



Aquaflex Wi-Fi Adapter User Manual

IRRIGATION MANAGEMENT MADE EASY

Aquaflex NZ, a division of Streat Instruments Limited
4a Expo Place • PO Box 24071 • Christchurch • New Zealand
Phone +64 3 384 8900 • info@aquaflex.co.nz • www.aquaflex.co.nz

This document may not in whole or part, be reproduced, copied, altered, or passed on to any third party without prior express written consent from Streat Instruments Ltd.

Aquaflex NZ, a division of Streat Instruments Limited

© Copyright Streat Instruments Ltd, 1998 - 2015

4a Expo Place, Christchurch 8062, New Zealand

Ph (+64) 3 384 8900

Fax (+64) 3 384 8901

mail@streetsahead.com

www.streetsahead.com

Conditions of Use

AQUAFLEX must be installed and operated as specified in the AQUAFLEX User Manuals. In particular, AQUAFLEX user's attention is drawn to the following warnings:

AQUAFLEX, and AQUAFLEX components, only provide data on soil moisture and temperature. Use of this data is entirely at the discretion of the user. The use of data generated by AQUAFLEX should therefore be subject to current best practice principles of soil moisture management and agronomic management. These must include regular checks on the integrity of AQUAFLEX and the data it is producing plus regular visual inspections of crops, plants or other materials being monitored by AQUAFLEX.

The AQUAFLEX system may have other sensors connected to it (e.g. air temperature, rain gauge information etc). Use of the data from these sensors is entirely at the discretion of the user. The use of data generated by AQUAFLEX should therefore be subject to current best practice principles of agronomic management for these sensors. These must include regular checks on the integrity of the sensors and the data it is producing plus regular visual inspections of crops, plants or other materials being monitored by the sensors.

Neither Streat Instruments nor its Distributors shall be liable (whether in contract, tort or otherwise) for any loss (including but not limited to loss of profits and consequential loss) of any kind whatever arising out of any published material or in connection with the performance or use of AQUAFLEX.

Streat Instruments Limited makes no warranty of any kind with regard to the material contained in or the products referred to in this manual, including, but not limited to, implied warranties or fitness for a particular purpose.

Streat Instruments Limited shall not be liable for errors contained herein or for incidental or consequential damages in connection with the performance or use of this manual or the products referred to in this manual.

Apple iOS and Google Android are either registered trademarks or trademarks of Apple Inc. or Google Inc. in the United States and/or other countries.

Manual:
Revision date:

AF188-07
29 June 2015

IRRIGATION MANAGEMENT MADE EASY

Contents

- 1 Overview of Aquaflex..... 1
- 2 Installing Aquaflex Mobile..... 2
 - 2.1 Install guide for Apple iOS devices 2
 - 2.2 Install guide for Android devices 3
- 3 Using Aquaflex Mobile 4
 - 3.1 Connecting to an Aquaflex Logging Sensor 4
 - 3.2 Downloading data 5
 - 3.3 Using charts 6
 - 3.4 Creating and editing charts 7
 - 3.5 Renaming sensors 8
 - 3.6 Removing sensors 8
 - 3.7 Clearing all data 8
- 4 Aquaflex Data Manager and AquacomSync 9
- 5 Making the best use of your Aquaflex data..... 11
- 6 Troubleshooting..... 12

1 Overview of Aquaflex

Soil Moisture and Temperature are the biggest factors that influence plant growth. In Spring and Autumn, soil temperature is the main limiting factor to growth. In the peak of the season, soil moisture becomes the dominant factor.

By measuring both parameters Aquaflex provides the information to ensure both soil moisture and temperature are maintained at the correct levels to maximise plant production.

Aquaflex is an important irrigation tool that helps optimise plant growth and quality. The grower can make informed irrigation decisions by using the data trends provided by Aquaflex.

Aquaflex Wi-Fi Adapter




The Aquaflex Wi-Fi Adapter and Aquaflex Mobile software are tools to get you started with monitoring the soil environment quickly and easily. Using the tools you can configure an Aquaflex Logging Sensor and download data from it to a Smartphone or Tablet.

This manual will detail the installation of the various components and provide a guide on making use of the data.




2 Installing Aquaflex Mobile

This section details the installation of the Aquaflex Mobile software.

2.1 Install guide for Apple iOS devices

1. Tap on the **AppStore Store** icon to open the Apple AppStore. 
2. When the AppStore has opened tap the **Search** box in the upper right hand corner of the screen. Type in **AquaflexMobile** and tap the **Search** button on the on screen keyboard.
3. When the search is complete there should be a listing called **AquaflexMobile**. Tap on the listing to display the details. 
4. From the **AquaflexMobile** details view tap the **Get** button under the application title. The button will change to **Install** and should be tapped again to confirm the installation. You may be prompted to enter your iTunes password after which the installation will begin.
5. **AquaflexMobile** can be started by tapping its icon from the application list screen when it has finished installing. 

2.2 Install guide for Android devices

1. Tap on the **Play Store** icon to open the Google Application Store. 
2. When the **Play Store** has opened tap the **Search** icon on the upper right hand corner of the screen. Type in **AquaflexMobile** and tap the **Search** button on the on screen keyboard.
3. When the search is complete there should be a listing called **Aquaflex Mobile**. Tap on the listing  to display the details.
4. From the **Aquaflex Mobile** details view tap the **Install** button under the application title. You will be prompted to agree with the application permissions. When you are ready tap accept to confirm the installation.
5. Aquaflex Mobile can be started by tapping its icon from the application list screen when it has finished installing. 

3 Using Aquaflex Mobile

Aquaflex Mobile software allows connection of Smartphones or Tablets to an Aquaflex Logging Sensor for configuration and downloading of data.


Using Aquaflex Mobile to regularly download the data from the Aquaflex Logging Sensor will prevent data from being lost due to its memory becoming full. The data will be most useful to you if it is kept up to date.

3.1 Connecting to an Aquaflex Logging Sensor

Aquaflex Mobile can configure and download the data from an Aquaflex Logging Sensor when it is connected to it.

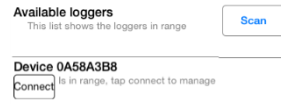
1. Power on the Wi-Fi Adapter by pressing the red button in centre of the adapter. The Green LED will flash slowly.
2. Insert the Wi-Fi Adapter into the front of the Aquaflex Logging Sensor battery box (it may need a hard push to get it fully in). Check that the switch points towards the sensor connector you want to connect with (left or right).
3. If your device is an iPad or iPhone use the device's Wi-Fi settings to connect to the Wi-Fi network called **Aquaflex-xxxx**.

Note: xxxx is the serial number of the Wi-Fi Adapter.

4. Start the Aquaflex Mobile app. Tap the blue **Connect** icon  either at the bottom of the screen for Smart Phones or the top of the screen for Tablets.



5. The **Connect** screen shows a list of Aquaflex Wifi Adapters that are in range. If you do not see your unit then you may be out of range. Tap **Scan** to attempt to discover the unit. Note: If you are using an iPhone or iPad, it may take some time before your unit appears on the screen.
6. If your unit is listed then tap its **Connect** button to open a connection.
7. When the screen changes you are connected. The display will now show the configuration options and current measurements for the unit.
8. To return to the **Connect** screen tap the **Disconnect** button at the top of the screen.



3.2 Downloading data

1. Use the steps in **Connecting to an Aquaflex Logging Sensor** to establish a connection and display the unit details.
2. Check that the switch on the bottom of the adapter is pointing towards the sensor connector you wish to connect with.
3. Tap the **Download** button at the top of the screen. The text in the button will show the progress of the download.
4. When the download is complete you will be prompted to disconnect. The data can be viewed from the **Chart** screen.

Aquaflex Sensors can be selected using this switch for Battery Boxes with two sensors connected



3.3 Using charts

Charts are used to view the sensor data from your Aquaflex system. Charts can be customised to display any combination of sensors.



Scaling axis

The chart can be scaled by pinch zooming anywhere on the chart area. It can also be scrolled by swiping left or right on the chart area. Alternatively the axes can be scaled or scrolled individually by pinching zooming or swiping on its axis near the side of the screen.

Changing the time range


Aquaflex Mobile has several buttons on the chart display for quickly navigating the data. Tapping the green **Latest** button scrolls the chart to the most recent data point. The blue buttons will scale the time axis to the range they indicate.


Changing to a different chart

From the **Charts** screen tap either the Charts icon  or the chart list icon  which will open the **Chart List** screen. Then tap on the chart of interest and the **Charts** screen will appear with the selected chart.

3.4 Creating and editing charts

Charts can have any combination and number of sensors. Beware that too many sensors on one chart may slow down the device.

To create a chart you first must open the **Charts** screen. Tap the Create icon  to show the **Create** screen. Enter in a name for the chart at the top of the screen. Tap the Add button for each sensor you want to display on the chart. Tap the back arrow to save the new chart. Note that if you do not add any sensors to a new chart, the chart itself will not be saved.

To edit a chart you must first have the chart you want to edit selected in the **Charts** screen. Tap the Edit icon  to show the **Edit** screen. Tap the back arrow to save the changes.

Add or remove sensors

Open either the **Create** or **Edit** screen. To add a sensor tap the Add button for the sensor that is in the **Available sensors to add** section. The sensor will be moved to the **Sensors on this chart** section. Tap the back button to save the changes.

To remove a sensor tap the Remove button for the sensor that is in the **Sensors on this chart** section. The sensor will be moved to the **Available sensors to add** section. Tap the back button to save the changes.


Setting Field Capacity and Refill Point

The Field Capacity, Refill Point or any other limit lines you wish to add can be added as a Static line in the Create or Edit Chart screen.


Open either the **Create** or **Edit** screen. Under the section called **Static lines on this chart** tap in the name field and type a name for the line,

enter a moisture value and tap the **Add** button. **Note: Static lines are always shown on the moisture axis.**

Removing charts


Open the chart you want to remove. Tap **Remove** icon  and you will be prompted to confirm deleting the chart. The sensor data does not get deleted.

3.5 Renaming sensors

Open the **Settings** screen by tapping the Settings icon  and tap the **Edit** button for the sensor you want to rename. The sensor label will become editable. Tap the **Done** button when finished.


3.6 Removing sensors

Removing a sensor will clear all its data from your device and cannot be undone.

Open the **Settings** screen by tapping the Settings icon  and tap the **Delete** button for the sensor you want to remove. You will be prompted to confirm.

3.7 Clearing all data

Clearing the data from your device will remove all sensor data, charts and other settings. This cannot be undone.

Open the **Settings** screen by tapping the Settings icon  and tap the **Clear** button. You will be prompted to confirm.

4 Aquaflex Data Manager and AquacomSync

To transfer the Aquaflex data from the Smartphone to your Aquaflex Data Manager on your PC you need the AquacomSync Software.


The latest installer can be downloaded from the Streat Instruments website Downloads page <http://www.streatsahead.com/downloads/> and by clicking on the **Download** button for AquacomSync.

Click on the file and it will download automatically. Then double click on the downloaded file to run the installer and follow the steps below:

When starting the installer a security warning may show. Click Run.

1. Click **Next** to view the License Agreement and then **I Agree** to choose the install components.
2. In the Choose Components screen make sure the all the options are ticked and then click **Next**.
3. The Install Location will be set to your computers default install location, click **Install**.
4. If during installation a 'Error opening file for Writing' appears then make sure the AquacomSync software is not running and if it is then close it and click **Retry**.
5. Once complete click **Finish**.

Note: If this is the first time the software has been installed then you will need to run Aquaflex Data Manager before AquacomSync so that a database is set up. Start the Aquaflex

Data Manager from the "Aquaflex" desktop icon. 

6. Start AquacomSync by selecting the Start Menu (bottom left of screen) as below:

Start Menu > All Programs > Streat Instruments > AquacomSync > AquacomSync

Configuring AquacomSync

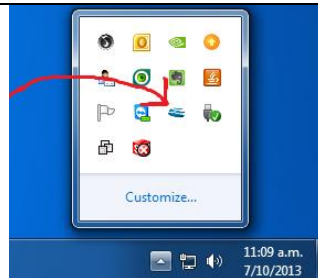
AquacomSync will keep Aquaflex sensor data up to date on the computer automatically whenever the Smartphone is plugged in.

Note for iPhone and iPad users: You must have iTunes installed on your computer in order for the data transfer to take place via AquacomSync.

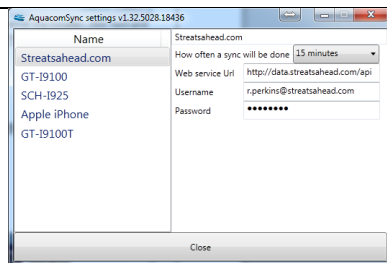
When a Smartphone is inserted into one of the computer's USB ports, AquacomSync will scan the phone and update Aquaflex Data Manager with any new data.

No configuration of Aquacom Sync is required if all you want is to transfer data from your Smartphone.

To open the settings, right click on the Aquacom Sync icon in the Notification area of the Task Bar (normal bottom right).



The settings window has a list of synchronisation sources on the left side, while the right hand side shows the settings for the selected source.



5 Making the best use of your Aquaflex data

The soil moisture and temperature data trends can help you make decisions around when to irrigate and for how long. For example, if the soil moisture is trending downwards and no rain is forecast then you can use the trends to measure rate of moisture loss and then irrigate to compensate.

Optimal irrigation is achieved when applying enough water to keep the plant in maximum growth mode and by not applying too much water that it drains through the soil before it is retained. There are three key parameters to monitor when irrigating, Field Capacity, Refill Point and soil temperature.

Field Capacity (FC) is defined as the maximum amount of water the soil can hold against the forces of gravity.

Refill Point (RP), sometimes called **Stress Point**, is the minimum amount of water in the soil before a plant becomes stressed.

Soil temperature is the temperature of the soil at the depth of the plant roots. Plants have an optimal growth temperature range.

The area between the Field Capacity and Refill Point is referred to as **Readily Available Water (RAW)**. RAW is the water that is easy for the plants to extract from the soil and where you will get maximum production. Set a **Field Capacity** and **Refill Point** on your Aquaflex sensor chart and use your irrigation system to keep the moisture trace within the RAW area.

Look up the application note **Setting Field Capacity and Refill Point** on www.aquaflex.co.nz for details.

6 Troubleshooting

Troubleshooting

Symptom	Resolution
Aqua flex Mobile does not appear after searching the Store	The operating system of your device may not be compatible. To install Aqua flex mobile your device version must be Android 4.1 or iOS 6 or higher.
The Aqua flex Mobile scan does not find the Aqua flex Wi-Fi Adapter	<p>The Aqua flex Wi-Fi Adapter communicates using your devices Wi-Fi radio. The Wi-Fi must be enabled on your device.</p> <p>Disable and then enable the Wi-Fi on your device or restart it.</p> <p>Check the Green LED flashes slowly after being powered on. If the Red LED flashes quickly then the batteries in the Adapter need to be replaced.</p>
Aqua flex Mobile connects but sensors readings are not shown	<p>Check the Port selector switch on the Aqua flex Wi-Fi Adapter is pointing towards the sensor to be connected.</p> <p>Check that the sensors are connected to the Aqua flex Logging Box correctly.</p> <p>Check the batteries inside the Logging Box are inserted correctly and produce at least 8 volts.</p>