



Dataflow Systems Pty Ltd

LOW COST DATA RECORDING SENSORS

Odyssey Data Logging Software Operating Manual

**Version 2.0.0.2
March 2012**

Dataflow Systems Pty Ltd
9b, Sheffield Cres, Burnside, 8053, Christchurch, New Zealand
Web: www.odysseydatarecording.com, Email: dataflowsystems@xtra.co.nz
Phone: 0064 3 358 8979, Fax: 0064 3 358 8676

Table Of Contents

Introduction	4
Warranty	4
Disconnected Battery Connection	5
Install/Replace Battery	5
Battery Life	7
Interfacing Logger to Computer	8
Serial Interface Cable	8
USB-Serial Interface Cable	9
Getting Started With Your Data Logger	10
System Requirements	11
Hardware Requirements	11
Software Requirements	11
Software Installation	12
Running the Software	16
Introducing Odyssey Data Logging Software	16
Site File	16
Sample Site File	17
New Site File	20
Edit a Site File	24
Delete a Site File	25
Selecting Communications Port	25
Auto Detect Port	25
Set Up and Start Logger	26
Scan Time	27
Start Date	28
Start Time	28
Stop Logger and Save Data	30
Data Graph	32
Composite Data Graph	34

Data Worksheet	34
Save Data Worksheet	36
Save As	37
Editing a Data Block	37
Re Calibrating a Data Block	37
Export or Import Data Into Microsoft Excel	38
Viewing Data Blocks From a Data Directory	39
Data Directory	40
Adding a Data Directory to Site File	41
View Files In Data Directory	42
Files In Data Directory	42
Sensor Calibration	43
Linear Calibration	43
Importing Calibration Files	44
Polynomial Calibration	46
Save Calibration Files	47
Delete Calibration Files	47
New Calibration File	47
Temperature Coefficient Calculator	48
Relative Value	49
Re Calibrating Site Data	49
Probe Trace Mode	50
Back Up And Restore Data	52
Linear Logging	53
Compressed Logging	53
Event Triggered Logging	53
Contents	54
About	54
Trouble Shooting	54

Introduction

The simple, reliable and affordable Odyssey Data Recorder can measure and log data at user specified intervals ranging from once every 10 seconds to once every 12 hours. Odyssey Data Logging Software enables the user to effortlessly select the logging rate, and initiate the start of data collection. The Quick Start guide will help users to start the data logger straight away.

Warranty

DATAFLOW SYSTEMS products are warranted against workmanship and material defects. This warranty is valid for one year from the date of shipment and only to the original purchaser.

DATAFLOW SYSTEMS will repair or replace any of its products that fails to operate properly during the warranty period. The failure must be from a defect in workmanship or material. The repair or replacement is at DATAFLOW SYSTEMS option and will be made without charge for parts and labour excluding batteries.

The customer must notify DATAFLOW SYSTEMS of any defects before the warranty expires. The customer must also make arrangements for repair and service. Shipping, duties, taxes, etc. are at the customer's expense. DATAFLOW SYSTEMS liability is limited to repair or replacement of defective instruments or parts.

Damage from abuse, accident, alteration (including interface with another manufacturer's product), shipping damage, misuse, or corrosion is not covered by the warranty.

Under no circumstances will the Company reimburse claimant for costs incurred in removing and/or reinstalling replacement or repaired equipment.

Other than the obligations DATAFLOW SYSTEMS describes herein, DATAFLOW SYSTEMS disclaims all warranties, (expressed or implied) including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. DATAFLOW SYSTEMS PTY LIMITED is not liable for indirect, incidental or consequential damages. Any attempts by unauthorized personnel to repair any Dataflow Systems product will automatically void the warranty covering that product.

Data recorder batteries are excluded under the conditions of Dataflow Systems Warranty Conditions.

Disconnected Battery Connection

Because of the possibility of x-ray scanning of freight which can cause damage to the data logger and flatten the batteries, the loggers now have one socket head screw fitted with a red insulation washer. This disconnects, the battery from the logger and prevents any battery failure during transport.

Please remove the insulation washer before using the logger. The socket head screw with the shake proof washer must be replaced into the disk and screwed up before the recorder can be used. When the socket head screw is replaced, it should only be tightened until it is firm. Over tightening may damage the data logger.

Install/Replace Battery

The Odyssey Logger uses a welded battery assembly of two 3.6V Lithium cells, which will be totally reliable in the field. To install/replace battery follow the steps below.

1. Unscrew the top cap of the logger housing.



2. Remove the two socket head screws in the fibreglass battery-mounting disk. Use a 2.5mm hexagon allen key to remove the screws. When the screws are removed, tip the logger upside down and gently shake it up and down until the battery pack and fibreglass disk fall out.



3. Slide the new battery pack into the logger.



4. Screw the two socket head screws into the sockets on the logger board. Make sure that the star shake-proof washers are on the socket head screws. When the socket head screws are replaced they should only be tightened until they are firm. Over tightening may damage the logger.



Replacement battery assemblies include the front fibreglass disk soldered to the batteries. These will be available from Dataflow Systems.

Battery Life

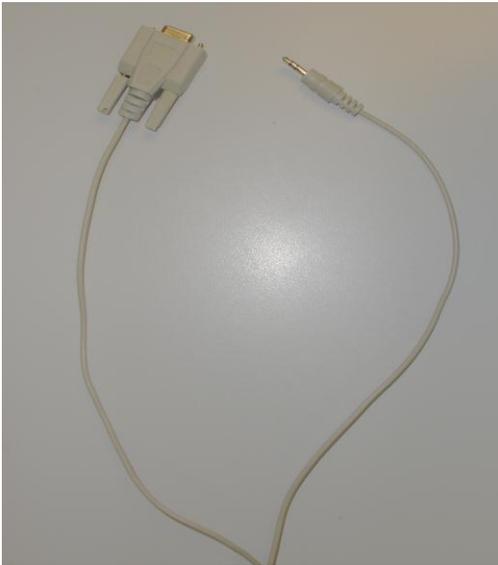
Logger battery life depends upon how frequently the user logs data. For an hourly logging interval, batteries will last for more than 18 months under normal operating conditions.

The battery voltage should be measured every time the logger is removed from the field to retrieve the logged data. The voltage can be measured by placing the test leads from a multimeter across the two socket head screws that hold the fibreglass disk and battery pack in place. If the voltage is below 6.5 volts then the batteries should be changed.

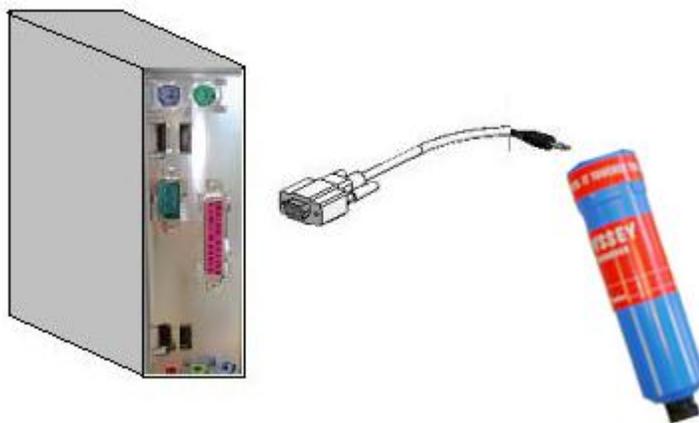
Interfacing Logger to Computer

Odyssey loggers can be interfaced to a computer either by using a Serial Interface cable or USB-Serial Interface cable.

Serial Interface Cable

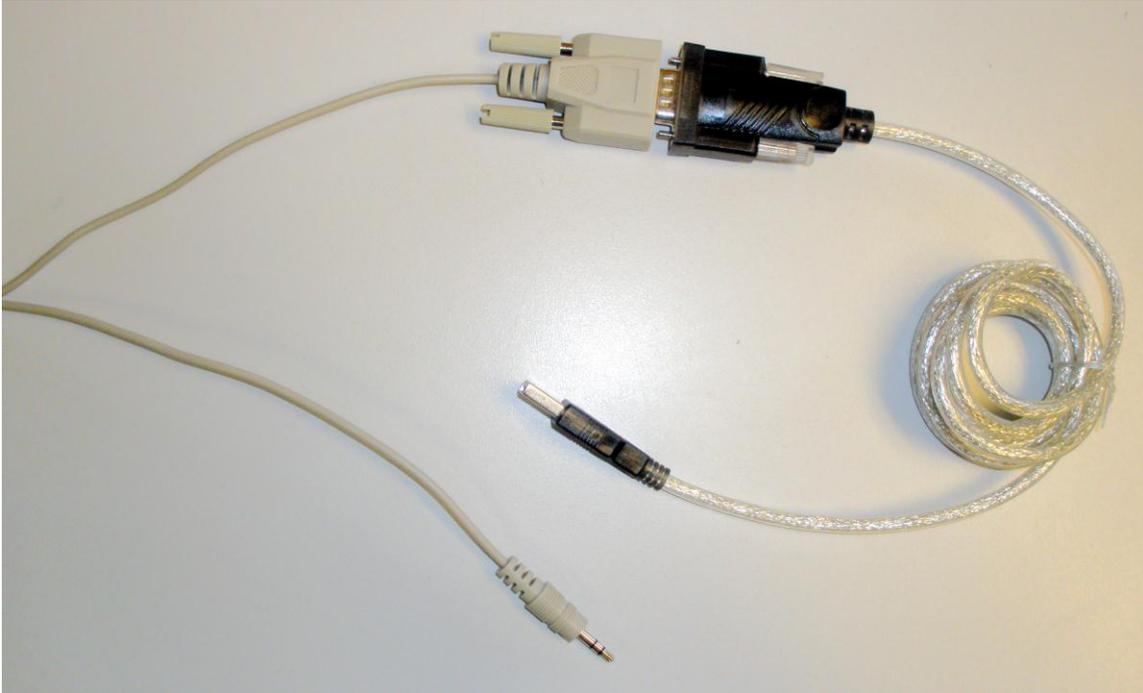


Connect the female DB 9-pin female connector of the serial interface cable to the 9-pin male serial port (COM port) on the computer and plug the stereo plug into the stereo plug socket of the data logger as shown in the picture.



USB-Serial Interface cable

Connect the female USB connector to the USB port on the computer and plug male stereo connector end of the interface cable into the stereo socket of the data logger.



Installing USB-Serial adapter cable driver software.

USB-Serial adapter cable driver software is included in the Odyssey Data Logging Software CD-ROM. View the USB-Serial adapter cable driver installation guidelines for supported Windows operating system.

[USB-Serial Cable Installation Guide for Microsoft Windows](#)

Getting Started With Your Data Logger

1. Install the Odyssey Software. (See Software Installation)
2. Load calibration files, these may be supplied on disk for the following loggers

 Pressure/Temperature Logger.

 Salinity/Temperature Logger.

 Temperature Logger.

 Other Loggers require user to generate calibration data.
3. Fit the battery and battery screws to the data logger (See Install/Replace Battery).
4. Connect the serial interface cable to the computer serial port and the logger. If you are using a USB-Serial adapter cable, connect the cable to a USB port and install the cable driver software (see installing USB-Serial Adapter cable).
5. Select the Communications Port or select Auto Detect Port from the communications menu in the software.
6. Create a site file for the data logger. Give it an identity name, enter the logger serial number. Select the type of logger from the selection list. Use the logger serial number for the sensor serial number unless you specifically want to use a different calibration file. Save the file under its identity name and serial number (For more info see Site File section).
7. Select the site file, select 'Set Up and Start Logger', set the scan and start times. Click 'Start Logger'.

The following messages **CONTACTING LOGGER**, **LOGGER TALKING** and **SENDING DATA** will be displayed on the status bar.

The data logger is now started and logging data. Disconnect the interface cable from the logger and install the logger in the logging environment to log data.

To save logged data connect the interface cable, select the site file used to start the logger and select 'Stop Logger and Save Data'.

System Requirements

Odyssey Data Logging Software can be used with a desktop PC or a laptop having the following hardware and software requirements.

Hardware Requirements

Odyssey Data Logging Software requires an IBM compatible PC with the following:

- Pentium or higher processor
- Windows 7/Vista/XP
- 64 MB RAM
- 15 MB free disk space
- Color 800 X 600 monitor
- CD-ROM
- Available 9 pin male serial (COM) port
OR
- Available USB Port

Software Requirements

- Microsoft .Net Framework 4.0 or later version
- Windows Installer 4.0 or later version

Software Installation

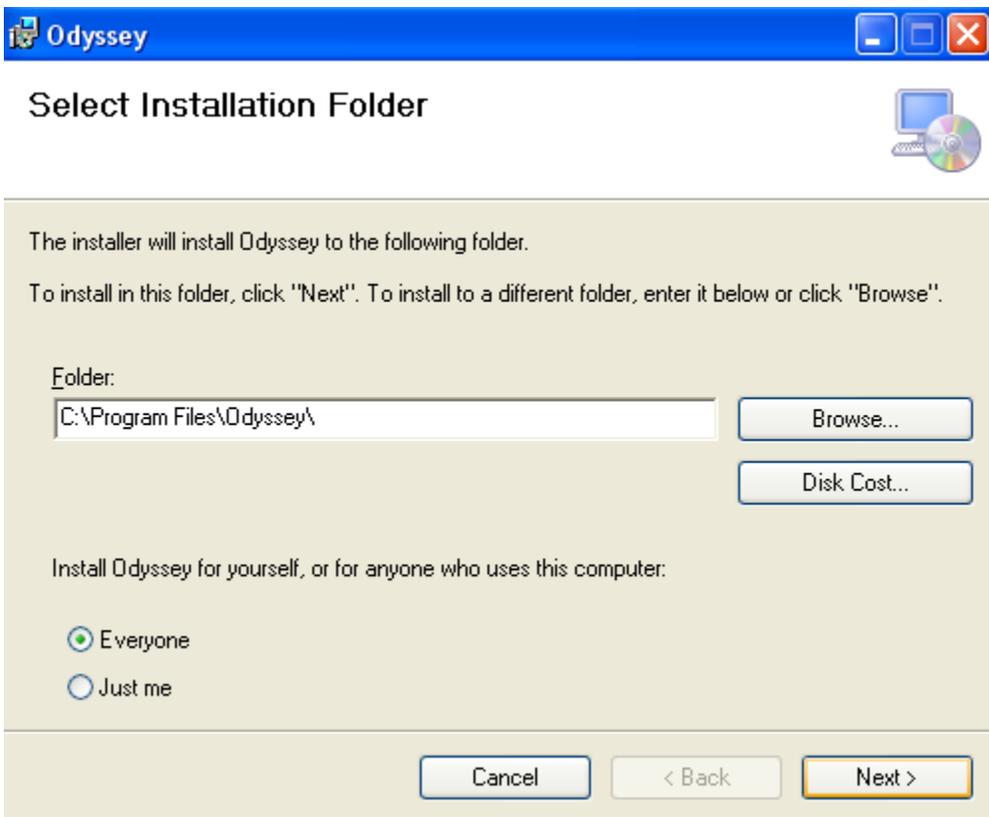
The Odyssey Data Logging software is supplied on a CD. Insert the CD-ROM labeled Odyssey software into the PC or laptop CD ROM-drive. A start screen will be displayed as shown below. Click on Install Software link for the installation of software.

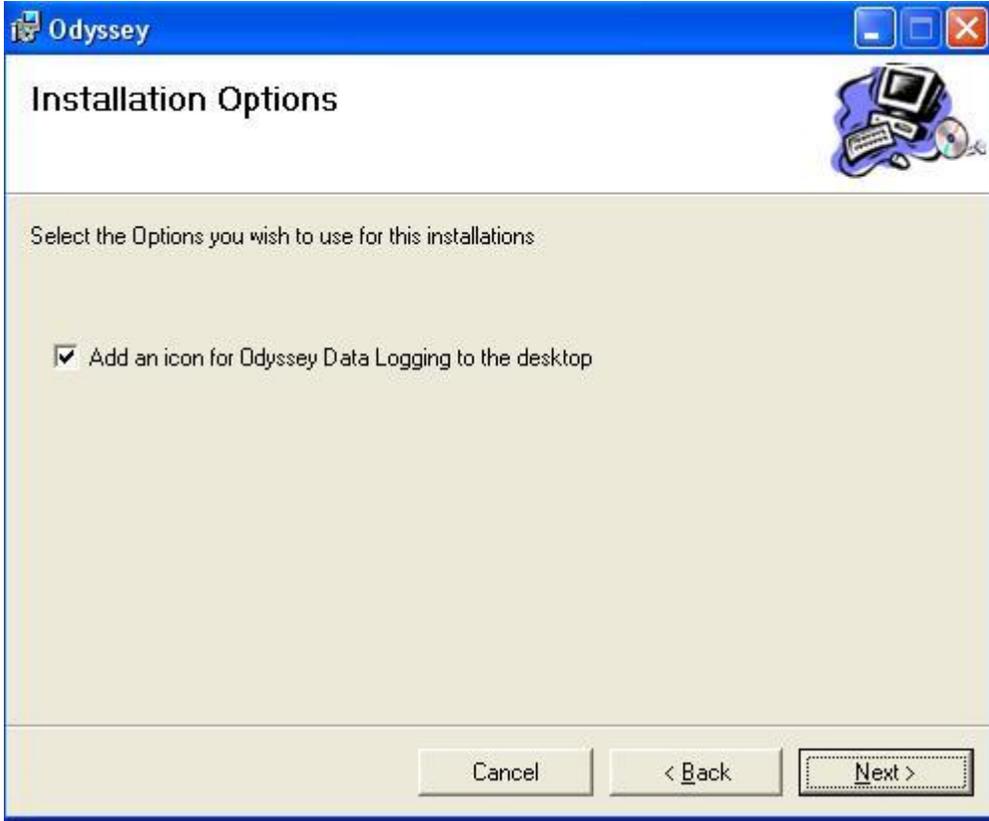
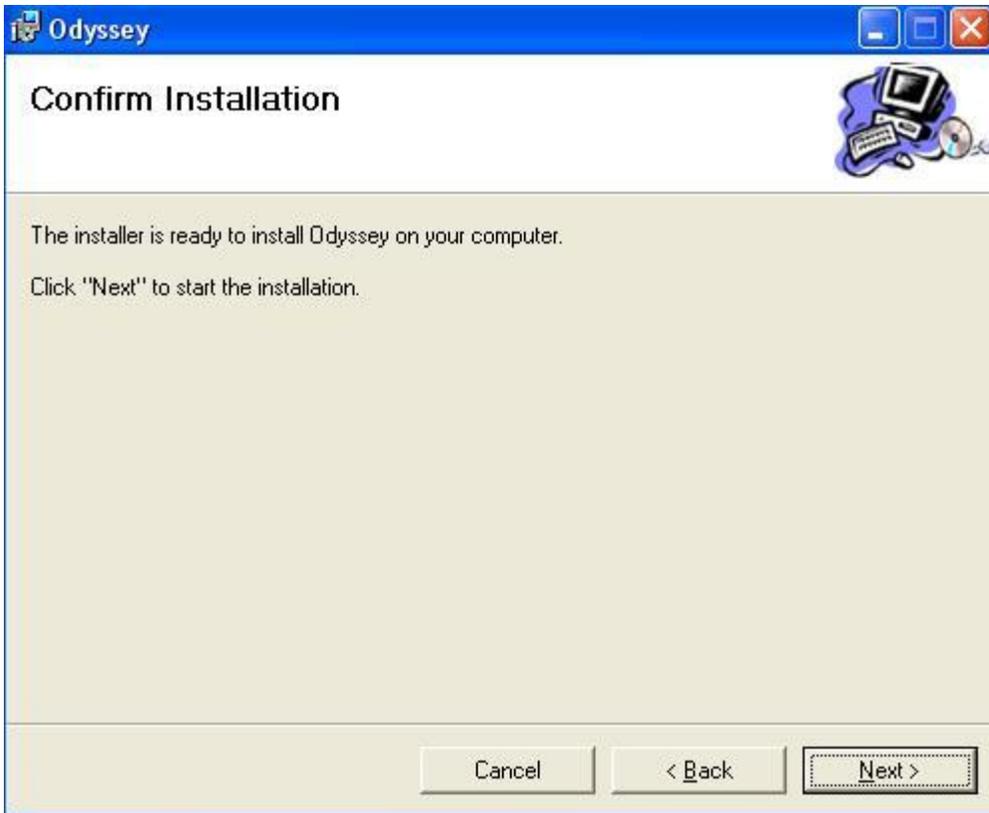


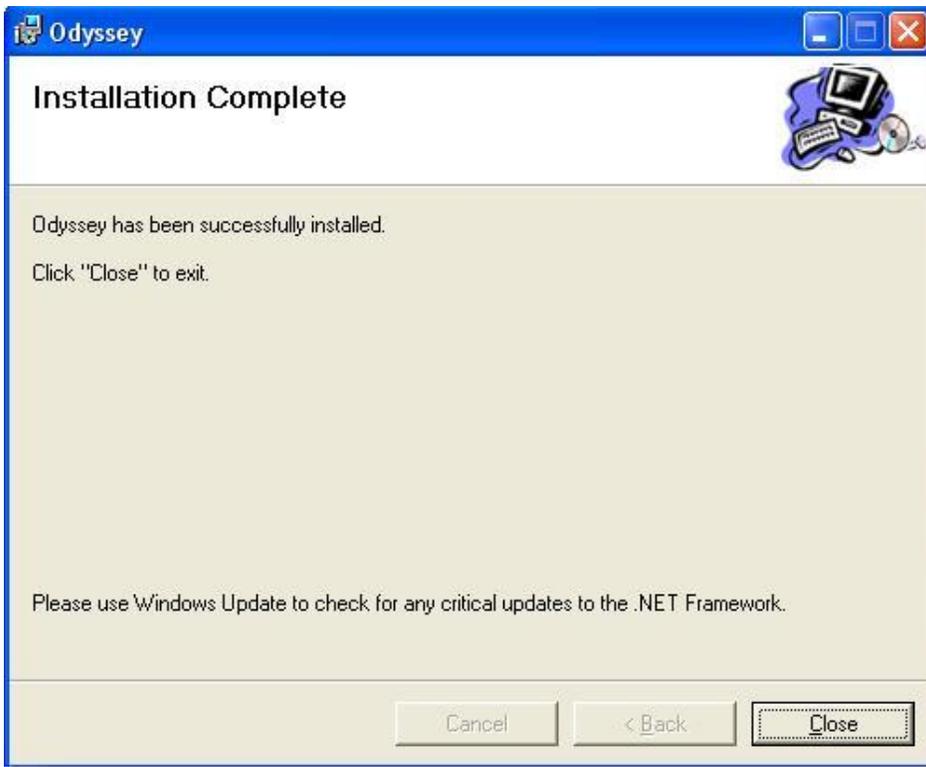
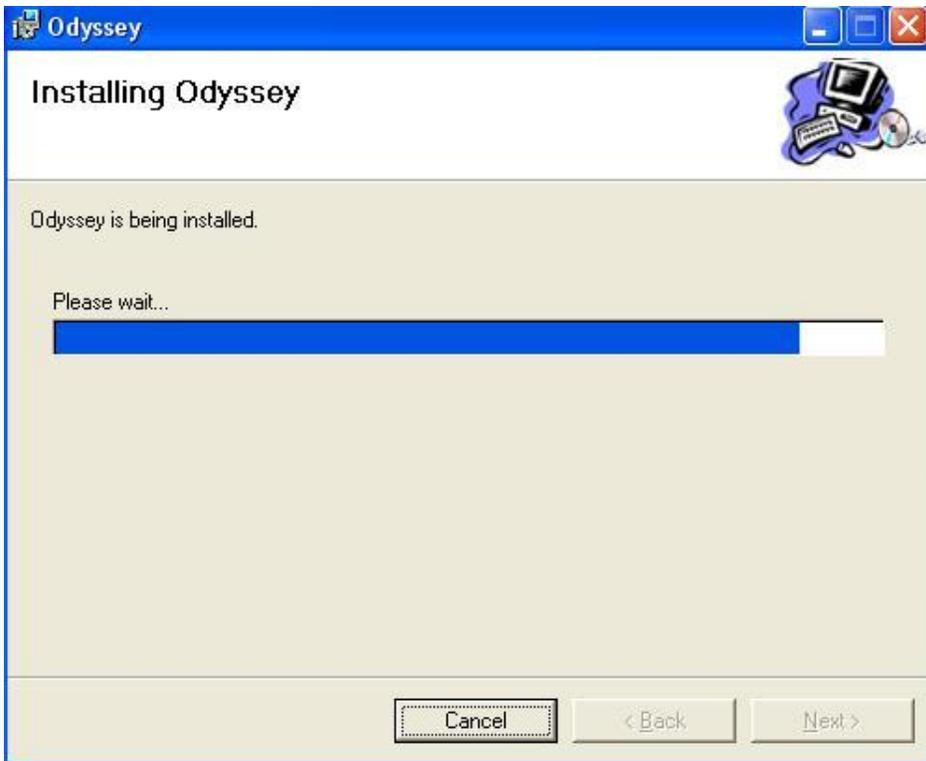
In any circumstance if the start screen does not pop up then use the following installation instructions.

Choose Run command from the Windows start menu, type d:\Odyssey\Setup.exe ('d' denotes CD ROM drive of the host computer) and click OK to bring the installation screen as below.

Successful installation of software will display the following screens.

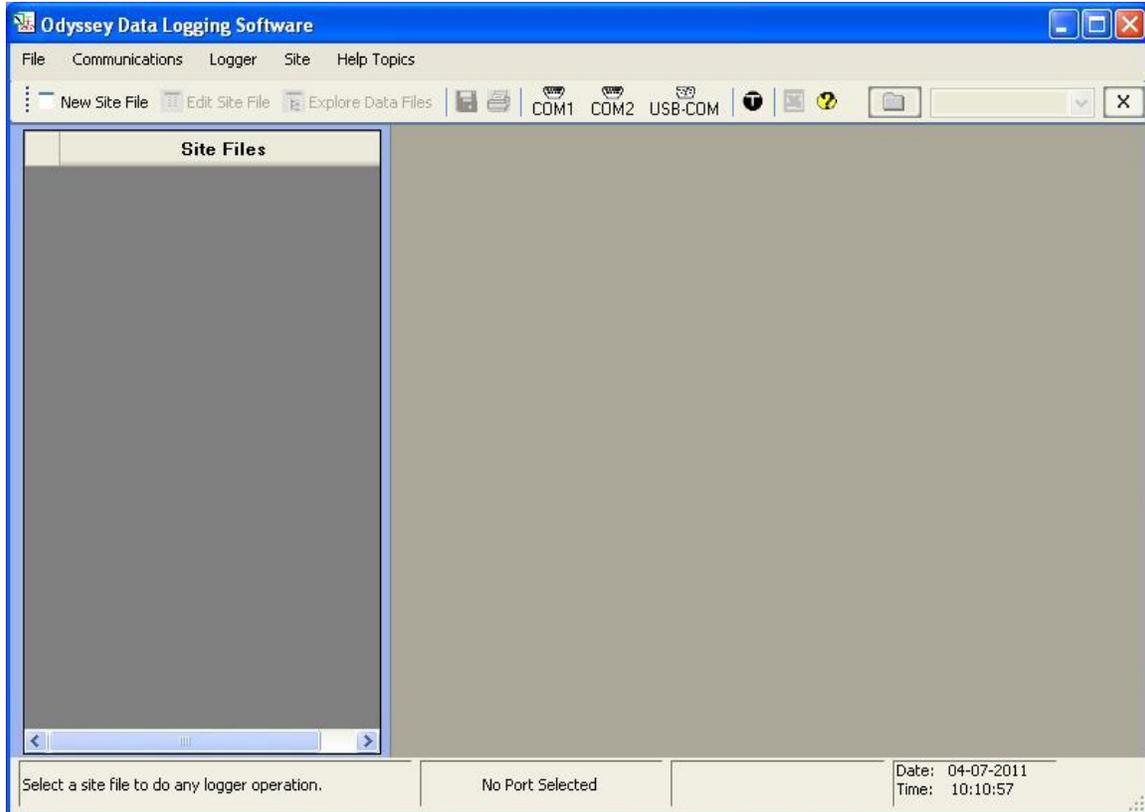






Running the Software

Run the software by selecting the Odyssey icon from the Odyssey software program group. The software will open and is immediately ready to use. Main screen will be displayed as shown below.



Introducing Odyssey Data Logging Software

The main screen consists of a menu and a toolbar at the top, a status bar at the bottom and a site files box on the left side. Menu consists of menu items to provide all features available with the software. Toolbar consists of more frequently used features of the software, which are also available in the menu. Status bar displays hints and other helpful information requires operating the software. Site file box lists all site files available in the host computer.

Site File

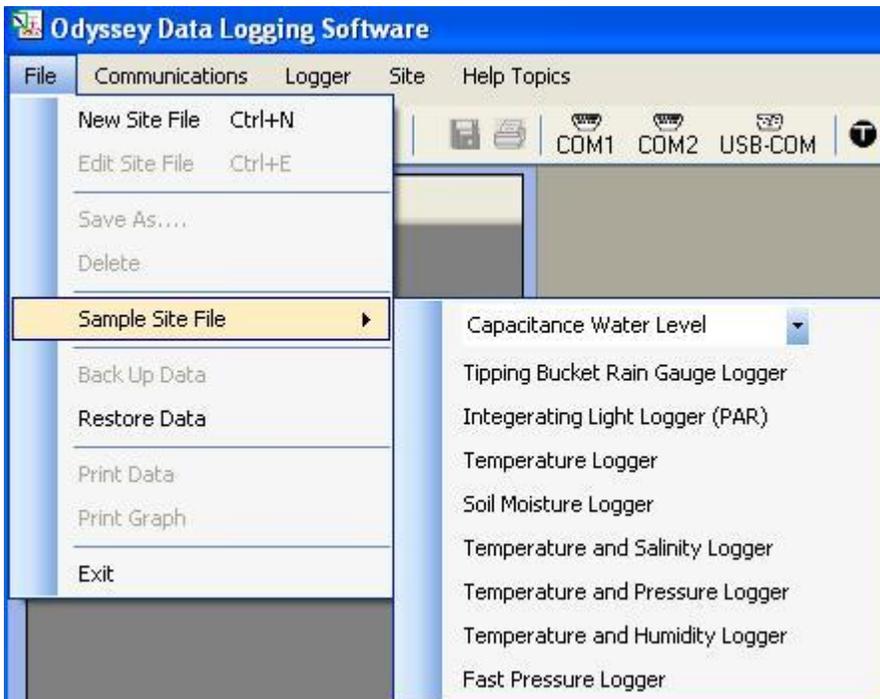
All loggers can be operated similarly using the software. The system for data saving that has been adopted for the Odyssey Data Logging Software is based on a site file. Odyssey software requires a site file created for a specific logger to operate that data logger. It holds information about the site or location where the logger is being installed, details about the logger and data saved. This also allows all data from a logging site or project to be joined together into a continuous record. This provides a very convenient method of viewing data from each logging site over an extended time period.

Software provides following options to create a Site File.

- Sample Site File
- New Site File

Sample Site File

This is the best option to create a site file for first time users of Odyssey data loggers. Selecting 'Sample Site File' from the 'File Menu' displays a range of logger types as shown below from which the user can select a logger type to create a site file to use it with the Odyssey data logging software.



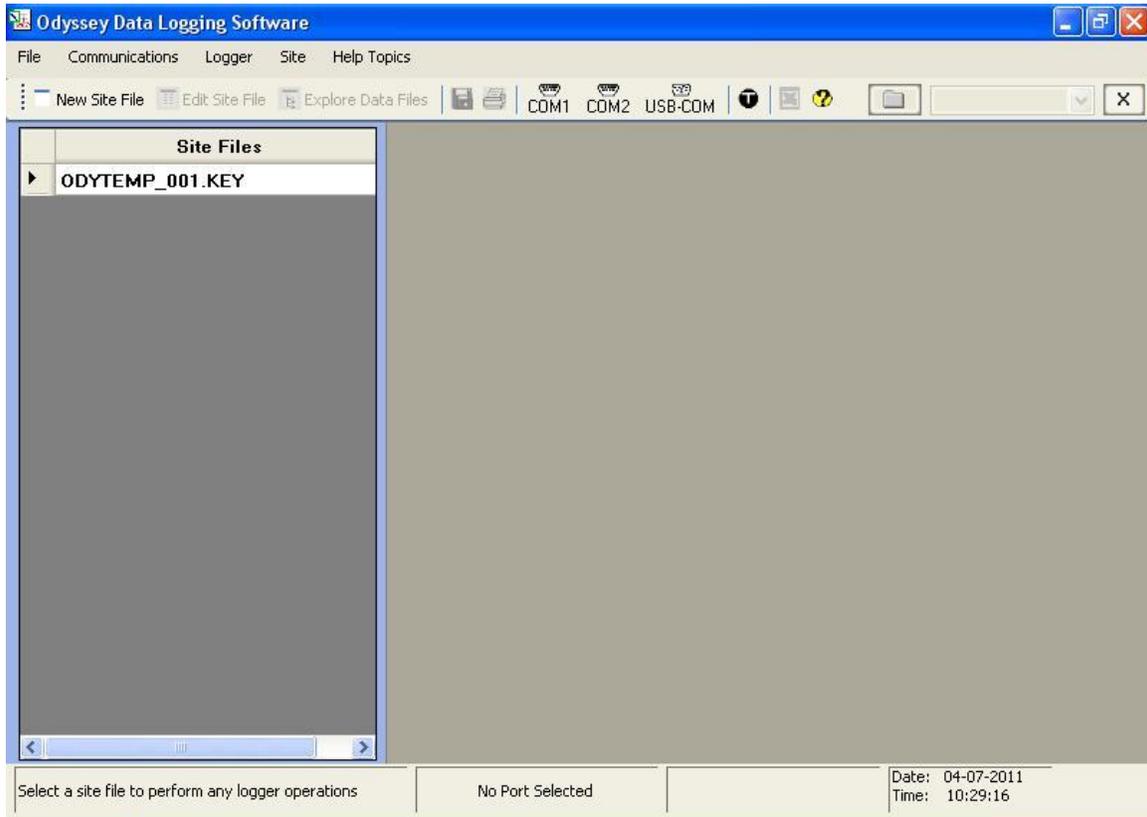
Selecting a logger type from the list of logger types available brings up the following window.



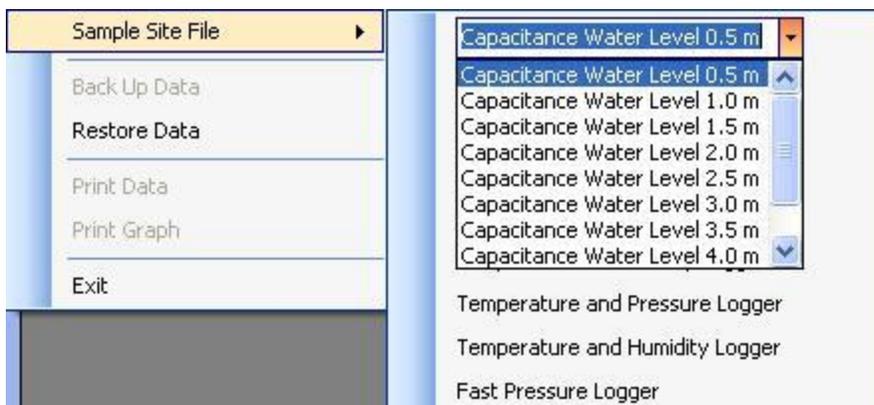
User must enter the logger serial number to create a site file using Sample Site File option.

Note: Logger serial number can be found on the label on logger casing.

Clicking 'OK' after entering logger serial number causes the software to automatically create a site file for the selected logger type as shown below. Creating a site file using Sample Site File option causes software to use default values for fields like site name, site number, sensor serial number and sensor calibration. These values can be changed later to user specific values by editing the site file.



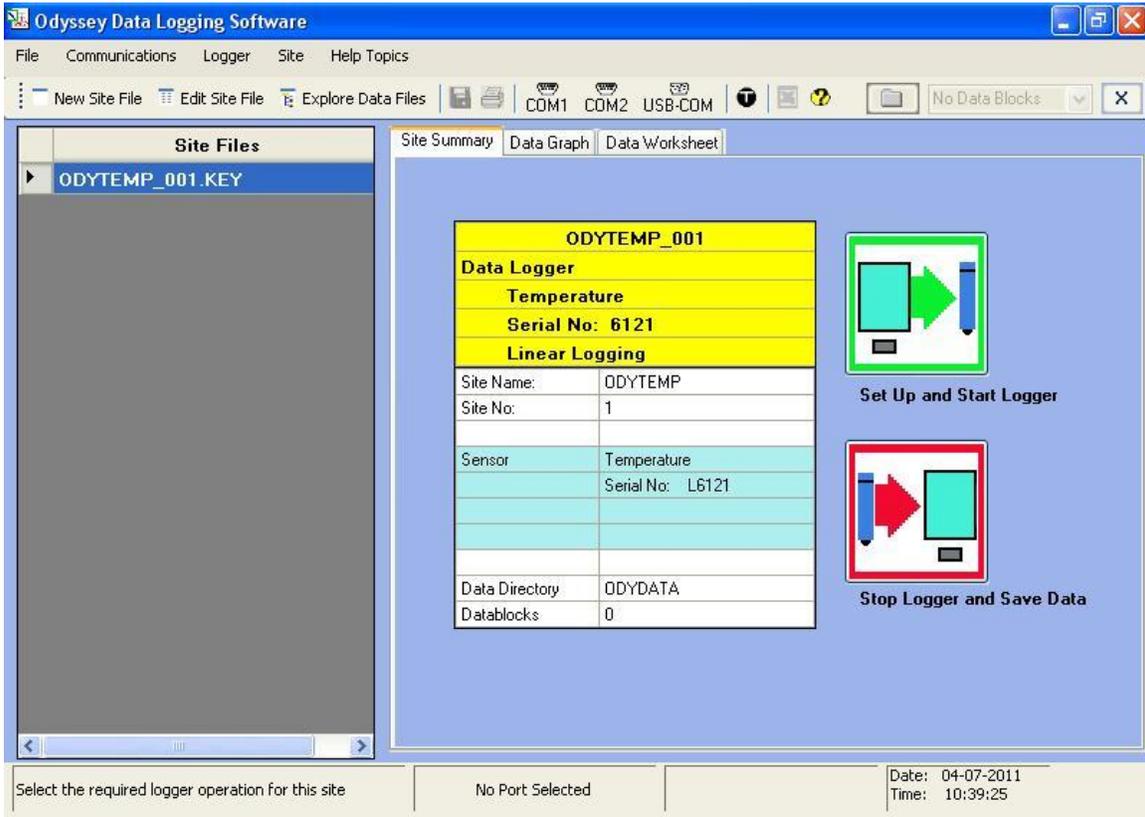
For Capacitance Water Level Logger, select the right sensor length from the available list of sensor lengths displayed in the 'Sample Site File' option as shown below.



Note: Capacitance Water Level sensor length can be found on the label on logger casing.

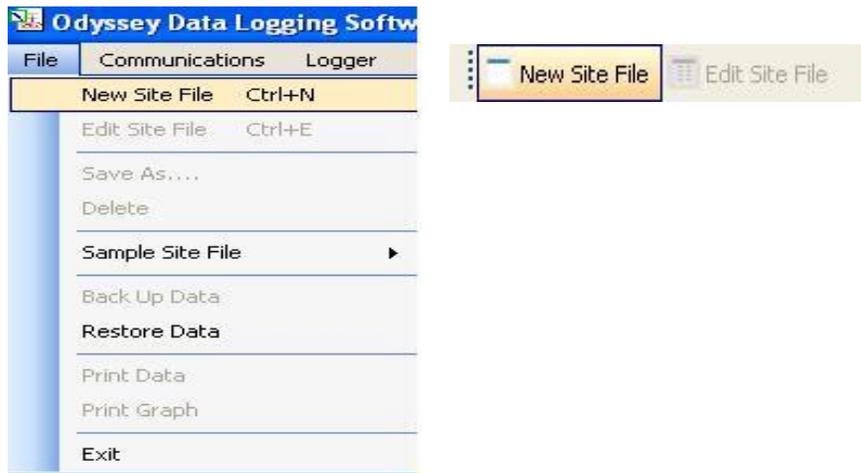
Selecting the Site File by left clicking the mouse causes the software to display a screen as shown below. There are three tabs in this window: Site Summary, Data Graph and Data Worksheet.

Site summary shows summary of the site file being used to perform logger operations of the interfaced logger. It also provides options to Set up and Start Logger, Stop Logger and Save Data, and View Saved Data Blocks.

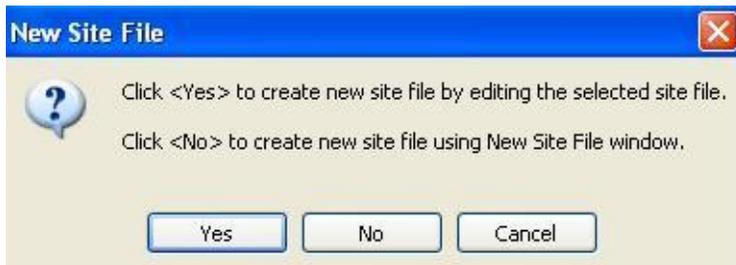


Site Summary tab will display Site File Name, Data Logger Type, Data Logger Serial Number, Logging Mode used for data logging, Site Name, Site Number, Sensor Type, Sensor Serial Number, current site Data Directory and total number of Datablocks saved to this site file.

New Site File



Selecting 'New Site File' from the 'File' menu or selecting 'New Site File' option in the toolbar pops up a window as shown below, if a site file is selected in the site file list box. This provides an option to create a new site file by editing the selected site file, which is a more simple option because it requires less user entries.



Clicking 'Yes' will bring up a window as shown below.

Site Details

Site Name: ODYTEMP
Maximum 15 characters, cannot use any special characters except '-'

Site Number: 1
Can be a value from 1 to 255.

Data Directory: ODYDATA
Data directory that is being used to save logger data. Default:-ODYDATA

Logger Details

Serial Number: 6121

Sensor Type: Temperature

Sensor	Serial No:	Calibration
Temperature	6121	Linear

Site File Identification:

Site Name Logger Serial Number

Ok Cancel

This window allows user to edit site details and logger details of an existing site file to create a new site file.

Site details consist of Site Name, Site Number and Data Directory.

Site Name is the name of the site where the logger is being installed. If there is more than one site to monitor in the same monitoring environment the site number can be used to identify different sites. So the Site Name and Site Number are for identification purposes.

Site Name can be a unique name, up to 15 characters long. The Site Name can contain letters, numbers and can use special character '-'.

Site Number can be a number from 1 to 255.

Data Directory is the directory that is being used to save logged data from a data logger. Default data directory of all sites is ODYDATA. There is an option to create 8 data directories for a site. See Adding Data Directories to a Site File.

Logger Details consist of Logger Serial Number, Sensor Type, Sensor Serial Number and Sensor Calibration.

Logger Serial Number is the serial number of the logger which is being used to monitor this site.

Sensor Type in the 'New Site File' window is the sensor type of the data logger. Serial No: is the sensor serial number. Calibration types available for sensors are Linear Calibration and Polynomial Calibration. User can choose a calibration type for the sensor as shown below.

Sensor	Serial No:	Calibration
Temperature	16230	Linear
Pressure	16230	Polynomial

Lastly, user can select either Site Name or Logger Serial Number as the required site file identification. By default the site name will be used for site file identification.

Clicking 'OK' will create a new site file in the host computer and will be displayed in the main screen site files box. The software also checks for duplication of site files with the same site name and site number, or logger serial number and site number before creating the site file. If duplication exists then user can re-enter site details or logger details in the New Site File window.

Logger details section of a 'New Site File' window for a Capacitance Water Level Logger will be slightly different from other logger types. It will be as shown below.

New Site File

Site Details

Site Name: ODYWL *
Maximum 15 characters, cannot use any special characters except '!'

Site Number: 1 *
Can be a value from 1 to 255.

Data Directory: ODYDATA ...
Data directory that is being used to save logger data.
Default: ODYDATA

Logger Details

Serial Number: 20054 *

Sensor Type: Capacitive Water Level *

Sensor Length: 2.0 m *

Sensor Serial No Calibration: 20054 Linear

Logging Mode: Linear Logging

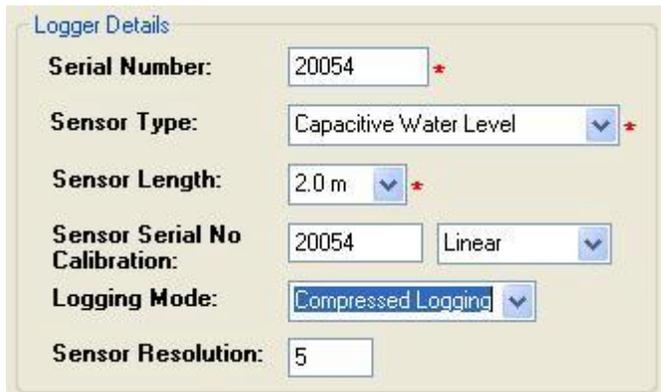
Site File Identification:
 Site Name Logger Serial Number

Ok Cancel

Additional details required for Capacitance Water Level Logger site file are sensor length and logging mode use to log data. The Capacitance Water Level Logger can be operated under two

types of logging mode: Linear Logging and Compressed Logging. By default linear logging will be used.

Compressed logging mode requires sensor resolution, which will be 5mm by default (See Compressed Logging). Logger details section of the 'New Site File' window of a Capacitance Water Level Logger using Compressed Logging will be as shown below.



Logger Details

Serial Number: 20054 *

Sensor Type: Capacitive Water Level *

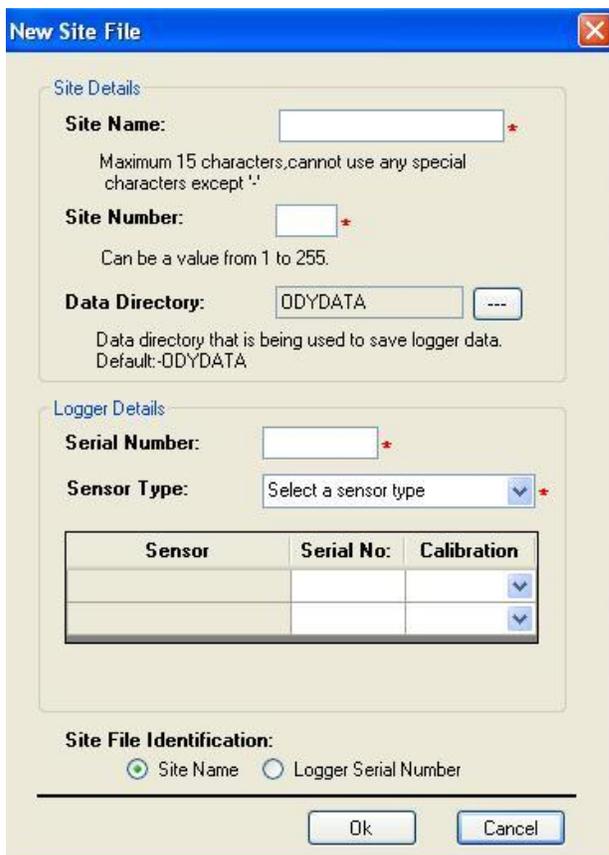
Sensor Length: 2.0 m *

Sensor Serial No Calibration: 20054 Linear

Logging Mode: Compressed Logging

Sensor Resolution: 5

If there is no site file selected in the site file box when selecting 'New Site File' option, or user doesn't want to create a site file by editing an existing one, New Site File window will be displayed as shown below.



New Site File

Site Details

Site Name: *
Maximum 15 characters, cannot use any special characters except '.'

Site Number: *
Can be a value from 1 to 255.

Data Directory: ODYDATA ...
Data directory that is being used to save logger data.
Default: ODYDATA

Logger Details

Serial Number: *

Sensor Type: Select a sensor type *

Sensor	Serial No:	Calibration
		▼
		▼

Site File Identification:
 Site Name Logger Serial Number

Ok Cancel

Edit a Site File

Selecting 'Edit Site File' from the File menu or selecting 'Edit Site File' option in the toolbar pops up a window as shown below, if a site file for a single channel logger (except capacitance water level logger) is selected.

The dialog box is titled "Edit Site File ODYTEMP_001.KEY". It is divided into two main sections: "Site Details" and "Logger Details".

Site Details:

- Site Name:** A text box containing "ODYTEMP". A red asterisk is to the right. Below it, text reads: "Maximum 15 characters, cannot use any special characters except '!'".
- Site Number:** A text box containing "1". A red asterisk is to the right. Below it, text reads: "Can be a value from 1 to 255".
- Data Directory:** A text box containing "ODYDATA" and a browse button "...". Below it, text reads: "Data directory that is being used to save logger data. Default: ODYDATA".

Logger Details:

- Serial Number:** A text box containing "6121". A red asterisk is to the right.
- Sensor Type:** A dropdown menu showing "Temperature". A red asterisk is to the right.
- Sensor Table:** A table with columns "Sensor", "Serial No.", and "Calibration".

Sensor	Serial No.	Calibration
Temperature	6121	Linear

Site File Identification:

- Two radio buttons: "Site Name" (selected) and "Logger Serial Number".

At the bottom are "Ok" and "Cancel" buttons.

Edit Site File window for a dual channel logger will be as shown below.

The dialog box is titled "Edit Site File ODYPRESS_001.KEY". It is divided into two main sections: "Site Details" and "Logger Details".

Site Details:

- Site Name:** A text box containing "ODYPRESS". A red asterisk is to the right. Below it, text reads: "Maximum 15 characters, cannot use any special characters except '!'".
- Site Number:** A text box containing "1". A red asterisk is to the right. Below it, text reads: "Can be a value from 1 to 255".
- Data Directory:** A text box containing "ODYDATA" and a browse button "...". Below it, text reads: "Data directory that is being used to save logger data. Default: ODYDATA".

Logger Details:

- Serial Number:** A text box containing "16230". A red asterisk is to the right.
- Sensor Type:** A dropdown menu showing "Temperature and Pressure". A red asterisk is to the right.
- Sensor Table:** A table with columns "Sensor", "Serial No.", and "Calibration".

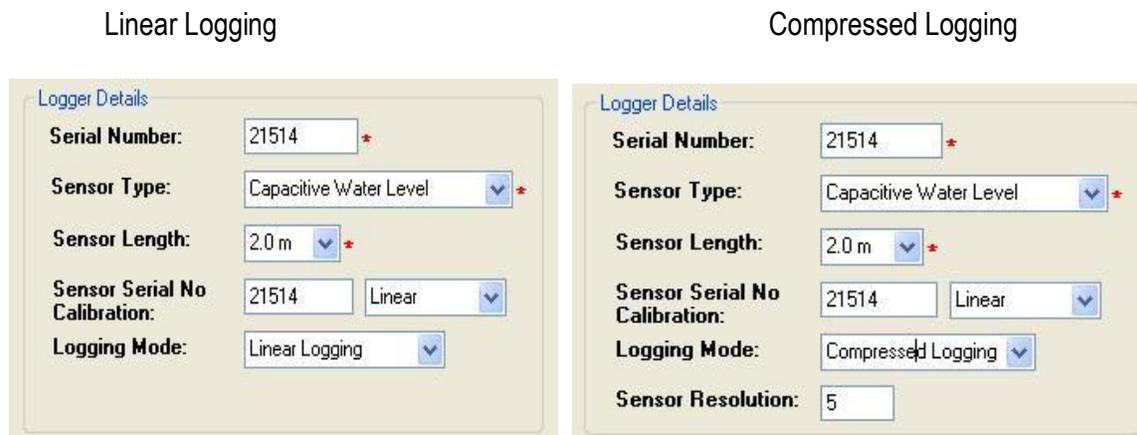
Sensor	Serial No.	Calibration
Temperature	16230	Linear
Pressure	16230	Polynomial

Site File Identification:

- Two radio buttons: "Site Name" (selected) and "Logger Serial Number".

At the bottom are "Ok" and "Cancel" buttons.

Logger details section of Edit Site File window of a Capacitance Water Level Logger is slightly different from other loggers. It is as shown below for a Capacitance Water Level Logger using Linear Logging or Compressed Logging.



Note: Sensor resolution should be between 3mm and 250mm.

Delete a Site File

A selected site file can be deleted either by Selecting 'Delete' from 'File' Menu or pressing the 'Delete' key on the keyboard of the host computer. A confirmation dialog will appear to get confirmation from user to delete the selected site file. Deleting a site file will also delete all data files associated with the file from Site File data directories.

Selecting Communications Port

Selecting a communication port from the 'Communications' Menu or from the toolbar will allow software to configure and use the selected port to communicate with the data logger. The port selected in the software should match the port to which the data logger interface cable is connected. To automatically detect the right port, select Auto Detect Port from the 'Communications Menu'.

Auto Detect Port

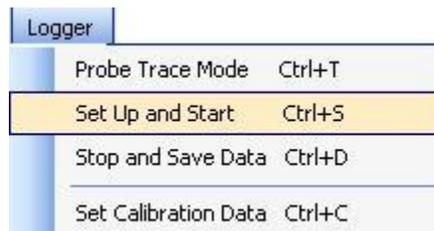
Selecting Auto Detect Port from the 'Communications Menu' will allow the user to automatically detect and configure which port the data logger is interfaced to the host computer. Software can auto detect the port only if a working data logger is connected to a COM port or USB port with the interface cable. In case of using USB-Serial adapter cable, cable should be installed properly before using 'Auto Detect Port' option. Once the software detects and configures the communications port then user can perform any logger operations. Status bar, Toolbar and Communications Menu of the software will display the detected port as shown below.



Set Up and Start Logger

To set up and start an Odyssey Data Logger the following list of prerequisites are required:

- Connect the serial interface cable to the computer serial port and the logger. If you are using a USB-Serial adapter cable connect the cable to a USB port and install the cable driver software (see Installing USB-Serial adapter cable).
- Select the Communications Port or select Auto Detect Port from the communications menu in the software.
- Create a site file for the data logger (see Creating a Site File).



To start an Odyssey Data Logger user must select the Site File created for the logger as mentioned in the Site File section. Selecting either Set Up and Start from the Logger Menu or clicking green Set Up and Start Logger button on the main screen brings up a window as shown below.

Set Up and Start Logger

Logging Site

Site Name: ODYTEMP
 Site No: 1
 Logger Serial No: 6121
 Logger Type: Temperature
 Logging Mode: Linear Logging

Start Settings

Scan Time: 00:10:00
 Select how frequently logger needs to log data.

Start Mode
 Start Now Delay Start
 To start logging immediately, click 'Start Logger'.

Start Date: 17-06-2011
 Start Time: 09:45:33

Start Logger
 Cancel

Date: 17-06-2011
 Time: 09:45:33

Top section of the window is a brief description of the logging site, which includes Site Name, Site Number, Logger Serial Number, Logger Type and Logging Mode used for data logging.

In Start Settings section user can set start settings required for the data logger to log data.

Scan time to determine how frequently the logger has to log data should be in the format HH:MM:SS. Odyssey Data Logger can measure and log data at user specified logging intervals or Scan Time from once every 10 seconds to once every 12 hours.

For Fast Pressure Logger minimum scan time which can be set is 1 second.

Note: Battery consumption increases dramatically as logging intervals are reduced to below one hour.

To set a **Scan Time**: -

- Select the part of the scan time (HH, MM or SS) that you want to modify. Selected part will be highlighted with a blue background.
- Use the up-down arrow to increase or decrease the selection or use the keyboard to enter the selected part of time.



Start mode for a logger can be set to 'Start Now' to start logger immediately or 'Delay Start' to delay the start of logging data. Data logging can be delayed to few days from the current date and time.

By default start mode will be set to 'Start Now' when a site is used for the first time to start a data logger. Otherwise start mode will be the last start mode used to start logger with the selected site file.

'Start Date' field can be used to set Start Date in the format DD-MM-YYYY.

To set the **Start Date**: -

- Clicking on the down arrow next to the start date will drop a calendar as shown below.
- The current date is circled red, while any date you select is highlighted in blue.
- Use the left and right arrows at the top of the calendar to navigate through the months.



'Start Time ' field can be used to set the Start Time in the format HH:MM:SS

To set the **Start Time**: -

- Select the part of the start time (HH, MM or SS) that you want to modify. Selected part will be highlighted to blue.
- Use the up-down arrow to increase or decrease the selection or use the keyboard to enter the selected part of time.



Click 'Start Logger' to send start settings to the logger. The following window will be displayed, if start settings has been transferred successfully.

Note: Starting the logger will erase all readings currently stored in its memory.

When a logger is started the maximum logging time will be calculated based on logger memory and scanning rate and will be displayed as shown below. It also displays the approximate date when logger memory becomes full. Once the logger has started it will continue to log data till next download of data or until its memory is full. When its memory is full, logger will shut down automatically to save battery power. The logged data is always preserved in the memory unless the logger is restarted.



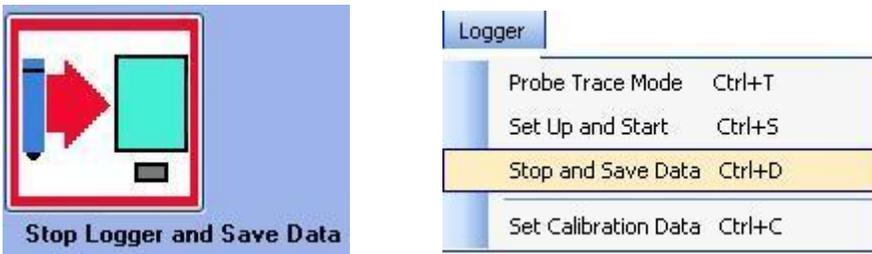
Note: All Odyssey Data Loggers are equipped with non-volatile memory, so data will be preserved even in the case of battery failure.

Stop Logger and Save Data

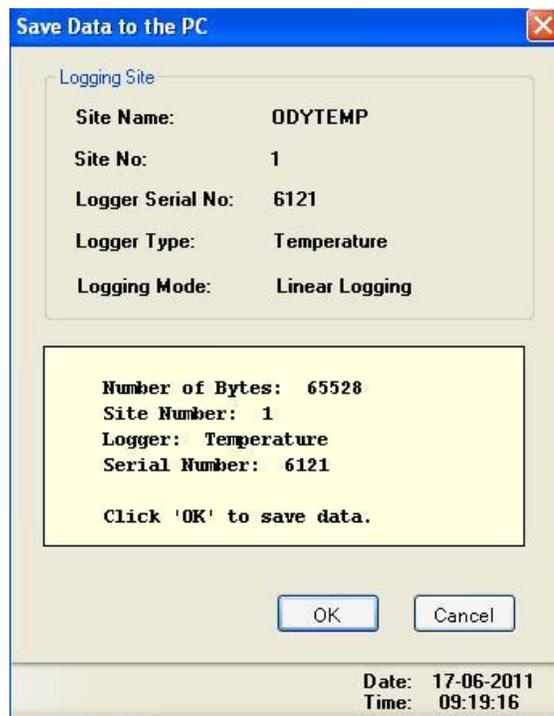
To stop logging and save data from an Odyssey Logger the following list of prerequisites are required:

- Connect the serial interface cable to the computer serial port and the logger. If you are using a USB-Serial adapter cable connect the cable to a USB port and install the cable driver software (See Installing USB-Serial Adapter Cable).
- Select the Communications Port or select Auto Detect Port from the communications menu in the software.

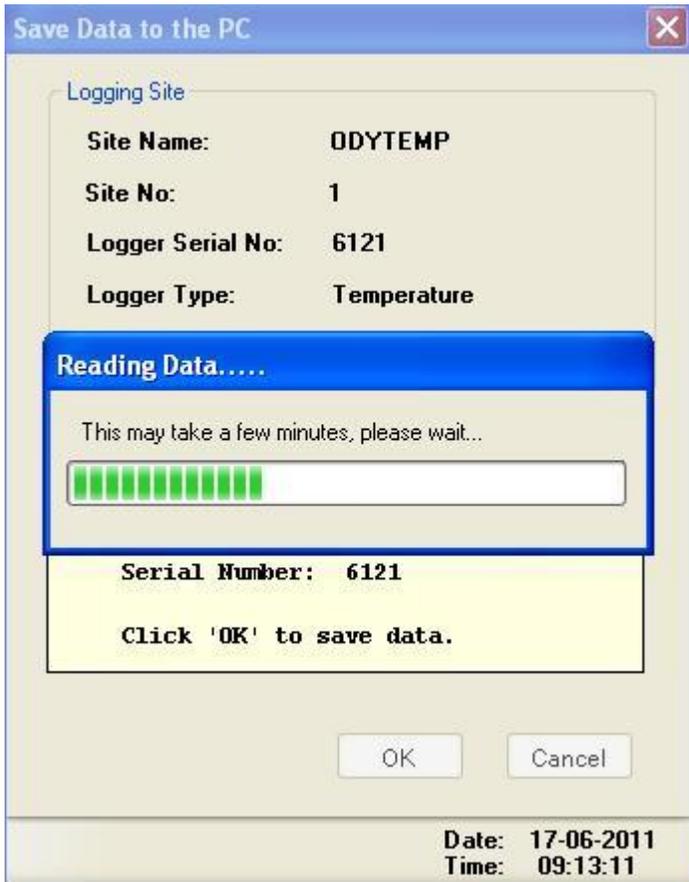
To stop and save data from an Odyssey Logger user must select the site file used to start the logger. Selecting either Stop and Save Data from the Logger Menu or clicking red Stop Logger and Save Data button on the main screen brings up a window as shown below.



The Save Data to the PC window displays details about the site file selected to save data, interfaced data logger type, serial number and total bytes of data inside its memory.



Click 'Ok' to save data to the host computer and view it or graph it. This brings up a progress bar showing the rate of reading data from data logger as shown below.



Finally, a save file window will be displayed to allow user to save a copy of data to any location under a file name with a .CSV extension. If user does not choose a file name, software will attempt to save data to a file with the name displayed in the window. CSV files are comma-separated files, which can be easily imported into spreadsheet applications like MS Excel.

Note: Data block will be saved to the Data Directory even if user cancels the Save .CSV File window.

If logger serial number is different to the one in the site file, software displays a message - 'Do you want to add this data to the selected site file?' - so if you accidentally choose the wrong site file for saving data you can do a repeat of saving data to the correct site file.

If the site number of the site file used to start logger is different from the site number of the site file used to save data, software displays a message - 'Do you want to add this data to the selected site file?' - so if you accidentally choose the wrong site file for saving data you can do a repeat of saving data to the correct site.

If the data has already been saved, a pop up message will appear and saving of data will be aborted.

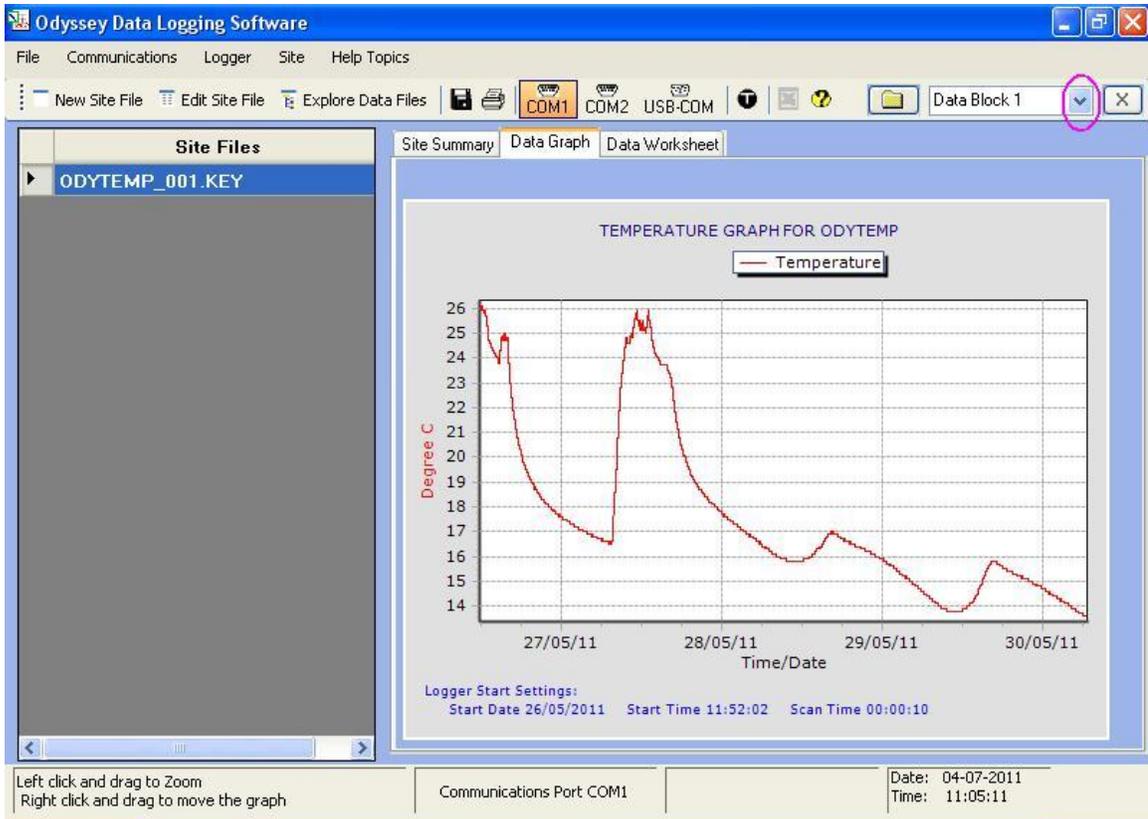
Note: If there is a large amount of data to save, it will take a few minutes to finish saving data.

After successfully saving data a window pops up to remind user to restart the logger as shown below. The data that has just been saved will remain in the Odyssey Logger memory until it has been started again.



Data Graph

Selecting the 'Data Graph' from the 'Site' menu or selecting 'Data Graph' tab from the main screen will allow user to view a graph of each data block associated with a site file. To view the data block graph, select a data block from the data block list at the top-right side of the main window as shown below.



Note: In order to display a data graph, a data block must be selected from the data block list.

Data block graph shows the following information: -

- Vertical axis shows scale and unit of the logged sensor data.
- Horizontal axis shows the logging period.
- Plotted graph as a red line.
- Scan Time used to log data, Start Date and Start Time of logging.

Note: If no calibration file exists for the data logger sensor, there will not be any unit displayed on the vertical axis (See Sensor Calibration for more details).

Graph Functions

Zoom In, select the section of the graph by positioning the mouse pointer at the top left of the area to be zoomed, then click and hold the left mouse button and drag the highlighted area until it covers the area that you want to expand.

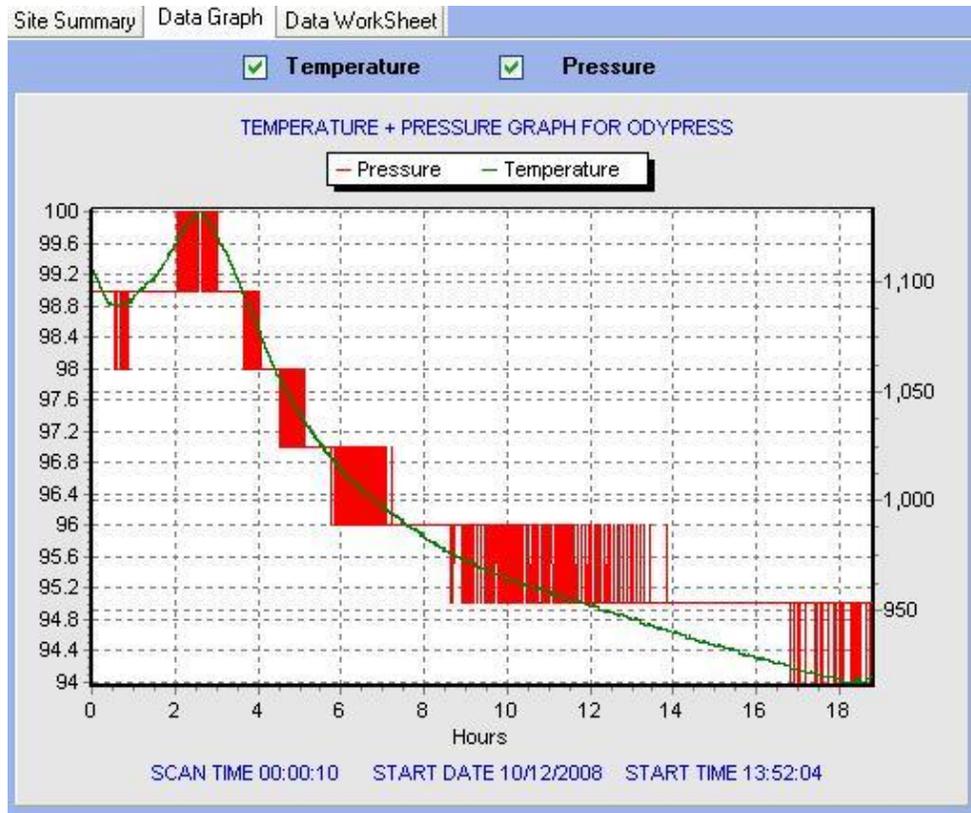
Zoom Out, place mouse over any part of the graph and drag up and left with left mouse button pressed.

Scroll, drag in either vertical or horizontal scroll direction with right mouse button pressed.

Print, select 'Print Graph' from the 'File Menu' or click on the main window.

Save as a .bmp file or .jpg file or .gif file, select 'Save As' from the 'File Menu' or click on the main window.

For a dual channel logger two check boxes will be displayed at the top of the graph. This allows selection of either sensor data on the graph as shown below. Also there will be two plotted graph lines- one in red color and other in green color. Left vertical axis shows scale and unit of first sensor and right vertical axis shows scale and unit of second sensor.



Composite Data Graph

Selecting 'Composite Data Graph' from 'Site' menu will display a timed data graph of all logged data of the site in the data directory.

Site graph shows all information as mentioned in the data graph section. It can be zoomed and scrolled in the same way as a data graph.

To **Display Data Values** on the graph, left click the mouse on the graph lines.

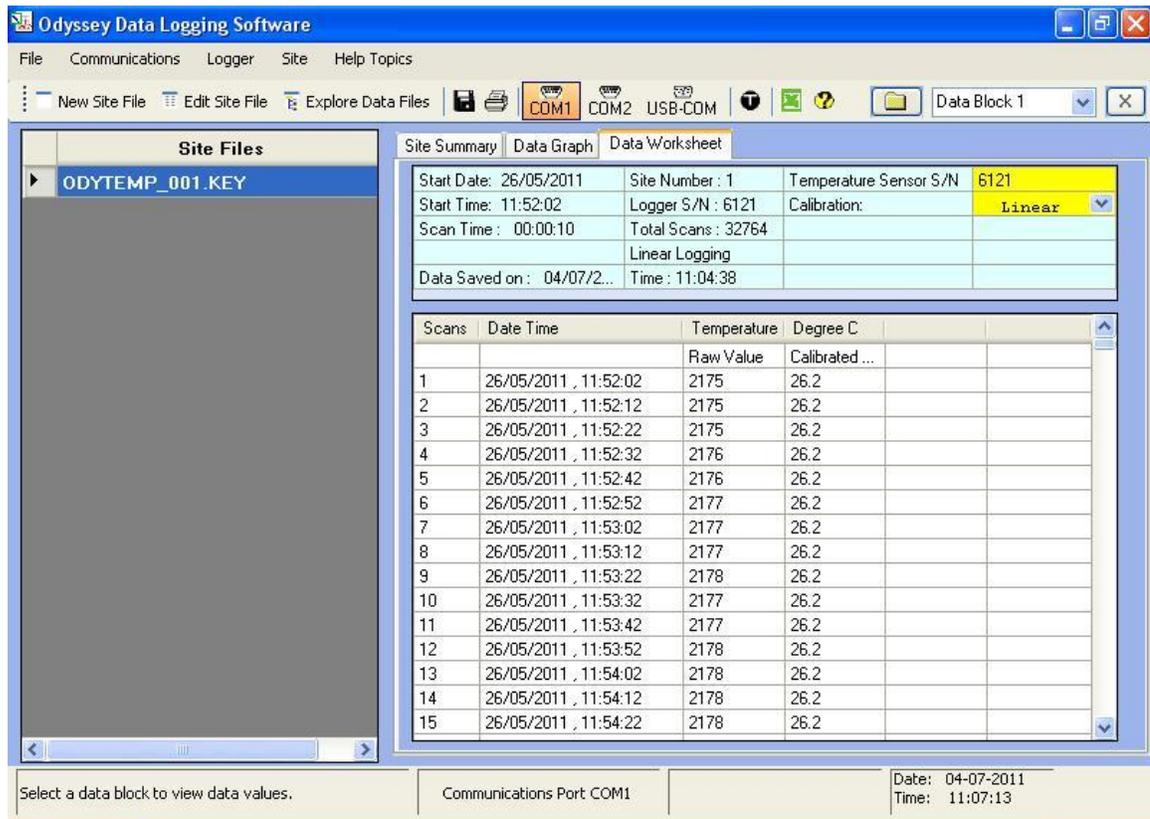
To **Mark Data Points** on the site graph, click  Mark Points in the site graph window.

To **Print** the composite graph, click  in the site graph window.

To **Save** the graph as a .bmp file or .jpg file or .gif file, click  in the site graph window.

Data Worksheet

The Data Worksheet tab in the software allows user to view and edit data values of a data block associated with a site file in the spreadsheet format. To view data points a data block must be selected from the data block list at the top-right of the main window as shown below. The data worksheet consists of two sections.



Start Date:	26/05/2011	Site Number :	1	Temperature Sensor S/N	6121
Start Time :	11:52:02	Logger S/N :	6121	Calibration:	Linear
Scan Time :	00:00:10	Total Scans :	32764	Linear Logging	
Data Saved on :	04/07/2...	Time :	11:04:38		

Scans	Date Time	Temperature		Degree C		
		Raw Value	Calibrated ...			
1	26/05/2011 , 11:52:02	2175	26.2			
2	26/05/2011 , 11:52:12	2175	26.2			
3	26/05/2011 , 11:52:22	2175	26.2			
4	26/05/2011 , 11:52:32	2176	26.2			
5	26/05/2011 , 11:52:42	2176	26.2			
6	26/05/2011 , 11:52:52	2177	26.2			
7	26/05/2011 , 11:53:02	2177	26.2			
8	26/05/2011 , 11:53:12	2177	26.2			
9	26/05/2011 , 11:53:22	2178	26.2			
10	26/05/2011 , 11:53:32	2177	26.2			
11	26/05/2011 , 11:53:42	2177	26.2			
12	26/05/2011 , 11:53:52	2178	26.2			
13	26/05/2011 , 11:54:02	2178	26.2			
14	26/05/2011 , 11:54:12	2178	26.2			
15	26/05/2011 , 11:54:22	2178	26.2			

First section displays following information:

- Start Date in the format dd/mm/yyyy.
- Start Time of logged data block in the format hh:mm:ss.
- Scan Time used for logging data in the format hh:mm:ss.
- Date and Time when data has been saved.
- Logger serial number and logging mode used to log data.

- Total number of scans logged by the logger.
- Sensor type, sensor serial number and sensor calibration.

Second section displays the logged data, which consists of following information:

- Scan count.
- Logging date and time in the format dd/mm/yyyy, hh:mm:ss.
- Raw readings from each sensor.
- Calibrated values of the logged sensor data.

For dual channel loggers data worksheet displays sensor type, sensor serial number and sensor calibration of both the sensors, logged data from both the sensors as shown below

Site Summary		Data Graph		Data WorkSheet	
Start Date: 10/12/2008	Site Number : 1	Temperature Sensor S/N	5690		
Start Time: 13:52:04	Logger S/N : 5690	Calibration:	Linear		
Scan Time : 00:00:10	Total Scans : 6780				
	Linear Logging	Pressure Sensor S/N	5690		
Data Saved on : 14-01-20...	Time : 12:53:32	Calibration:	Polynomial		

Scans	Date Time	Temperature		Pressure	
		Raw Value	Calibrated ...	Raw Value	Calibrated ...
1	10/12/2008 , 13:52:04	1105	23.1	3714	7125
2	10/12/2008 , 13:52:14	1105	23.1	3715	7127
3	10/12/2008 , 13:52:24	1105	23.1	3714	7125
4	10/12/2008 , 13:52:34	1105	23.1	3713	7123
5	10/12/2008 , 13:52:44	1105	23.1	3714	7125
6	10/12/2008 , 13:52:54	1104	23.1	3715	7127
7	10/12/2008 , 13:53:04	1104	23.1	3710	7117
8	10/12/2008 , 13:53:14	1104	23.1	3712	7121
9	10/12/2008 , 13:53:24	1104	23.1	3716	7129
10	10/12/2008 , 13:53:34	1104	23.1	3715	7127
11	10/12/2008 , 13:53:44	1104	23.1	3713	7123
12	10/12/2008 , 13:53:54	1104	23.1	3714	7125
13	10/12/2008 , 13:54:04	1104	23.1	3711	7119
14	10/12/2008 , 13:54:14	1104	23.1	3715	7127
15	10/12/2008 , 13:54:24	1104	23.1	3710	7117

Save Data Worksheet

Data displayed in the data worksheet can be saved as .csv, .prn, or .txt files.

Files saved in the .csv format consist of comma-separated values and are directly readable by Microsoft Excel and many other spreadsheet applications.

Files saved in the .prn format consist of comma-separated values which can be easily imported into spreadsheet applications like Microsoft Excel.

Files saved in the .txt format consist of comma-separated values which can be viewed by most text editing software or spreadsheet applications like Microsoft Excel.

User can save data to any of the above file formats by selecting 'Save As' from the 'File' menu or click  on the main window.

To print data displayed in the data work sheet, select 'Print Data' from the 'File' menu or click  on the main window.

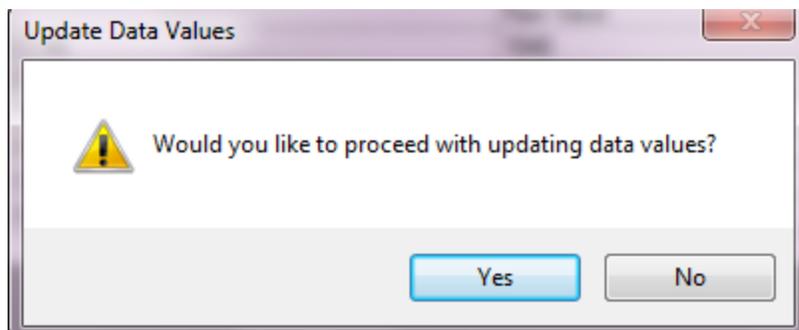
Save As

Selecting 'Save As' from the 'File' menu can be used to save data graph as a .bmp, .jpg, .gif file or to save data worksheet as a .csv, .prn or .txt file.

Note: If no calibration file exists for the data logger sensors, calibrated values will be same as raw values (see Sensor Calibration for more details).

Editing a Data Block

Raw data values of a data block displayed in the Data worksheet can be edited and saved. The data should only be edited if you know that there is a bad value in the logged data. To edit data, select data required to be edited, enter new data, then press 'Enter' key on the keyboard. To save the changes made to the data values, select 'Update Data Values' from the 'Site' menu. To avoid inadvertently editing raw data values the user will be asked to confirm that you need to proceed with editing values.



Click 'Yes' to proceed with updating values.

Data blocks saved from a Capacitance Water Level Logger with compressed data logging mode and the Tipping Bucket Rain Gauge cannot be edited.

Re-calibrating a Data Block

The software allows user to change sensor calibration of a data block from Linear to Polynomial calibration or vice versa. To change sensor calibration, select the calibration to be

changed, select the new calibration, then press 'Enter' key on the keyboard as shown below. If the calibration data does not exist, the program will come up with a message that the calibration does not exist (see Sensor Calibration Data for more details).

Temperature Sensor S/N	6466
Calibration:	Linear
	Linear
	Polynomial

The software allows user to change the sensor serial number of a data block to a valid new serial number as shown below. To change sensor serial number, select sensor serial number to be changed, enter new sensor serial number in the data worksheet cell, then press 'Enter' key on the keyboard.

Temperature Sensor S/N	6121
Calibration:	Linear

To save the changes made to the sensor calibration or sensor serial number, select 'Recalibrate Data Block' from the 'Site' menu. To avoid inadvertently changing the sensor calibration or sensor serial number the user will be asked to confirm that you need to proceed with changes made.

Note: The sensor serial number or sensor calibration of a data block should only be changed, if you know that the data block has been using an incorrect sensor serial number or sensor calibration.

If you want to delete a data block, select the data block to be deleted from the data block list at the top-right of the main window, click the 'X' button on the right as shown below. You will then be prompted to confirm that you do want to delete the selected data block of this site. If you click 'Yes' then the block will be deleted and the remaining blocks will then be renumbered.



Note: It is advisable to back up your data before you delete or edit a data block from a site. This protects your data in case you make a mistake and inadvertently delete or edit the wrong block.

Export or Import Data into Microsoft Excel

Selecting 'Export Data to Excel' from the 'Site' menu or clicking  from the main window toolbar will launch the MS Excel spreadsheet application, and loads the displayed data block

directly to an Excel worksheet. This option will only work if the host computer has MS Excel spreadsheet application software (Office XP or later version) installed.

The selected data block can also be saved as MS Excel compatible files by selecting 'Save As' or click  from the main window toolbar (see Save Data Worksheet).

When each block of data is saved from an Odyssey Data Logger a text file is automatically created that contains all the data for the site selected. This file has a .PRN extension and can be imported into Microsoft EXCEL as a text file. The '. PRN' file is in the same data directory of the site file as the data that you have saved from the logger.

Note: All data directories of a site file will be listed in the Odyssey Data Files folder under the logged-on user profile.

Perform the following steps to import data into Microsoft Excel:

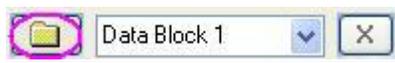
- Load Microsoft Excel, then select 'Open' from the 'File' menu.
- Select the .PRN file from the site file data directory where your data has been saved and then click on 'Open'.
- Select Delimited in the Next Option box, then click on Next.
- Select Comma, click on Next, then click on Finish.

To format the date and time. First click on A at the top of the column A. This will highlight all the data in column A. Then click on Format, then click on Cells. Click on Date then select DATE TIME. Select the one that displays the time as a 24-hour clock. Click on OK. The data in column A will now be displayed in date and time format.

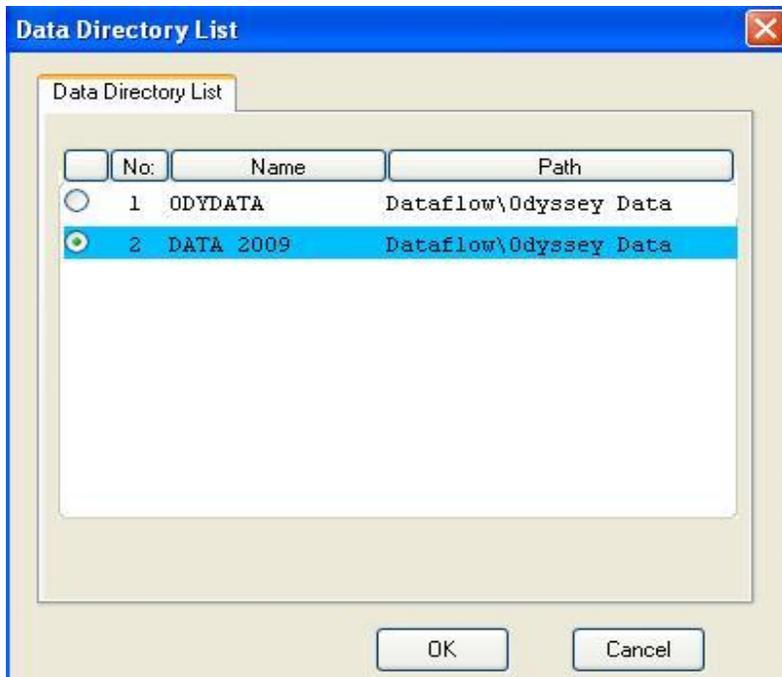
The data that is imported contains the un-calibrated data in the first data column and the calibrated data in the second data column. For a dual channel sensor this is repeated for the second sensor.

Note: If the data is not calibrated, data values in the calibrated data column will be the same as the un-calibrated data or raw data.

Viewing Data Blocks From a Data Directory



The software allows user to view data blocks from any data directory associated with a site file. To view saved data files in a different data directory other than the current data directory, click on  the left side of the data block drop-down list to display a window as shown below.



Select the data directory from which you want to view data blocks and Click 'OK'. This will load all data blocks of the selected site file in the drop down data block list. Now user can select the data block to graph in the Data Graph tab or view data in the data worksheet.

Note: Selecting a data directory to view data will not change the current data directory of a site file.

Data Directory

The data directory is the directory of the site file where data files will be saved while saving data from a logger. There is an option to create 8 data directories for a site. The directory names can also be used as a separator for the data from different logging periods for the logger that is being used. If you set the data directory for the site as DATA2010, for the logging period 2010 the data files for that particular year's monitoring period will be saved in this directory. Likewise for 2011 a different data directory, DATA2011 can be used for the same site. This gives the option for easily analyzing yearly data and comparing the changes. The directory names can indicate either the project or the year that the data was logged.

Note: Data directories of all site files are located in the folder 'Odyssey Data Files' under the user profile path.

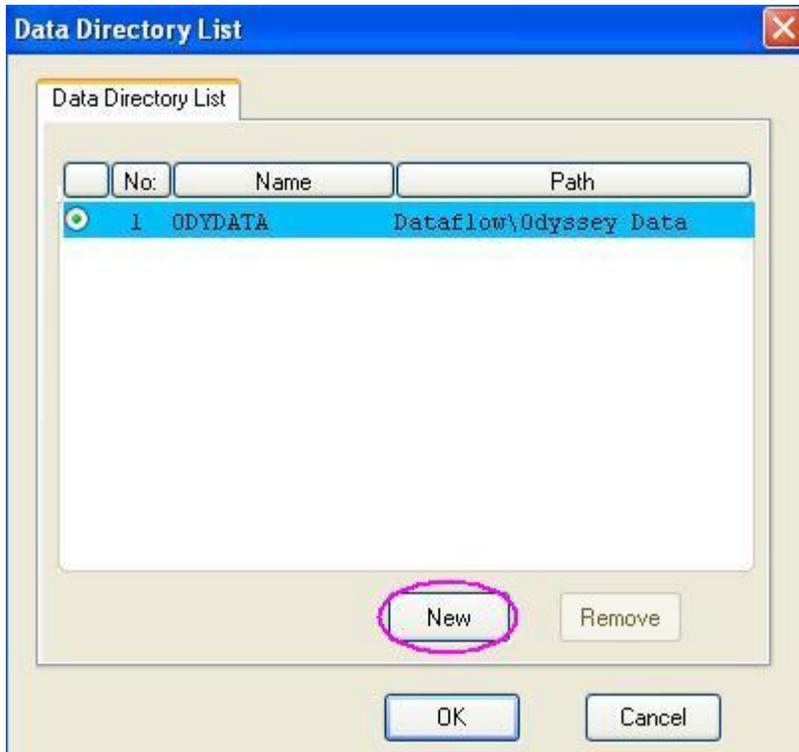
**For Windows 7 and Windows Vista the 'Odyssey Data Files' folder path is
C:\Users\{Username}\Odyssey Data Files**

**For Windows XP the 'Odyssey Data Files' folder path is
C:\Documents and Settings\{Username}\Odyssey Data Files**

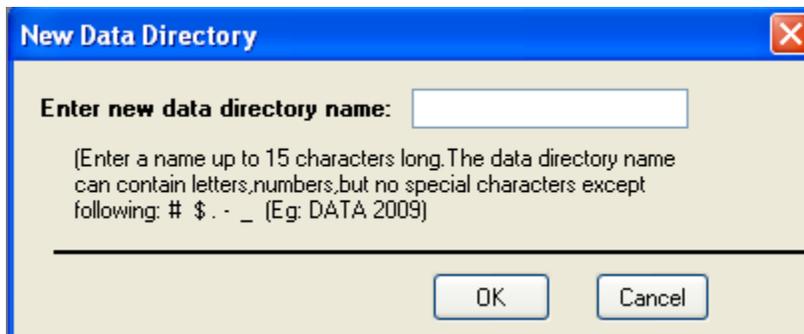
The 'Username' is the logged-on username of the Windows Operating System.

Adding a Data Directory to Site File

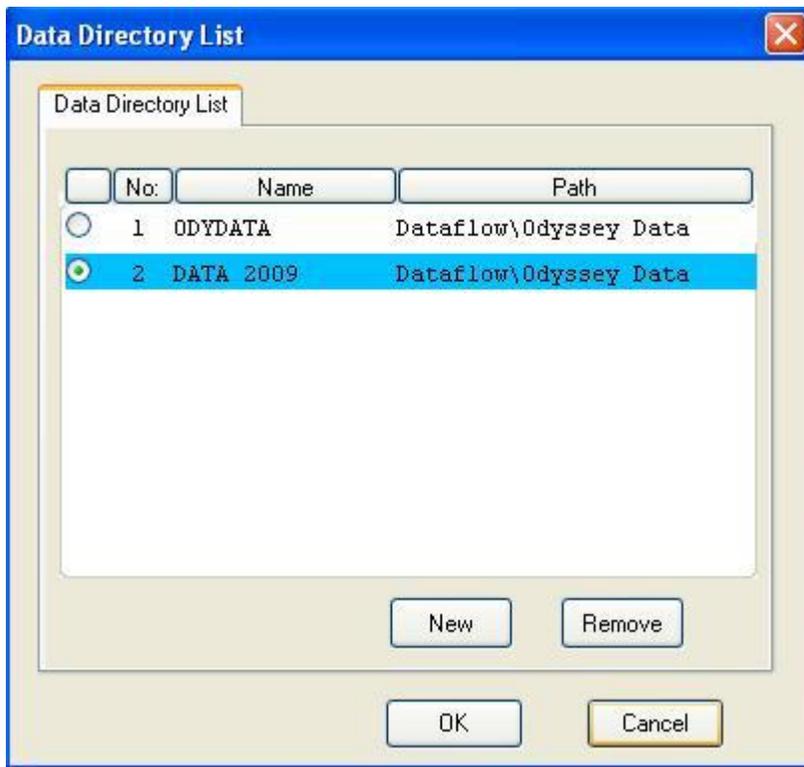
Clicking button  right of the data directory box in the New Site File or Edit Site File window will display a window as shown below. This will display the number of data directories of the site file, data directory name and path of the data directory. Current data directory will be automatically selected and displayed with a blue background in the data directory list.



Click the 'New' button to bring up a window as shown below.



Enter the name of the data directory, for example, DATA 2009 and click 'OK' to add the data directory to the data directory list of a site file. To **change the current data directory**, select a data directory from the list and click 'OK' as shown below.



Explore Files In Data Directory

Right clicking the site file and selecting 'Explore Data Files' or clicking button  on the main screen will display the data files in the selected data directory of the site file in Windows Explorer. This gives the option to copy or back up the data files without locating the data directory in the system.

Files In Data Directory

When a data block is saved from a data logger, the software creates the following files in the data directory.

- . **dat file & .key file:** - consists of logged data in ASCII or binary format.
- . **prn file:** - consists of data as comma separated values.
- . **dec file:** - consists of data in text format.
- . **bgf file:** - graph file.

Sensor Calibration

All Odyssey data loggers are software calibrated. This avoids the complication in changing hardware settings for calibration purpose and if you need, it is easy to recalibrate also. Calibration data for all loggers will be supplied on a disk or CD except for following loggers:

Capacitance Water Level.
Tipping Bucket Rain Gauge.
Integrating Light Logger.
Soil Moisture.

These loggers require the user to generate calibration data. The calibration procedure for the above loggers is described in the technical handbook for these loggers.

The calibration for each sensor of a logger should be entered before the logger is used to log data. If calibration data is not available before the logger and sensor are deployed then the program will process the data using a slope of 1 and an offset of 0. The calibration can be changed at a later date by editing a data block.

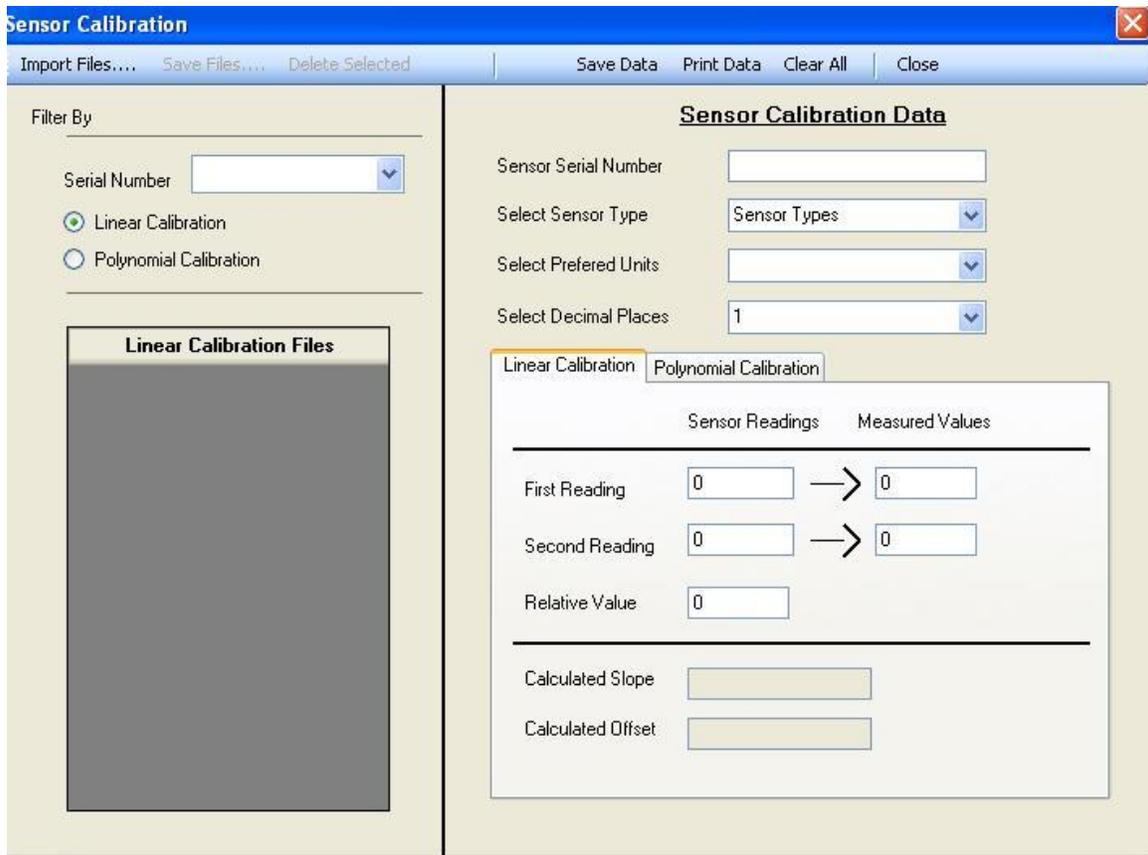
Two types of calibration

- Linear Calibration
- Polynomial Calibration

Linear Calibration

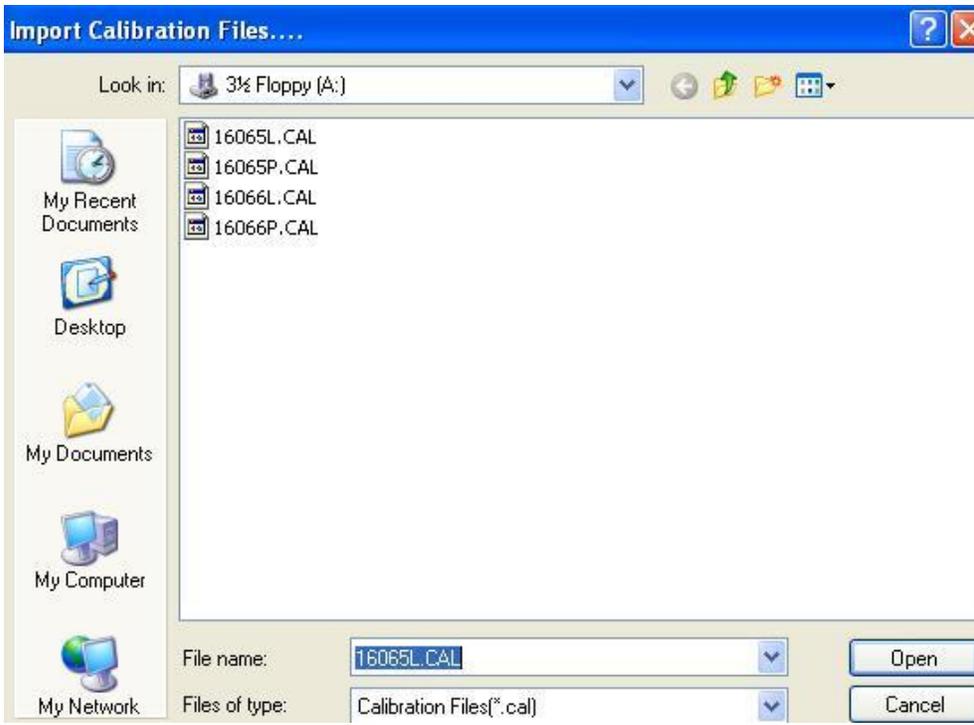
The linear calibration system is based on a two-point calibration procedure to generate a Slope and Offset for a sensor to calibrate the sensor readings. Calibration data can be obtained by obtaining two values while the logger is running in the Probe Trace Mode.

Selecting 'Set Calibration Data' from the logger menu or using the shortcut key 'Ctrl + C' will bring up a window as shown below.



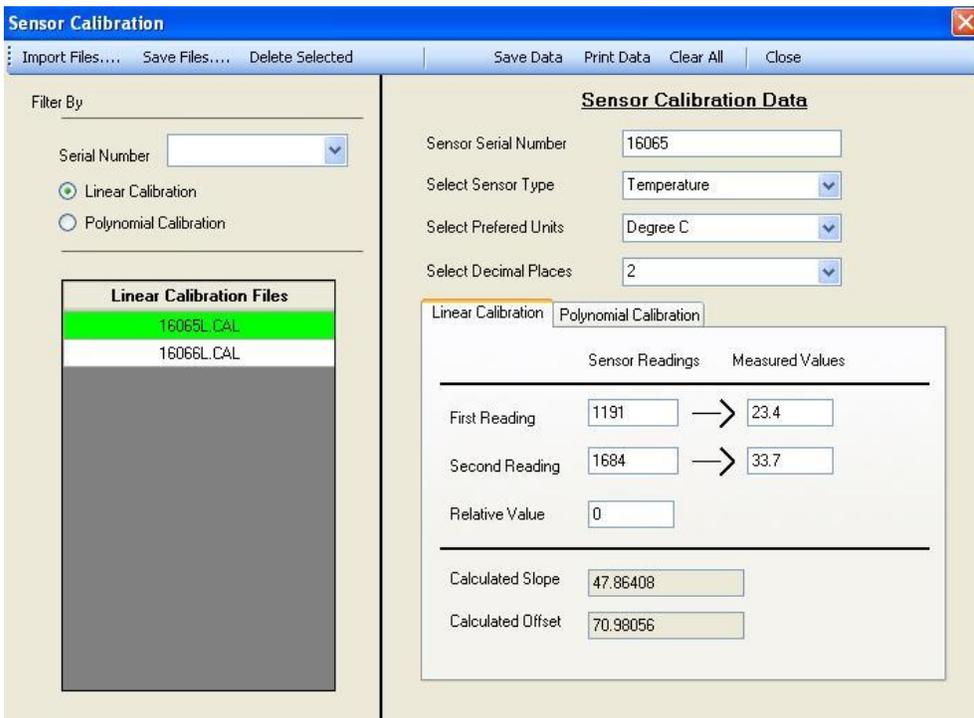
Import Calibration Files

Selecting 'Import Files' in the sensor calibration window pops up a window, which allows user to select the drive (floppy disk, CD or any drive) from which calibration files are to be transferred to the Odyssey Data Logging Software calibration directory. To transfer files select the calibration file or files to be transferred and click 'Open' as shown below.



Note: Multiple files can be selected by holding the 'Ctrl' key and left clicking the mouse on each file.

The calibration data of a sensor calibration file can be viewed by selecting a file from the calibration file list box as shown below.



Polynomial Calibration

This is a calibration by which the calibration curve is expressed in a polynomial function of a specific order. Sensors having a slight error in linearity can be reduced to almost zero by using the Polynomial Calibration method. To achieve a good curve correction, 4 to 6 points must be entered for the calibration.

To view Polynomial Calibration files, select the 'Polynomial Calibration' option as shown below and select the file to be viewed from the file list box.

The screenshot shows the 'Sensor Calibration' application window. On the left, under 'Filter By', the 'Serial Number' dropdown is set to '16065'. The 'Polynomial Calibration' radio button is selected. Below this is a list of 'Polynomial Calibration Files' with '16065P.CAL' highlighted in green. On the right, the 'Sensor Calibration Data' section is active. It shows fields for 'Sensor Serial Number' (16065), 'Select Sensor Type' (Pressure), 'Select Preferred Units' (mm), and 'Select Decimal Places' (0). Below these are tabs for 'Linear Calibration' and 'Polynomial Calibration', with the latter selected. A table displays calibration data points:

DATA INPUT ITEM	SENSOR READINGS	MEASURED VALUES
First Value	62	0
Second Value	1118	4307
Third Value	2090	8206
Fourth Value	3042	12046
Fifth Value	4123	16390
Sixth Value	5050	20118

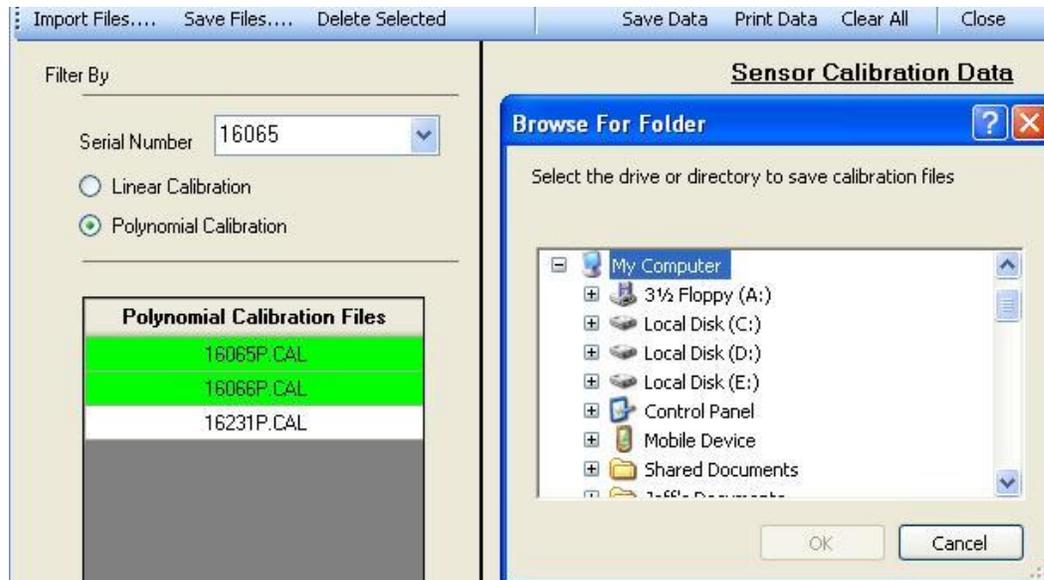
Below the table, 'Degree of Polynomial' is set to 3, and 'View % Accuracy' shows 99.9999481262731 %. At the bottom, 'Relative Value' is 0 and 'Sensor Temperature' is 1.2.

Calibration files can be filtered by 'Serial Number' by entering the serial number in the serial number box as shown below.

This close-up shows the 'Filter By' section. The 'Serial Number' dropdown menu is open, displaying '16065'. The 'Polynomial Calibration' radio button is selected. Below is a list of 'Polynomial Calibration Files' with '16065P.CAL' highlighted in green.

Save Calibration Files

Selecting 'Save Files' allows the user to save selected calibration files to any drive on the host PC as shown below.



Delete Calibration Files

Selected calibration files can be deleted from Odyssey Data Logging Software calibration directory by clicking **Delete Selected** option of the software. A confirmation dialog will appear to get the confirmation from the user to delete the selected calibration file.

New Calibration File

A new calibration file for a sensor can be created by entering the sensor serial number, selecting the sensor type, preferred unit for calibration and number of decimal places to which the calibrated data is to be corrected.

For sensors using Linear Calibration, get sensor readings corresponding to the first measured value and second measured value using Probe Trace Mode option of the software. Select 'Linear Calibration' tab, enter measured values and sensor readings in the corresponding fields. A slope and offset will be generated automatically by the software for the sensor.

Finally, select Save Data **Save Data** to save the sensor calibration to a calibration file.

For sensors using polynomial calibration select Polynomial Calibration in 'Filter By' option, if it is not selected. Enter measured values and corresponding sensor readings in the fields. When View % Accuracy is clicked the accuracy of curve matching will be displayed. This should be at least 99% if effective curve correction is to be achieved. If this percentage is below 99% then the data entry should be checked or check the method that was used to generate the data.

Note: Measured values should be entered based on the preferred unit for calibration.

Odyssey Pressure and Conductivity sensors use polynomial calibration to calibrate sensor readings.

Pressure sensors have internal temperature compensation in the actual sensor, so the pressure sensor does not require a temperature coefficient. The specification for the compensation will provide adequate performance in most groundwater applications.

The Odyssey Conductivity sensor uses temperature coefficient of the solution is being measured to perform the temperature compensation. Temperature compensation corrects the conductivity measured at the sample temperature to what that value would be if the sample was at a reference temperature. Normally the reference temperature would be either 20 or 25 degrees Celsius. If the temperature coefficient is unknown, then the default value of 1.8% per degrees Celsius should be accepted. The software allows the user to calculate the temperature coefficient of a solution by selecting the 'Coeff Calculator' to the right of the Temperature Coeff of Solution Cell as shown below to display the temperature coefficient calculator.

Reference Temperature	25	Coeff Calculator
Temperature Coeff: of Solution	1.8	

Temperature Coefficient Calculator

Temperature coefficient of a solution can be determined from conductivity measurements at two different temperatures.

Temperature difference of the solution should be less than 20 for better results.

	Temperature (C)	→	Conductivity (mS/cm)
Readings at Low Temperature	<input type="text"/>	→	<input type="text"/>
Readings at High Temperature	<input type="text"/>	→	<input type="text"/>

Calculate Temperature Coeff %/C

Ok Cancel

Enter the conductivity readings at high temperature and low temperature of the solution and click 'Calculate Temperature Coeff' to generate the temperature coefficient of the solution. Click 'OK' to assign the temperature coefficient to the conductivity sensor.

Relative Value

Relative Level values can be entered in the calibration file to provide measurements relative to a known reference point.

For example, water level values in groundwater measurements can be referenced from the water level to a point at or above ground level. The difference in the distance between the sensor and the required reference point can be entered in the Relative Value field. This value will be added to the measured value obtained from the sensor.

In the case of a pressure sensor if the sensor is for example 82 metres below ground level then the relative value would be entered as -82 if the sensor was calibrated in metres. Then if the sensor-measured water level value is 5.761 metres, the resulting data value will be $5.761 - 82 = -76.239$ metres, this value is the distance of the water level below the ground surface.

In the case of the Capacitive Water Level sensor the measurement situation will determine the value of the relative value, for example, a 'V' notch weir. The distance between the zero calibration point for the sensor and the bottom of the 'V' notch weir would be entered as a negative number. If the zero point for the sensor was 300mm below the bottom of the 'V' notch, then -300 would be entered for the Relative Value. If the sensor is deployed in a water bore then the Relative Value would be entered in the same manner as for the pressure sensor. If the water level probe or a pressure sensor is measuring the height of water above ground then the Relative Value would be zero, or if the sensor was mounted so that the zero for the sensor was below ground then this distance would be entered as a negative number.

The Relative Level can also be used for other sensors, for example if you want to record temperature data with a zero set at 20 degrees then the Relative Value would be set as -20. This will then give positive values when the sensor reading is above 20 and negative values when the sensor reading is below 20.

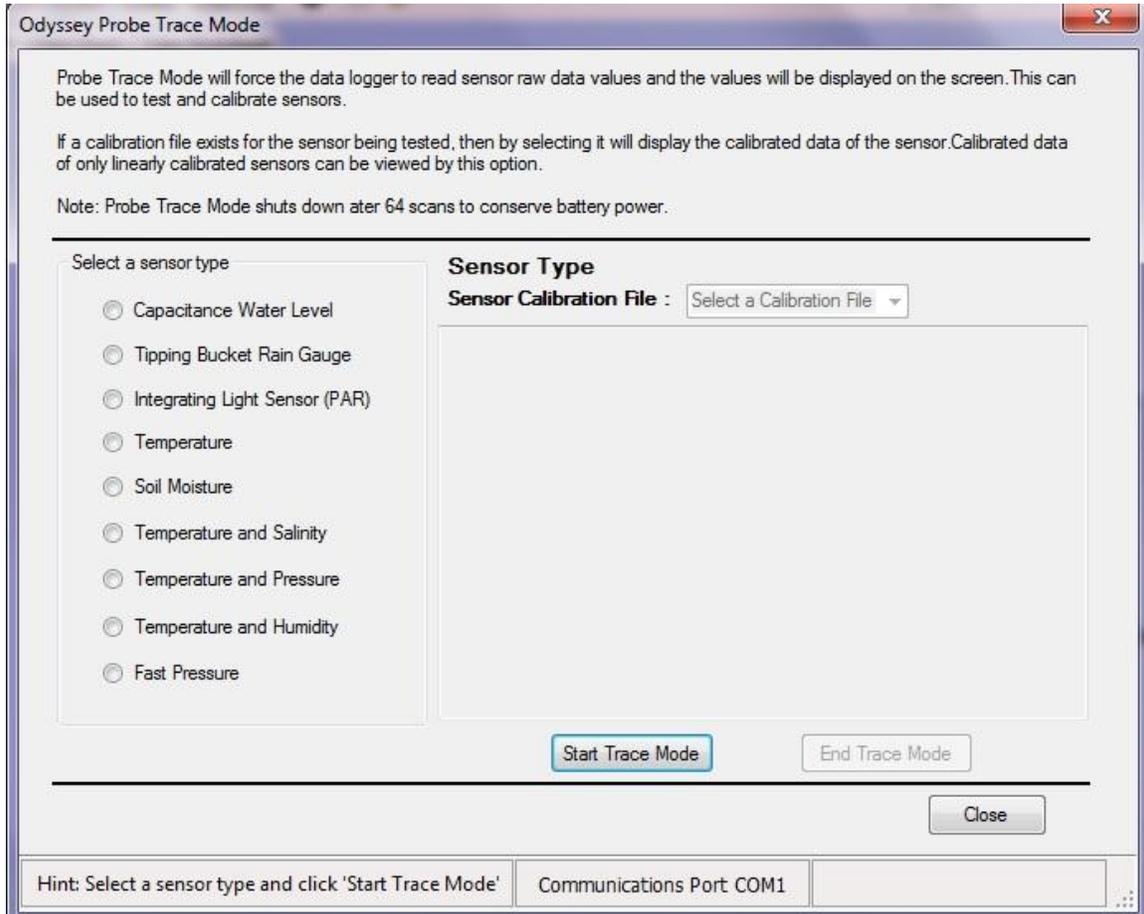
Re-calibrating Site Data

Selecting 'Recalibrate Site Data' from the 'Site' Menu will recalibrate all data blocks of the site file in the current data directory of the site file. Use this option to calibrate all data blocks of a site or create a new copy of the .prn file in the site data directory or if the composite site graph is not loading. This option will recalibrate all data blocks in the selected data directory of the site file with the sensor calibration details in the site file.

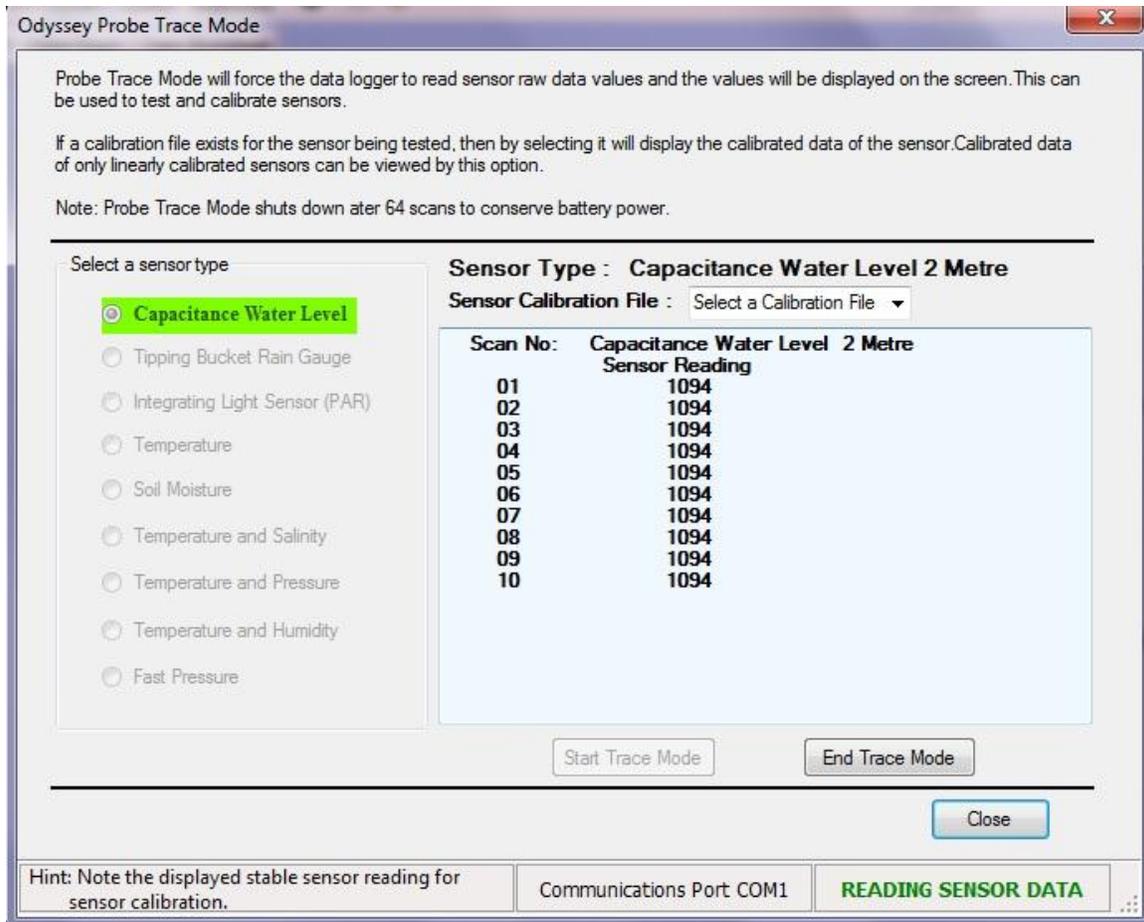
Note: To recalibrate a single data block of a site file use the "Recalibrate Data Block' option of the software.

Probe Trace Mode

Selecting 'Probe Trace Mode' from the logger menu will force the data logger to read the sensor raw data values and the values will be displayed on the screen. The probe trace mode can be used to test sensors and also for calibrating sensors; the Probe Trace Mode window is as shown below.



To perform 'Probe Trace Mode', select the sensor type which is the same as the one interfaced with the host computer, then click on 'Start Trace Mode' to display the sensor readings as shown below.



Note: For the capacitance water level logger the sensor length also needs to be selected to display correct sensor readings.

This option is useful in obtaining calibration data for a sensor. For sensor calibration data note the stable sensor reading displayed on the screen. Sensors that can be calibrated in the probe trace mode are: -

- Temperature Sensor
- Capacitive Water Level
- Tipping Bucket Rain Gauge
- Soil Moisture Sensor
- Pressure Sensor
- Conductivity Sensor

The Sensor Calibration File box lists all linear calibration files in the Odyssey data logging software calibration directory. If a calibration file exists for the sensor being tested then the calibration file can be selected in the calibration file box. The data on the screen will now display raw sensor readings and also calibrated data.

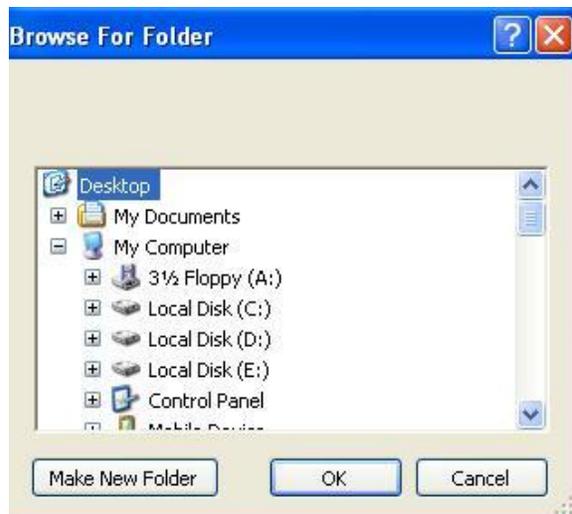
To exit the program click on the button End Trace Mode. If a dual channel is used in probe trace mode, the left hand column values are the readings from the first sensor and the right hand column values are the readings from the second sensor.

If the logger is in the logging mode, a displayed warning will advise that the logging will be terminated if you enter the probe trace mode. The probe trace mode automatically shuts down after 64 scans to conserve battery power.

Back-Up and Restore Data

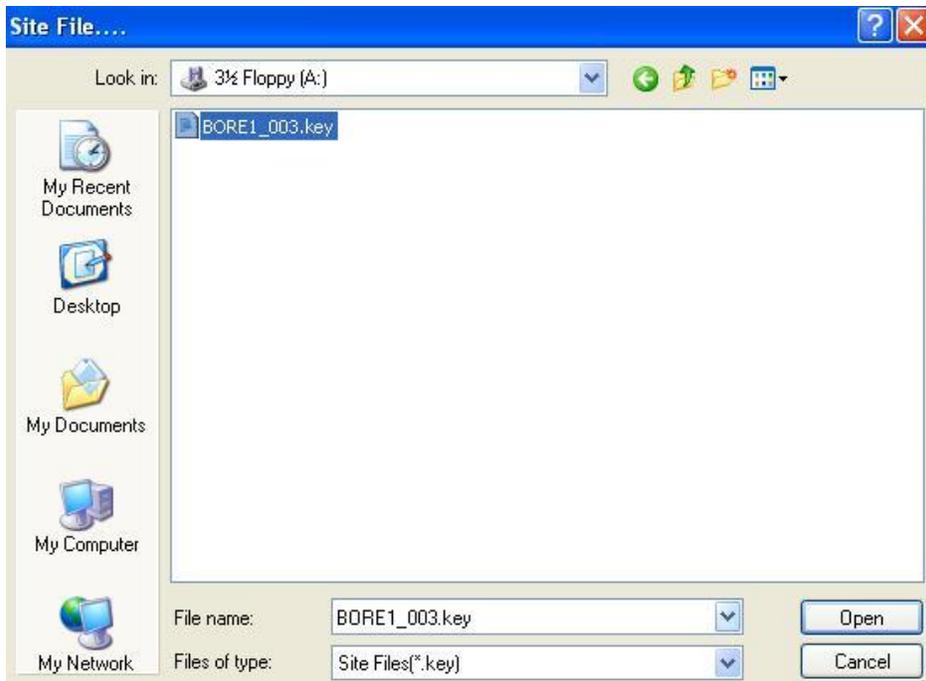
The importance of backing up recorded data onto an external storage drive is VITAL. If for any reason something happens to your hard disk or the data is accidentally erased and it has not been backed up, it is lost forever.

This loss can be very inconvenient and also expensive as in most cases the data cannot be recreated. So the software allows the user to back-up data by selecting 'Back Up Data' from the 'File' menu. This will allow the user to back-up data from all data directories of the selected site file to an external drive by selecting the drive in the displayed window as shown below.



If you click on the 'OK' button the software will start to back-up data files to the selected drive or location. If for any reason data is lost or accidentally damaged then it can always be restored up to the last back-up date by clicking on the Restore Data option of the software. Remember that only the data that has been backed up will be restored, any data that was not backed up is lost.

To restore data select 'Restore Data' from the 'File' menu and select the site file to be restored from the window as shown below.



Linear Logging

When a logger is in linear logging mode, the logger logs data each time it reads the sensor at a fixed logging interval. All Odyssey data loggers can be operated in this logging mode except the Odyssey Rain Gauge logger.

Compressed Logging

In compressed logging mode, the sensor will be scanned at a fixed time interval and logs the data if the value measured has altered from the last logged value by more than the resolution factor that has been set when the logger was started. This provides very compact data files from slow or sporadically changing water levels.

Note: Capacitance water level sensors up to 2 metres can be used only in the compressed logging mode.

Event-Triggered Logging

In event-triggered logging, the data will be logged when the sensor triggers an event. The Odyssey Rain Gauge logger operates based on event-triggered logging.

Note: The Odyssey rain gauge logger does not log data based on scan time.

Contents

Selecting 'Contents' from the 'Help Topics' menu or pressing 'F1' will bring up the HELP window available with the software.

About Software

Details about the odyssey software can be viewed by selecting 'About' from the 'Help Topics' menu. This will display the 'About' window, which contains information about the software version. It includes full version number of the software and the date it was released. This will also provide contact details on how to find technical support for Odyssey products and software.

Trouble Shooting

USB to Serial Cable Installation

After installing a USB to Serial adapter cable, if an error message appears as shown in Figure 1, when you click the USB-COM icon in the Odyssey Software or a message appears as shown in Figure 2 when you select the 'Auto Detect Port' option, please follow steps 1 and 2 below.



Figure 1

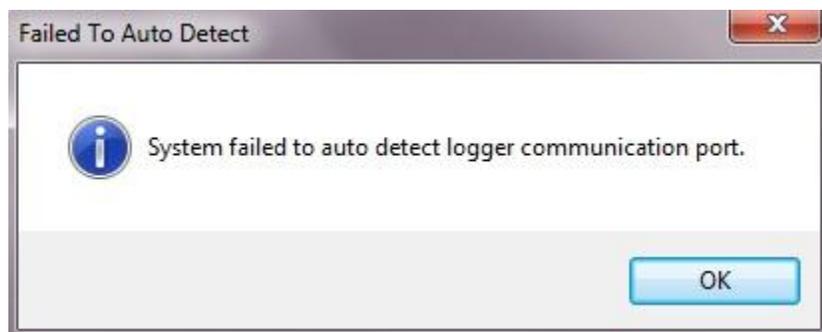


Figure 2

Step 1: Check the USB to Serial Cable Driver Installation.

The following steps will help you to check the cable installation under MS Windows operating systems.

Windows XP

1. Click Start→Control Panel→System→Hardware→Device Manager.
2. List the ports by clicking the + symbol beside Ports (COM & LPT).

A properly installed USB to Serial cable will be listed as shown in Figure 3.

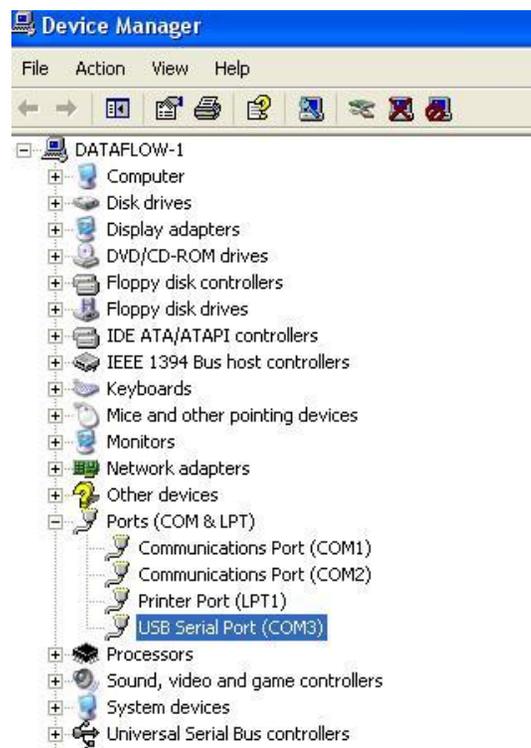


Figure 3

Windows 7 and Vista

1. Start→Control Panel→System→ Device Manager.
2. List the ports by clicking the ▸symbol beside Ports (COM & LPT).

A properly installed USB-Serial cable will be listed as shown in Figure 4.



Figure 4

If there is a yellow symbol  (Windows XP) or  (Windows 7) beside the USB Serial Port (COMX) then the cable is not installed properly. Please uninstall the driver by double clicking the FTClean.exe file in the folder D:\USB 2.0 to RS232 Cable\Driver\FTClean (D-refers to the CD-Rom).

Step 2: USB to Serial Cable is not working after installing the driver properly.

The Device Manager also shows the COM port number assigned to the adapter cable.

In some computers or laptops, the USB to serial adapter cable won't work even though everything appears to have installed correctly, because computers will only scan a limited number of COM ports and the COM port number assigned to the adapter cable will be too high for the computer to recognise it.

For instance, it is possible that a computer has a limitation of scanning the first three or four COM ports. If the adapter is installed on COM5, a device with such a limitation will not work until the COM port is reassigned to COM1-COM4.

Windows XP/Vista/Win 7 port reassignment

1. Under the Device Manager window, right click on "USB Serial Port" and click on Properties.
2. Click on "Port Settings" tab and click the "Advanced" button.

3. Pull down the scrollbar on the bottom left side and select COM 1, 2, 3 or 4. Click "OK."
4. Click "OK" again. Notice that the newly assigned COM port will show up on the USB Serial Port in Device Manager. If the port has not changed, right click 'USB Serial Port' and select 'Scan for hardware changes' to display the newly assigned port.
5. Close the Device Manager and **restart the computer**.
6. Launch the Odyssey Data Logging software and click on the USB-COM icon to use the Communications Port.

1. Software pops up with message 'Unsupported File Version'.

The site file belongs to a previous version of Odyssey software. The site file format needs to be changed to support this software version. It is recommended to do a back-up of the existing data files of the site file before changing to a new format.

Note: Changing the site file to a new format will change the data file format.

2. Software pops up with message 'Failed to communicate with the logger'.

If software displays a message 'Failed to communicate with the logger, use HELP to troubleshoot', then please check the following

1. Check the battery voltage, it should be above 6.5 volts (see Install/Replace Battery for more information).
2. The selected communications port in the software should be the port to which the logger is interfaced with PC (see Interfacing Logger to PC for more information).

3. Software pops up with message 'Empty Logger Memory'.

If software displays a message 'Empty Logger Memory' while saving data, please check the following.

1. Check the battery voltage; it should be above 6.5 volts (see [Install/Replace Battery](#) for more information).
2. Perform '[Probe Trace Mode](#)' to confirm that the logger is communicating with the sensor and PC.
3. Do a trial logging with a scan time of 1 minute for about 30 minutes and save data from the logger. If trial logging pops up with the same message 'Empty Logger Memory' contact [Dataflow Systems Pty Ltd](#) for more assistance.

4. Software pops up with message 'Logger failed to start'.

If software displays a message 'Logger failed to start' while starting the logger, it could be due to any of the following

1. Faulty interface cable or interface cable that is used not supplied by Dataflow Systems Pty Ltd.
2. Logger type of the site file is not matching the interfaced logger.

5. Software pops up with message 'Data Block Exceeds the Limit' while saving data.

A site file can save a maximum of 100 data blocks to a data directory. So add a new data directory to the site file and try to save data again.

6. Software pops up with message 'Site File Not Compatible' while saving data.

This indicates that the Site File used to save data will not support the interfaced logger type. So select the right site file of the logger type, or create a New Site File for the logger type to save data.

7. Software pops up with message 'Data Has Already Been Saved' while saving data.

This indicates that the data block from the interface logger memory has already been saved to the selected site file. So there is no need to attempt saving data again.

8. Software pops up with message 'Logging Mode is Different' while saving data.

This indicates that the Site File used to save data will not support the interfaced logger's logging mode. So select the right site file of the logger type or create a New Site File for the logger type to save data. For Example: Data cannot be saved from a data logger that is started with Compressed Logging Mode to a Site File with a data logger using Linear Logging.

9. Software pops up with message 'Calibration Data Error or Incompatibility in sensor data' while saving or recalibrating data.

This error message pops up due to the following reasons:-

1. The site file used to start the data logger does not match the selected site file to save data. So select the right site file and retry again.
2. Either the logger is faulty or the total data bytes logged by the logger are wrong due to a flat battery during the logging period.

10. Software pops up with message 'Data Block File Error' while selecting a data block.

This indicates that the selected data block file is not compatible with the version of software.

11. Software pops up with message 'Data Block File Does Not Exist' while selecting a data block.

This error indicates that the selected data block file is missing from the site data directory and hence cannot be graphed or viewed.

12. Software pops up with message 'Unsupported Microsoft Excel Version' while selecting a data block.

Data can be exported only to Microsoft Excel XP version or later.

Dataflow Systems Pty Ltd
9b, Sheffield Cres, Burnside, 8053, Christchurch, New Zealand
Web: www.odysseydatarecording.com, Email: dataflowsystems@xtra.co.nz
Phone: 0064 3 358 8979, Fax: 0064 3 358 8676