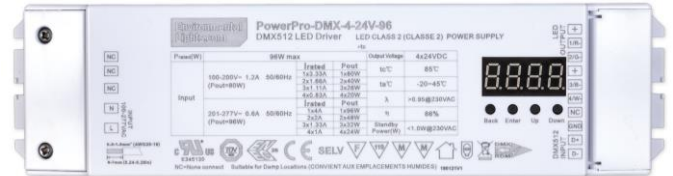
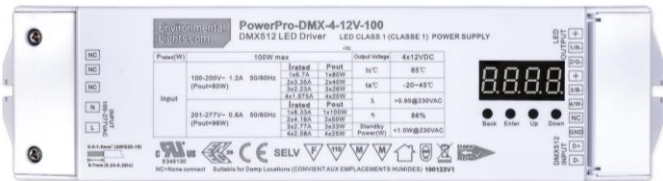


# PowerPro Powered DMX Digital Decoders

Part number: PowerPro-DMX-4-24V-96, PowerPro-DMX-4-12V-100



The PowerPro 4 Channel DMX Digital Decoder is a self-contained decoder and power supply. It simplifies the hardware needed for DMX lighting applications by enclosing both power supply and decoder functions within a single housing. It accommodates up to four output channels of LED lighting. The decoder takes the output from any standard DMX console or controller and decodes the signal so you can drive up to four channels of LEDs, such as our RGBW products. The appearance of flicker on studio video equipment is virtually eliminated with an adjustable PWM frequency of 500 to 30,000 Hz. The PowerPro 4 Channel DMX Digital Decoder includes a 12 DC VDC power supply that is rated for up to 100 watts. A digital display is used for configuring the DMX address and settings

## Features

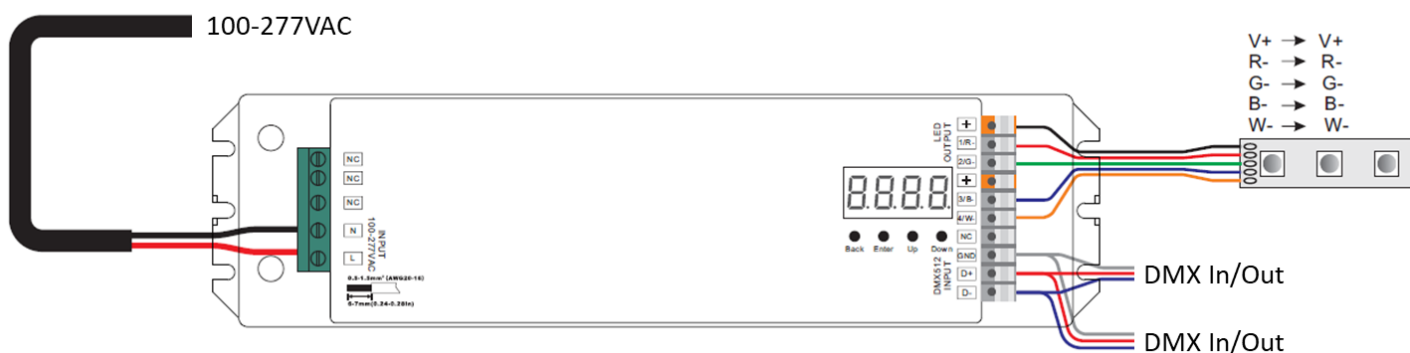
- Four output channels
- Adjustable 500 to 30,000 Hz PWM output
- 100/80 Watts maximum output for 12V/24V
- Adjustable DMX modes and dimming curve
- UL Recognized

## Applications

- DMX controlled lighting applications where convenience and quick installation are important
- On-camera lighting requiring high PWM frequency.

## Wiring

1. Confirm that the PowerPro output voltage matches the LED product and that the available AC power input is between 100-277VAC. ALWAYS TURN OFF POWER AT THE BREAKER BEFORE DIRECTLY CONNECTING TO HIGH VOLTAGE WIRING. HIGH VOLTAGE WIRING SHOULD ONLY BE DONE BY A PROPERLY TRAINED PROFESSIONAL.
2. Connect the LED load to the output side of the PowerPro, this is the right-hand side in the diagram below. Flip up the cover to expose the wiring terminals. The V+ output terminals are marked with a "+" indicator on the case and the physical terminal is colored orange. There are two "+" terminals for ease of wiring with multiple LED products. They are internally connected so there is no need to use both, unless it is more convenient, or to balance the load between the terminals. The output channels are labeled with the channel number as well as the typical color order for wiring RGBW LED strip light. Simply press down on the spring-loaded button, insert the wire into the terminal and release the button to secure the wires in place.
3. Connect the DMX input and output (if using) wires. The terminals for DMX in/out are located adjacent to the LED outputs, labelled GND, D+ and D-. Refer to the wiring diagram for your DMX controller to make sure that you are connecting each DMX wire to the correct terminal on the PowerPro decoder. DMX input and output share the same terminals.
4. Connect the AC input by unscrewing the cover on the input side of the PowerPro, which is the left-hand side in the diagram below. Beneath the screw-down cover are screw terminals with labels "L" for line voltage and "N" for neutral. Connect the line and neutral wires to the respective terminals using a flathead screwdriver, making sure that the wires are secure. The AC power should remain off until the cover has been screwed back into place.



5. Reconnect AC power to turn on the decoder. The screen will display **A.XXX** where "XXX" is the DMX starting address. Default is address 001

## Operation

Navigation Buttons:



- Up and Down are used to cycle through settings and adjust parameters.
- Enter is used to select a setting to adjust.
- Back saves the current setting and stops adjustment of that parameter

DMX Address: **8**.XXX

This display indicates the current DMX starting address. Press Enter and then Up or Down to change the DMX starting address. Up and Down can be held down to quickly scroll through addresses. Press Back once the desired DMX address has been reached.

Output Channels: **88**XX

The “Output Channels” parameter allows the utilize all five output channels using fewer DMX channels. Based on the number of independent channels needed, the outputs will be mapped as follows. Note: this mapping is for DMX starting address 001 and default “Decoding Mode” value. See the section on Decoding Mode below for more information.

Output Channel	CHXX Setting			
	CH04	CH03	CH02	CH01
Channel 1	001	001	001	001
Channel 2	002	002	002	001
Channel 3	003	003	001	001
Channel 4	004	003	002	001

Output PWM Resolution: **88**XX

The Bit Depth setting controls the DMX output smoothing resolution, either “08” for 8-bit or “16” for 16-bit. The decoder provides output smoothing in 16-bit mode (default and recommended). The setting helps to reduce visible steps in brightness when dimming through DMX. This setting is different from a true 16-bit DMX input. 16-bit DMX input that uses two DMX channels for each output channel is set through the Decoding Mode.

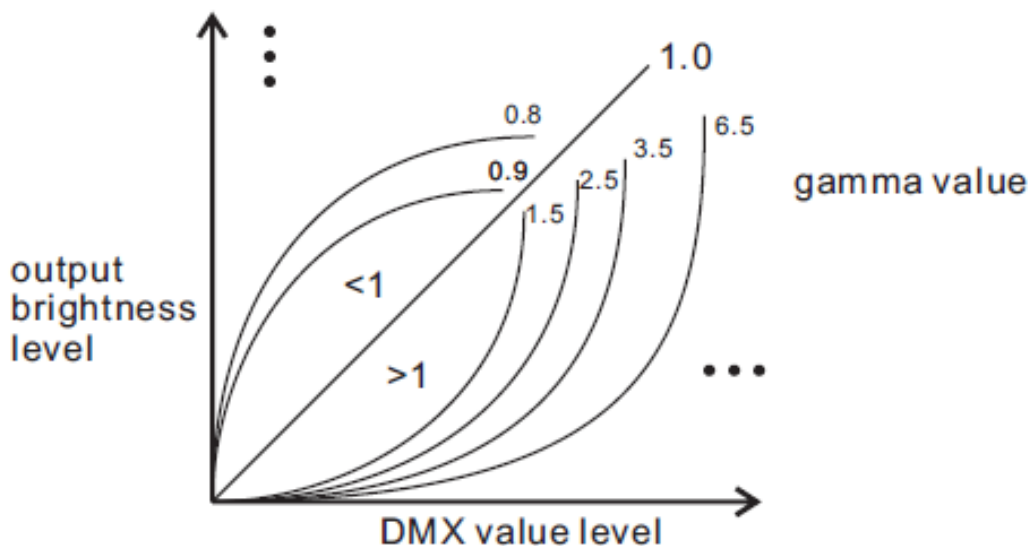
PWM Frequency: **88.XX**

The output PWM frequency is set through this parameter, with "XX" being the frequency in kHz. The default value is "01", corresponding to 1kHz. Options range from "00" = 500Hz to "30" = 30kHz.

The output PWM frequency can be adjusted to avoid flicker in different settings. It can be left at 1kHz for most applications. For on-camera use, settings around 5kHz are typically sufficient to eliminate flicker. Very high frequency settings (over 10kHz) should be used only if necessary. Very high frequency signals can be distorted by long cable runs and/or environments with a lot of electrical signals.

Output Dimming Curve: **88.XX**

The "gamma" value of the dimming curve is set with this parameter. This changes the rate at which the brightness changes at different DMX values. It can be used to make dimming less sensitive at the high or low end for greater precision in that brightness range. Default value is 1.5 and can be adjusted from 0.1-9.9. Values less than 1 give greater dimming precision at high brightness and values greater than 1 increase precision at low brightness. Human vision is more sensitive at low light levels, so values greater than 1 are most common.



DMX Decoding Mode: **88.XX**

The DMX Decoding Mode determines how the DMX input is processed and mapped to the outputs. This setting is directly affected by the Output Channels parameter, please make sure that setting is configured before adjusting the DMX Decoding Mode. The setting "dP2.1" enables 16-bit input mode for all channel configurations. This mode uses two DMX input channels for each output, the first channel is the standard DMX adjustment and the second is for fine dimming control. NOTE: the effect of the 16-bit input is only visible for gamma settings of 1.4 or higher. Refer to Appendix A for a list of all modes and functions.

# Appendix A: 5 Channel Decoding Mode Tables

The following tables explain the available DMX decoding modes. All tables assume the starting address of 001.

Setting	CH01	
DMX Channel	Decoding Mode	
	dp1.1	dp2.1
1	Dimming All Outputs	Dimming All Outputs
2	Not Used	Micro Dimming All Outputs

Setting	CH02		
DMX Channel	Decoding Mode		
	dp1.1	dp2.1	dp3.2
1	Dimming Output 1, 3	Dimming Output 1, 3	Dimming Output 1, 3
2	Dimming Output 2, 4	Micro Dimming Output 1, 3	Dimming Output 2, 4
3	Not Used	Dimming Output 2, 4	Dimming All Outputs
4	Not Used	Micro Dimming Output 2, 4	Not Used

Setting	CH03			
DMX Channel	Decoding Mode			
	dp1.1	dp2.1	dp4.3	dp5.3
1	Dimming Output 1	Dimming Output 1	Dimming Output 1	Dimming Output 1
2	Dimming Output 2	Micro Dimming Output 1	Dimming Output 2	Dimming Output 2
3	Dimming Output 3, 4	Dimming Output 2	Dimming Output 3, 4	Dimming Output 3, 4
4	Not Used	Micro Dimming Output 2	Dimming All Outputs	Dimming All Outputs
5	Not Used	Dimming Output 3, 4	Not Used	Strobe Effect All Outputs
6	Not Used	Micro Dimming Output 3, 4	Not Used	Not Used

Setting	CH04			
DMX Channel	Decoding Mode			
	dp1.1	dp2.1	dp4.3	dp5.3
1	Dimming Output 1	Dimming Output 1	Dimming Output 1	Dimming Output 1
2	Dimming Output 2	Micro Dimming Output 1	Dimming Output 2	Dimming Output 2
3	Dimming Output 3	Dimming Output 2	Dimming Output 3	Dimming Output 3
4	Dimming Output 4	Micro Dimming Output 2	Dimming Output 4	Dimming Output 4
5	Not Used	Dimming Output 3	Dimming All Outputs	Dimming All Outputs
6	Not Used	Micro Dimming Output 3	Not Used	Strobe Effect All Outputs
7	Not Used	Dimming Output 4	Not Used	Not Used
8	Not Used	Micro Dimming Output 4	Not Used	Not Used