



## Specification Overview:

The Demux24 is a 24 channel DMX to analogue converter, housed in a compact 1U 19" rack mounting case.

The Demux24 is well specified, featuring four ring locking DIN output connectors (each carrying six channels), preheat and 4 output laws selectable per channel, positive / negative polarity and DMX address selectable per output socket, and manual level control plus 12 memories for standalone operation. Remote operation is possible by DMX, with optional end-of-line termination.

## Control Interface

The main display consists of four seven-segment displays; the data displayed is dependent on the set-up mode of the Demux24. Around the outside of these displays are eight LEDs. Seven of which indicate the current set-up mode of the Demux24, the eighth is used for DMX indication.

The Demux24 has a default mode, for operation. In this mode none of the set-up mode LEDs will be lit, the main display will show the DMX address(es) and if it has been terminated a small dot will be shown in the bottom right of the fourth display.



### Mode Button:

The Mode button is used to cycle through the different set-up modes. They are;

- Manual
- DMX address
- DMX fail
- Memory
- Preheat
- Law
- Polarity
- Default

### Enter Button:

The Enter button is used to confirm actions.

### Up & Down Buttons:

These are used to adjust the values shown in the main display. Pressing both buttons together will reset the display to the default values.

## Set-up Modes:

### Manual Control:

The Manual Control Mode allows the user to set-up a look on the outputs without the need of an external controller.

Select '**Manual**' mode using the 'Mode' button. The display will show CC.LL, where CC is the channel number and LL is the level. Select the channel you require or 'A' for all channels, using the 'Up & Down' Arrows and press 'Enter'. Now set the level you require using the 'Up & Down' Arrows and press 'Enter' again to confirm and move back to the channel selection.

### DMX Address:

There are 2 ways that the Demux24 can be patched – a single DMX start address can be set for the block of 24 channels (block patch), or each output socket (6 channels) can be given a different DMX start address.

For block patch, the range of DMX start addresses is 001 – 489. In default mode the single DMX start address of the block will be shown on the display.

For individual patch, the range of DMX start addresses is 001 – 507. In default mode all four DMX start addresses are cycled on the display.

Select '**DMX ADDRESS**' using the 'Mode' button, the display will show S.AAA, where S is the socket number and AAA is the current DMX address for that socket. Select the socket you require (1-4), or 'A' for all sockets (block patch), using the 'Up & Down' Arrows and press 'Enter'. Now set the address you require using the 'Up & Down' Arrows and press 'Enter' again to confirm and move back to the socket selection.

### DMX Fail:

There are three DMX fail modes available – 'fade to black', 'hold DMX' and 'fade to memory'.

Select '**DMX Fail**' using the 'Mode' button. Using the 'Up & Down' Arrows select your preferred choice from the list below;

Fail Mode	Main Display
Hold Last State	Hold
Fade to Zero	F 00
Fade to Memory 1 - 12	F 01 – F 12

## Memories:

The Demux24 will store 12 memories for stand alone operation, these can only be re-called if there is no DMX present.

1. Set-up the scene using the '**Manual**' control function or a DMX controller.
2. Select '**Memory**' using the 'Mode' button.

Using the 'Up & Down' Arrows select the required memory number and press the 'Enter' button to confirm. A 'p' should appear next to the memory to signify that it has been programmed.

Holding both the 'Up & Down' Arrows for 1 second will clear the selected memory. If these buttons are held for 5 seconds, ALL memories will be cleared.

## Preheats:

Preheats can be selected on a per channel or all channel basis. The preheat level is preset to 5% and cannot be adjusted.

Select '**Preheat**' by cycling through the modes using the 'Mode' button.

Select required channel or 'A' for all channels, using the 'Up & Down' Arrows and press 'Enter', to confirm.

Now select on/off using the 'Up & Down' Arrows. Press 'Enter' to confirm and return to the channel selection.

## Output Laws:

Four output laws are available, which can be selected per channel.

Select '**Law**' mode using the 'Mode' button. Using the 'Up & Down' Arrows select the channel required, or 'A' for all channels. Press 'Enter' to confirm. Now select the law you require, again using the 'Up & Down' Arrows and press 'Enter' to confirm and return to the channel selection.

Output Law	Main Display
Normal	n
Switch	S
Linear	L
Invert	in

Note that the Invert law is different to the voltage polarity option described below. The Invert law results in the output being at full scale voltage (either positive or negative) for a DMX input value of 0%, and 0V for a DMX input value of 100%.

## Polarity:

**CAUTION**  
TO AVOID POSSIBLE DAMAGE TO EQUIPMENT,  
TAKE CARE TO MATCH THE POLARITY SETTING  
ON THE DEMUX24 TO THAT REQUIRED BY  
CONNECTED EQUIPMENT.

Each output socket can be set to positive or negative voltage polarity.

Select '**Polarity**' mode using the 'Mode' button. Using the 'Up & Down' Arrows select the socket required, or 'A' for all sockets. Press 'Enter' to confirm. Now select the polarity ('**Pos**' or '**Neg**') you require, again using the 'Up & Down' Arrows and press 'Enter' to confirm and return to the socket selection.

## Super User:

The Demux24 has a number of hidden functions, located in the Super User Menu. The super user menu's can only be accessed from the **Default** mode (No LEDs Lit). To enter Super User press and hold the 'Up & Down' Arrows together and press and hold the 'Mode' button for 5 seconds. All the mode LEDs will flash to indicate the Demux24 is in super user mode.

The 'Up & Down' Arrows are used to cycle through the various super user functions. Pressing the 'Mode' button at any point will revert to normal operation. If no buttons are pressed after 20 seconds the Demux24 will automatically revert to normal operation.

## Lock/Unlock

Press the 'Up & Down' Arrows until the display shows "**LOC**". Press 'Enter' to confirm this action. The Demux24 will revert to the Default mode. Pressing the 'Mode' button now will only cycle between **Manual Control** and **Default Mode**.

If Super User is entered when the Demux24 is locked, only the unlock function will be available. The display will show "**UNL**". To unlock the Demux24, press and hold the 'Enter' button for 5 seconds. The Demux24 will unlock and exit super user returning to the Default mode.

## DMX Termination:

Press the 'Up & Down' Arrows until the display shows "**ter**". If the Demux24 is terminated a dot will appear at the bottom of the last segment. Pressing the 'Enter' button will toggle between the two states.

## Resetting The Demux24:

Press the 'Up & Down' Arrows until the display shows "rset". Press 'Enter' to confirm. The display will flash briefly to confirm this action. The Demux24 will be reset to its default settings, shown in the table below:

Set Up Parameter	State
Manual Control Levels	All Off
DMX Addresses	Block patch at 001
DMX Fail Mode	Hold Last State
Memory	Memory Cleared
Preheat	Off (0%) for all channels
Law	Normal law for all channels
Polarity	Positive for all output sockets
DMX termination	Disabled

## Firmware Version:

To identify which version of firmware is loaded in the Demux24, press the 'Up & Down' Arrows until the firmware version is shown in the display (e.g. 01.02). Press and hold the 'Enter' button for 1s, and the Demux24's CPU serial number will be displayed. Press the 'Enter' button again to return to the version display. Note that the firmware version will also be shown briefly on start up.

## Technical:

**WARNING**  
**DO NOT REMOVE COVERS WITHOUT FIRST COMPLETELY DISCONNECTING THE DEMUX24 FROM THE MAINS SUPPLY.**

## Electrical:

The Demux24 is designed to operate on the following mains input specification. The Demux24 may not operate satisfactorily outside this specification.

- Mains Supply Voltage: 85-264V AC
- Frequency: 47 – 63 Hz
- Single Phase CEE22 inlet connector

## Mechanical:

- Height: 44mm
- Width: 483mm
- Depth: 128mm
- Weight: 3.0kg (6.6lb)

## Analogue Output Connections

- Four 8-pin ring-locking DIN connectors, six channels each.
- Short circuit proof, all channels capable of 5mA, diode output.
- Positive / Negative polarity by software selection.
- Any dimmer supply not used.
- Pin assignment is:

Pin 1	Channel 1	(7, 13, 19)
Pin 2	Channel 2	(8, 14, 20)
Pin 3	Channel 3	(9, 15, 21)
Pin 4	Channel 4	(10, 16, 22)
Pin 5	Channel 5	(11, 17, 23)
Pin 6	Channel 6	(12, 18, 24)
Pin 7	Not connected	
Pin 8	0V	

## DMX Connections

One male and one female 5 pin XLR connector. Opto-isolated. Pin assignment is:

Pin 1	0V
Pin 2	DMX- (RS485 B line)
Pin 3	DMX+ (RS485 A line)
Pin 4	Reserved
Pin 5	Reserved

## DMX Indication:

On	DMX dimmer data (start byte of 00) being received OK.
Flash Fast	DMX data being received, but <u>not</u> dimmer data (start byte of 00)
Flash Slow	DMX data errors occurring.
Off	No DMX data being received.

## Notes:

Zero 88 Lighting Ltd reserves the right to make changes to the equipment described in this manual without prior notice.

This equipment is designed for professional stage lighting control, and is unsuitable for any other purpose.

It should be used by, or under the supervision of, an appropriately qualified or trained person.

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Manual Stock Number: 7340200

Issue 2.0: September 2006

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