RED3 Dimmer

INSTALLATION and OPERATION

Version V 1.0

Covering software Version 1.0
June 2016
Document Number: RED3-T01U-A1

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Contents

Conventions Used in this Manual

Throughout this manual, certain conventions have been used to make the meaning clearer.

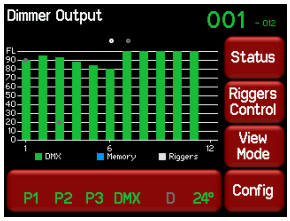
- A word in [**Bold**] text represents a button
- Emphasis is indicated by underlining.
- *Notes or Hints are displayed in italic font*

Copyright Notices

1 Quick Reference

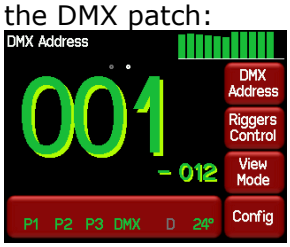
1.1 HOME PAGES

The "Dimmer Output" home page shows the channel levels.

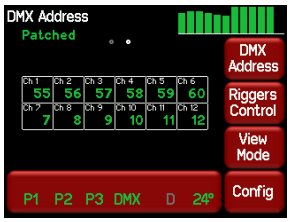


Press [**View Mode**] to change to the "DMX Address" home page.

The "DMX Address" home page shows the DMX patch numbers and has two possible formats depending upon the DMX patch:



"DMX Address" with 1 to 1 Patch.



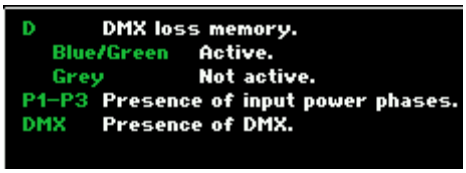
"DMX Address" with Individual Patches.

Press [**View Mode**] to change back to the "Dimmer Output" home page.

1.2 STATUS

The large bar at the bottom of the screen shows the presence of the input power phases, DMX presence and temperature of the RED3.

Press the bar to see the legend screen.



Touch anywhere within the legend screen to cancel.

1.3 DMX PATCHING

1.3.1 1 to 1 patch

A 1 to 1 patch connects each dimmer channel to sequential DMX address's starting at a DMX address that you enter in the one operation.
From the "DMX Address" home page press [**DMX Address**].
Enter the DMX start slot number then press [**Apply**].

1.3.2 Individual Channel Patching

To individually patch channels to DMX slots press [**Config**] [**DMX**] [**Patch**]. Select a channel number(s) then press [**Set Address**]. Enter the DMX slot number and press [**Apply**].

1.3.3 DMX LOSS Memory

If the DMX input signal is lost, the default setting is for the RED3 to hold the last DMX level indefinitely. If you set a delay time other than "Infinite", the RED3 will fade to the "DMX Loss" memory when the delay time expires.
To set a DMX delay time press [**Config**] [**DMX**] [**Delay**]. Enter a time and press [**Apply**].
To create or edit a "DMX Loss" memory press [**Config**] [**DMX**] [**D**].
Either:

- Press [**Snap**] to take a copy of either the current [**DMX**] input signal or the current state of the RED3's [**Outputs**] then press [**Apply**]
- Select a channel(s) then press [**Level**]. Enter a level and press [**Apply**].

When finished press [**Exit**].

1.4 RIGGERS CONTROL

The dimmer can be directly controlled from the touch screen.
From either home page press [**Riggers Control**].
The output of the Riggers Controls can be turned off or on by pressing
[**De activate**]/[**Activate**].
To set the level of a channel(s), use the virtual faders.
To disable the levels set on the faders press [**De-Activate**].
When finished press [**Exit**].

1.4.1 Chaser

To activate the chaser, from the "Rigger Control" (above), press [**Chaser**].
To enable the Chaser press [**Activate**].
Use the buttons to select a pattern for the chaser.
Set the direction with [**I>>>I**] (forward), [**I<<<I**] (reverse) or [**I<>I**] (bounce from end to end).
Set the speed in BPM (Beats Per Minute).

2 Product Description

2.1 ABOUT THIS MANUAL

This manual describes the installation, configuration and operation of the RED3 range of rack mount dimmers manufactured by LSC Lighting Systems.

2.2 RED3 OVERVIEW

The RED3 rack mount dimmers are an entry level dimmer that can be controlled by any DMX512lighting controller. Dimmer configuration, patching and local control is achieved via a backlit colour touch screen on the front panel. A lock code can be used to prevent unauthorised tampering. Patching can be remotely controlled using the RDM (Remote Device Management) protocol.

2.2.1 Features

- 12 channels @ 10A per channel or 6 channels @ 10A per channel.
- Thermal Magnetic circuit breaker per channel.
- 2.8" full colour Display with colour coded bar graph output.
- Display has touch interface for on screen configuration.
- 100% duty cycle rated.
- DMX with RDM fitted as standard.
- Configuration locking to stop accidental changing of dimmer settings.
- Min level (preheat) setting per channel to preheat lamps. – user settable level.
- Max level (Top set) setting per channel to prolong lamp life – user settable level.
- Fade curve selection per channel.
- DMX back up scene with delay.
- In build easy to use riggers control allows any channel to be driven directly from the front panel of the dimmer, without needing a lighting console.
- The levels in the riggers control are saved for retrieval at power on, allowing the dimmer to be turned off and then return to the same levels when next powered up, making it ideal for small trade show stands and stand alone events.
- The riggers control includes 6 chases.
- Current Control technology fitted as standard to reduce cold lamp in rush and breaker tripping.
- Inbuilt DMX soft-patch
- SD card for export and import of dimmer configurations and for software updates.
- CE and C tick approved

2.2.2 Models

The RED3 dimmer is available either 6 or 12 channels of dimming.

2.2.3 Output Connections

The following types of rear mounted load socket are available:

- Terminals blocks.
- Australian sockets.
- Swiss Shuko sockets.
- Euro Shuko sockets.
- Wieland sockets.
- Socapex sockets.

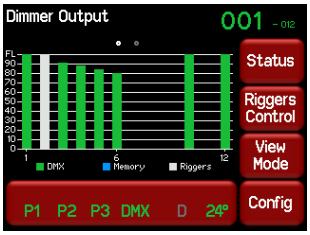
2.3 FRONT PANEL

The front panel contains load MCB (Miniature Circuit Breakers), DMX input and DMX Thru connectors SD card slot and LCD touch screen.

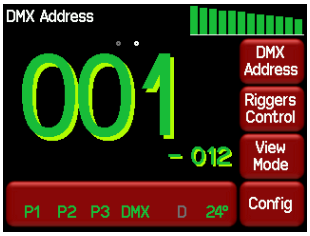
12 channel

2.3.1 Touch Screen Control Panel

The RED3 dimmer uses a colour LCD touch screen which is operated by touching the virtual buttons and faders with your finger or a stylus. Do not touch the screen with any sharp object. There are two choices of home page display:



The "Dimmer Output" home page has a large channel level bargraph plus a small DMX address in the top corner.

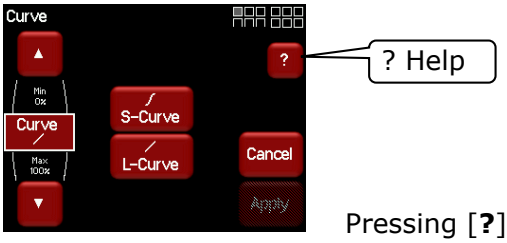


The "DMX Address" home page has a large DMX address plus a small channel levels bargraph in the top corner.

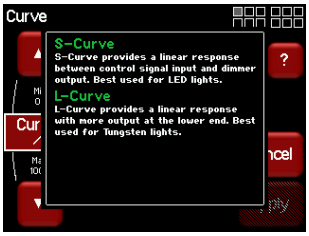
The touch screen menus are fully described in section 5.

2.3.2 Help

Many menus have Help screens available. Press the [**?**] button (when available) to see the help screen. For example:



Pressing [**?**] shows……



Press anywhere within the help screen to cancel.

3 Installation

3.1 SAFETY

All electrical work must be carried out by suitably qualified persons.
The dimmer is heavy. Use the correct lifting procedures when handling the dimmer.

3.2 UNPACKING

The RED3 dimmer is fully tested and inspected before leaving the factory. Upon delivery, inspect the dimmer for signs of damage or mishandling. In the event of any damage, contact your LSC agent.

3.3 MOUNTING THE RED3

The RED3 dimmer is primarily designed for mounting in a standard 19 inch rack.
Ensure that the mounting can support the weight. Refer to the specifications at the end of this manual for the weight of your model.
The ventilation holes at the sides of the unit must be kept clear.

3.4 CONNECTIONS

3.4.1 Input Power Supply

The **RED3** dimmer system must be fed from a suitable external circuit breaker.
Note: The rating of the Neutral conductor feeding the dimmer must be at least 1.25 times that of rated limit of any of the Active phase conductors.
This is because various combinations of dimmer drive will result in a Neutral current higher than the line current due to the phase control characteristics of these type of dimmers.
For example, a 40Amp 3 phase supply must have a neutral rated at 50Amps.

- Australian models are supplied with a 1.2 metre cable fitted with a 32 Amp 5 pin 3 phase plug.
- Export models are supplied with a 1.2 metre cable. A suitable 3 phase plug must be fitted (not supplied).

The nominal input voltage is 220-240 Volts. 3-phase Star (380-415V). 50-60Hz.

3.4.2 Output Load Circuits

The following types of rear mounted load socket are available:

- Australian sockets.
- Socapex sockets
- Swiss Shuko sockets.
- Euro Shuko sockets.
- Wieland sockets.
- Terminals blocks.

3.4.2.1 Australian Sockets

Australian Sockets

3.4.2.2 Socapex Sockets

Connector #1	Function	Connector #2	Function
Pin 1	Chan 1 Active	Pin 1	Chan 7 Active
Pin 2	Chan 1 Neutral	Pin 2	Chan 7 Neutral
Pin 3	Chan 2 Active	Pin 3	Chan 8 Active
Pin 4	Chan 2 Neutral	Pin 4	Chan 8 Neutral
Pin 5	Chan 3 Active	Pin 5	Chan 9 Active
Pin 6	Chan 3 Neutral	Pin 6	Chan 9 Neutral
Pin 7	Chan 4 Active	Pin 7	Chan 10 Active
Pin 8	Chan 4 Neutral	Pin 8	Chan 10 Neutral
Pin 9	Chan 5 Active	Pin 9	Chan 11 Active
Pin 10	Chan 5 Neutral	Pin 10	Chan 11 Neutral
Pin 11	Chan 6 Active	Pin 11	Chan 12 Active
Pin 12	Chan 6 Neutral	Pin 12	Chan 12 Neutral
Pin 13	Earth	Pin 13	Earth
Pin 14	Earth	Pin 14	Earth
Pin 15	Earth	Pin 15	Earth
Pin 16	Earth	Pin 16	Earth
Pin 17	Earth	Pin 17	Earth
Pin 18	Earth	Pin 18	Earth
Pin 19	Earth	Pin 19	Earth

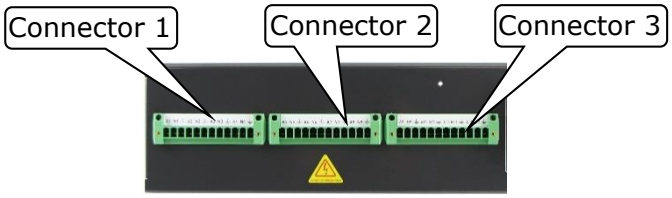
3.4.2.3 Harting/Wieland Sockets

Connector 1	Function	Connector 2	Function
Pin 1	Chan 1 Active	Pin 1	Chan 7 Active
Pin 2	Chan 2 Active	Pin 2	Chan 8 Active
Pin 3	Chan 3 Active	Pin 3	Chan 9 Active
Pin 4	Chan 4 Active	Pin 4	Chan 10 Active
Pin 5	Chan 5 Active	Pin 5	Chan 11 Active
Pin 6	Chan 6 Active	Pin 6	Chan 12 Active
Pin 7	Not used	Pin 7	Not used
Pin 8	Not used	Pin 8	Not used
Pin 9	Chan 1 Neutral	Pin 9	Chan 7 Neutral
Pin 10	Chan 2 Neutral	Pin 10	Chan 8 Neutral
Pin 11	Chan 3 Neutral	Pin 11	Chan 9 Neutral
Pin 12	Chan 4 Neutral	Pin 12	Chan 10 Neutral
Pin 13	Chan 5 Neutral	Pin 13	Chan 11 Neutral
Pin 14	Chan 6 Neutral	Pin 14	Chan 12 Neutral
Pin 15	Not used	Pin 15	Not used
Pin 16	Not used	Pin 16	Not used

Note: Earth connection is via the clips on the side of the socket insert.

Note: This is the recommended wiring scheme for Harting/Wieland connectors. An alternative wiring scheme exists for these connectors and RED3 dimmers can be wired to the alternative scheme by special order. If you order the alternative wiring then the pin-outs are listed in a separate document that is included with your dimmer.

3.4.2.4 Screw Terminals



Connector 1	Function	Connector 2	Function	Connector 3	Function
Pin 1	Chan 1 Active	Pin 1	Chan 5 Active	Pin 1	Chan 9 Active
Pin 2	Chan 1 Neutral	Pin 2	Chan 5 Neutral	Pin 2	Chan 9 Neutral
Pin 3	Chan 1 Earth	Pin 3	Chan 5 Earth	Pin 3	Chan 9 Earth
Pin 4	Chan 2 Active	Pin 4	Chan 6 Active	Pin 4	Chan 10 Active
Pin 5	Chan 2 Neutral	Pin 5	Chan 6 Neutral	Pin 5	Chan 10 Neutral
Pin 6	Chan 2 Earth	Pin 6	Chan 6 Earth	Pin 6	Chan 10 Earth
Pin 7	Chan 3 Active	Pin 7	Chan 7 Active	Pin 7	Chan 11 Active
Pin 8	Chan 3 Neutral	Pin 8	Chan 7 Neutral	Pin 8	Chan 11 Neutral
Pin 9	Chan 3 Earth	Pin 9	Chan 7 Earth	Pin 9	Chan 11 Earth
Pin 10	Chan 4 Active	Pin 10	Chan 8 Active	Pin 10	Chan 12 Active
Pin 11	Chan 4 Neutral	Pin 11	Chan 8 Neutral	Pin 11	Chan 12 Neutral
Pin 12	Chan 4 Earth	Pin 12	Chan 8 Earth	Pin 12	Chan 12 Earth

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3.4.3 Connecting DMX512

DMX 512 is the industry standard for the transmission of digital control signals between lighting equipment. DMX is usually "looped" from one piece of equipment to the next.

DMX 512 is connected to the RED3 dimmer by a 5 pin XLR male socket on the front panel. The DMX512 connection is high impedance. This allows the DMX512 to be wired in parallel to other dimmers by utilising the DMX Thru female 5 pin XLR female socket.
If the DMX line ends at this dimmer (is not looped to other dimmers or devices) then a DMX TERMINATOR must be plugged into the DMX Thru connector.

LSC recommends the use of RS485 data cable or shielded CAT5 cable for the DMX connections. Audio or Microphone cables must not be used.
See "DMX Explained and Typical Installations" in section 7 for more information including connector wiring.

4 Configuring the RED3 Dimmer

When a RED3 dimmer is installed, it needs to be configured to suit its particular installation and application. This involves the following operations which are achieved via the touch screen menus. The menu system is fully described in the next section.

4.1 PATCHING

Channels need to be patched to the DMX slot number that is to control them.
See DMX Patching in section 5.8.

4.2 OPTIONAL SETTINGS

In addition to these settings you can also set the following *optional* parameters;

- Create a DMX memory that can be automatically recalled when the DMX signal is lost. See section 5.8.2
- Set minimum and maximum levels for each channel.
  See section 5.9
- Set each dimmer to either "S Curve" (dimmer) or "L Curve" (Linear). See section 5.9.3
- Set a "lock code" to prevent unauthorised access to the menu system. See section 5.11

5 Menu System

5.1 OVERVIEW

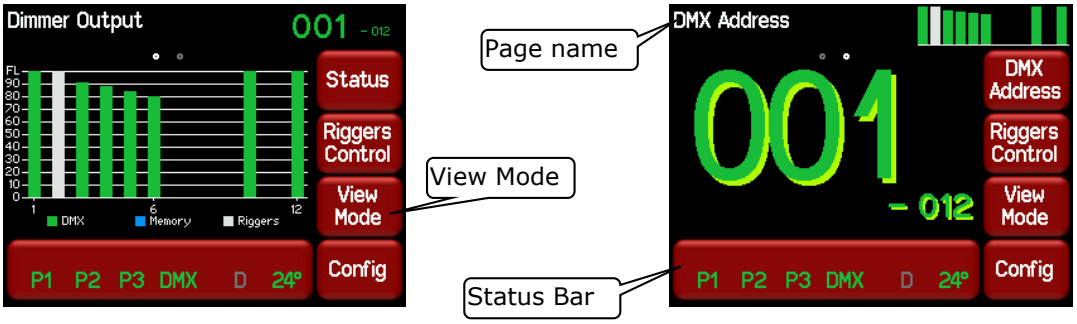
The RED3 dimmer uses a colour LCD touch screen which is operated by touching the virtual buttons or faders with your finger or a stylus. The menus on the screen provide the functions to configure and operate the dimmer.

5.2 HELP SCREENS

Many menus have Help screens available. Press the [**?**] button to see the help screen. Press anywhere within the help screen to cancel.

5.3 HOME PAGES

There are two possible "home" pages that you can select to suit your individual requirements. The "Dimmer Output" home page shows the current output of the RED3 and the "DMX Address" home page has a large DMX address display.
Pressing [**View Mode**] changes between the pages.



Both home pages are described in detail later in this section.

5.3.1 Information

The status bar 

shows the status of the input power, DMX control signal and dimmer temperature.

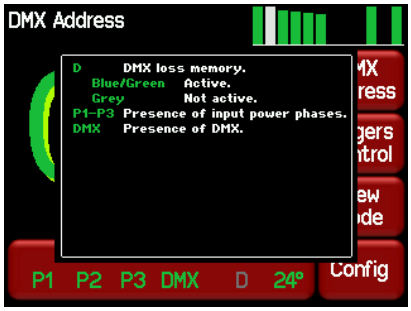
- **P1**, **P2**, **P3** show the presence of the input power phases.
  Flashing **Red** is not present.

- **DMX** shows the presence of a DMX control signal.
  Flashing **Red** is not present.

- **D** is the "DMX loss" memory.
  Blue is active. **Grey** is not active.

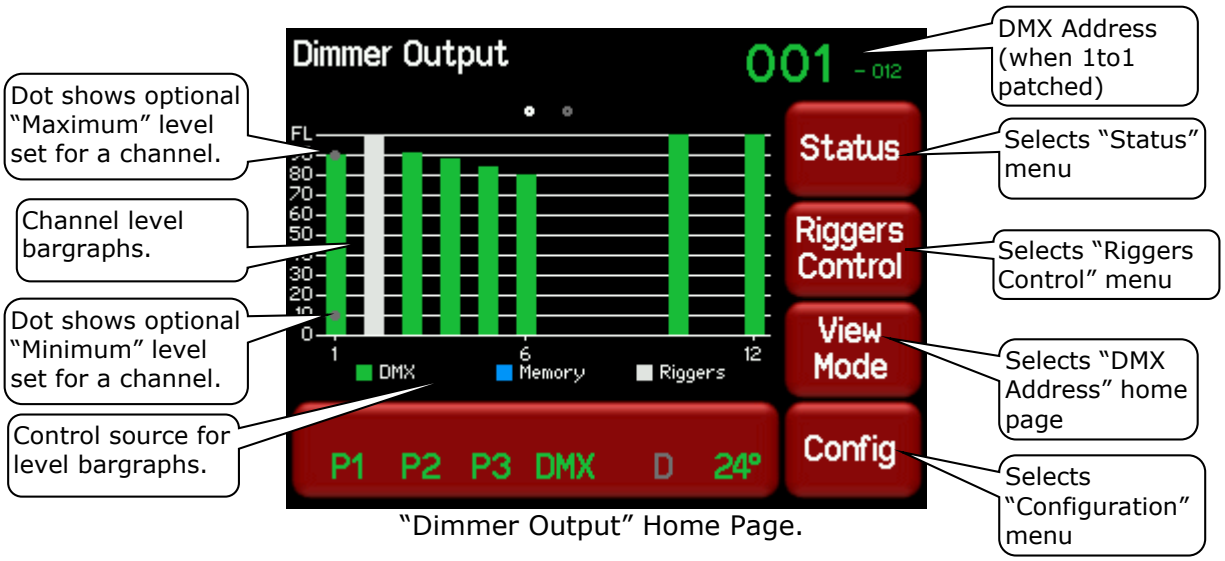
- The internal temperature of the RED3 is shown in degrees Celsius.

Pressing the status bar shows the legend for the indicators. Press the legend screen to close.



5.4 DIMMER OUTPUT HOME PAGE

The "Dimmer Output" home page shows current level of each channel in a bar graph display which is colour coded to show the current **control source** for each channel.



"Dimmer Output" Home Page.

The bargraph shows the output level of every channel. Channels can be controlled from multiple sources and the colour code of the bargraph indicates the source of the control signal.

- **Green** = controlled by DMX.
- **Blue** = DMX has been lost and the channel is being controlled from the DMX Loss memory.
- **Grey** = controlled by the "Riggers Control" on the touch screen.

If a channel has a minimum or maximum level set in the channels menu then a grey dot on the bargraph shows this level. See section 5.9

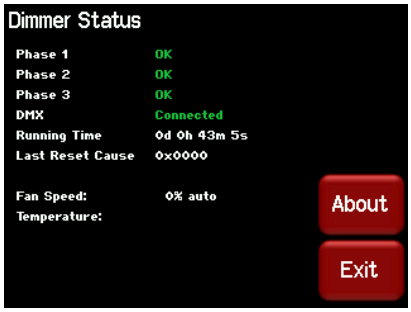
The top right corner of the screen shows the DMX address information.

- If a 1 to 1 patch is implemented it shows the DMX addresses of the first and last channels of the dimmer rack.
- If channels are individually patched it shows the word "Patched".

Pressing [**View Mode**] selects the "DMX Address" home page as described below.

5.4.1 Status

Pressing [**Status**] shows the presence of the input power phases, DMX presence, dimmer running time, last cause of a reset, fan speed and the temperature of the internal modules of the RED3.



Pressing [**About**] shows the software versions.

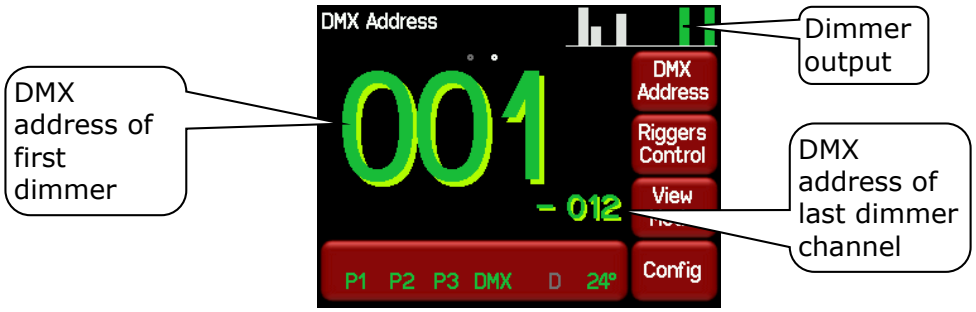
5.4.2 View Mode

Pressing [**View Mode**] changes to the "DMX Address" home page.

5.5 DMX ADDRESS HOME PAGE

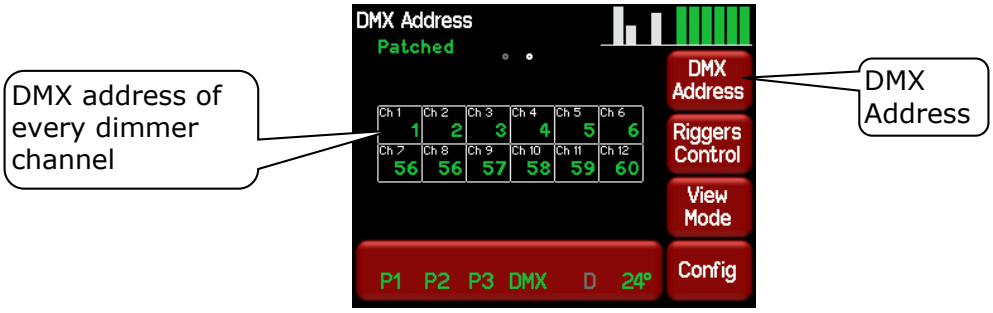
The "DMX Address" home page has two formats:

If a 1 to 1 patch is implemented it shows the DMX addresses of the first and last channels of the dimmer (in a large and small font respectively). To perform a 1 to 1 patch see section 5.5.1



1 to 1 Patch

If channels are individually patched it shows the word "Patched" and the DMX addresses of all channels in the dimmer. To individually patch channels see section 5.8.1

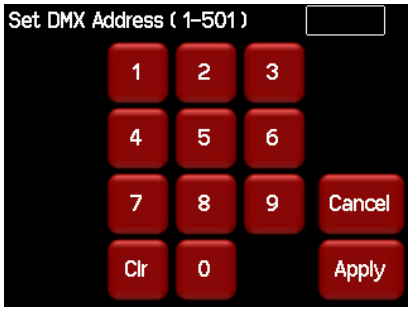


Channels individually patched

Both displays also show a colour coded mini bar-graph of the dimmer output at the top of the screen. See the "Dimmer Output" home page above for the colour code.

5.5.1 DMX Address

Patches are often performed in contiguous blocks of addresses. The "DMX Address" function provides a rapid method of patching all of the dimmers in one RED3 rack to sequential DMX slots, starting from a DMX address that you enter.
To perform a 1 to 1 patch, select the "DMX Address" home page (above) then press [**DMX Address**].

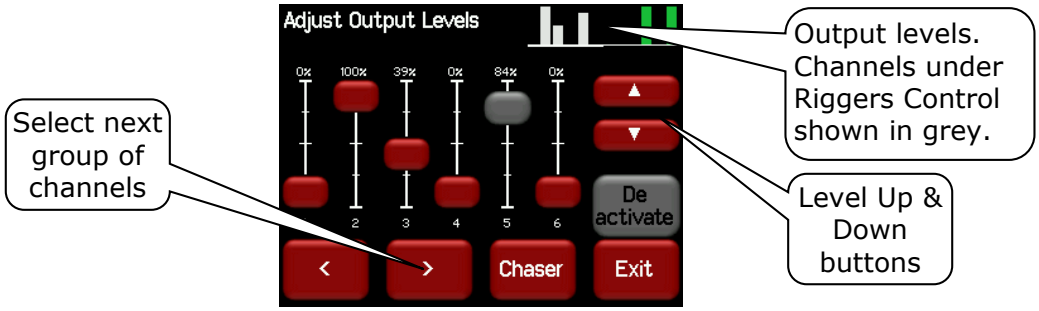


Enter the DMX address for the first channel in this RED3 then press [**Apply**].

Individual channel patching is performed in the DMX menu described in section 5.8.

5.6 RIGGERS CONTROL

The RED 3 can be manually controlled from the touch screen. To set the level of a channel(s) (or run a chaser) from the touch screen press [**Riggers Control**]. If the "User" has been "locked", the [**Riggers Control**] button is greyed out. See section 5.11 for details on the Lock function.



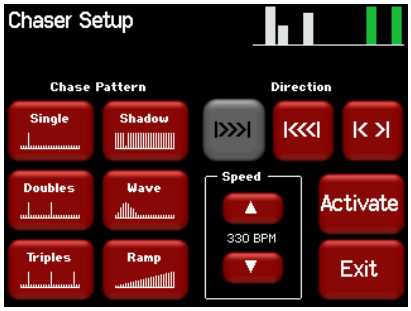
The output of the Riggers Controls can be turned off or on by pressing [**De activate**]/[**Activate**].
Press [**<**] or [**>**] to select more channels (if fitted).

To set the level of a channel(s), use the virtual faders or the level Up/Down buttons.

When finished press [**Exit**].

5.6.1 Chaser

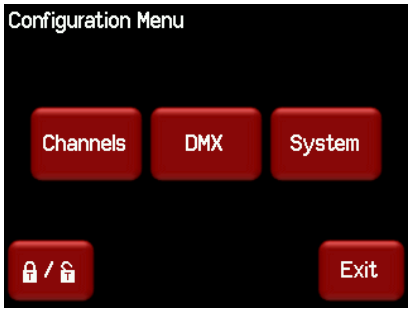
To activate the chaser, from the "Rigger Control" (above), press [**Chaser**].



To enable the Chaser press [**Activate**].
Select a pattern" using the 6 "Chase Pattern" buttons.
Set the speed in BPM (Beats Per Minute) by pressing the [▲] or [▼] buttons.
Use the "Direction" buttons to select [**I>>>I**] (forward), [**I<<<I**] (reverse) or [**I<>I**] (bounce from end to end).
To disable the Chaser press [**De-Activate**].
When finished press [**Exit**].

5.7 CONFIG MENU

Pressing [**Config**] allows you to access a range of functions and setups via sub-menus. Each sub-menu screen has it name in the top left corner. If the "Config" has been "locked", the [**Config**] button is replaced by the [**Padlock**] button. Touching the [**Padlock**] button and entering your code number unlocks the RED3 and reveals the [**Config**] button. See section 5.11



The following table shows the functions that can be performed in each sub menu of the Configuration Menu:

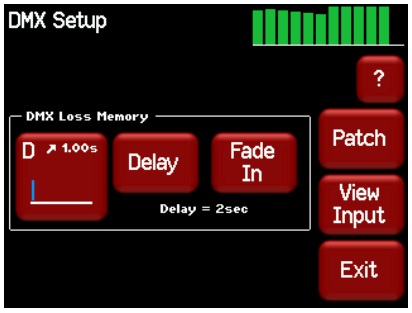
Channels	DMX	System
Min Level	Patch	Code Upgrade
Max Level	View DMX Input levels	Import/Export (dimmer configuration)
Curve	D (Edit DMX Loss memory)	Reset
	Delay (Sets DMX loss hold time)	Fan Speed
	Fade In (Fade Out) (Views DMX loss memory)	Service (Factory use only)

The "Lock" menu allows you to lock out user and or configuration menus. See section 5.11

5.8 DMX MENU

Selecting [**Config**] [**DMX**] provides menus for:

- Patching DMX.
- Editing and activating the DMX Loss (D) memory.
- Viewing the Input DMX signal.



5.8.1 Patch

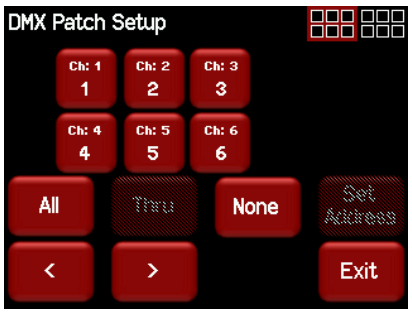
The patch allows you to patch (connect) DMX slots (addresses) from your DMX lighting controller to RED3 channel numbers. Each RED3 dimmer unit numbers its channels from channel 1 through to channel 6 or 12, depending upon the quantity of channels in the model of RED3.

Patches are required when;

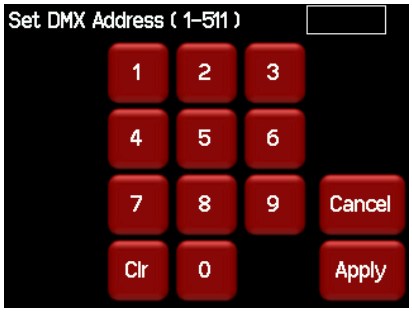
- A particular *DMX slot number* from the lighting controller is to control an RED3 dimmer with a different *channel number*.
- A single DMX slot number is to control multiple RED3 channel numbers.

Patches are often performed in contiguous blocks of addresses. The "DMX Address" function provides a rapid method of patching all of the dimmers in one RED3 frame to sequential DMX slots, starting from a DMX address that you select. See section 5.5.1

To individually patch dimmers channels to DMX addresses press [**Config**] [**DMX**] [**Patch**].



The menu shows the first 6 channels. Use the [**<**] or [**>**] buttons to see the other groups of 6 channels (if fitted). Touch a channel to select it. You can select multiple channels. To select a range of channels select your first channel then press [**Thru**] then your last channel. Use [**All**] to select all channels. Press [**None**] to de-select all channels. Selected channels turn grey. When you have selected your channel(s) press [**Set Address**].



Enter the required DMX address then press [**Apply**].

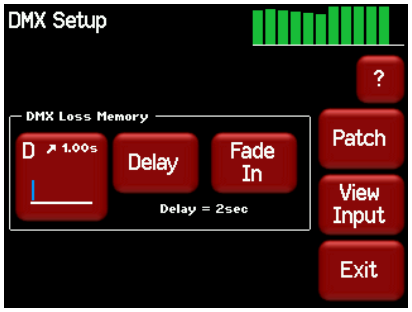
If more than one channel is selected, then the lowest channel number will be patched to the selected DMX slot and the following dimmers will be patched to the sequential DMX slot numbers.
For example, if channels 1, 2, 3 and 10 are selected and DMX slot number 24 is applied the result will be ……

Channel	DMX Slot
1	24
2	25
3	26
10	27

To patch multiple channels to the same DMX slot patch them one at a time.
When finished patching press [**Exit**].

5.8.2 DMX Loss Memory

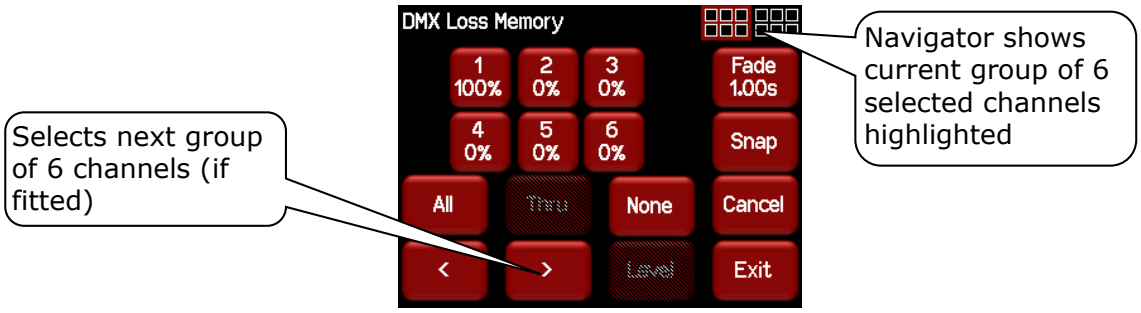
The RED3 has a "DMX Loss Memory" that you can program. In the event that the DMX input signal is lost, channels will hold their last DMX level for a programmable "Delay" time. The default setting for this time is "Infinite". If you set a delay time other than "Infinite", the channels will fade to the "DMX Loss Memory" when the delay time expires (up to 1 hour). When DMX is restored, the RED3 will fade back to the DMX signal.
To create or edit a "DMX Loss" memory press [**Config**] [**DMX**].



The "DMX Loss Memory" box has 3 buttons:

- Press [**Delay**] to set the "Delay" time as described above.
- Press [**D**] to create or edit the memory as described below.
- Press [**Fade In**]/[**Fade Out**] to see the DMX Loss memory on the output.

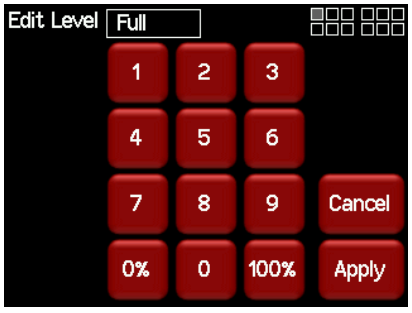
The "D" button shows a bargarph display of the current DMX Loss memory and also its fade time in seconds. When you press [**D**], you can either take a [**Snap**] (snapshot) of the current DMX input signal or the current state of the RED3's Outputs or select a channel(s) and manually set their levels using the controls on the screen.



5.8.2.1 Manually Setting Channel Levels

The "DMX Loss Memory" menu (above) shows the first 6 channels. Use the [**<**] or [**>**] buttons to see the other groups of 6 channels (if fitted). The navigator at the top right of the screen shows current group of 6 selected channels highlighted.

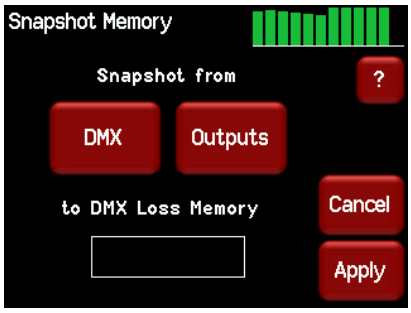
Touch a channel to select it. You can select multiple channels. To select a range of channels select your first channel then press [**Thru**] then your last channel. Use [**All**] to select all channels. Press [**None**] to de-select all channels. When you have selected your channel(s) press [**Level**].



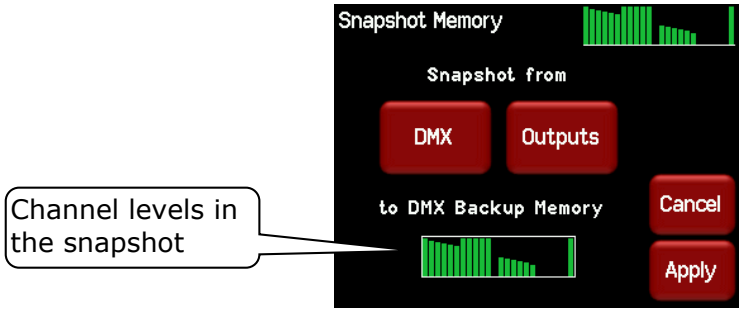
Use the keypad to set the level then press [**Apply**].

5.8.2.2 Taking a Snapshot

To create a memory by taking a snapshot, press [**Snap**] from the "DMX Loss Memory" menu above.



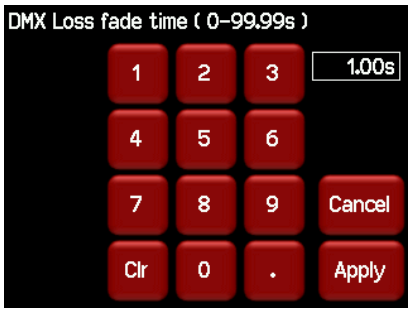
Pressing [**DMX**] will take a snapshot of the current DMX input signal.
Pressing [**Outputs**] will take a snapshot of the current output of the RED3. These channel levels could be coming from DMX or Riggers Control.
When you take the snap, the channels levels will be displayed in the box.



To save the snapshot to the memory press [**Apply**].
The channels levels that were captured in the snapshot can be edited by manually setting channel levels as described above.

5.8.2.3 Fade Time

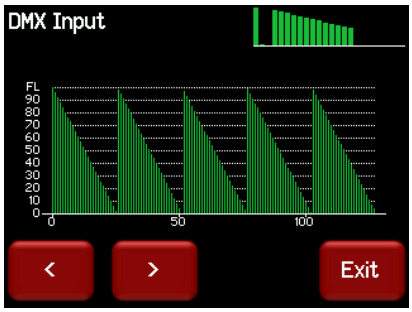
When editing the DMX Loss memory (above), you can set a fade time for the memory by pressing [**Fade**].



Enter a time in seconds (0 to 99.99) then press [**Apply**].

5.8.3 View Input

The "DMX Setup" menu allows you to view the channel levels on the DMX input.
From any home screen press [**Config**], [**DMX**], [**View Input**]:

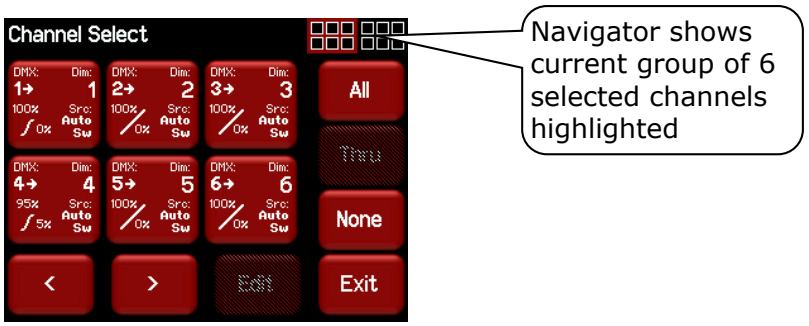


Press either [**>**] or [**>**] to scroll through all slots in the DMX Universe.

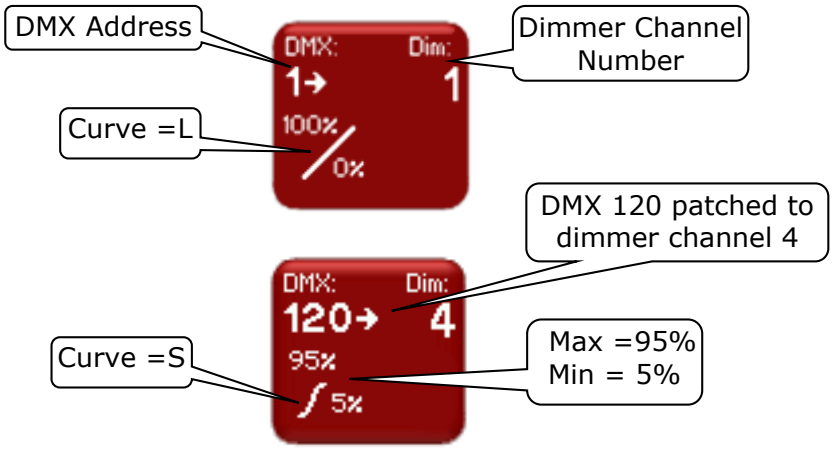
5.9 CHANNELS MENU

Selecting [**Config**] [**Channels**] provides menus for configuring the following parameters for each channel:

- Min. Minimum Level
- Max. Maximum Level
- Curve. S (S shape) or L (linear).

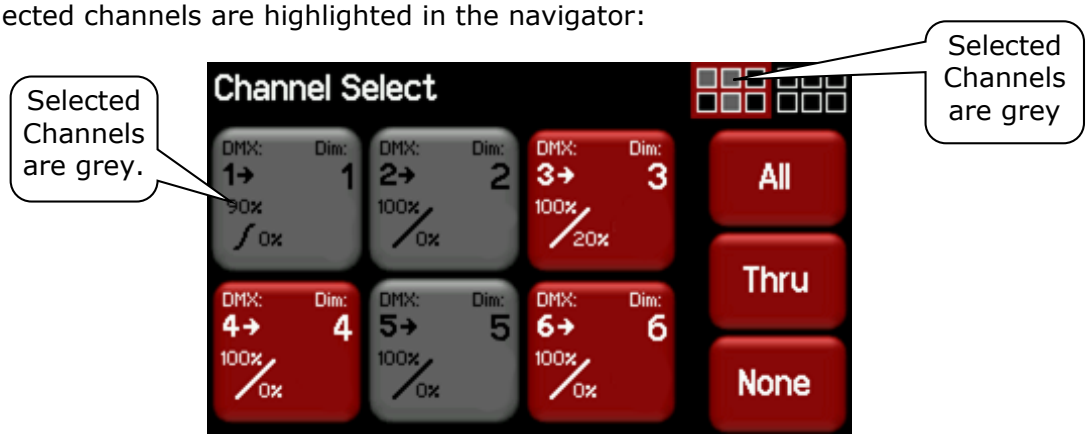


The screen shows the settings for the first 6 channels. Use the [**<**] or [**>**] buttons to see the other group of 6 channels (if fitted). The navigator in the top right of the screen shows the selected group highlighted.
Each channel button shows the settings for that channel.



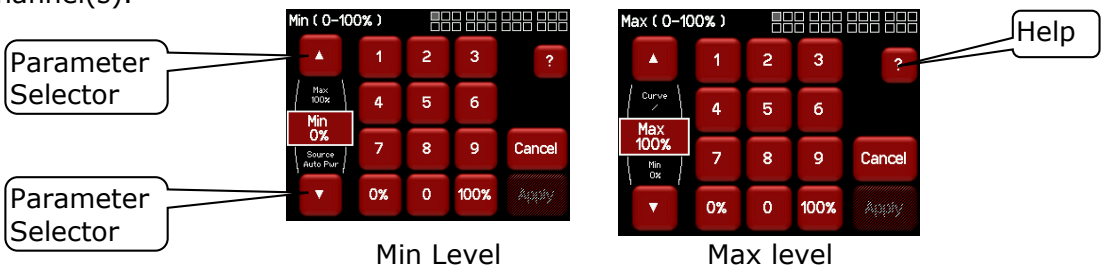
To change the settings of a channel(s), select the channel(s) by touching. You can select multiple channels. To select a range of channels select your first channel then press [**Thru**] then your last channel. Use the [**<**] or [**>**] buttons to see the other groups of 6 channels (if fitted). Use [**All**] to select all channels. Press [**None**] to de-select all channels.

The selected channels are highlighted in the navigator:

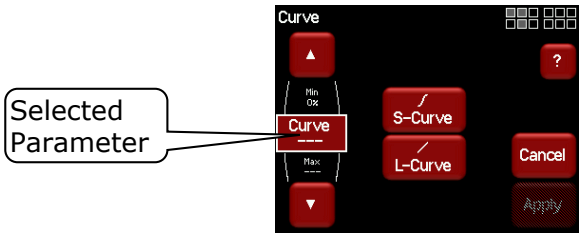


In this example channels 1, 2 and 5 are selected.

When you have selected your channel(s) press [**Edit**].
There are 3 possible parameter menus: Min Level, Max level and Curve. Use the [▲] and [▼] "Parameter Selector" buttons to scroll through the parameter settings for the selected channel(s).



Min Level Max level



Curve

Each parameter setting is described below and on screen "Help" also explains each parameter.

5.9.1 Min Level

"Min" sets the level of the channel output when the control signal is set to minimum. For example, setting this value slightly above zero is useful to "Pre-Heat" lamp filaments.

5.9.2 Max Level

"Max" sets the level of the dimmer output when its control signal is set to maximum. For example, setting this value to 90% will extend the life of a lamp as it never operates on full voltage or setting it to 50% provides 115volt output.
Note: The actual output voltage is dependent upon the dimmer curve. LSC recommends that you measure the output voltage (with a 240 volt load connected) to determine the "Max" level setting you require for a specific maximum voltage. This procedure should only be carried out by suitably qualified personnel.

5.9.3 Curve

Fade Curve is the curve or "transfer characteristic" between input control signal and dimmer output. The following curves are available;

- S curve. Provides a linear response and is best used for LED's.
- L (Linear) curve. Provides more output at lower settings and is best used for tungsten lamps.

5.9.4 Default Channel Settings

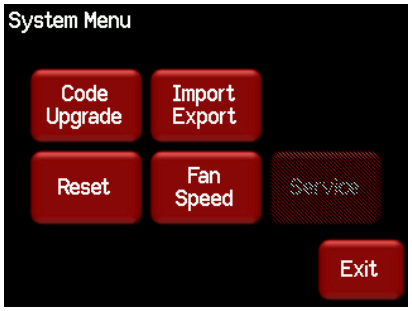
The default settings for channel parameters are;

ATTRIBUTE	DEFAULT SETTING
Min Level	0%
Max Level	100%
Fade Curve	L Curve

5.10 SYSTEM MENU

Selecting [**Config**] [**System**] provides menus for the following functions:

- Code Upgrade.
- Import/Export.
- Reset.
- Fan Speed.
- Service. (Factory use only).



5.10.1 Code Upgrade

See section 10.

5.10.2 Import/Export

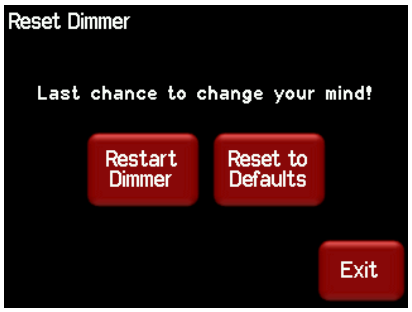
You can export the settings of your RED3 dimmer to a SD card for safe storage or you can import the settings to another RED3 dimmer.

To export your settings, insert a SD card into the slot on the front panel then press [**Config**], [**System**], [**Import/Export**], [**Export Config**].

To import settings, insert a SD card containing a previously exported config into the slot on the front panel then press [**Config**], [**System**], [**Import/Export**], [**Inport Config**]. The screen prompts you to perform a reset to apply the settings.
Press [**Exit**], [**Reset**], [**Restart Dimmer**].

5.10.3 Reset

The RED3 provides two different types of reset function.



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5.10.3.1 Restart Dimmer

In the unlikely event that the RED3 fails to respond, the operating system may be restarted so that the software may initialise and recommence normal operation.

5.10.3.2 RESET To Defaults

This will ERASE all memory from the RED3 and reset to defaults.

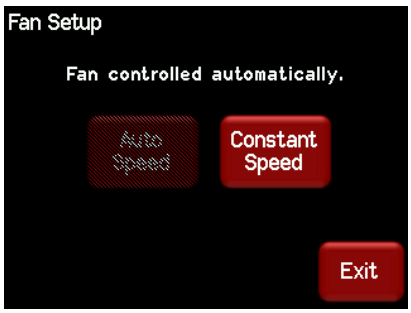
The default settings are:

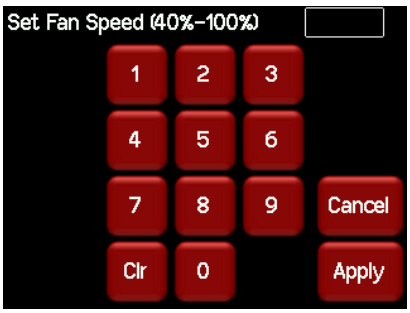
ATTRIBUTE	DEFAULT SETTING
Patch	1 to 1 patch starting at DMX address 1
DMX Loss Hold Time	Infinite
Channel Min Level	0%
Channel Max Level	100%
Channel Fade Curve	S Curve

5.10.4 Fan Speed

The fan can be set to run with its speed controlled automatically or run at a constant speed. The default setting is “Auto Speed”. A constant speed setting can be useful to reduce fan

noise in a quite environment. To set the fan speed to a constant setting press [**Config**], [**System**], [**Fan Speed**], [**Constant Speed**].

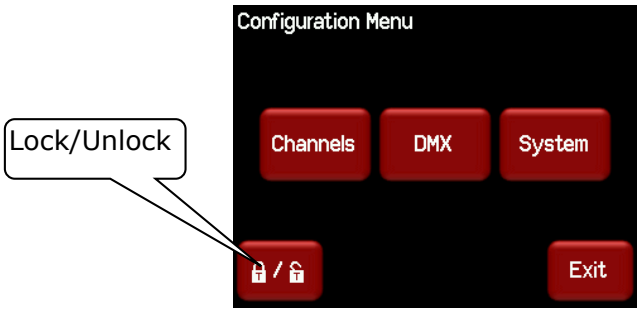




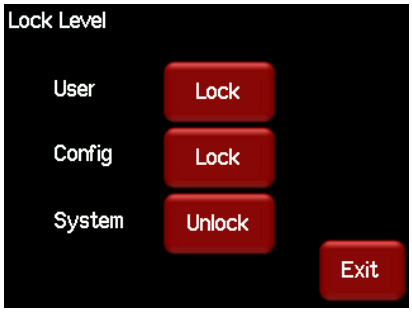
The constant fan speed can be set to any speed in the range of 40% to 100%.
To set the fan speed to a automatic speed press [**Config**], [**System**], [**Fan Speed**], [**Auto Speed**].

5.11 LOCK / UNLOCK

To **lock** the touch screen of the RED3 and prevent unauthorised access press [**Config**].

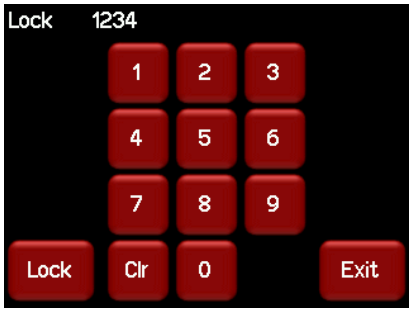


Pressing the "Padlock" symbol provides 3 levels of lock.



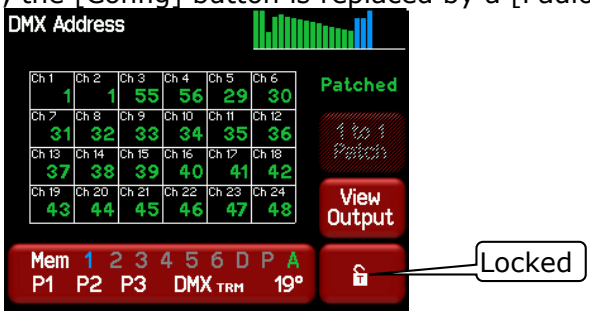
- User. Locks out the "Config", "Riggers Control" and "DMX Address" menus.
- Config. Locks out the "Config" menus.
- System. Locks out the "System" menu.

Note: The "System" menu is used for factory setup and has no user functions. It is always locked.
Pressing a [**Lock**] button reveals a "Lock" keypad. Enter a four digit code and the [**Lock**] button appears.



Press [**Lock**] to lock the selected level.

If "User" or "Config" are locked, the [Config] button is replaced by a [Padlock] symbol.



To unlock, press the [**Padlock**] symbol and enter your 4 digit code.

6 Alarms and Troubleshooting

Warning. No user controls or user serviceable parts are located inside the RED3 Dimmer. Refer all servicing to suitably qualified personnel.

6.1 MAINTENANCE

Ensure that the air vents at the sides of the frame are free from dust.
Check that all connector screw terminal are tight. This must be performed by a suitably qualified person.
Check that the RED3 contains the latest software release.

6.2 ALARMS

The "Information" button at the bottom of the LCD "Home Screens" indicates the following:

- **P1**, **P2**, **P3** show the presence of the input power phases. Flashing **Red** is not present.
- **DMX** shows the presence of a DMX control signal. Flashing **Red** is not present.
- **Temperature.** If the temperature of the RED3 is too high, the temperature display on the LCD will flash **Red** and ALL OUTPUT from the RED3 is automatically switched OFF. Either reduce the load or increase the cooling to reduce the temperature. When the temperature returns to normal, the RED3 automatically returns to normal operation.

6.3 TROUBLE SHOOTING

If a channel is not working check the MCB (Miniature Circuit Breaker) for that channel.
If the MCB has tripped (OFF), firstly try to determine the cause of the breaker tripping. It could be a blown lamp or a circuit overload. Rectify to problem (replace the lamp or reduce the load) then restore the MCB. If the MCB continues to trip, refer the problem to a suitably qualified person.

If a channel will not turn on check the following:

- The Maximum level is not set too low.
- Ensure that the load is plugged in.

If a channel will not turn off check the following:

- The Minimum level is set at 0%.
- Riggers control is set to 0%.

6.3.1 Rigger Test

You can test the operation of a dimmer channel from the "Riggers Control" on the LCD touch screen. See section 5.6.

6.3.2 DMX Control

If the dimmer is working from the Riggers Control but not via DMX, check that the dimmer is patched to the correct DMX slot. See sections 5.8.

View the DMX levels that are being received by the dimmer by pressing:
[**Config**], [**DMX**], [**View Input**].

7 DMX Explained

DMX512/1990-A is the industry standard for the transmission of digital control signals between lighting equipment. It utilises just a single pair of wires on which is transmitted the level information for the control of up to 512 DMX slots (addresses or channels).
As the DMX512-A signal contains the level information for all slots, each piece of equipment needs to be able to read the level(s) of the slots(s) that apply only to that piece of equipment. To enable this, the RED3 dimmer has a "DMX Patch" menu that allows you to patch (connect) each DMX slot (address) from your lighting controller to a RED3 channel number or to multiple channel numbers.
When good quality data cables are used, DMX512 cable runs may be up to 1,000 metres in length. When several DMX feeds are required (to feed different locations), DMX512 splitters must be used. These provides multiple isolated DMX512 feeds.
The RED3 uses a high impedance DMX input circuit allowing you to loop the DMX signal from one RED3 to the next. The last RED3 in the chain must have a "DMX Termination" (110 ohms) plugged into the DMX Thru connector.

Note: Do not use unscreened microphone or low speed data cables for DMX. This can cause problems in the DMX network. Make sure the cable conforms to the EIA485 cable requirements by providing the following specifications:

- Low capacitance
- One or more twisted pairs
- Foil and braid shielded
- Impedance of 85 -150 Ohms, nominally 120 Ohms
- 22AWG gauge for continuous lengths over 300 metres

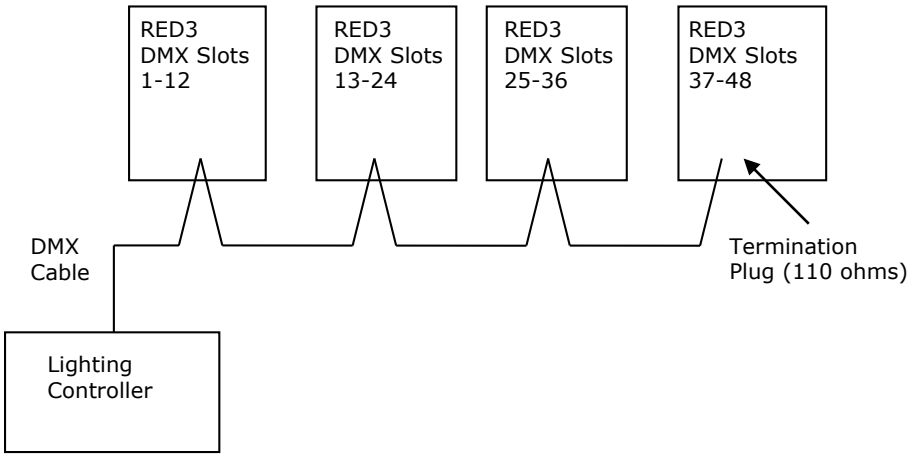
7.1 DMX PIN OUTS

DMX uses a 5 pin XLR connector.

Pin Number	Use
1	Ground
2	+ Data
3	- Data
4	Not Used
5	Not Used

7.2 TYPICAL DMX INSTALLATIONS

In the following example, the DMX output signal from the lighting control desk is fed to the DMX connector of the first RED3 dimmer. The DMX cable is then looped to the following RED3 dimmers. The order of the daisy chaining is not important as each RED3 channel can be patched to any DMX slot number. The end of the DMX line is terminated to prevent the signal reflecting back up the line and causing possible errors.



8 RDM Explained

RDM stands for Remote Device Management. It is an "extension" to DMX.

Since the inception of DMX it has always been a 'one way' control system. Data only ever flows in one direction, from the lighting controller outwards to whatever it may be connected to. The controller has no idea what it is connected to, or even if what it's connected to is working, switched on, or even there at all!

RDM changes all that allowing the equipment to answer back!

An RDM enabled moving light, for example, can tell you many useful things about its operation - the DMX address it is set to, the operating mode it is in, whether its pan or tilt is inverted and how many hours since the lamp was last changed.

But RDM can do more than that. It isn't limited to just reporting back, it can change things as well. As its name suggests, it can remotely manage your device.

LSC's RED3 Dimmer range are RDM enabled products. This allows you to use RDM to interrogate the dimmer to find out its status and also to set its DMX address.

RDM has been designed to work with existing DMX systems. It does this by interleaving its messages with the regular DMX signal over the same wires. There is no need to change any of your cables but because RDM messages now go in two directions, any in-line DMX processing you have needs to be changed for new RDM hardware. This will most commonly mean that DMX splitters and buffers will need to be upgraded to RDM capable devices.

To utilise RDM you will also need an RDM controller. Presently these are devices that plug in to the DMX line and talk the RDM language. They put the messages on to the DMX line, listen for any replies and display the results via an attached computer. The latest lighting consoles now also come with RDM controllers built in.

RDM also has the ability to read and report operating statistics and error conditions from any enabled equipment that supports it. This opens up the possibility of remotely monitoring the condition of your lighting rig and getting notice of failed equipment or even advanced notice of things that may be cause for concern. For example, a moving light that reports a very high bulkhead temperature may be suffering from a failed fan or clogged filter or a scroller that reports a high motor current may have a jammed scroll.

The RED3 dimmer reports the following information via RDM:

- Input power phases.
- DMX present.
- Temperature.
- Fan Speed.

9 Specifications

9.1 MODELS

Order Code	Size	Output Connectors
RED3/12A	12 Channel x 10 Amp	Australian GPO
RED3/12Q	12 Channel x 10 Amp	Swiss Schuko
RED3/12S	12 Channel x 10 Amp	EU Schuko
RED3/12T	12 Channel x 10 Amp	Screw terminals
RED3/12W	12 Channel x 10 Amp	2x16P Wieland
RED3/12X	12 Channel x 10 Amp	2x19P Socapex
RED3/6A	6 Channel x 10 Amp	Australian GPO
RED3/6Q	6 Channel x 10 Amp	Swiss Schuko
RED3/6S	6 Channel x 10 Amp	EU Schuko
RED3/6T	6 Channel x 10 Amp	Screw terminals
RED3/6W	6 Channel x 10 Amp	1x16P Wieland
RED3/6X	6 Channel x 10 Amp	1x19P Socapex
3RU/REARBRK	Dimmer chassis rear mounting bracket	
3RU/ROOBRK	Rear mounting ROO bar support bracket	

9.2 FEATURES

Feature	RED3
Channels	6 or 12
Max load per channel	10A (2400Watts)
Min Load per Channel	25 Watts
Breaker types	Thermal Magnetic
DMX512	Yes
RDM capable	Yes
User interface control	2.8” Colour Touch Screen
Preheat (min)	Yes – user settable
Top Set (Max)	Yes – user settable
DMX Mode	8 Bit DMX
Firing Technology	Opto-coupler
Rise time	80uSec 10-90%
Local Riggers control	Yes
Fan Control	Auto Speed
Remote Control - RDM	Yes – DMX Setting
Single or 3 phase operation	Yes – limited to 40A single phase.
Output mimic	Yes on the colour display
CCT (Current Control Technology)	Yes
Software upgrade method	SD card
Output connectors types	Australian, Wieland (Harting), Socapex, Terminals, Schuko
Power supply range	90-260VAC
Dimmer curves	2
In-built Softpatch	Yes
Product Dimensions	483 x 300 x 132mm
Shipping Dimensions	580 x 500 x 210mm
Power input connection	Australian – 32A 5 pin 3 phase plug with 1.2mtr tail Export – supplied with 3 phase tail.
Product Weight	TBD
Shipping Weight	TBD
Construction material	Zinc Steel
Operating frequency	44-66 Hz

10 Software Upgrade

LSC Lighting Systems has a corporate policy of continuous improvement to its products. The **RED3** dimmer software (firmware) is subject to this policy as new features are added and existing features improved.

The software version of your **RED3** dimmer can be checked by pressing [**Status**] [**About**].

To upgrade your **RED3** software, download the latest version from the LSC web site, www.lsclighting.com and save the new software to an **SD Card**. Both HC and low density format cards are supported. The file will be called "RED3_Vx.yy.BIN".

Press [**Config**], [**System**], [**Code Upgrade**].

Insert the SD card containing the file in the front panel card slot.

Follow the onscreen instructions.

11 Compliance Statements

11.1 RCM COMPLIANCE

The RED3 Dimmer from LSC Lighting Systems (Aust) Pty. Ltd. complies with the Regulatory Compliance Mark (RCM).

11.2 CE COMPLIANCE STATEMENT

The RED3 Dimmer from LSC Lighting Systems (Aust) Pty. Ltd. has been designed and tested to the European Committee for Electrotechnical Standardization (CENELEC) standard– EN55022 (Information Technology Equipment).

11.3 C TICK COMPLIANCE STATEMENT

All LSC products with CE Compliance automatically comply with C-Tick requirements as per Section 182 of the Radio-communications Act 1992. LSC Company Registration number is N921.