



# **Series 7**

## **DALI RGB Paint & Sequence Model**

### **User Manual**

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## Specifications

	Din mount enclosure including terminals	Mother board DALI, inputs,	Daughter boards	
			PSU	SCI
<b>Physical</b>				
Size (mm) (l) x (w) x (h/d)	105x71x59	74x50x15	16x50 x11	14x35x11
Weight (grams, approximate)	90	28	8	4
Materials	ABS beige	Lead-free	Lead-free	Lead-free
<b>Power</b>				
Bus Power Output initial DALI voltage (@ 24v dc input) * Maximum (current limited) rating	-	-	21vdc 245mA	-
Input – range (>500mA)	-	9-24v	-	-
Input – recommended regulated switch mode 1A + power supply *	-	DC 24vdc	-	-
Current Drain on DALI power supply (if not externally powered)	-	13 mA	-	2 mA
<b>Protection</b>				
Polarity reversal on DC input	-	Immune	-	-
Over-current protection	-	S	S	-
Transient protection on DALI circuitry	-	S	S	-
Accidental mains connection to DALI Bus	-	Immune	-	-
<b>Status LEDs</b>				
Indicating status led for input power present	S	S	S	-
Indicating status led for output power present	S	-	-	-
Indicating status led for DALI transmitting	-	-	S	-
Indicating status led for data activity	-	-	-	S

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## Requirements

### RGB LED/Lights

Important: The PAINT function requires the DIDIO to work with predetermined addresses for the lights / leds to be controlled and assumes a standard 3 addresses for red green and blue are to be used. 4 addresses for red, green, blue and white can be ordered too, and other configurations are possible at time of order, for more channels for example, at additional cost.

The DALI RGB DIDIO models assume the DALI lights, dimmers or led controllers have addresses and colours as follows: 0=red, 1=green, 2= blue. If this is not the case, you will need to advise the factory at the time of order.



### Pin functionality

Input (bottom row) to GND (top row) (note, not the DMX ground)

- 1 - on/off latching (leave open for ON, short to ground for OFF)
- 2 - next scene (momentary, short to ground to trigger), if ON, holding for 2s enters paint mode, if OFF, holding for 3s does factory reset
- 3 - fade up (if showing a scene) or speed up (if showing a sequence) (momentary, short to ground to trigger)
- 4 - fade down (if showing a scene) or slow down (if showing a sequence) (momentary, short to ground to trigger)
- 5 - on/off (momentary, toggles between ON and OFF states), can be used instead of pin 1

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## DIDIO DALI RGB MODELS

### Paint & sequence control features

9 preset colours are programmed in the factory as standard. These colours can all be 'painted' to virtually any colour (dependant only on the original colour sources) by the user. The painted colour is automatically stored and can be recalled at any time. A painted colour can be changed as often as desired. The user can restore all original colours by a simple factory reset procedure. The DIDIO is shipped standard with the following colours in the order shown below:

1. Red
2. Orange
3. Yellow
4. Green
5. Cyan
6. Sky Blue
7. Blue
8. Magenta
9. Rose Purple

The above list assumes monochromatic led sources (eg most leds) of red green and blue.

In addition to the 9 colours, there are 2 selectable sequences. The standard DIDIO RGB Paint & Sequence Model comes preprogrammed with a continuous sequence of each of the 9 colours in order, and a second sequence which continuously selects and steps through randomly generated colours:

10. One preset colour sequence (painted colours automatically replace the preset for that colour in the sequence once stored).
11. One random sequence that generates its own colour combinations.

Number of Presses of MODE button	Slot Result
0	Red
1	Orange
2	Yellow
3	Green
4	Cyan
5	Sky Blue
6	Blue
7	Magenta
8	Rose Purple
9	Preset Colour Sequence Mode*
10	Random Colour Sequence Mode*
11	Loops back to Red

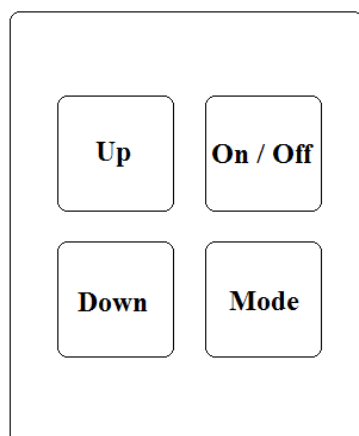
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## Turning the Unit On



The On/Off switch is the only latching switch in this configuration. All other switches are momentary – ie they return to their default state once you remove pressure.

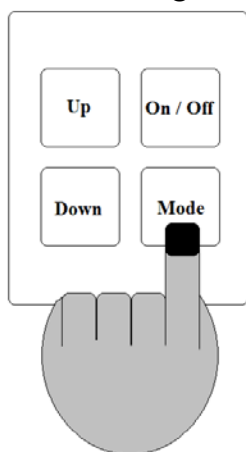
You turn the lighting on and off using the On/Off switch. This is also the case if you have the optional infra-red version.

When you first turn the unit on it will go to its last scene, which is the last colour or sequence selected (this can be changed at time of order as an optional extra).

## Navigating

To step through each of the 9 standard colours, simply press and release the MODE button. Do not hold the mode button down for more than 2 seconds, as this will cause the DIDIO to go into 'paint' mode (refer page 8).

For each press of the MODE button a new colour will illuminate. It is handy to think of each colour as having its own slot. Each time you press MODE a new slot (called a scene in other models of DIDIO) is called up. If you are using the infrared remote handset, you can navigate forwards with the 'next scene' left arrow button, or backwards through the 'previous scene' right arrow button.



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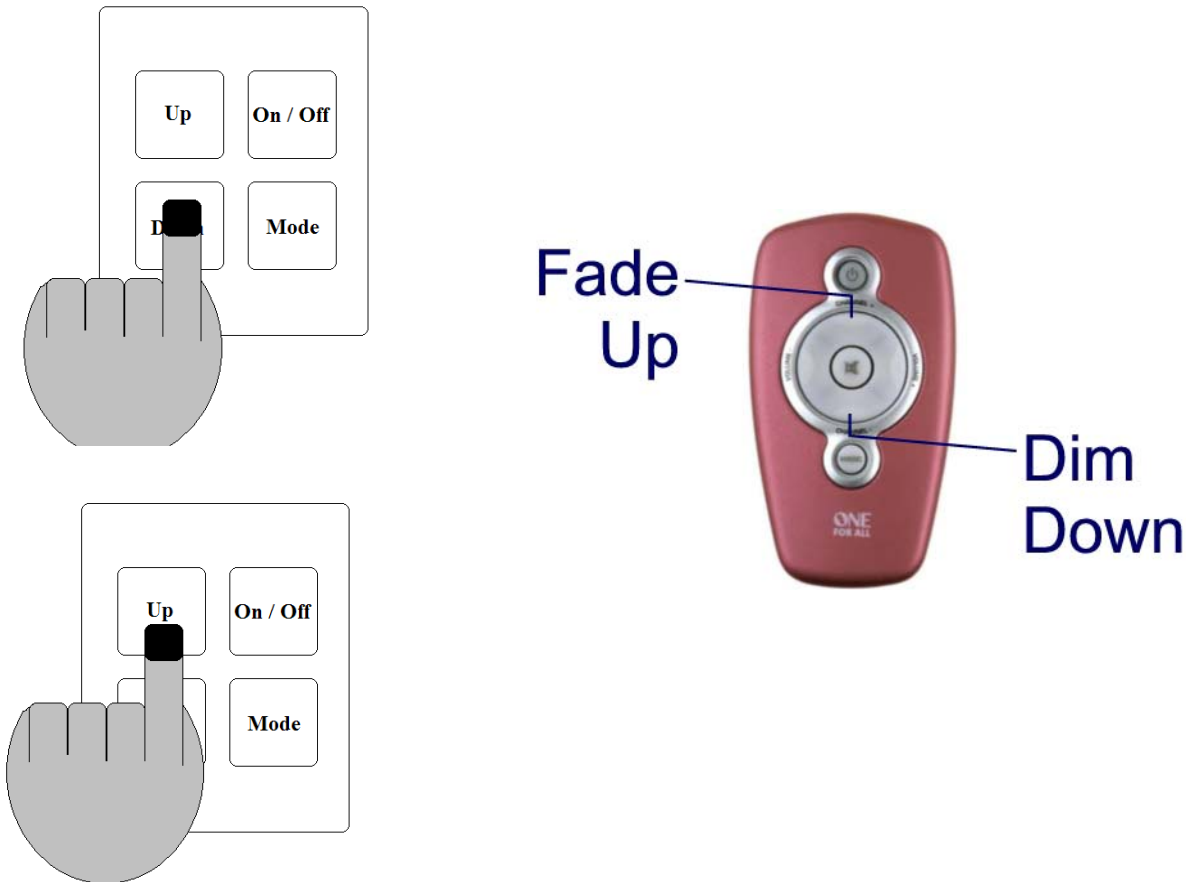
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## Fading Colour Up and Down

Any static colour selected can be faded up or down simply by holding down the UP or DOWN fade buttons on the controller.



***TIP*** – Note that even with the lights no longer emitting light, the light fixtures will still be powered.

## Colour Painting Mode

The controller also features a patented mode known as Paint. This feature allows the user to individually mix the intensities of the Red, Green and Blue lamps to create their own, individual colours.



To access the Paint feature on the controller you need to first navigate to the colour you wish to change (refer to page 6).

Once you have selected the colour you wish to paint into a new colour, simply hold down the mode 'paint' button for 2 seconds or more. In standard models the first colour to flash will be red.

You are then given up to 8 seconds in which to adjust the intensity of the colour that was flashed by using the UP and DOWN buttons. Once you have adjusted the first lamp (red), a short press of the MODE button will take you to the next colour. In standard models, the next colour after red is green. Adjust the intensity of the green lamp with the up and down buttons. Repeat again for blue. While you are still in paint mode you can still use short presses of the mode button to navigate to each of the red blue and green and make any further adjustments until you are completely satisfied. Once that's done, do nothing and 5 seconds later the colour combination you have painted will flash to indicate that the DIDIO has stored the new colour combination and has exited out of Paint mode.

After you have exited in PAINT mode, you can also make temporary adjustments to the intensity of your new painted colour by using the UP and DOWN buttons if you so desire.

**!!For example**, if you call up a preset colour using the MODE button and you want to adjust the red intensity only, you would hold the MODE button until the Red lamps flash, then release the MODE button. The preset colour should return but now you should be able to tune just the red intensity by using the UP and DOWN fade buttons.

**!!Infra-red models** can achieve all the functions of the 4 button plate via the infra-red remote handset.

**!!Understanding the PAINT feature** is best accomplished through trying it yourself!

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## Sequence Modes

The DIDIO features two sequence modes that allow the lighting to dynamically change over time. The first sequence mode is the Preset Loop - an endless sequence that fades from one preset colour to another. The second sequence mode is Random Loop – an endless sequence that fades from one random colour combination to another colour.

Both modes – Preset Loop and Random Loop - are reached using the MODE button on a switch plate or the left and right arrows on the remote handset. The sequences are located in the final two slots of the colour presets (the slot layout was shown in the changing colours part of this documentation – Page 5).

You can tell you are in a sequence mode because the lights will flash once to indicate they are about to commence sequencing. You will then see colours slowly morph from one colour to another.

To exit a sequence mode use the MODE button to step through to a static colour.

***TIP*** – you can speed up and slow down the speed of Preset Loop and Random Loop by simply using the UP and DOWN buttons. UP increases the speed of transition from colour to colour. DOWN slows down the speed of transition from colour to colour.

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## control wiring details

For the controller to work it needs to be powered with a 24vdc (>500mA) source, normally an SMPS Mains Adaptor supplied by Creative Lighting. This supply is connected to the top right hand terminals marked CD IN + and -.

Provided the device is powered, the DALI signal will be transmitted out of the DALI out screw down terminals marked DALI out on the top row of terminals.

Due to the robustness of the DALI protocol, fixtures can be wired in a daisy chain or star configuration. It is up to the installer to decided on the most suitable method for distributing the DALI data amongst fixtures for control.

**!!!IMPORTANT** – turning the ON/OFF switch OFF does not disconnect the power to the DALI fixtures, which are wired separately.

**!NOTE** – The DIDIO only provides the data signal and (if the DALI Power Supply daughter board is fitted) data line power to the fixture(s). The fixture(s) mains power needs to be supplied separately by your qualified electrician.

## recommended DALI wiring

DALI needs to be wired using 240VAC insulated wiring. The minimum recommended wiring thickness is 1mm<sup>2</sup> and 1.5mm<sup>2</sup> is often used. The maximum voltage drop on the DALI line must not exceed 2V.

The maximum line length between the DIDIO and the furthest DALI device depends on the cable diameter (see table below).

Maximum run length				Maximum Aggregate run length
AWG 18 1mm <sup>2</sup>	AWG16 1.3mm <sup>2</sup>	AWG14 1.6mm <sup>2</sup>	AWG12 2mm <sup>2</sup>	
170m	265m	425m	670m	880m

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## DIDIO with third party switches

Following are the timing requirements for the standard 4 sets of input lines. More inputs are available (up to 12) at time of order and the cost for the additional inputs can be quoted when you advise the functions or actions each additional input is to provide. The specified delays below indicate the length of time before the controller can respond to further inputs.

While ON/OFF lines are shorted:

- Shorting the MODE lines for 50ms causes the next scene to be selected (200ms delay after scene selection).

For sequences:

- Shorting the UP lines for 50ms causes the current sequence to speed up (350ms delay after speed up).
- Shorting the DOWN lines for 50ms causes the current sequence to slow down (350ms delay after slow down).

For presets:

- Shorting the UP lines for 50ms causes the current static colour to fade up (100ms delay after fade up).
- Shorting the DOWN lines for 50ms causes the current static colour to fade down (100ms delay after fade down).
- Shorting the MODE lines for >2000ms allows for the current static colour to be painted (3000ms delay after entering paint mode).

During paint mode:

- Shorting the MODE lines for 50ms causes the next component colour (red, green or blue) to be selected (3000ms delay after selecting next component colour).
- Shorting the UP lines for 50ms causes the currently selected component colour to fade up (100ms delay after fading up).
- Shorting the DOWN lines for 50ms causes the currently selected component colour to fade down (100ms delay after fading down).
- Shorting the MODE lines for >2000ms OR not performing any of the above 3 actions for >5000ms will cause paint mode to be exited (3000ms delay after exiting paint mode).

While ON/OFF lines are open:

Shorting the MODE lines for >5000ms will cause the factory settings for the scenes to be restored (this will reset the 9 static colours and 2 sequence speeds). Restoring factory defaults takes approximately 6-7 seconds.

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Name of project

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Location of project

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Brief description of project

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Contact Name

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Contact Company

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Contact Details – Email

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Contact Details – Telephone

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Date of Purchase

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