

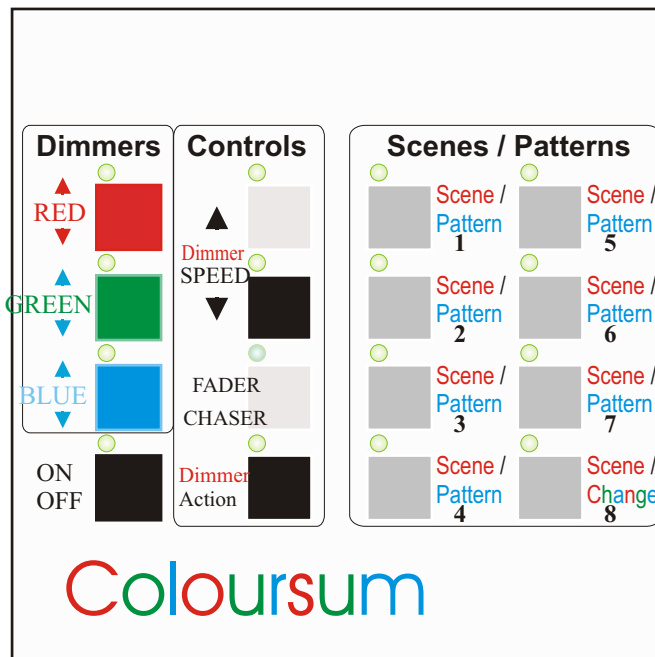


Digital Lighting Systems, Inc.

DMX512 ANIMATION CONTROLLERS

COLOURSUM

DMX512 Automatic Color Mixer & 3 Channels Dimmer / 8 Scenes



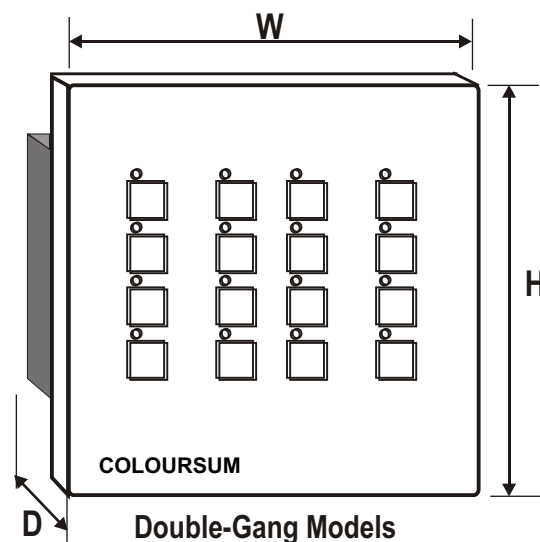
USER MANUAL

COLOURSUM

Maximum Outside Dimensions

MODEL	WIDTH	HEIGHT	DEPTH	GANG
COLOURSUM	4.600" 117 mm	4.600" 117 mm	1.650" 042 mm	Double

DEPTH (D) includes circuit board with components



INTRODUCTION

The **Coloursum** is a three-channel 8 scenes lighting color mixer. 3 Individual channel dimming allows the use of Red, green and Blue primary color sources to create thousands of combinations of colors. This new design employs the latest electronic technology and presents a control panel with a sleek modern look and simple to use controls. Added features include a standard **DMX-512** output. When in dynamic mode, the **COLOURSUM** creates dazzling light shows from user selected crossfading between user programmable scenes. In static mode, the **COLOURSUM** acts as a three-circuit dimmer with a Eight scenes. The **COLOURSUM** can also work in an ON/OFF between scene sequencing mode. In short, whether your lighting project requires sharp light sequencing or a more subtle cross-fade mixing of colors, the **COLOURSUM** provides you with a perfect solution. The **DMX-512** compatibility makes the **COLOURSUM** a perfect and inexpensive solution for retrofit applications by working with existing **DMX-512** dimmers. The **COLOURSUM** requires a double-gang masonry box.

COLOURSUM FEATURES

- ♦ Economical.
- ♦ 3 Channel Logic DMX512 (1,2,3)
- ♦ 8 scene crossfading Patterns.
- ♦ Cross-Fade and Chase Modes.
- ♦ Static 3-Ch. Dimmer with 8 Scenes.
- ♦ User Programmable scenes
- ♦ Automatic Pattern Change Mode.
- ♦ Single Pattern Select Mode.
- ♦ Independently Adjustable Chase Rate.
- ♦ Independently Adjustable Fade Rate.
- ♦ Blackout Switch.
- ♦ Nonvolatile Memory.
- ♦ Simple PushButton Operation.
- ♦ LED Indicators.

APPLICATIONS

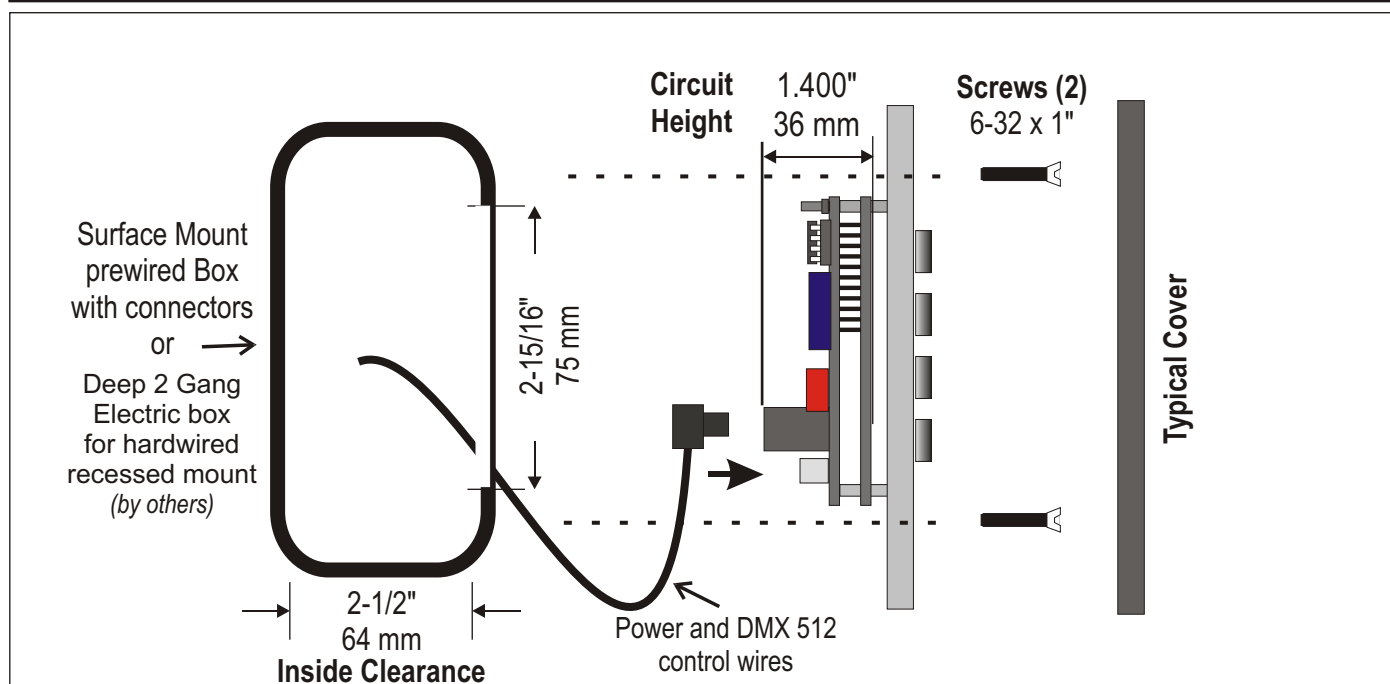
- Architectural & Decorative Lighting.
- Landscape Lighting.
- Structure Lighting.
- Pond and Fountain Lighting.
- Museums and Art Galleries.
- Movie Theaters.
- Theme Parks.
- Fair Rides.
- Point of Sale Displays.
- Christmas Displays.
- Electric Sign Animation.
- Entertainment and Club Lighting.

Physical and Electrical Specifications

Back Plate:	Metal Construction.
Dimensions:	See Table Above.
Voltage range:	8 to 12 V ; 50 / 60 Hz or VDC
Power:	200 mAmps
Data Output:	RS485 Compliant.
Output Drive:	256 H. Impedance RS485
Data Format:	Standard DMX-512 Protocol.
Data Retention:	10 years, no batteries required.
ESD Protection:	15 KV on data input and output.
DMX output Port:	Standard RJ45 pins 7 & 8 (XLR5 output available)

PD408-DMX DIMMER PACK

The **COLOURSUM** requires an external dimmer pack with a DMX cable. Any DMX-512 compatible dimmer may be used. Digital Lighting Systems, Inc. manufactures high quality low cost DMX-512 dimmer packs. The **PDseries** is excellent along with DC voltage packs designed to control LED lighting.



Mounting requirements

- The **Coloursum** mounts in double-gang deep electric box or may be ordered in a surface mount aluminum enclosure. The Enclosure has a chassis mounted RJ45Jack and a 2.5mm male /5mm power connector.
- Double Gang box must have a minimum depth of 2-1/2" and a minimum inside height of 2-15/16" to allow clearance for printed circuit board. (See above illustration.)
- Use Grounded metal boxes to protect against high static discharge .

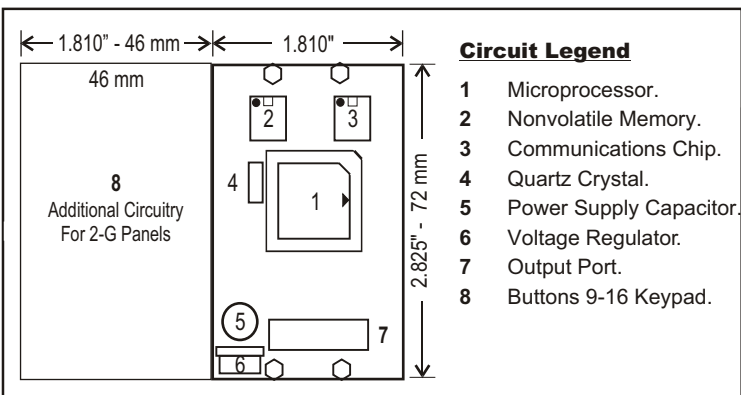
Ordering Information

COLOURSUM: Cross-Fader/Chaser/4-Channel Dimming Controller, 2-G size.

Coloursum-AE: Alum.Enclosure for Coloursum.

Wiring Notes

- All wiring between the Coloursum and dimmer packs is low voltage (NEMA Class 2) and must be a shielded twisted pair cable.
- Standard industry DMX-512 cables may be used with the Coloursum.
- Do not run DMX cable in the same conduit with non-class 2 circuits.
- The Coloursum is supplied with an external low voltage wall adapter.
- Power for the adapter may be on a different power phase from power supplying the DMX-512 dimmer packs or fixtures.
- Installation must conform to local and/or NEC code requirements.



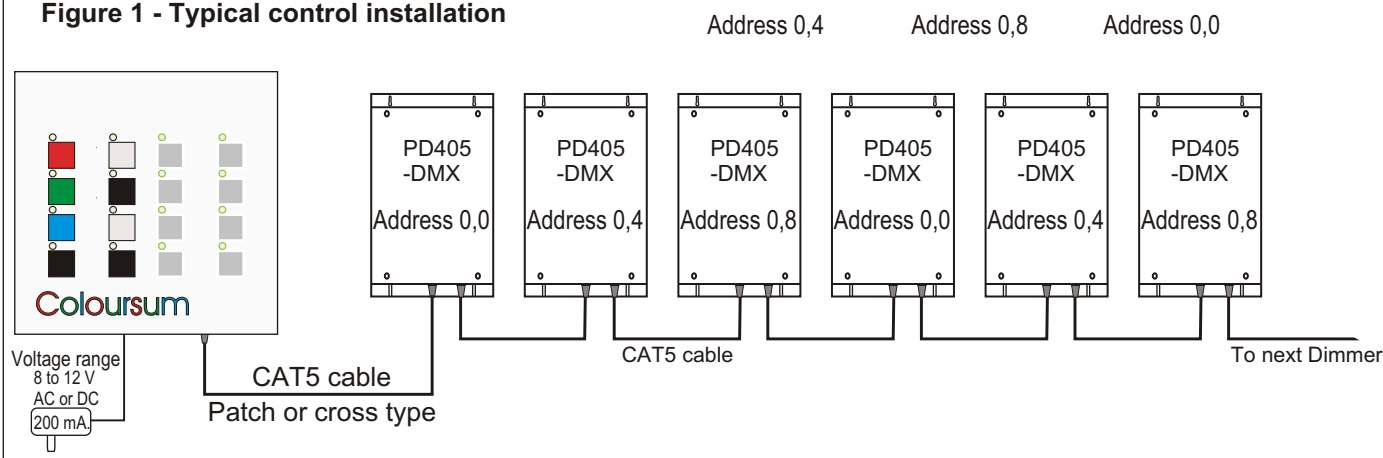
A - General Information

The Coloursum controllers use low-power electronic components and do not directly connect to high voltage supply or electric loads. They are powered by an external low-voltage transformer. The loads connect to a separate DMX-512 compatible dimmer pack(s). The Coloursum controls the outputs of the dimmer pack(s) by sending a series of digital dimming levels over a low voltage cable. Several DMX dimmer packs may be connected to the same control cable in a daisy-chain configuration. The DMX information is received by all dimmers and each pack extracts and uses the portion of the information that is intended for it. This is accomplished by setting each dimmer pack to a different DMX address by way of address selectors. It is possible to have several dimmer packs set to the same address when controlling loads that exceeds the dimmer's output capacity. Loads may be broken into smaller sections and still be controlled as a single load by any particular DMX

B - Coloursum DMX Output

The information sent by the Coloursum is in accordance with the DMX-512 standard control protocol. The Coloursum sends control information over the first 3 DMX addresses. All remaining addresses, up to 512, are sent a DMX off-level. Figure 2 below shows the various DMX outputs generated by the Coloursum according to the number of channels setting.

Figure 1 - Typical control installation



Although the COLOURSUM is a 3 channel (RGB) controller it outputs the first 12 channels of DMX512 packets in order to be able to use 4 channel dimmer packs for RED GREEN BLUE without wasting dimmer outputs.

The outputs levels are repeated every 3 channels.

Channel 1 = Channel 4 = Channel 7 = Channel 10

Channel 2 = Channel 5 = Channel 8 = Channel 11

Channel 3 = Channel 6 = Channel 9 = Channel 12

FIG. 2 - COLOURSUM DMX512 OUTPUT FORMAT

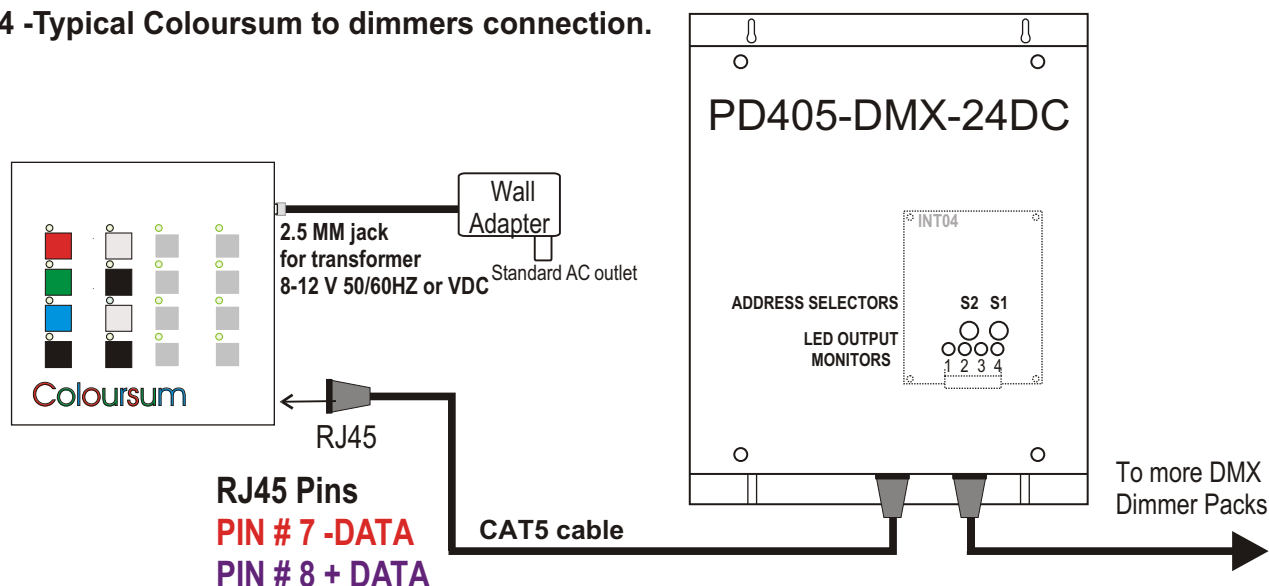
DMX OUTPUT	Chan:1	Chan:2	Chan:3	Chan:4	Chan:5	Chan:6	Chan:7	Chan:8	Chan:9	Chan:10	Chan:11	Chan:12	Repeat
Values	RED LEVEL	GREEN LEVEL	BLUE LEVEL	RED LEVEL	GREEN LEVEL	BLUE LEVEL	RED LEVEL	GREEN LEVEL	BLUE LEVEL	RED LEVEL	GREEN LEVEL	BLUE LEVEL	Repeat

Key: Level = Value of dimming level from 0-255

C - Installation Instructions (See Figs. 4 & 5 below).

1. Install the Coloursum in a convenient location. Fig. 4 shows an COLOURSUM which has a female RJ45 jack connector mounted on the side of its aluminium enclosure.
2. Provide a standard power outlet with a toggle switch for the wall transformer. Plug the supplied transformer to the Coloursum using the Molex connector plugs. The Coloursum may remain energized at all times. The loads can be turned off by using the front panel 'Black-Out' Button.
3. Install the DMX dimmer pack and follow the wiring instructions in its user manual.
4. Connect the Coloursum to the Dimmer Pack using a standard Cat5 patch or gross cable Skip to Operating Instructions.

Fig. 4 -Typical Coloursum to dimmers connection.

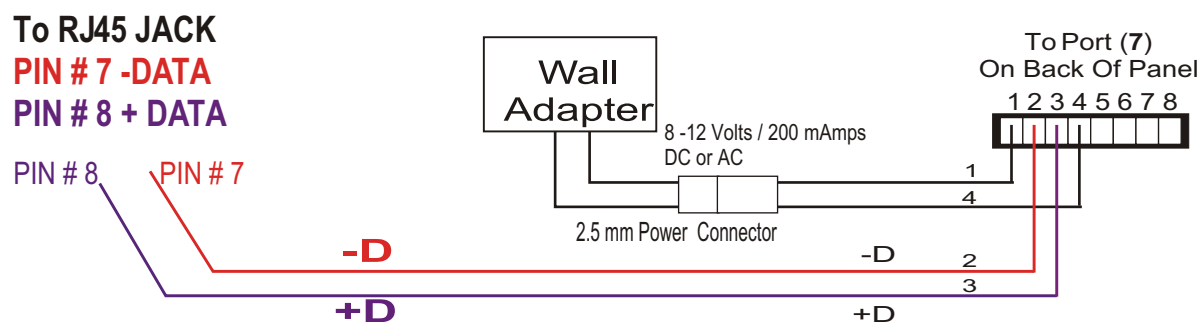


E - Coloursum DMX and Power Connections

The **Coloursum** panels use a standard RJ45 connector to connect to DMX equipment as seen in Figs. 4 . They are also available on request with an unterminated pigtail that plugs into the back of the unit so that customers may make their own DMX connections or with a pre-terminated cable with XLR connector to the customer's desired length (J8FXLR5-L). and an external transformer connector Jack 2.5 mm/5mm ..

Power and DMX pin assignments are shown in Fig. 5.

Fig. 5 -INTERNAL Logic power and Data connection



COLOURSUM Operating Instructions

I. Introduction

The COLOURSUM DMX-512 is a 3 Channel (3 primary colors) 8 scenes dimmer controller with programmable scene sequence and cross fade.

The COLOURSUM has simple to use push-Button controls with LED indicators. Following is a description of the operation of the COLOURSUM Buttons and the various functions they perform.

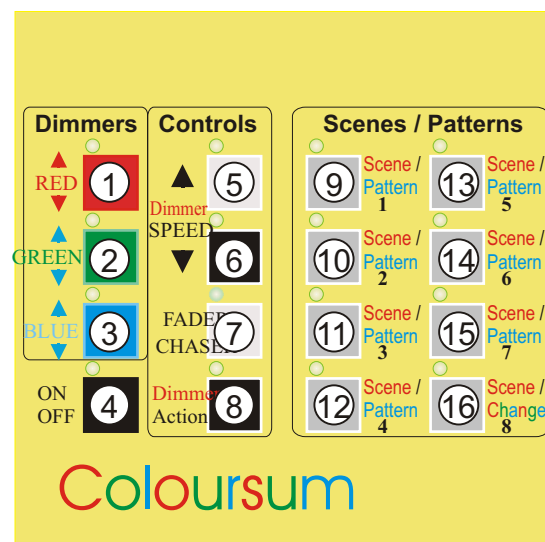


Fig. 6 The Coloursum Front Panel

II. The Control Panel

Buttons # 1,2,3 & 5,6; Dimmers Controls

To activate the individual control functions, the COLOURSUM should be on Dimmer Mode. Button number 8 should be pressed momentarily and its LED indicator should be ON.

Each of the 1 (RED),2 (GREEN),3 (BLUE) channels could be dimmed or brightened by pressing and releasing the corresponding Button. The LED indicator of the pressed Button should come ON. Then to adjust the Level of this channel Push and hold Button 5 to raise or push and hold Button 6 to lower.

The LED indicators of Buttons 5 & 6 will both come ON when the level is between 1 and 99%. The LED of Button 5 will come ON and of Button 6 will come OFF when the maximum 100 % is reached. The LED of Button 6 will come ON and of Button 5 will come OFF when the minimum 0 % is reached.

For step by step Level adjustment push momentarily Button 5 or Button 6 .
For each momentary push the level will change by 1 step out of 256.

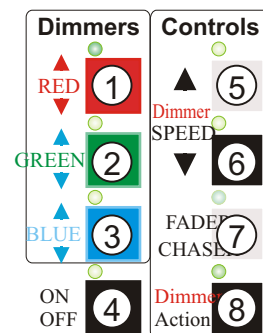


Fig. 7 Dimmers controls

Button # 4; All OFF

Pushing Button # 4 will alternate between Turning all three outputs OFF and returning to the previous status of operation.

Buttons # 5 & 6; Fade / Chase rate

Pushing Button # 5 will increase the speed of level change for the dimmers and the Fade between scenes in the action mode.

Pushing Button # 6 will decrease the speed of level change for the dimmers and the Fade between scenes in the action mode.

COLOURSUM Operating Instructions

Button # 7; Fader / Chaser

Pushing Button # 7 will alternate between Fader mode (slow change between scenes) to Chaser mode (instantaneous Scene ON and scene Off)

Button # 8; Dimmer / Action

Pushing Button # 8 will alternate between The 3 Channel **Static Dimmer** 8 scenes Operation and the **Dynamic Crossfade or Chase** between selectable scenes.

Buttons # 9 through 16 ; Scenes

The COLOURSUM has a default lock for the scenes to avoid overwriting by mistake.

To unlock the scenes push the recessed reset Button (between Buttons (1 and 5) under face plate or unplug and replug power. During the Reset cycle which lasts around 10 seconds while all LEDs on the COLOURSUM are ON, Push simultaneously Buttons **12 and 16** .

This will unlock the scenes to be programmed.

To program the scene presets the COLOURSUM should be on Dimmer Mode; Button number 8 should be pressed momentarily to turn its LED indicator ON.

Pushing anyone of the scene Buttons will recall the corresponding prerecorded scene.

Using the dimmer Buttons (1 ,2 or 3) will override the levels if desired.

8 default scenes are preprogrammed in the factory as follows:
1 =RED; # 2=GREEN; # 3=BLUE and the rest of the scene have combination of colors.

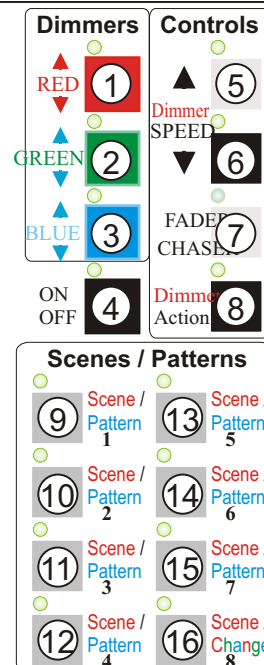


Fig. 8 Scene setup

Programming of the scenes is performed as follows:

Adjust Light levels on the three channels to get the desired Color mix. Press and hold any of the Scenes Buttons (9 to 16) to record the scene.

Repeat till all scenes are programmed.

Reset Coloursum or disconnect power and reconnect to LOCK the scenes.

In the **Motion** mode:

Sequencing (Fade or Chase) between scenes could be selected as follows.

- Push Pattern Button # 1(9) Runs between Scenes # 1 & 2
- Push Pattern Button # 2(10) Runs between Scenes # 1 , 2 & 3
- Push Pattern Button # 3(11) Runs between Scenes # 1 , 2 , 3 & 4
- Push Pattern Button # 4(12) Runs between Scenes # 1 , 2 , 3 , 4 & 5
- Push Pattern Button # 5(13) Runs between Scenes # 1 , 2 , 3 , 4 , 5 & 6
- Push Pattern Button # 6(14) Runs between Scenes # 1 , 2 , 3 , 4 , 5 , 6 & 7
- Push Pattern Button # 7(15) Runs between Scenes # 1 , 2 , 3 , 4 , 5 , 6 , 7 & 8
- Push Pattern Button # 8(16) Runs a factory programmed auto pattern.

LIMITED WARRANTY

Digital Lighting Systems, warrants to the purchaser that its products have been carefully manufactured and inspected and are warranted to be free from defects of workmanship and materials when used as intended. Any abuse or misuse contrary to normal operation shall void this warranty.

Digital Lighting Systems' obligation under this warranty shall be limited to replacement or repair of any units as shall within one year of date of invoice from **Digital Lighting Systems**, prove defective; and **Digital Lighting Systems** shall not be liable for any other damages, whether direct or consequential. **The implied warranties of merchantability and fitness for a particular purpose are limited to the duration of the expressed warranty.** Some states do not allow the exclusion of the limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, you may also have other legal rights which vary from state to state.

Defective merchandise may be returned to **Digital Lighting Systems**, prepaid, after prior notification has been given and approval obtained for the return. To obtain prior approval for the return of the defective items, contact your local Digital Lighting Systems distributor, representative, or:

Digital Lighting Systems, Inc.

Attn: Customer Service Department
12302 SW 128 Ct. Bay # 105
Miami, FL 33186
(305) 969-8442

Upon request, replacement unit(s) will be shipped as soon as available. Unless immediate shipment of replacement merchandise is requested, **Digital Lighting Systems** will not ship replacement merchandise until defective merchandise is received, inspected, and determined to be defective.

No labor charges in connection with warranty problems will be reimbursed by Digital Lighting Systems without prior written approval from the factory.

Digital Lighting Systems distributors and representatives have no authority to change this warranty without written permission.

Digital Lighting Systems reserves the right to determine the best method of correcting warranty problems.



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