



YESCO®

Lighting Controller

Data HUB

YDHUB4

YDHUB40

YDHUB40P

LED Lighting Systems

Installation Manual

(Version 1.3)

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DMX Data Hub User Guide (Version 1.3)

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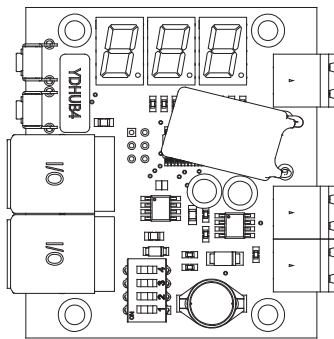
DMX Data Hub User Guide (Version 1.3)

The YESCO Data Hub 4 is a protocol conversion device taking in DMX signals with low voltage power to drive Yesco Smart Products including the SmartStrip™ and SmartPuck™ LED lighting fixtures. This device also has several additional functions built-in to ease installation while allowing operations without additional components.

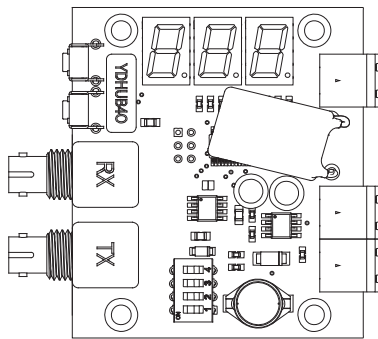
Features:

- Power supply voltage 5-30VDC
- Maximum output current 5A
- Push-button DMX channel setting with numerical display
- Full range DMX channel output
- Stand-alone color morphing mode
- Stand-alone 24 bit color steady-burn
- Built-in output intensity adjustment function
- Available in three communication media types:
 - CAT5 or better UTP cable (YDHUB4)
 - Glass core fiber optic cable with ST terminations (YDHUB40)
 - 1mm plastic optical fiber (YDHUB40P)

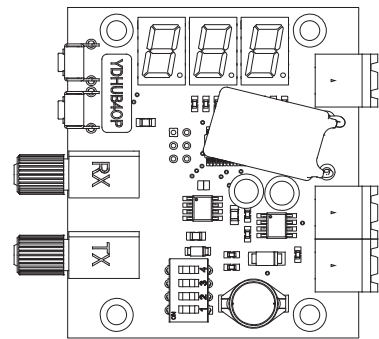
Device Identification



YDHUB4

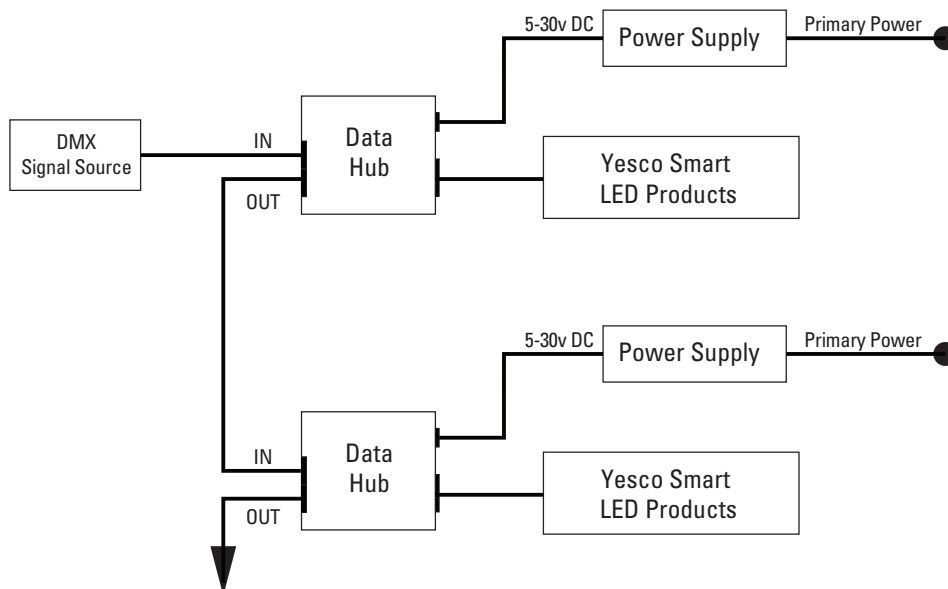


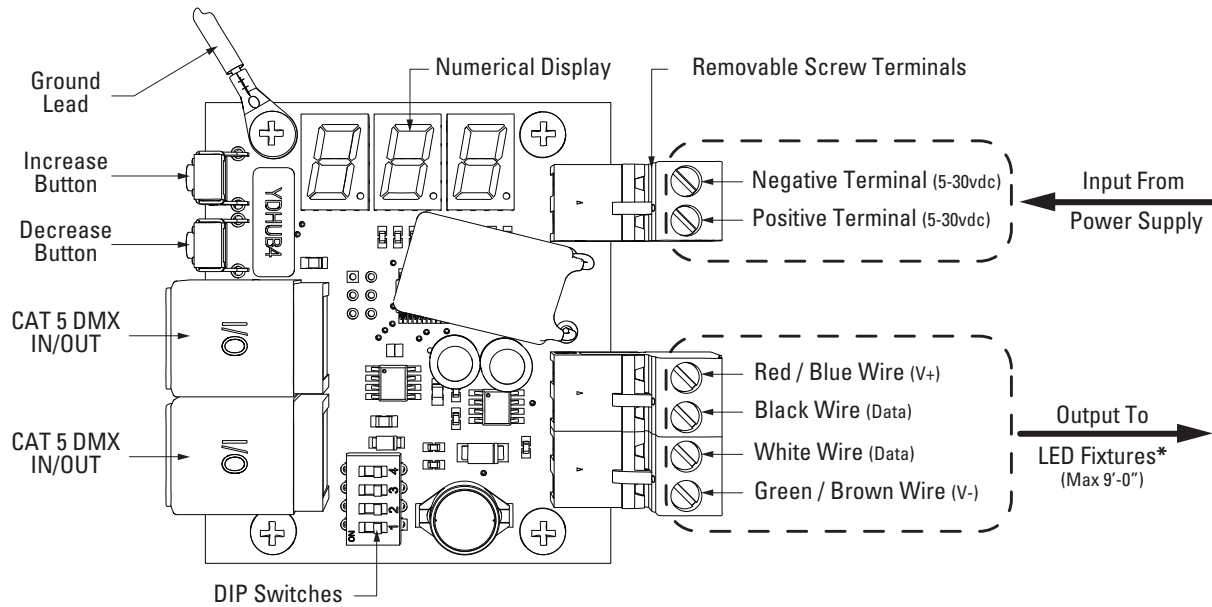
YDHUB40



YDHUB40P

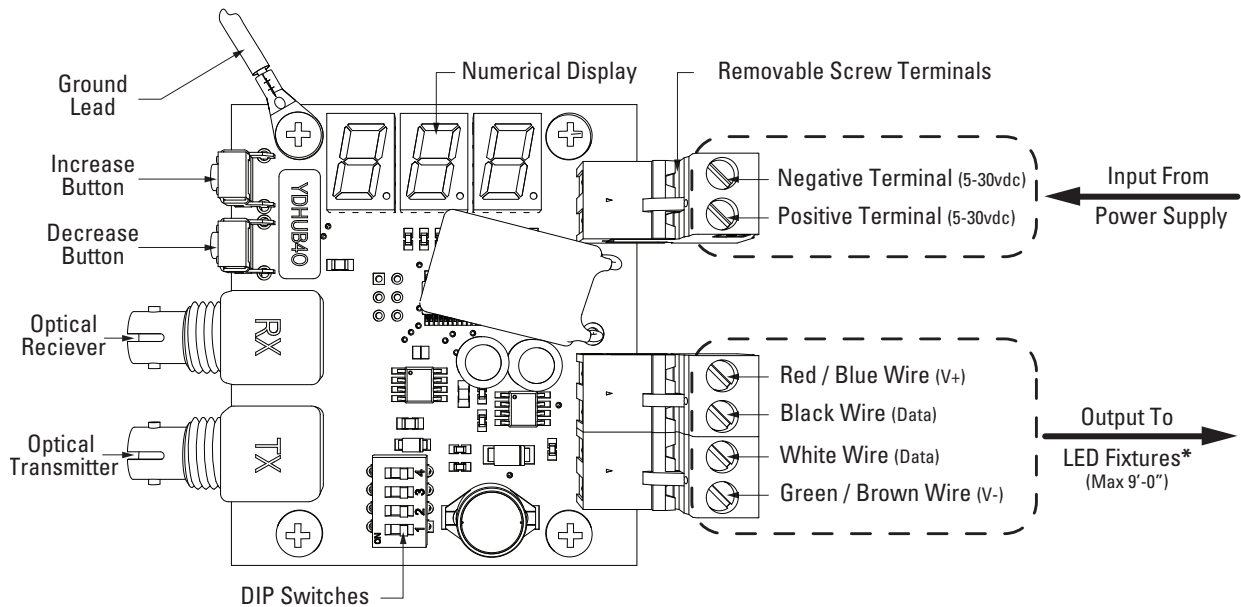
Connection Diagram



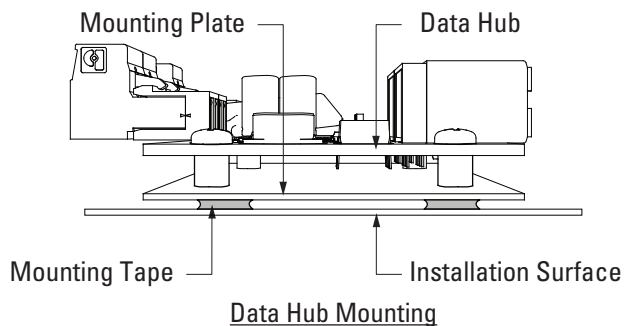
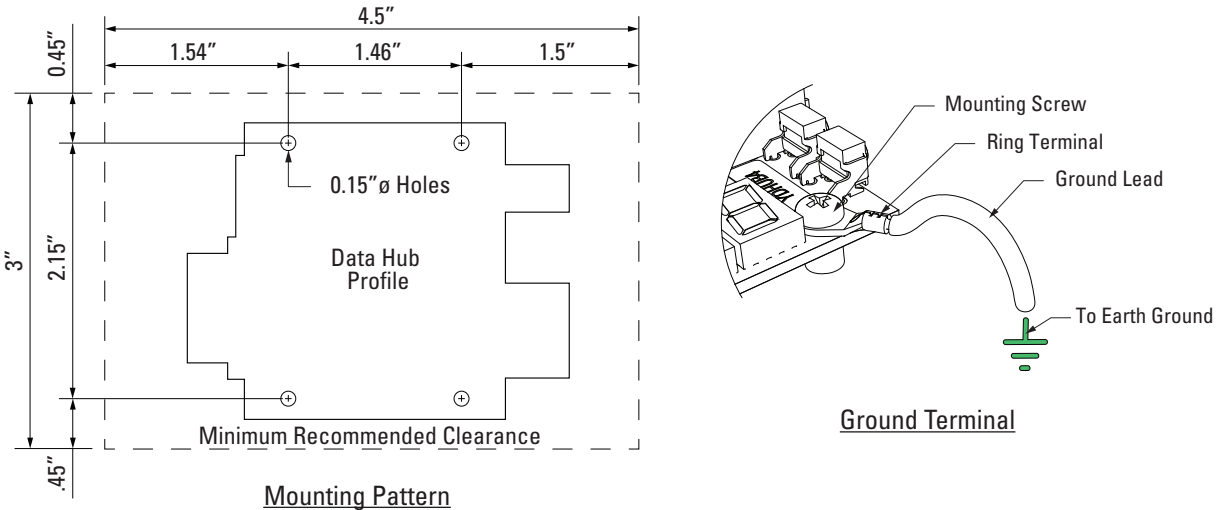


YDHUB4

*** DO NOT HOT SWAP**
Ensure DC power is off before connecting or disconnecting the output



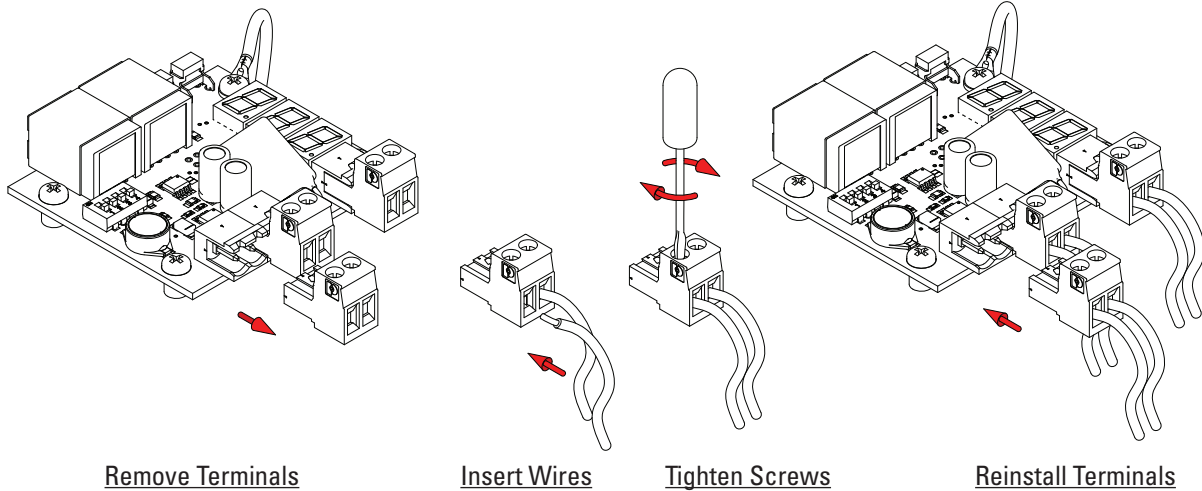
YDHUB40 and YDHUB40P



The Yesco Data Hub is an electrical component that is designed to function in a variety of applications, in order to maintain a small package and versatility; it cannot be exposed to the elements. To complete the installation, a protective enclosure is required to house the data hub and any supporting components which may be required for your installation. Allocate some space near the led fixtures to accommodate an enclosure large enough to house all the required components while maintaining ease of accessibility during and after installation for service or maintenance work at a future date. When selecting an enclosure please remember to choose one with the proper weather resistance rating which is suitable for the installation location, while being in accordance to any governing codes and regulations.

When mounting the Data Hub into its final location, clearance needs to be maintained around all sides to ease of installation and allow proper operation. The suggested minimum space allowance is an area of 4 1/2" wide by 3" high and 2" tall of clear space is recommended. Mounting on a solid substrate with mounting tape is recommended and silicone can also be used for additional security. **The supplied grounding lead on the data hub must be bonded to earth ground, failure to perform this procedure can result in damages to the entire LED system.**

Proceed with installing the power supplies; if multiple LED systems were ordered please be aware there may be different power supplies as each system has its unique power requirements. Check to verify the output voltage and currents, they are properly matched to the correct led fixtures. If not paired correctly damage to the entire LED system may occur. Please refer to the documentation provided by the manufacture on instructions and procedures of the installation process. It is recommended that only a qualified electrician knowledgeable in national and local electrical codes is performing the work to ensure your installation conforms to all applicable regulations.

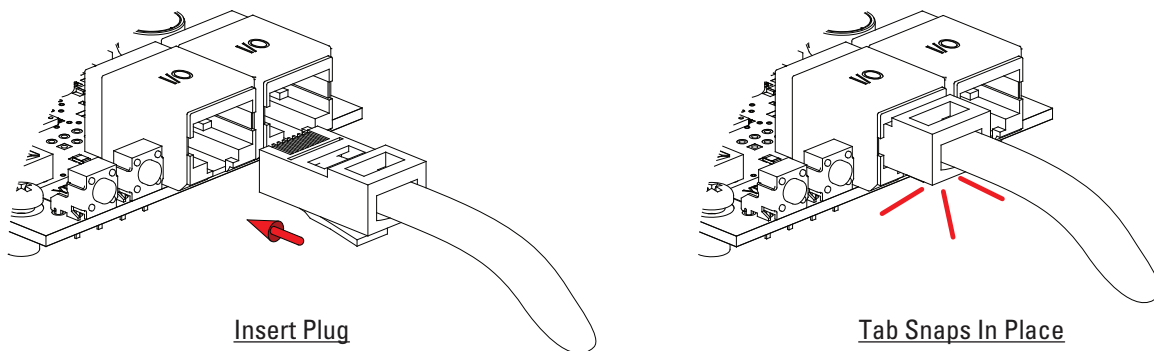


Removable screw terminal contacts are provided to ease installation of wires, to start please remove terminals from the data hub, then insert a stripped wire end into the proper location and tighten with a flat bladed screwdriver to no more than 0.6 Nm of force. Then reinstall the terminals in the proper location once all wires have been attached.

Connect the power supply output to the data hub power input, refer back to power supply instructions if needed, the correct polarity and voltage is required for proper operation, refer to the separate LED fixture instructions to verify the correct voltage is being supplied for the fixture.

Locate where each LED System starts and run the appropriate wires to each data hub location. If any holes are made please check to see that the cables are properly protected against abrasion while being sealed from exposure per location. Any wires that are run should be supported and secured along the entire length to minimize any damage. Connect the wire end of each cable to the data hub's output as shown on the Device Overview page. After everything is installed and connected go back through the entire system to check that all components are installed correctly and that there are no loose, missing or abnormal occurrences. Secure loose wiring as required to help reduce any damage to the system.

DO NOT power the system on after all electrical connections are made. The Data Hub outputs are not hot swappable, ensure that the power is shut off prior to connecting or disconnecting any LED fixtures. Please refer to the Data Hub operation manual in order to proceed with the next section of installation.

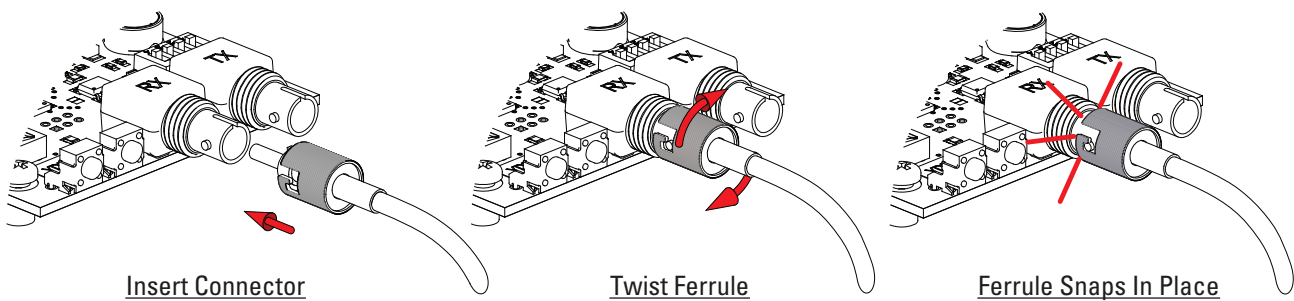
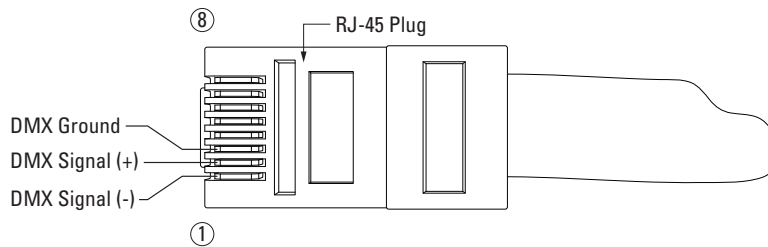


YDHUB4: CAT5 or better UTP cable is used for communications among devices, pre-made patch cables or field terminated cables may be used, make sure all connectors are terminated straight through using the T568B standard, the maximum length per data runs should not exceed 350 linear feet. Each Data Hub is fitted with two RJ-45 ports, either port may be used to connect to the data source, the other port may be used for sending signals to subsequent Data Hubs in the system. Common DMX 512-A controllers may be used to operate your lighting system. This data hub is fitted with two RJ-45 ports wired using the standard pinout shown in the RJ-45 Pinout Diagram.

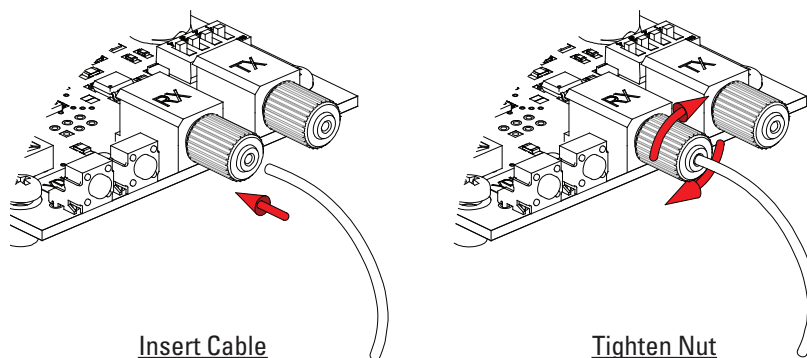
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RJ-45 Pinout Diagram

Pin	Function
1	DMX Signal (-)
2	DMX Signal (+)
3	DMX Ground
4	No Connection
5	No Connection
6	No Connection
7	No Connection
8	No Connection









YDHUBO: Fiber optic cables of 62.5/125 μm multi-mode with ST / BFOC connectors are used for communications among devices. It is recommended that only qualified personnel well trained in fiber optics is performing cable installations and terminations ensuring a fault free data system. Next to the decrease button is the receiver port which gets connected to the data source. Located towards the bottom is the sender port which gets connected to subsequent Data Hubs in the system. The maximum length per data run should not exceed 2300 linear feet.



YDHUBOP: A connector less style of plastic optic fiber (POF) cable with a 1000 μm jacket and 980 μm core is utilized. A receiver port is located next to decrease button and transmitter located towards the bottom of the Data Hub. This version offers ease of installation with simple field terminations; the maximum length per data run should not exceed 500 linear feet. The cables can be cut with razor blade for best results, other methods can be used such as scissors or lineman cutters but the ends may need to be sanded/polished. Once cut to size insert the cable end into a corresponding port until it bottoms out. Finally tighten the compression nut on housing until a snug fit is achieved and the cable is resistant to pullout.

Once all connections are complete, check the surrounding areas for any foreign objects such as metal shards or wire clippings, and remove when observed to help reduce any potential for shortage hazards. Proceed with powering the system on, digits should appear on the numerical displays, once are confirmed on the Data Hubs, continue along to the programming process in the following page. If there is no display, go back and double check the work confirming the installation has been preformed correctly and there is power to the system.

Program Functions

Function	SW 1	SW 2	SW 3	SW 4	Diagram
DMX "Full Matrix"	off	off	off	on	
DMX "Single Matrix"	on	off	off	on	
DMX "Half Matrix"	off	on	off	on	
Output Intensity Setup	on	on	off	on	
Stand-Alone Set Red Level	off	off	on	on	
Stand-Alone Set Green Level	on	off	on	on	
Stand-Alone Set Blue Level	off	on	on	on	
Stand-Alone Color Morph	on	on	on	on	

DMX "Full Matrix": This setting is the normal DMX operation mode. Each LED fixture pixel is controlled independently to display the color of its corresponding DMX channels. Press the increase / decrease buttons to set the starting DMX address per data hub, address 1-170 will appear on the numerical display. Holding the buttons during the setup will allow for more rapid changes.

DMX "Single Matrix": This setting allows the Smart Strip to simulate Yesco's standard LED strips. In this mode, all LED Fixtures connected to the data hub, will operate as one single pixel. The DMX address is set using the increase / decrease buttons, within the range of 1-170

DMX "Half Matrix": Every two pixels of the LED Fixtures are controlled simultaneously acting as one, reducing the number of DMX address if required or allowing the fixtures to be controlled with less resolution. DMX address can be set using the increase / decrease buttons.

Output Intensity Setup: In this mode the LED Fixtures will display a white color. The output intensity level of (0-255) will appear on the numerical display. Notice the decimal point of the first and third digit will be lit. Use the increase / decrease buttons to adjust the intensity levels. This function may be used for calibrating replacement LED Fixtures, to match existing fixtures in order to maintain uniform light output. The default value is set at 100% which is displayed as 255. Upon finishing the setup, switch back to DMX mode and the fixtures will illuminate with the new calibration intensity.

Stand-Alone Set Red Level: This brings up a single color steady burn in red. The 8 bit red color level (0-255) can be set using the increase / decrease buttons. While adjusting the red set level a decimal point will appear on the first digit indicating red adjustment.

Stand-Alone Set Green Level: This brings up a single color steady burn in green. The 8 bit green color level (0-255) can be set using the increase / decrease buttons. While adjusting the green set level a decimal point will appear on the second digit indicating green adjustment.

Stand-Alone Set Blue Level: This brings up a single color steady burn in blue. The 8 bit blue color level (0-255) can be set using the increase / decrease buttons. While adjusting the blue set level a decimal point will appear on the third digit indicating blue adjustment.

Stand-Alone Color Morph: In this mode, the LED Fixtures connected will display a continuously color changing pattern. The numerical display will show the color changing speed, with all three decimal points displayed. Speed adjustment is changed through adjustment with the increase / decrease buttons. This function can be used as a self-test of LED system to ensure proper operation of the LED Fixtures.