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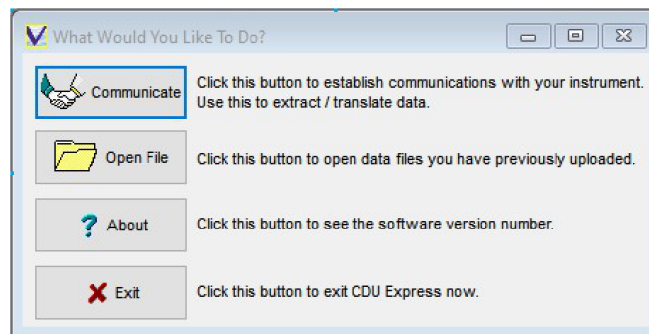
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As part of our policy of continuous development, we reserve the right to alter, without prior notice, all specifications, designs, prices and conditions of supply for all our equipment

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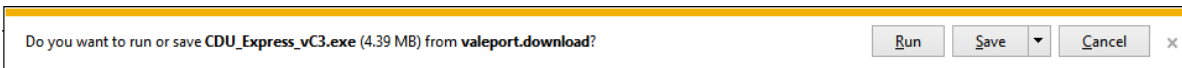
0012B CDU	Model 801 CDU
Model 105 / 106 CDU	Model 802 CDU
Model 602 CDU	Model 108 / 308 /600 mk3 /604 CDU
SoundBar II CDU	Model 200 CDU

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.
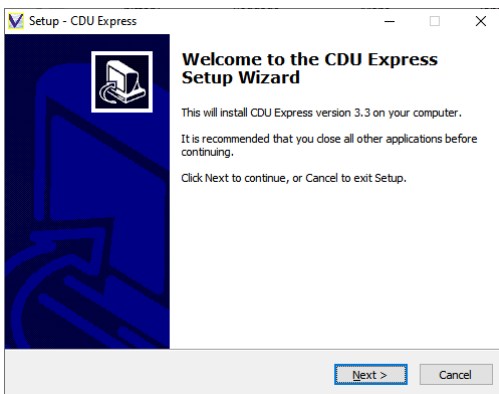
2. Installation

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

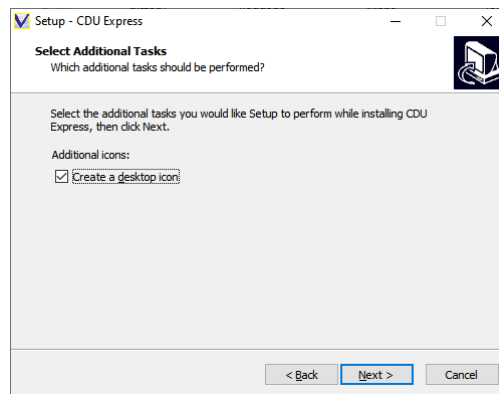or if down loading from the Valeport Website (www.valeport.co.uk) click "Run"

Do you want to run or save **CDU_Express_vC3.exe** (4.39 MB) from **valeport.download**?   [Run] [Save ▾] [Cancel] ✕

The installation wizard will appear as below:

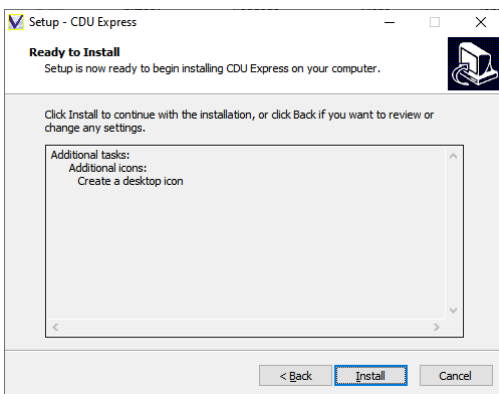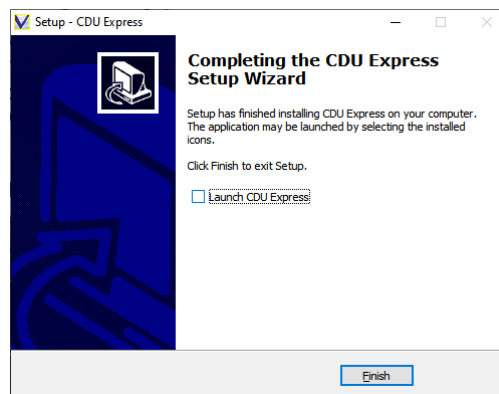Click "Next".

Click "Next" again.

Click "Install".

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 the Seawater Calculations Utility section of this manual.
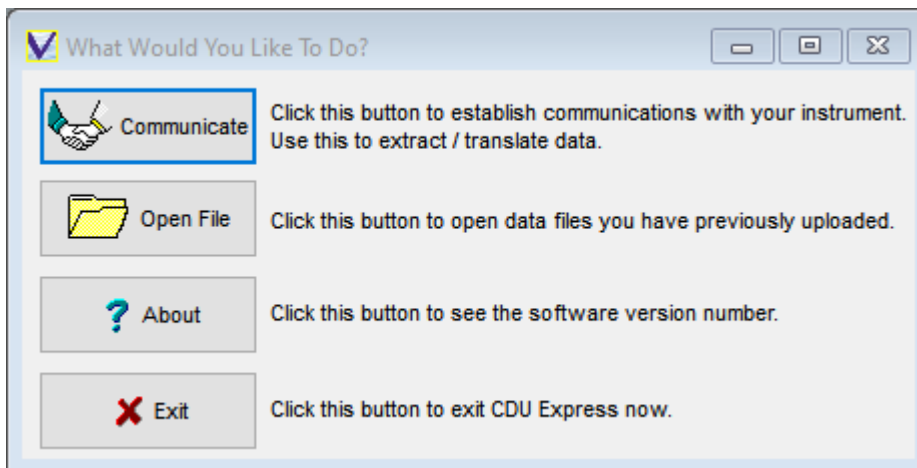
3. Connecting to the CDU

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.
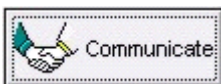
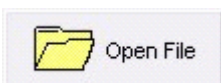To change the CDU type, the program will need to be restarted
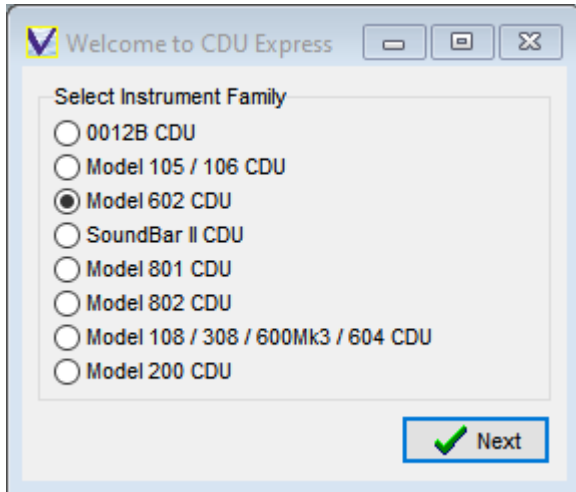
Once the CDU type has been selected the following screen will appear:
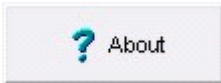

There are 4 buttons available, the function of each is described on screen and below.


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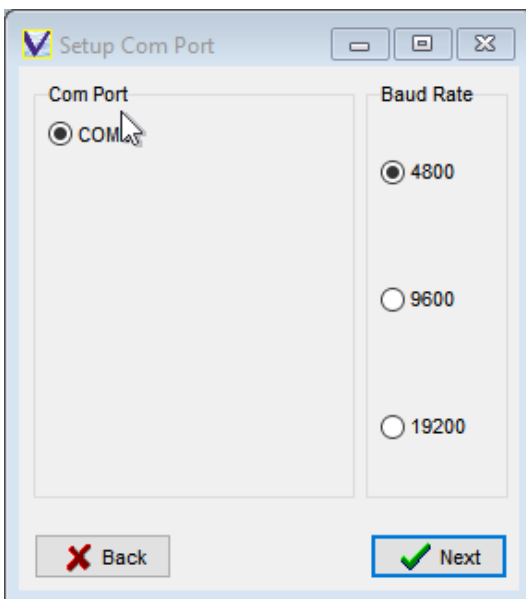
The About button displays the current version number of the software. Valeport support staff may ask you for this number if you have a technical problem.
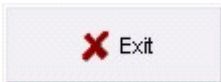
Exit closes down the CDU Express program.

## 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:

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.
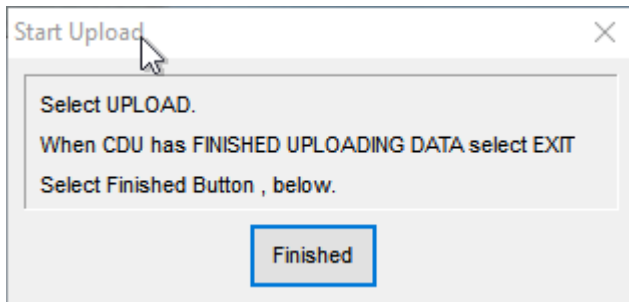
The following screen will appear.
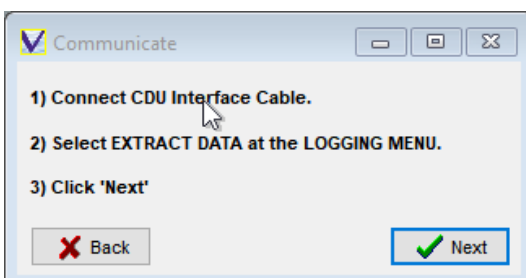
Follow the instructions in the manual for the CDU in use to extract data, and Click Next.

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:
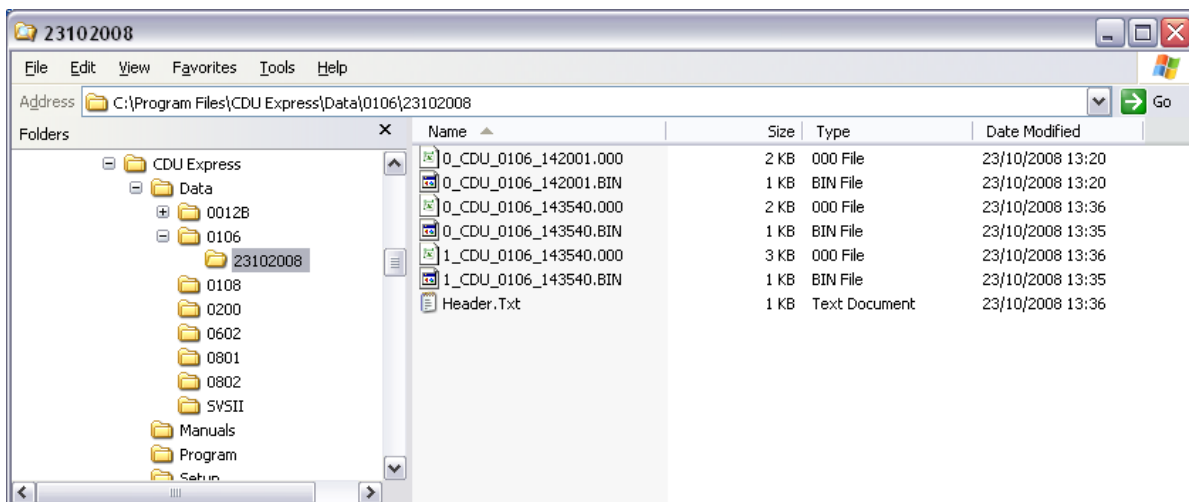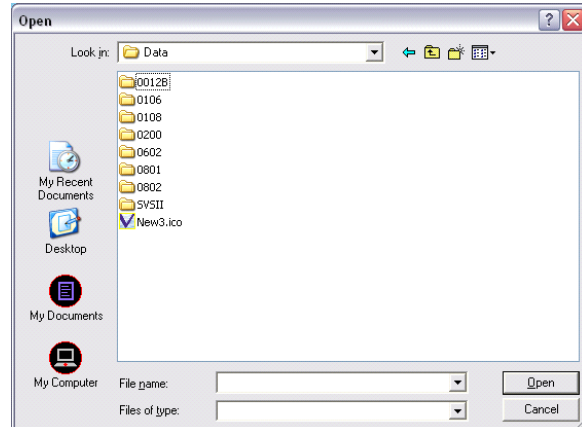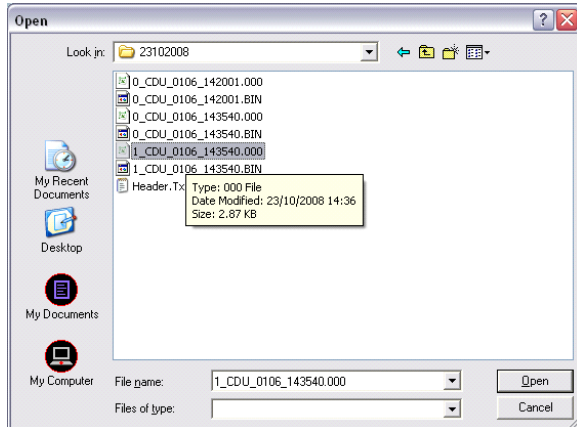

4.1. Opening Uploaded Data Files

To open an uploaded data file, click the Open File button on the Welcome Screen
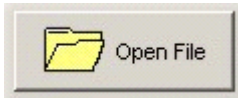
You will be shown a standard Windows "Open" display, as indicated.

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

> 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.

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.
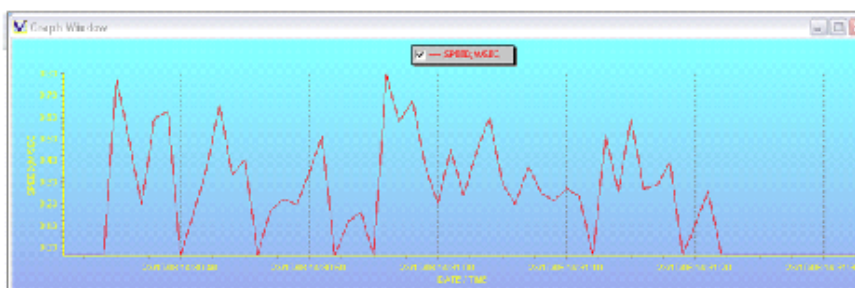
Right -click the box and choose the required parameter from the "Sensor List", as shown.
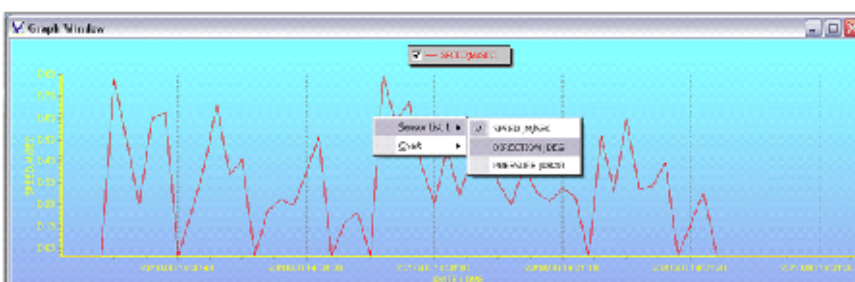
The Graph Window may be moved and sized using the mouse. By default, the graph scales will "Autoscale" to fit the displayed data. Control of this feature and other graph functions are described below

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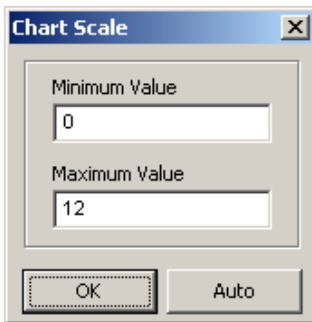
Right click on the scale to be adjusted – click on the actual line of the scale as shown.

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. 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/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:

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