

DataLog x2 and Terminal x2 Installation and User Guide



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# Contents

1 Introduction		1
2 Installation		2
3.1 Establish	a Connection	7
3.2 Configure	e an Instrument	9
3.3 Download	d a file	12
3.4 Record a	ı File	14
4 Datalog X2		16
4.1 Home To	olBar	16
4.1.1 File Ma	lanager	16
	Series Chart	
4.1.3 Profile	e Chart	17
4.1.4 Scatte	er Chart	17
	Chart	
4.1.6 Termir	nal Window	18
	View	
	nt ToolBar	
	lish a connection	
•	gure an Instrument	
	load a File	
	d a File	
	ment Tools	
	olBar	
4.4 Recording	g Toolbar	30
•	e a Model 106 Current Meter	
	a 740 Tide Gauge	
5.3 Calculate	ed Density and Salinity	37



## 1 Introduction

DataLog X2 and Terminal X2 are software packages to interface, configure and download data from Valeport Instrumentation. DataLog x2, in addition to interfacing and download capability, has extensive graphing and data analysis tools built in.

Terminal X2 will work with any Valeport Instrument that communicates via serial RS232. Functionality may be limited with some older instruments.

At present DataLog X2 is not fully compatible with the following instruments and the listed packages should be used instead:

Equipment	Software to be Used					
TideMaster	TideMaster Express					
MIDAS DWR	WaveLog Express					
MIDAS WTR	WaveLog Express					
MIDAS Surveyor	SurveyLog					
MIDAS BathyPack	BathyLog					
MIDAS CTD+	DataLog Pro					
Model 803	ROVLog					



## 2 Installation

### 2.1 System Requirements:

DataLog X2 and Terminal X2 have been tested on Windows 8, 8.1 and 10.

Basic Requirements: 800MHz processor; 512MB of RAM; 1024 x 768 screen resolution; Free Disk-space 20Mb (excluding data); IE6+ installed.

Recommended Requirements: 1 gigahertz (GHz) or faster 32-bit (x86) or 64-bit (x64) processor. 2 gigabyte (GB) RAM (32-bit) or 4 GB RAM (64-bit); 1280 x 1024 screen resolution; Free Disk-space 20Mb (excluding data of course!); IE9+ installed.

### 2.2 Installation Process:

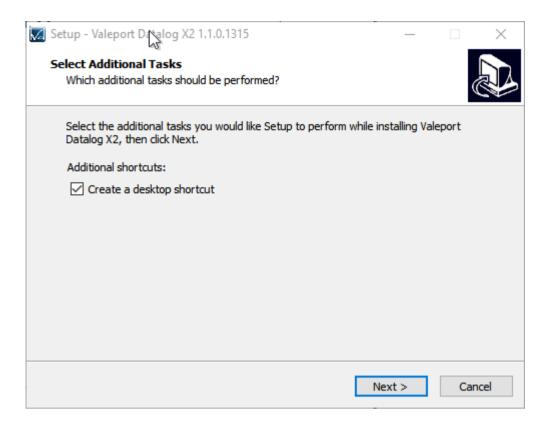
To Install: Run Setup.exe from the installation directory.

Note: You may need to accept a Windows security warning to proceed based upon your system configuration.



Confirm additional settings as required





Confirm the installation tasks and click "Install" to finalise the installation.

Setup - Valeport Datalog X2 1.1.0.1315	_		$\times$
Ready to Install Setup is now ready to begin installing Valeport Datalog X2 on your o	omputer.		
Click Install to continue with the installation, or click Back if you want change any settings.	t to revie	w or	
Additional tasks: Additional shortcuts: Create a desktop shortcut		/	\ \
<		>	/
< Back Ins	tall	Car	ncel

Installation can be terminated at any time by pressing the "Cancel" button.



Valeport Datalog )	(2 <u>- I ×</u>
Setup - Valeport Datalog )	C2         ■ ■ ■         Completing the Valeport Datalog X2 Setup Wizard         Setup has finished installing Valeport Datalog X2 on your computer. The application may be launched by selecting the installed icons.         Click Finish to exit Setup.         ✓ Launch Valeport Datalog X2         ✓ Launch Valeport Terminal X2
	Einish

### 2.3 Uninstall

To uninstall DataLog X2, navigate to the Windows "Control Panel" and select "Remove Program", DataLog X2 can be selected from the program list and uninstalled.

#### 2.3.1 Starting DataLog X2

To start DataLog X2 use the following methods:

Navigate to the "All Programs" link under the Windows "START" menu

Navigate to the folder "Valeport Software"

Click the icon "DataLog X2"

Alternatively, if during setup you chose to create a desktop icon, locate the icon on the desktop and double-click to open DataLog X2.



## 3 Terminal X2

Terminal x2 is a lightweight terminal program for serial communication, configuration and control of Valeport Instruments. It is intended as a direct replacement for Hyper Terminal which is no longer available for Windows PC's.

It has a number of additional features over and above most terminal packages including data logging, wizard based instrument configuration, file downloads, multiple port connections and TCP-IP serial connection for use over internet connections.

File	Terminal X2	[Untitled]									
Connect	Configure Connec	Download	Record	Port: Baud: 115200	 € \$0 ¶ ▼ ⊘ • ⊽	Paste	E <u>C</u> opy	Select <u>A</u> ll Clear Selection Send File So oard	Courier Ne		
Terminal 1											Σ
								o			
Command:										•	► Send

## 3.1 Terminal Toolbar

File	erminal							0
Connect	Configure Downloa	d Record	Port:	Paste	K Cut     K Select All       Let Copy     Copy       Letete     Send File ▼	Boot Loader	Courier New 💌 🛛 💌 B 🖌 <u>U</u> ABC A <sup>*</sup> A <sup>*</sup>	
	Connection		Settings 🕞		Clipboard	Tools	Format	E.

This allows the port to be configured, serial com ports or TCP/IP ports can be selected. Baud rates can be changed whilst still connected. Default port settings are 8 bit, No stop bit, No 1 Parity Bit. These settings can be changed but as standard will work with all Valeport instruments.

Other options available from this toolbar include echo on/off, wrapping, hexadecimal split screen, hide/show special characters and time stamping.

#### **Connection Status**

Port: COM6:115200,N,8,1 Connected

Shows the current port, baud rate and protocol and connection status.

#### **Connection Window**

16:10:33.714 -0.003»22.933»0000.000¶ 16:10:33.839 -0.003»22.934»0000.000¶ 16:10:33.979 -0.003»22.933»0000.000¶ 16:10:34.089 -0.002»22.933»0000.000¶ 16:10:34.213 -0.002»22.933»0000.000¶ 16:10:34.338 -0.003»22.932»0000.000¶ 16:10:34.463 -0.002»22.933»0000.000¶ 16:10:34.603 -0.002»22.932»0000.000¶ -0.003»22.933»0000.000¶ -0.003»22.933»0000.000¶ 16:10:34.728 16:10:34.837 16:10:34.962 -0.003»22.933»0000.000¶ 16:10:35.087 -0.003»22.933»0000.000¶ 16:10:35.212 -0.003»22.933»0000.000¶ 16:10:35.352 -0.003»22.933»0000.000¶ 16:10:35.477 -0.003»22.933»0000.000¶ 16:10:35.586 16:10:35.711 -0.002»22.933»0000.000¶ -0.003»22.933»0000.000¶ -0.002»22.933»0000.000 -0.002»22.933»0000.000 16:10:35.836 16:10:35.976 16:10:36.101 -0.002»22.933»0000.000¶ 16:10:36.210 -0.002»22.933»0000.000¶ 16:10:36.335 -0.002»22.933»0000.000¶ 16:10:36.460 -0.003»22.933»0000.000¶ -0.003»22.933»0000.000¶ 16:10:36.600

The connection window shows any communications between the PC and the connected instrument. In the example above the time stamping is enabled. Once the window is full, it will scroll with any received data. Data can be highlighted, selected, copied and pasted.

Commands can be typed directly into the connection window or entered into the command line window below

#### Command Line and Dropdown

Command: ##

The command line can be used to send commands to a connected instrument. A history of sent commands can be accessed with the drop-down functionality

Connection information

Received: 36.23kb 1547 Lines Rate: 7.865 Hz

Shows volume of data received during currently connected session, number of lines of data received and rate at which data is being received.



X



▼ Send



## 3.2 Establish a Connection

There are two methods of establishing a connection. When the instrument type is known and when a generic serial connection is required.

Connect Clicking on the connect icon will bring up the connection wizard. The instrument type can be selected from the drop down list. The connection settings will default to the factory settings for that instrument. If these have been changed by the user it may be necessary to change these.	Connection       X         Connection       Instrument         Setup communications       Instrument         Instrument:       Type: (Select Instrument Type>)         Port       Type: Direct Y       Advanced         Baud Rate:       115200         Data Bits:       B       Parity: None         Stop Bits:       1       Flow Control: None         DK       Cancel
Alternatively, set the connection up using the settings toolbar. Once the appropriate port and baud rate settings are selected, press the connect icon to establish a connection	Port: COM6 Settings
To establish TCP-IP serial connection, select TCP-IP port from the drop down menu, Enter the IP address and port in the Host settings	Port: TCP Client Host: 10.0.1.191:207 Settings



Once the connection is established, the status bar will show the connection details and any communications will be shown in the window.

Commands can be issued via typing directly into the command window or via the command toolbar.

The command toolbar stores a history of issued commands.

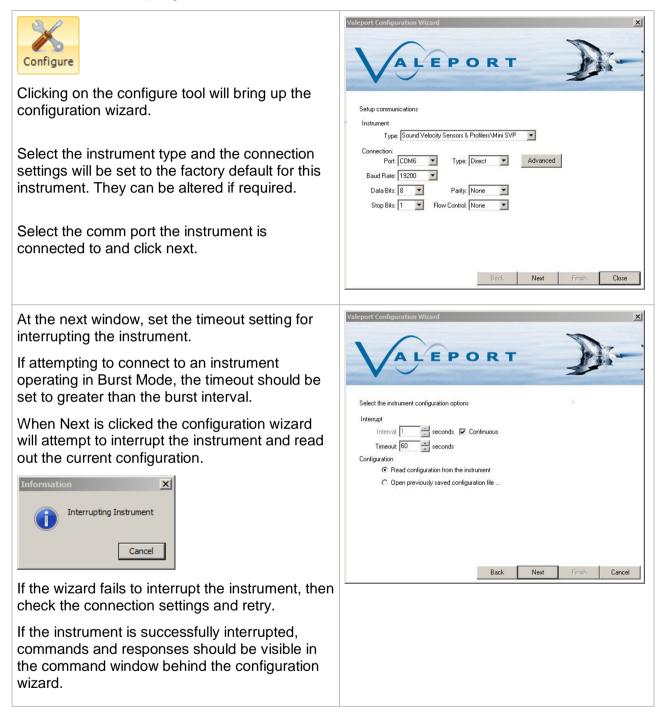
The status toolbar shows the amount of data received, sent and the received rate of data.

Valeport T	erminal X2	[Untitled]									
Disconnect	Configure Connect	Download	Record	Port: COM11 Baud: 38400,	 = \$0 ¶ ▼ ⊘ ▼ ₪	Paste	Copy	Select <u>All</u> Clear Selection Send File	 Courier Ne		
Port: COM11:: M1¶ >ULTRA P: Site info Calibrate( Hode: Mi¶ \$PVULT, P \$PVULT, P \$	S/N 38422 : JAYS LAH d: 10/06/ ,038429,M ,038429,M ,038429,M ,038429,M ,038429,M ,038429,M	91 81 20141 1,0010.24 1,0010.23 1,0010.23 1,0010.23 1,0010.23	9,0000.0 9,0000.0 9,0000.0 5,0000.0 7,0000.0	00,*46¶ 00,*46¶ 00,*48¶ 00,*46¶ 00,*46¶			¢				
Command:										<b>_</b>	► Send
Received: 3	93 Bytes 1	5 Lines Rate	: 1.788 Hz						•• •	••••	•••



## 3.3 Configure an Instrument

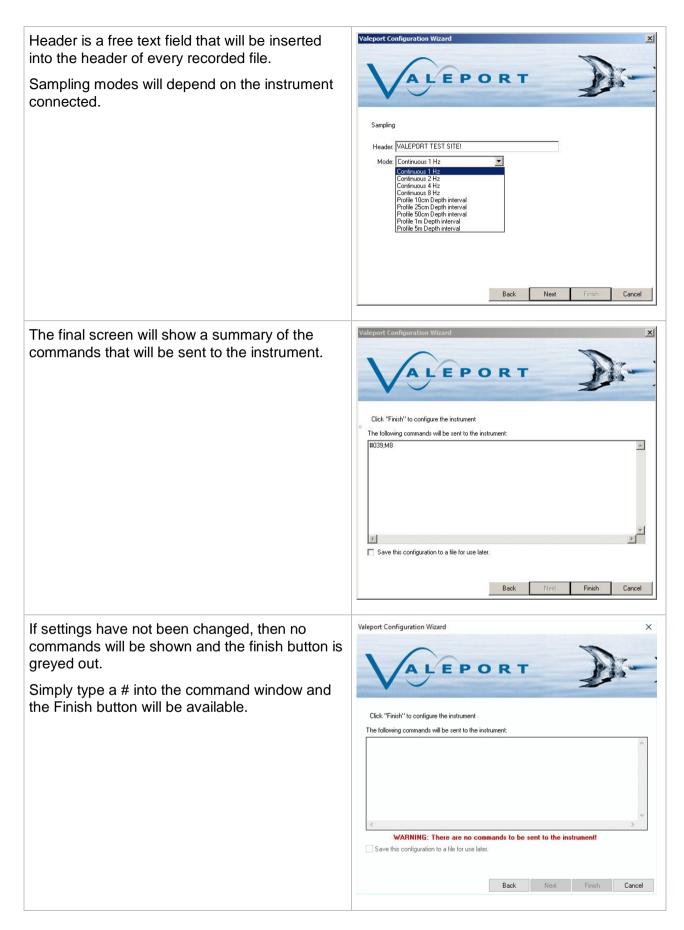
The configuration wizard is instrument specific and the options given will depend on the instrument connected, the example given here is for a MiniSVP.





The first wizard window shows information about the instrument. Boxes are greyed out as information cannot be changed by the user.	Valeport Configuration Wzard         Valeport Configuration Wzard         Valeport Configuration Wzard         Instrument Detais         Serial No: 45202         Firmware: 005071385 1281 11/07/2011 13:30         Calibration Date: 2014/01/03         Memory: Memory Used 2215322 of 1967057920 Bytes         Voltages: External power = 13.1         Battery power = 0.1
The next screen allows the pressure sensor to be configured.	Valeport Configuration Wizard
Output units can be set and the Tare setting can be configured.	VALEPORT
To set a manual Tare, enter the required figure in the box.	Pressure The pressure sensor fitted to the Mini measures absolute pressure, i.e. it includes atmospheric pressure. The pressure tare function allows the atmospheric pressure (as measured by the sensor before deployment) to be removed from the readings, so the output is simply pressure of water.
To take a measured Tare, press the Set Tare Button.	Note also that by taking a tare reading at any fixed point in the water column, readings will then be output relative to that point. Units: dBar
The following dialog will pop-up.	Tare: 10.14135 ON Set TARE Now
Warning  Ensure the pressure sensor is out of the water  OK Cancel	Latitude: 50.4273 Back Next Finish Cancel
The Latitude value is used to convert pressure to depth. An approximate value can be used for the operational area.	
If the instrument being configured has a Real Time Clock, the option to sync it to PC time is available.	Valeport Configuration Wizard         Valeport Configuration Wizard         Valeport Configuration Wizard         Real-Time Clock.         C       PC: [03/12/2014]         15:48:59       Synchronise         Device: [03/12/2014]       15:50:53         Set

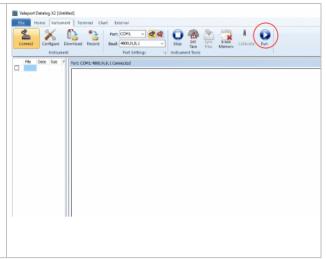




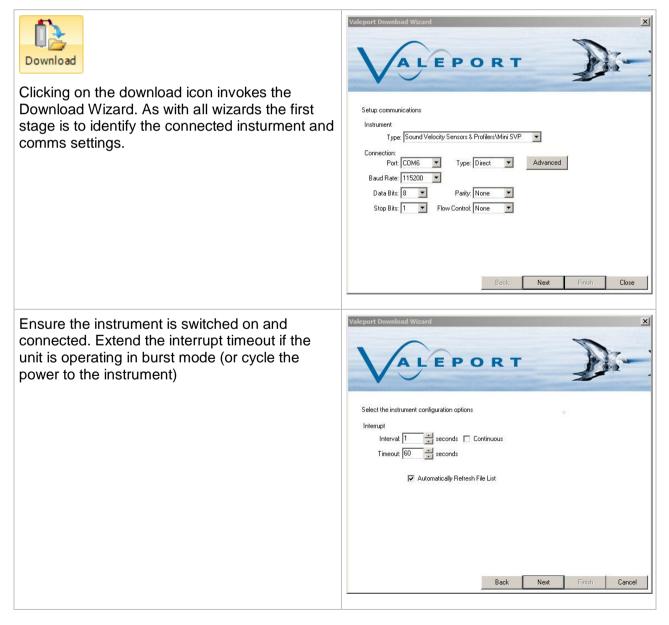


Once the configuration is completed, the instrument will be in a paused ('interrupted') state and, therefore, will require prompting from the user to set it running. This can be achieve in one of 3 ways:

- 1. Select the RUN button in the instrument tab of DataLog X2 (See image).
- 2. Enter the command #028 in the Terminal window.
- 3. Disconnect, then reconnect the Power/Comms cable to activate the instrument.



### 3.4 Download a file





Location to download files to can be defined here. Sub folders by instrument and date will automatically created.

For instruments that support individual file downloads (mini and 400 series), a file list with check boxes will be displayed.

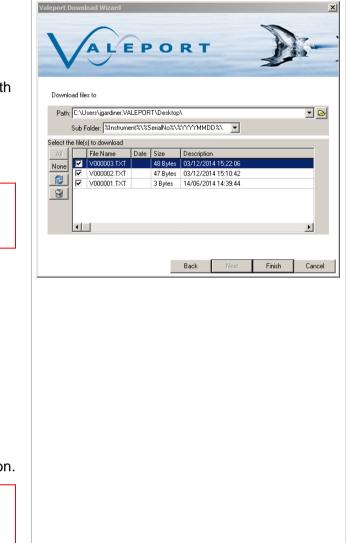
For older instruments such as the model 106/108/308 and the model 740, the entire memory has to be downloaded in one

A status window will show the progress of the download and estimated completion time.

Protocol:	Zmodem	Bytes transferred:	25088
Block check:	Crc32	Bytes remaining:	7864
File name:	V000003.TXT.part	Blocks transferred:	3
File size:	32952	Blocks remaining:	1
Block size:	8192	Block errors:	0
Total Blocks:	4	Total errors:	0
Estimated time:	0:02	Throughput	4476 CPS
Elapsed time:	0:06	Efficiency:	39%
Remaining time:	0:00	Kermit windows:	0
Status: OK			
Progress:			
	Ca	ncel	

Files can be deleted by clicking on the bin icon.

There is no recycle bin. If the file is deleted from the instrument it is gone forever

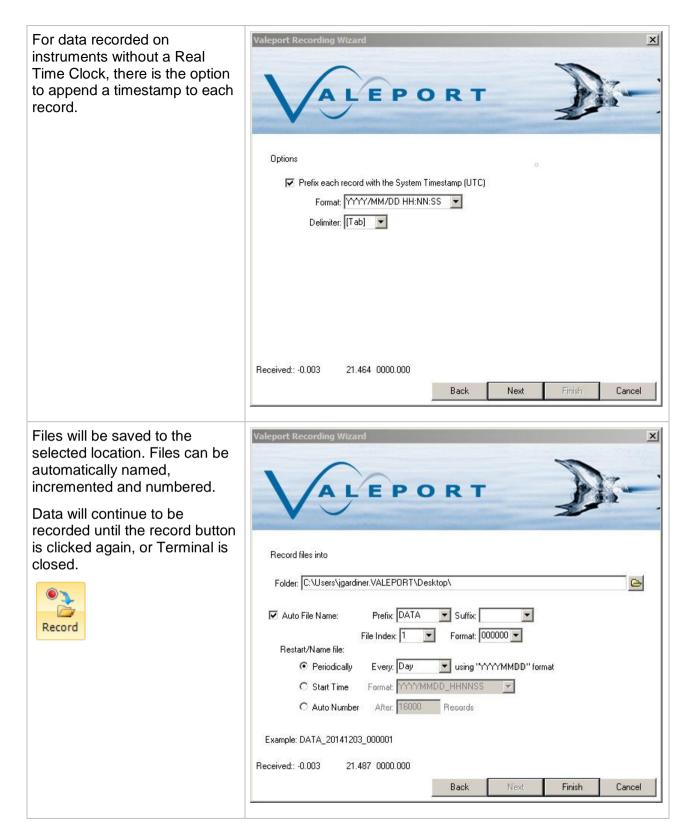




## 3.5 Record a File

Real time data can be logged to file with the Recording wizard. As with the other wizards, set up the instrument type and communications settings. If the instrument is not listed, then a 'Generic Instrument' can be selected from the dropdown and suitable comms settings entered.	Valeport Recording Wizard         Setup communications         Instrument         Type: (Recent) Mini SVP         Connection:         Pott: [DIM6 ▼ Type: Direct ▼ Advanced]         Baud Rate: [115200 ▼         Data Bits: [8 ▼ Parity: None ▼         Stop Bits: [1 ▼ Flow Control: None ▼         Back       Next         Back       Enrich
The next screen sets the interuppt settings, but also adds the ability to filter the incoming string. For example, if an instrument such as the TideMaster is outputting multiple NMEA strings such as \$PVTM1 for met, and \$PVTMA for Tide, the start filter can be set to \$PVTMA to only log the tide data.	Valeport Recording Wizard         Select the instrument configuration options         Interrupt         Interrupt         Interval:         Seconds         Filters:         Start:         End:         End:         End:         End:         Back       Next         Firish         Cancel







# 4 Datalog X2

DataLog X2 is a package for communication, configuration and control of Valeport Instruments. It also contains basic graphing and data display functions for internally recorded and real time data from Valeport Instruments.

It has all the features of Valeport Terminal including data logging, wizard based instrument configuration, file downloads, multiple port connections and TCP-IP serial connection for use over internet connections.



## 4.1 Home ToolBar

File H	lome	instrument	Chart	Profiling	l								
Time Series Chart New	Profile Chart	Scatter Chart	Polar Chart	Terminal	Table	Add Files	↓ Up↓ Down→ RemoveFiles	🧭 Remove All	Paste	X Cu <u>t</u> © Copy X Delete Clipbo		ABC A	A N

The Home toolbar gives access to graphing and file management tools. Data from recorded files and downloaded files can be loaded and viewed as tables and graphs.

#### 4.1.1 File Manager

In DataLog X2 a file is either a recorded data file from real-time connection, or a downloaded file from an instrument. Downloaded files and recorded files are automatically loaded into the file manager window.



Previously downloaded or recorded files can be added by clicking on the button

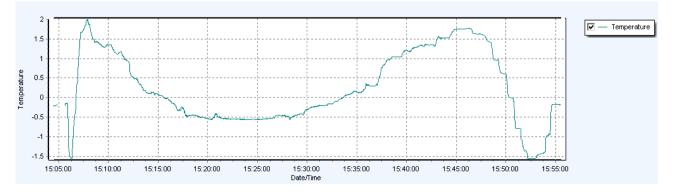
Files will be sorted in the order that they are added. The select button activates or deactivates the file.

#### 4.1.1.1 Workspaces

A workspace is a saved configuration of files, graphs and tables. When the workspace is loaded, it will automatically load the files and create the graphs and tables saved in the workspace.

#### 4.1.2 Time Series Chart

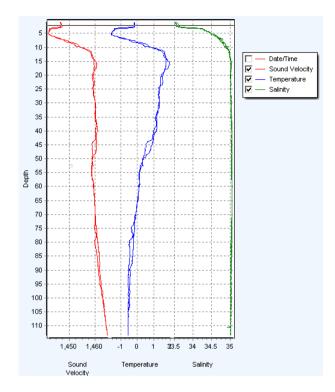
A time series chart can be for single parameter or multiple parameters. Time is always on the X axis. If multiple parameters are selected then multiple Y axes will be displayed.





#### 4.1.3 Profile Chart

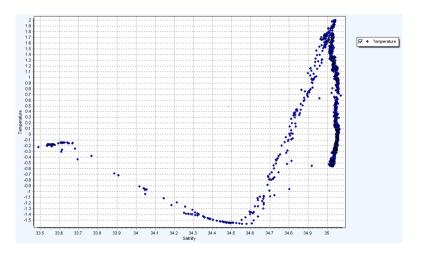
A profile chart can show a single or multiple parameters plotted against depth/pressure. Depth/Pressure is always on a reversed Y axis.



#### 4.1.4 Scatter Chart

A scatter chart allows one parameter to be plotted against another. A good example of this is T-S plot traditionally used in oceanography to identify water masses.

Temperature is show here on the Y axis with Salinity plotted on the X axis.



#### 4.1.5 Polar Chart

Polar Charts can be used to display vector type data with a magnitude + direction. eg. water current direction and speed or wind speed and direction.



#### 4.1.6 Terminal Window

The terminal window shows any comms between the insturment and DataLog X2. It can be used to manually interact with the instrument. It gives access to all the functionality of <u>Terminal X2</u>

Port: tcp://192.168.8.160:10001 Connected		23
>±028¶		^
>miniPS2e Serial Number:>45687¶		
Pressure Module Serial Number:»205020¶		
PCB Serial Number:»11120148489		
Firmware Version:»0760707BO Apr 22 2020 13:419		
Pressure Module Range:»100Bar¶		
Operating Mode:»31		
No of Samples:»169		
Sampling Rate:»16Hz¶		
Output String Format:»81		
Calibrated Units:»41		
Tare Enabled:»01		
Tare Value:» 0.9806¶		
miniIPS2e Address:»1¶		
Latitude:» 50.0009		
Primary Cal:»0.000000e+00,0.000000e+00,1.000000e+00¶		
Secondary Cal Enabled:»0¶		
Secondary Cal:»0.000000e+00,0.000000e+00,0.000000e+00¶		
\$PVIPS2,01,45687,0.984,d,1.097,M*64¶		_
\$PVIPS2,01,45687,0.984,d,1.036,M*6f¶		
2##<		U
	>	
Command: #013;8	Send	1
Received: 2,125kb 83 Lines Rate: 1,182 Hz		

#### 4.1.7 Table View

The Table view shows the data contained in the file currently highlighted in the File Manager.

Greyed out data is data that has been filtered using the Filtering Tools available in the <u>Chart</u> <u>Toolbar</u>



Date/Time	Depth (m)	Sound Velocity (M/SEC)	Pressure (DBAR)	Temperature (C)	Conductivity (MS/CM)	Salinity (PSU)	Sound Velocity (M/SEC)	Density (kg/m³)
2013/09/13 15:54:41	2.241	1446.207	21.974	-0.188	27.814	33.571	1446.715	1027.067
2013/09/13 15:54:44	2.140	1446.239	20.985	-0.174	27.820	33.565	1446.754	1027.056
2013/09/13 15:54:46	2.034	1446.197	19.951	-0.178	27.812	33.559	1446.711	1027.047
2013/09/13 15:54:50	1.935	1446.173	18.972	-0.176	27.810	33.555	1446.699	1027.039
2013/09/13 15:55:07	1.938	1446.170	19.009	-0.179	27.818	33.569	1446.704	1027.051
2013/09/13 15:55:09	1.937	1446.170	18.997	-0.179	27.812	33.561	1446.694	1027.044
2013/09/13 15:55:15	1.940	1446.169	19.024	-0.176	27.812	33.557	1446.703	1027.041
2013/09/13 15:55:17	1.931	1446.159	18.939	-0.179	27.814	33.563	1446.696	1027.045
2013/09/13 15:55:18	1.828	1446.144	17.928	-0.179	27.812	33.561	1446.677	1027.039
2013/09/13 15:55:20	1.731	1446.135	16.976	-0.177 0	27.810	33.557	1446.665	1027.031
2013/09/13 15:55:22	1.629	1446.113	15.975	-0.180	27.804	33.553	1446.630	1027.023
2013/09/13 15:55:24	1.522	1446.081	14.931	-0.185	27.798	33.551	1446.587	1027.017
2013/09/13 15:55:25	1.424	1446.059	13.963	-0.181	27.796	33.545	1446.581	1027.007
2013/09/13 15:55:27	1.319	1446.040	12.933	-0.183	27.794	33.545	1446.556	1027.002
2013/09/13 15:55:28	1.223	1446.037	11.997	-0.177	27.794	33.539	1446.560	1026.993
2013/09/13 15:55:30	1.116	1446.028	10.947	-0.178	27.800	33.548	1446.552	1026.995
2013/09/13 15:55:32	1.013	1446.011	9.936	-0.175	27.796	33.540	1446.538	1026.984
2013/09/13 15:55:33	0.910	1445.990	8.929	-0.177	27.794	33,541	1446.513	1026.980
2013/09/13 15:55:59	0.918	1445.974	9.004	-0,183	27.788	33,539	1446.484	1026.979
2013/09/13 15:56:01	0.916	1445.973	8.979	-0.177	27.788	33,533	1446.503	1026.973
2013/09/13 15:56:03	0.815	1445.928	7.993	-0.181	27.780	33,527	1446.461	1026.964
2013/09/13 15:56:05	0.712	1445.583	6,982	-0.235	27.714	33,499	1446.157	1026.939
2013/09/13 15:56:08	0.611	1445.362	5.988	-0.280	27.650	33,464	1445.885	1026.908
2013/09/13 15:56:10	0.508	1445.351	4.982	-0.282	27.652	33,470	1445.867	1026.908
2013/09/13 15:56:11	0.406	1445.426	3.977	-0.259	27.670	33,469	1445.957	1026.902
2013/09/13 15:56:16	0.303	1445.357	2.972	-0.271	27.664	33,475	1445.893	1026.902
2013/09/13 15:56:17	0.196	1445.371	1.924	-0.264	27.664	33,468	1445.899	1026.891
2013/09/13 15:56:21	0.205	1445.366	2.008	-0.261	27.662	33,462	1445.906	1026.887
2013/09/13 15:56:23	0.201	1445.324	1.975	-0.274	27.650	33,460	1445.843	1026.885
2013/09/13 15:56:39	0.099	1445.317	0.969	-0.271	27.658	33,460	1445.843	1026.880

### 4.2 Instrument ToolBar



The instrument toolbar gives access to a range of functionality for connecting, configuring and downloading data from a Valeport Instrument



#### 4.2.1 Establish a connection

The connection wizard is shard with DataLog X2

There are two methods of establishing a connection. When the instrument type is known and when a generic serial connection is required.

Clicking on the connect icon will bring up the connection wizard. The instrument type can be selected from the drop down list. The connection settings will default to the factory settings for that instrument. If these have been changed by the user it may be necessary to change these.	Connection       X         Connection       Instrument         Setup communications       Instrument         Type:       Setect Instrument Type>         Connection:       Y         Port       Type:         Data Bits:       Parity:         None       X         OK       Cancel
Alternatively, set the connection up using the settings toolbar. Once the appropriate port and baud rate settings are selected, press the connect icon to establish a connection	Port: COM6 Settings
To establish TCP-IP serial connection, select TCP-IP port from the drop down menu, Enter the IP address and port in the Host settings	Port: TCP Client 💌 🔊 🗄 🕯 🕅 🏹 🖷 Host: 10.0.1.191:207 💌 🔗 🗸 Settings



Once the connection is established, the status bar will show the connection details and any communications will be shown in the window.

Commands can be issued via typing directly into the command window or via the command toolbar.

The command toolbar stores a history of issued commands.

The status toolbar shows the amount of data received, sent and the received rate of data.

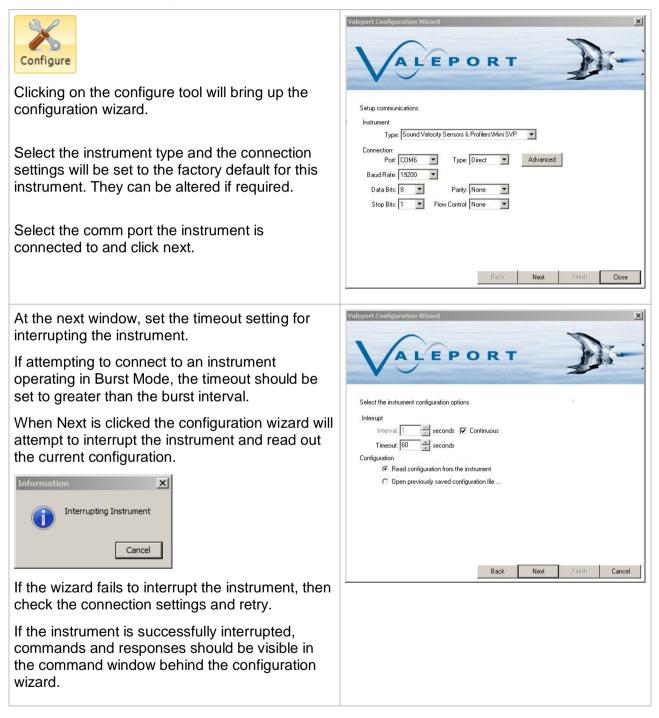
Disconnect	configure	Download F		ort: COM11 ud: 38400,N	8,1		out Sele opy Sele oelete Seno Clipboard	r Selection d File 👻 B	coot Loader	Courier Ne		Ă
ort: COM11:	38400,N,8,1 0		,		Settings	(91)	Cipboard	10	1015		Format	Σ
Mi¶ >ULTRA P: S/N 38429¶ Site info: JAYS LAB¶ Calibrated: 10/06/2014¶ Mode: Hi¶ \$PVULT, P,038429,M1,0010.241,0000.000,*45¶ \$PVULT, P,038429,M1,0010.235,0000.000,*46¶ \$PVULT, P,038429,M1,0010.237,0000.000,*46¶ \$PVULT, P,038429,M1,0010.236,0000.000,*46¶ \$PVULT, P,038429,M1,0010.236,0000.000,*46¶ \$PVULT, P,038429,M1,0010.236,0000.000,*46¶ >*f¶ ERROR¶ >												



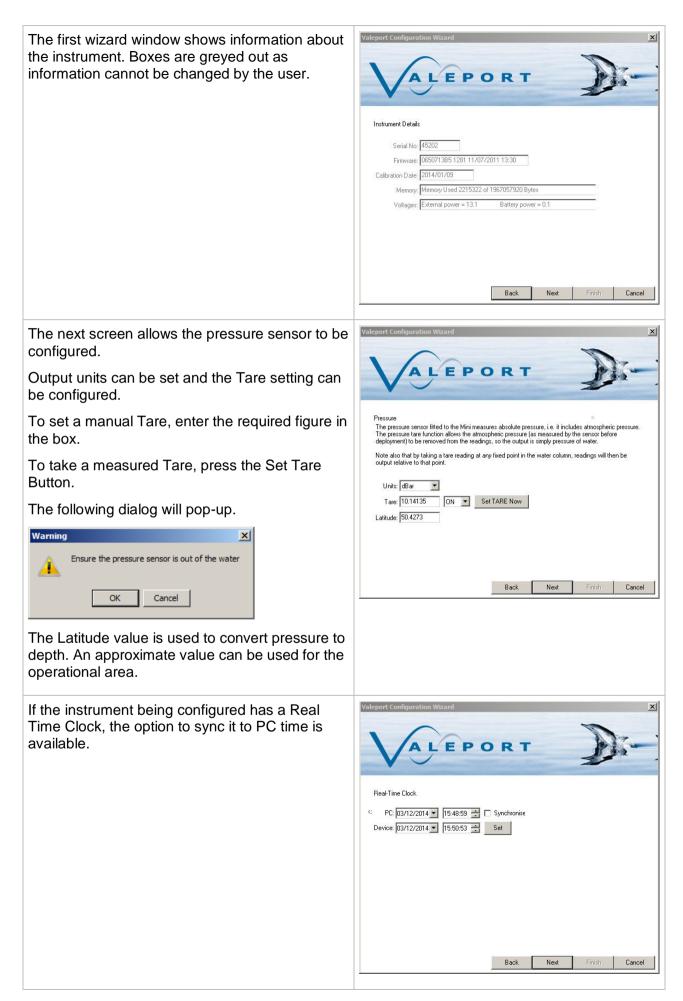
#### 4.2.2 Configure an Instrument

The configuration wizard is shared with DataLog X2.

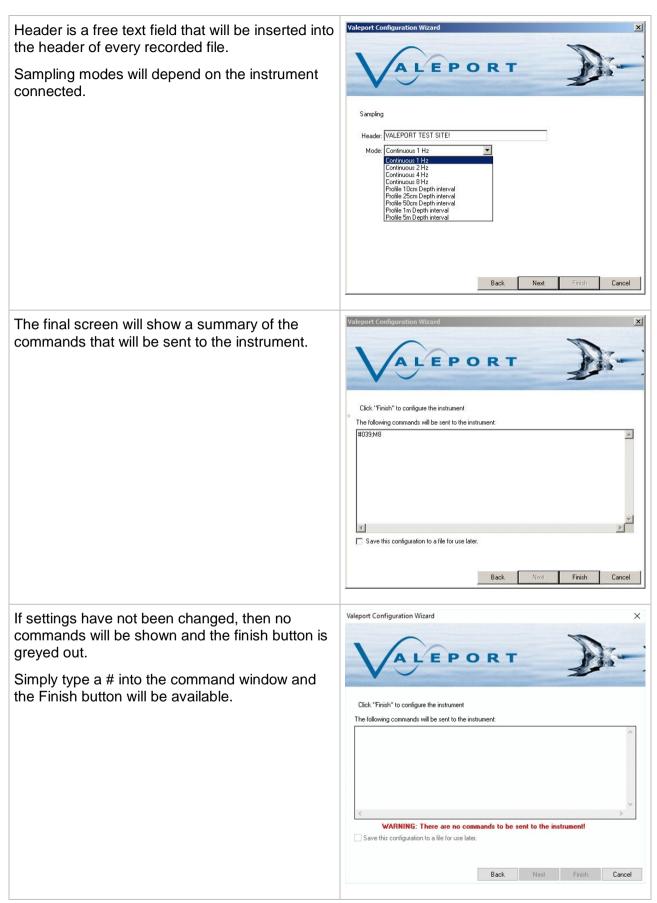
The configuration wizard is instrument specific and the options given will depend on the instrument connected, the example given here is for a MiniSVP.













Once the configuration is completed, the 2 
 X
 Image: Compare
 Image: Compare 10 instrument will be in a paused ('interrupted') state and, therefore, will require prompting from the File user to set it running. This can be achieve in one of 3 ways: 1. Select the RUN button in the instrument tab of DataLog X2 (See image). 2. Enter the command #028 in the Terminal window. 3. Disconnect, then reconnect the Power/Comms cable to activate the instrument.

#### 4.2.3 Download a File

The download wizard is shared with DataLog X2, it operates in the same way as in Terminal with the addition that any downloaded files are automatically loaded into the <u>File Manager</u>.

Clicking on the download icon invokes the Download Wizard. As with all wizards the first stage is to identify the connected insturment and comms settings.	Valeport Download Wizard         Setup communications         Instrument         Type; Sound Velocity Sensors & Profilers Mini SVP         Connection:         Poit: COM6         Poit: COM6         Data Bits:         B         Pairly: None         Stop Bits:         I         Block:         Next         Enrich
Ensure the instrument is switched on and connected. Extend the interrupt timeout if the unit is operating in burst mode (or cycle the power to the instrument)	Valcport Download Wizard         Valcport Download Wizard         Valcport Download Wizard         Valcport Download Wizard         Select the instrument configuration options         Interrupt         Back         Next         Finish         Cancel



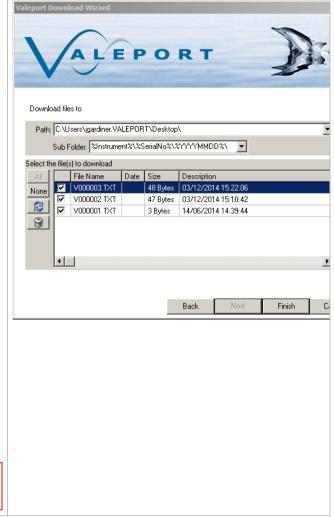
Location to download files to can be defined here. Sub folders by instrument and date will automatically created.

For instruments that support individual file downloads (mini and 400 series), a file list with check boxes will be displayed.

For older instruments such as the model 106/108/308 and the model 740, the entire memory has to be downloaded in one

A status window will show the progress of the download and estimated completion time.





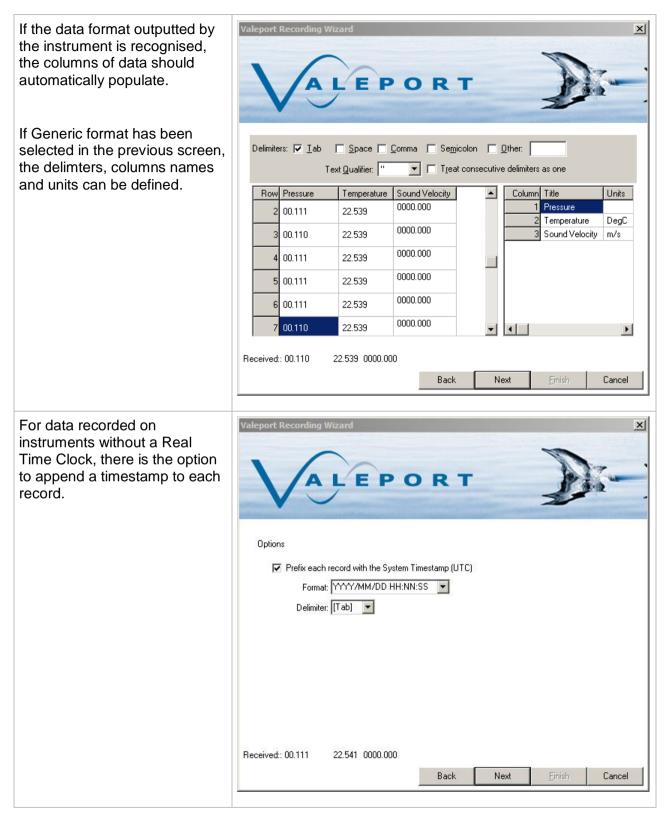


#### 4.2.4 Record a File

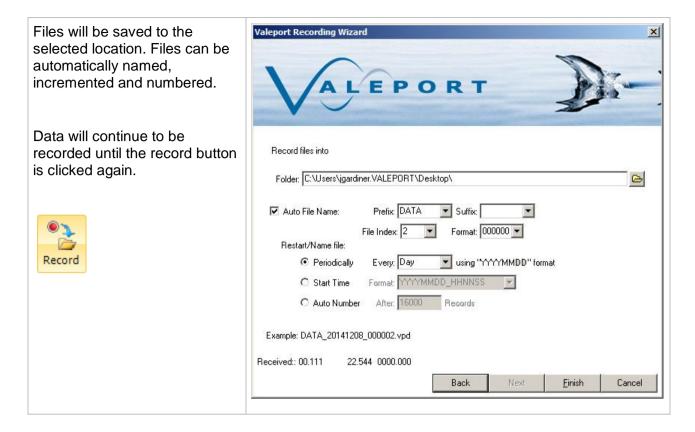
The recording wizard in DataLog X2 differs from the recording wizard in Terminal X2. Rather than just recording any data incoming on the serial port, DataLog X2 will interpret and parse the data into the current workspace to allow real-time data to be displayed and potted using the charting tools available on the <u>Home Toolbar</u>

Real time data can be logged to file with the Recording wizard. As with the other wizards, set up the instrument type and communications settings. If the instrument is not listed, then a 'Generic Instrument' can be selected from the dropdown and suitable comms settings entered.	Valeport Recording Wizard         Setup communications         Instrument         Type: (Recent) Wini SVP         Type: (Recent) Wini SVP         Connection:         Port: COM6         Port: COM6         Type: Direct         Advanced         Baud Rate: [15200         Data Bits: 8         Parity: None         Stop Bits: 1         Flow Control None
The next screen sets the interrupt settings, selects the	Valeport Recording Wizard
incoming Data format and adds the ability to filter the incoming string.	VALEPORT
If the data format is not known, select generic instrument, the next screen will allow the format to be defined.	Select the instrument configuration options Interrupt Interval: 1 seconds Continuous Timeout: 60 seconds
Filtering is also available. For	Format Select: Mini SVP Type: Delimited
example, if an instrument such as the TideMaster is outputting multiple NMEA strings such as \$PVTM1 for met, and \$PVTMA for Tide, the start filter can be ast to \$P\/TMA to apply log the	Filters: Start: End: [CR][LF]
set to \$PVTMA to only log the tide data.	Back Next Finish Cancel

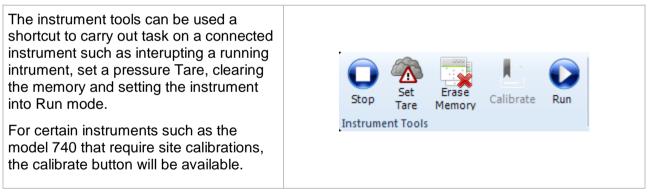








#### 4.2.5 Instrument Tools





### 4.3 Chart ToolBar

File Home Instrument Chart Profiling					۲
Starting: 2013/09/01 💌 20:15 🗧 Depth Min: 1 🌲	T	T	Chart:	3	
Ending: 2013/09/19 🔽 16:09 🗧 Max: 0 🔷	Add	Clear	Series:		vle Axes
Filter			Series		

The Chart Toolbar allows for some basic filtering to be applied to the datasets in the workspace.

Date and Depth filters can be applied using the toolbar buttons, One additional filter can be added using the Add button. This brings up the filter dialogue where the parameter to filter with can be selected and upper/lower limits set.

🔀 Add Filter			<u>_</u> _×
Select a filter	to add:		
Column:	Salinity		
Min:	31		
Max:	35		
		OK	Cancel
		ОК	Cancel

To clear the filter, click the clear button.

### 4.4 Recording Toolbar

The Recording toolbar becomes active when the Record button on the <u>Home Toolbar</u> is clicked. Clicking the record button will activate the <u>Recording Wizard</u>.

Record Stop	Folder:       C:\Users\jgardiner.VALEPORT\Desktop         Next File       File No:		Port: COM6 💽 🧶 🍘
Recording 🕞	File Management	G.	Port Settings 🕞

The recording toolbar can be used to manage incoming data. The toolbar informs on the location that files are being saved to, the file increment and the port settings of the attached instrument.

When DataLog X2 is actively recording data, a new file can be started by pressing the next file button.

Record Stop	Folder: C:\Users\jgardiner.VALEPORT\Desktop Next File File No: 3	<b></b>	Port: COM6 💽 🌉 🌉 Baud: 4800,N,8,1
Recording 🕞	File Management	G	Port Settings 🕞

This is will also have the effect of resetting any graphs or charts currently active.



## 5 Tutorials

## 5.1 Configure a Model 106 Current Meter

Configuration of a Model 106 current meter is via the configuration wizard, this can be accessed via the <u>Instrument ToolBar</u>.



Clicking on the Configure button

will invoke the configuration wizard.

Select Model 106 Current Meter from the dropdown menu. This will populate the connection settings with the default setting for a Model 106. Select the COM port that the instrument Setup communications is connected to. Instrument Type: <Recent>\Model 106 Current Meter (Direct) -Click Next. Connection Advanced Port: COM6 Type: Direct --Baud Rate: 4800 -Data Bits: 8 Parity: None -• Stop Bits: 1 Flow Control: None -Next Close This will set the interrupt timeouts for X the instrument. As default DataLog X2 will attempt to interrupt an instrument 0 RT for 60s. If the instrument is not currently connected to the PC, or the seawater Select the instrument configuration options switch is not connected if using an older Interrupt model, do so now and click next. Interval: seconds 🔽 Continuous If the interrupt is successful, then Timeout: 60 + seconds Configuration commands should be displayed bottom Read configuration from the instrument left being sent to the instrument. C Open previously saved configuration file ... If no connection is established, check connections and the correct com port /baud rate is being used and try again. Back Next Cancel



DataLog X2 will read the current setting of the instrument and display on screen. Settings that are greyed out, are factory set and cannot be changed by the user Instrument Details Setial No 24063 Firmware VER 0104708E Configuration Wizard The instruments internal clock can be manually set, or synced to the PC time. This will be in the time zone that the PC is currently set to.			
set and cannot be changed by the user  set and cannot be changed by the user  Instrument Detais  Setial No (#4083  Fitmware VER 0104706E  Configuration (#FM104P  Free Memory, \$17486 bytes: Batery Voltage 1.327 volts  The instruments internal clock can be manually set, or synced to the PC time. This will be in the time zone that the PC is currently set to.  Veleport Configuration Wizard  Real-Time Clock  C PC: [4/01/2015] [5:15:50] C Synchronise		Valeport Configuration Wizard	
Serial No 34063         Firmware VER 0104706E         Configuration BFM104P         Free Menory 517486         bytes:         Battery Voltage 1:327         volts         Back Next Firm         The instruments internal clock can be manually set, or synced to the PC time. This will be in the time zone that the PC is currently set to.         Valeport Configuration Wzard         Real-Time Clock         Contiguration Structure         Real-Time Clock         Contiguration Structure		ALEPORT	D
Firmware:       VER 0104706E         Configuration:       BM104P         Free Memory:       517486         Batery Vokage:       1327         volts       Back         Next       Firm         The instruments internal clock can be manually set, or synced to the PC time. This will be in the time zone that the PC is currently set to.       Valeport Configuration Wizard         Real-Time Clock.       Core PC:       Firme Clock.         Core PC:       Firme Clock.       Synchronise		Instrument Details	
Configuration:       BFM104P         Free Memory:       \$17486         bytes:       Battery Voltage:         Battery Voltage:       1.327         volts       Back         Next       First         The instruments internal clock can be manually set, or synced to the PC time. This will be in the time zone that the PC is currently set to.       Vizerd         Valeport Configuration V/zord       Real-Time Clock.         Configuration:       \$ PC: [14/01/2015]         Synchronise       Synchronise		Serial No: 34069	
Free Memory:       17486       bytes:         Battery Voltage       1.327       volts         The instruments internal clock can be manually set, or synced to the PC time. This will be in the time zone that the PC is currently set to.       Valeport Configuration Wizard         Valeport Configuration Wizard       Valeport Configuration Wizard         Real-Time Clock.       Synchronise			
Back       Next       First         The instruments internal clock can be manually set, or synced to the PC time. This will be in the time zone that the PC is currently set to.       Valeport Configuration Wizard         Valeport Configuration Wizard       Valeport Configuration Wizard         Real-Time Clock       Real-Time Clock          PC: 14/01/2015       15:15:50			
The instruments internal clock can be manually set, or synced to the PC time. This will be in the time zone that the PC is currently set to.		Battery Voltage: 1.327 volts	
The instruments internal clock can be manually set, or synced to the PC time. This will be in the time zone that the PC is currently set to.			
The instruments internal clock can be manually set, or synced to the PC time. This will be in the time zone that the PC is currently set to.			
The instruments internal clock can be manually set, or synced to the PC time. This will be in the time zone that the PC is currently set to.			
manually set, or synced to the PC time. This will be in the time zone that the PC is currently set to. Real-Time Clock C PC: 14/01/2015 15:15:50 Synchronise		Back	Next Finish
< PC: 14/01/2015 🗾 15:15:50 🚍 🗖 Synchronise	anually set, or synced to the PC time. is will be in the time zone that the PC		D
C: 14/01/2015 15:15:50 Synchronise		Beal-Time Clock	
Device: 14/01/2015 T5:15:55 📑 Set			
		Device: 14/01/2015 💌 15:15:55 拱 Set	



Sample Period and Averaging Period can be set.	Valeport Configuration Wizard
The combination of these two will determine how often the Model 106 will log and output data.	VALEPORT
Sample Period is how long the 106 counts impeller revolutions for. This is set to a minimum of 3 seconds.	Sampling Sample Period: 3 Secs
Average Period is how many Sample Periods are averaged before a data point is recorded or output.	Averaging Period: 1 no of sample periods
I.E	
Sample Period = 3s	
Average Period = 1	
Data recorded once every 3s	
Sample Period = 3s	
Average Period = 20	Back Next Finish
Data recorded once every 60s.	
The final screen shows the commands to be sent to the instrument. If no changes have been made to the instrument setup, then no commands will be shown here. Manual commands can be added here, for example if you want to put the instrument straight into run mode, then add #028 to the list.	Valeport Configuration Wizard Valeport Configuration Wizard Deployment Run Mode: Both Direct and Log Tare: 10.057 Set
	Back Next Finish

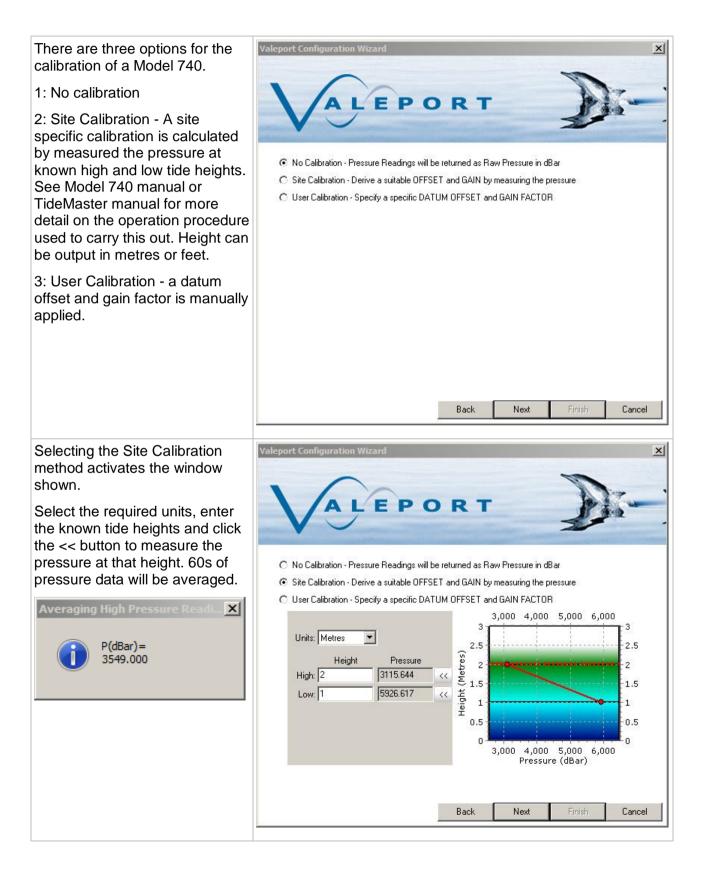


The final screen shows the commands Valeport Configuration Wizard to be sent to the instrument. If no changes have been made to the instrument setup, then no commands EPORT will be shown here. Manual commands can be added here, for example if you want to put the Click "Finish" to configure the instrument instrument straight into run mode, then The following commands will be sent to the instrument: add #028 to the list. #020 5 Alternatively, click finish to apply setup commands, and then start the model 106 running by using the Instrument Tools run button Save this configuration to a file for use later. Back Finish

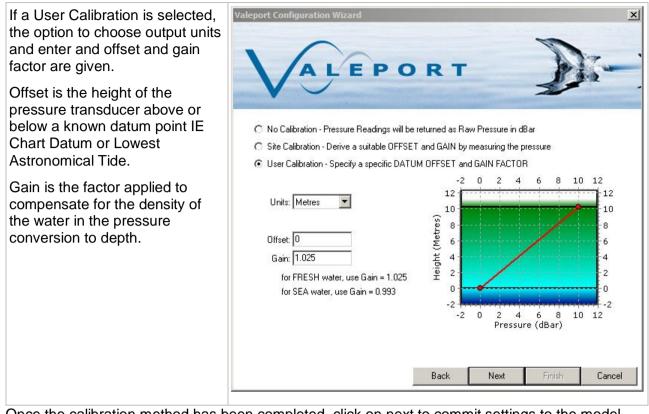


## 5.2 Calibrate a 740 Tide Gauge

There are two routes to calibrate a 740 tide gauge in DataLog X2, it will appear as part of the <u>configuration wizard</u> while configuring a model 740, or can be directly accessed via the <u>Instrument</u> <u>Tools</u> Toolbar. To access via the Instrument Tools section, a connection will first have to be <u>established</u> with the Model 740.







Once the calibration method has been completed, click on next to commit settings to the model 740.



## 5.3 Calculated Density and Salinity

By uploading a data set that contains Sound Velocity, Pressure and Temperature DataLog x2 will automatically calculate the Practical Salinity and from that Density at each point in the profile using Valeport's proprietary computational techniques.

Salinity is calculated to an accuracy of ±0.05 PSU and Density to an accuracy of ±0.05kg/m<sup>3</sup>

nnect Configure Do		ort: COM1		<b>?</b>	Stop Set	Eras		
Instrument		Port	Settings	Fa .	Instrument Too			
File				1				
FILE_004 SURVEY AALS			120 million					
FILE_005 SURVEY AALS		Depth	Sound Velocity	Pressure	Temperature	Salinity	Density	
	Date/Time	(m)	(M/SEC)	(DBAR)	(C)	(PSU)	(kg/m <sup>3</sup> )	
	2016/07/07 15:29:01	495.825	1492.816	495.825	20.684	0.083	1000.379	
	2016/07/07 15:29:02	495.825	1492.822	495.825	20.685	0.086	1000.381	
	2016/07/07 15:29:03	495.825	1492.821	495.825	20.686	0.082	1000.378	
	2016/07/07 15:29:04	495.813	1492.817	495.813	20.685	0.082	1000.378	
	2016/07/07 15:29:05	495.813	1492.818	495.813	20.684	0.085	1000.381	
	2016/07/07 15:29:06	495.800	1492.820	495.800	20.684	0.087	1000.382	
	2016/07/07 15:29:07	495.800	1492.818	495.800	20.685	0.083	1000.379	
	2016/07/07 15:29:08	495.800	1492.820	495.800	20.685	0.084	1000.380	
	2016/07/07 15:29:09	495.800	1492.821	495.800	20.685	0.085	1000.381	
	2016/07/07 15:29:10	495.788	1492.818	495.788	20.684	0.085	1000.381	
	2016/07/07 15:29:11	495.788	1492.816	495.788	20.684	0.084	1000.380	
	2016/07/07 15:29:12	495.775	1492.818	495.775	20.685	0.083	1000.379	
	2016/07/07 15:29:13	495.775	1492.820	495.775	20.685	0.085	1000.380	
	2016/07/07 15:29:14 2016/07/07 15:29:15	495.775 495.750	1492.817 1492.819	495.775 495.750	20.684	0.085	1000.380	
	and a feature and a second state of the last second state of the	495.750	1492.819	495.750	20.683	0.090	1000.384	
	2016/07/07 15:29:16 2016/07/07 15:29:17	495.750	1492.817	495.750	20.683	0.085	1000.381	
	2016/07/07 15:29:17	495.737	1492.817	495.737	20.683	0.086	1000.381	
	2016/07/07 15:29:18	495.737	1492.815	495.737	20.683	0.086	1000.381	
	2016/07/07 15:29:20	495.725	1492.813	495.725	20.683	0.086	1000.381	
	2016/07/07 15:29:21	495.725	1492.817	495.725	20.683	0.088	1000.383	
	2016/07/07 15:29:22	495.723	1492.817	495.712	20.684	0.085	1000.380	
	2016/07/07 15:29:23	495.712	1492.810	495.712	20.684	0.083	1000.379	
	2016/07/07 15:29:24	495.712	1492.814	495.712	20.683	0.086	1000.381	
	2016/07/07 15:29:25	495.712	1492.813	495.712	20.683	0.085	1000.380	
	2016/07/07 15:29:26	495.700	1492.817	495.700	20.683	0.089	1000.383	
	2016/07/07 15:29:27	495.700	1492.817	495.700	20.684	0.086	1000.381	
	2016/07/07 15:29:28	495.688	1492.814	495.688	20.683	0.086	1000.381	
	2016/07/07 15:29:29	495.688	1492.813	495.688	20.683	0.085	1000.380	
	2016/07/07 15:29:30	495.688	1492.812	495.688	20.683	0.084	1000.380	
	2016/07/07 15:29:31	495.663	1492.813	495.663	20.683	0.086	1000.381	
	2016/07/07 15:29:32	495.663	1492.816	495.663	20.683	0.088	1000.383	
	2016/07/07 15:29:33	495.650	1492.814	495.650	20.684	0.084	1000.379	
>	2016/07/07 15:29:34	495.650	1492.813	495.650	20.684	0.083	1000.378	
Key Value 🔺	2016/07/07 15:29:35	495.650	1492.814	495.650	20.683	0.087	1000.381	
instrument MONIT	2016/07/07 15:29:36	495.638	1492.811	495.638	20.683	0.084	1000.379	
vice Series 400	2016/07/07 15:29:37	495.638	1492.813	495.638	20.683	0.086	1000.381	
evice Type MONIT	2016/07/07 15:29:38	495.638	1492.812	495.638	20.683	0.085	1000.380	
ial Number 39429	2016/07/07 15:29:39	495.625	1492.813	495.625	20.683	0.086	1000.381	
Firmware 04007	2016/07/07 15:29:40	495.625	1492.812	495.625	20.683	0.085	1000.380	
Latitude	2016/07/07 15:29:41	495.625	1492.810	495.625	20.682	0.086	1000.381	
Longitude	2016/07/07 15:29:42	495.625	1492.809	495.625	20.683	0.083	1000.378	
Site Info SURVE' v	2016/07/07 15:29:43	495.612	1492.812	495.612	20.682	0.088	1000.383	
	2016/07/07 15:29:44	495.612	1492.813	495.612	20.683	0.086	1000.381	
ns Metadata			11					

