

CDU EXPRESS – SOFTWARE MANUAL

What Would You I	ike To Do?	
	Click this button to establish commun Use this to extract / translate data.	ications with your instrument.
Open File	Click this button to open data files yo	u have previously uploaded.
? About	Click this button to see the software	version number.
🗶 Exit	Click this button to exit CDU Express	now.

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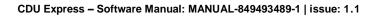
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Table of Contents

1.	Introduction	1
2.	Installation	2
3.	Connecting to the CDU	3
	3.1. Establishing Communications	4
4.	Uploading Data	5
	4.1. Opening Uploaded Data Files	6
5.	Data Display	7
	5.1. Scroll window	7
	5.2. Time Series Graph	7
	5.2.1. Adjusting Scale 5.2.2. Exporting Graphs	8 8
6.	Seawater Calculations Utility	9





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 software is supplied with your instrument and can be downloaded from the website - search for your particular instrument software download is found towards the bottom of the page. Whilst all new CDU's are shipped with the latest version of this software, shipping / warehousing delays, or sourcing the CDU through a 3rd 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.

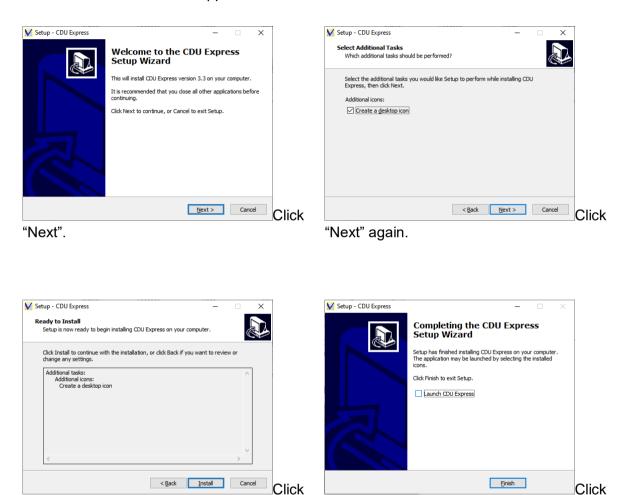
2. Installation

To install CDU Express, run "setup.exe" from the installation media.

or if down loading from the Valeport Website (www.valeport.co.uk) click "Run"



The installation wizard will appear as below:



"Install".

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

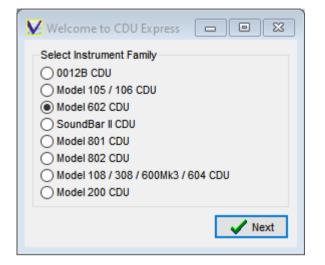
Once installed, CDU Express may be run by clicking the icon on your desktop. Note that a second utility program will also be installed with a similar icon, called "Sea Water Calculations". This program allows the user to verify the calculation of Salinity, Density, Depth and Sound Speed values using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



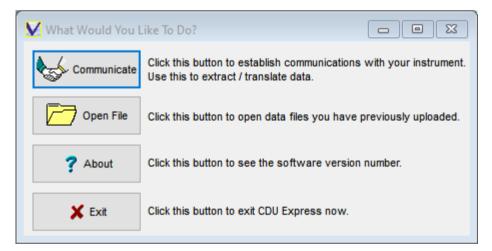
3. Connecting to the CDU

When you run CDU Express the following screen will appear. This allows you to pick the correct instrument and therefore, CDU operating software. This option can only be selected at start up.

To change the CDU type, the program will need to be restarted



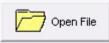
Once the CDU type has been selected the following screen will appear:



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:

🚺 Setup Com Port	
Com Port	Baud Rate
	O 9600
	O 19200
X Back	Vext

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.

Select the required **Baud Rate**. CDU Express should select the correct baud rate for the CDU selected. When you have chosen the correct COM Port and Baud Rate, click Next.

The following screen will appear.

V Communicate	
1) Connect CDU Interface Cable.	
 2) Select EXTRACT DATA at the LOG 3) Click 'Next' 	GGING MENU.
X Back	Vext

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.

Start Upload	×
Select UPLOAD.	_
When CDU has FINISHED UPLOADING DATA select EXIT	
Select Finished Button , below.	
Finished	

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.

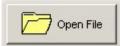
The data will be uploaded into a predefined file structure organised by instrument types. Within each instrument folder, folders will be organised by date of upload, within each date folder, files will be named by time of upload and order of upload:

23102008					_ 🗆 🛛		
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools	Help						
Address 🛅 C:\Program Files\CDU Expr	Address 🛅 C:\Program Files\CDU Express\Data\0106\23102008 💎 🄁 Go						
Folders	×	Name 🔺	Size	Туре	Date Modified		
🖃 🚞 CDU Express	~	0_CDU_0106_142001.000	2 KB	000 File	23/10/2008 13:20		
= 🦲 Data		🔤 0_CDU_0106_142001.BIN	1 KB	BIN File	23/10/2008 13:20		
🕀 🛅 0012B		0_CDU_0106_143540.000	2 KB	000 File	23/10/2008 13:36		
🖃 🧰 0106		國 0_CDU_0106_143540.BIN	1 KB	BIN File	23/10/2008 13:35		
2310200	3 🗐	1_CDU_0106_143540.000	3 KB	000 File	23/10/2008 13:36		
0108		🔟 1_CDU_0106_143540.BIN	1 KB	BIN File	23/10/2008 13:35		
<u> </u> 0200		🗐 Header.Txt	1 KB	Text Document	23/10/2008 13:36		
<u> </u> 0602							
<u> </u> 0801							
0802							
🛅 SVSII							
🚞 Manuals							
🚞 Program	-						
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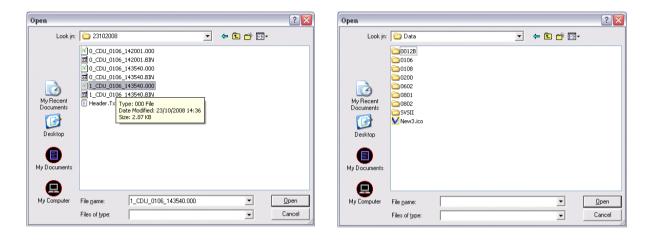


4.1. Opening Uploaded Data Files

To open an uploaded data file, 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\{nnnn}\ddmmyyyy

Where: **nnnnn** signifies the instrument type **ddmmyyyy** signifies the date of the upload

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 shows data from saved or uploaded files.

V Sero II I	mindow			
Deato	Time	SPEED WSEC	DIRECTION DEC	PRESS./PEDDAR
29/10/2005	103010	0.887	2847.00	-0.716
23/10/0008	14:31:69	0.250	264.7 00	-0.746
22*10/2006	14:31:00	0.387	291/00	0.716
23710/0008	1430/07	0.489	284.100	-0.746
23/10/2002	14:30:05	0.295	294,000	40748
2374040005	103035	0.304	2547.00	-0.746
202005005	10.3516	0.635	268.100	.0.708
23/10/2005	1430:65	D.484	254.1 00	-0.7+6
23/10/2006	163082	0.275	2847.00	-0.716
23710/0008	1430.01	0.468	2847.00	-0.746
23*10/2005	14:31:00	0.229	2947-00	0.710
237/0/0008	14.33.59	0.411	284.7 00	-0.746
23/10/2005	10.20.53	021	204200	-0.746

Right – click in the Window, and select "Sensor List 1", then choose the parameter you wish to view.

you can repeat this process to add parameters to the scroll window

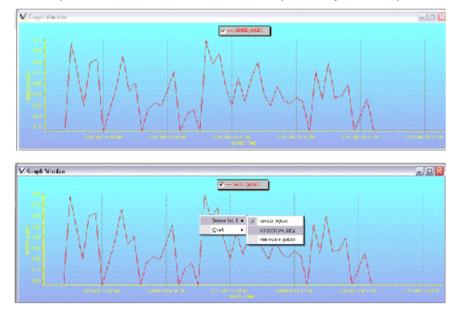
The following points should be noted about the Scroll Window:

- 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.

11.40 11.20 11.00	370.00 360.00 350.00	1500.50 1500.00 1499.50 7 1499.00	
10.80	≥ 340.00	≩ 1498.50 ⊑ 1498.00 -	

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

Chart Scale	×
Minimum Value	
Maximum Value	
12	
OK Auto	

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. 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.

📈 Sea Water Calculations			$ \Box$ \times
Help			
Select Speed of Sound Formula Chen & Millero 1977 V			Density Anomaly [kg/m3]
	Enter Values		
Select Conductivity or Salinity Conductivity ~	42.914	mS/cm	Salinity [PSU]
Pressure	0	dBar	
Select Temperature Scale Temperature IPTS-90 ~	0	deg. C	Sound Speed [m/s]
Latitude	0	degrees	UNESCO Standard Depth [m]
	Calculate		

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/m³)
- Conductivity or Salinity (whichever the user did not enter)
- 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
- Sound Speed calculated using the chosen Speed of Sound Formula:

📈 Sea Water Calculations	
Help	
Select Speed of Sound Formu Chen & Millero 1977	la V
Chen & Millero 1977 Del Grosso 1974 McKenzie 1981	
Medwin 1975 Wilson (Full) Oct 1960 Wilson (Simple) Oct 1960	

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