24 Channel Constant Voltage DMX512 & RDM Decoder

SKU: A-D24B-DMXD

The Axion Lighting 24 Channel DMX Decoder offers a great way to control single color, tunable white, RGB, RGBW or even RGBWW fixtures. With 24 independent channels you can mix and match LED strips, recessed lights, or more to create multiple independent zones

Features

- Fully compliant with the DMX512 standard protocol.
- No DIP switches! Use the integrated buttons and OLED display to configure the DMX address and settings.
- Supports RDM functionality for those DMX masters or controllers that take advantage of this enhanced protocol.
- 16 bit (65536 levels) or standard 8 bit (256) level selection.
- PWM dimming frequency selection: 500 / 2000 / 8000 / 16000 Hz options for reduced power noise and LED flickering.
- Output dimming curve gamma value of 0.1 to 9.9 selectable.
- Over-heat, over-load and short circuit protection with automatic recovery.
- CE, EMC, and LVD certified.
- *5 year warranty*

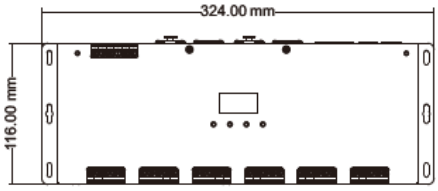
CE RoHS emc LVD

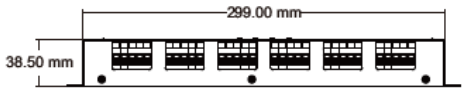
Input and Output	
Input voltage	12-24VDC
Input current	96.5A
Output voltage	12 x (12-24)VDC
Output current	24CH, 4A/CH
Output power	24 x (48-96)W
Output type	Constant voltage

Safety and EMC	
EMC standard (EMC)	EN55032:2015, EN61000-3-2:2014, EN61000-3-2:2013, EN55024 :2010/A1:2015
Safety standard (LVD)	EN 61347-1:2015 EN 61347-2-11:2015
Certification	CE,EMC,LVD
Warranty	
Warranty	5 years

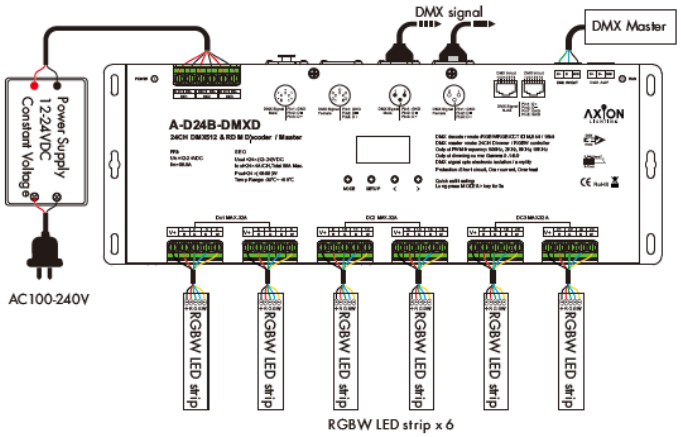
Environment	
Operation temp.	Ta: -30° C ~ +55° C
Max case temp.	Tc: +85°C
IP rating	IP20
Package	
Size	L13.19 x W5.31 x H1.81in
Gross weight	2.87 lbs

Mechanical Structures and Installations





Wiring Diagram



Note

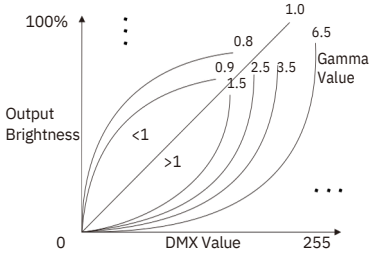
- A DMX signal amp is typically required if more than 10-15 decoders are connected. This is especially true if the distance between the decoders is very long (250 ft+).
- If there appears to be signal loss, you can try connecting a 0.25 watt 90-120 Ohm terminal resistor at the end of the DMX signal line.
- If the display reads OLA, that indicates an overload alarm (wattage to high).
- If the display reads OHA, that indicates an overheating alarm.
- Alarms should clear automatically if the problem is resolved (may take up to 30 seconds).
- Up to 3 different power supplies may be connected to power 2 full phoenix connectors each. This can be of varying DC voltages if needed (eg: 12 and 24).

OLED Screen Interface

- Short press the MODE key to switch between DMX decoder mode, Dimmer mode and RGB controller mode.
- Short press the SETUP key, to enter setup, and switch between each option. Press the < or > key for setting adjustment. Long press the SETUP key or wait 30s to exit the menu.
- Long press the M & > key for 2s, to enter fast self-testing. Long press the < & > key for 2s, to restore factory default parameters.

DMX Decoder Mode

- Address can be from 001 – 512 by setting the “Addrs” value.
- DMX Decoder mode can be DIM (1 channel single color), CCT (2 channel color temperature) or RGB (3 channel). Use RGB mode even if you’re using RGBW or RGBWW fixtures.
- Output PWM Frequency can be changed to Standard (Std = 2000 Hz), High (High = 8000 Hz), Mid (Mid = 500 Hz), or Super (Supr = 16000 Hz). A higher PWM frequency will cause a lower output current but helps reduce power noise and visible flickering if detected.
- Bit mode can be changed from the default 8-bit to 16-bit. This should match your controller’s bit mode setting.
- The output dimming curve (for 8-bit only) can be changed from Standard, with a Gamma of 1.6 to Linear or a custom value between 0.1 and 9.9. Leaving it on Standard is recommended and meets most applications. To change the custom value, long press the < or > button.



Each channel brightness setting can be between 0-255 (0-100%) <<&>>.
Press the < or > key to switch between pages, each page controls 3 channels.

DMX Master Mode as RGB Controller

Dynamic RGB mode: 10 types
Mode speed: 1-10 level where level 10 is the fastest speed
Mode brightness: 10%-100%

Standalone RGB Controller Mode

- When selecting the option to set the unit up as a standalone RGB controller, it is assumed that the lights connected are only RGB and not RGBW or RGBWW.
- There are 10 modes you can set in this state:
  - 01 – White chase jump
  - 02 – White synchronous fade
  - 03 – White chase fade
  - 04 – RGB synchronous jump
  - 05 – RGB chase jump
  - 06 – Color synchronous gradual
  - 07 – Color jump gradual
  - 08 – RGB synchronous fade
  - 09 – RGB chase fade
  - 10 – All of the modes above loop

Address Setting Table

8bit:

Mode		DIM	CCT	RGB	RGBW
Address Quantity		6	12	18	24
Channel	1	001	001	001	001
	2	001	002	002	002
	3	001	001	003	003
	4	001	002	003	004
	5	002	003	004	005
	6	002	004	005	006
	7	002	003	006	007
	8	002	004	006	008
	9	003	005	007	009
	10	003	006	008	010
	11	003	005	009	011
	12	003	006	009	012
	13	004	007	010	013
	14	004	008	011	014
	15	004	007	012	015
	16	004	008	012	016
	17	005	009	013	017
	18	005	010	014	018
	19	005	009	015	019
	20	005	010	015	020
	21	006	011	016	021
	22	006	012	017	022
	23	006	011	018	023
	24	006	012	018	024

16bit:

Mode		DIM	CCT	RGB	RGBW
Address Quantity		12	24	36	48
Channel	1	001 002	001 002	001 002	001 002
	2	001 002	003 004	003 004	003 004
	3	001 002	001 002	005 006	005 006
	4	001 002	003 004	005 006	007 008
	5	003 004	005 006	007 008	009 010
	6	003 004	007 008	009 010	011 012
	7	003 004	005 006	011 012	013 014
	8	003 004	007 008	011 012	015 016
	9	005 006	009 010	013 014	017 018
	10	005 006	011 012	015 016	019 020
	11	005 006	009 010	017 018	021 022
	12	005 006	011 012	017 018	023 024
	13	007 008	013 014	019 020	025 026
	14	007 008	015 016	021 022	027 028
	15	007 008	013 014	023 024	029 030
	16	007 008	015 016	023 024	031 032
	17	009 010	017 018	025 026	033 034
	18	009 010	019 020	027 028	035 036
	19	009 010	017 018	029 030	037 038
	20	009 010	019 020	029 030	039 040
	21	011 012	021 022	031 032	041 042
	22	011 012	023 024	033 034	043 044
	23	011 012	021 022	035 036	045 046
	24	011 012	023 024	035 036	047 048

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