

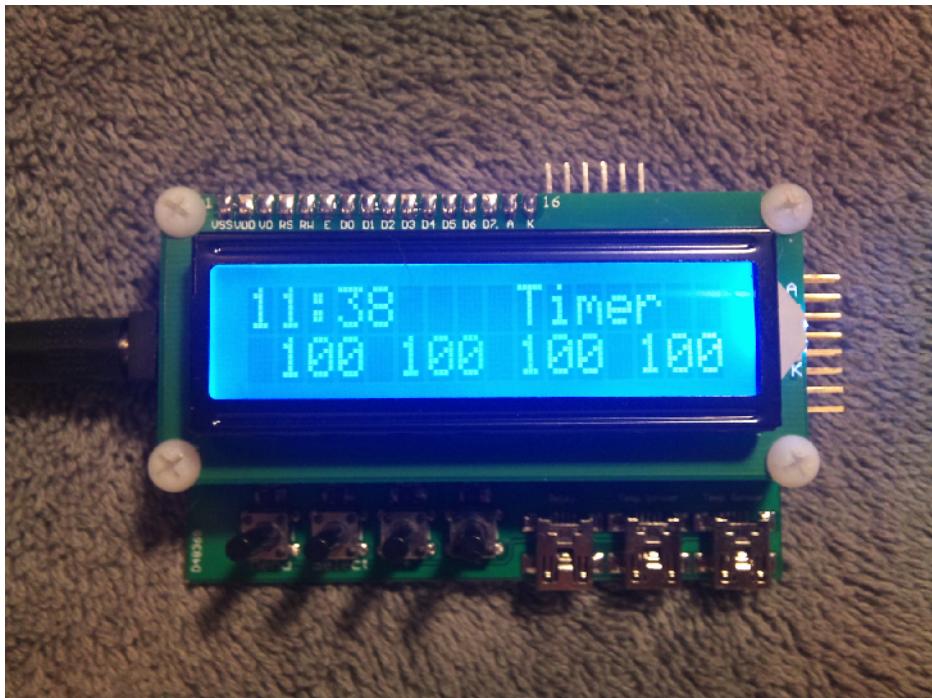
SALTYDOG AQUARIUMS



Typhon

Reef LED Controller

Basic Version



Disclaimer Notice

Please read the entire manual before using the Typhon LED Controller. By using the Typhon LED Controller, you agree that SaltyDog Aquariums™ will not be held responsible for any injury and damage as a result of using the Typhon LED Controller.

Although the information and recommendations in this manual are presented in good faith and believed to be correct, SaltyDog Aquariums™ makes no representations or warranties as to the completeness or accuracy of the information.

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Credit

SaltyDog Aquariums™ gives full credit to N. Enders and R. Ensminger who designed and created the Typhon. The original Arduino sketch has been minimally modified to give a better user interface. This Typhon unit has been assembled by SaltyDog Aquariums™ and brought to you under [Creative Commons 3.0 BY-SA](#).

Helpful Links

MeanWell LED Drivers: <http://www.meanwell.com/webnet/search/seriessearch.html>

LuxDrive™ 3021 BuckPuck: <http://www.luxdrive.com/content/3021-BuckPuck.pdf>

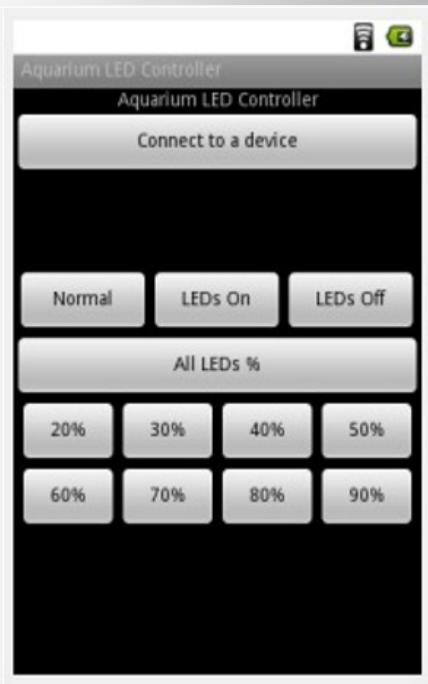
Arduino: <http://www.arduino.cc>

Quick Overview

Typhon LED Controller (Typhon) is an Arduino-based platform that provides four independent output channels (both 5V PWM and 10V PWM signals) for dimmable LED drivers. This LED controller controls each channel with “Start” and “End” times, fade duration, minimum and maximum intensity level. It also offers 2 inputs via USB-mini for (2) DS18B20 Temperature sensors, an output for a 4-channel relay unit and Bluetooth lighting control via a Bluetooth Module (Purchased Separately) with our Android App (Purchased Separately).

What You Need:

- Project Box (HIGHLY recommended to physically and electrically isolate the Typhon preventing premature failure and/or electrical shock).
- Electrical Tape or Heat Shrink Wire Wrap.
- 12V AC/DC Power Adapter (Universal).
- Optional FTDI USB Cable with 6-pin connector to update the Typhon with new/modified Arduino sketches.
- Optional 4 Channel Relay Unit
- Optional Bluetooth Module
- Optional Android Application



Compatible Dimmable LED Drivers

Meanwell LED Drivers

- ELN-30-XXP, ELN-60-XXP (such as ELN-60-48P)
- HLN-40H-XXB, HLN-60H-XXB, HLN-80H-XXB

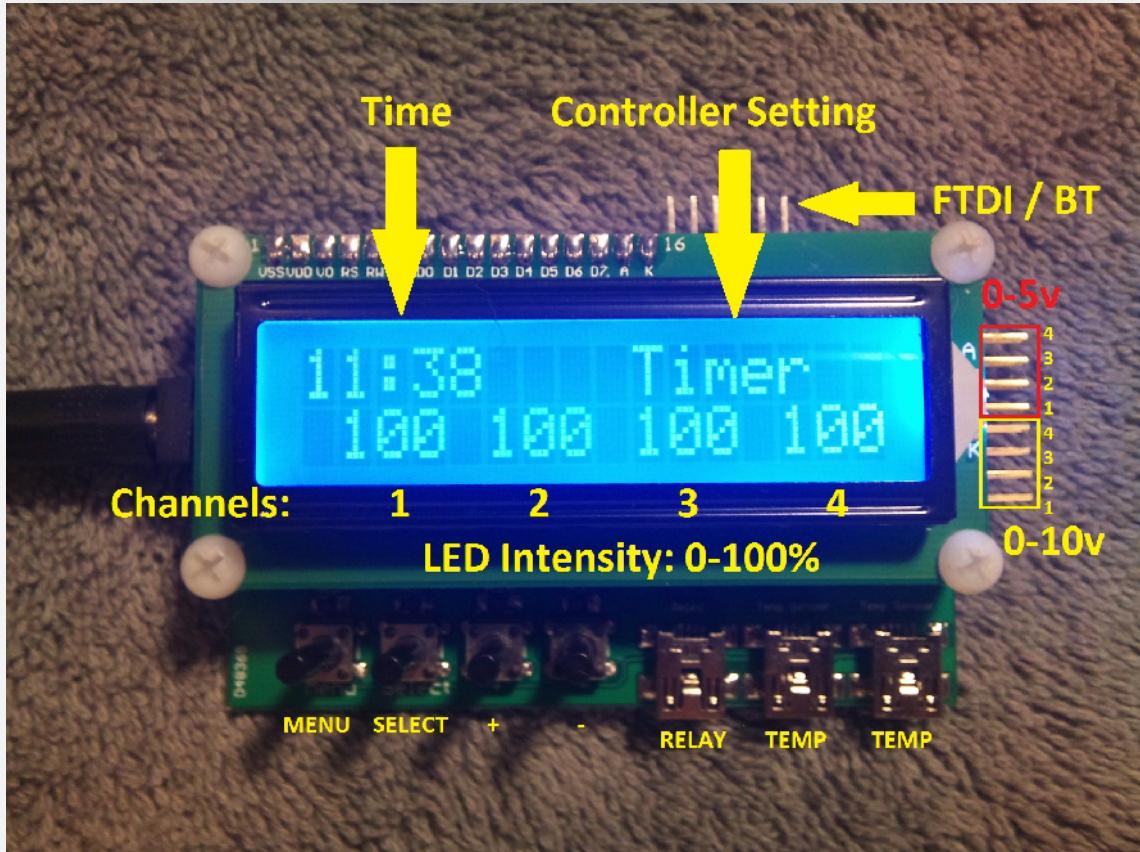
LuxDrive™ 3021 BuckPuck

- 3021-D-E-XXXXmA

NOTE: BuckPuck LED drivers have inverted 0-5V PWM input signals. Thus, 0% intensity on the Typhon will increase the driver output to 100%, and 100% intensity on the Typhon will decrease the driver output to 0%. Easy solution: Set the "Start Time" on the Typhon to the desired time when you want the LED channel to turn "OFF", and vice versa.

OnSemi CAT4101

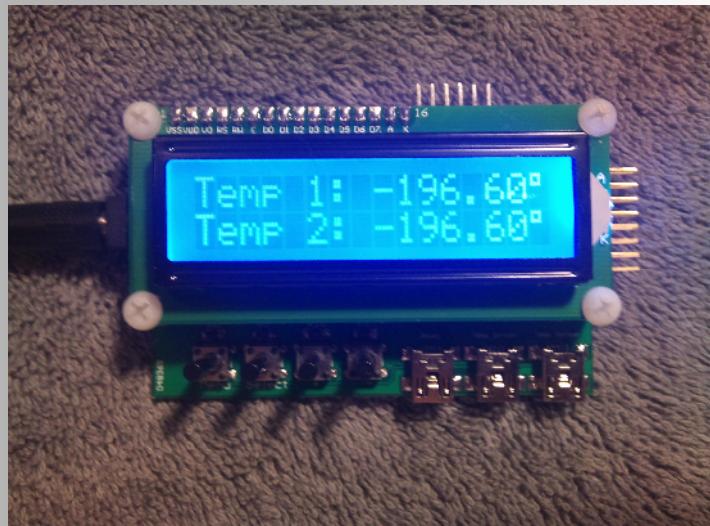
Controller Overview



The Typhon LED Controller has a 16x2 LCD display. What this means is there are two displayable lines with a maximum of 16 characters. The first line of the main screen shows the current time and the setting of the lighting schedule. The bottom line will display each channel with the current intensity. Channels are listed from right to left with channel 1 being the first displayed.

Temperature Reading Menu

This menu allows for reading of two DS18B20 Temperature Sensors via the USB-Mini plug inputs. One can be used for water temperature readings while the second is used for heatsink temperature reading.



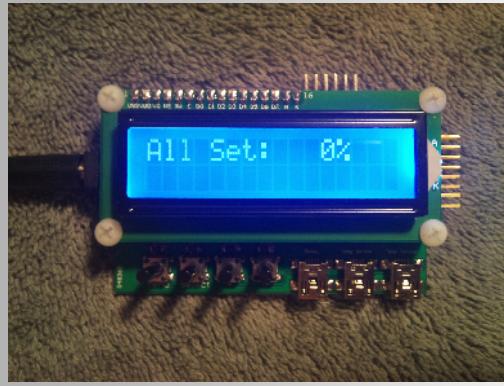
Controller Menu and Settings

When You first receive your controller there will be some settings you will need to change to suite your needs. The next few pages we will provide a walk-through through the menu system so you can custom tailor your settings. There are 13 Main menu's and sub-menu's for each Main Menu. When on the Main Display by pressing the Menu Button you can be taken to the following menu's.

- Temperature Reading
- Timer and LED Over-ride Functions
- Channel 1 Setting
- Channel 2 Setting
- Channel 3 Setting
- Channel 4 Setting
- Time and Date Setting
- Controller Contributors

Timer & LED Over-ride

1. By default, the Typhon is set to “Timer” Mode. The other modes are “All Channels MAX”, “All Channels MIN”, and “All Set %”.
2. To adjust the mode, push “Menu” and then “Select” to scroll through.
3. “All Channels MAX” and “All Channels MIN” will change the intensity level to 100% and 0%, respectively.
4. “All Set %” allows adjustment of the light intensity for all the channels at once.



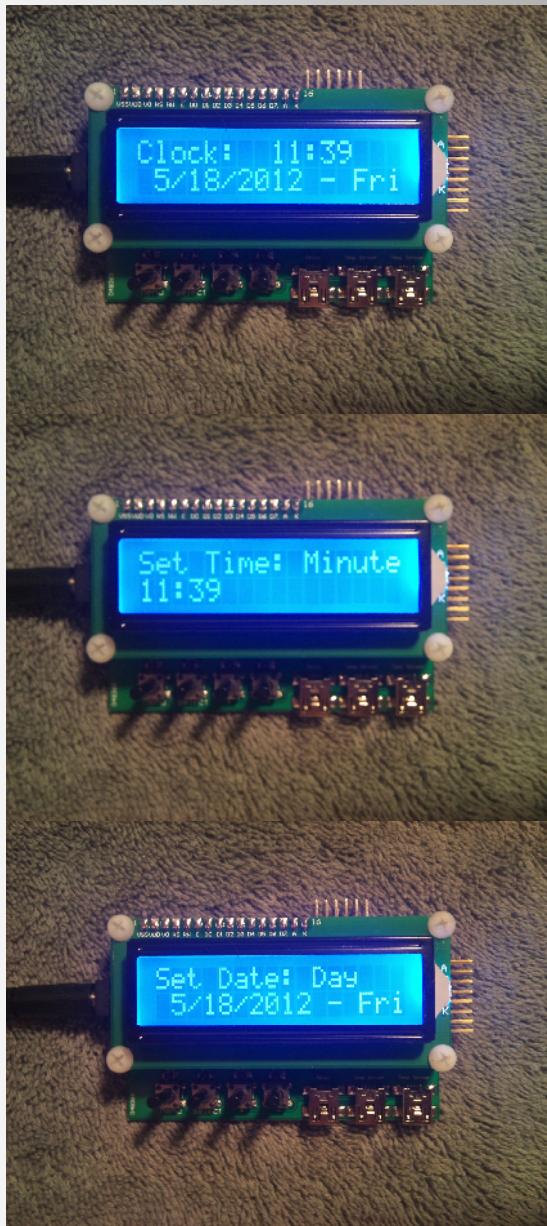
Channel 1-4 Settings

1. To set “Start” and “End” times, fade duration, minimum and maximum light intensity for the LEDs controlled by Channel 1, push “Menu” twice to reach “Channel 1 Start.”
2. Push “Select” to move forward to “Channel 1 Start.” Use the (+) and (-) buttons to set the desired start time.
3. Push “Select” to move forward to “Channel 1 End.” Use the (+) and (-) buttons to set the desired end time.
4. Push “Select” to move forward to “Channel 1 Fade Duration.” Using (+) and (-) buttons, adjust the duration of fade time (HH:MM) of light intensity for Channel 1
5. Push “Select” to move forward to “Channel 1 Min Level.” Adjust maximum intensity from 0-100% with the (+) and (-) buttons.
6. Push “Select” to move forward to “Channel 1 Max Level.” Adjust maximum intensity from 0-100% with the (+) and (-) buttons.
7. Push “Menu” to move onto the next channel.
8. Repeat steps 2-6 for the other 3 channels, if you plan to use them.



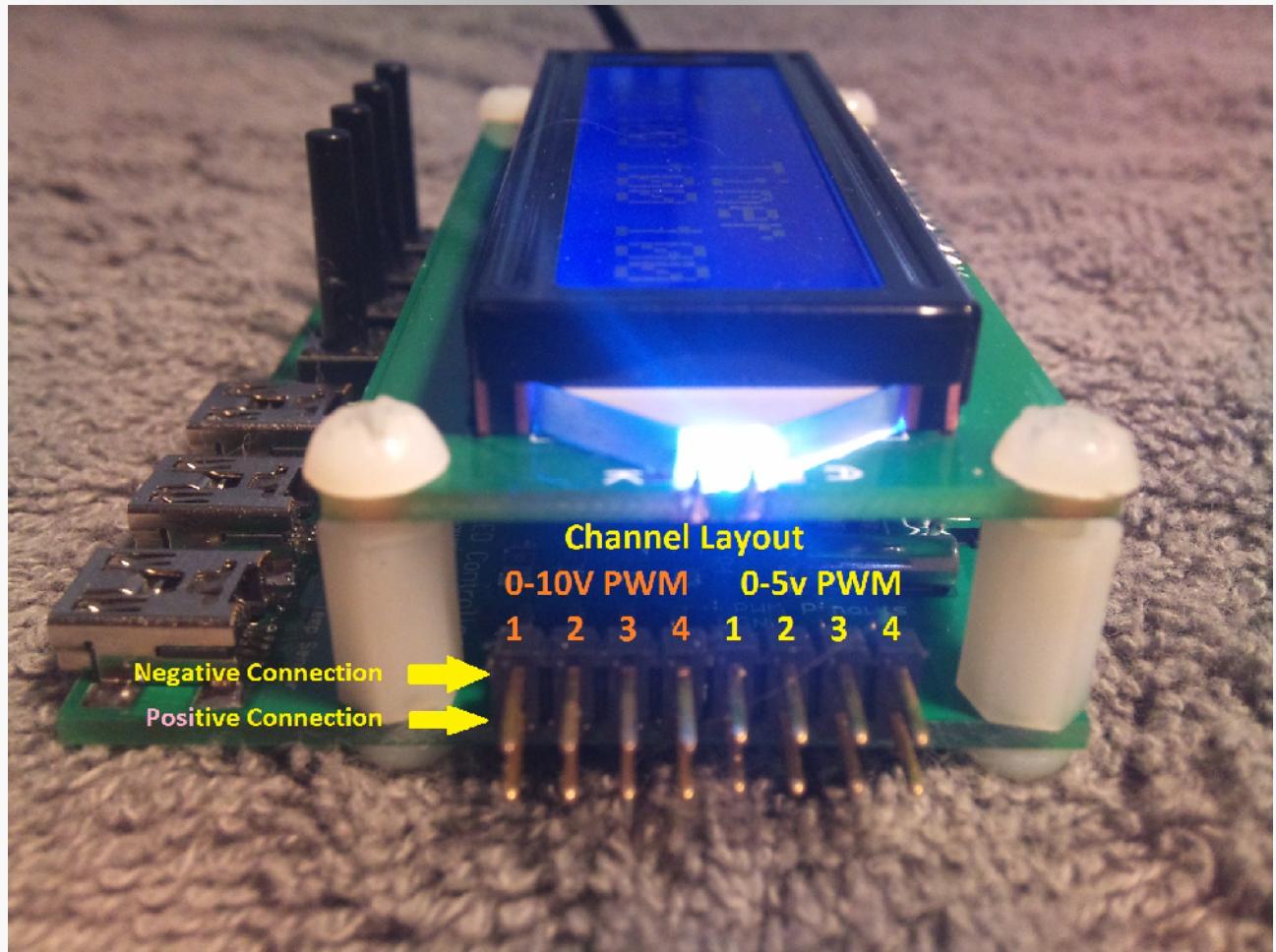
Time and Date Settings

1. Push “Menu” until reaching the “Clock” menu.
2. Push “Select” moving forward to the “Set Time: Hour” menu.
3. Push the (+) or (-) buttons to adjust the Hours.
4. Push “select” again until reaching the “Set Time: Minutes” menu.
5. Push the (+) or (-) buttons to adjust the Minutes.
6. Push “Select” again moving forward to the “Set Date: Month” menu.
7. Push the (+) or (-) buttons to adjust the Month.
8. Push “Select” again until reaching the “Set Date: Day” menu.
9. Push the (+) or (-) buttons to adjust the Day.
10. Push “Select” again moving forward to the “Set Date: Year” menu.
11. Push the (+) or (-) buttons to adjust the Year.
10. Push “Select” again moving forward to the “Set Date: Day of Week” menu.
11. Push the (+) or (-) buttons to adjust the Day of Week.
12. Push “Menu” to set the Clock.



Driver Connections

There are a total of 8 connections on the board. 4 are for the 0-10v PWM out-put and 4 for the 0-5v PWM out-put. The top row of headers are the negative connections and the bottom row of headers are the positive connections.



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