INTRODUCTION

Thank you for your purchase of a Neptune Systems Apex AquaController System. This quick and easy guide will take you through the process of quickly and efficiently installing and setting up your Apex AquaController.

<table>
<thead>
<tr>
<th>Component</th>
<th>Quantity/Length</th>
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<tbody>
<tr>
<td>Apex Base Unit (ABU)</td>
<td></td>
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<tr>
<td>Energy Bar 8 (EB8)</td>
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<tr>
<td>Apex Display Screen</td>
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<tr>
<td>Aquabus Cable</td>
<td>Qty:1: 3 ft</td>
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<td></td>
<td>Qty:1: 6 ft</td>
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<tr>
<td>Ethernet Cable</td>
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<tr>
<td>Temperature Probe</td>
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<td>Lab Grade pH Probe (blue)</td>
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<td>Lab Grade ORP probe (red)</td>
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<tr>
<td>Lab Grade Conductivity/Salinity Probe</td>
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<tr>
<td>Calibration Solutions (not pictured):</td>
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<tr>
<td>Calibration 7</td>
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<td>Calibration 10</td>
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<td>Conductivity 53,000 uS/cm</td>
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Calibration Solutions (not pictured): Calibration 7, Calibration 10, and Conductivity 53,000 uS/cm
Connect the Apex Ethernet port to an available port on your router using the supplied Ethernet cable.

Do not confuse your router with your cable or DSL modem-Your router is what gives you WiFi in the house.

• Note: If your router is not near your Aquarium, that is OK! For initial setup, we will be at your router. After setup is complete you have the opportunity to make the controller wireless to your home network.
STEP 2: INITIAL CONNECTIONS (CONTINUED)

Connect your EB8 power cord to a wall outlet

Connect the 6' Aquabus cable from an EB8 aquabus port (gray circle) to the Apex Base Unit's aquabus (orange circle)

NOTE: The Ethernet must be connected before powering your unit on. If unit was already powered before Ethernet was connected, then connect Ethernet and power cycle.
Connect the PM2 module, display module or any other aquabus modules you may have one module at a time. Use the aquabus port on the side of the EB8 as a hub.

NOTE: It does not matter the order or the port you connect an aquabus module.
Most all of your interface to the Apex will be done using our cloud-based service, Apex Fusion. To connect, go to ApexFusion.com and create an account.

Now you will “Link” your Apex to your Apex Fusion account.
STEP 3: CONNECTING TO APEX FUSION (Continued)

To link your Apex to Apex Fusion pick up your Apex Display Screen. Tap the center button and scroll to “Apex Fusion: Link.” Tap the center button again to generate your “Link Token.”

NOTE: If it says “Apex Fusion: Down,” then please restart your controller. If it still says “Apex Fusion: Down” see the FAQ at the end of this Quick-Start Guide.

Enter your link token on your Apex display screen to your Apex Fusion account- It is case sensitive.
After entering the “Link Token,” you should see a “Link Successful Message.” Select “OK”.

To see your Apex Fusion Dashboard, select the “list” icon in your Fusion tool bar.
STEP 3: CONNECTING TO APEX FUSION (Continued)

Select your Apex from your Apex list

Now you are at your Apex Fusion Dashboard. Here you can begin configuring your Apex.

For more detailed Apex Fusion instructions please see the "Quick-Start Apex Fusion Guide"
After you have connected to Apex Fusion and confirmed green status lights on your modules, then it is time to install the Apex at your aquarium.

Make sure the mounting location free is of moisture-above the water line.

- Be sure to utilize drip loops on all power cords, aquabus, and probe cables.
- Do NOT connect your aquarium equipment to the EB8 at this time.

Connect probes to their appropriate inputs, but do not mount them in your aquarium or sump yet.

Temperature Probe> Temp (hear the click)
 pH and ORP probes > pH and pH/ORP respectively
 Salinity Probe> Cond on salinity module

- Be careful handling the probes as they are FRAGILE.
If you do not have the recommended hardwired Ethernet connection at your aquarium and need to make your controller wireless, try using a 3rd party adapter, like an Internet Gaming Adapter.

Many users have tremendous success using the Netgear WNCE 2001 Internet Gaming Adapter. If you use Apple Routers, then get an Airport Express instead.

Follow the instructions from the manufacturer.
STEP 5: CALIBRATE YOUR PROBES

Only the pH and salinity probe need calibration. First float your calibration solutions in your tank to bring them to tank temperature for a few minutes.

Remove the cap on your pH probe.

To calibrate pH on your Display Screen: Setup > pH Setup > pH Calibrate > select pH > Follow on screen instructions.

To calibrate salinity on your Display Screen: Setup > Cond Setup > Cond Calibrate > Follow on screen instructions.

NOTE: Select the “53,000” for the high solution.

NOTE: The Salinity probe is very sensitive to air-bubbles, hold and install the probe at a slight angle so bubbles will “roll off” the monitoring surface. Lightly tap the probe a few times while calibrating to release air bubbles.
STEP 5: CALIBRATE YOUR PROBES (Continued)

After you have finished calibrating your probes mount them in your Aquarium or Sump.

Do NOT completely submerge the probes- use a probe holder like the Neptune Systems Magnetic Probe Rack (MPR) **LINK**
Confirm the calibration was successful by placing the pH probe in the 7 and 10 solution, and the salinity in the 53,000 uS/cm Solution.

They should read ~7, ~10, and ~35.0 in each respective solution. If they do not, then please see the FAQ at the end of this Guide.

Your temperature probe is calibrated at Neptune Systems.

The ORP probe does not need calibrating. Simply remove the cap an put in the tank. The ORP probe has roughly a week break-in period before it will report accurate readings.

If you need further assistance in calibrating any of your probes please see the Apex Comprehensive Reference Manual.
Now that your Apex is installed at your Aquarium, you can begin to configure your Apex on how to control and monitor your Aquarium.

Set the time zone in your controller. On your display screen:
System> Clock Setup> Time Zone (East, -5, Central, -6, Mountain, -7, and Pacific, -8).

International Time zones will vary, check what time zone you are in here.

Confirm the time is correct by selecting “Tank Time Set”

Configuring outlets on your Energy Bar 8. To get started you must understand which outlet is which on your EB8.

The label on your EB8 maps out physically which outlet is which.
There are two types of Energy Bar 8 outlets.

The solid-state switched (5A max) outlets (Orange) are outlets 1, 2, 3, 5, 6 & 7. It is typically best to plug in devices between 20W and 300W into these outlet like your 200W heater or Return pump.

The mechanical relay (10A max) outlets (Yellow) are outlets 4 and 8. It is typically best to plug in devices under 20W and between 300W to 800W into these outlets like you dosing pump or 400W MH ballast.

The combined current of all of your devices plugged into your EB8 can not exceed 15A.

To begin programming outlets in Apex Fusion you must first go to the outlet configuration page.

To navigate to this, select the “outputs” icon.
On the output configuration page all of the outlets for your Apex are listed. There are three main types of outlets.

**Variable** - Variably controlled 0-10V outputs to control Apex Ready devices
**Alert** - Your audible sound and email alarm outlets
**Outlet** - Physical on/off outlets on your EB8

Configure outlet #1 on your EB8. First to select this outlet in Apex Fusion.

We know this is outlet #1 on your EB8 because its device is labeled as “3_1.” The “3” identifies the EB8 and the “1” comes from this being outlet #1 on EB8.
Regardless of the device plugged into the EB8 outlet, all outlets will have several common properties. Fill out and select the appropriate information for the device you plan to connect to outlet #1:

**Device:** How the outlet is identified: “3_1”

**Name:** What you want to call the outlet: *i.e. “Return_3_1” or “Heater_3_2”*

**Icon:** The graphical image of that outlet on your Apex Display Screen Module

Select “Control Type.”

A drop down of several wizards that can be used to program outlets will appear. These wizards and examples to use them will be described in the next few steps. The general wizard types include:

- **Light**, **Pump**, **Heater**, **Chiller**, **pH control**, **ORP control**, **Feeder** (for AFS), and **Advanced**.
All the wizards share one common configurable state—“Fallback.”

Fallback is what the outlet will do (on or off) if the EB8 module loses communication with your Apex Base Unit.

Program devices that should be ON in a fallback state (like a pump) “Fallback On.” Program devices that should be OFF in a fallback state (like your lights) “Fallback Off.”

If you wanted to configure a light to turn on at 8am and off at 7pm. Select “Light” option in “Control Type”

On Time: 8:00
Off Time: 19:00
Shut Down Probe: Temp
Shut Down Value: 81.0
Hysteresis: 30:00

Notes: Shut Down Probe/Value: If temperature goes above 81.0 the light will turn off.
Hysteresis: How long the light will be off if it goes above shutdown value
STEP 6: CONFIGURING YOUR APEX (Continued)

If you wanted to configure a heater to control temperature to 77 degrees. Select “Heater” option in “Control Type”

**On Temp**: 76.5  
**Off Temp**: 77.5

*Notes*: Heater will turn on when temperature falls below 76.5 and turn off when it goes above 77.5.  
If heater has internal thermostat, set it slightly above the “Off Temp,” so 79.0

If you wanted to configure a Return pump to be on all the time except during a feed mode and maintenance mode, then select “Advanced” option in “Control Type”

```
Fallback ON
Set ON
If FeedA 000 Then Off
If FeedB 000 Then Off
```

*Notes*: Any wizard can be switched to advance control type after updating the outlet to add more FeedA and FeedB have been configured to be 5 and 30 minutes long:  
Display screen: Setup> Outlet Setup> Feed Interval> Select Feed> Feed Interval
STEP 6: CONFIGURING YOUR APEX (Continued)

If you wanted to configure a chiller/fan in outlet #1 to control temperature to 77 degrees. Select “Chiller” option in “Control Type”

On Temp: 78.0
Off Temp: 77.0

Notes: Chiller will turn on when temperature rises above 78.0 and turn off when it goes above 77.0. If chiller has internal thermostat set it slightly below the “On Temp,” so 76.0.

If you wanted to configure a powerhead to turn on/off every 30 seconds and off when a “feed mode” is activated. Select “Pump” option in “Control Type”

Initial Off Time: 0:00
On Time: 0:30
Off Time: 0:30
Feed Timer: A
Feed Timer Delay: 0

Notes: A power head programmed to run opposite of this one would reverse the Initial Off (0:30) and Off time (0:00).
STEP 6: CONFIGURING YOUR APEX (Continued)

We have not covered the pH Wizard (Calcium Reactor Setup), ORP wizard (Ozone Control), and Feeder Wizard (AFS) as their complexity and application is outside the scope of this document.

Please refer to the Apex Comprehensive Reference Manual and Automatic Feeding System documentation for assistance in configuring outlets for these applications.

IMPORTANT:
After configuring an outlet to the needed function, the configuration needs to be uploaded to your Apex.

To do this select the upload button in the top right hand corner of your Apex Fusion page.
STEP 6: CONFIGURING YOUR APEX (Continued)

After the configuration for that outlet has successfully be uploaded to your Apex, then you will see a “Successful Update” message.

Select “Ok”

To continue configuring your outlets select the output configuration icon and repeat the steps starting here for your other EB8 outlets.

If you do not plan on utilizing some of the outlets at this time, then label it as “NotUsed1”, “NotUsed2,” ETC.
STEP 7: CONTROLLING YOUR APEX

After the configuration of your outlets is complete, it is time to start having your controller do what it is all about—controlling your aquarium.

If not already there, go to your Apex Fusion Dashboard by selecting the dashboard icon.

On your dashboard you will see the different Apex Fusion tiles. The EB8 outlets now have the custom names you programmed.

They have an “Off,” “Auto,” and “On” state. Selecting “Off” or “On” will bypass the outlet’s configuration and turn it off or on immediately. To resume normal programming you must set the outlet back to “Auto”
When initially connecting devices, it is best to physically plug into a manually “Off” position.

Set all of your EB8 outlets to “Off”

Now plug in your aquarium equipment into their appropriately configured outlets.

Confirm that you can turn piece of equipment manually on, then back manually off. Then set the outlet to auto so it will begin its normal operation.

If you find a device cannot be turned on or off, please see the FAQ section at the end of this guide.
STEP 8: SETTING UP ALERTS

The Apex System cannot only control your equipment but also can alert you via an audible and/or an electronic alarm when things do not go as planned—*It is your tank insurance.*

To set this up, first select your account settings.

Select “Notification.”
STEP 8: SETTING UP ALERTS (Continued)

Select the plus sign in the top right hand corner.

Select an email address to enter - This is the email address where you want to receive alerts.

Click “Add Recipient” again to add a SMS/text message alert. Choose your carrier, and enter your phone number (no dots or dashes).
STEP 8: SETTING UP ALERTS (Continued)

Test to make sure that you can receive alerts at the email and SMS/test message address you entered.

Select the Gear, then select test.

You should receive the test alert within a few moments. If you do not get a test, confirm your cell/email address is correct before testing again.

To configure the conditions that will activate an Email/SMS alarm navigate to your output configuration page and select your email alarm outlet.
There are many possible conditions that can trigger an alert. By default you will receive an alert if temperature goes above 82 or below 75. If you wanted to receive emails regarding pH you might add:

If pH > 8.5 Then On
If pH < 7.7 Then On

Please refer to the Apex Comprehensive Reference Manual for additional alarm examples.

To receive audible alerts select the base_Alarm or base_Warn from your outputs page. This alert can be configured exactly as your email alert.

Each of the audible alert outlets will use a different sound tone. To configure these tones on the display screen go to System> Sounds Setup> Alarm Sound/Warn Sound
STEP 9: CUSTOMIZING YOUR APEX

Your Apex Fusion dashboard’s layout can be customized to your needs. To manipulate the layout of your dashboard click the unlock button in the top right hand corner of your Apex Fusion Dashboard.

After selecting the unlock button a new “unused tray” will open. Here you can drag and drop items to and from your dashboard.

For example, if you are not using some of your EB8 at this time, then place the those outlets into your “unused tray.”
A word about positioning your tiles. Apex Fusion is designed to be “mobile first.” Meaning if it doesn’t work on a phone or tablet, then it doesn’t work in Apex Fusion.

On your smart phone or tablet you may not have the space to display all three of these columns at once.

Therefore, they will be displayed column 1, column 2, or column 3 from top to bottom.

To access your Apex Fusion account on a mobile device, open your phone/tablet’s Internet browser. Navigate to apexfusion.com and sign in.

After signing in, bookmark the page to your home screen, so that you have quick and easy access to your Apex Fusion account from your mobile device (iOS displayed).
STEP 9: CUSTOMIZING YOUR APEX (Continued)

You’ll notice on your mobile device/tablet that your outlets are greyed out. This is a safety feature to prevent you from inadvertently turning an outlet on/off.

To remove the outlet cover simply swipe your finger left over the outlet cover. Swipe your finger right to close the outlet cover.

Use the unlock button to open/close all the outlets all at once.

You can change your outlet cover settings by navigating to your account settings.

Select Display and choose your appropriate preference.
CONCLUSION

Congratulations you completed the initial setup and configuration of your Apex AquaController System! The steps and programming introduced in this guide are simply an introduction to using your Apex System; but, this is just the beginning-the tip of the iceberg.

There are many resources available to you to get the most out of your Apex System, and to assist you if you are having trouble. To briefly describe these resources:

• **Apex Comprehensive Reference Manual**- A comprehensive guide to program and configure your controller to do just about anything.

• **Neptune Systems Documentation**- Here is the treasure chest of documentation and quick-starts for each module and device that is configurable with the Apex System

• **Neptune Systems Community Forum**- Our forum is a great place for users to help fellow users. Here you will find fellow users ready to help answer your questions or find an answer to an already asked question.

• **Official Neptune Systems Support**- If you want to go straight to the source, feel free to send us an email or contact us by phone. Email is the most efficient method to having your questions answered.
Below are a couple troubleshooting steps should you experience trouble with your initial setup.

**Problem:** On my Apex Display Screen it shows “Apex Fusion: Down” - even after I power-cycled the Apex.

**Answer 1:** Change the DNS servers in your controller.

To do this, on your display screen go to System> NetSetup> DHCP> Off. Then change the primary DNS Sever to 8.8.8.8 and the Alt DNS server to 4.2.2.1, then restart your controller.

**Answer 2:** Check to make sure your IP address is appropriate for your network.

To do this, on your display screen go to System> NetSetup> DHCP> Off. Then navigate to “IP Address” and “Gateway.” If your gateway was “192.168.0.1,” then your controller’s IP address should be 192.168.0.XX. If it is not, can you access your router at http://“Gateway” in your Internet browser.

If so, then modify your controller’s IP address to match the first three sets of numbers in your “gateway,” and restart your controller.

If not, then modify your gateway to match the first three sets of numbers in your “IP Address,” and restart the controller.

**Answer 3:** Restart your modem, then your router. If that does not work, then contact Neptune Systems.

**Problem:** My EB8 outlet does not turn my device on/off.

**Answer 1:** Make sure your outlet is uniquely named - no outlets can have the same name. If all are uniquely named, then test a common incandescent light bulb into the outlet. If it does not turn on/off, then contact Neptune Systems.

**Problem:** My EB8 outlet does not turn my device off.

**Answer 1:** Plug a common incandescent light bulb into the outlet. If it turns on/off correctly, then it sounds like this is a device that will not be controllable by the solid state/TRIAC outlets. Some devices, typically devices with very low power factors/low wattage, need to be run on the mechanical relay outlets (4/8).
<table>
<thead>
<tr>
<th><strong>Problem:</strong></th>
<th>My probe(s) does/do not appear to be reading accurately</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Answer 1:</strong></td>
<td>Place the probes in the calibration solution. If they do not read correctly, then attempt to recalibrate the probes. If you still continue to have trouble, then <a href="#">contact Neptune Systems</a>.</td>
</tr>
<tr>
<td><strong>Answer 2:</strong></td>
<td>If the probes reads correctly in the calibration solution, then place them in a cup of water outside the tank. Do they read differently or the same? If they read differently, then likely a piece of aquarium equipment is leaking stray voltage in the tank. Turn devices off one by one to determine which device. Look into replacing/repairing that device or a grounding probe.</td>
</tr>
<tr>
<td><strong>Answer 3:</strong></td>
<td>If the probe reads correctly in the calibration solution and the same in a cup of water as the tank, then turn off all of your aquarium equipment one by one. Does turning off an item cause the value to change in the cup of water? If so, then likely the probe is experiencing Electromagnetic Interference (EMI) from that device. The probe and the device should be moved as far from each-other as possible, and/or look into methods for RF Shielding.</td>
</tr>
<tr>
<td><strong>Answer 4:</strong></td>
<td>If the probe reads correctly in the calibration solution, and turning device turning on/off has no affect on the probe measurement, then likely the probe is reading correctly.</td>
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</table>