

# DMX512 Constant Voltage Decoder

## User's Manual



Decoder is designed via advanced microchip technology to convert the universal standard DMX512/1990 signal into most advanced PWM (pulse-width-modulation) digital driving signal, it allows user to choose 1~3 output channel, 256-level brightness control, max 512 output channels. This compact decoder connects to light console, analog device and various Led terminal products such as RGB Led lamps, RGB Led tubes, building lamps, LED wall washers or lighting and other compatible devices allowing its user to create endless possibilities of light shows.

### ➤ Specifications

Model	CONSTANT VOLTAGE 5A
Input voltage	DC12V~DC24V
Max load current	5A/CH×3
Output Power	180W/360W(12V/24V)
Output Scale level	256 levels
Input signal	DMX512/1990
Output signal	3 constant voltage PWM
Output DMX Channel	3Chs or 4Chs (4 <sup>th</sup> CH is shutter strobe)
DMX512 socket	Standard XLR-3R
Dimension	L125×W52×H40mm
Package Size	L135×W70×H50mm
Weight (G.W)	300g

### ➤ Basic Features

1. Input standard DMX512 protocol, Address can be set by DIP.
2. Automatically adapt input voltage DC12V-24V.
3. 3 output channels, 256 scale each, RGB driving control.
4. 10 modes of self-Changing, 8 level of speed changing.
5. Max output 5A each channel.

#### Two different versions

3 DMX ADD Version:

The 1st address controls LEDs on CH1,0-255 steps of brightness.

The 2nd address controls LEDs on CH2,0-255 steps of brightness.

The 3rd address controls LEDs on CH3,0-255 steps of brightness.

4 DMX ADD Version:

The 1st address controls LEDs on CH1, 0-255 steps of brightness.

The 2nd address controls LEDs on CH2, 0-255 steps of brightness.

The 3rd address controls LEDs on CH3, 0-255 steps of brightness.

0-127 of the 4th address controls the brightness, 128-255 for strobing

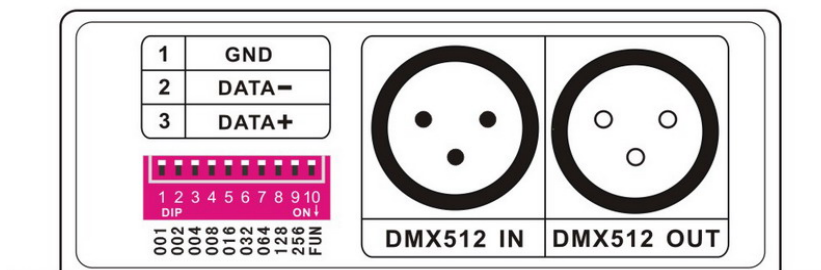
## ➤ Safety warnings

Please don't install this controller in lightning, intense magnetic and high-voltage fields.

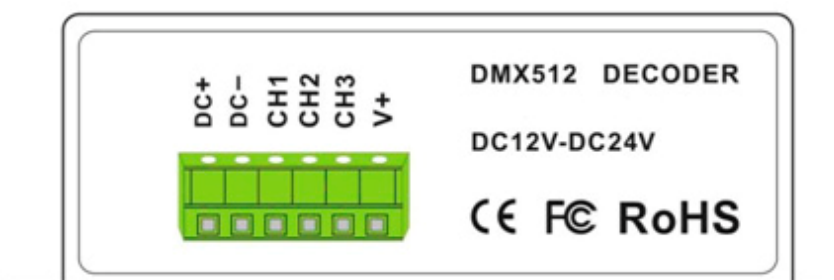
1. To reduce the risk of component damage and fire caused by short circuit, make sure correct connection
2. Always be sure to mount this unit in an area that will allow proper ventilation to ensure a fitting temperature.
3. Check if the voltage and power adapter suit the controller  
**(please select DC12-24V power supply with constant voltage)**
4. Don't connect cables with power on; make sure a correct connection and no short circuit checked with instrument before power on.
5. Please don't open controller cover and operate if problems occur.

**The manual is only suitable for this model; any update is subject to change without prior notice.**

## ➤ 1. Interfaces



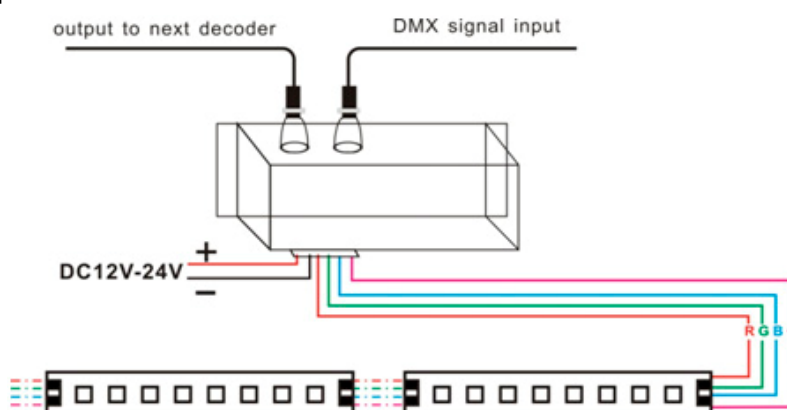
DMX Port



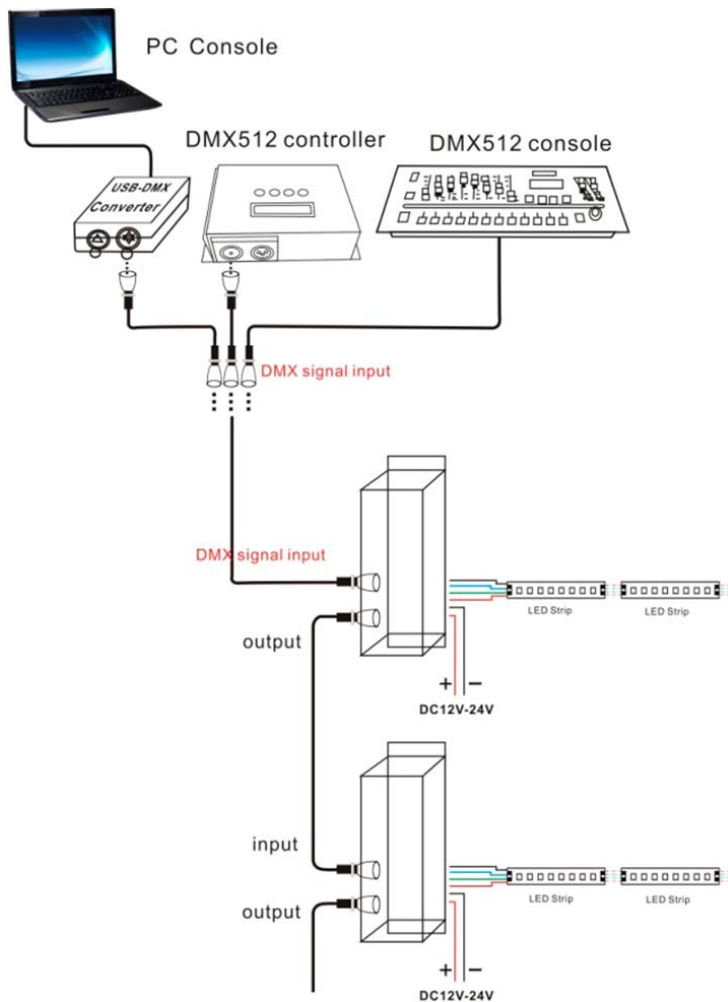
Output Port

## ➤ 2. Conjunction Diagram

1. Connect to LED strip:



2. Connect to DMX system:



**NOTE:** According to DMX512 protocol, in order to ensure a steady data transmission, you should add a metalster(Metal Thin Film resistor, 90-120Ω 1/4 W )at the end of each layout of DMX data cable(between Foot 2 and Foot 3, Data + and Data -), please also refer to your DMX console manual to select a correct resistor.

## Operating instructions

### 1. Decoder address setting

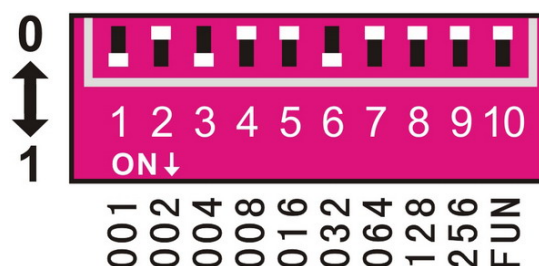
This decoder occupies 3 addresses, adopted Dip switch to set the address, the Dip switches from 1 to 9 are a kind of binary value coding switches used to set DMX512 initial address code, the correlative bits is the 1-9 bits of the DIP switch, the 1<sup>st</sup> bit is LSC, the 9<sup>th</sup> bit MSC , 512 addresses totally.

DMX512 initial address code is equal to the total amount of the Dip switches' number from 1 to 9, press Dip switch downward (ON: at position "1"), user can get the number of its position, if pressing upward (at position "0"), the number of its position is 0.

Accept DMX512 signal only when the DIP switch FUN=OFF (at position "0")

Example 1: Set to 37

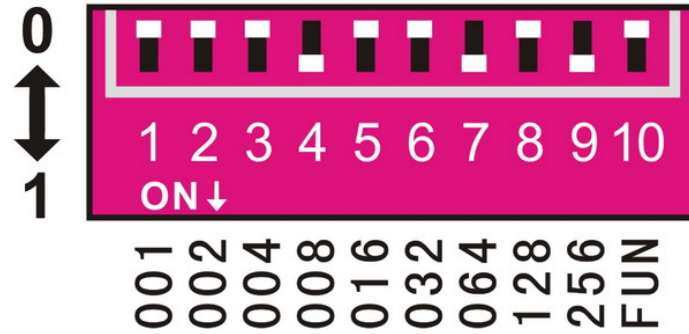
Set the 6<sup>th</sup>, 3<sup>rd</sup>, 1<sup>st</sup> bit of the DIP switch downward to "1", others to "0" (picture 1), the total sum from 1 to 9 is 32+4+1, so the DMX512 initial address code is 37.



Picture 1

### Example 2:

Set DMX512 original address code as 328: Set the 9<sup>th</sup>, 7<sup>rd</sup>, 4<sup>st</sup> bit of the DIP switch downward to “1”, the rest to “0” (as picture 2), the total sum from 1 to 9 is 256+64+8, so the DMX512 original address code is 328.



Picture 2

## VI. Instructions for other functions

### 1. Testing function:

The 10<sup>th</sup> DIP switch is FUN, acting as the function key.

DMX512 Decoder works when FUN is at OFF, receiving DMX512 signals.

Decoder testing mode works when FUN is at position “ON” as Picture 3:

SWITCH1—9 OFF: BLACK

SWITCH1 IS ON: RED

SWITCH2 IS ON: GREEN

SWITCH3 IS ON: BLUE

SWITCH4 IS ON: YELLOW

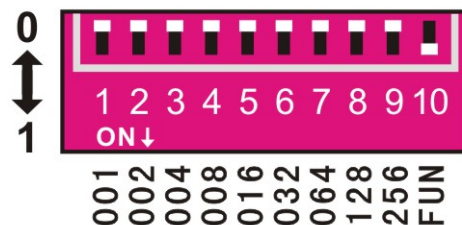
SWITCH5 IS ON: PURPLE

SWITCH6 IS ON: CYAN

SWITCH7 IS ON: WHITE

SWITCH8 IS ON: 7 CLOLOR JUMPING (8 SPEED LEVELS)

SWITCH9 IS ON: 7 COLOR SMOOTH (8 SPEED LEVELS)



Picture 3

### 2. Color jumping & color smooth speed

When decoder is at testing mode, DIP Switch 8 is at “ON”, it's the 7 Color Jumping, when DIP Switch 9 is at “ON”, it's the 7 Color Smooth, with 8 speed levels for each effect.

SWITCH 1—7 OFF: SPEED 0

SWITCH 1=ON: SPEED 1

SWITCH 2=ON: SPEED 2

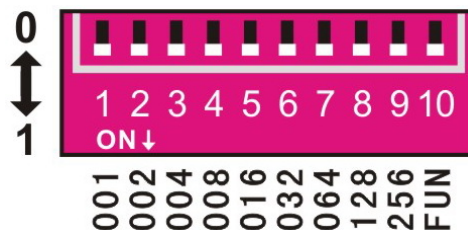
SEITCH 3=ON: SPEED 3

SWITCH 4=ON: SPEED 4

SWITCH 5=ON: SPEED 5

SWITCH 6=ON: SPEED 6

SEITICH7=ON: SPEED 7;



Picture 4



As Picture 4. When several DIP SWITCH at “ON” at the same time, comply with the largest value switch; In Picture4, it shows the decoder status is color smooth at testing function, and is at Speed 7.

## ➤ Exception Handles

Malfunction	Causation	Solution
No light	1. No power from plug 2. Power supply protection works 3. Incorrect connection or cable loose	1. Check the socket 2. Check the malfunction, re-power on 3. Check connection
Incorrect color	4. Incorrect RGB output wire connection	4. Re-connect RGB wires correspondently
No changes for certain mode	5. Speed is too slow	5. Press Speed to accelerate
Output current less than 350mA/700mA	6. The LEDs at each channel are not in series 7. the LED quantity in series is beyond the capacity 8. the input voltage is lower than the total voltage of all the LEDS in series.	6. Connect LEDS in series 7. reduce the LED quantity 8. replace a suitable power supply
Cannot Remote	1. Remote battery is low. 2. Over remote distance	1. Replace a new battery 2. Reduce remote distance

## ➤ After-Sales

From the day you purchase our products within 2 years, if being used properly in accordance with the instruction, and quality problems occur, we provide free repair or replacement services except the following cases:

1. Any defects caused by wrong operations.
2. Any damages caused by inappropriate power supply or abnormal voltage.
3. Any damages caused by unauthorized removal, maintenance, modifying circuit, incorrect connections and replacing chips.
4. Any damages due to transportation, breaking, flooded water after the purchase.
5. Any damages caused by earthquake, fire, flood, lightning strike etc. force majeure of natural disasters.
6. Any damages caused by negligence, inappropriate storing at high temperature and humidity environment or near harmful chemicals.
7. Product has been updated.

## ➤ Kindly Reminder

### Power Source Selection

Power source must be DC constant voltage type of power supply. Due to the efficient output in some power supplies are only 80% of total, so please select at least 20% higher output power supply than the consumption of LED lights.