Installation Instructions - Smart Pixel LineLED Decoder

Models SR-DMX-SPI

Please read all instructions prior to installation and keep for future reference!

1. ENSURE POWER TO POWER SUPPLY IS OFF BEFORE INSTALLING
2. PRODUCT TO BE INSTALLED BY A QUALIFIED ELECTRICIAN.
3. USE ONLY WITH CLASS 2 POWER UNIT

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Prior to installing determine the location, which requires a minimum of 2" clearance around the decoder to provide proper air circulation.

Remove covers on both sides of Smart Pixel LineLED decoder by using a small screwdriver. Store covers and their fasteners until decoder setup is complete and functioning properly and then re-install them.

WIRING DIAGRAM

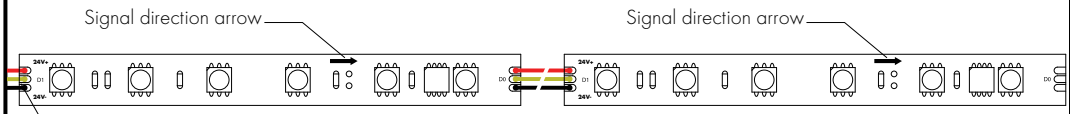
SR-DMX-SPI
Smart Pixel LineLED Decoder

NOTE: Please make sure that power is turned off before wiring.

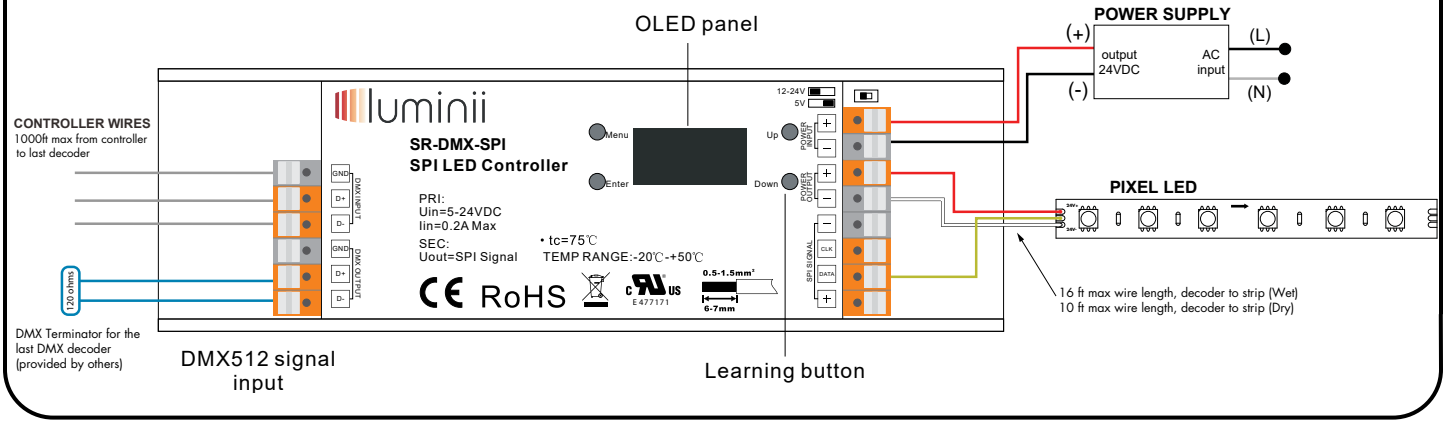
Also, ensure that the correct power supply (voltage and wattage) is used to power the LED strips connected to the decoder. Follow illustrated wiring diagram. Use screwdriver to open and close connection slots.

NOTE: When connecting two or more LED strip lights or light fixtures, always make sure the signal direction arrows are pointing the same direction

The signal direction arrow should appear on each section (cut increment) of LED strip



NOTE: Must power from the opposite direction of the signal direction arrow



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OPERATING GUIDE

SR-DMX-SPI
DMX512 Pixel Signal Decoder

There are four buttons for configuration of settings with the OLED display: "Menu", "Enter", "Up" and "Down". Click "Menu" button to enter the menu selection interface, and keep clicking "Up" and "Down" buttons you will get 5 settings one by one as follows:





1. Set mode: to select an operation mode, click "Enter" button to enter the configuration interface, then click "Up" and "Down" buttons to choose RF or DMX mode, click "Menu" button to confirm the setting and return to menu selection interface.



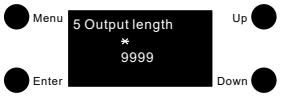
2. IC config: to set driving IC type, click "Enter" button to enter the configuration interface, click "Up" and "Down" buttons to choose a IC type that drives your LED lights, click "Menu" button to confirm and return to menu selection interface. Total 44 kinds of driving IC available. Luminii uses IC type **UCS2904** for RGBW pixel products.



3. LED type: to set RGB/RGBW color order, click "Enter" button to enter the configuration interface, click "Up" and "Down" buttons to choose a color order, click "Menu" button to confirm and return to menu selection interface. Total 7 kinds of color order available.



4. DMX address: to set DMX address under DMX mode, click "Enter" button to enter the configuration interface, the cursor will be on the "hundreds" position of the start address, click "Up" and "Down" buttons to change the number, click "Enter" button to confirm and move the cursor to "tens" position and set, then "units" position, and then the end address, and click "Menu" button to confirm the setting and return to menu selection interface.



5. Output length: to configure total output channels, click "Enter" button to enter the configuration interface, the asterisk is on the "thousands" position, click "Up" and "Down" buttons to change the number, click "Enter" button to confirm and move the asterisk to "hundreds" position and set, then "tens" position and "units" position, and click "Menu" button to confirm and return to menu selection interface. The SPI controller supports max. 3,333 RGB & 2,499 RGBW pixels.



6. Group length: to divide the total output length of pixels into different groups which will be controlled individually and set the controlled pixel quantity within each group under DMX mode. Click "Enter" button to enter the configuration interface, the asterisk is on the "hundreds" position, click "Up" and "Down" buttons to change the number, click "Enter" button to confirm and move the asterisk to "tens" position and set, then "units" position, and click "Menu" button to confirm
and return to menu selection interface.

LED TYPE SETTING

There are 7 types of RGB/RGBW color order available: RGB, RBG, GRB, GBR, BRG, BGR, RGBW. and return to menu selection interface.

SETTING START AND END ADDRESS

Under DMX mode, the DMX start address and end address can be set via buttons. The address can be set from 001-512. For example, when the start address is set as 001, and end address as 003, then the controller will use 3 decoding channels. When the start address is set as 001, and end address as 004, then the controller will use 4 decoding channels. When the start address is set as 001, and end address as 512, then the controller will use 512 decoding channels. and return to menu selection interface.

SETTING OUTPUT CHANNEL QUANTITY

Output length means total output channels or the number of pixels from the start pixel that you would like to address. Each RGB pixel has 3 channels output, and each RGBW pixel has 4 channels output. The controller support max. 9999 output channels. For example, when the output length is set as 0003, the controller will be capable of addressing 1 RGB pixel, when the output length is set as 0004, the controller will be capable of addressing 1 RGBW pixel. When the output length is set as 9999, the controller will be capable of addressing 3333 RGB pixels or 2499 RGBW pixels.

SETTING THE NUMBER OF PIXELS WITHIN EACH GROUP

Group length is to divide the total output length of pixels into different groups which will be controlled individually and set the controlled pixel quantity within each group under DMX mode.

For RGB pixels, please set the Group length as multiples of 3, which means the controlled pixel quantity within each group is the multiples, each group will need 3 DMX addresses, please set DMX address range according to the number of groups you would like to divide the total output length to, which means the required DMX channel quantity equals to the number of groups multiplying by 3.

For RGBW pixels, please set the Group length as multiples of 4, which means the controlled pixel quantity within each group is the multiples, each group will need 4 DMX addresses, please set DMX address range according to the number of groups you would like to divide the total output length to, which means the required DMX channel quantity equals to the number of groups multiplying by 4.

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OPERATION

SR-DMX-SPI
DMX512 Pixel Signal Decoder

Power input: Make sure the power input is set to 12-24V using the DIP switch.



(+) is positive voltage output
CLK is the Clock signal (not used on standard Luminii Pixel)
Data is the Data signal (used on all pixels)
(-) is negative voltage output

DMX MODE



After choosing DMX mode and configuration of all settings, click "Menu" button to return to Menu select interface, click it again to show the detailed configuration information.

Under DMX mode, the controller is capable of addressing each pixel individually (3 DMX channels for each RGB pixel, 4 DMX channels for each RGBW pixel) or work with macro mode that allows you to address an entire string of RGB/RGBW pixels with just 3/4 DMX channels.
DMX source device (DMX console) and sequencing software (when not used in RF mode with built in sequences.) are required for control under DMX mode.

SET DMX ADDRESS & OUTPUT LENGTH
Each RGB pixel requires 3 DMX decoding channels, and each RGBW pixel requires 4. Please set the DMX address quantity as a multiple of 3 or 4.
For RGB pixels it's best to set the start address number as 001 or 001 plus a multiple of 3 (004, 007, 010…508) and set the end address as a multiple of 3 and greater than the start address (003, 006, 009…510).
For RGBW pixels it's best to set the start address number as 001 or 001 plus a multiple of 4 (005, 009, 013…509) and set the end address as a multiple of 4 and greater than the start address (004, 008, 012…512).
Each RGB pixel has 3 channels output, and each RGBW pixel has 4. Please set the output length (channels) as a multiple of the previously set DMX address quantity.

ADDRESSING EACH PIXEL INDIVIDUALLY
When addressing each pixel individually, the DMX channels for output channels of each pixel are as follows:

ADDRESSING UP TO 170 RGB PIXELS INDIVIDUALLY

DMX ADDRESSES	PIXEL No.	DECODING CHANNEL -> OUTPUT CHANNEL
001-003	1, 171, 341,..., 3061	1 -> R, 2 -> G, 3 -> B
004-006	2, 172, 342,..., 3062	4 -> R, 5 -> G, 6 -> B
007-009	3, 173, 343,..., 3063	7 -> R, 8 -> G, 9 -> B
010-012	4, 174, 344,..., 3064	10 -> R, 11 -> G, 12 -> B
...	...	...
508-210	170, 340, 510,..., 3230	508 -> R, 509 -> G, 510 -> B

ADDRESSING UP TO 128 RGBW PIXELS INDIVIDUALLY

DMX ADDRESSES	PIXEL No.	DECODING CHANNEL -> OUTPUT CHANNEL
001-003	1, 171, 341,..., 3061	1 -> R, 2 -> G, 3 -> B
004-006	2, 172, 342,..., 3062	4 -> R, 5 -> G, 6 -> B
007-009	3, 173, 343,..., 3063	7 -> R, 8 -> G, 9 -> B
010-012	4, 174, 344,..., 3064	10 -> R, 11 -> G, 12 -> B
...	...	...
508-210	170, 340, 510,..., 3230	508 -> R, 509 -> G, 510 -> B

RF MODE



After choosing RF mode and configuration of all settings, click "Menu" button to return to Menu select interface, click it again to show the detailed configuration information.

PAIR TO THE RF REMOTE
Turn on the RF remote -> Click "Down" button on the SPI controller -> Click any zone button on the remote to select a zone and immediately touch color wheel on the remote -> OLED display of the SPI controller will show "Learning OK" and connected LED lights blink to indicate successful pairing to the zone
DELETE THE PAIRING
Press and hold down "Down" button on the SPI controller until OLED display shows "Learning Delete" and connected LED lights blink, which means the pairing is deleted successfully
BUILT-IN SEQUENCES UNDER RF MODE
There are 35 built-in sequencing, chasing, changing and static colors under RF mode, and you can play, pause, speed up or down them with a RF remote after successful pairing.
CONTROL WITH AN RF REMOTE
Under RF mode, all configured pixels will be addressed by macro mode and can not be addressed individually.

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TABLES OF CHANGING MODES

SR-DMX-SPI
DMX512 Pixel Signal Decoder

No.	COLOR	No.	COLOR
1	static red	19	7 color I chasing (each color 8 pixels)
2	static green	20	White meteor I (each color 16 pixels fade out, interval 16 pixels of black)
3	static blue	21	RGB meteor (each color 16 pixels fade out, interval 16 pixels of black)
4	static yellow	22	7 color meteor(each color 16 pixels fade out, interval 16 pixels of black)
5	static purple	23	Red and white float
6	static cyan	24	Green and white float
7	static white	25	Blue and white float
8	RGB skipping	26	Red and yellow float
9	7 color skipping	27	Red and purple float
10	RGB strobe	28	Green and yellow float
11	7 color strobe	29	Green and cyan float
12	RGB smooth	30	Blue and purple float
13	7 color smooth	31	Blue and cyan float
14	RGB fade out & fade in	32	Red, yellow and green float
15	7 color fade out & fade in	33	Red, purple and blue float
16	RGB Flow (front color as the background)	34	Green, cyan and blue float
17	7 color Flow (front color as the background)	35	7 color float
18	RGB chasing (each color 8 pixels)		

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