IOTA USER GUIDE

Control of Sicce Syncra SDC and XStream SDC pumps with APEX

IoT α

CONTENTS

INTRODUCTION

This guide will assist you in setting up Sicce Syncra SDC™ multifunction pumps and XStream SDC™ propellor pumps to be controlled by an Apex controller system.

In this guide, you will see references to IoTa and IOTA. IoTa is an acronym of ***Internet of Things: Aquarium***. IoTa is the name of an initiative created by Neptune Systems to standardize and facilitate development of Apex control of Internet-connected aquarium equipment from other manufacturers.

REQUIREMENTS

- An Apex or ApexEL is required; this capability is not available in Apex Classic models, which include the Apex Classic, Apex Gold, Apex Lite, and Apex Jr.
- The Apex must have AOS version 5.06_5E21 (or later) installed.
- The Apex must be connected to the local network via Wi-Fi or Ethernet.
- The Syncra SDC and XStream SDC which will be directly controlled by the Apex must be connected over Wi-Fi to the same network as the Apex.

- Each IoTa device being directly controlled by an Apex counts as an Apex module and is subject to the Apex limit of 49 modules.

PROVIDING POWER TO YOUR SICCE SDC-SERIES PUMP

The power supplies for Syncra SDC™ multifunction pumps and XStream SDC™ propellor pumps do not need to be plugged into an EnergyBar outlet; instead, they should be plugged into a regular wall outlet or power strip. Neptune Systems recommends that the power supplies <u>not</u> be plugged into an EnergyBar outlet.

However, if you do, the EnergyBar outlet should be programmed to be always ON. You can use the APEX Fusion "Always" Task to configure the EnergyBar outlet to be always On, or if you prefer to program it yourself, use this simple program:

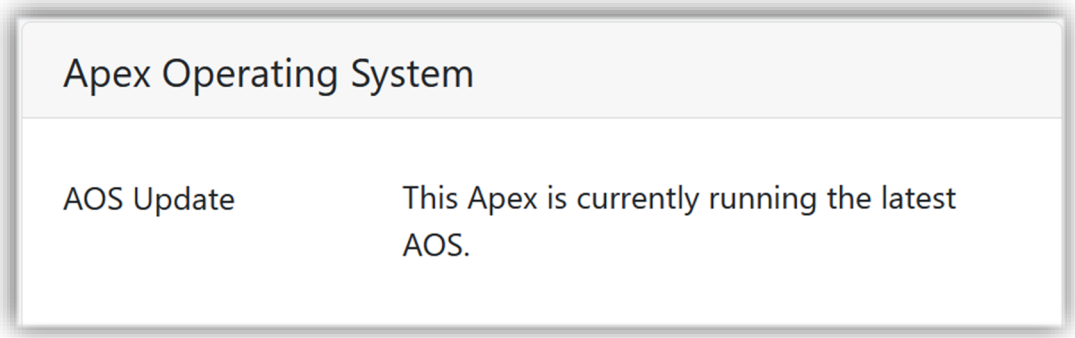
Fallback ON
Set ON

In APEX Fusion, the "Always" Task may be found by clicking on the **Tasks** button.

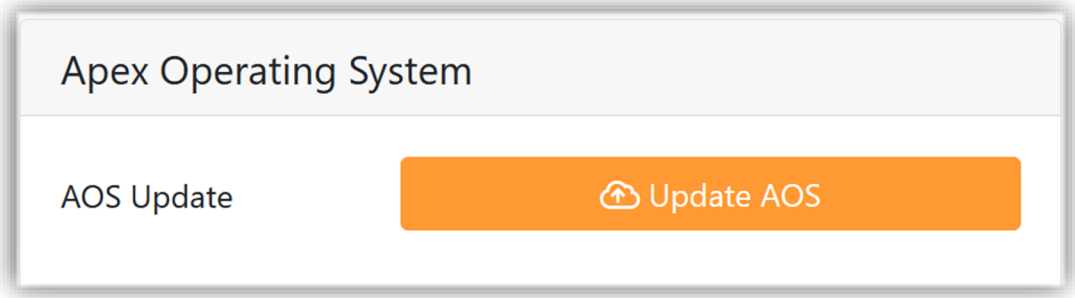
UPDATING YOUR APEX AOS

Your Apex must have AOS version 5.06_5E21 or later installed. You can check for the availability of a newer AOS than installed and install an AOS update if one is available using either APEX Local or APEX Fusion. On the **Dashboard**, click the **Expand** button, then click the **Network** button.

The page will either show that no update is needed, or that an AOS is available to install.



- or -

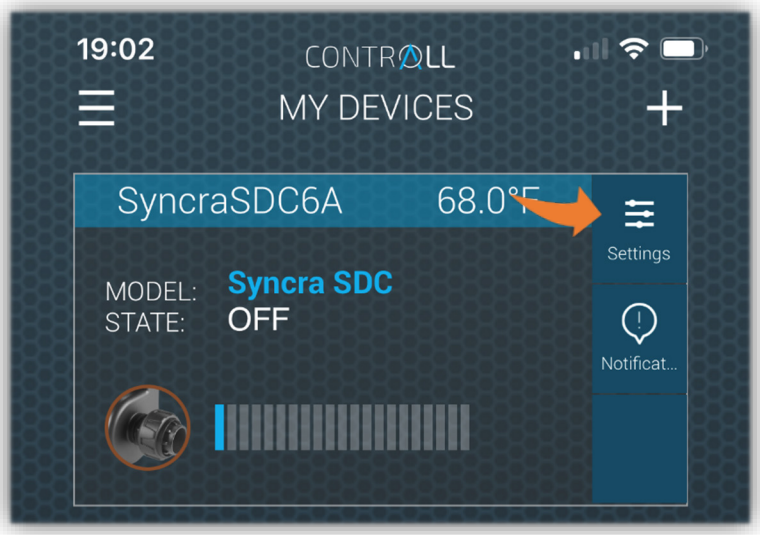


If an update is available, click the **Update AOS** button, then follow the prompts. Wait at least 5 minutes after the AOS update process completes before proceeding.

PREPARING YOUR SDC-SERIES PUMP TO BE CONTROLLED BY THE APEX

1. Use the Sicce CONTROLL™ app to configure the pump to connect to your wireless network.
2. After a pump is set up and connected to your network, select the desired pump on the MY DEVICES list.

3. Tap the Settings button

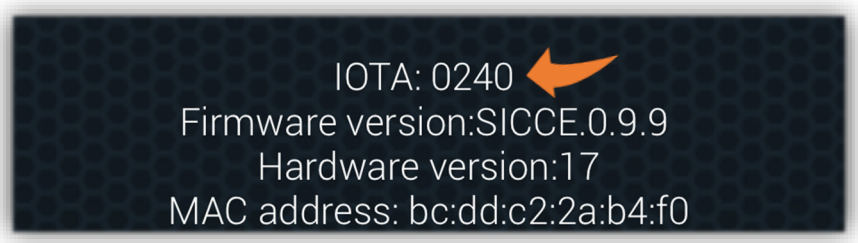


4. Scroll to the bottom of the Settings page.
5. Check the installed Firmware version to see if it is IOTA-capable:
    - For Syncra SDC pumps, the minimum version is 0.9.9
    - For XStream SDC pumps, the minimum version is 1.3.1

IMPORTANT:

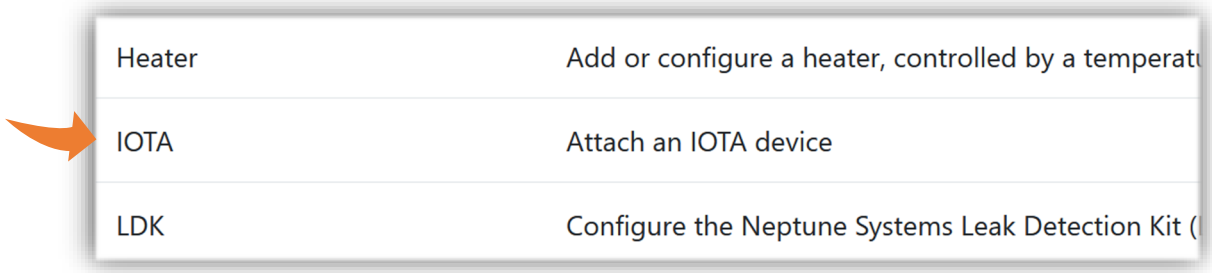
If the CONTROLL™ app shows that the pump controller does not have the minimum version required, then the pump's firmware does not have IOTA support. You must contact Sicce and request that the pump's firmware be updated. Send an email to infous@sicce.com from the same email address you used to setup the Sicce SDC-series pump(s). Sicce technical support will upgrade the firmware on your pump(s) and advise you when that has been performed.

6. Make note of the 4-digit number shown where IOTA: #### is displayed; this is the password which will be used later to authorize your Apex to control this pump.

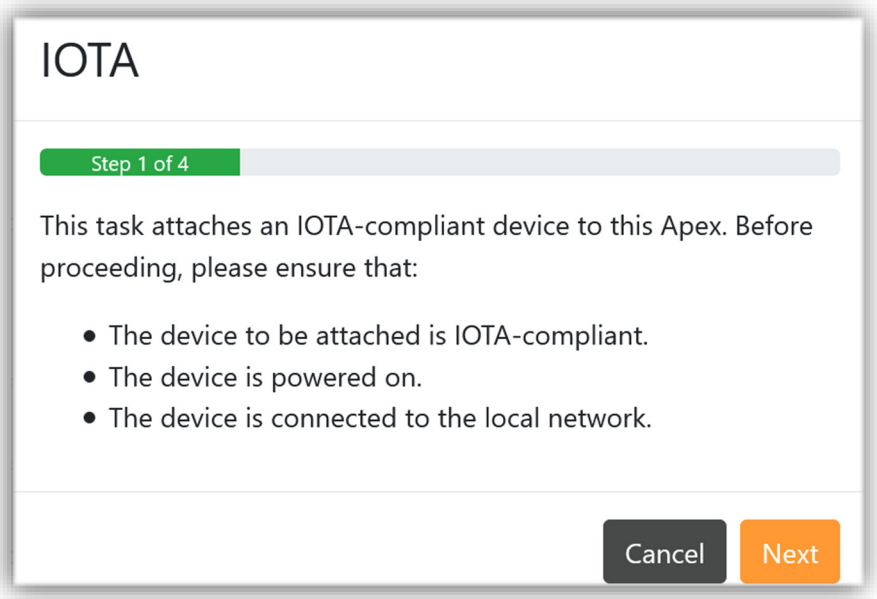


ATTACHING A SDC-SERIES PUMP TO THE APEX USING THE APEX FUSION IOTA TASK

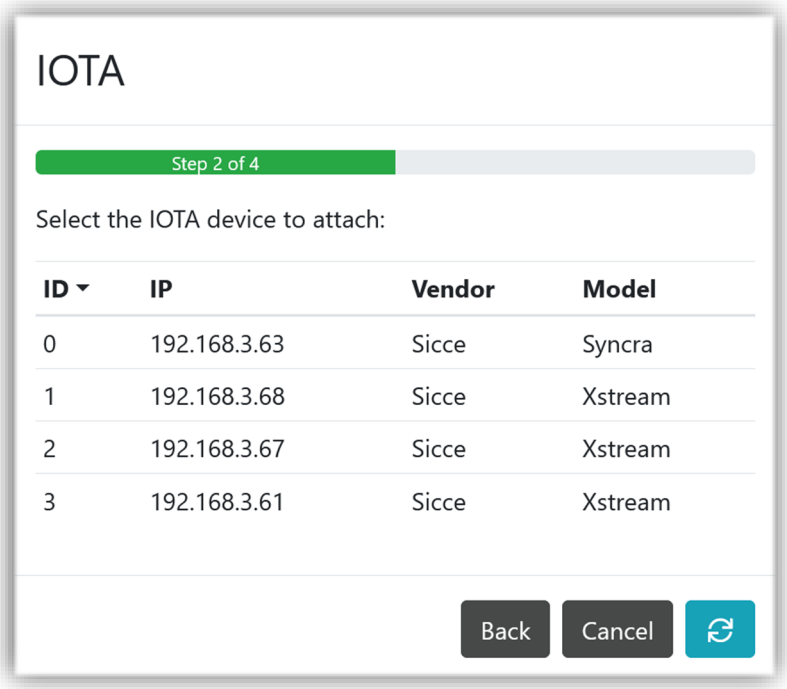
The process of configuring an Apex to control a SDC-series pump is called "attaching". The simplest and preferred method of attaching the pump is by use of the IOTA Task in APEX Fusion (not APEX Local). While viewing your Apex dashboard, click on the **Tasks** button; then click on the IOTA Task:



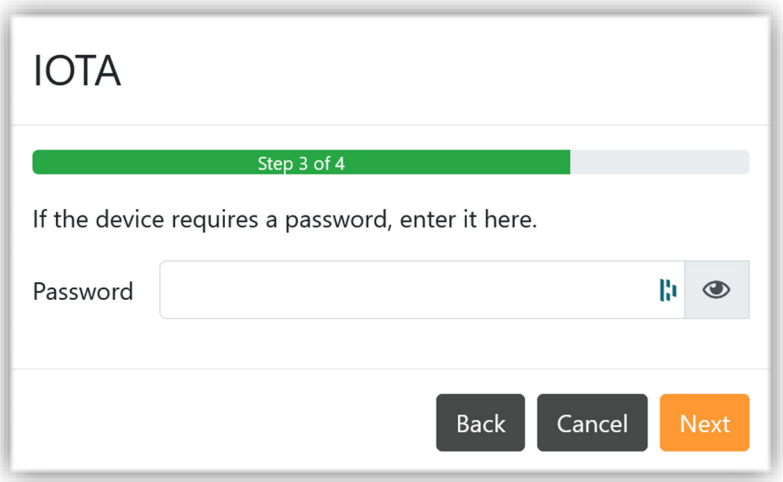
Follow the IOTA Task steps. Step 1 is a summary of what the task does and the basic requirements to be able to attach an IOTA-compatible pump or light to the Apex:



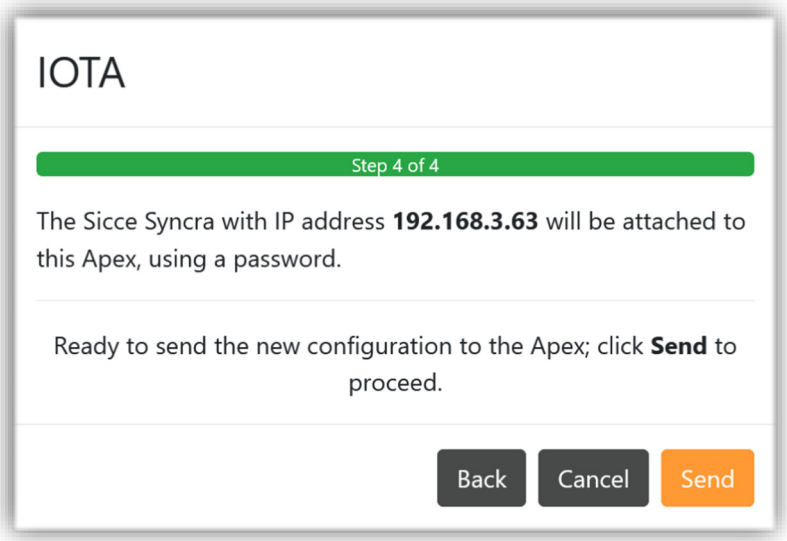
In Step 2, you will be presented a list of all compatible lights and pumps that the Apex has discovered on your network and which are not already attached to this Apex. In the image below, you can see that one Syncra SDC pump and three XStream SDC pumps were found. Click on the pump you wish to attach, then click the **Next** button.



Some IoTa devices may optionally be configured with a password, or may require the use of a password when setting this up for control by an Apex. Sicce pumps do require a password. In Step 3, enter the 4-digit IOTA password for this pump and click the **Next** button.



Step 4 summarizes the action to be taken. Click the **Send** button to finish the IOTA Task.



Run the IOTA Task again for each additional pump to be attached. Be sure to use the correct IOTA password for the selected pump.

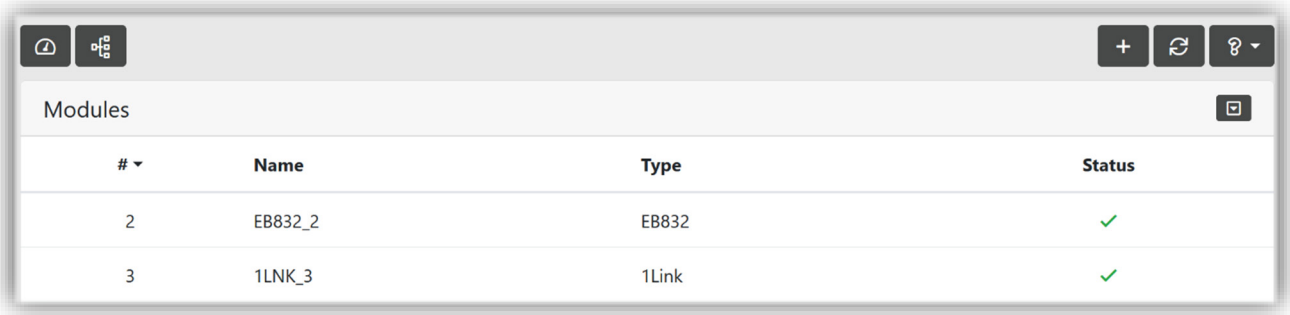
IMPORTANT:

After attaching a Sicce pump to your Apex, do not use the ContrAll app to control the pump.

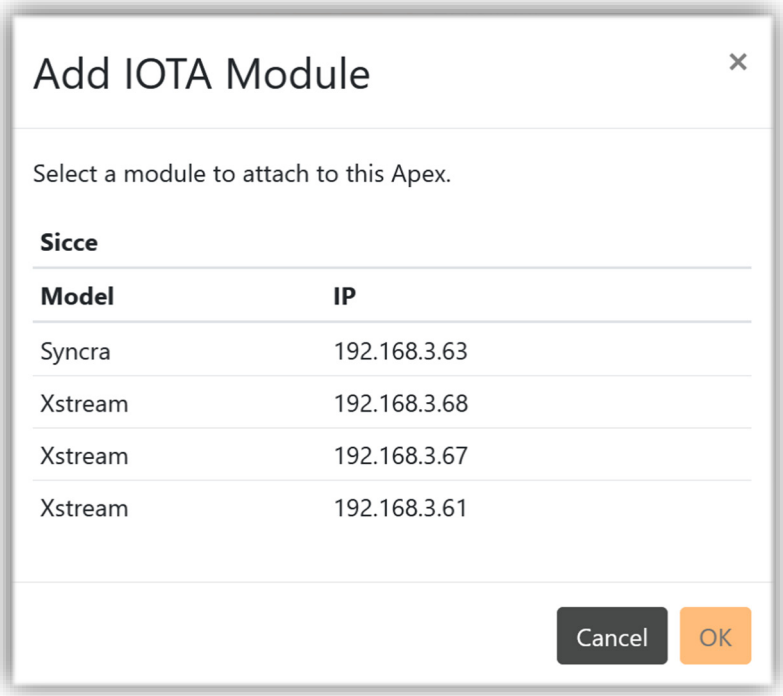
ATTACHING A SDC-SERIES PUMP TO THE APEX USING THE MODULES LIST IN APEX LOCAL OR APEX FUSION

As an alternative to using the APEX Fusion IOTA Task, IoTa devices may be attached using the Modules view in either APEX Fusion or APEX Local.

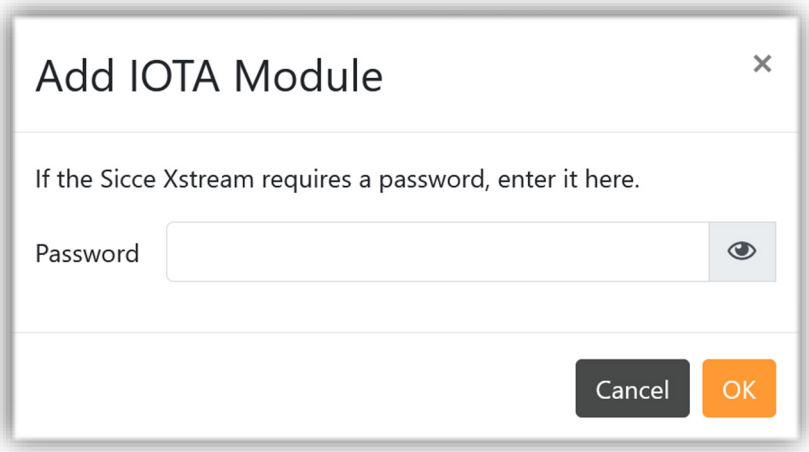
While viewing your Apex dashboard, click on the **Expand** button, then click the **Modules** button. A listing of all connected modules will be shown:



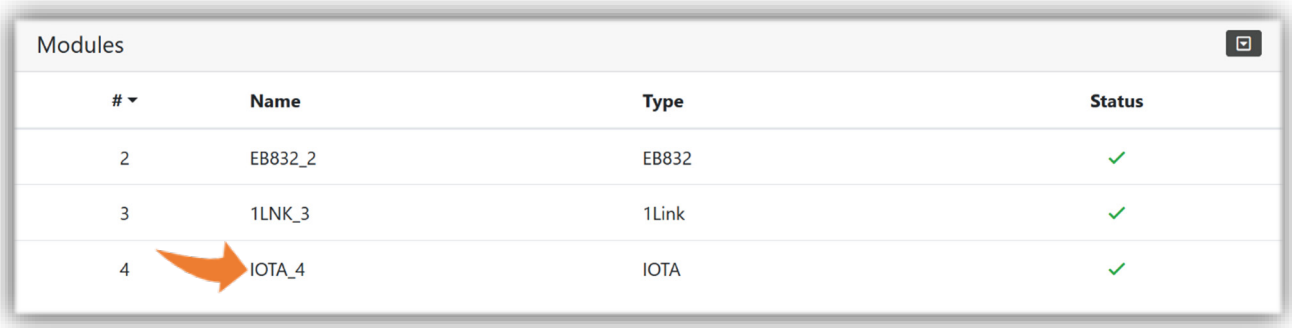
Click on the **Add IOTA Module** button in the upper right. You will be presented with a list of all compatible IoTa devices that the Apex has discovered on your network and which are not already attached to this Apex. In the image below, you can see that one Syncra pump and three XStream pumps were found. Click on the line for device you wish to attach, then click the **OK** button.



Some IoTa devices may optionally be configured with a password, or may require the use of a password when setting this up for control by an Apex. Sicce pumps do require a password. Enter the 4-digit IOTA password for this pump and click the **OK** button.



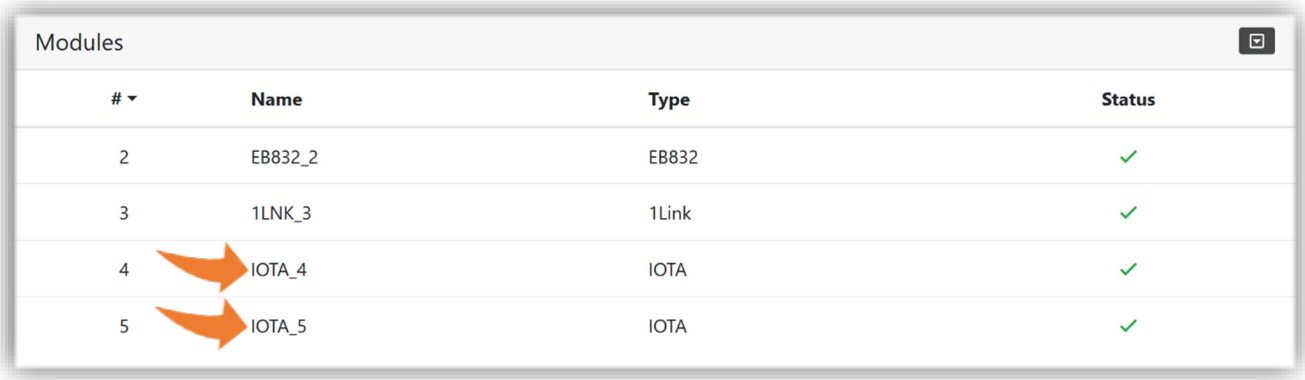
You will be returned to the Modules view. If you are using APEX Local, wait 5-10 seconds, then click the Refresh button. You should now see a new module named IOTA_# where # is the Aquabus address which the Apex assigned for newly-attached IoTa device. It may take a minute or so if you are using APEX Fusion before the newly-added pump appears as a module.



Repeat this process for any additional Sicce pumps you wish to connect. In the image below, you can see that two IoTa devices have been attached and have been assigned Aquabus addresses 4 & 5.

IMPORTANT:

After attaching a Sicce pump to your Apex, do not use the CONTROLL™ app to control the pump.

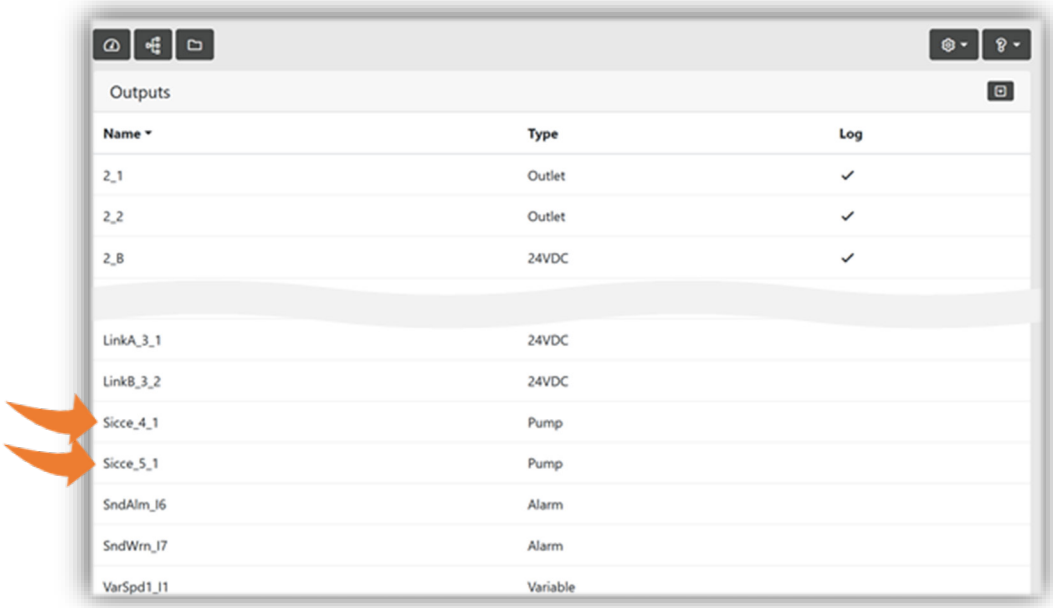


Modules

#	Name	Type	Status
2	EB832_2	EB832	✓
3	1LNK_3	1Link	✓
4	IOTA_4	IOTA	✓
5	IOTA_5	IOTA	✓

OUTPUTS AND DASHBOARD TILES FOR IOTA-ATTACHED DEVICES

When IoTa devices are attached to the Apex, new outputs and dashboard tiles will automatically be created. Outputs will appear in the **Outputs** view. The Apex outputs for the Syncra and XStream pumps which were attached earlier can be seen in this image:

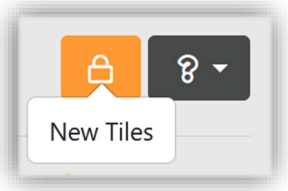


Outputs

Name	Type	Log
2_1	Outlet	✓
2_2	Outlet	✓
2_B	24VDC	✓
LinkA_3_1	24VDC	
LinkB_3_2	24VDC	
Sicce_4_1	Pump	
Sicce_5_1	Pump	
SndAlm_I6	Alarm	
SndWrn_I7	Alarm	
VarSpd1_I1	Variable	

The default output name for any Sicce IoTa device is **Sicce***xx*_#_**1**; # is the Aquabus address of the IoTa module.

Now go back to the **Dashboard**; it will show the New Tiles indicator:

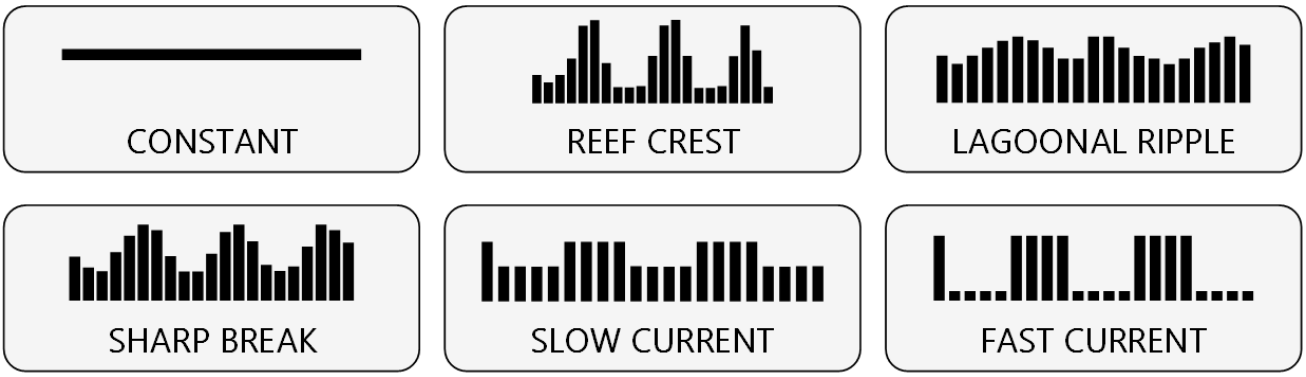


Click the **Unlock** button to show the hidden tiles area, then locate and drag the new tile(s) named Sicce_#_1 onto your dashboard and position each one where desired. When done, close the hidden tiles area by clicking on the **Lock** button again.

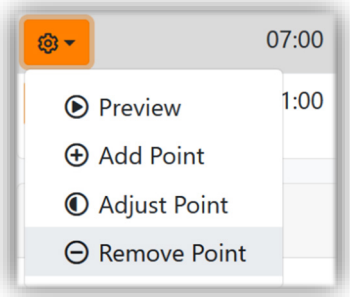
CREATING A SCHEDULE FOR YOUR SICCE PUMP

To create a schedule for your newly-attached Sicce pump, locate its dashboard tile and click the on the tile. The wizard with a sample schedule will be shown. Use this as a starting point.

The following operating modes are available for use in your schedule for both Syncra and XStream pumps:

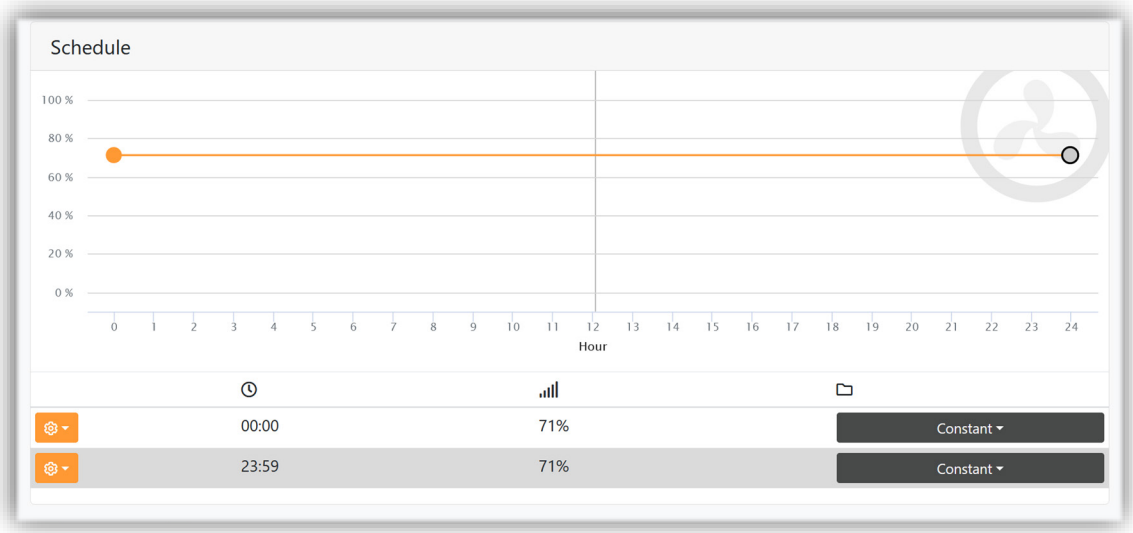


Modify the schedule as desired by dragging each schedule points to adjust the time and overall intensity. Add an additional schedule point by clicking on the for a point then clicking on Add Point. You can also adjust the time and intensity for a point or remove a point.

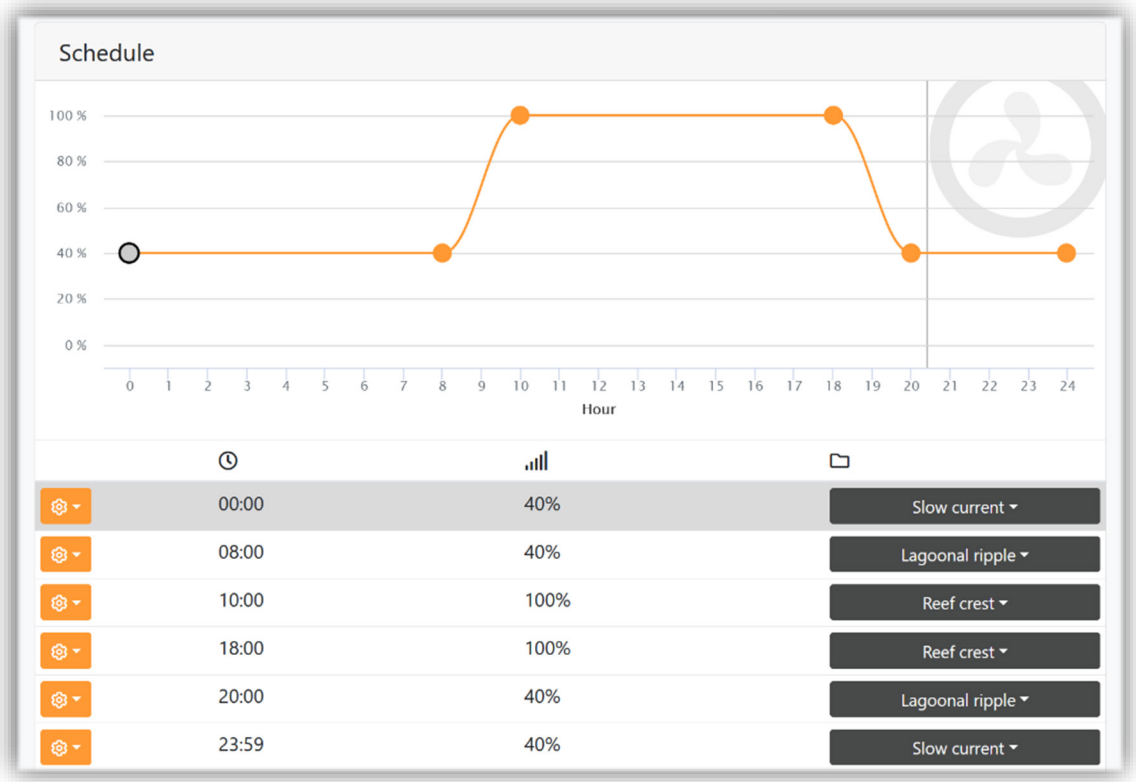


For each point, choose the mode and maximum intensity desired.

For Syncra SDC pumps being used as return pumps, it is generally best to use a simple schedule with Constant mode set with the intensity that is optimal for your plumbing and overflow. An example of this is shown below.

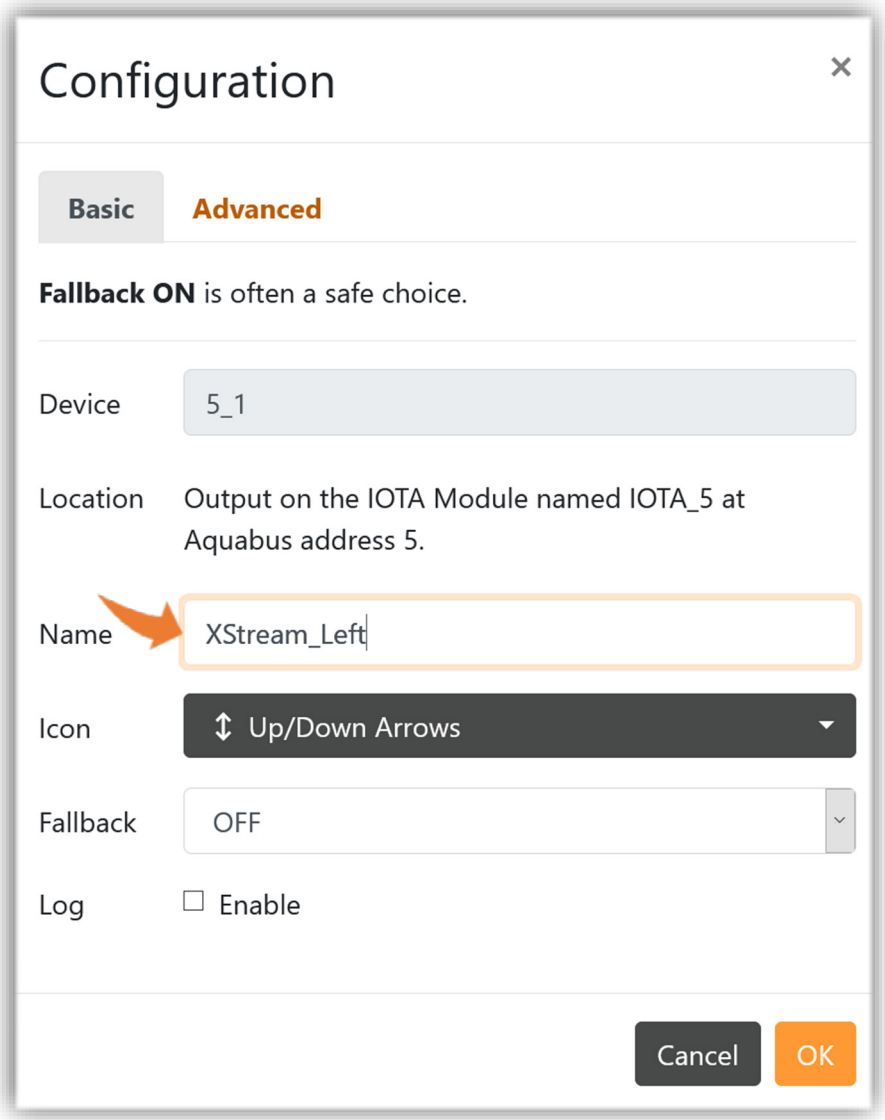


In the example schedule shown below for a XStream propeller pump, Reef Crest mode at a higher intensity has been assigned during daytime, the gentler Slow Current mode at moderate intensity has been schedule for nighttime, and Lagoonal Ripple has been used to ramp up or ramp down in intensity during the transitions between daytime and nighttime.



After creating your pump's operating schedule, assign a custom name to the output by clicking on the **Configuration** ⚙ in the upper right corner.

Edit the default output name to give it a descriptive and meaningful name; click the **OK** button when done.



When finished creating your pump's operating schedule, send it to the Apex by clicking the **Update APEX** button.

SCHEMES

The IoTA wizard in APEX Fusion supports the use of Schemes, which are pump or lighting schedules that can be saved for your own later use and can also be shared with other Apex owners.

- To save a schedule as a Scheme, click the **Save Scheme** button.

- To search for Schemes shared by others, click the **Download Scheme** button. Schemes are available only in APEX Fusion; they are not available in APEX Local.
- You can save a Scheme, then load it onto another IoTa device of the same model.
- Schemes are vendor- and model-specific:
  - A Scheme created from a Neptune Systems COR pump, for example, cannot be used with a Sicce SDC output.
  - A Scheme created from a Syncra SDC cannot be used with a XStream SDC.

ADVANCED PROGRAMMING

- The use of percent values in advanced programming is supported. When advanced programming using % values is in effect, the pump will be in Constant mode at the specified speed. For example:
  - If FeedA 000 Then 25
  - If Output Slow = ON Then 10
  - If SwFeed CLOSED Then 50
- The use of Apex profiles is not supported with IoTa outputs.
- Fallback is not supported. Should an Apex-controlled Sicce pump lose communications with the Apex, the pump will continue to operate with the last mode and intensity setting it received from the Apex.

ADDITIONAL INFORMATION

- Schedules created in the Sicce ContrAll app cannot be converted or imported into APEX Local or APEX Fusion.
- The app must not be used to control a Sicce pump after it has been attached to the Apex.

- Additional detail about an attached Sicce pump is available on the Modules view. To see that information, start on the **Dashboard**. Click or tap on the **Expand** button, click or tap the **Modules** button, then select the desired IOTA Module. You will see the detailed status on the IOTA Module view:

IOTA Module named IOTA_4 at Aquabus address 4.

Type	IOTA
Name	IOTA_4
Address	4
Status	Connected
Vendor	Sicce
Model	Syncra
Serial	123456
MAC	bcddc22ab4f0
IP Address	192.168.3.63

IOTA Module named IOTA_5 at Aquabus address 5.

Type	IOTA
Name	IOTA_5
Address	5
Status	Connected
Vendor	Sicce
Model	Xstream
Serial	000000
MAC	3c71bf338975
IP Address	192.168.3.61

Of primary interest here is the type and IP address of the Sicce pump.

CHANGE LOG

1.0	05/24/2021	Initial release
1.1	05/26/2021	Added minimum Sicce firmware versions