# CL-DMX-2900 Decoder Specification

CL-DMX-2900 is one DMX-SPI decoder, which converts the DMX-512 (RS485) digital signal into SPI (TTL) digital signal. Using the DMX controller, you can control LED NeonFlex Vivid Pixel, changing each channel, dimming from 0-100%, and creating various color effects.

It can also create channel combinations. 3 channels combined into 1 channel (ex: single color chasing), and 3 channels combined into 2 channels (ex: Dynamic White chasing). With the DMX, you can create Pixel combinations as well. By combining multiple units you can reduce the number of channels being used, and the combined units will create the same color changing effect. This will allow you to control longer chasing lights using the DMX controller's 512 channels.

Technical Specifications

Working Voltage	DC 12-24V
Power Consumption	1W
Input Signal	DMX512 (RS485)
Output	SPI (TTL)
Control Qty	480 Pixels (RGB chasing lights) 360 Pixels (RGBW chasing lights)
Dimension	5.51in x 3in x 1.06in (140mm x 76mm x 27mm)

Configuration Diagram

POWER DC12-24V   DMX IN   DMX OUT

P+ P- L+ S+ S- L-   A B G   A B G
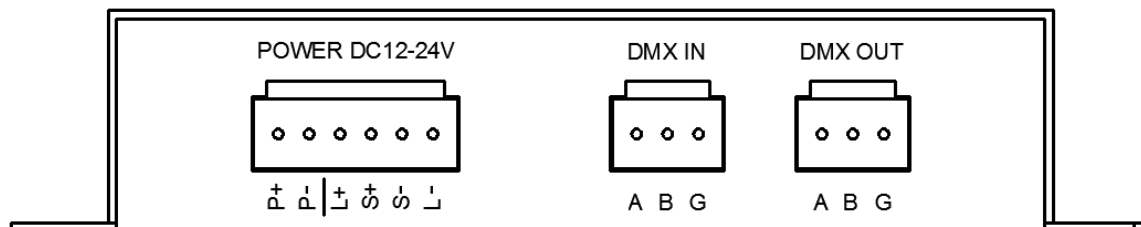
No.		Port	Function
1	Power Input	P+	DC12-24V LED "+"
		P-	DC12-24V LED "-"
2	Signal Output	L+	The "+" of the lights
		S+	Signal cable of the lights
		S-	Spare Port
		L-	The "-" of the lights
3	DMX Input	A/B/G	Connect to the DMX controller or with the output ports of one DMX decoder
4	DMX Output	A/B/G	Connect with the input ports of the next DMX decoder

Indicator Light Key

DMX512 DECODER

1 2 3 4 5 6 7 8 9 10 11 12
ON

PARAMETERS SET

DMX   PRO   POW
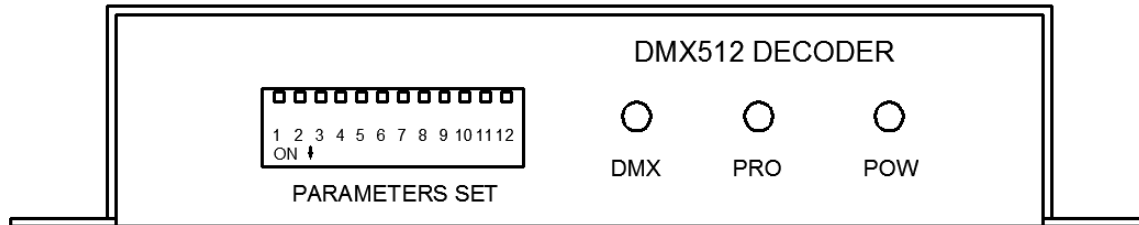
No.	Name	Running State
1	DMX : exterior controlling indicator	When the DMX decoder is connected to the DMX controller, indicator light will flicker indicating that it's recieving signal.
2	PRO : interior controlling indicator	When the DMX decoder is not recieving a signal from the DMX controller, the indicator light will be on, showing that the internal testing program is running.
3	POW : power input indicator	Indicator light will be on when the decoder is connected to power.

Dip Switch Set-up Key (no controller)

Without signal from the DMX controller, the DMX decoder will enter testing mode (PRO indicator will be on). The functions of the switches are as follows:

Switch No	RGB test mode	Effect speed	Dynamic White test mode
P1	Fixture will turn red	1	Color temperature 1
P2	Fixture will turn green	2	Color temperature 2
P3	Fixture will turn blue	3	Color temperature 3
P4	Fixture will turn yellow	4	Color temperature 4
P5	Fixture will turn purple	5	Color temperature 5
P6	Fixture will turn cyan	6	Color temperature 6
P7	Fixture will turn white	7	Color temperature 7
P8	3 color jump		Color temperature 8
P9	7 color jump		Color temperature 9
P10	7 color fade		Color temperature 10

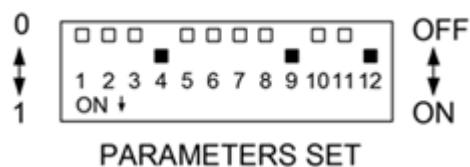|	
P11	When switch is "ON", P1-P10 will be in Dynamic White test mode
P12	RGB selector. "ON" for RGBW, "OFF" for RGB

Note:
3 color = Red, Green, Blue
7 color = Red, Green, Blue, Yellow, Cyan, Purple, White
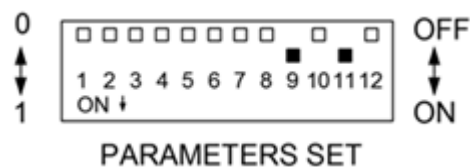When P12 is "ON" (RGBW mode), P7 is mono-channel white

Example 1:

When switches are set as shown, fixture will perform a 7 color jump at speed 4.

Example 2:

When switches are set as shown, fixture will be in Dynamic White mode at color temperature 9.

Dip Switch Set-up Key (with controller)

With a signal from the DMX controller, the DMX decoder will enter exterior controlling mode (DMX indicator will flicker). The functions of the switches are as follows:

Switch No	Function	
P1	01	This sets your first DMX address using binary. See Diagram 1.
P2	02	
P3	04	
P4	08	
P5	16	

P6		This sets your Pixel combinations. See diagram 2.
P7		
P8		
P9		

P10		This selects control type:
P11		P10=0 P11=0 : Channels will not be combined (RGB P10=1 P11=0 : Fixture uses 2 channels instead of 3 (Dynamic White) P10=0 P11=1 : Fixture uses 1 channel instead of 3 (single color)

P12		"OFF" for RGB, "ON" for RGBW

Note: avoid setting P10=1   P11=1.

DIAGRAM 1

	1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
P1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
P2	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
P3	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
P4	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
P5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Dip Switch Set-up Key (with controller, cont)

DIAGRAM 2   Px = Pixels   1 Pixel (Px) = 1 unit

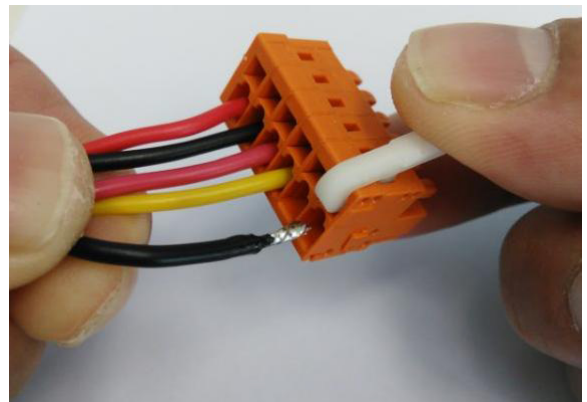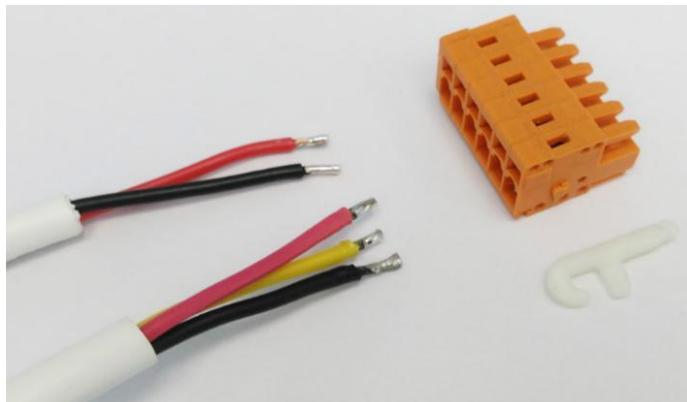|	1 Px	2 Px	4 Px	5 Px	6 Px	8 Px	10 Px	12 Px	16 Px	20 Px	24 Px	40 Px	60 Px	80 Px	120 Px	A ll
P6	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
P7	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
P8	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
P9	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

Example 3:
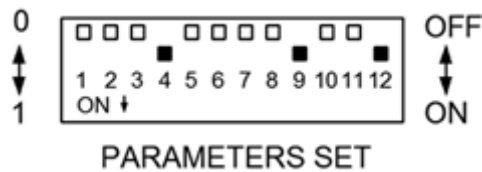
When switches are set as shown, DMX decoder address is set to 8, the fixture will act as though the 16 Pixels are 1.
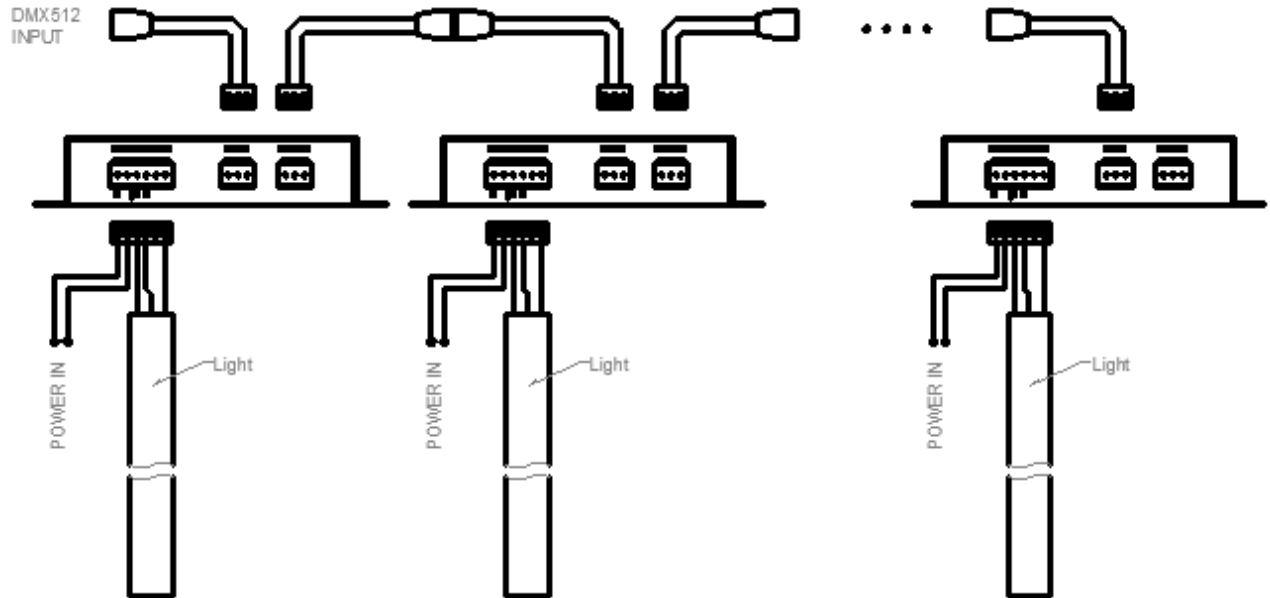
Example 4:
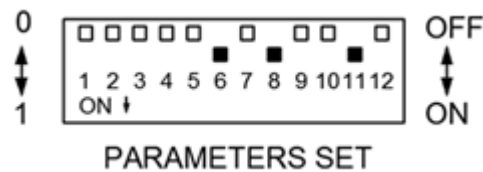
When switches are set as shown, DMX decoder address is set to 0, single color lights (using 1 channel instead of 3) act as though 8 pixels are 1.

Terminal Wiring

DMX Decoder Wiring Diagram

DMX512
INPUT

POWER IN   Light
POWER IN   Light
POWER IN   Light

Product Dimensions

4.5

76

128

140

27