User Manual

V1.0.0

Important Safety Instructions

PLEASE READ AND FOLLOW ALL SAFETY INSTRUCTIONS BEFORE PROCEDING

DANGER
Discontinue use if any signs of water are present in any electronic/electrical device.

WARNING – To avoid injury to yourself and others, safety precautions should always be observed.

DANGER – Never attempt to service any electronic /electrical equipment before unplugging the device from the outlet. Risk of electrical shock if care is not taken. Special care should always be taken when operating any aquarium equipment. If the plug or receptacle gets wet, NEVER unplug it from the outlet. Always use the fuse or circuit breaker that supplies power to the device. Disconnect it and then examine for water presence.

- If device shows any sign of abnormal appearance, discontinue use.
- Never operate the device if plugs or cords are damaged, torn, ripped or malfunctioning.
- A "drip loop" should be arranged and position your aquarium stand and tank to the side of the power receptacle to avoid the device or power receptacle from getting wet. Please refer to Figure 1 below.
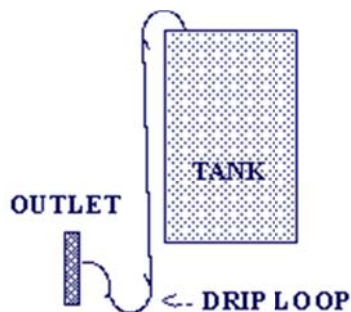
OUTLET   TANK
<-- DRIP LOOP

Figure 1

Product Overview

Thank you for choosing Reef Angel Controller kit for your Reefing needs.

Reef Angel is the first controller kit to offer the reefing hobbyist full control of hardware and software to accommodate all their reefing needs.

At your fingertips is the ability to create the most sophisticated controller you will ever need. With a very simple to use interface and easy to learn programming language, Reef Angel will give you endless possibilities.

Reef Angel was built in the same open-source electronics prototyping platform as the world famous Arduino. What does it mean? It means you can rest assured that your reef controller is working on the most stable platform on the market. Programmers from all over the world have spent countless hours perfecting the coding on this platform.

Not familiar with the programming world? Just looking for an all-in-one and out-of-the-box solution for your reef system? Not a problem. Reef Angel Controller comes with its own built-in software that will leave you with your mouth open as it's taking care of your reef system.

Reef Angel Star Controller

Package Contents

1. Head Unit
2. Universal Relay Box Expansion
3. SD Card
4. 3x Temperature probes
5. pH probe
6. pH 7.0 and pH 10.0 calibration fluids
7. 2x float switches
8. Probe bracket
9. Ethernet cable
10. Power adapter
11. USB cable

Features

1. 2.8" capacitive touch screen
2. SD Card for storage of data and images
3. 3x temperature probe ports
4. pH port
5. 3x input ports
6. 4x output ports (configurable to 0-5V PWM, 0-5V analog, 0-10V PWM or 0-10V analog)
7. Rope leak detector port (rope leak sensor not included)
8. 2x Expansion ports
9. Ethernet port
10. 8x controllable outlet ports
11. Cloud server compatible (Control and monitor without any port forwarding setup)
12. Remote firmware update

Controller Head Unit

1. 2.8" Capacitive Touch Screen
2. Power/Programming Port
3. SD Card
4. Status LED
5. Temperature Probe Ports
6. pH Probe Port
7. Input Ports
8. Output Ports
9. Rope Leak Detector Port

10. Expansion Ports
11. Ethernet Port

Output Port

Make sure to pay attention to the polarity.

Pin	Label
1	Daylight 1 +
2	Daylight 1 -
3	Daylight 2 +
4	Daylight 2 -
5	Actinic 1 +
6	Actinic 1 -
7	Actinic 2 +
8	Actinic 2 -

Input Port

There is no polarity on the input ports when used with the float switches.

High   Low   Alarm
ATO   ATO

Getting Started

Using your Reef Angel Controller for the first time

1. Plug one side of the USB cable on the programming port on the side of your Reef Angel controller
2. Plug the other end on your computer.
3. Open your browser and go to http://forum.reefangel.com/webwizard
4. Click the menu button on the top left corner.
5. Click "Download Plugin"
6. The plugin will be downloaded. Install it when the download is completed
7. You should see a blue box with "Plugin found and connected" if the plug in is installed correctly
8. Click Wizard
9. Choose Reef Angel Star controller
10. Follow the prompt and set it up according to your own environment
11. At the end, the web wizard will generate the code that you can upload to your controller
12. Make sure to select the correct local serial port. Remote upload is not available for the first time setup
13. When the upload is completed, the unit will reboot and your code will be running.
14. Disconnect the USB cable from the computer and connect it to the power adapter.