

UltraLog 5.1 - SREXCF session logged on Friday - 10 Nov 2021 @ 08:41:30

File Setup Help Program Help

**Log Setup**

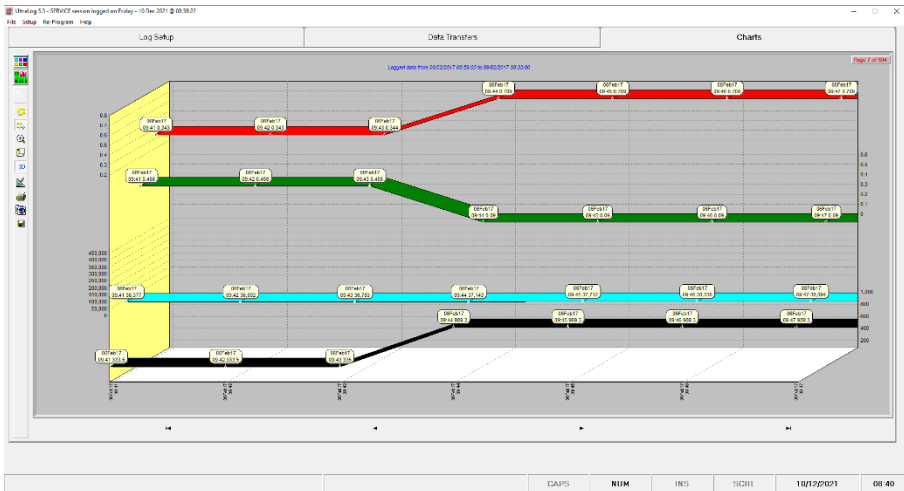
- Panel 1**
  - Level
  - Distance
  - Confidence
  - Strength
  - HALL
  - Average Noise
  - Peak Noise
  - Temperature
- Panel 2**
  - Level
  - Distance
  - Confidence
  - Strength
  - HALL
  - Average Noise
  - Peak Noise
  - Temperature
- Applicator**
  - Average Level
  - Diffusivity
- Status**
  - System Status
  - Relay Status
  - Digital Inputs
  - Volume**
    - Volume
    - Pumped
  - Flow 1**
    - Flow
    - Avg Flow
  - Totals 1**
    - System
    - Resizable
    - Daily
  - Log Collection**
    - System
    - Resizable
    - Daily
- Transfer 2**
  - System
  - Resizable
  - Daily
- Flow 2**
  - Flow
  - Avg Flow
- Volume 132**
  - Avg Volume
  - Total
- Flow 142**
  - Avg Flow
  - Total
- Input/Output**
  - Output 1
  - Output 2
  - Flow Input
  - Velocity
- Volume 2**
  - Volume

**Data Transfers**

- Unit Setup**
  - Variable 3
  - Advanced 5
  - Advanced 6
  - Flow 3
  - Flow 5
  - Flow 10
  - Level Star 3
  - Level Star 5
  - Zenith 5
  - Flow 2.1 E
  - Quantum 8
  - Flow Cert 5
  - Bellwheiger
  - Oracle CSO
  - Twin
  - Quantum 10
  - S-Index 2
  - Reactor
- Hardware Option**
  - mA Input Available
- Log Setup Summary**
  - Bytes Per Log: 3
  - Log Interval (mins): 1
  - Log Duration (days): 45.7
  - Log Wrapping
- Unit Information**

Buttons: Select All, Select None, Setup Unit, Get Unit Info

Bottom bar: CAPS NUM INS SCRL 10/12/2021 08:41



# UltraLog Software

## Instruction Manual



## ULTRALOG SOFTWARE (FOURTH EDITION REV 1)

December2021

Part Number M-100-LOG-002P

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## CHAPTER 1: START HERE...

Congratulations on your purchase of Pulsar Measurement's UltraLog software.

The Ultra Log Software Package is a powerful tool that is used in conjunction with the optional data logging board available with the Pulsar Ultra range and will provide you with all the tools required to get the most from the powerful data logging capability of the Pulsar Ultra range of products.

The Ultra Log software is used to programme the Pulsar Ultra series data logging facility and download any data stored in the Pulsar Ultra unit so that it may be interrogated and viewed and stored.

Dependent on the amount of data to be logged, and the frequency of logging chosen, the Pulsar Ultra series can provide data logging of information for a period more than 12 months.

### *About this Manual*

**It is important that this manual is referred to for correct installation and operation.** There are various parts of the manual that offer additional help or information as shown.

### *Tips*



TIP: Look for this icon throughout your Pulsar Measurement manual to find helpful information and answers to frequently asked questions.

### *Additional Information*

#### **Additional Information**

At various parts of the manual, you will find sections like this that explain specific things in more detail.

## Specification

---

### SYSTEM REQUIREMENTS

<b>Operating System</b>	Windows 7 (latest service pack), Win 8 & Win 10
<b>Processor Speed</b>	133 MHz (Minimum)
<b>Memory</b>	32Mb (Minimum)
<b>Disk Space</b>	6 Mb (approx.)

Pulsar Measurement operates a policy of constant development and improvement and reserve the right to amend technical details, as necessary.

## CHAPTER 2 INSTALLATION AND CONNECTIONS

### *Installing your software*

Installation of the Ultra Software is simple, just insert the CD into your drive and follow the instructions on the screen.

UltraLog will create its own directory under C:\Program Files\UltraLog Version xx called 'UltraLog'.

If Autorun is not enabled on your computer, then you will need to click on your Start menu, click on Run, then use the Browse facility to locate the Set-up file in your CD drive. Or if downloading from the Pulsar website, you can run the software from your downloads folder. You will need administration privileges to install the software.

Once the installation is complete, a shortcut icon will be created and installed onto your desktop, labelled 'UltraLog' simply double click on this icon to open the initial screen.

### *Connection Details*

Connection to your computer is via a standard RS232 serial connection. A connector and lead can be supplied with your software package if requested.

Connection to the Pulsar Ultra series is via the RJ11 plug, the connector socket can be found in line with the terminal blocks, as detailed in the manual of the Pulsar instrument being used.

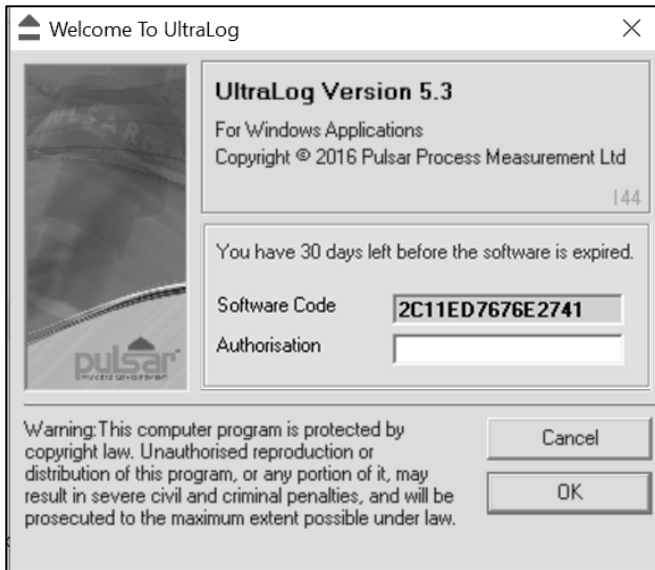


## CHAPTER 3 HOW TO RUN ULTRALOG

To run the UltraLog software, once the installation is complete, double click the UltraLog shortcut that has been installed onto your desktop, during installation, this will open the initial screen. As shown below.

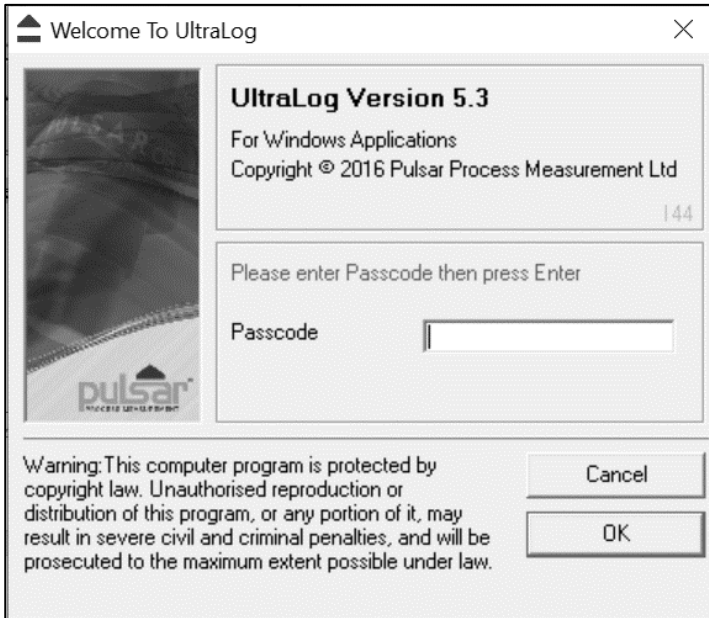
### *Run Mode*

#### *Registration Screen*



To continue press the (remind me later) key and the screen below will appear on your desktop.

*Passcode Screen*



Key in the passcode **1997** and press enter to run your program.

Your UltraLog program will run for 30 days until you register with Pulsar. To register, you will require your CD Serial Number (found on the back of the CD case) and the Software Code (displayed in the initial screen after starting up UltraLog), we will then provide you with an authorisation key to remove the evaluation limitation.

To obtain an authorisation key you can contact us by telephone on 01684 891371 or alternatively e-mail us at:

Europe: [europa@pulsarmeasurement.com](mailto:europa@pulsarmeasurement.com)

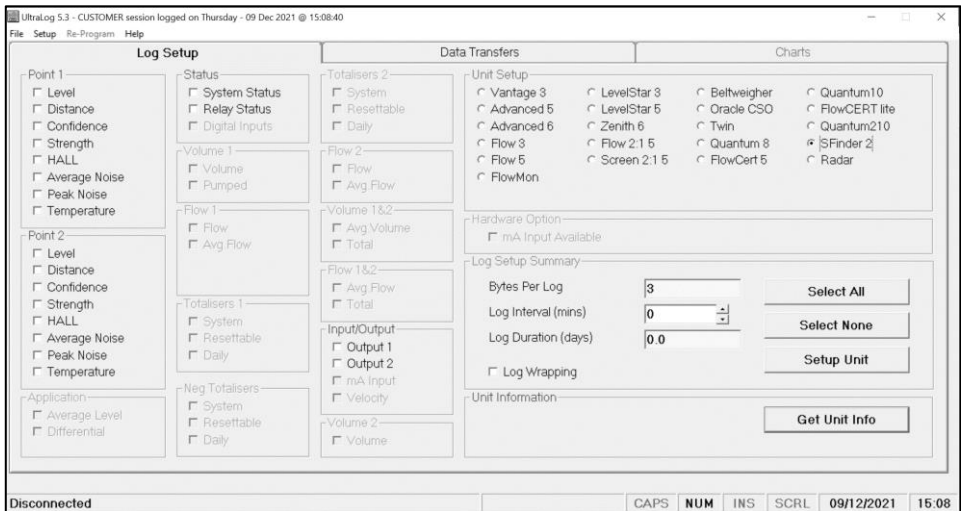
Outside Europe: [northamerica@pulsarmeasurement.com](mailto:northamerica@pulsarmeasurement.com)

You can also use the e-mail address [support@pulsarmeasurement.com](mailto:support@pulsarmeasurement.com) for any technical issues that you may have.

When you obtain your authorisation key enter it into the Authorisation window in the opening screen and press the Register now key, your program will then be validated.

When UltraLog has opened you will see a screen like the one shown below:

### Data Logging Screen



The screen shown above would appear if a SludgeFinder2 was selected. The ticked circle in the 'Unit Setup' window at the top right hand of the display indicates the unit type, which is verified after the 'Get unit Info' button is pressed, and the unit is interrogated. Any 'greyed out' option is not able to be logged with the system type selected.

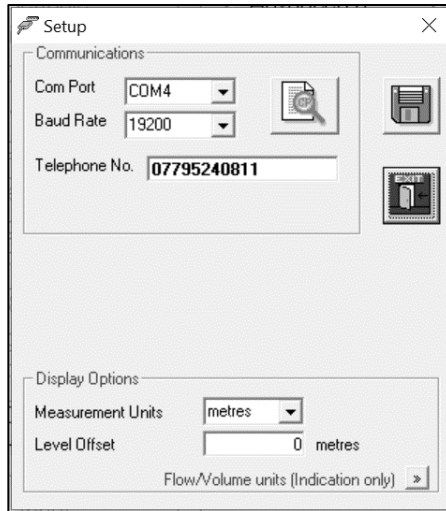
The amount and type of parameters that are available to be logged vary with the unit type.

System Types selectable in UltraLog:

SYSTEM TYPE	SYSTEM INFO
Vantage 3	This is an old system type and is used for level. Pulsar no longer supports this device
Advanced 5	This is the Ultra 5 set as a pump controller.
Advanced 6	This is an old system type and is used for level/differential/pump control. Pulsar no longer supports this device.
Flow 3	This is the Ultra 3 set as a flow controller.
Flow 5	This is the Ultra 5 set as a flow controller.
Flow Monitor	This is used to monitor flow velocity from the FlowPulse sensor.
LevelStar 3	This is the Ultra 3 set as a level/volume controller.
LevelStar 5	This is the Ultra 5 set as a level/volume controller.
Zenith 6	This is the Zenith controller and can be set to level/volume/differential or pump control.
Flow 2:1 5	This is an old system type and is used for flow. Pulsar no longer supports this device.
Screen 2:1 5	This is an old system type and is used for level. Pulsar no longer supports this device.
Beltweigher	This is an old system type and is used for level. Pulsar no longer supports this device
Oracle CSO	This is an old system type and is used for flow. Pulsar no longer supports this device
Twin	This is the Ultra Twin and can be used for level/volume/differential/pump control or flow.
Quantum 8	This is an old system type and is used for level/differential or pump control. Pulsar no longer supports this device
FlowCERT 5	This is the FlowCERT and is used for pump/flow and velocity measurement.
Quantum 10	This is an old system type and is used for level/differential and pump control. Pulsar no longer supports this device
FlowCERT Lite	This is the FlowCERT Lite and is used for pump and flow measurement.
Quantum 210	This is the Quantum 210 (Quantum 2) and is used for level/differential and pump control.
SludgeFinder 2	This is the SludgeFinder 2 and is used for Sludge measurement.
Radar	This is an old system type and is used for level. Pulsar no longer supports this device

### Communication Port Configuration

Once UltraLog is open click on 'Setup' and choose your Comms Port then press Save and Exit, alternatively press start searching, UltraLog will then find the comms port for you.



UltraLog will set up the comms port you will be using to the following configuration.

Baud Rate 19200, 8 (data bits), 1 (stop bit), N (no parity).

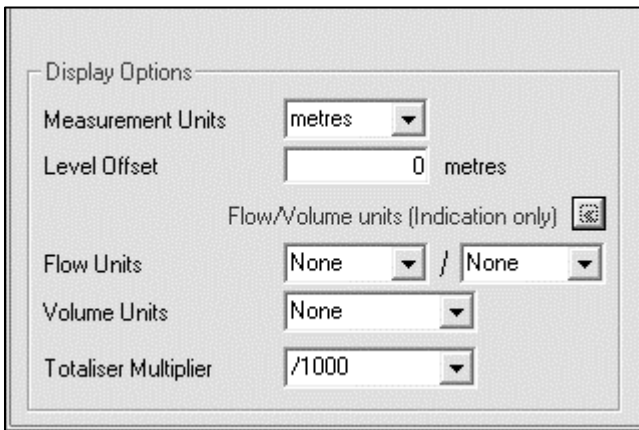
### Other Settings

The setup screen also allows you to change the display units shown on the chart legends. Under the “Display Options” frame, you can choose the measurement units and whether to apply a level offset

The measurement units will re-scale the relevant data log charts to the desired units (Level, Distance etc.).

The level offset will apply an offset to the Level charts only. This is useful for referencing to sea level for example.

If you have logged Flow or Volume, you can also change the unit labels for these however, changing these will not re-scale the charts so caution should be observed so as not to display the wrong units. To change the flow or volume units, you must first click on the double arrow icon to expand the window (shown below):



### Security and Passwords

Your UltraLog will cease to function after 30 days unless it has been registered with Pulsar and you have received your unique authorisation code.

UltraLog is password protected in the same manner as the Pulsar Ultra series. The password **'1997'** is entered at the opening screen and will give access to all the parameters to enable the programming of a Pulsar Ultra unit, fitted with an optional data logging board, to carry out data logging.

**Dynamic Variables Available for Logging**

<b>POINT 1</b>	<b>DESCRIPTION</b>
Level	The measured value between the empty distance and the application surface
Distance	The measured value between the transducer face and the application surface
Confidence	An indication of the certainty of the instrument that it is measuring the correct echo
Strength	An indication of echo strength - units 0 – 100
H.A.L.L.	An indication of echo strength above the loss limit values
Average Noise	The average noise levels received by the transducer
Peak Noise	The peak noise levels received by the transducer
Temperature	The measured temperature calculated by the transducer

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Temperature	The measured temperature calculated by the transducer

**Additional Information**

Point 2 is only applicable for units with two Transducers

For a more complete explanation of the above parameters please contact your local Pulsar Measurement representative for assistance.

APPLICATION	DESCRIPTION
Average Level	The calculated value for average level of two transducers measuring between the empty distance and the application surface measured value between the empty distance and the application surface
Differential	The calculated value of the Level under Transducer 1 minus the Level under transducer 2

STATUS	DESCRIPTION
Ultrasonic	The current operational status of the transducer
Relay Status	The relay status as a binary bitmap (see notes)
Digital Inputs	The Digital Input status as a binary bitmap

*Notes on Relay and Digital Input Status*

The relay and digital input status are derived in UltraLog as a binary bitmap:

Digital Input or Relay Number	1	2	3	4	5	6	7
Resulting Binary Number	1	2	4	8	16	32	64

Please consult Pulsar Measurement or contact your local Pulsar representative for further details.



The log time interval in the above chart is 1 minute. The graph is sloped between points because a Digital Input has been switched on sometime during that minute. In the example below this indicates that during the period 17.23 to 17.24 Digital Input 1 was switched on.

Following this, sometime between 17.31 and 17.32 Digital Input 2 was also switched on. The combined binary bitmap is  $1 + 2 = 3$  as indicated on the y axis, or the last figure in the data label graphic. Sometime between 17.37 and 17.38 Digital Input 3 was switched on, the new combined binary result being  $1 + 2 + 4 = 7$ . Digital Input 3 was then switched off returning the resultant binary count to 3, then, Digital Input 3 and Digital Input 2 are on together with Digital Input 1 off, making the binary count 6. Finally, Digital Input 3 and Digital Input 1 are both off leaving Digital Input 2 on producing a binary count of 2.

The same principle applies to the Relay Status.

<b>VOLUME 1</b>		<b>DESCRIPTION</b>
Volume	The calculated instantaneous volume	
Pumped	The pumped volume throughput	

<b>FLOW 1</b>		<b>DESCRIPTION</b>
Flow	The calculated instantaneous flow	
Average Flow	The average flow between two log periods	

<b>TOTALISERS 1</b>		<b>DESCRIPTION</b>
System	The current value of the non-resettable totaliser	
Resettable	The current value of the resettable totaliser	
Daily	The total over a 24-hr. period	

<b>VOLUME 2</b>		<b>ONLY AVAILABLE WITH ULTRA TWIN</b>
Volume	The calculated instantaneous volume	

<b>TOTALISERS 2</b>		<b>ONLY AVAILABLE WITH ULTRA TWIN</b>
System	The current value of the non-resettable totaliser	
Resettable	The current value of the resettable totaliser	
Daily	The total over a 24-hr. period	

<b>FLOW 2</b>		<b>ONLY AVAILABLE WITH ULTRA TWIN</b>
Flow	The calculated instantaneous flow	
Average Flow	The average flow between two log periods	

<b>FLOW 1 &amp; 2</b>		<b>ONLY AVAILABLE WITH ULTRA TWIN</b>
Average Flow	The average flow of both measurement points	
Total	The calculated total average of total flow.	

<b>INPUT/OUTPUT</b>	<b>DESCRIPTION</b>
Output 1	mA output value of point one
Output 2	mA output value of point two
Input	mA input value
Velocity	Instantaneous calculated value of velocity (see below)

**Additional Information**

The velocity value can only be logged in m/s if the unit is communicating with the speedy sensor via Modbus, if the unit is calculating the velocity based on a mA input, then only that input can be logged.

## CHAPTER 4 THE MENU BAR

### *Drop Down Menus*

The top menu bar contains a number of 'Drop Down Menus'. The functions of each of these menus are explained below.

#### *File*

The File menu will give you the following two options:

Open Log File

This option will enable you to open and view a previously stored Log File.

#### *Exit*

This option, when selected, will exit out of the UltraLog software, disconnect from the Pulsar Ultra unit and shut down the UltraLog software.

#### *Setup.*

Selecting the Setup menu will open a small sub screen: See page 11.

#### *Communications*

This allows you to determine which comms port will be used to connect your PC to the Pulsar Ultra unit. Once selected, press 'Save' followed by 'Exit'. Alternatively press 'Start Searching' and the UltraLog software will then find the relative comms port to which the Pulsar Ultra unit is connected, and correctly set the required variables.

#### *Re-Program*

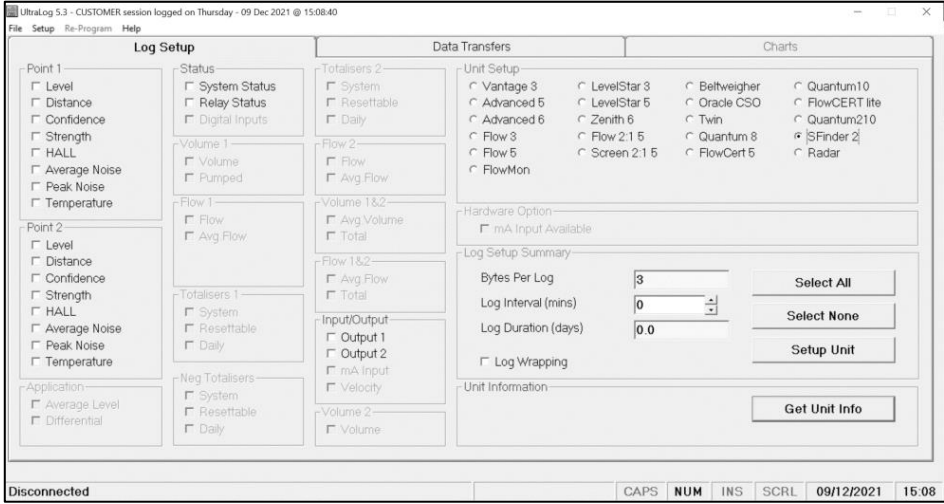
The Data Logger can be upgraded with new editions of software, if required, thereby benefiting from new and improved features, and should only be carried out by experienced service staff. All software upgrades are available from Pulsar and can be e-mailed as required. Once you press the Re-program icon read the instructions on the screen before attempting to upgrade your software. It should be noted that all previously stored data would be lost when re-programming the Data Logger with a software upgrade.

#### *Help*

Contact Pulsar for assistance.

## CHAPTER 5 HOW TO SET UP LOGGING

### Log Setup Screen



The Log Setup screen is used to program the Pulsar Ultra series, fitted with an optional data logging board to log the required data.

### Unit Setup

In the top right-hand corner of the Log Setup screen, you will find the Unit Setup window, when connected to a Pulsar Ultra unit, fitted with an optional data logging board, with UltraLog this window will identify the Pulsar Ultra unit type once, the 'Get Unit Info' button has been pressed. Alternatively, you can select the unit type, to setup the data logging program prior to connecting to the unit.

The left-hand side of the Log Setup menu gives details of the all the variables that can be logged by the Pulsar Ultra series.

If a category is 'greyed' out it means that it is not available with the Pulsar Ultra unit currently connected to or selected.

### Point 1 Measurements

This category details all the variables, calculated by the Pulsar Ultra unit, that are available to be logged, to select an option simply 'click' the corresponding box, which will insert a 'tick' indicating it has been selected.

### *Point 2 Measurements*

Only available on Pulsar Ultra units which utilise a second transducer to measure 'Average' or 'Differential'. The variables available are the same as for Point 1.

### *Application*

Only available on Pulsar Ultra units which utilise a second transducer to measure 'Average' or 'Differential'. When selected on Average level will be calculated and logged for the selected application.

### **Status**

#### *Ultrasonic Status*

Selecting this option allows you to continually log the status of the transducer, and will indicate occurrences such as Loss of Echo or transducer failure.

#### *Relay Status*

Selecting this option allows you to continually log the status of the relays, and will indicate occurrences such as Alarms and switching of Pumps etc.

#### *Input/Output*

This option allows the analogue input (where applicable), or output, to be continually logged, to select simply 'click' the corresponding box, which will insert a 'tick' indicating it has been selected.

#### *Totalisers*

Only available with units using totaliser(s) and when selected the totaliser(s) will be continually logged.

#### *Volume*

Only available on units capable of volumetric conversion, and when selected the appropriate volume will be continually logged.

#### *Flow*

Only available on units capable of calculating flow and when selected the flow will be continually logged or alternatively a calculated average flow can be logged.

### *Log Setup Summary*

The bottom right-hand side of the Log Setup menu is used to finalise the Log Setup and provides the controls to send the required program to the Pulsar Ultra unit.

### *Bytes Per Log*

As you select or deselect a variable to be logged the number, in the box next to Bytes Per Log, will increment to provide the total number of bytes that will be logged at each Log Interval.

### *Log Interval*

This is used to set the time interval at which the Pulsar Ultra unit is required to log the selected variables.

### *Log Duration*

Once you have selected the variables to be logged and set the Log Interval, the total number of days of logging, which can be achieved by the Pulsar Ultra unit without loss of any data, will be calculated and will be shown, in the box next to Log Duration. It should be noted that once the data logger is full no further logging would take place unless Log Wrapping is selected.

### *Log Wrapping*

By selecting Log Wrapping continuous logging can be used, once the data logger is full a section of the oldest data will be erased, on a first in first out basis, the remaining data will then be moved to make space for the new data. When using Log Wrapping it will reduce the maximum Log Duration period, the recalculated maximum period, which can be maintained, when wrapping is used, will be displayed under the Log Wrapping option.

### *Select All*

When 'pressed', all the variables available for data logging will be selected and Bytes Per Log and Log Duration will be updated accordingly.

Select None

When 'pressed', all the variables that have been selected for data logging will be deselected.

### *Setup Unit*

When 'pressed', the Pulsar Ultra unit will be programmed with all the relevant information to enable data logging according to the variables chosen and the selected Log Interval.

### *Get Unit Info*

When 'pressed' the UltraLog software will connect to the Pulsar Ultra unit, and interrogate it to see if it is programmed for data logging and display the results in the Log Setup menu.

#### **Additional Information**

When you upload a Log Setup program to a Pulsar Ultra unit, utilizing the data logging facility, any previous program and logged data will be lost.

### *How to Setup Logging*

Connect the serial lead between the PC and the Pulsar Ultra unit, as described in Chapter 2 Installation and Connections.

'Press' the Get Unit Info button and download any log information from the Pulsar Ultra unit, the Unit Setup window will indicate the unit type and all variables for that unit type will be made available.

Select the variables you wish to log.

Select the required Log Interval and ensure the Log Duration is sufficient for your requirements.

If required select Log Wrapping to enable continuous logging.

'Press' the Setup Unit button to program the Pulsar Ultra unit with all the relevant information. Confirm the Pulsar Ultra units Date and Time, as prompted.

Programming is now complete close the UltraLog software, disconnect the Pulsar Ultra unit from the PC and data logging will commence.

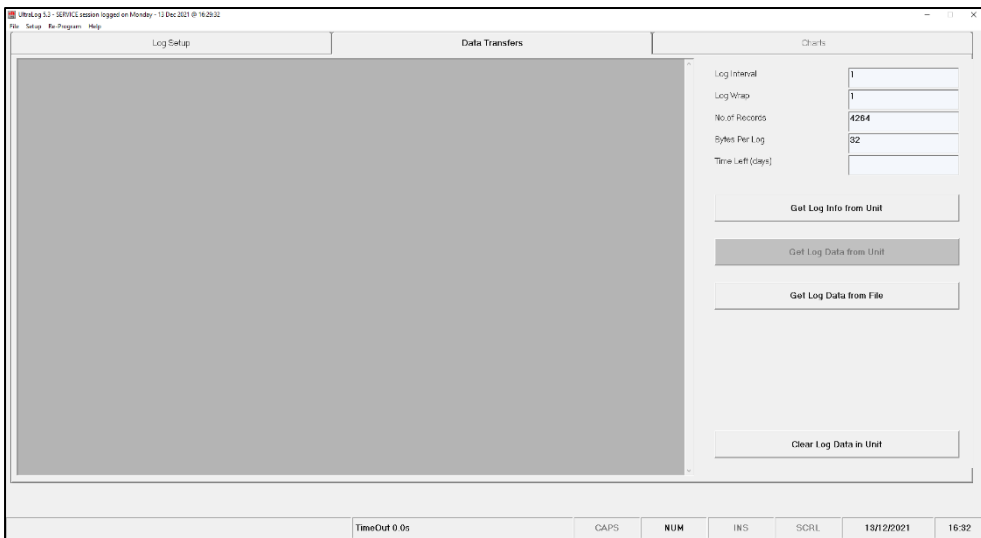
#### **Additional Information**

Data Logging will not commence until the serial lead is disconnected from the Pulsar Ultra units' serial interface (RJ11 connector), when connected data logging will be suspended.

## CHAPTER 4 THE MENU BAR

The Data Transfer menu is used to download and display Log Data stored in the Pulsar Ultra unit's data log.

### *Data Transfer (Screen)*





### ***Get Log Info from Unit***

This button is used to get the Log Information from the Pulsar Ultra unit, which will be displayed in the Log Information boxes in the top right-hand corner of the Data Transfer Menu.

### ***Log Information***

#### *Log Interval*

This will display the time interval to which the Pulsar Ultra unit has been programmed to log the selected variables.

#### *Log Wrap*

This will indicate if the Pulsar Ultra unit has been programmed for Log Wrapping or not.

#### *No. Of Records*

This will give the total number of records contained in the Pulsar Ultra unit's data logs. Each record indicates a Log Interval.

#### *Bytes Per Log*

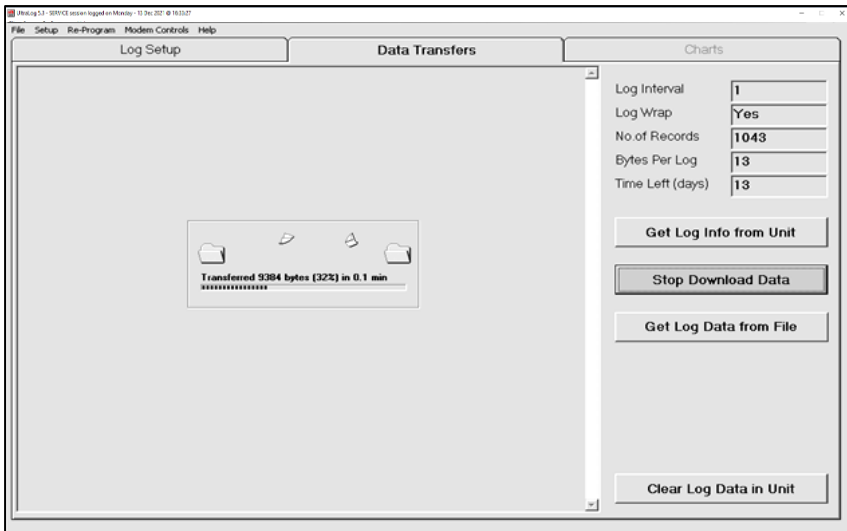
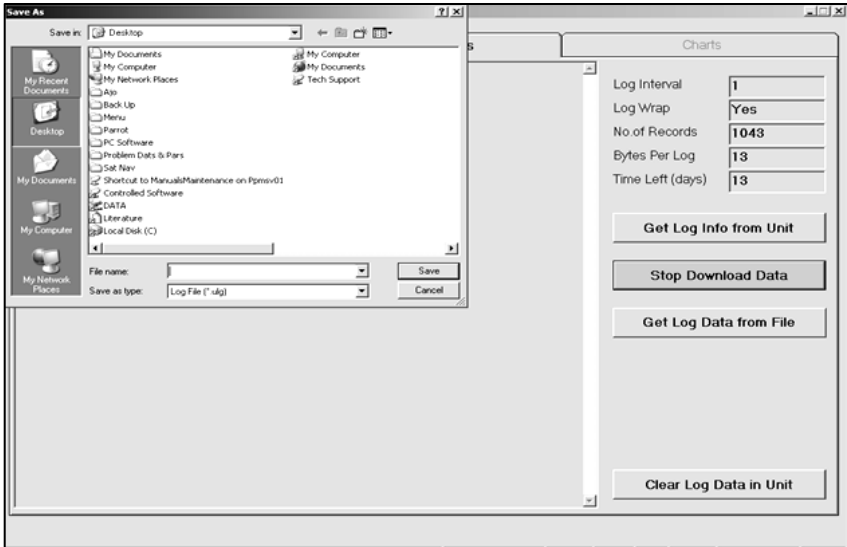
This gives details of the number of Bytes Per Log, as programmed in Log Set.

#### *Time Left*

This will indicate the remaining time left before the Pulsar Ultra unit's available log memory become full.

### Get Log Data from Unit

Once the Log Information has been downloaded from the Pulsar Ultra unit, if the Get Log Data from Unit button is 'pressed' the UltraLog software will open a 'save' window give the file to be saved a name and location. The file will then be downloaded when save is pressed.



### *Get Log Data from File*

When 'pressed' this will allow you to open and display data and charts for previously 'saved' data log files.

### *Clear Log Data in Unit*

This button is used to clear all logged data stored in the Pulsar Ultra unit. When 'pressed' you will be asked to confirm that you wish to continue, on answering 'Yes' all logged data in the Pulsar Ultra unit will be erased.

### *How to Transfer Data*

Connect the serial lead between the PC and the Pulsar Ultra unit, as described in Chapter 2 Installation and Connections.

'Press' the Get Log Info from Unit button and download the log information from the Pulsar Ultra unit.

'Press' the Get Log Data from Unit button and download the data logs from the Pulsar Ultra unit. Before commencing the download of data, a 'Save As' window will appear, prompting you for a file name in order to save the data in a file, if you do not wish to 'save' the file 'press' Cancel and the download will be completed without 'saving'. The UltraLog software will automatically import the data into the appropriate chart, and on completing the download of the data this chart will be displayed automatically so that it may be viewed.

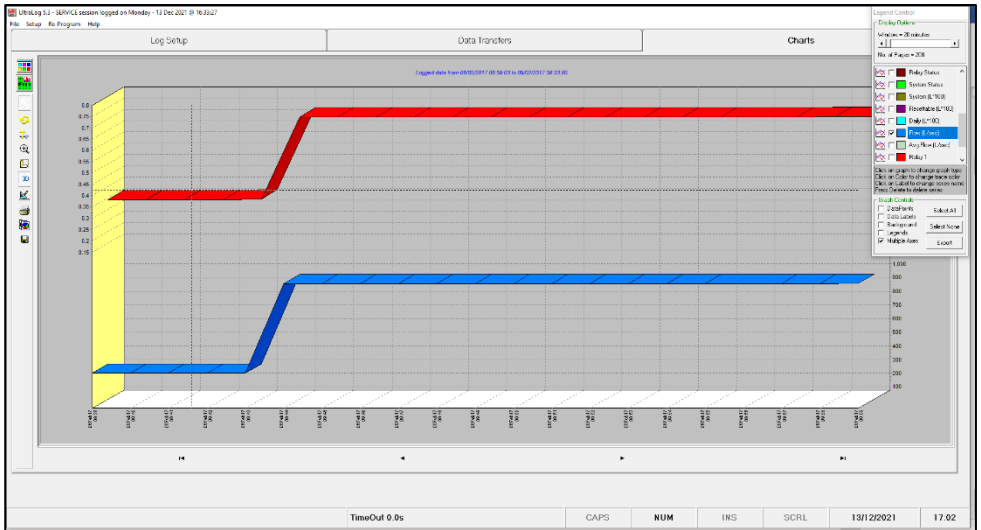
#### **Additional Information**

Data Logging will not resume until the serial lead is disconnected from the Pulsar Ultra unit's serial interface (RJ11 connector).

## CHAPTER 7 VIEWING AND EDITING CHARTS

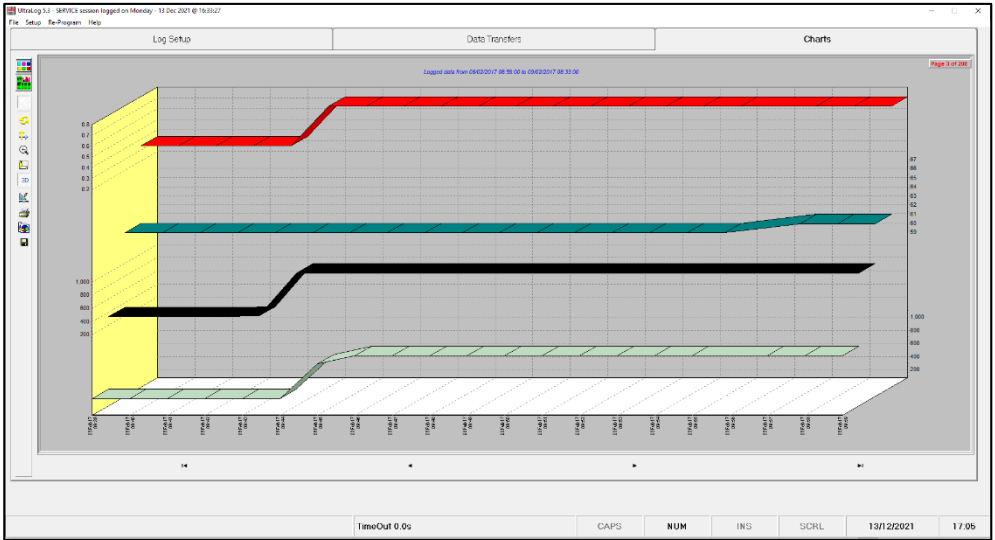
### Charts Screen

The chart screen will automatically open when a log file is opened or downloaded and it will look like the screen below, with the legend control window open.



The Charts menu is used to display the logged data obtained from the Pulsar Ultra unit. The charts can be edited and manipulated to display the information as required

Multiple axis can be used, and the widow time frame can be altered as seen below.



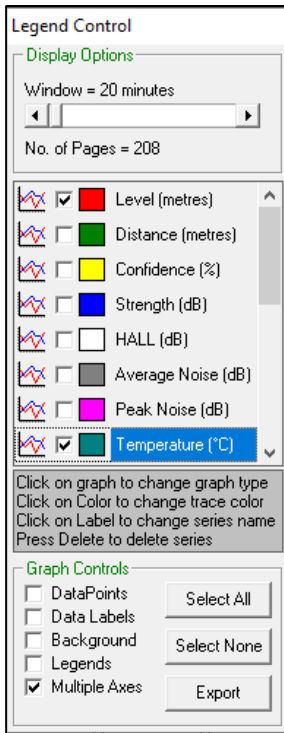
### Control Icons

There are a number of icons which running down the left-hand side of the chart window, starting from the top and working down each are described in turn.

#### Toggle chart Legend Control



Toggles the Legend Control window ON and OFF.



The Legend Control is used to edit and modify the data displayed in the current chart and can be toggled On and Off by pressing the top icon of the line of icons which run down the left-hand side of the Chart window.

## **Display Options**

The size of the chart window can be changed, relative to time, by moving the slider backwards and forwards to increase or decrease the detail to be viewed.

You can select and de-select which series of data should be displayed in the chart by checking or clearing the relative series box.

Changes to the type of graph, series names and colour of the graph can be made by clicking on the appropriate icon of the series to be modified.

## **Graph Controls**

### *Data Points*

Selecting Data Points will add data points to the chart indicating the start of each Log Interval.

### *Data Labels*

If selected, Data Labels will be added to the chart giving details of time and date of each logged reading.

### *Background*

Allows you to toggle the chart Background colour from dark to light.

### *Legends*

When selected the legend for each series will appear at the bottom of the chart window in the colour it appears in the chart.

### *Multiple Axes*

If the chart contains data that have different axes values, for example level and temperature, by selecting Multiple Axes then both traces will be scaled so that they can be viewed and interpreted easily.

## **Control Buttons**

### *Select All*

When 'pressed' all series in display options will be selected and displayed


### *Select None*

When 'pressed' all series in display options will be de-selected and no data will be displayed.

### *Export*

If it is required to save the logged data to a spreadsheet then 'press' the Export button and you will be prompted for a file name and the data will be stored as a Comma Separated Variable (\*.csv) file.

**Generate Report**

 **Report Generator**
✕

**Report Descriptions**

Company Name

Company Address

Compiled By

---

**Site Descriptions**


Site Number


Site Description

Remarks

---

**Daily Report Settings**

Trend Data  From Date  

Daily Total Report  To Date  

Report Data



Daily Report

Totaliser Unit

Date Format

Log starts @ 06/02/2017 08:59:00

Log stops @ 09/02/2017 08:33:00



The report generator can be used to generate a report like the one below.

Print Preview

**Pulsar Measurement**  
Sandy's Road, Malvern, Worcestershire, WR14 1JJ, England

Compiled By : Jon Doe on 19/12/2021 @ 15:12  
Log File Name : \\192.168.120.20\TechnicalSupport\Marc\Marc's Documents\Unit tests\Ultra 3 tests\FLOW3 3day log test.ulg  
Machine Name : PUL-17QXL33











**Reporting Level (metres) for period from 06/02/2017 to 09/02/2017**  
Site Number : 123456  
Site Description : Malvern STW  
Remarks : Outflow Open Channel  
Daily Report Method : **Use Maximum Value of Level (metres)**  
Totaliser Unit : **litres**

Date (dd/mm/yyyy)	Mean (metres)	Min (metres)	Time (24hr)	Max (metres)	Time (24hr)	Daily Total (litres)
06/02/2017	0.5	0.3	@ 12:32	0.7	@ 12:30	0.7
07/02/2017	0.5	0.1	@ 15:06	0.8	@ 13:26	0.8
08/02/2017	0.3	0.3	@ 10:07	0.3	@ 23:52	0.3
09/02/2017	0.3	0.3	@ 00:00	0.6	@ 08:22	0.6

**Report Summary**  
Average Daily = 0.6 litres  
Period Total = 2.4 litres  
Max Daily Total = 0.8 litres on 07/02/2017  
Min Daily Total = 0.3 litres on 08/02/2017  
Period Max. Level (metres) = 0.8 @ 13:26, 07/02/2017  
Period Min. Level (metres) = 0.1 @ 15:06, 07/02/2017

This report can then be printed off or filed for the customers records.

## Graph Key

ICON	DESCRIPTION
	If displayed, closes the ' <b>Legend Control</b> ' window, and displays the chart only.
	When pressed and the cursor is on the graph hold the left mouse button down and you can rotate the graph.
	After 'pressing' the <b>Move</b> button place the cursor in the graph window, hold the left mouse button down and you can move the graph position within the chart window.
	When the <b>Zoom</b> button is 'pressed' and the cursor placed in the graph window, hold the left mouse button down and you can Zoom in and out of the graph by moving the mouse backwards and forwards.
	When <b>3D</b> is toggled <b>ON</b> if the <b>Depth</b> button is 'pressed' place the cursor in the graph window, hold the left mouse button down and you can <b>increase</b> or <b>decrease</b> the depth of the <b>3D</b> effect.
	Toggles the <b>3D</b> effect <b>ON</b> and <b>OFF</b> .
	When 'pressed' this will bring the <b>Chart Editor</b> window up which will allow you to <b>edit</b> , <b>add</b> , <b>delete</b> , and <b>change</b> the <b>chart</b> , series, and <b>titles</b> as you require.
	When 'pressed' this option will open a print preview window of the current chart, which you can then modify to suit your requirements before printing
	When 'pressed' a copy of the current chart will be pasted to the clipboard, from there it can be pasted into a document such as word for recording, viewing or reporting purposes.
	On 'pressing' the <b>Save</b> icon the <b>Save As</b> window will open and allow you to ' <b>save</b> ' the current displayed chart to a location of your choice

## CHAPTER 8 TROUBLESHOOTING

This section describes many common symptoms, with suggestions as to what to do. If the issue persists, please contact your local Pulsar distributor.

SYMPTOM	WHAT TO DO
The program will not install correctly.	Check that your computer is running Windows 7 or higher and all updates are installed.
The program will not open.	Close down all other Windows applications that you may be running. UltraLog needs up to 65% of your resources to be able to run. To check this, go to your Start menu click Settings then System then click the Performance tab.
The registration period has ended.	Contact the distributor of your software with your software code (see page 7).
The program and unit will not communicate.	Check the Pulsar Ultra unit is switched on and the correct voltage applied.

If you experience any other issues that are not mentioned in the above troubleshooting guide, please contact your local Pulsar distributor for further assistance.

## CHAPTER 9 DISPOSAL

Incorrect disposal can cause adverse effects to the environment.

Dispose of the device components and packaging material in accordance with regional environmental regulations including regulations for electrical \ electronic products.

### Transducers

Remove power, disconnect the Transducer, cut off the electrical cable and dispose of cable and Transducer in accordance with regional environmental regulations for electrical \ electronic products.

### Controllers

Remove power, disconnect the Controller, and remove battery (if fitted).

Dispose of Controller in accordance with regional environmental regulations for electrical \ electronic products.

Dispose of batteries in accordance with regional environmental regulations for batteries.



 EU WEEE Directive Logo

This symbol indicates the requirements of Directive 2012/19/EU regarding the treatment and disposal of waste from electric and electronic equipment.



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