

12-Channel LED Animation Light Engine User Manual LEN-3012DMX

12-Channel LED animation light engine has 13 in-built programs (Program C could be applied for console programming). It has 4 operation mode: DMX, AUTO, SLAVE and TEST. In DMX operation mode, 4 different receiving modes are available. In AUTO mode, it has 13 in-built programs for free combinations, and the brightness, speed, interval of each scene could be adjusted. The machine is ideal for large and complicated fiber optic projects of shooting star, starry sky, meteor, moon, fireworks, etc.

I. Safety Instruction

1. Make sure the input voltage is compatible with the light engine;
2. Keep out of rain and moist area to avoid shock hazards;
3. Avoid to run the machine at high ambient temperature(>40°C)
4. Keep good ventilation.

II. Features

1. On-line operation up to 4 sets. In-built programs could have different brightness, speed, intervals and audio mode.
2. Rj45 interface is applied. It has DMX receiving and master-slave independent lines.
3. Programs in Auto Mode is free for combination (13 in-built programs, among them Program C could be applied for DMX programming).
4. The remote control is optional.

III. Specifications

1. Item No.: LEN-3012DMX
2. input Voltage: 100-240V AC
3. LED: 12*3W, White
4. Output power consumption: 40W
5. LED Life: 50,000hrs
6. Output: DMX512 signal, 12CH light
7. DMX Channel: 54CH (could be set up at 6CH, 12CH, 18CH, 48CH, 54CH)
8. Fiber Strands: Standard---0.75mm*85pcs*12 Ports, Maximum---0.75mm*135pcs*12 Ports
9. Size: L290*W157*H80mm
10. Weight: 1.6KGS

IV. Installation

The size and outlook of the animation light engine:

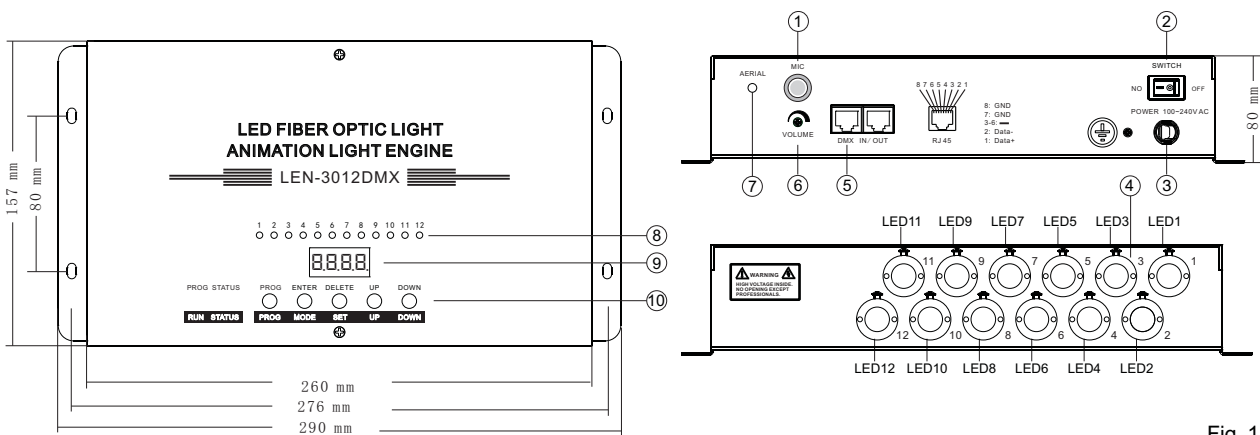
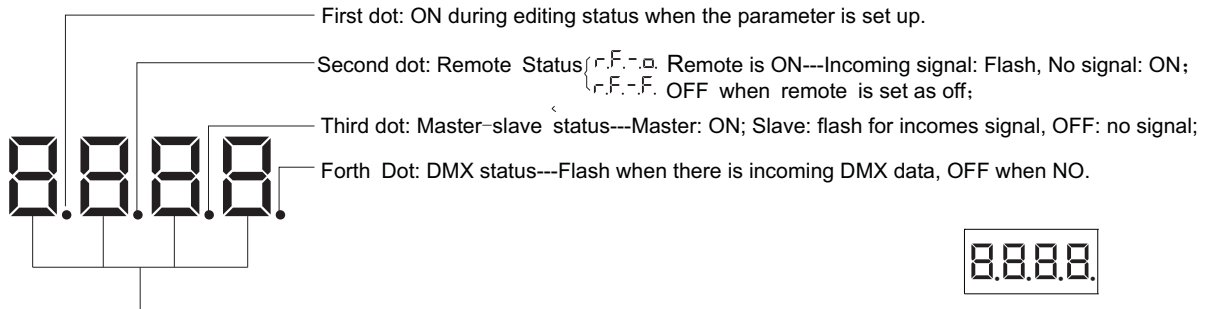


Fig. 1

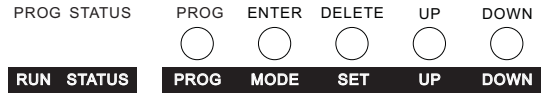
- ① MIC ② Power Switch ③ Power Cable ④ 12 Ports ⑤ DMX and Master/slave output/input
⑥ Audio Control Adjustment ⑦ Antenna ⑧ LED Indicator Light ⑨ Digital Display ⑩ Buttons

V. How to run the programs

1. The function of the digital display and buttons during the operation :



Editing Status: It displays the parameters to be edited;
 Running Status: It displays the parameters of the running program.



RUNNING STATUS /BUTTONS	Functions
PROG	To choose different built in programs
MODE	To choose different operation mode
SET	To choose the parameters of the in-built programs
UP	To set or modify the parameters
DOWN	To set or modify the parameters

2. Brief introduction of function menu in running status

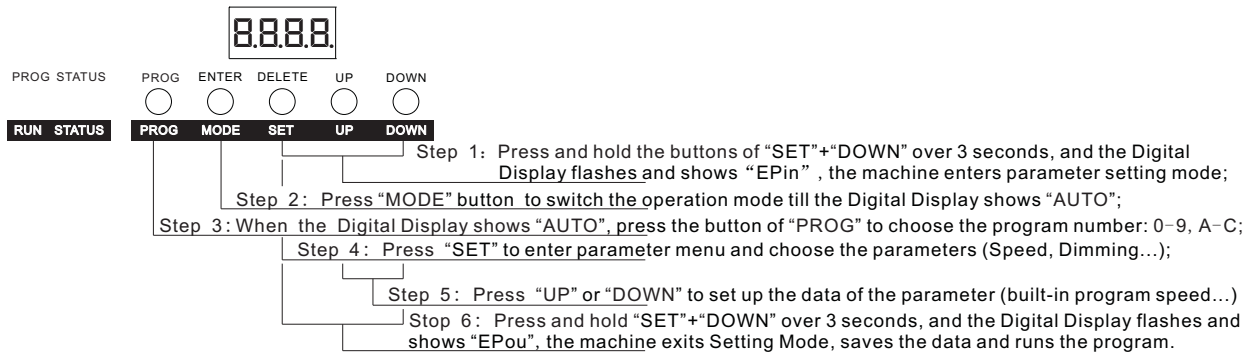
Operation Status	"MODE" Button	"PROG" Button	"SET" Button	"UP"/"DOWN" Button	Remarks
主机状态	DMX Operation Mode Digital display shows "d.n.b."	"PROG" Invalid	H888 "B": Value	DMX Address (H888. Three "B" stands for DMX address)	1. Press and hold "SET+DOWN" for 3 seconds, the editing status is ready. When the parameter is set, press and hold "SET+DOWN" again for 3 seconds to save the data and exit editing status. 2. The digital display will shut off when there is no press of buttons for a long time. The digital display will show its current status when any button is pressed. Press the button of "MODE" to show current operation mode. Press the button of "SET" to display the parameters in the current operation mode. During the operation, no parameter or mode could be set or changed. Only in Editing mode could parameter be changed. 3. When the audio control is ON, on built-in program is triggered by each audio signal. 4. Please refer to enclosed Table 5 for DMX channel function. 5. To run the built-in programs, the operation mode should be Auto in which parameters could be set. 6. Data will be automatically saved in 3 seconds after each change of the parameters.
			Hc88 "B": Value	To choose DMX channel quantity (Two "B" stands for channel value): 6CH, 12CH, 18CH, 48CH, 54CH.	
			n5-a/n5-f	"n5-a" stands for data to slave machine "n5-f" stands for no data to Slave machine.	
	Automatic Operation Mode Digital display shows "R.u.e.a"	Program number Parameter 13 in-built programs, Program 0-12 as follows: "0" All OFF "1" All ON "2" Shooting Star 1 "3" Shooting Star 2 "4" Shooting Star 3 "5" Shooting Star 4 "6" Moon: Single dot fading (12 Steps: Full on, Pause 5 seconds) "7" Fading (Full ON to Full Off): Single dot chasing to three dots off "8" Meteor 1 "9" Meteor 2 "A" Starry Sky 1 "b" Starry Sky 2 "c" Editable Program (Maximum 99 steps) Remarks: First digit on digital display of Parameter menu "X" stands for Program Number.	X5.F.B/X5.J.B "B": Value	Built in Program Speed: X5.F.B - X5.F.Y : FADING; X5.J.B - X5.J.H : CHASING From Slow to Fast: FADING: X5.F.B-20s, X5.F.C-10s, X5.F.D-5s, X5.F.E-3s; X5.F.Y-1s; CHASING: X5.J.B-1s; X5.J.C-3/4s; X5.J.D-2/4s; X5.J.E-3/8s; X5.J.F-2/8s; X5.J.G-1/8s; X5.J.H-1/16s; X5.J.I-1/25s; X5.J.J-1/33s; X5.J.K-1/50s; X5.J.L-1/100s.	
			X.e.e.B "B": Value	Intervals between program (X.e.e.B - X.e.e.R. from Slow to Fast) : X.e.e.B-0s, X.e.e.C-1s, X.e.e.D-2s, X.e.e.E-5s X.e.e.F-10s, X.e.e.G-20s, X.e.e.H-30s, X.e.e.I-60s, X.e.e.J-2min, X.e.e.K-5min, X.e.e.L-10min	
			X.F.L.B "B": Value	Strobe Speed (X.F.L.B - X.F.L.R. from Slow to Fast) : X.F.L.B - Strobe: OFF, X.F.L.C-1/15s, X.F.L.D-1/10s, X.F.L.E-1/8s秒, X.F.L.F-2/8s, X.F.L.G-3/8秒, X.F.L.H-4/8s, X.F.L.I-1s, X.F.L.J-2s, X.F.L.K-5s	
			X.d.n.B "B": Value	Built in Program Dimming (X.d.n.B - X.d.n.E 6-level): X.d.n.C-10%, X.d.n.D-20% X.d.n.E-40%, X.d.n.F-60%, X.d.n.G-80%, X.d.n.H-100%	
			P.C.B.B "B": Value	Output channels of online operation (Up to to 4 sets in serial connection) P.C.I.2-12CH P.C.I.4-24CH P.C.I.8-48CH	
			L.d.n.B "B": Value	Overall dimming (L.d.n.B - L.d.n.E 6-level) : L.d.n.C-10%, L.d.n.D-20% L.d.n.E-40%, L.d.n.F-60%, L.d.n.G-80%, L.d.n.H-100%	
			L.n.-a/L.n.-f	"L.n.-a" Stands for Audio ON "L.n.-f" Stands for Audio OFF	
n5-a/n5-f	"n5-a" Means delivering data to slave machine "n5-f" Means no delivering				
r.F.-a/r.F.-f	"r.F.-a" Means remote control ON "r.F.-f" Means remote control OFF				

Continued

	Testing Operation Mode Digital display shows "E.E.S.E."	"PROG" Invalid	<p>E-88 "8" refers to different testing value serial number</p> <p>RS-a/RS-F</p>	<p>Testing Programs (Light source output: E-00-E-13) :</p> <p>E-00 - ALL OFF; E-13 - ALL ON; E-01-E-12 refer to the corresponding light source: ON. (OFF is not).</p> <p>"RS-a" stands for delivering data to slave machine. "RS-F" stands for no delivering of data to slave machine.</p>	
Slave Machine Status	Slave Machine Operation Mode Digital display shows "SLR"	"PROG" Invalid	<p>SL88 "8" refers to slave machine address value</p>	<p>Slave machine address (SL01-SL04)</p> <p>SL01 stands for receiving data from master 1-12 (synchronous with the master)</p> <p>SL02 stands for receiving data from master 13-24</p> <p>SL03 stands for receiving data from master 25-36</p> <p>SL04 stands for receiving data from master 37-48</p>	

3. Parameters settings in four operation modes

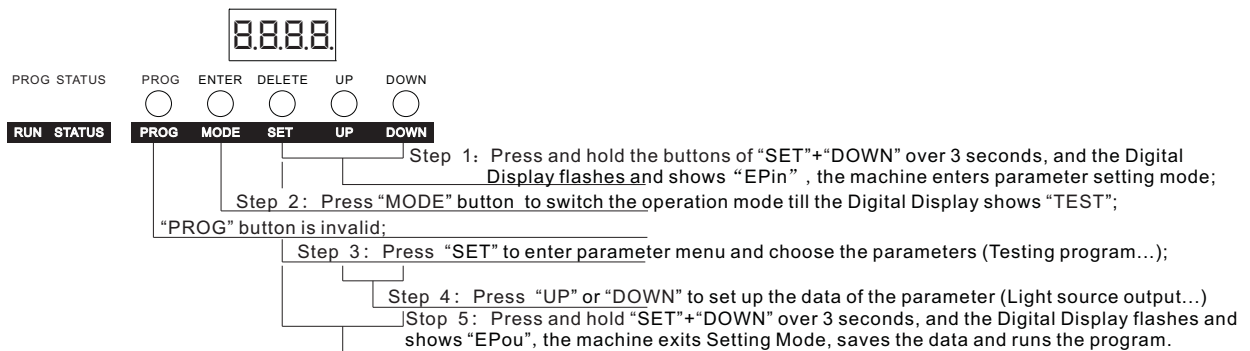
① Automatic operation mode (AUTO)



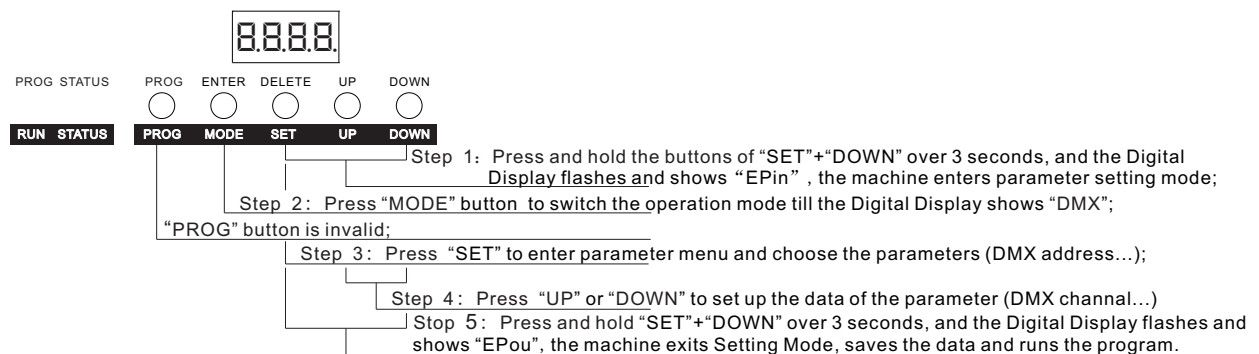
Remarks:

In Auto operation mode, the machine runs automatically combined programs (Please refer to Automatic Program Order Combination Edit Page 4).

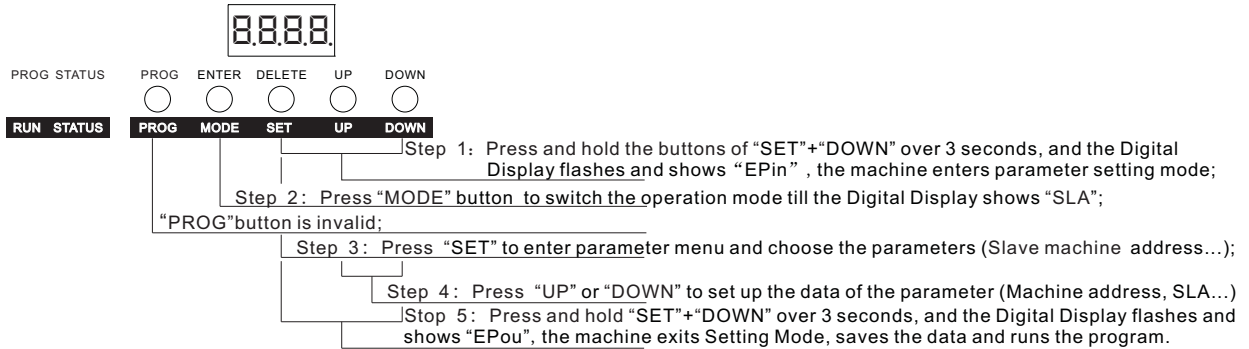
② Testing Operation Mode (TEST)



③ DMX Operation Mode (DMX)

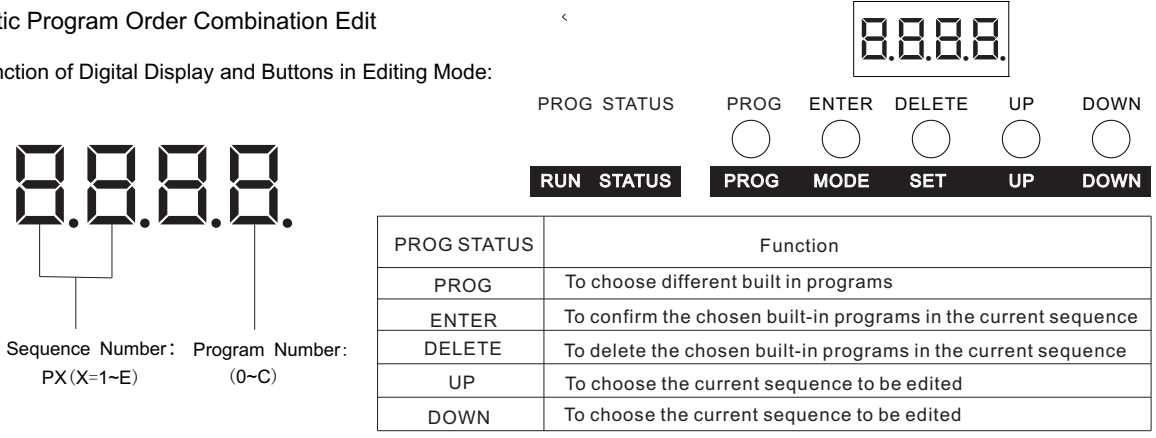


④ Slave Machine Operation Mode (SLA)



VI. Automatic Program Order Combination Edit

1. The function of Digital Display and Buttons in Editing Mode:



Editing steps to Automatic programs sequence combination:

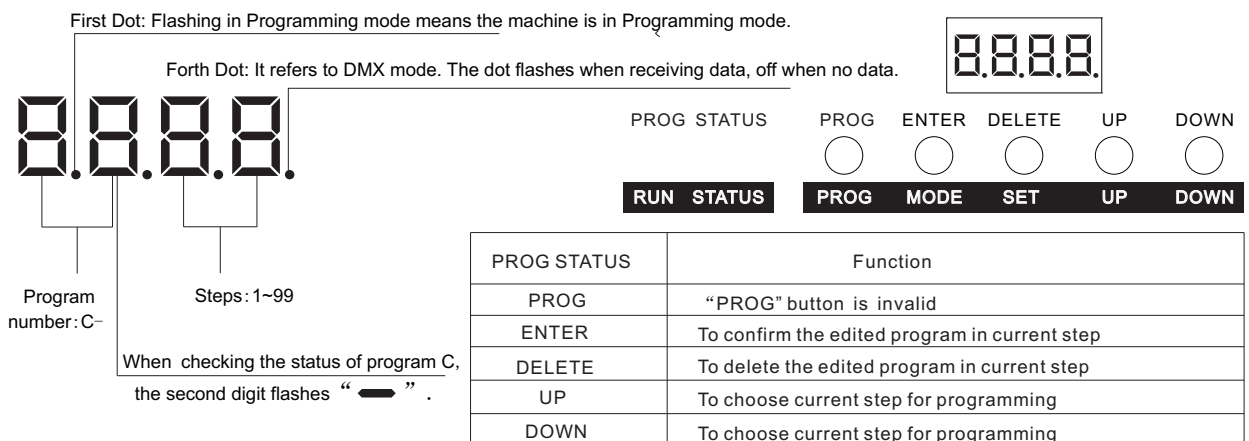
- ① Press and hold "ENTER" + "DOWN" over 3 seconds, the machine enters Editing Mode "ECin";
- ② Press the button of "UP" or "DOWN" to adjust the current sequence number to P1(1-E, maximum 14 steps editable)
- ③ Press the button of "PROG" to choose the built-in program in the current sequence; then press "ENTER" to confirm and the machine goes to next step or press "DELETE" to delete the built-in program and exit back to previous step; Repeat the procedure to edit multiple sequence (Remarks: Press of button "ENTER" in each sequence will automatically save the data).
- ④ Press and hold "SET"+ "DOWN" over 3 seconds, and the Digital Display flashes and shows "ECou", the machine exits Setting Mode.

Remarks:

1. All the parameters in the built in program to be utilized should be set up before editing automatic programs sequence combination.
2. If the intervals are different when the same program is repeated utilized, Program 0 could be inserted (Program 0 is "ALL OFF" which needs to have intervals pre-set).

VII. Program C Programming

1. The function of Digital Display and Buttons in Programming Mode :

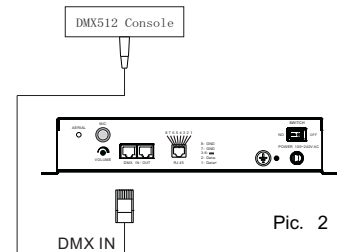


Programming steps of programmable Program C (Maximum programming steps are 99) (See Pic. 2 for connection diagram)

- ① Insert the data cable of DMX console (RJ45 cable, 1 D+ 2 D-) into "DMX IN" port of the animation light engine.
- ② Press and hold "UP"+"DOWN" over 3 seconds to enter Programming Mode with "Edin" shown in Digital Display. When the first and forth dot flash, it means that there is DMX signal coming in and the light engine works in good condition.
- ③ Press "UP" or "DOWN" to adjust the current step to Step 1. Program the light effect through the console and save the programming by pressing the button "ENTER" and go to next step or delete the programming by pressing the button "DELETE" and go back to previous step. Repeat the above procedure and save multi-steps in the program (The light engine will exit the Programming Mode if there is no movement in 5 minutes.).
- ④ Press and hold "UP"+"DOWN" over 3 seconds to save and exit program mode. The Digital Display shows "Edou".

Remarks:

1. Once the programming is finished and the console is disconnected, the Program C effect could be reviewed when the second digit of the Digital Display flashes after 5 seconds entering the Programming status. If the programs need any change, note down the steps to be revised first. Connect the light engine to the console, and make the change.
2. If one or more steps need to be deleted when the programming is finished, it is recommended to delete all the steps by pressing "DELETE" if the steps ahead and after the deleted ones are not clear. It is better to star the programming again.



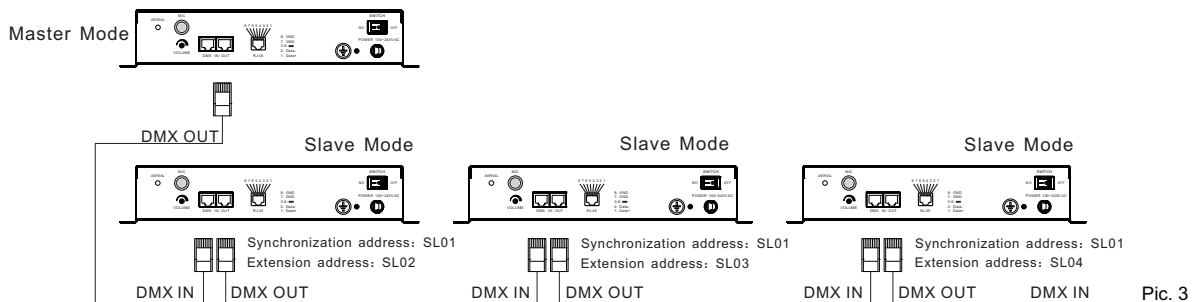
2. Difference between Program C programming and Console programming

- ① The program edited in Program C is stored in the light engine. The console is a programming tool and could be disconnected when the program is running.
- ② The program edited by DMX console is stored in DMX console. The console is necessary for the programming running.

3. Two on-line control ways when the program is running:

(1) Master-slave control way:

There are two ways of master-slave mode. One is the slave runs the same program as the master; the other mode is that the slave machine works as an extension of the master machine, and runs the data delivered by the master. The connection diagram is as follows:

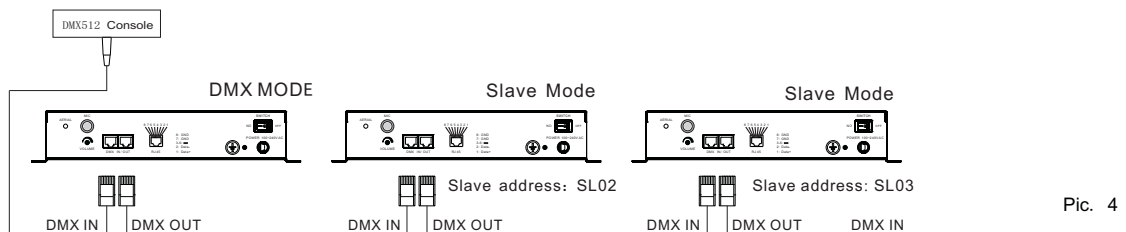


Remarks:

Multiple machines could be on line for synchronous control, and signal amplifier may be need when there is any decay. Maximum 4 sets is allowed extension on line operation (one of them as the master).

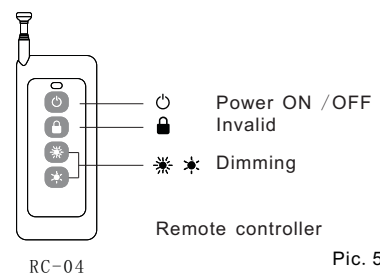
(2) DMX512 signal control mode

In this control mode, the DMX512 console delivers the signal and controls the operation of the light engine. The connection diagram:



VIII. Remote control (Pic. 5)

The remote control function needs to setup in "AUTO" mode. In "AUTO" mode, set the parameter as "r.F.-.a.", and the remote control is activated. The button "⏻" controls ON and OFF of the light engine. The buttons "⌘" and "⌘" adjust the brightness of the light engine (6-level dimmable). The button "🔒" is invalid. To terminate the remote control function, set the parameter as "r.F.-.F." in "AUTO" mode.



IX. Restore Factory Reset

1. Press and hold "ENTER"+"DELETE"+"UP"+"DOWN" over 3 seconds, the Digital Display will flash and show "dEFu",ress "ENTER";
2. Press the button of "ENTER"and the factory reset is restored.

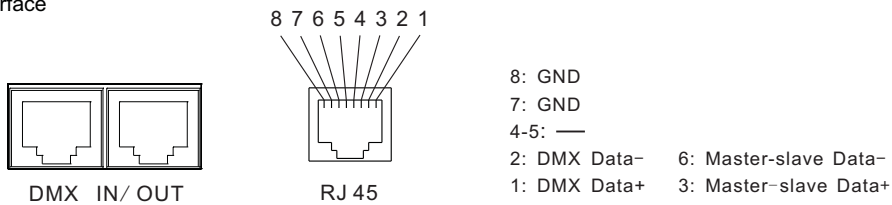
Remarks :

The default value of different programs:

- Shooting Star: Chasing 1/25s
- Meteor: Chasing 2/4s
- Starry Sky: Fading 1s

X. Interface Definition:

DMX Interface



Appendix

Table 1

Function of 6 channels in DMX Mode:

1CH-PRO (Built in Program)	0-255	0-15, turn off 12 ports; 16-255 in correspondence to 13 programs in AUTO Mode.
2CH-SPEED (Speed of built in program)	0-255	0-255 corresponding to different speed of built in programs, from fast to slow. There are 16 levels of speed (corresponding to the speed in AUTO Mode).
3CH-STOP TIME (Intervals)	0-255	0-255 corresponding to different intervals between built in programs, from short to long. 0-15: no intervals; 16-255: 10 levels.
4CH-FLASH SPEED (Strobe Speed)	0-255	0-255 corresponding to different strobe speed of built in programs, from fast to slow. 0-15: no strobe; 16-255: 9 levels.
5CH-DIMMER (Brightness)	0-255	0-255 corresponding to different overall brightness, from weak to strong. 0-9: All OFF; 10-255: 9 levels.
6CH-Audio Control	0-255	0-239: Audio control---OFF, 240-255:Audio control---ON

Table 2:

Function of 12 channels in DMX Mode:

1CH-12CH	0-255	Dimming of 12 channels, 0-3: OFF, 4-255--1%-100%
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Table 3:

Function of 18 channels in DMX Mode:

1CH-12CH	0-255	Dimming of 12 channel output (When the figure of Ch13 is lower than 16 hours).
13CH-PRO (Built in Program)	0-255	0-15 corresponding to 12 ports; 16-255 in correspondence to 13 programs in AUTO Mode.
14CH-SPEED (Speed of built in program)	0-255	0-255 corresponding to different speed of built in programs, from fast to slow. There are 16 levels of speed (corresponding to the speed in AUTO Mode).
15CH-STOP TIME (Intervals)	0-255	0-255 corresponding to different intervals between built in programs, from short to long. 0-15: no intervals; 16-255: 10 levels.
16CH-FLASH SPEED (Strobe Speed)	0-255	0-255 corresponding to different strobe speed of built in programs, from fast to slow. 0-15: no strobe; 16-255: 9 levels.
17CH-DIMMER (Brightness)	0-255	0-255 corresponding to different overall brightness, from weak to strong. 0-9: All OFF; 10-255: 9 levels.
18CH-Audio Control	0-255	0-239: Audio control---OFF, 240-255:Audio control---ON

Table 4:

Function of 48 channels in DMX Mode:

1CH-48CH	0-255	Dimming of 48 channels. 0-3: OFF, 4-255--1%-100%
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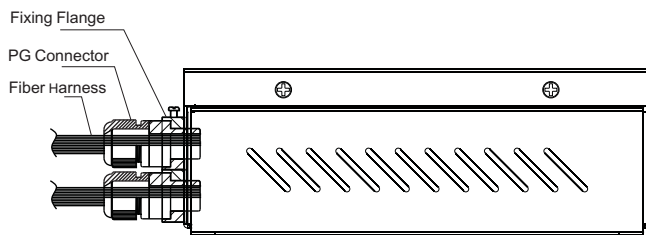
Table 5:

Function of 54 channels in DMX Mode:

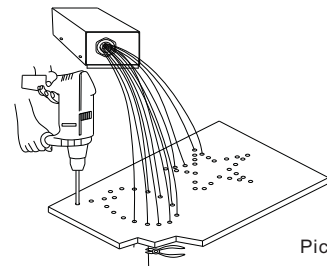
1CH-48CH	0-255	Dimming of 48 channel output (When the figure of Ch19 is lower than 16 hours).
49CH-PRO (Built in Program)	0-255	0-15 corresponding to 12 ports; 16-255 in correspondence to 13 programs in AUTO Mode.
50CH-SPEED (Speed of built in program)	0-255	0-255 corresponding to different speed of built in programs, from fast to slow. There are 16 levels of speed (corresponding to the speed in AUTO Mode).
51CH-STOP TIME (Intervals)	0-255	0-255 corresponding to different intervals between built in programs, from short to long. 0-15: no intervals; 16-255: 10 levels.
52CH-FLASH SPEED (Strobe Speed)	0-255	0-255 corresponding to different strobe speed of built in programs, from fast to slow. 0-15: no strobe; 16-255: 9 levels.
53CH-DIMMER (Brightness)	0-255	0-255 corresponding to different overall brightness, from weak to strong. 0-9: All OFF; 10-255: 9 levels.
54CH-Audio Control	0-255	0-239: Audio control---OFF, 240-255:Audio control---ON

Preparation of the Fiber Harness and its Connection to the Light Engine :

- (1) Cut the fiber strands to the requested length. The cross section should be vertical to the fiber strands and keep clean and smooth.
- (2) Peel off 50-100mm of the PVC sheath of the fiber optic cable (not necessary if there is no PVC jacket). Be careful not to hurt the fiber strands.
- (3) Unscrew the PG Connector and insert the fiber optic cable into the PG Connector and Fiber Connector until the end of the cable is flush with the Fiber Connector. Screw tightly the PG Connector.
- (4) Insert the finished Fiber Connector into the Fixing Flange, screw tightly the Screw. (Pic. 6)
- (5) Installation of the fiber harness to the light engine. (Pic. 7)
- (6) The fiber strands should be installed on the panel by order for effect of Shooting Star, Moon, etc.



Pit. 6



Pict. 7