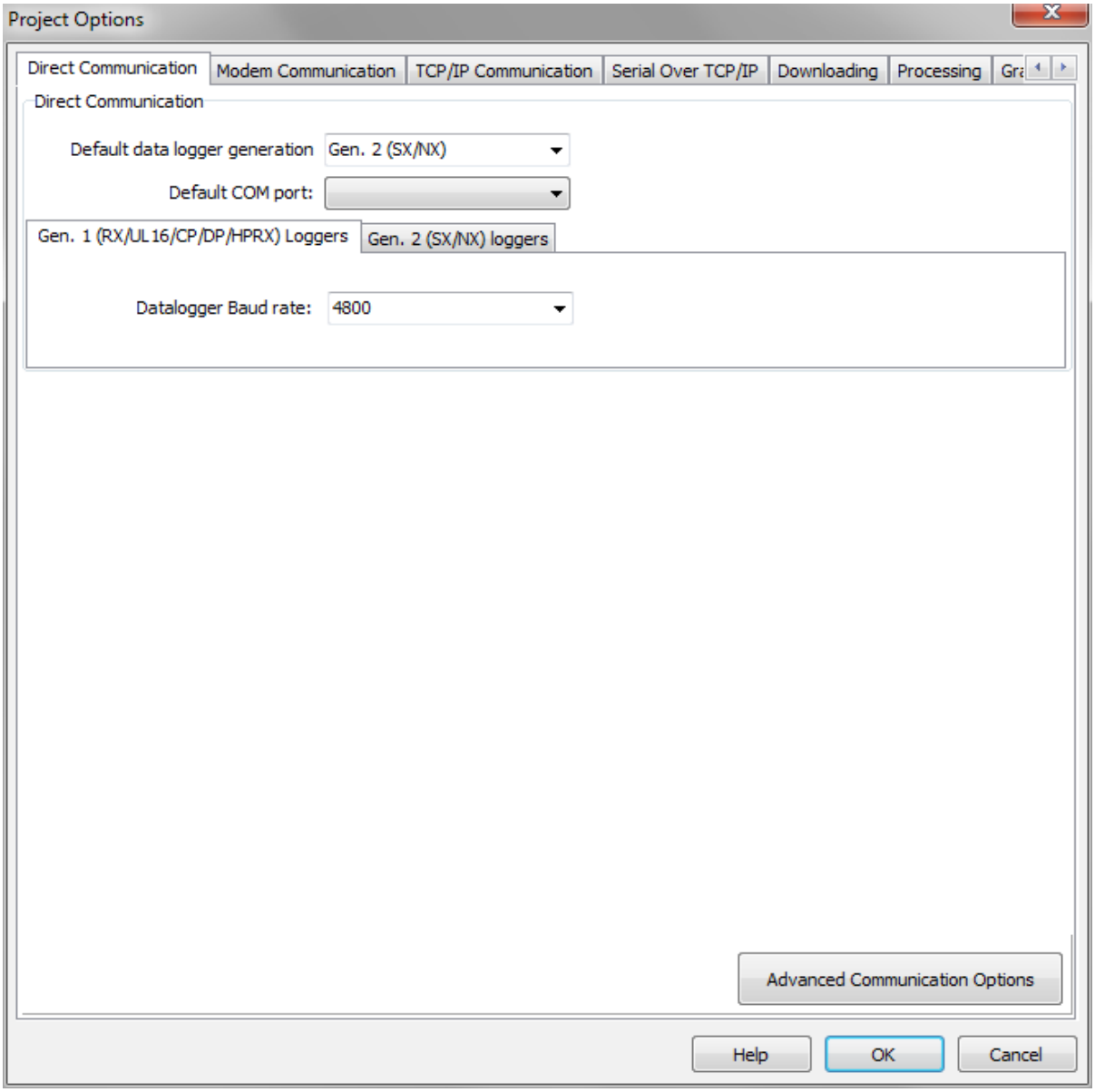
**PPF EXAMPLE**

**Unpack Project** – Opens a packed project and creates a file for it in your Lakewood folder.

**Options** – Make changes or edit project settings.

# SETTING YOUR PROJECT OPTIONS

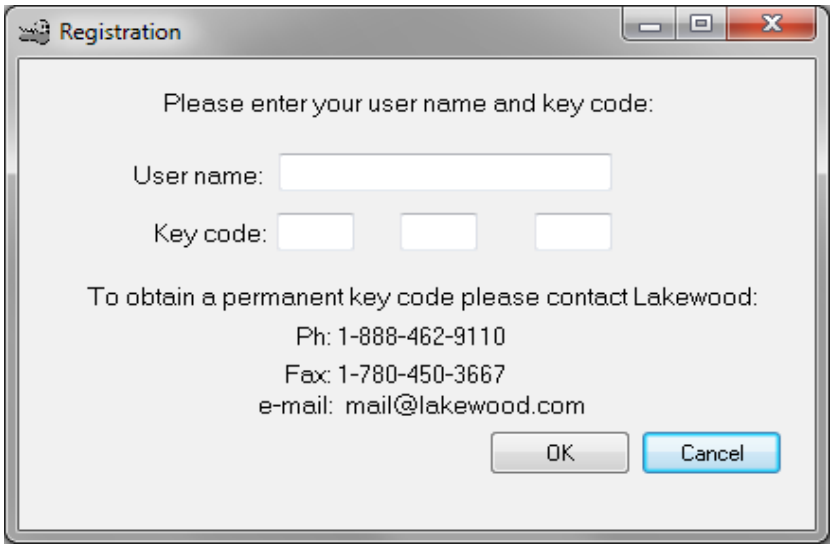
When you add a new project or run Prolog for the first time, the project options form will appear. It is a good idea to check your communication options at this time. Ensure that the communications port and baud rate are set correctly. By default the Gen 1 loggers have a baud rate of 4800 while the Gen 2 loggers have a baud rate of 115200. If you need to change your project settings at any time, the project options form can be accessed by selecting **Options** from the **Project** menu at the top of the program.




**PROJECT OPTIONS FORM**

## ENTERING YOUR KEY CODE

By default, Prolog software installs as a 30 day trial program. To permanently unlock the software select **Registration** from the **Help** menu. You then need to enter your user name and key code to unlock the software permanently. Your user name must be entered exactly as it was given to you.




**THE REGISTRATION FORM**

**NOTE: Your key code is tied to your specific user name. They will only unlock the software if they are used together.**

# CONNECTING YOUR DATALOGGER TO YOUR COMPUTER

**GENERATION 1 RX UNIT (LEFT) AND GENERATION 2 TSR UNIT (RIGHT)**

## Generation 2 Connection

The Generation 2 TSR logger can be connected to any computer with a USB port using a mini USB cable.

**TSR USB CONNECTION**

# Generation 1 Connection

The connection from your computer to your RX data logger can be made in a variety of ways.

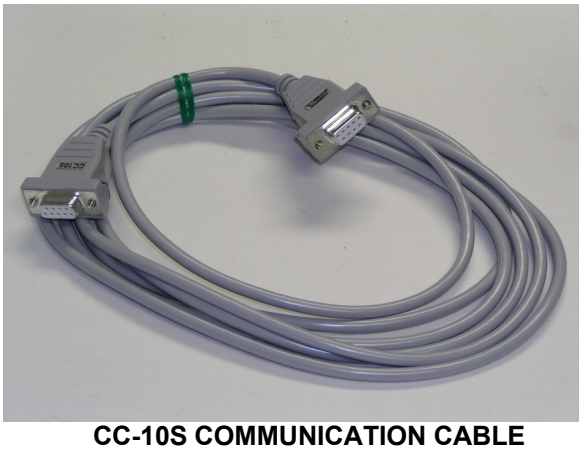
## CCUSB Cable

The most common connection to the Gen 1 RX unit is the CCUSB cable. This can be connected to the com port on the case or directly to the logger inside the case.

**CCUSB COMMUNICATION CABLE**

## Serial COM Port

Direct serial connections can be made through Lakewood System's CC-10S communications cable by plugging into a computer's serial port

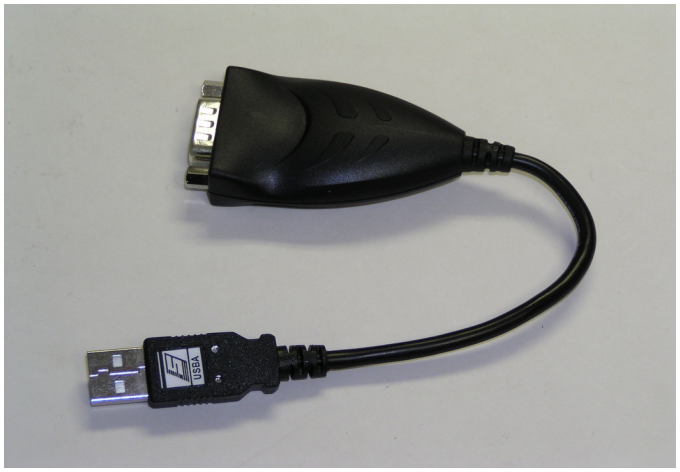


**CC-10S COMMUNICATION CABLE**
**COMPUTER SERIAL PORT**

**NOTE: Not all serial cables work with Lakewood data loggers. An incorrect cable could damage your computer with certain data logger configurations.**

## USB COM Port

If your computer does not have a serial port, another way to connect directly is by using a standard USBA to serial connector. This converts the serial communications to USB however it does require additional drivers to operate.

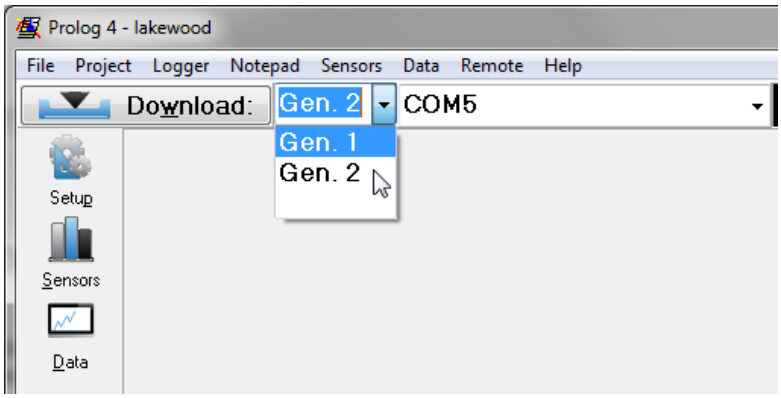


**TYPICAL 3RD PARTY USB TO SERIAL CONNECTOR**

**NOTE: Not all USB to serial converters work with Lakewood data loggers.**

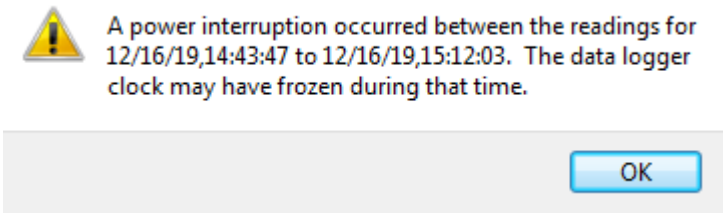
# DOWNLOADING YOUR DATA

After properly installing Prolog 4 and ensuring that the data logger is correctly connected to your computer. Prolog should automatically start up and begin downloading upon detecting the logger. Prolog will also select the correct COM port and logger generation. If however the logger was not properly detected. The user can manually select the logger generation and COM port via the drop down menus.



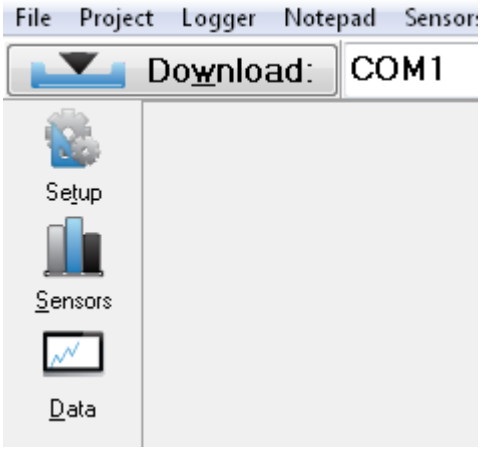

**GENERATION SELECT AND COM PORT SELECT DROP DOWN MENUS**

If a data logger has been unpowered for some time it is normal for some errors stating that there was a power interruption and that the clock time is incorrect to occur.




**EXAMPLE OF ERROR THAT COULD OCCUR ON FIRST TIME SETUP**

If data needs to be downloaded manually, simply click the **Download** button found on the top left of the screen.




**DOWNLOAD BUTTON**

# WORKING WITH YOUR DATA

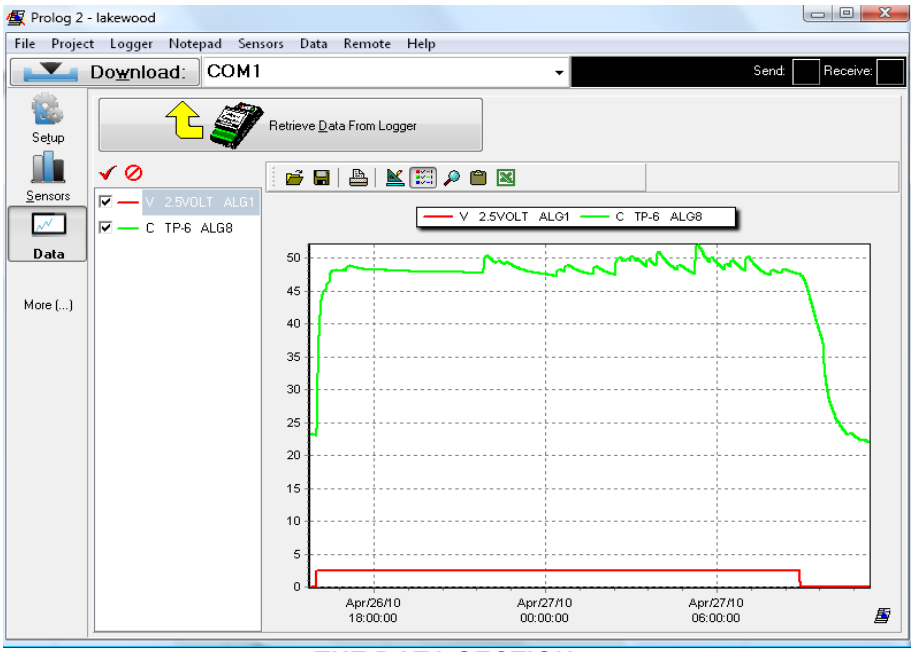
Once your download is complete, a graph will appear. Prolog has automatically created a Lakewood Site File (.lsf). The name of the site file is displayed on the top bar. All of the site files are saved in the site folder in your project base folder The site file contains all the important information pertaining to your site. It includes current site readings of your sensors, data logger settings, status, notepad, and most importantly your recorded data. To access your site files click on file at the top of the screen and select open site download. Through the file menu you can also choose to save the site file or begin a new site download.

**THE DOWNLOAD BUTTON**

**NOTE: It is important to check the condition of your battery and data logger memory while in the field.**

The **Data** button allows you to view and analyze your data. Your recordings can be observed as a chart (graph) as well as in tabular form. Your data can also be transferred to spread sheets, reports, e-mails and other forms of documents.

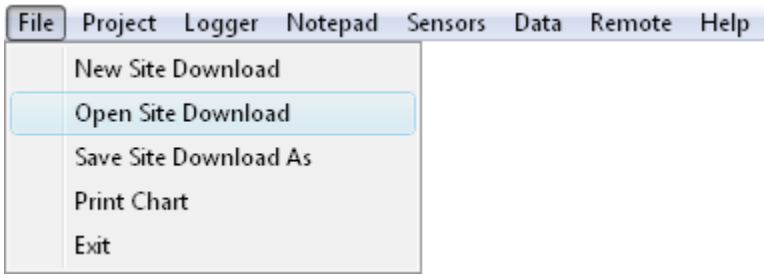
**THE DATA BUTTON**




**THE DATA SECTION**

## ACCESSING YOUR STORED DATA

The site file created by pressing the **Download** button can be reopened by clicking on file at the top of the screen and selecting open site download. Once your site file is selected and opened you will have the ability to examine your data, use it in a spread-sheet or paste it into a document. If you do not wish to open the entire site file and would just like the Data, click on **Data** at the top of the screen and select open data. You will also have the option to select new graph or save data as if you want to rename your data after any edits you have made.

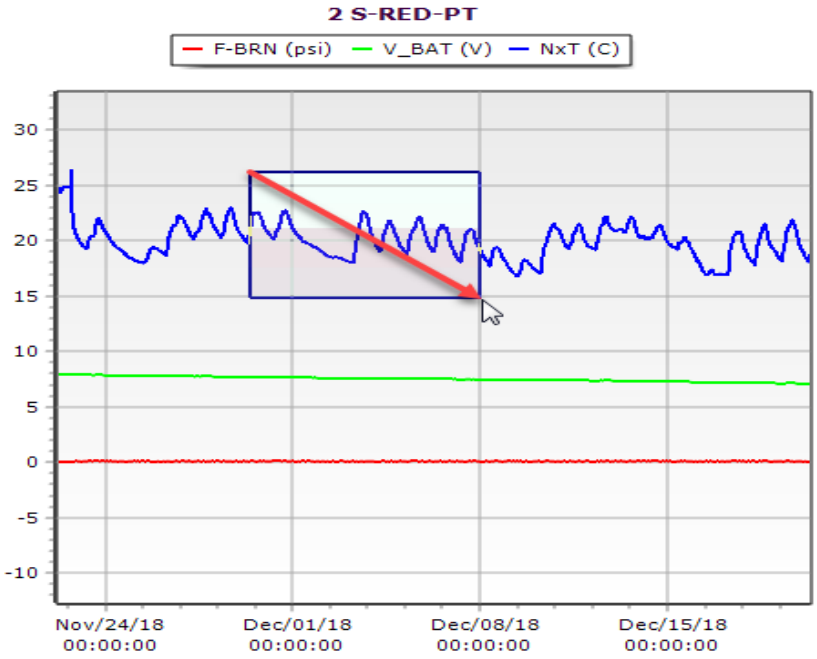



**CLICK ON FILE THEN OPEN SITE DOWNLOAD TO LIST YOUR DOWNLOADED AND PREVIOUSLY SAVED SITE FILES**

# WORKING WITH THE GRAPH

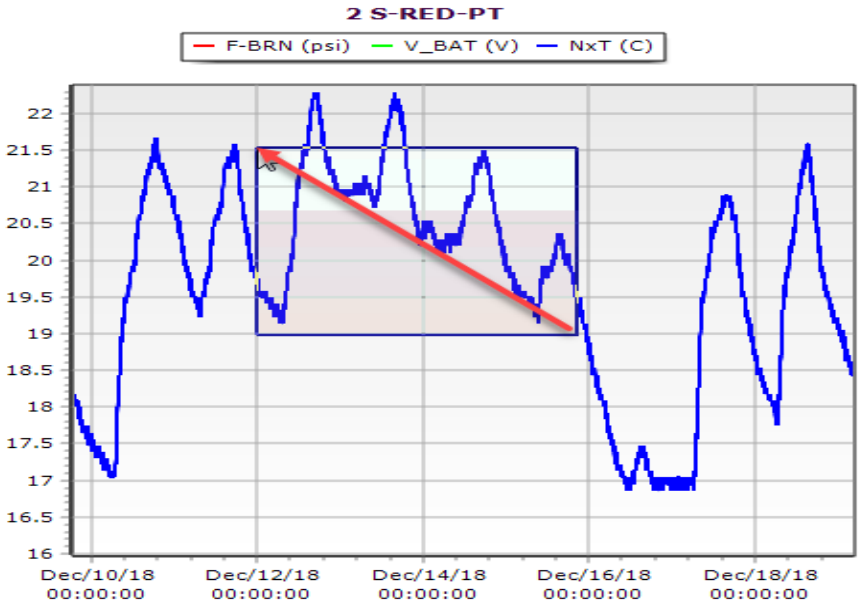
## ZOOMING BY DRAWING BOXES

You can zoom into a specific region by holding down the left mouse button and drawing a box from an upper left point on the graph to a lower right point on the graph and releasing the button.




**DRAWING A BOX TO ZOOM THE GRAPH**

To return to the original zoomed out state, draw a box from a lower right point to an upper left point on the graph.




**DRAWING A BOX TO ZOOM OUT**

## USING THE MOUSE SCROLL WHEEL TO ZOOM AND PAN

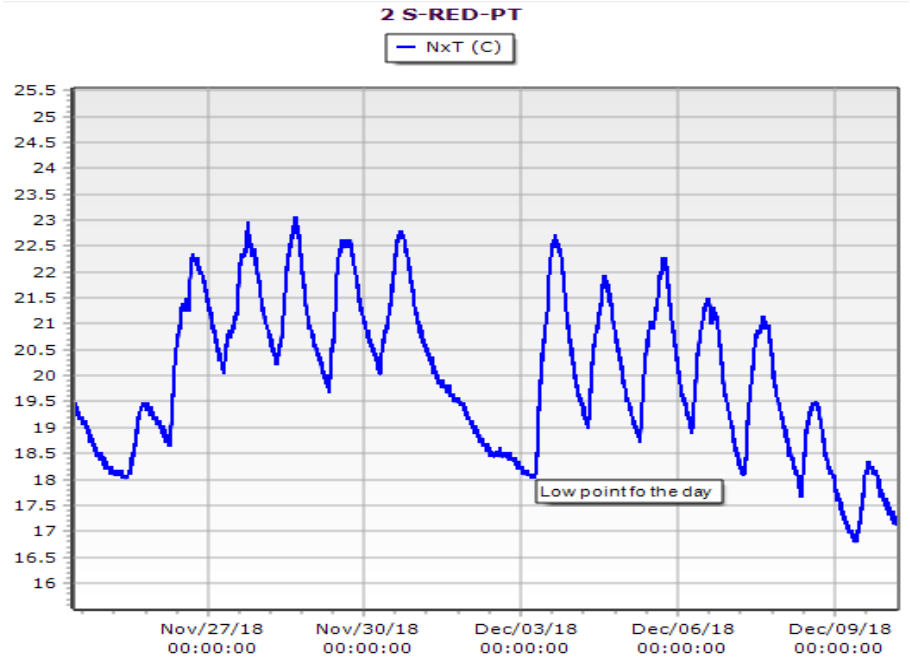
The scroll wheel of your mouse can be used to pan and zoom the graph. Panning can be achieved by pressing down on the scroll wheel and moving your mouse around. Turning the wheel up and down allows you to zoom in and out of the graph respectively.

## WORKING WITH A TWO BUTTON MOUSE

If you are using a two button mouse, panning the graph can be accomplished by right clicking on the graph and selecting the **Use right mouse button to pan** option. To restore your mouse back to the default setting you must first right-click on the graph, then choose **Use middle mouse button to pan**.

## ANNOTATING THE GRAPH

To add an annotation to the graph, right click on the graph and select **Add annotation**. This will enable you to enter text, which will appear in a box on the graph. The created annotation box can be moved to a desired location by clicking and holding down the left mouse button then placing it. Annotations can also be edited or deleted by right clicking on the annotation and selecting the corresponding option. Annotations and graph zoom states are preserved by saving the entire site file as a different name. All of the annotations can be cleared by right clicking on the graph and selecting **Delete all annotations**.



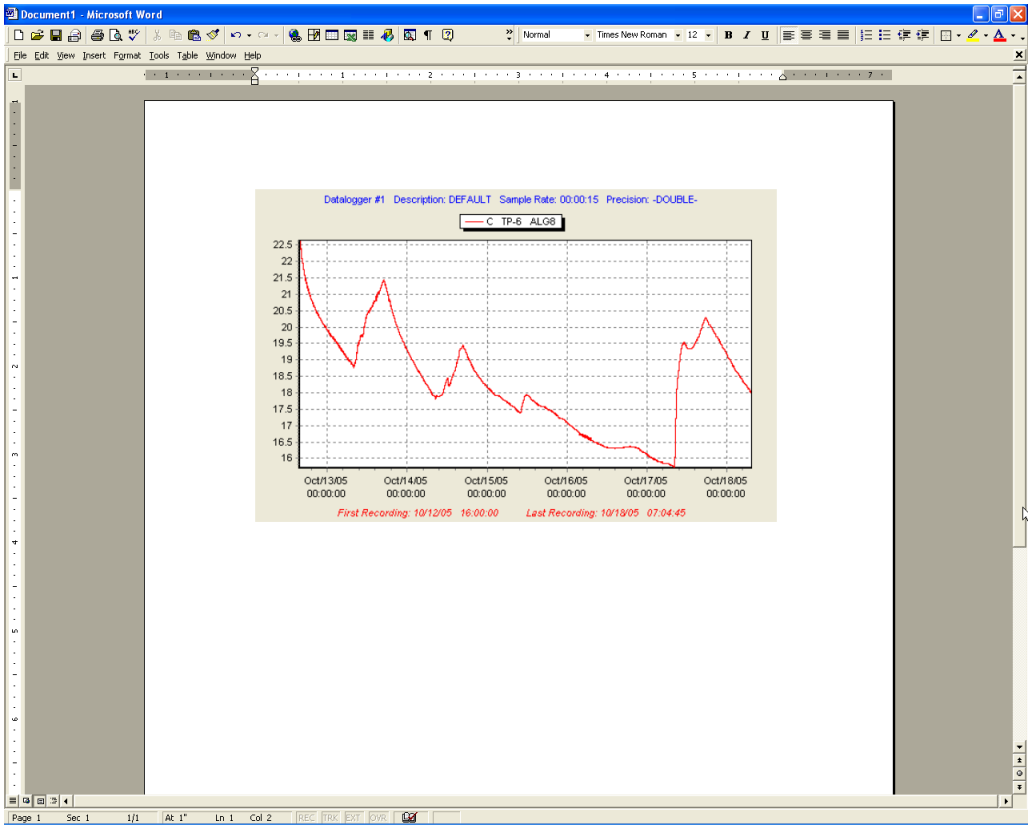

**AN ANNOTATION ON THE GRAPH**

## COPYING THE GRAPH TO THE WINDOWS CLIPBOARD

To copy the graph to the clipboard, click the **Copy Chart To Clipboard** button.

**THE COPY CHART TO CLIPBOARD BUTTON**

The graph is then stored as an image on the windows clipboard and can be pasted into other applications such as Outlook in HTML format, Word or Excel.




**MICROSOFT WORD WITH A GRAPH FROM PROLOG**

## WORKING WITH THE DATA IN EXCEL

The **View Data In Excel** button opens your data in an Excel spread sheet.

**THE VIEW DATA IN EXCEL BUTTON**

If another program is the default viewer for comma separated variable (.csv) files that program will be used instead.

# CHECKING THE STATUS OF YOUR DATA LOGGER

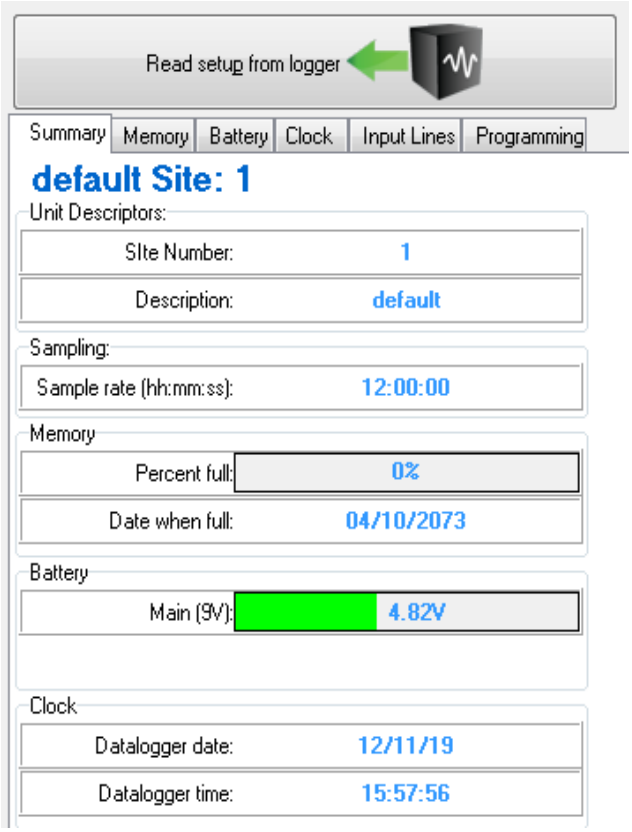
The status of your data logger can be checked by pressing the **Setup** button.

**THE SETUP BUTTON**

The Setup button displays important information about your data logger that should be checked every time you are in the field.

## CHECKING THE SUMMARY SCREEN

The **Summary** tab shows you the most important information about the state of your data logger.



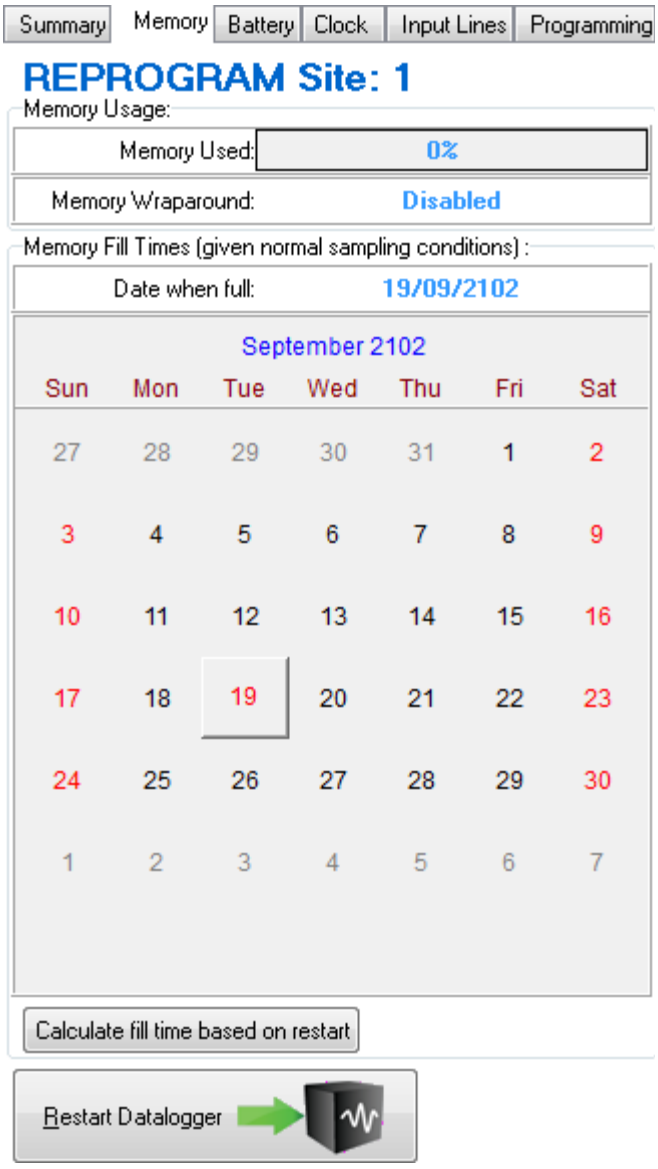

**THE SUMMARY TAB**

It displays the site number, description, sampling rate as well as current memory, battery, and clock status.

**NOTE: It is important to check the status of the battery and memory when you are in the field.**

## RESTARTING YOUR DATA LOGGER'S RECORDINGS

The **Memory** tab shows you detailed information about the memory usage of your data logger.

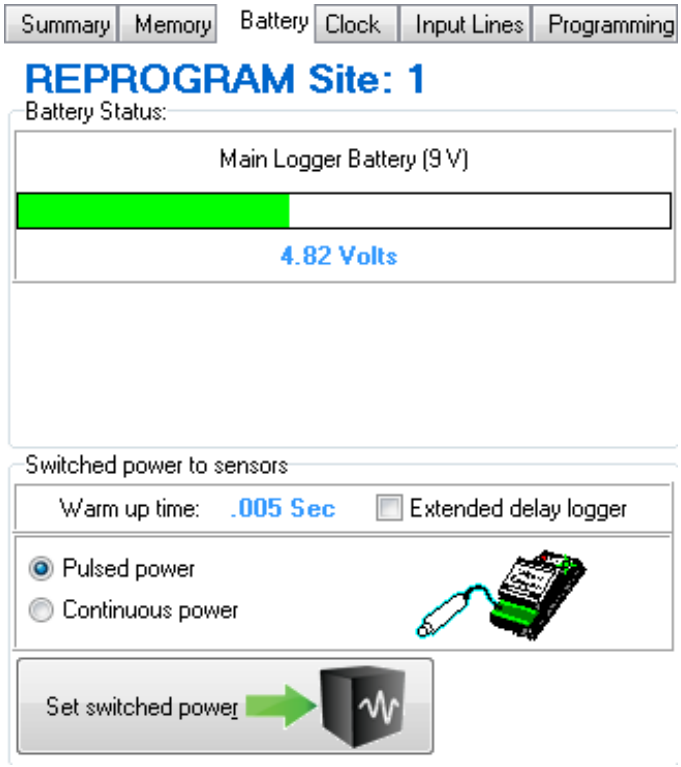



**THE MEMORY TAB**

This tab allows you to restart your data logger and calculate the fill time based on a restart. Pressing the **Restart Data Logger** button will restart your data logger's recordings. **Always download important information before restarting the data logger**. The **Calculate Fill Time Based On Restart** button will tell you when the data logger memory will be full if you were to restart it. You can check the estimated fill time on the summary tab.

## CHECKING YOUR DATA LOGGER'S BATTERY

The **Battery** tab shows you detailed information about the data logger's batteries.



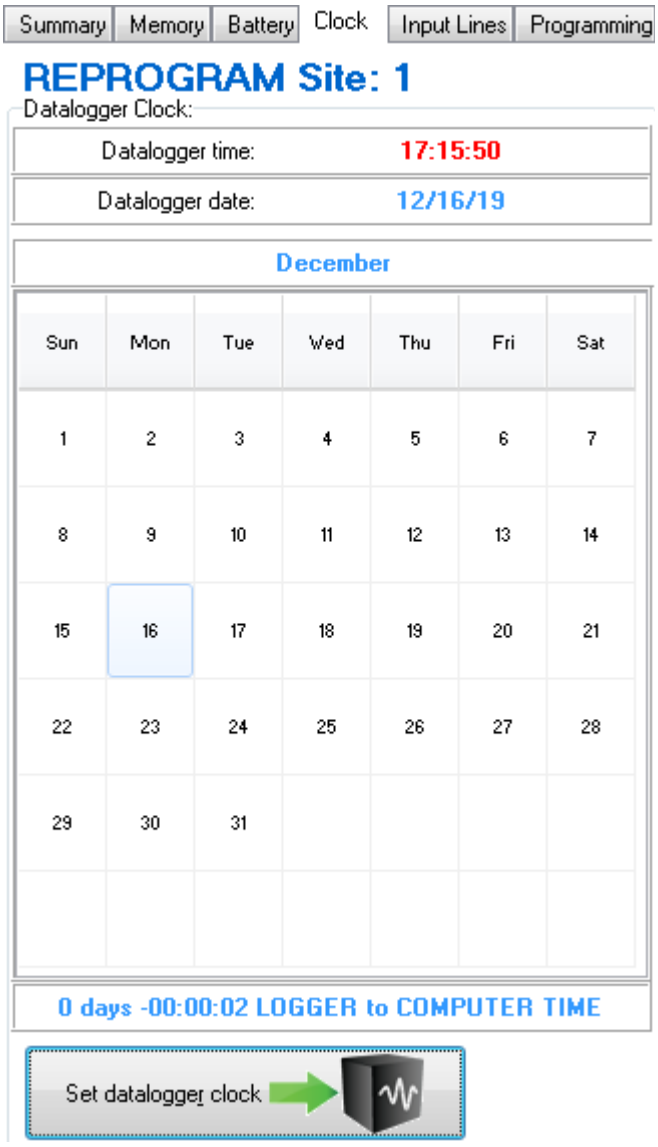

**THE BATTERY TAB**

This screen also allows you to set your data logger's sensors for **Pulsed or Continuous power**. Some sensors require a certain amount of time to stabilize to a correct reading. In Pulsed power mode the data logger powers your sensor for the specified warm-up time, takes a reading and then goes back to sleep. With Continuous power mode the sensor has power delivered to it constantly.

**NOTE: Powering your sensors continuously may consume much more power and could inadvertently drain the battery if left on.**

## SETTING THE DATA LOGGER'S CLOCK

The **Clock** tab allows you to check and set the data logger clock.



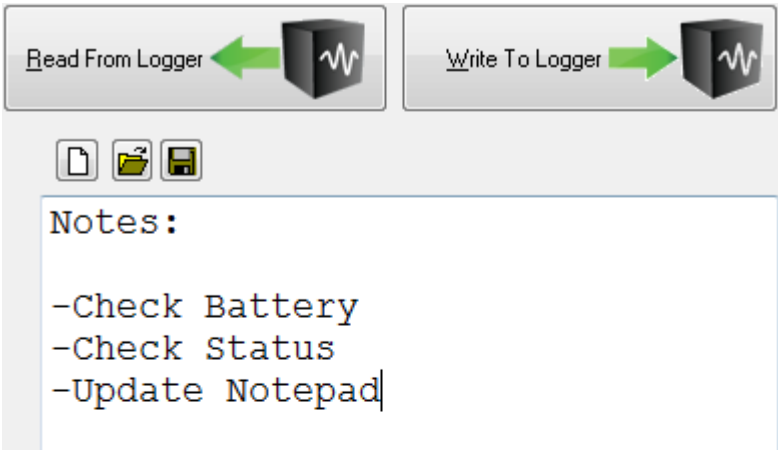

**THE CLOCK TAB**

**The Set Data Logger Clock** button will let you synchronize the clock of your data logger to your computer's time or let you specify a different value.

# CHECKING AND LEAVING NOTES ABOUT THE SITE IN THE DATA LOGGER

The **Notepad** button displays a section of the data logger's memory where you can store information in text form.

**THE NOTEPAD BUTTON**




**THE NOTEPAD SCREEN**

The **New, Open And Save Notepad** buttons are able to create a new notepad, load a notepad file that you have saved on your computer, or save a file containing the notepad information to your computer.

**NEW, OPEN, AND SAVE BUTTONS**

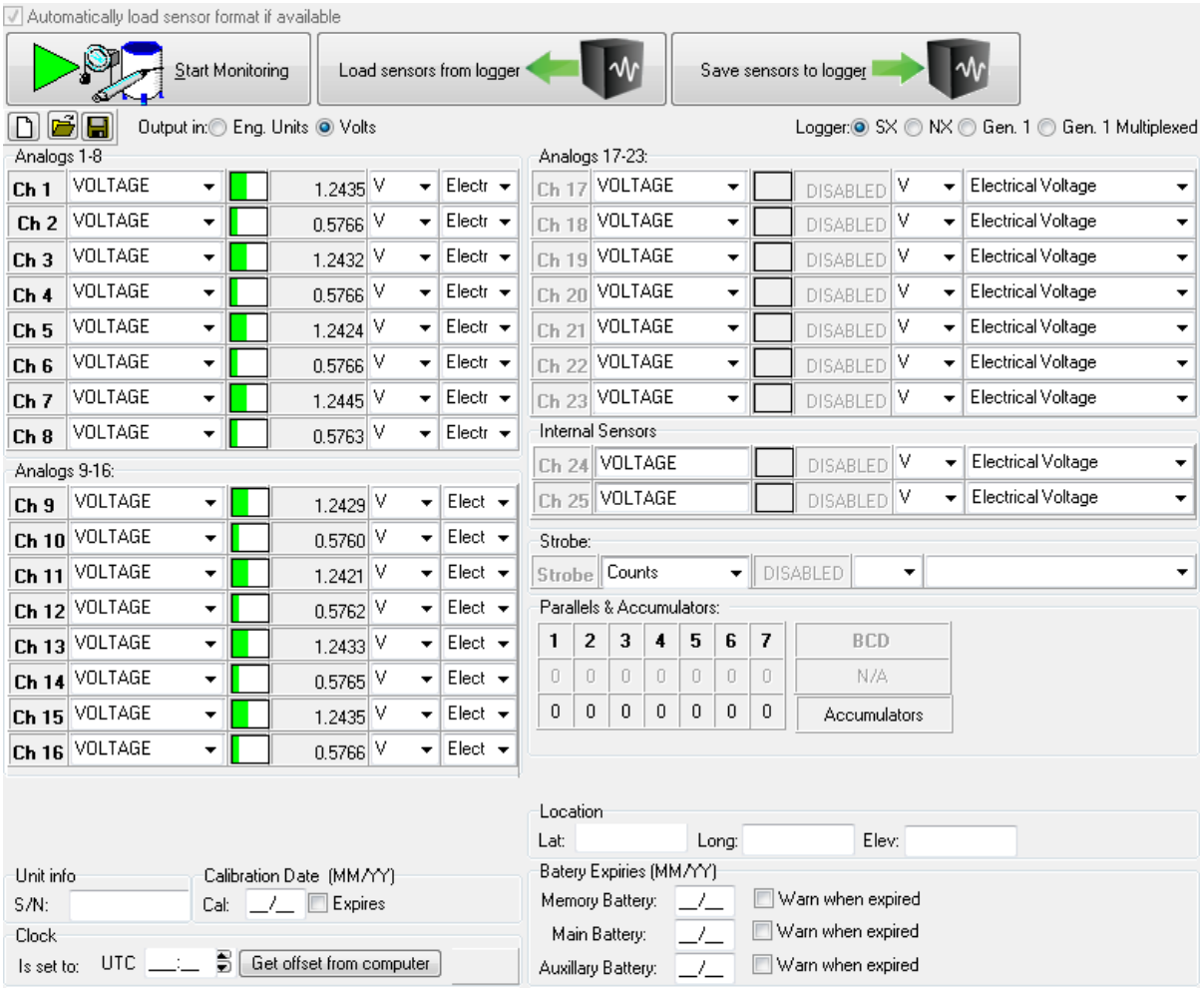
The **Read From Logger** button reads the notepad from the data logger's memory and displays the information on the screen.

The **Write To Logger** button writes the text on the screen into the data logger's memory.

# CHECKING THE SENSORS

The **Sensors** button will allow you to monitor readings and change which sensors are being used in your application.

**THE SENSORS BUTTON**

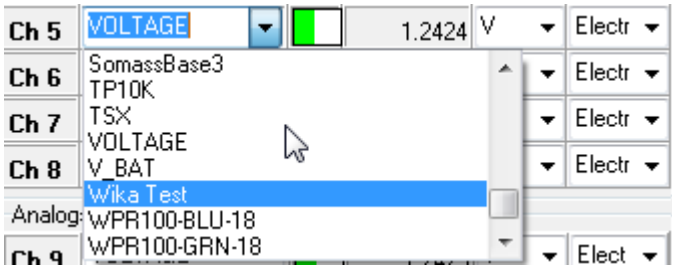



**THE SENSORS SECTION**

The **Start Monitoring** button shows the current readings of your sensors.

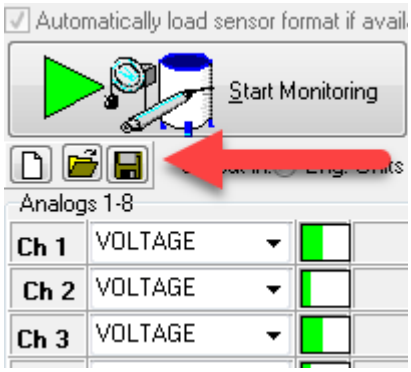
**THE START MONITORING BUTTON**

The sensor readings are calculated differently depending on what sensor is selected for the channel. The **sensor selection** drop down menu lets you choose which sensor is on each channel. Changing a sensor using the drop-down menu also updates your graph in the data section.




**THE SENSOR SELECTION DROP DOWN MENU**

Prolog saves the information about which sensor is on each channel in a sensor format file. The **New, Open And Save Sensor Format File** buttons give you the capability to create a new sensor format, load a sensor format file that you have previously saved on your computer or save a sensor format file to your computer respectively.

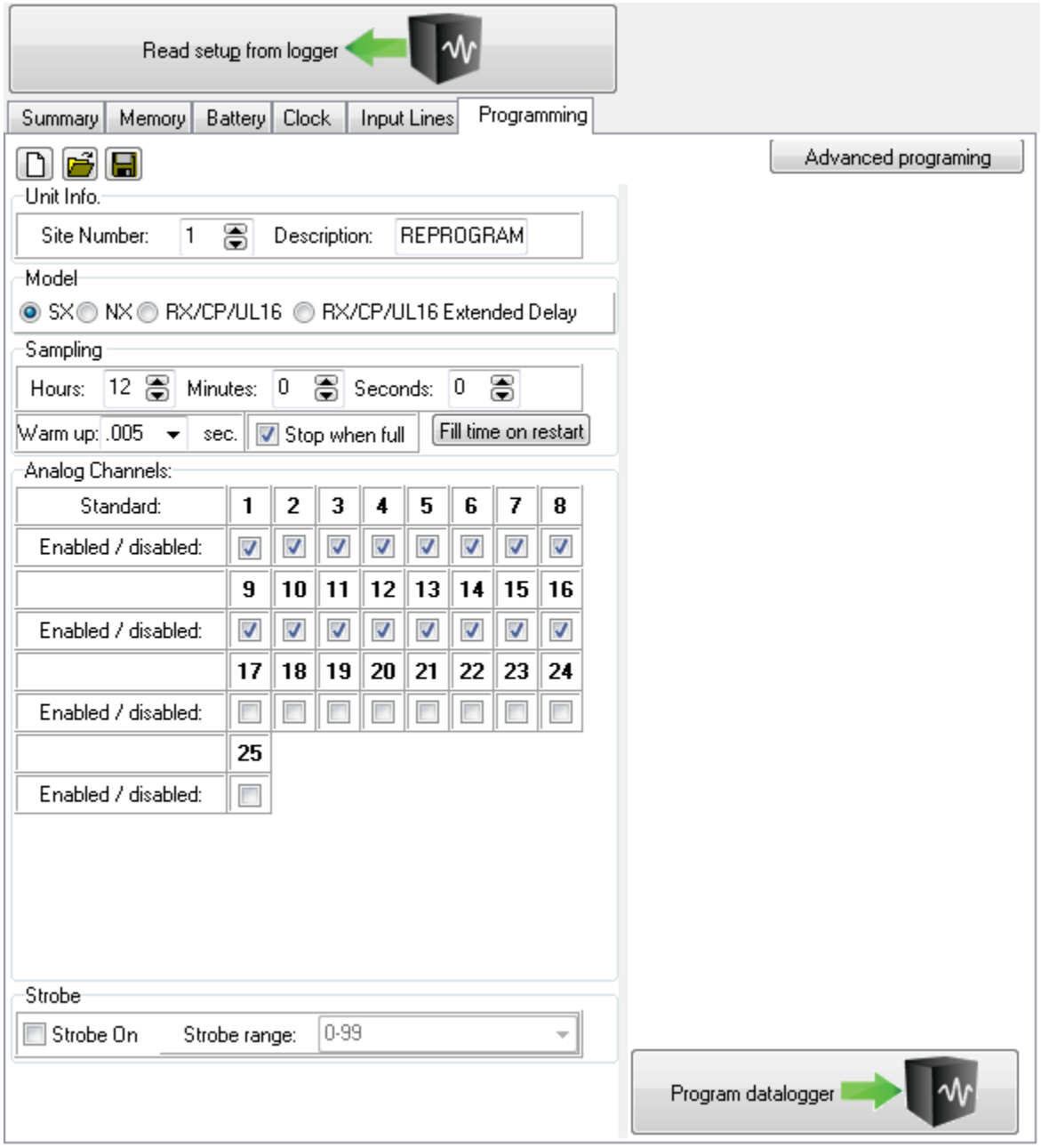



**THE NEW, OPEN AND SAVE SENSOR FORMAT FILE BUTTONS**

**NOTE: If there is a sensor format file in your project with the same name as the data logger description Prolog will automatically load it unless the Automatically load sensor file check box is unchecked.**

# CHANGING YOUR DATA LOGGER'S CONFIGURATION

The **Programming** tab displays the current settings that are programmed in your data logger. This section will allow you to change the site number, description, warm-up time and sampling rate. Inputs (sensors) can also be turned on or off in this screen. You can change any of these settings and then apply them to your data logger by pressing the **Program Data Logger** button.




**THE PROGRAMMING TAB**

The **New, Open And Save Logger Configuration** buttons allow you to create a new data logger program, load a program or save a program.

**THE NEW, OPEN AND SAVE PROGRAMMING BUTTONS**

The **Program Data Logger** button sends new settings to your data logger that you have modified.

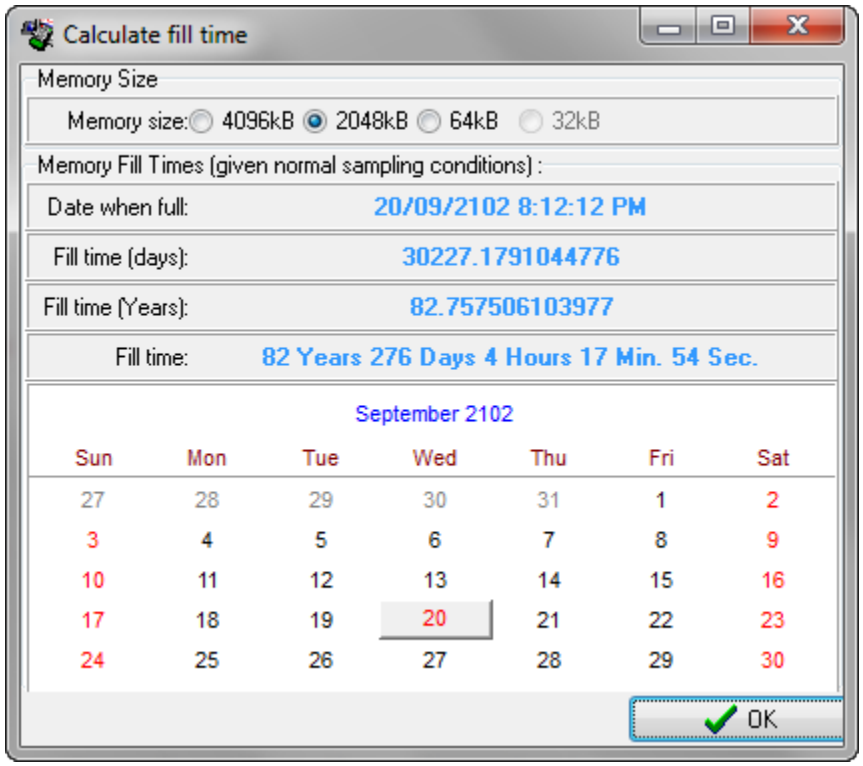
**THE PROGRAM DATA LOGGER BUTTON**

**NOTE: Pressing the program data logger button will restart the unit's memory.**

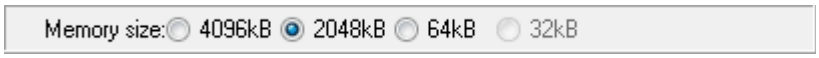
The recording rate of your data logger can be changed by changing the numbers of the sample rate. If you change the sample rate it is important to check the new memory fill time by pressing the **Calculate Fill Time** button.

**THE CALCULATE FILL TIME BUTTON**

You may have to change the **memory size** drop down box on the calculate fill time form to correspond to the memory size of your data logger.




**THE CALCULATE FILL TIME FORM**




**THE MEMORY SIZE SELECTION**

# WHERE TO FIND MORE INFORMATION

You may obtain more information by using either the built-in Help files or by contacting Lakewood Systems directly.

## ACCESSING THE HELP FILES

The Help files can be accessed by selecting Help from the Help menu of the program. The help files contain detailed information that is not covered in this getting started guide.

## OBTAINING TECHNICAL SUPPORT

Technical support can be obtained by contacting Lakewood Systems directly. Please feel free to contact us if you have any questions or concerns. The following contact information can be used to obtain technical support:

Tel.: (780) 462-9110
Fax: (780) 450-3867
#112, 9704 39 Avenue
Edmonton AB
Canada
T6E 6M7

**MP1205**