



Odyssey® Xpert User Manual

Odyssey Xpert User Manual

Contents

Initial Requirements.....	2
Using the Xpert portal.....	2
Map Tab.....	3
Chart Tab.....	4
Logger Config Tab.....	7
Groups Tab.....	9
Deployment Tab.....	10
Water Level Logger.....	11
Soil Moisture Logger.....	12
Rain Gauge Logger.....	13
PAR Logger.....	13
PAR Wiper.....	13
Temperature Logger.....	13
Calibration Tab.....	14
Water Level Logger.....	14
Soil Moisture Logger.....	16
Rain Gauge Logger.....	17
PAR Logger.....	17
PAR Wiper.....	18
Temperature Logger.....	18
Licenses Tab.....	18
User Guides Tab.....	19
Data TimeStamp.....	20



Spreadsheets.....20

Initial Requirements.

1. Xtream Logger(s)
2. Internet connection
3. Xtract App loaded onto a tablet or smart phone

Using the Xpert portal

The Xpert portal is the web server where all data can be viewed for your Xtream loggers and all settings for the loggers are entered.

- Navigate to the Xpert Web page at www.xpert.nz
- Press the Login button on the top right

LOGIN

Dataflow Systems
Ltd

- Enter your username and password provided by Dataflow Systems.
- Press the Login Button

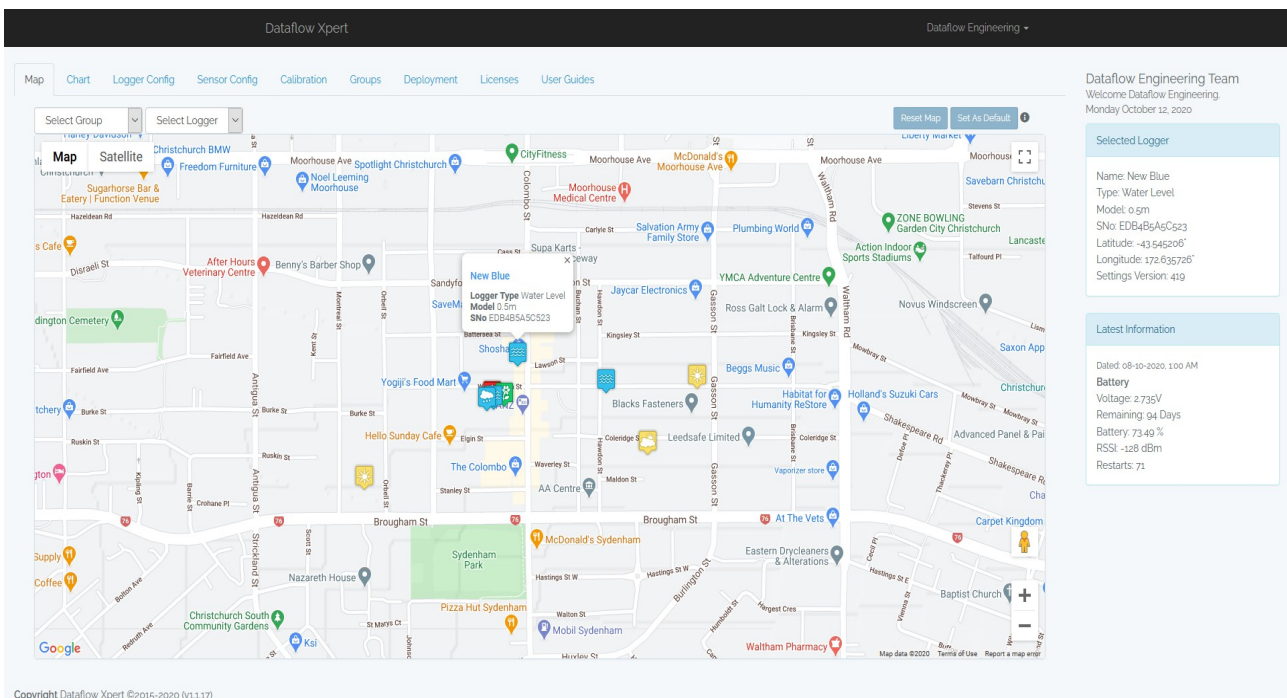
A screenshot of the Dataflow Xpert login page. The page has a dark header with 'Dataflow Xpert' on the left and 'Login' on the right. Below the header is a white login form with a light blue border. The form contains a 'Login' label, an 'E-Mail Address' input field, a 'Password' input field, a 'Remember Me' checkbox, a blue 'Login' button, and a 'Forgot Your Password?' link.

To correctly use Xpert, the user will be required to connect the Xtract App to the Xpert web application via the **SERVER SYNC** button located in settings, in the Xtract App. To Logout click your company name in the right of the title bar and choose logout.

Map Tab

The Map tab shows the location of all registered loggers using the GPS co-ordinates supplied by the Xtract App. This is the default page shown once logged in.

- Select the Map Tab from the Menu bar at the top of the page.



View of Map Tab

As seen above, general information on each logger can be seen by selecting the desired logger.

Select Group:	Allows the user to select which group of loggers they wish to view. New groups may be added in the group tab. All purchased loggers are loaded into the Home group.
Select Logger:	Allows the user to select which logger within a group they wish to view.
Reset Map:	Sets the map back to its default location and zoom level.
Set As Default:	Sets the default map view to the current location and zoom level.

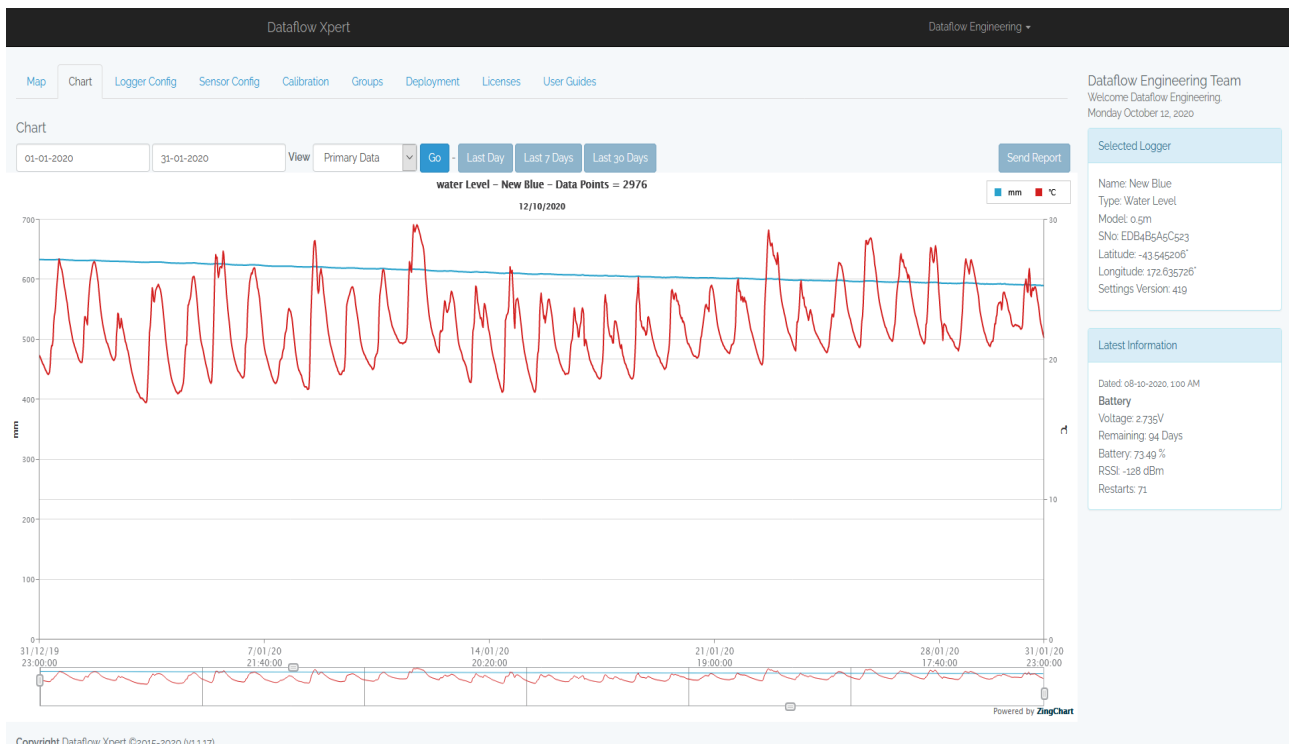
- Select a logger by clicking on the icon on the map. A pop-up will indicate it has been selected. The Selected Logger box and the Latest Information boxes will also be populated once the logger is selected.

Chart Tab

This is where the data that the logger has stored can be viewed.

- Select the Chart Tab from the Menu bar at the top of the page.
- If a box pops up with no data available navigate back to the Map Tab and select a logger icon.
- To quickly view a graph of the logger data, Press one of the three quick graphing buttons, Last Day, Last 7 Days or Last 30 Days.
- To view a graph over a specified period enter the From Date and To Date in the boxes provided, then press the Go button.
- Move the mouse over the graph to view data at each point.
- To zoom in on the data click and drag with the mouse or use the menu on the right mouse click.
- For the chart menu right mouse click on the chart. This menu allows the displayed data to be exported in a number of formats.

Note: The graph shows the number of Data Points in the title. If this number is 10,000 then not all data will be displayed. Reduce the entered date range to view the data.



Primary Data view of a Xtream Water Level Logger

From:	View from Date.
To:	View to Date.
View:	Primary Data: Sensor data the logger has recorded. Diagnostic Data: Additional data recorded by the logger which may be useful.
Last Day:	View the last day of data.
Last Week:	View the last week of data.
Last Month:	View the last month of data.
Send Report:	A CSV report will to be emailed to your registered email address. The maximum data points per report is 55,000.

The diagnostic data is normally recorded once per day however it can also be recorded when things change i.e. when power is applied to the logger.

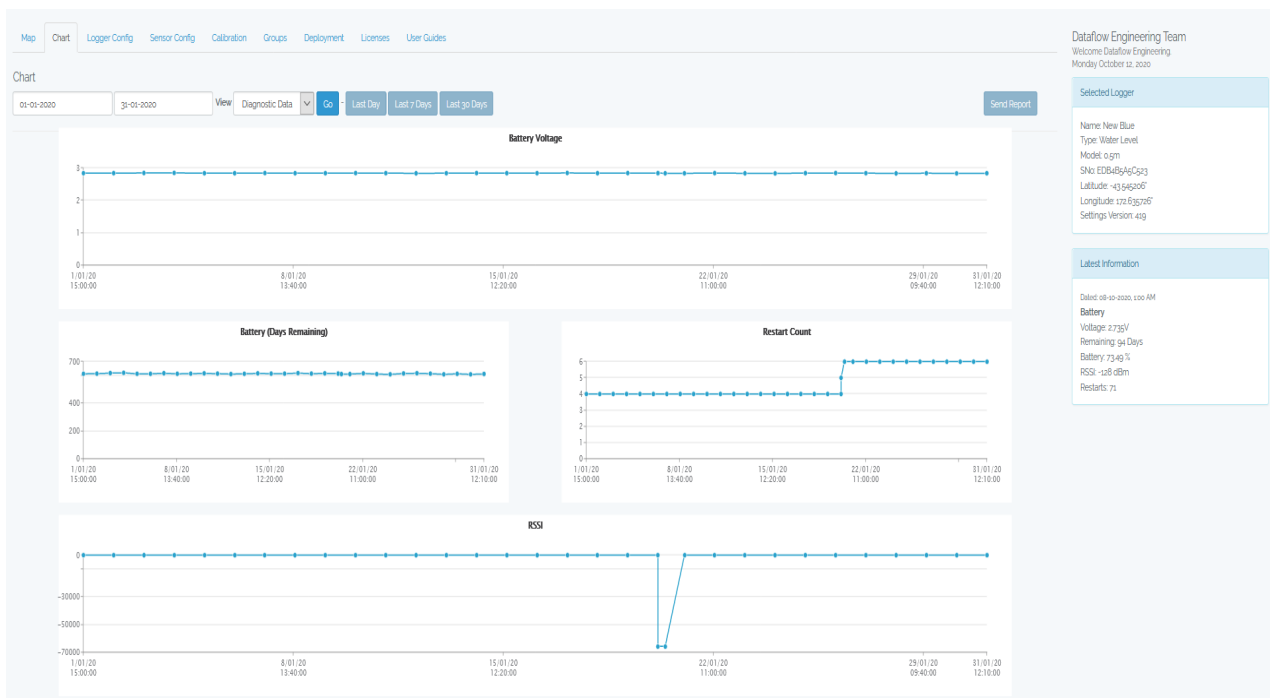
There are four diagnostic charts:

Battery Voltage: Shows the battery voltage of the logger.

Battery Days Remaining: Shows the estimated remaining battery life using the settings in the logger.

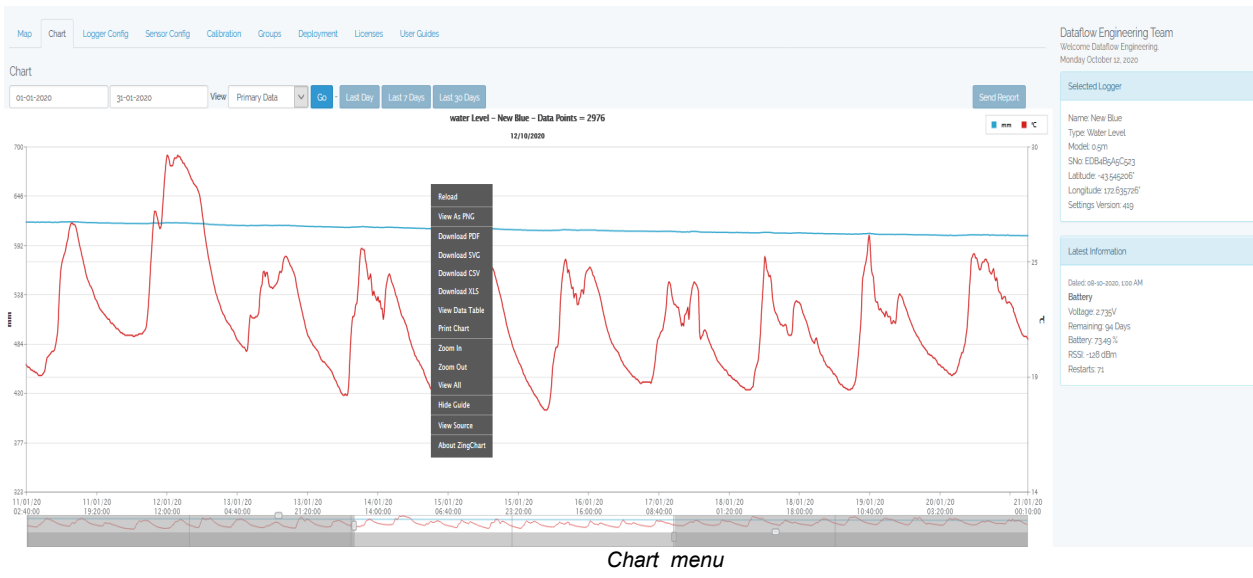
Restart Count: The number of times the logger has restarted since new.

RSSI: The received signal strength recorded for the last download of the day.



There are some useful options from the Chart Menu (right mouse click on the chart).

Reload	Reloads the data from the server.
View As PNG	Not Available at this time.
Download PDF	Page format does not display correctly at this time.
Download SVG	Downloads the chart for viewing in a web browser page. Good for taking a snapshot of the current zoomed chart.
Download CSV	Downloads the data for importing into most spreadsheet programs.
Download XLS	Downloads the data for Microsoft Excel.
View Data Table	Shows a list of the data in table below the chart. Click this again to hide the list.
Print Chart	Print the chart as displayed. A pdf printer can be used here.
Zoom In	Zooms the chart in with the cursor as the centre.
Zoom Out	Zooms the chart out with the cursor as the centre.
View All	Views all data on chart.
Hide Guide	Hide the Vertical Guide line.
View Source	Change what is displayed on the chart. Text or data points.



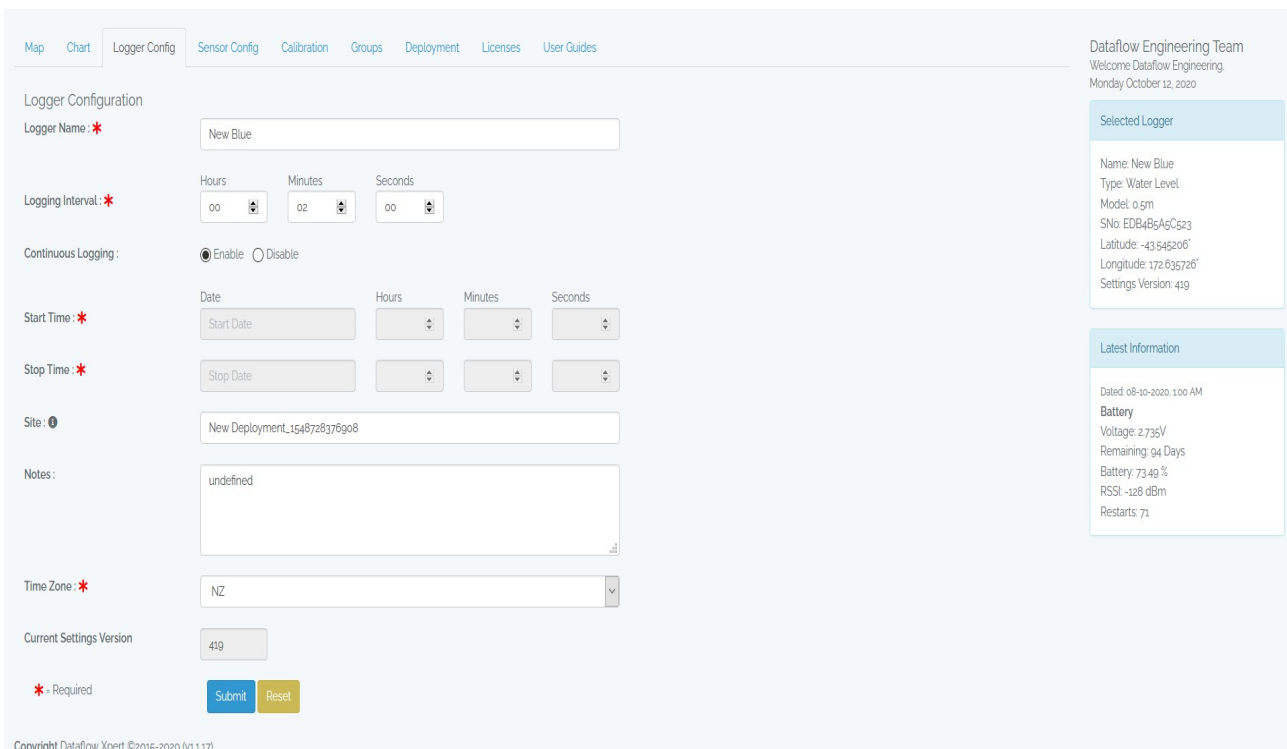
Logger Config Tab

This tab is for the general settings of the logger. The fields with a red asterisk must be entered.

- **Logger Name.** This is the name the logger will be identified by. Write this name on the logger label if required.
- **Enable Continuous Logging** to allow the logger to overwrite the oldest data once the memory gets full. This is the recommended option.
- If continuous logging is disabled a **Start Time** and **Stop Time** must be entered to enable the logger only to log during the selected period.
- Set the **Logging Interval** in hours and minutes. This is how often the logger will take a sensor measurement.
- Enter a **Site** reference to be used in the deployment tab to recall notes and other information about this deployment.
- Enter any text in the **Note** field and it will be recorded in the deployment field.
- Select the **Time Zone** where the logger is deployed.
- Press the **Submit** button to store the settings for the Xtract application to collect.

The **Current Settings Version** number can be used in the Xtract application to make sure the settings have been applied to the logger.

Note: Identification of the logger by serial number is difficult due to the number of serial number digits. If a serial number is required then just make your own and put it into the logger name field. Write this on the logger label if required.

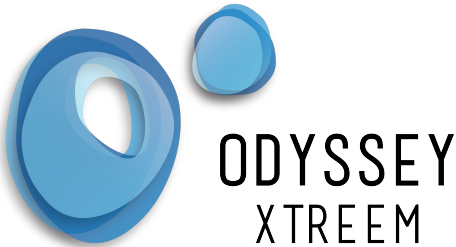


The screenshot shows the 'Logger Config' tab in the Odyssey Xpert web interface. The main configuration area includes:

- Logger Name:** * (Required) Input field containing 'New Blue'.
- Logging Interval:** * (Required) Three dropdown menus for Hours (00), Minutes (02), and Seconds (00).
- Continuous Logging:** Radio buttons for 'Enable' (selected) and 'Disable'.
- Start Time:** * (Required) Date and time selection fields.
- Stop Time:** * (Required) Date and time selection fields.
- Site:** Input field containing 'New Deployment_1648728376908'.
- Notes:** Text area containing 'undefined'.
- Time Zone:** * (Required) Dropdown menu set to 'NZ'.
- Current Settings Version:** Input field containing '419'.

At the bottom, there are 'Submit' and 'Reset' buttons. A sidebar on the right shows 'Selected Logger' details (Name: New Blue, Type: Water Level, Model: 0.5m, SN: EDB4B5A6C523, Latitude: -43.646206, Longitude: 172.635726, Settings Version: 419) and 'Latest Information' (Dated: 08-10-2020 1:00 AM, Battery: Voltage: 2.735V, Remaining: 94 Days, Battery: 73.49%, RSSI: -128 dBm, Restarts: 71).

View of Logger Configuration tab



Odyssey® Xpert User Manual

Logger Name:	This is the individual name of the selected logger. A default name is given to all loggers at the time of registration.
Continuous Logging:	Enable: Allows for continuous logging with no stop date. Disable: Logging will now follow the Start & Stop times entered
Start Time:	Allows the user to select a start and stop date for data logging.
Stop Time:	
Logging Interval:	The duration between each recorded reading.
Site:	A default generated deployment name is given to the logger. This can be changed by the user at time of initial configuration. <i>Note: changing the site name of an already deployed logger must be done in the Deployment tab. Doing so in Logger Config will cause the system to create a new deployment for the selected logger instead of updating an existing deployment.</i>
Notes:	User notes for the logger.
Time Zone:	Time zone the logger is in.

Note:

The Xtract Application must connect to the server and download the new settings. This will occur within 10 minutes or to synchronise immediately use the Sync to Server button in the settings menu of the Xtract Application. The logger then must be in range of the Xtract Application to connect and download the new settings.

Groups Tab

Registered loggers can be sorted into groups of the users choosing to make it easier to find them. Initially all loggers are placed in the Home group.

Assign loggers to another group.

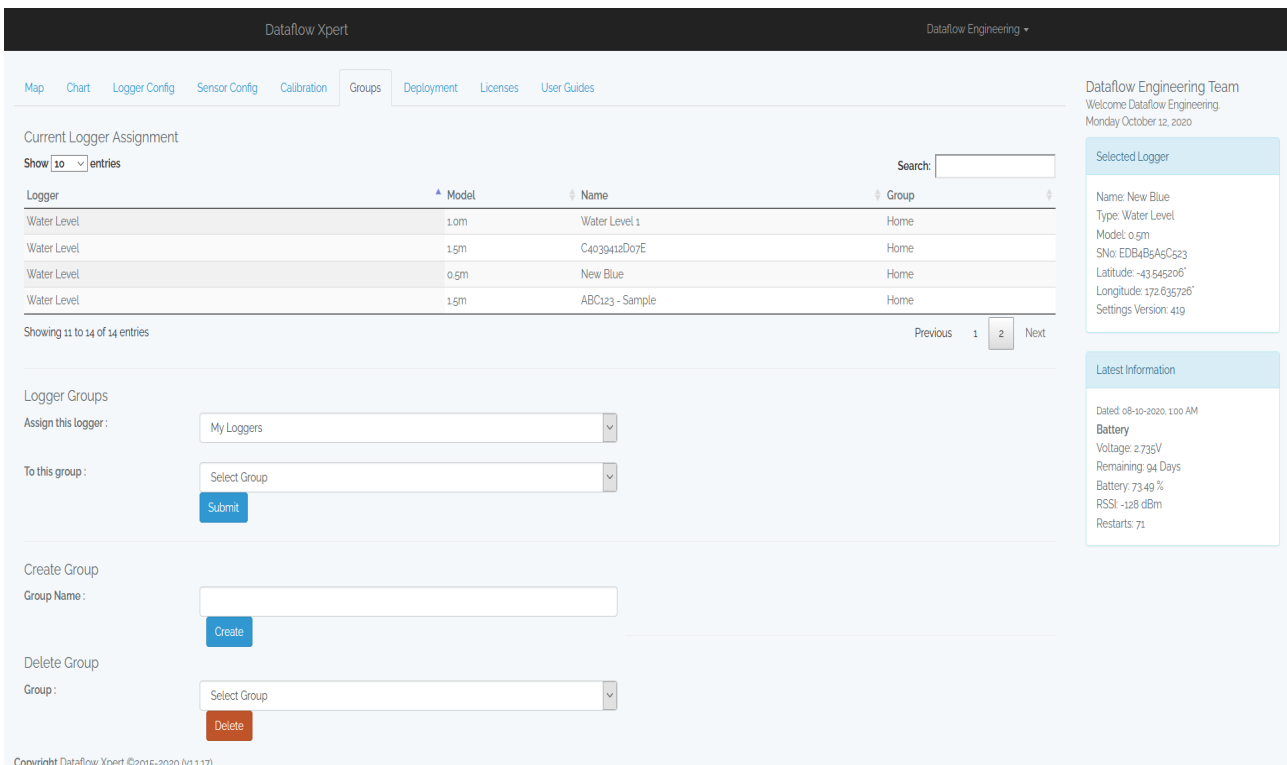
- Click the My Loggers drop down box to select one of your loggers.
- Click the Select Group drop down box to select a group.
- Click on the submit button to assign the selected logger to the selected group

Create a User Defined group. Choose a group name that is meaningful.

- Click the Group Name box and enter a new group name.
- Click on the Create button to save the new group name.

Delete user Defined groups.

- Click the delete Group drop down box and select the group name.
- Click on the delete button to delete the group name.



The screenshot displays the 'Groups' tab in the Dataflow Xpert application. At the top, there are navigation tabs: Map, Chart, Logger Config, Sensor Config, Calibration, Groups (selected), Deployment, Licenses, and User Guides. The main content area is titled 'Current Logger Assignment' and features a table with columns for Logger, Model, Name, and Group. The table lists four loggers, all currently assigned to the 'Home' group. Below the table, there are controls for 'Logger Groups', including a dropdown to 'Assign this logger' (set to 'My Loggers') and another dropdown to 'To this group' (set to 'Select Group'), with a 'Submit' button. There is also a 'Create Group' section with a text input for 'Group Name' and a 'Create' button. A 'Delete Group' section has a dropdown for 'Group' (set to 'Select Group') and a 'Delete' button. On the right side, a sidebar provides details for the 'Selected Logger' (Name: New Blue, Type: Water Level, etc.) and 'Latest Information' (Dated: 08-10-2020, 1:00 AM, Battery: 73.49%, etc.).

View of Group tab

Logger Groups: Allows the user to assign a selected logger to a selected group.

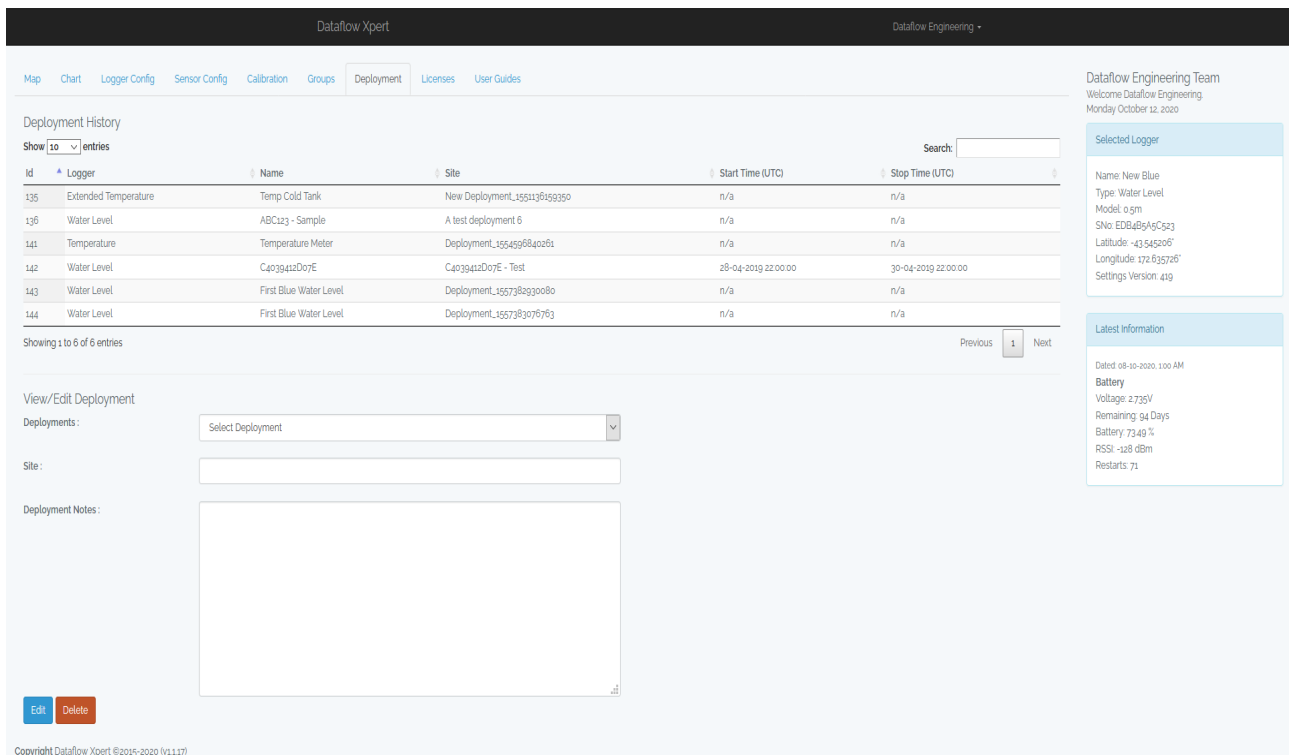
Create Group: Allows the user to create a new logger group.

Delete Group: Allows the user to delete a logger group.

Deployment Tab

This tab shows the deployment history of a selected logger

- In the Select Deployment drop down box, choose a deployment name previously entered in the Logger Config tab. Note a logger must be selected from the Map to use this page
- Change the Name of selected deployment by over-writing the text in the Site box.
- Change the Deployment Notes by over-writing the text in the Site box.
- Press the button Edit to save the changes made.
- Press the Button Delete to remove this deployment.



The screenshot displays the 'Dataflow Xpert' interface. At the top, there are navigation tabs: Map, Chart, Logger Config, Sensor Config, Calibration, Groups, **Deployment**, Licenses, and User Guides. The 'Deployment History' section shows a table with 6 entries. Below the table, there is a 'View/Edit Deployment' section with a 'Select Deployment' dropdown, a 'Site' text input, and a 'Deployment Notes' text area. On the right, there are two summary boxes: 'Selected Logger' and 'Latest Information'.

Id	Logger	Name	Site	Start Time (UTC)	Stop Time (UTC)
135	Extended Temperature	Temp Cold Tank	New Deployment_15511315193950	n/a	n/a
136	Water Level	ABC123 - Sample	A test deployment 6	n/a	n/a
141	Temperature	Temperature Meter	Deployment_15545968422651	n/a	n/a
142	Water Level	C4039412D07E	C4039412D07E - Test	28-04-2019 22:00:00	30-04-2019 22:00:00
143	Water Level	First Blue Water Level	Deployment_1557382930080	n/a	n/a
144	Water Level	First Blue Water Level	Deployment_1557383076763	n/a	n/a

Showing 1 to 6 of 6 entries

View/Edit Deployment

Deployments :

Site :

Deployment Notes :

Selected Logger

Name: New Blue
Type: Water Level
Model: 0 9m
SNO: EDB4B5AGC523
Latitude: -43.545206°
Longitude: 172.835726°
Settings Version: 419

Latest Information

Dated: 08-10-2020, 1:00 AM
Battery
Voltage: 2.735V
Remaining: 04 Days
Battery: 73.49 %
RSSI: -128 dBm
Restarts: 71

View of Deployment tab

- | | |
|-------------------|---|
| Deployments: | Select required deployment. |
| Site: | The user can chose to update the Site name for the chosen deployment. |
| Deployment Notes: | User notes on selected deployment. |

Sensor Config Tab

Each type of logger may have a user required configuration for its sensor.

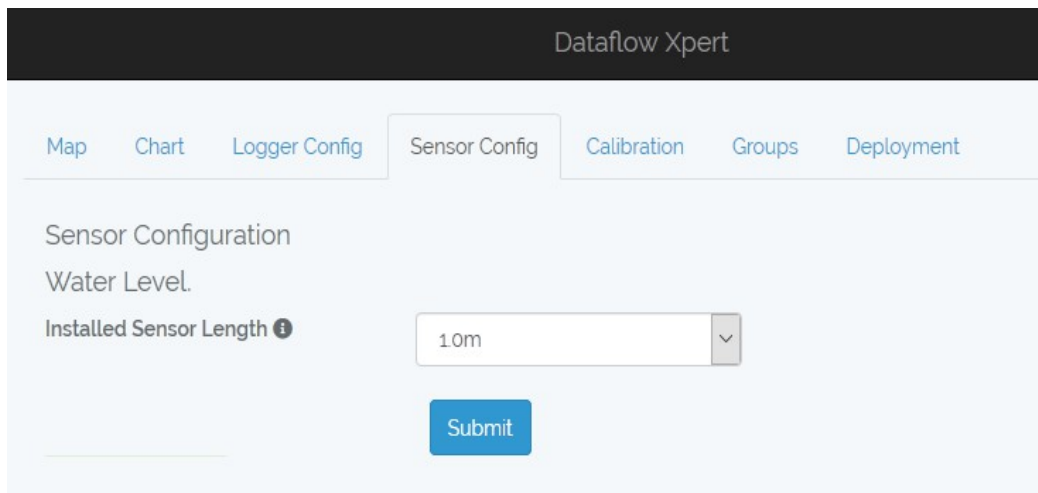
Water Level Logger

Plug in the sensor cable into the logger and identify its length which is printed on the cable close to the connector.

- Click on the Installed Sensor Length drop down box and select the length cable installed onto the logger.
- Press the Submit button to save the changes.

Note:

The Xtract Application must connect to the server and download the new settings. This will occur within 10 minutes or to synchronise immediately use the Sync to Server button in the settings menu of the Xtract Application. The logger then must be in range of the Xtract Application to connect and download the new settings.



The screenshot shows the 'Dataflow Xpert' application interface. At the top, there are navigation tabs: 'Map', 'Chart', 'Logger Config', 'Sensor Config' (which is selected), 'Calibration', 'Groups', and 'Deployment'. Below the tabs, the 'Sensor Configuration' section is visible, showing 'Water Level' and 'Installed Sensor Length' with a dropdown menu currently set to '1.0m'. A blue 'Submit' button is located below the dropdown menu.

Water Level Sensor Config Tab

Installed Sensor Length	Select the length of the sensor cable plugged into the logger.
-------------------------	--

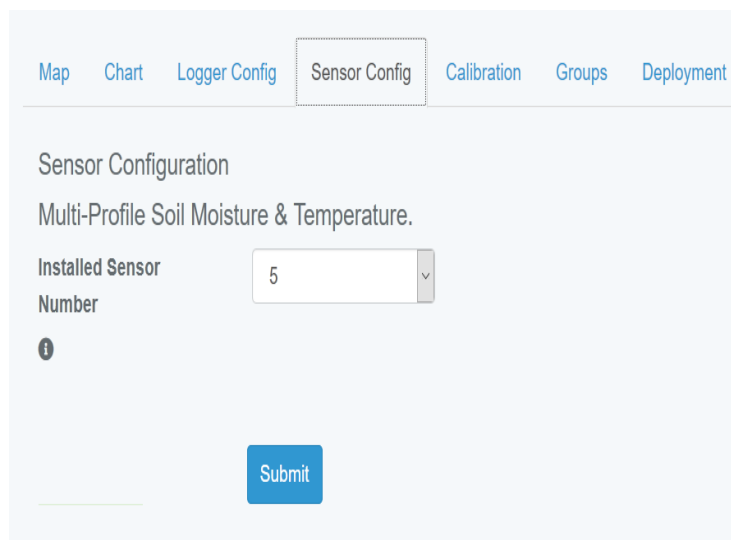
Soil Moisture Logger

This includes the single soil moisture logger or the multi-profile soil moisture logger. Check the label on your the moisture sensor and select the number of sensors from the the drop down selection box. For the single soil moisture sensor select 1. The soil moisture sensor cable or rod is removable from the logger and can be plugged into any other logger. Note the Multi-profile logger is different to the single soil moisture logger and they are not interchangeable.

- Select the number of soil moisture sensors in the sensor rod. Select 1 for the single soil moisture sensor.
- Press the Submit button to save the changes.

Note:

The Xtract Application must connect to the server and download the new settings. This will occur within 10 minutes or to synchronise immediately use the Sync to Server button in the settings menu of the Xtract Application. The logger then must be in range of the Xtract Application to connect and download the new settings.



The screenshot shows a software interface with a navigation bar at the top containing 'Map', 'Chart', 'Logger Config', 'Sensor Config', 'Calibration', 'Groups', and 'Deployment'. The 'Sensor Config' tab is active. Below the navigation bar, the text 'Sensor Configuration' and 'Multi-Profile Soil Moisture & Temperature.' is displayed. A label 'Installed Sensor Number' is followed by a dropdown menu showing the number '5'. An information icon (i) is located below the dropdown. At the bottom of the configuration area, there is a blue 'Submit' button.

Soil Moisture Sensor Config Tab

Installed Sensor Number	Number of soil moisture sensors installed.
-------------------------	--

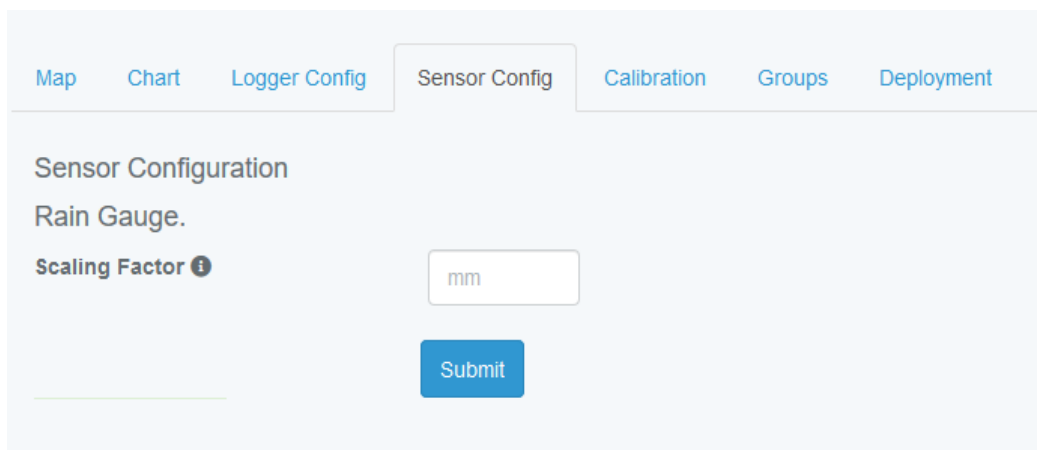
Rain Gauge Logger

From the tipping bucket identify the amount of water collector size. For the Davis tipping buckets it is 0.2mm per tip.

- Click on the Scaling Factor Box and enter the water collector size
- Press the Submit button to save the changes.

Note:

The Xtract Application must connect to the server and download the new settings. This will occur within 10 minutes or to synchronise immediately use the Sync to Server button in the settings menu of the Xtract Application. The logger then must be in range of the Xtract Application to connect and download the new settings.



Rain Gauge Sensor Config Tab

Scaling Factor	Water collector size in mm.
----------------	-----------------------------

PAR Logger

There are no sensor configurations required for this logger.

PAR Wiper

There is no sensor configurations required for the PAR Wiper

Temperature Logger

There are no sensor configurations required for this logger.

Calibration Tab

Some loggers require a user calibration to be performed for its sensor. Note some loggers also have a factory calibration.

Water Level Logger

The water level logger can be purchased with factory calibrated temperature and temperature compensation. The sensor will still need to be calibrated for this logger. Refer to the Water Level Logger user manual for details on how to perform this user calibration.

- Enter the first reading for the Reference and the Logger reading. Make sure the decimal point is put in.
- Enter the first reading for the Reference and the Logger reading. Make sure the decimal point is put in.
- The Sensor length should be the same as entered in the Sensor Config and should be filled in already.
- Enter the logger temperature as reported by the logger when collecting the user calibration data. This is required for factory temperature compensated units.
- Press submit button to save the data.

If it is needed to carry out another calibration the logger must be returned to factory defaults before taking new measurements.

- To return the logger to factory calibration defaults select the Restore Factory defaults tick box and press the submit button.

Note:

The Xtract Application must connect to the server and download the new settings. This will occur within 10 minutes or to synchronise immediately use the Sync to Server button in the settings menu of the Xtract Application. The logger then must be in range of the Xtract Application to connect and download the new settings.

Once the user calibration has been carried out the Calibrated Parameters boxes will be filled out. The resolution box indicates the resolution in mm that can be expected from data logger. The minimum resolution will always be 0.1mm.

If the logger has been factory temperature compensated the applied temperature compensation in mm/°C will be displayed in this box.

Map Chart **Logger Config** Sensor Config Calibration Groups Deployment

Calibration Settings

Water Level.

Restore Factory Defaults ?

	Reference ?	Logger Reading ?
First Reading *	<input type="text" value="200"/>	<input type="text" value="3828.5"/>
Second Reading *	<input type="text" value="500"/>	<input type="text" value="4712.8"/>
Sensor Length *	<input type="text" value="0.5m"/>	
Logger Temperature *	<input type="text" value="23.00"/>	

Calibrated Parameters ?

Resolution mm

Temperature Compensation mm/°C

* = Required

Copyright Dataflow Xpert ©2015-2020 (v1.1.17)

Water Level Sensor Calibration Tab

First Reading:	The first calibration point.
Second Reading:	The second calibration point.
Sensor Length:	The length of the sensor plugged into the logger.
Logger Temperature:	The ambient temperature as measured by the logger during the calibration.
Restore Factory Defaults	Returns the calibration to the factory defaults.

Soil Moisture Logger

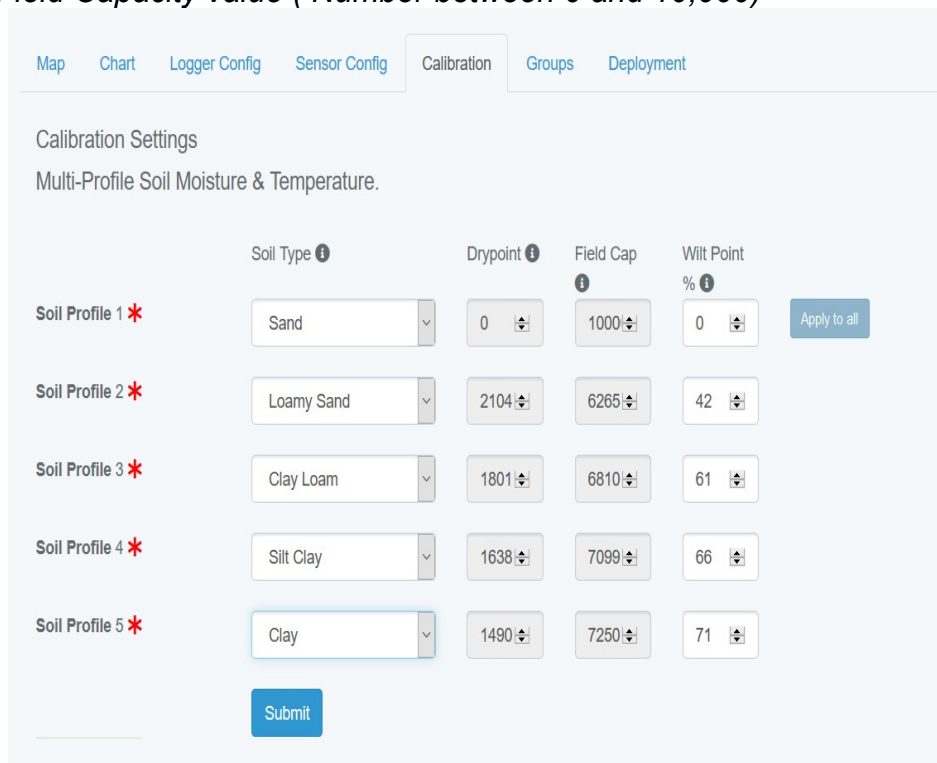
The soil moisture logger is factory calibrated for temperature and each sensor is temperature compensated. The user must select the soil type from the drop down box or choose custom to set your own soil parameters.

- Select the soil Type from the drop down box for each profile level.
- Press the Apply to All button if all profiles are the same.
- Press submit button to save the data.

For Soil Test the values shown on the chart will be raw values from the logger.

For Custom enter the raw drypoint value and the raw Field Capacity value measured.

- Enter the Drypoint value (Number between 0 and 10,000)
- Enter the Field Capacity value (Number between 0 and 10,000)



	Soil Type ⓘ	Drypoint ⓘ	Field Cap ⓘ	Wilt Point % ⓘ	
Soil Profile 1 *	Sand	0	1000	0	Apply to all
Soil Profile 2 *	Loamy Sand	2104	6265	42	
Soil Profile 3 *	Clay Loam	1801	6810	61	
Soil Profile 4 *	Silt Clay	1638	7099	66	
Soil Profile 5 *	Clay	1490	7250	71	

Submit

Soil Moisture Calibration Tab

Soil Profile X	Soil Type. Select from 12 different predefined soil types.
Dry Point:	The Dry value for the Soil type. (Value for 0.00%) Fixed by Dataflow for the soil type selected. Choose custom soil type for user entered values.
Field Cap:	The Field Capacity (wet point) for the Soil type. (Value for 100.00%) Fixed by Dataflow for the soil type selected. Choose custom soil type for user entered values.
Wilt Point:	User set wilt point. Shows a wilt point line on the charts.
Apply to all:	Applies the Soil Profile 1 to all profiles.

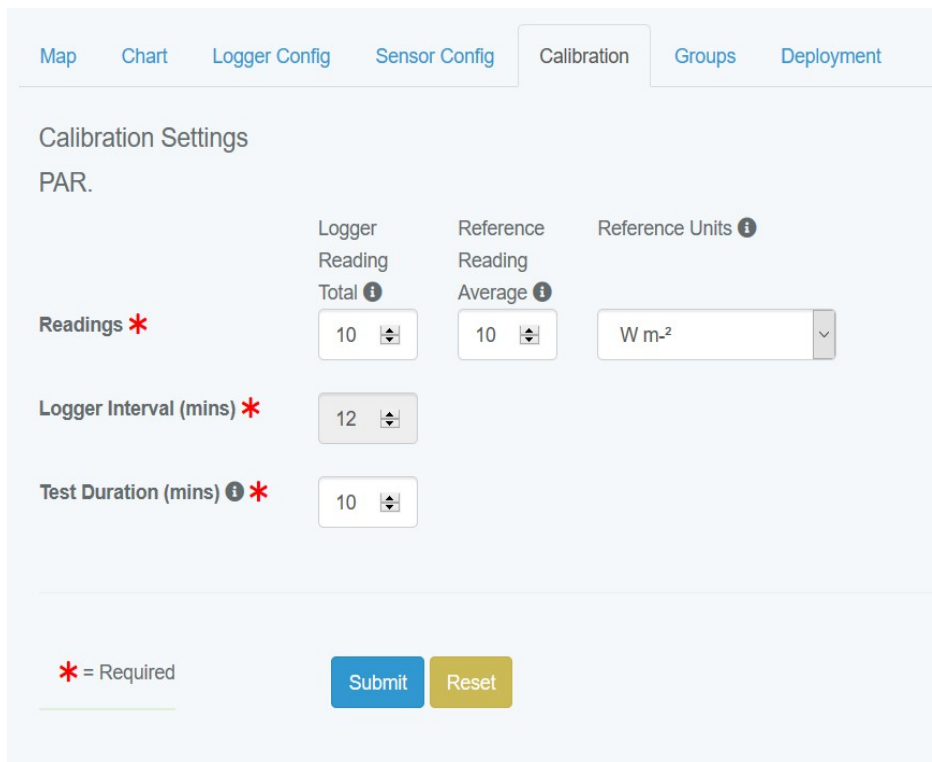
Rain Gauge Logger

There is no calibration required for the rain gauge logger.

PAR Logger

The par logger should be user calibrated against a reference standard. As the output of the PAR logger is zero when there is no light the calibration is just single point.

- Enter the Logger Reading Total.
- Enter the Reference Reading Average.
- Select the Reference Units.
- Enter the Test Duration.
- Press Reset button to set to the predefined test values for calibration only.
- Press Submit button to save the data.



PAR Logger Calibration Tab

Logger Reading Total	The total of all the logger readings for the calibration test duration.
Reference Reading Average	The average of the reference readings for the test duration. Add all the readings together over the test duration then divide by the number of readings to get the average.
Reference Units	The units that were used during the calibration on the reference unit.
Test Duration	The entire test duration entered in minutes.

PAR Wiper

There is no Calibration required for the PAR Wiper

Temperature Logger

There is no calibration required for the temperature logger.

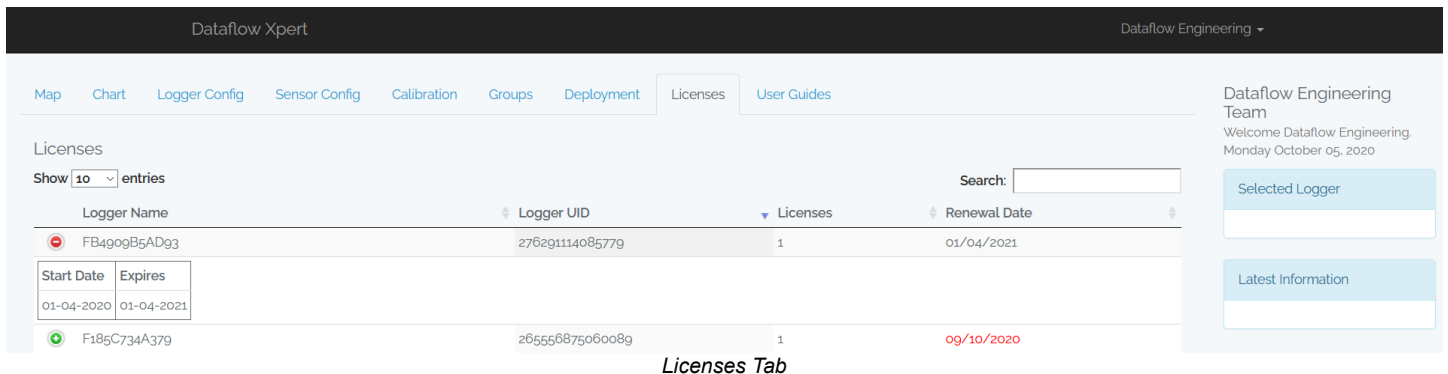
Licenses Tab

This shows all loggers and the renewal date of the license for each logger. Click on the column heading to change the sort criteria. If the renewal date is within 8 weeks of expiring the date will be shown in red. Clicking on the green + symbol beside the logger shows more information about the license

If there is no valid license, logger setting changes will not be saved and if the data collected for the invalid license period will not be accessible.

After two years of no valid License the data will no longer be collected from the logger.

To purchase new licenses for loggers email Dataflow Systems sales@odysseydatarecording.com.



The screenshot shows the 'Licenses' tab in the Dataflow Xpert application. The interface includes a navigation menu with options like Map, Chart, Logger Config, Sensor Config, Calibration, Groups, Deployment, Licenses, and User Guides. The Licenses section displays a table of loggers with their respective license details. A search bar is available for finding specific licenses. On the right side, there are buttons for 'Selected Logger' and 'Latest Information'.

Logger Name	Logger UID	Licenses	Renewal Date				
FB4909B5AD93	276291114085779	1	01/04/2021				
<table border="1"> <tr> <th>Start Date</th> <th>Expires</th> </tr> <tr> <td>01-04-2020</td> <td>01-04-2021</td> </tr> </table>		Start Date	Expires	01-04-2020	01-04-2021		
Start Date	Expires						
01-04-2020	01-04-2021						
F185C734A379	265556875060089	1	09/10/2020				

Licenses Tab



Odyssey® Xpert User Manual

User Guides Tab

The latest user documentation for all loggers is available here. Click on the document type button to display a list of the documents available then choose the document required. Use the embedded pdf menu buttons print or download the document.

Map Chart Logger Config Sensor Config Calibration Groups Deployment Licenses User Guides

User Guides + Data Sheets + Application Notes +

2 of 9 Automatic Zoom

DATAFLOW SYSTEMS LTD
www.Odysseydatarecording.com Page 1
V 09/19

**Odyssey® Xtream
PAR Logger
User Manual**

Contents

Xtream PAR Logger User Diagram.....	1
Principal of Operation.....	3
Installation Methods.....	3

Selected Logger

Name: Rain Gauge 1
Type: Rain Gauge
Model: TBRG
SNo: Eg631206CFCC
Latitude: -43.545229°
Longitude: 172.63572°
Settings Version: 312

Latest Information

Dated: 27-06-2020, 2:05 PM
Battery
Voltage: 1.996V
Remaining: 0 Days
Battery: -0.41 %
Other
Tilt Count: 0
Tilt State: 0
RSSI: -55 dBm
Restarts: 26

User Guides Tab

Data TimeStamp

The 'Send Report' button emails a CSV file with a timestamp in Unix Time which is the number of seconds since the 1st January 1970 (Epoch).

The downloaded reports have a timestamp similar to Unix Time but it is the number of milli-seconds since the 1st January 1970 (Epoch).

Spreadsheets

Spreadsheet programs like Microsoft Excel need a timestamp in fractions of a day and also need an adjustment for the Unix Epoch.

Use the following formulae in your spreadsheet to produce a column with the adjusted timestamp.

$$=(D2/(24*60*60))+DATE(1970;1;1)$$

Where D2 is the reference to the Unix timestamp to be converted.

For the downloaded reports simply divide the Unix timestamp by 1000 first as below.

$$=((D2/1000)/(24*60*60))+DATE(1970;1;1)$$

Notes:

- 24*60*60 refers to 24 hours per day, 60 minutes per hour and 60 seconds per minute.
- The date function used in these formulae may need a comma to separate the variables rather than semi-colons as shown.