Pixel SPI LED DMX Decoder

SKU: A-DSA-DMXD

The Axion Lighting SPI Pixel LED DMX Decoder offers a great way to control the latest individually addressable LED strips. Whether single color, RGB, RGBW, high density or COB style, this DMX decoder integrates them perfectly with all your favorite control systems. It also offers a stand-alone mode for an easy way to run of the 32 included dynamic effects.

Features

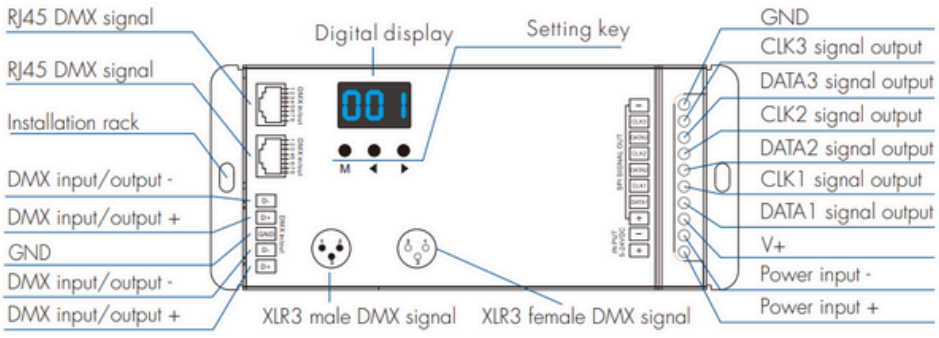
- Fully compliant with the DMX512 standard protocol.
- No DIP switches! Use the integrated buttons and display to configure the DMX address and various settings.
- Supports RDM functionality for those DMX masters or controllers that take advantage of this enhanced protocol.
- Over-heat, over-load and short circuit protection with automatic recovery.
- CE, EMC, and RED certified.
- 5 year warranty

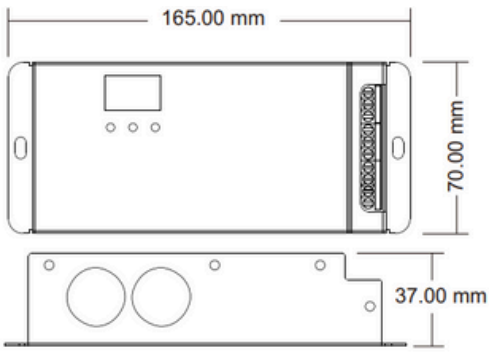
Input and Output	
Input voltage	5-24VDC
Input current	10A
Power Consumption	1W
Input signal	DMX512
Output signal	3x SPI / TTL ports
Dynamic Mode	32 Unique Effects
Control dots	Max of 900 individual pixels

Safety and EMC	
EMC standard (EMC)	ETSI EN 301 489-1 V2.2.3 ETSI EN 301 489-17 V3.2.4
Safety standard (LVD)	EN 61347-1:2015+A1:2021 EN 61347-2-13:2014+A1:2017
Radio Standard (RED)	ETSI EN 300 328 V2.2.2
Warranty	**5 years**
Certification	CE, EMC, RED

Environment	
Operation temp.	Ta: -20° C ~ +55° C
Max case temp.	Tc: +65° C
IP rating	IP20
Package	
Size (Metric)	L165 x W80 x H45mm
Size (Imperial)	L6.49 x W2.75 x H1.45 in
Gross weight	0.397kg

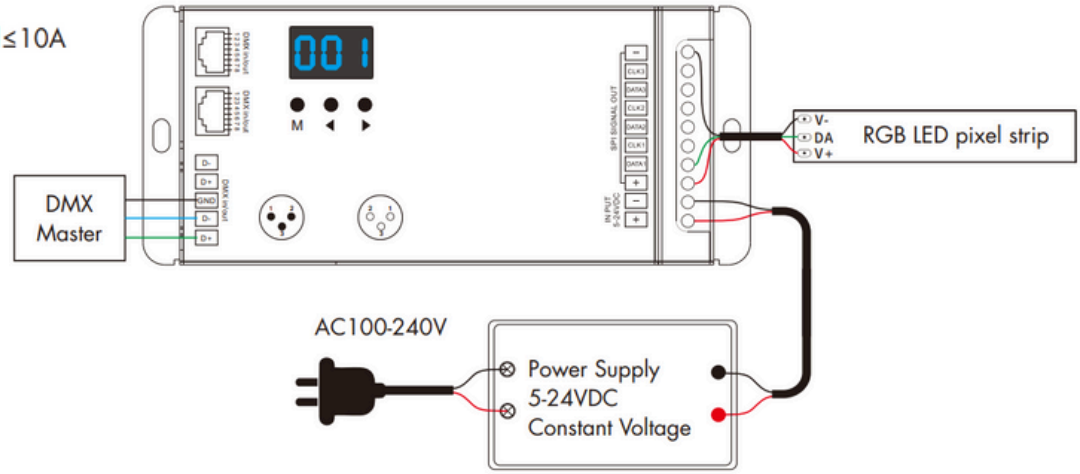
Mechanical





Wiring Diagram

- Strip load≤10A



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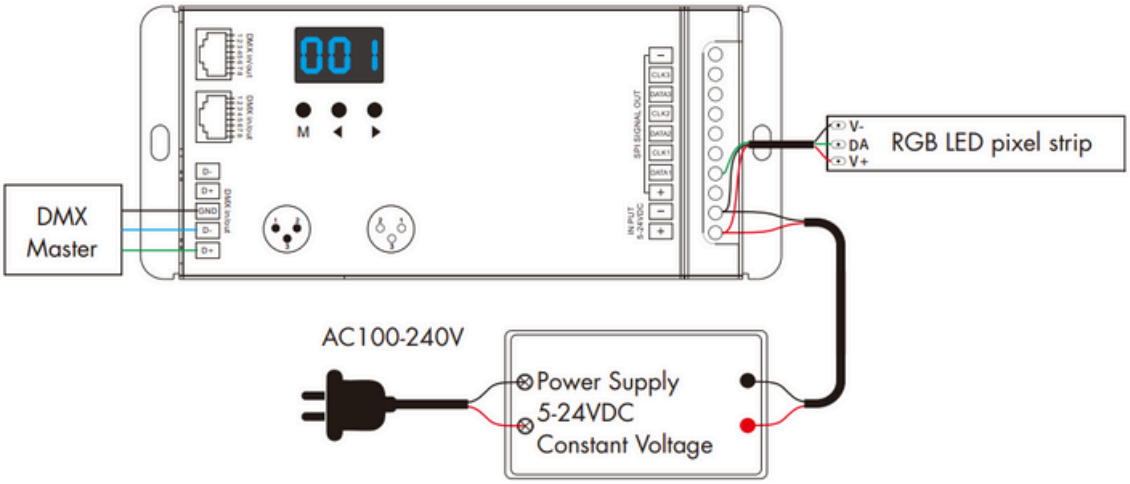

Operation

- First verify or change the IC (LED chip) type, RGB order (if different), and pixel length.
- To do this, long press the M and < buttons at the same time. Short press the M key to switch between the settings and use the arrow keys to set the value for each. To exit this menu, long press the M key for 2 seconds or wait 10 seconds (if at any point there are 10 seconds between key presses, it will exit the menu automatically).

IC Types Supported

DMX Decoder Value	IC Type	Output Wire Signal
C11	TM1803	DATA
C12	TM1809, TM1804, TM1812, UCS1903UCS1909, UCS1912, SK6813, UCS2903, UCS2909, UCS2912, WS2811, WS2812, WS2813, WS2815, SM16703P	DATA
C13	TM1829	DATA
C14	TLS3001, TLS3002	DATA
C15	GW6205	DATA
C16	MBI6120	DATA
C17	TM1814B (RGBW)	DATA
C18	SK6812 (RGBW), WS2813 (RGBW), WS2814 (RGBW)	DATA
C19	UCS8904B (RGBW)	DATA
C21	LPD6803, LPD1101, D705, UCS6909, UCS6912	DATA, CLK
C22	LPD8803, LPD8806	DATA, CLK
C23	WS2801, WS2803	DATA, CLK
C24	P9813	DATA, CLK
C25	SK9822	DATA, CLK
C31	TM1914A	DATA
C32	GS8206, GS8208	DATA
C33	UCS2904	DATA
C34	SM16804	DATA
C35	SM16825	DATA
C36	SM16714 (RGBW)	DATA
C37	UCS5603	DATA
C38	UCS2603	DATA
C39	SM16714D	DATA

RGB Order Values:

- 0-1 = RGB
- 0-2 = RBG
- 0-3 = GRB
- 0-4 = GBR
- 0-5 = BRG
- 0-6 = BGR

White LED Order (RGBW Strips only)

- 04c = WRGB
- 0c4 = RGBW

Pixel Length Range (this is how many ICs will be controlled)

- 008 – 900
- The easiest way to set this is increase the default until your effect runs the full length of the strip.

Automatic Blank Screen (if enabled the LEDs turn off when no DMX signal is present)

- bon = feature enabled
- boF = feature disabled

DMX Decoder Mode Selection

- There are three DMX decode modes that are selectable.
  - DMX decode mode 1: the DMX data will change the light colors directly.
  - DMX decode mode 2: the DMX data is used to switch between 32 dynamic modes, brightness and speed.
  - DMX decode mode 3: Similar to mode 1, but only for single color strips and dimming.
- Long press M, ◀ and ▶ key at the same time to enter setup.
- Press the ◄ or ► key to switch between DMX decode mode1 (d-1), DMX decode mode 2(d-2) and DMX decode mode 3(d-3).
- Long press the M key for 2s to return to the DMX address interface.

NOTE: For more details on DMX modes, please reference the Pixel DMX Decoder Integration Guide.

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Dynamic Effect List

- P01 – Red Race with White Base
- P02 – Green Race with White Base
- P03 – Blue Race with White Base
- P04 – Yellow Race with Blue Base
- P05 – Cyan Race with Blue Base
- P06 – Purple Race with Blue Base
- P07 – 7 Color Multi-Race
- P08 – 7 Color Race Close & Open
- P09 – 7 Color Multi-Race Close & Open
- P10 – 7 Color Scan Close & Open
- P11 – 7 Color Multi-Scan Close & Open
- P12 – Blue White Chase
- P13 – Green Cyan Chase
- P14 – RGB Chase
- P15 – 7 Color Chase
- P16 – Blue Meteor
- P17 – Purple Meteor
- P18 – White Meteor
- P19 – 7 Color Meteor
- P20 – Red Float
- P21 – Green Float
- P22 – Blue Float
- P23 – Purple Float
- P24 – RGBW Float
- P25 – Red Yellow Float
- P26 – Green Cyan Float
- P27 – Blue Purple Float
- P28 – Blue White Float
- P29 – 6 Color Float
- P30 – 6 Color Smooth Sections
- P31 – 7 Color Jump Sections
- P32 – 7 Color Strobe Sections

FCC Statement

This device complies with Part 15 of the FCC Rules. operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IC Statement: This Class B digital apparatus complies with Canadian ICES-003. (Cet appareil numérique de la Classe B conforme à la norme NMB-003 du Canada).

Troubleshooting Steps

Issue	Troubleshooting
General tips	1. 18-gauge wire is recommended for connection to the light fixtures. 2. If using our DMX Controller, verify the firmware is up to date. 3. Start troubleshooting by disconnecting all but one DMX device and verify you have good control before adding more. 4. Connect no more than 32 ft or 10m of LED strip on one line to minimize voltage drop. 5. Oversize your power needs by at least 10-15%
Connected LED Lights do not work	1. Ensure that you are using a matching 12 or 24 volt power supply for your 12 or 24 volt fixtures. The decoder will not convert the voltage. 2. Verify you have the proper pinout of the light fixture connected in RGBW order. 3. Check the DMX address and make sure it matches your programming or integration. 4. Ensure that you have a good DMX signal and that you haven't reversed the Data + and Data – wires.
RJ45 Connector Pinout	1: Data + 2: Data – 3-6: Empty 7-8: Ground
Wrong colors are being displayed	1. Verify you are using 8 bit or 16 bit mode in your integration. By default our decoders come in 8 bit mode. 2. Make sure you only have one DMX master or controller connected to the bus. 3. Check other DMX devices to make sure they are not overlapping total count DMX addresses. EG: A 12 channel decoder uses 12 addresses so if one is set to address 1, it will consume DMX addresses 1-12. The next unit should be set to DMX address 13 or higher.
When connecting multiple decoders, some closest to the DMX Controller stop working.	1. Try adding a 120 Ohm resistor to the last DMX decoder in the line. 2. If connecting 12 or more DMX devices, you may need to add a DMX booster or use the integrated DMX AMP signal booster found on some decoders