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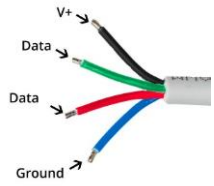
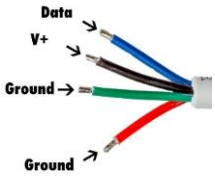
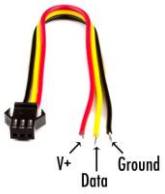
PixelControl Troubleshooting Manual

The latest in intelligent LED lighting is here, and it's amazing! Our PixelControl line combines the ability to produce millions of colors, with the technology needed to achieve individual pixel control. This PixelControl family of LED pixel lighting gives you higher LED densities and longer lengths for building larger and brighter LED digital displays, along with the superior quality light you're accustomed to from EnvironmentalLights.com products.

This document contains helpful hints for troubleshooting your PixelControl lighting system.

Wire Colors

Many issues can be avoided by paying careful attention to the wire colors and corresponding inputs on PixelControl lights. Many of our PixelControl products have different wire colors for different inputs. Check the wire diagrams on the product pages as reference when wiring up your system. Different PixelControl products might have slight wiring differences. Our PixelControl products have three inputs (although some products might require wiring two of the wires to one input).

PixelControl LED Strip Light	
XLPixelControl LED Strip Light	
4-in-1 PixelControl LED Strip Light	

Power

- The power or V+ wire supplies power to the PixelControl lights.
- Non-directional.
- Power can be supplied on either or both ends of lights.
- Power is defined by the required input voltage on the LED products you wish to control.
- **Before** supplying power to your lights, check if the PixelControl lights in use require 5, 12 or 24 VDC. **Never apply 12 or 24 VDC to 5 VDC products. Applying 12V or 24V to strip requiring 5V will destroy the product.

Data

- The data wire supplies the data signal to PixelControl lights. The data signal line supplies information to PixelControl lights, as defined by DMX input.
- Directional.
- Connect DATA channel on the DMX 512 PixelControl Decoder to the wire that corresponds to Data In on PixelControl lights.
- Some products have multiple data wires that can both be connected to the same channel. The extra data channel is a redundant circuit intended to increase reliability.

Ground

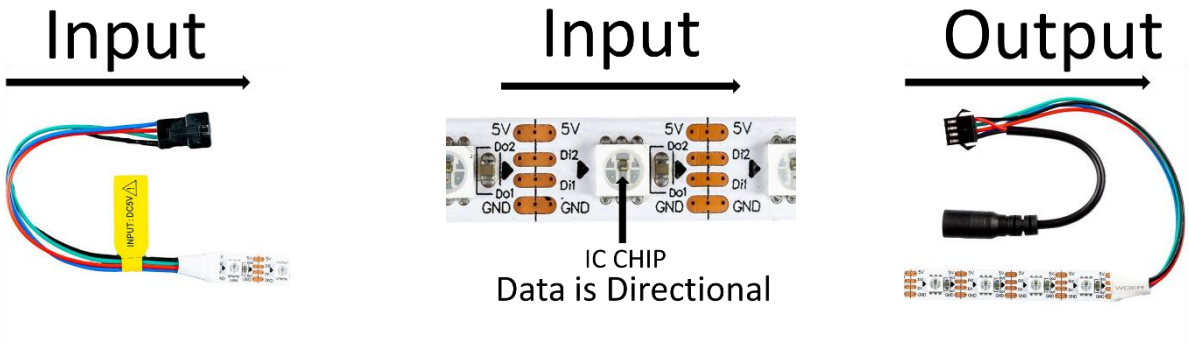
- The ground wire is the common ground line for PixelControl lights.
- Non-directional.
- Ground can be connected on either or both ends.
- All ground wires in the PixelControl light system need to be connected to a common ground wire, especially when using multiple power sources.
- If all grounds are not connected, then the PixelControl lights will display erratic behavior, such as rapid flashing or flickering.

Data Input Direction

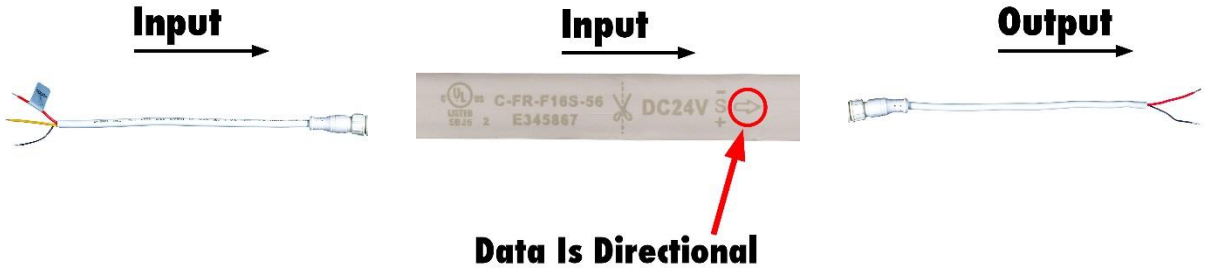
Always check to make sure that the correct input end on PixelControl lights is being used. PixelControl lights are one directional, so pay close attention to the orientation of the string. The data input direction is indicated by an arrow.

Always insert data at the female input. The LED products are labeled with arrows pointing from input to output. Data direction images are provided below for each PixelControl LED product.

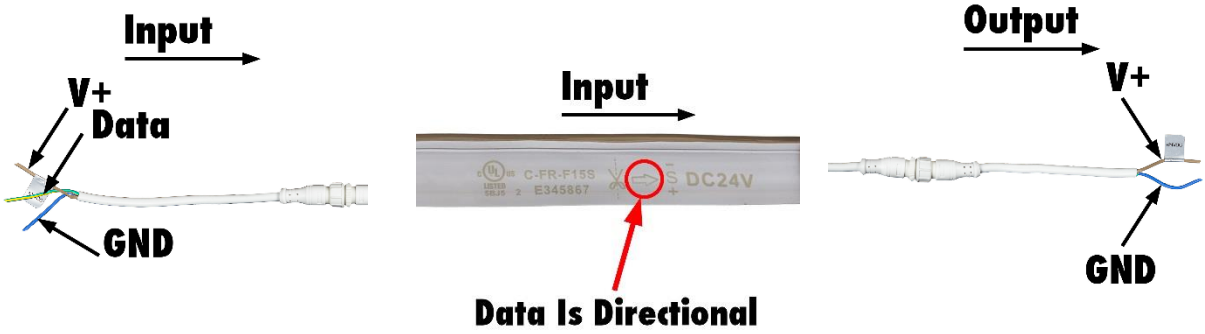
All PixelControl LED Strip Light:



RGB 5050 PixelControl LED Super Flat Rope:



RGB PixelControl LED Neon:



Power

Always use the proper voltage for your LED products – application of incorrect voltage can permanently damage your PixelControl lights. The required voltage for PixelControl lights is either 5, 12 or 24 VDC.

Please use the chart below to verify the required input voltage of your PixelControl lights:

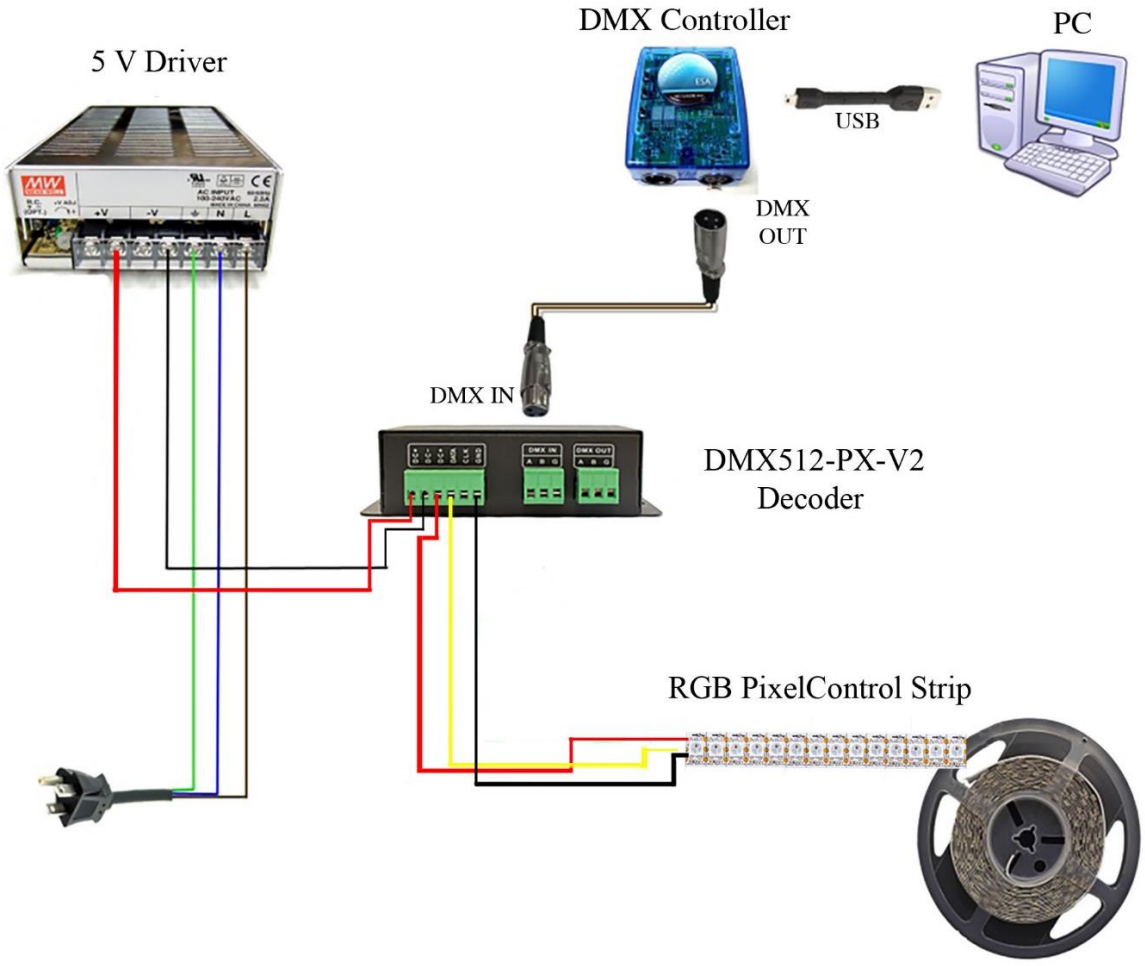
5 VDC	12VDC	24 VDC
RGB PixelControl LED Strip Lights	RGB XL PixelControl LED Strip Light	RGB PixelControl LED Neon
Waterproof PixelControl LED Strip Lights	Waterproof RGB XL PixelControl LED Strip Light	RGB 5050 PixelControl LED Super Flat Rope
4-in-1 RGB PixelControl LED Strip Lights		
Waterproof 4-in-1 RGB PixelControl LED Strip Lights		

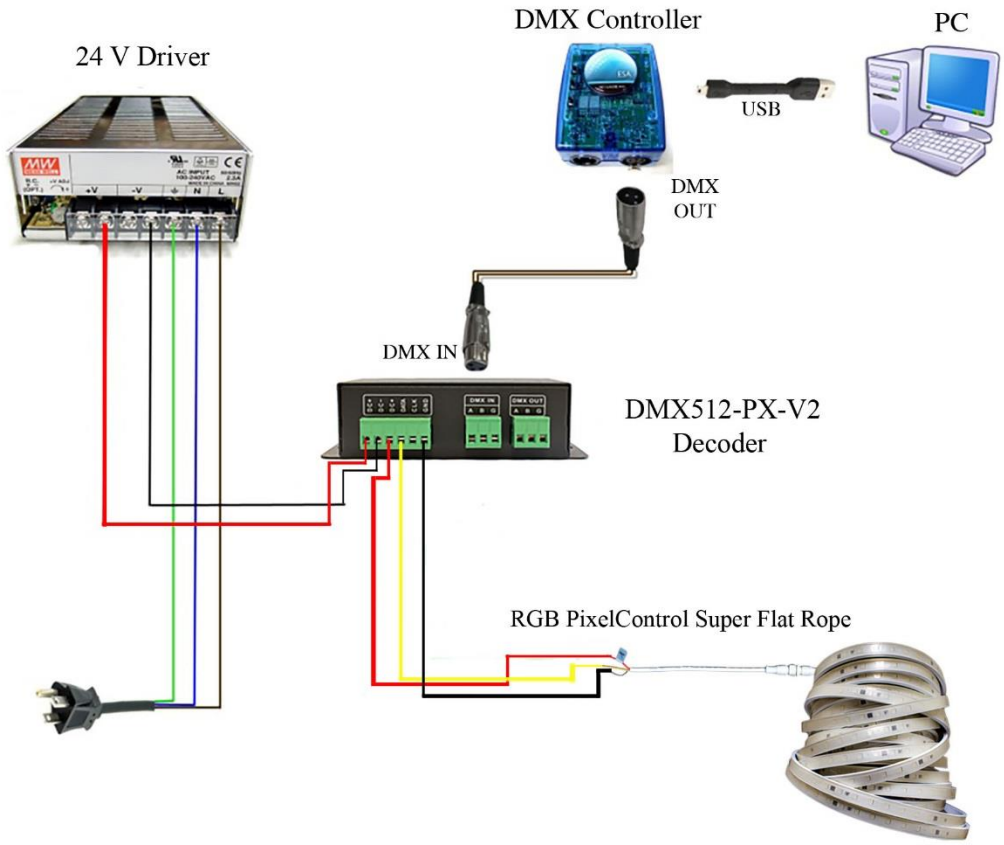
Power can be applied to one or both ends of the lights. We recommend applying power to both ends of a reel to ensure maximum consistency unless a UL Listing is a requirement. **Powering both ends will void the UL Listing.**

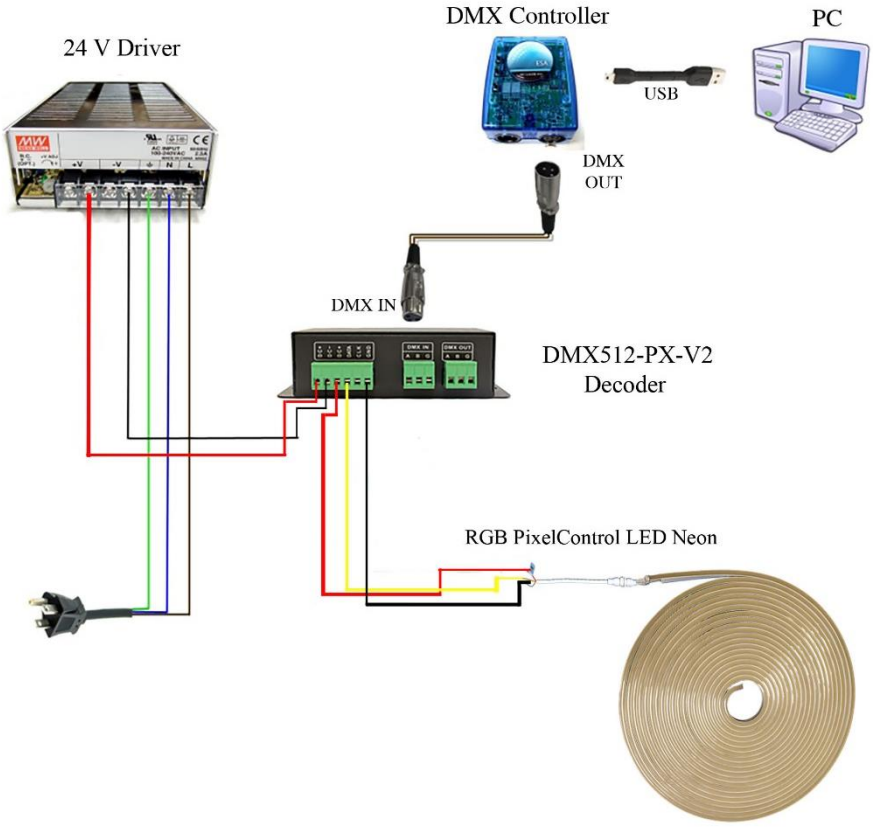
Insert power at proper intervals to avoid voltage drop. Voltage drop will cause dimming or discoloration of LEDs further from the power source. We recommend injecting power at both ends of the reel and between consecutive reels (if UL is not required) to ensure perfect color consistency.

Circuit Diagram

Be sure to match the voltage of the power supply to the required voltage of the PixelControl LED product. Carefully read the label on the product to confirm voltage before applying power.




DMX Controller
PC
24 V Driver
USB
DMX
OUT
DMX IN
DMX512-PX-V2
Decoder
RGB PixelControl Super Flat Rope


DMX Controller
PC
24 V Driver
USB
DMX
OUT
DMX IN
DMX512-PX-V2
Decoder
RGB PixelControl LED Neon

DMX 512 PixelControl Decoder: Dip Switch Settings

An address bit is set ON and has a value of one when it is in the down position. If you are having trouble controlling your lights via DMX and your lights appear to be steady on, then you may be in the functional test mode. DIP switch 10 should always be “off” when in DMX mode.

The DMX 512 PixelControl Decoder has built in functional test modes, which is active when DIP switch 10 is “on” in the down position. The different test modes can be accessed by setting the DIP switches. When in the Color Step and Color Fade modes, DIP switches 1-5 can be used to adjust the speed of the test modes. In either of these modes, if none of the DIP switches 1-5 are “on” the color will not change.

Dip Switch Settings	
1000000001	Red
0100000001	Green
0010000001	Blue
0001000001	Yellow
0000100001	Purple
0000010001	Cyan
0000001001	White
0000000101	Color Step
0000000011	Color Fade

Safety Precautions

Please take the following precautions:

1. This equipment, like all electrical equipment, should be installed by a qualified person.
2. Do not expose these LEDs, dimmers or power supplies to intense electro-magnetic fields, including lightning.
3. The controllers and power supplies are not waterproof. Keep them dry.
4. Always observe proper polarity.

When installing LED lighting, it is a good idea to follow this "dry-run" procedure:

1. Be sure you have everything you need before you start.
2. Lay out your lights and power supply on the floor or table.
3. There is some resistance in the LED lighting. If you see any color fading or dimming at the end of a long run, you may have too many LEDs for your power supply and you might need a bigger supply or shorter runs. Use a bus structure as described in rgb_manual.pdf. Call if you need assistance with larger projects.
4. Connect everything and test it to be sure it works and you have it connected properly. It is unlikely, but possible, that some part of your system is defective or was damaged during shipment. If that is the case, it will be very helpful to you to know that before you do all the work involved in installing custom LED lighting systems. You will also know if you damage anything during installation, which is really helpful in trouble-shooting because manufacturing defects and installation damage typically have very different solutions.

Once you have tested the system successfully, you are ready to install it. We recommend you install LEDs, electronic controls and dimmers in such a way that you have access to them in case they fail. All electrical components can fail.