

**VALEPORT LIMITED**

**CDU Express**

**Operation Manual**

Document Ref: 8008838A

Document Version: A

Date: November 2008

This confidential document was prepared by the staff of Valeport Limited, the Company, and is the property of the Company, which also owns the copyright therein. All rights conferred by the law of the copyright and by virtue of international copyright conventions are reserved to the Company. This document must not be copied, reprinted or reproduced in any material form, either wholly or in part, and the contents of this document, and any method or technique available therefrom, must not be disclosed to any other person whatsoever without the prior written consent of the Company.

Valeport Limited,  
St Peters Quay,  
Totnes,  
Devon, TQ9 5EW,  
UK

Tel: +44 (0)1803 869292  
Fax: +44 (0)1803 869293  
e-mail: [sales@valeport.co.uk](mailto:sales@valeport.co.uk)  
Web: [www.valeport.co.uk](http://www.valeport.co.uk)

As part of our policy of continuous development, we reserve the right to alter, without prior notice, all specifications, designs, prices and conditions of supply for all our equipment.

Copyright ©2008

## Contents

1	INTRODUCTION .....	3
2	INSTALLATION .....	4
3	CONNECTING TO THE CDU .....	5
3.1	Establishing Communications .....	6
4	UPLOADING DATA .....	7
4.1	Opening Uploaded Data Files .....	8
5	DATA DISPLAY .....	9
5.1	Scroll window .....	9
5.2	Time Series Graph .....	9
5.2.1	Adjusting Scale .....	10
5.2.2	Exporting Graphs.....	10
6	MANUALS 11	
7	SEAWATER CALCULATIONS UTILITY .....	12

## 1 **INTRODUCTION**

This manual covers the operation of Valeport's CDU Express software. It is a simple package designed to extract recorded data files from Valeport's range of Control Display Units using a common interface and is supplied for use with the following Valeport CDU products:

- 0012B CDU
- Model 105 / 106 CDU
- Model 602 CDU
- SoundBar II CDU
- Model 801 CDU
- Model 802 CDU
- Model 108 / 308 /600 mk3 /604 CDU
- Model 200 CDU

CDU Express is supplied on a single CDROM with the unit. Whilst all new CDU's are shipped with the latest version of this software, shipping / warehousing delays, or sourcing the CDU through a 3<sup>rd</sup> party, may result in a newer edition of the software being available. It is worth checking the support pages of our website to confirm that you have the latest version of the software before using it.

## 2 INSTALLATION

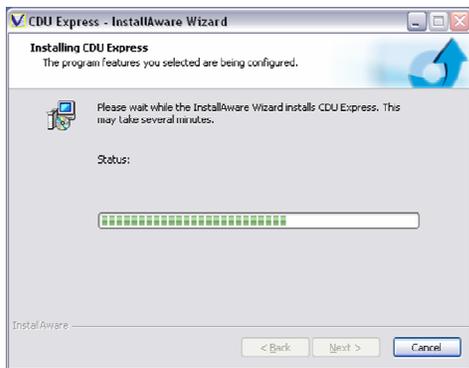
To install CDU Express, run “setup.exe” from the installation CDROM, or from the “CDU\_Express\_install” directory if you have downloaded the software. The installation wizard will appear as below:



Click “Next”.



Click “Next” again.



Wait while the software installs.

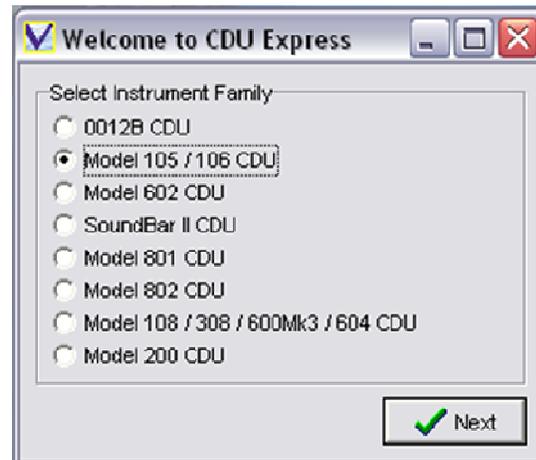


Click Finish to complete the installation.  
No PC restart is necessary.

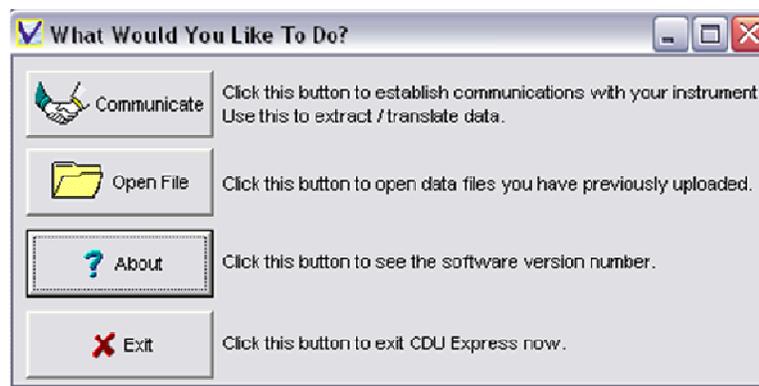
Once installed, CDU Express may be run by clicking the icon on your desktop. Note that a second utility program will also be installed with a similar icon, called "Sea Water Calculations". This program allows the user to verify the calculation of Salinity, Density, Depth and Sound Speed values using industry standard equations, and is described in full in Section 9 of this manual.

### 3 CONNECTING TO THE CDU

When you run CDU Express the following screen will appear. This allows you to pick the type of CDU you would like to connect to. This option can only be selected at startup. To change the CDU type, the program will need to be restarted



Once the CDU type has been selected the following screen will appear:



There are 4 buttons available, the function of each is described on screen and below.



The Communicate button allows you to talk to the CDU for the purposes of extracting recorded data files to PC.



The Open File button allows you to open data that you have previously uploaded from the CDU; this data may then be viewed using a variety of display functions.



The About button displays the current version number of the software. Valeport support staff may ask you for this number if you have a technical problem.



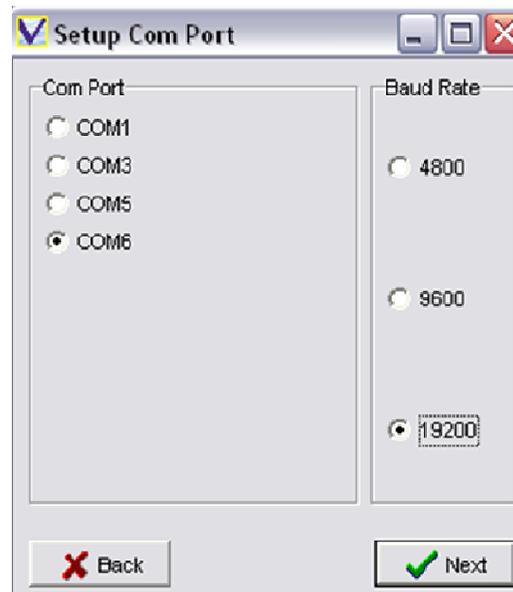
Exit closes down the CDU Express program.

### 3.1 ESTABLISHING COMMUNICATIONS

Click the Communicate button on the Welcome screen to begin the process of connecting to the CDU. This screen will be shown:

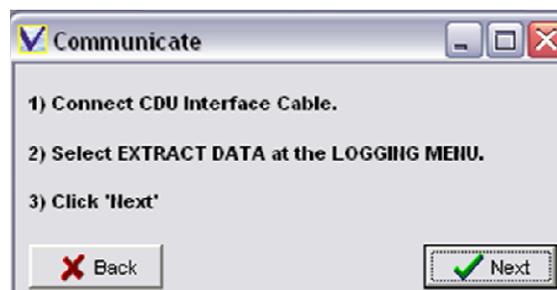
The **Com Port** box on the left will list all the Com Ports fitted to your PC. Choose the port that you wish to use to communicate with the CDU.

**Baud rate** is the speed at which the PC and the instrument communicate. CDU express should select the correct baud rate for the CDU selected. When you have chosen the correct Comm Port and Baud Rate, click Next.



The following screen will appear.

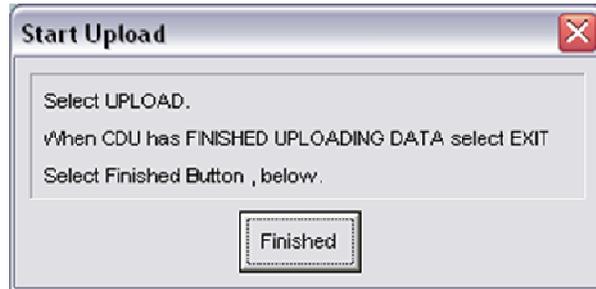
Follow the instructions in the manual for the CDU in use to extract data, and Click Next.



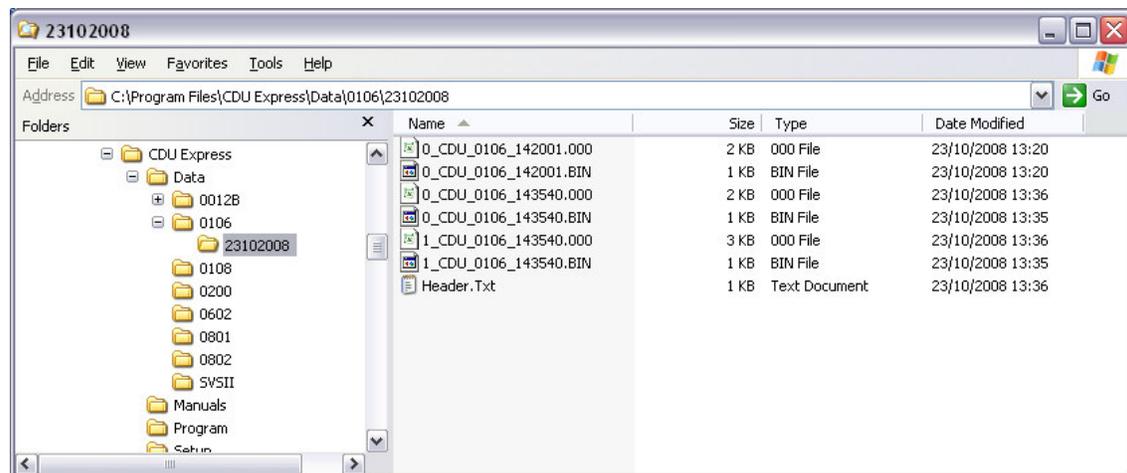
## 4 UPLOADING DATA

CDU Express will passively listen for files to be uploaded. File upload will need to be initiated on the CDU by following the instructions in the user manual for the CDU.

CDU Express will indicate what it is doing in the bottom left hand corner of the screen. The CDU unit will also display status messages. When the CDU has successfully uploaded the data follow the instructions in the CDU manual and click on the finished button in CDU express.

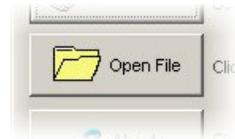


The data will be uploaded into a predefined file structure organised by instrument types. Within each instrument folder, folders will be organised by date of upload, within each date folder, files will be named by time of upload and order of upload:

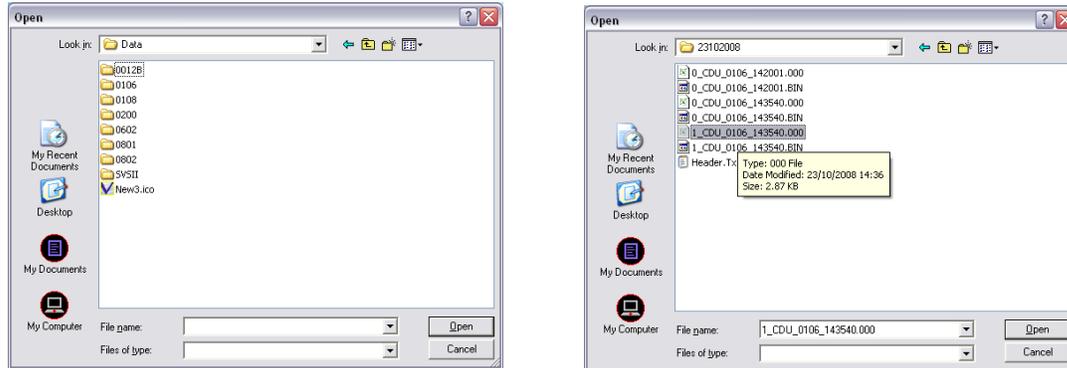


#### 4.1 OPENING UPLOADED DATA FILES

To open an uploaded data file, either click the Open File button on the Welcome Screen



You will be shown a standard Windows “Open” display, as indicated.



Navigate to the correct folder, remembering that data is always uploaded to the following location:

**C:\Program Files\CDU Express\Data\{nnnnn}\ddmmyyyy**

Where: **nnnnn** signifies the instrument type

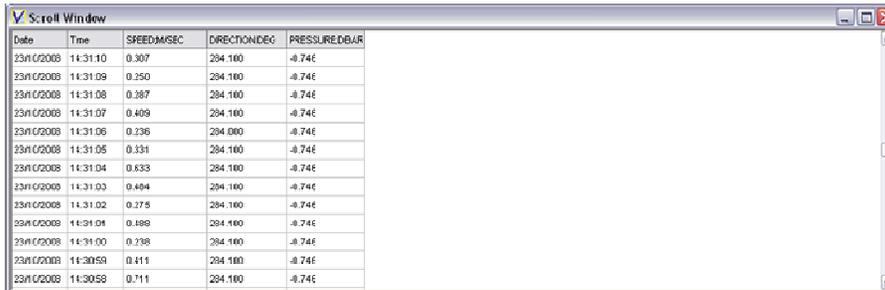
**Ddmmyyyy** signifies the date of the upload

Note that if an uploaded file is split into more than one ASCII file then the extension increments, i.e. “.001”, “.002” etc.

## 5 DATA DISPLAY

### 5.1 SCROLL WINDOW

The scroll display is a tabular list of the data, and is suitable for showing data from a saved or uploaded file.



Date	Time	SPEED/MSEC	DIRECTION/DEG	PRESSURE/DBAR
23/11/2008	14:31:10	0.307	284.100	-8.74E
23/11/2008	14:31:09	0.250	284.100	-8.74E
23/11/2008	14:31:08	0.387	284.100	-8.74E
23/11/2008	14:31:07	0.409	284.100	-8.74E
23/11/2008	14:31:06	0.236	284.000	-8.74E
23/11/2008	14:31:05	0.331	284.100	-8.74E
23/11/2008	14:31:04	0.633	284.100	-8.74E
23/11/2008	14:31:03	0.494	284.100	-8.74E
23/11/2008	14:31:02	0.275	284.100	-8.74E
23/11/2008	14:31:01	0.189	284.100	-8.74E
23/11/2008	14:31:00	0.238	284.100	-8.74E
23/11/2008	14:30:59	0.411	284.100	-8.74E
23/11/2008	14:30:58	0.711	284.100	-8.74E

Right – click in the Window, and select “Sensor List 1”, then choose the parameter you wish to view. Note that you can repeat this process to add parameters to the scroll window

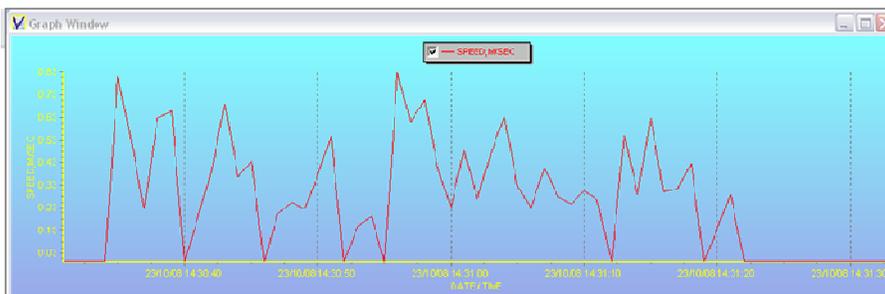
The following points should be noted about the Scroll Window:

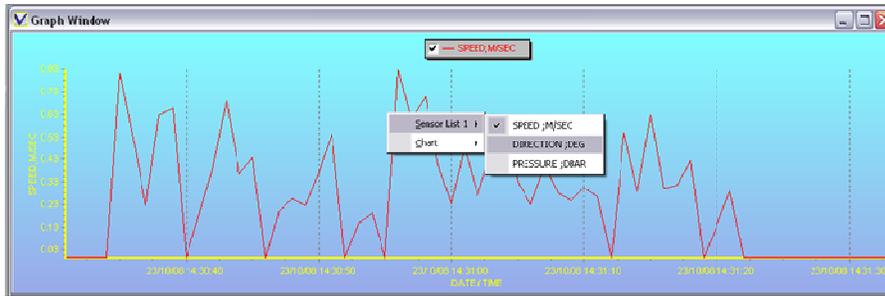
- The most recent data point is at the top of the list, the oldest at the bottom
- Large data files may take a few seconds to open with this display
- The columns widths are adjustable using the mouse

The entire display may be positioned and resized using the mouse

### 5.2 TIME SERIES GRAPH

CDU Express will show a Time Series Graph of any chosen parameter, from uploaded data files.





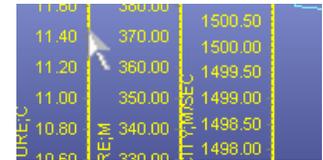
Right-click the box and choose the required parameter from the “Sensor List”, as shown.

The Graph Window may be moved and sized using the mouse. By default, the graph scales will “Autoscale” to fit the displayed data. Control of this feature and other graph functions are described below

### 5.2.1 ADJUSTING SCALE

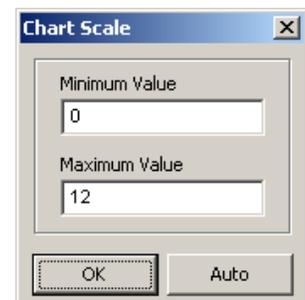
By default, the scale for each parameter will “Autoscale” to suit the range of data being displayed. However, it is possible to manually control the scale if preferred.

Right click on the scale to be adjusted – click on the actual line of the scale as shown.



Then, enter the required minimum and maximum values for the scale, and click OK.

To return to the Autoscale mode, simply click “Auto”.



### 5.2.2 EXPORTING GRAPHS

The image of a Graph or Profile may be made available to other packages, for use in presentations and reports. Right click the Graph and select the “Chart Option”, then choose to either “Copy” the image to the PC clipboard for simple pasting, or “Save” it to disk as a bitmap or metafile image.

## **6      MANUALS**

A software copy of this operating manual, together with the hardware manuals for all the hardware with which CDU Express is compatible, is included with the installation of the software. Select “Manuals” from the menu, and then choose either “CDU Express” or the appropriate instrument hardware manual from the drop down list.

These manuals are saved in Adobe Acrobat format, so will require Adobe Acrobat Reader to be installed on your PC. If you do not have this, please visit the following website to download it. Acrobat Reader is free.

**[www.adobe.com/products/acrobat/readstep2.html](http://www.adobe.com/products/acrobat/readstep2.html)**

## 7 SEAWATER CALCULATIONS UTILITY

The Seawater Calculations Utility installed in conjunction with CDU Express is provided as a tool for the user to carry out standard oceanographic calculations.

Simply input Conductivity/Salinity, Pressure Temperature (in IPT68 or IPT 90 scales) and Latitude (if known), and click on the Calculate button. The program will calculate and display the following parameters:

- Density Anomaly Gamma (Calculated Density – 1000kg/m<sup>3</sup>)
- Conductivity or Salinity (whichever the user did not enter).
- Sound Speed calculated using the chosen Speed of Sound Formula:
- Depth in metres calculated using the UNESCO standard formula. This is an approximation, and does not account for variations in density distribution throughout the water column. Its accuracy has been estimated at better than 0.1m.



All formulae, including the various Speed of Sound formulae are available in full from Valeport, if required.