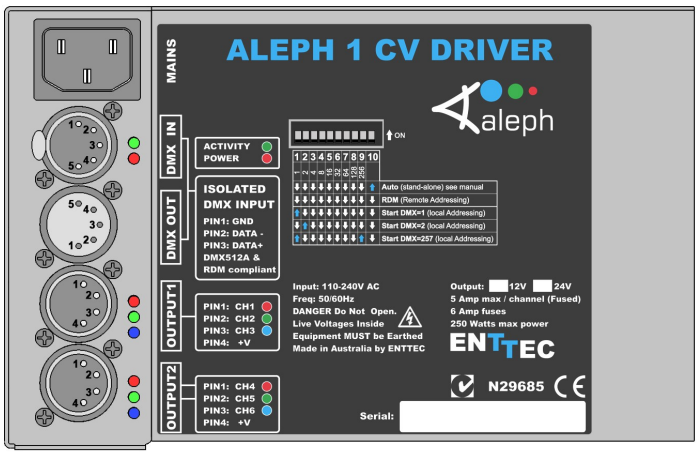
User Manual
Rev D / Firmware V1.4
Document PN: 50394

ALEPH 1 *CV DRIVER*

6-CHANNEL CONSTANT VOLTAGE LED DRIVER/POWER SUPPLY

73520



Features

- DMX512 Controllable and RDM Configurable
- Designed for driving LED strips through 6 high power channels
- Smart heat management
- Easy addressing interface (physical switches and RDM)
- Isolated DMX input
- 6x 5 Amps constant voltage controllable outputs
- 250 watts total output power
- Fused outputs
- Power, status and output LED indicators
- Scalable design
- Stand-alone output sequences (no external controllers required)
- Up to 8 units stackable using standard 19” modular rack accessory (sold separately)
- Ideal for white or RGB installations
- Standard IEC mains input connector
- Auto-selectable Multi voltage mains input

Safety

- Do not expose this the ALEPH1 CV DRIVER to rain or moisture, doing this will void the warranty
- Do not spill water or other liquids into or onto the unit
- Check that the local power outlet matches that of the required voltage (110 → 240V AC)
- Make all the connections before you plug in the main power
- Do not remove the cover whist the unit is powered
- Never operate this unit when it’s cover is removed
- Never plug this unit in to a dimmer pack
- Always be sure to mount this unit in an area that will allow proper ventilation. Allow about 6” (20 cm) between this device and a wall
- Make sure ventilation holes are clean and unobstructed
- Do not attempt to operate this unit, if it becomes damaged
- This unit is intended for indoor use only
- Always mount this unit in safe and stable matter
- Power-supply cords should be routed so that they are not likely to be walked on or pinched by items

placed upon or against them, paying particular attention to the point they exit from the unit

- The appliance should be situated away from heat sources
- Make sure the unit is dry and there is no fluids residue before powering the unit after cleaning

Firmware Update

Updating the firmware to the ALEPH1 CV DRIVER requires an ENTTEC USB Pro or a Pro Mk2 widget plugged in to a PC USB port and to the ALEPH 1 CV unit through a standard 5 pin DMX cable.

Please download and install the CV_Update_Firmware application from **www.enttec.com** website, connect the widget to the unit, power it up and run the application. Whilst performing the updating process the status LED should stop blinking for about 35 seconds. The process will be finished when the status led starts blinking again.
To make sure the process has been successful and check the firmware version, please look at the "Software Version ID" field using an RDM tool such us "ENTTEC RDM Controller" software which can be downloaded for free from ENTTEC website.

Dip Switches Configuration

The ALEPH1 CV DRIVER counts with a 10 ways dip switch which defines the behaviour of the unit, being switches # 1 to 9 the DMX start address and switch # 10 the mode.

The two modes defined by switch # 10 are called "Standard" and "Auto" where in standard mode the unit will need and external DMX source to control the lights and in auto mode the unit will generate pre-defined sequences in stand-alone manner.

Please reefer to the following table which describes how to use the switches.

Standard mode (switch # 10 set to OFF position):

RDM (remote addressing)		When all the address digits (1 to 10) are set to OFF the DMX start address must be defined through RDM
DMX (local addressing)		DMX start Address is: **001**
DMX (local addressing)		DMX start Address is: **002**
DMX (local addressing)		DMX start Address is: 2+4= **006**
DMX (local addressing)		DMX start Address is: 256+1= **257**

Auto mode (switch # 10 set to ON position):

The binary number set in switches #1 to 9 will define the sequence number. The following table shows some examples of pre-defined sequences.

All channels OFF		All output channels will be dimmed OFF (Blackout)
CH1 full intensity		CH1 output will be driven to full intensity
CH4 full intensity		CH4 output will be driven to full intensity
CH6 full intensity		CH6 output will be driven to full intensity
All channels ON		All output channels will be driven to full intensity

RDM Capabilities

The ALEPH1 CV DRIVER has full RDM capabilities and you can read/write them by using any standard RDM tool. The "ENTTEC RDM Controller" software can be downloaded for free from ENTTEC website and be used in combination with a DMX USB PRO, RDM USB PRO or a PRO MK2 widget.

RDM addressing will be only available when all configuration switches are all set to OFF position.

Read only supported fields

- RDM Protocol Version
- Device Model ID
- Software Version ID
- Sensor Value
- DMX Footprint

- Sensor Count
- Manufacturer Label
- Supported Parameters Count

User configurable supported fields

- Lamp On Mode
  - [OFF] Stays off until instructed
  - [DMX] Strikes upon receiving DMX
  - [ON] Strikes Auto at Power Up
- DMX Personality
  - 8 Bit 6-Channel Mode
  - 8 Bit 8-Channel Extended Mode
  - 16 Bit 12-Channel Mode
- DMX Start Address
- Identify Device
- Factory Defaults

Channel Distribution (DMX Personalities)

The CV Driver handles each DMX channel as an RDM sub-device, so you can assign independent addresses to each channel which do not have to be consecutive. It is even possible defining several channels to the same DMX address.

8 BIT 6-CHANNEL MODE (DEFAULT)

1st Channel	2nd Channel	3rd Channel	4th Channel	5th Channel	6th Channel
000 - 255 0% - 100%	000 - 255 0% - 100%	000 - 255 0% - 100%	000 - 255 0% - 100%	000 - 255 0% - 100%	000 - 255 0% - 100%

16 BIT 12-CHANNEL MODE

1st Channel	2nd Channel	3rd Channel	4th Channel	5th Channel	6th Channel
000 - 255 (HIGH)	000 - 255 (LOW)	000 - 255 (HIGH)	000 - 255 (LOW)	000 - 255 (HIGH)	000 - 255 (LOW)
7th Channel	8th Channel	9th Channel	10th Channel	11th Channel	12th Channel
000 - 255 (HIGH)	000 - 255 (LOW)	000 - 255 (HIGH)	000 - 255 (LOW)	000 - 255 (HIGH)	000 - 255 (LOW)

8 BIT 8-CHANNEL EXTENDED MODE

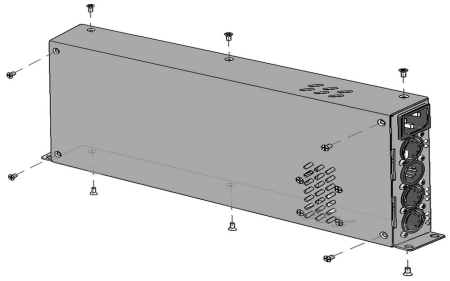
1st Channel	2nd Channel	3rd Channel	4th Channel	5th Channel	6th Channel
000 - 255 0% - 100%	000 - 255 0% - 100%	000 - 255 0% - 100%	000 - 255 0% - 100%	000 - 255 0% - 100%	000 - 255 0% - 100%
7th Channel	8thChannel				
STROBE FREQUENCY[1]	MASTER DIMMER[2]				

[1] 000-010 → Full Output depending on current CH1-CH6 and Master Dimmer channel.
011-252 → Varies strobe frequency where 011 is the lowest and 252 the highest (still keeps the colour and master dimmer values from the other channels)
253-255 → Full Output depending on current CH1-CH6 and Master Dimmer channels

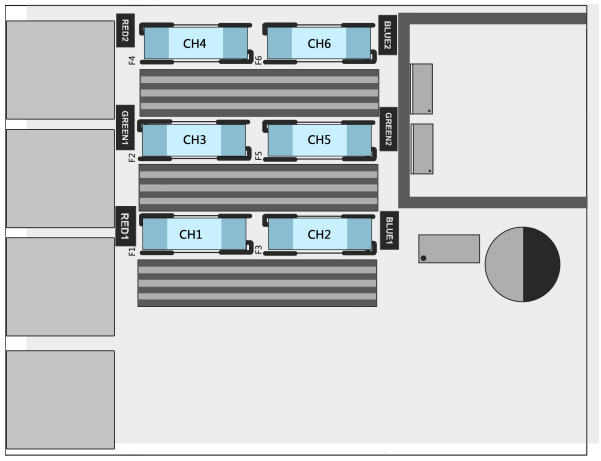
[2] 000 → All outputs will be OFF (dimmed to 0%)
255 → Full Output (100%) depending on current CH1-CH6 and Strobe Frequency channels.
000-255 → Dimms all channels merging them with the current CH1-CH6 and Strobe Frequency channels, where 000 is 0% and 255 is 100% intensity.

Changing Fuses

The ALEPH1 CV DRIVER has six Fast 5X20mm, 6 Amps, UL glass fuses for protecting the outputs and can be changed by removing the metal lid following this steps:
1- Un-power the unit. There are mains voltages inside, so the unit must be never operated without the lid.
2- Detach the metal lid by removing the 10 Philips type screws. Please note that there is a wire running from the base to the lid which need to be watched during the procedure:



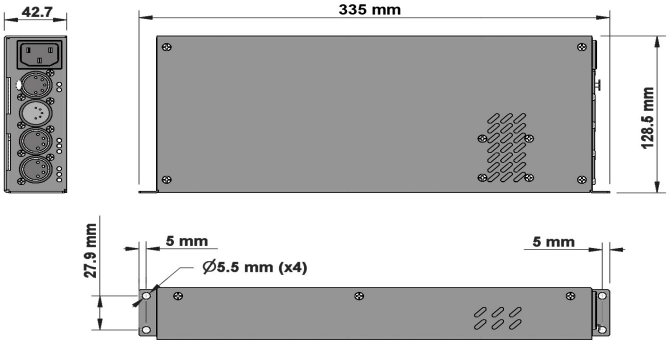
3- Locate and change the desired fuse in the main controller board using this diagram:



4- Place the lid back and the unit will be ready to be re-powered.

Dimensions

The ALEPH1 VC DRIVER is designed to fit the modular rack accessory (sold separately) which allows stacking up up to 8 units.



Stackable Modular Rack (Accessory)

The modular rack (sold separately) allows up to 8 ALEPH1 CV units to be stacked up using only 3 standard rack units (3RU). Also has an in-built fan at the rear side.

Screw Terminal Output (Accessory)

The converter from 4 pin XLR to screw terminal (sold separately) allows easy installation by using a flat screw driver, avoiding the need of wiring and soldering.

Specifications

Due to continuous improvements and innovations of all ENTTEC products, specifications and features are subject to change without notice.

Item	Value
Input Voltage	110 – 240V AC
Input Frequency	50/60Hz
Maximum Total Output Power	250 Watts
Maximum Current Per channel	5 Amps
Output Type	Common Anode
Output Channels	6
Control Input	DMX512 & RDM E1.20
Personalities	3 DMX distributions: 6, 8 and 12 channels
Smart Dimming	14 bit internal dimming mapped to 8 bit S curve
Cooling Method	Forced air (temperature-regulated for low noise)
Ambient Working Temperature	5° to 40° C
Connectors	1x 5-Pin Male XLR for DMX input 1x 5-Pin Female XLR for DMX output 2x 4-Pin Female XLR for channels output 1x 3-Pin IEC C14 Male Socket 10Amps for mains
Protection Rating	IP20
Net Weight	2.4 Kg
Shipping Weight	2.8 Kg

Ordering Information

Order 24V CV DRIVER version by part number **73520**; 12V units are made under special order (please contact us).
Also stackable modular rack accessory is available by part number **73525** and 4pin XLR to screw terminal output converter accessory by **73526.**

www.enttec.com