ALEPH CV DRIVER

Specifications

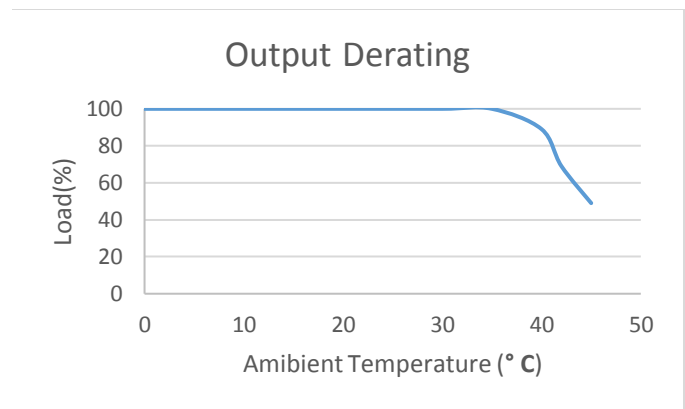| Item	Value
Input Voltage	110 – 240V AC
Input Frequency	50/60Hz
Max total Output Power	250 Watts
Max. Current Per channel	5 Amps
Output Channels	6
Control Input	DMX512 & RDM E1.20
Personalities	3 DMX distributions: 6, 9 and 12 channels
Smart Dimming	14 bit internal dimming mapped to 8 bit S curve
Cooling Method	Forced air (temperature-regulated for low noise)
Ambient Working Temperature	5° to 35° 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
DMX Pinout	Pin1: Ground Pin2: Data – Pin3: Data +
Protection Rating	IP20
Net Weight	2.4 Kg
Shipping Weight	2.8 Kg

Features

- DMX512 Controllable and RDM Configurable
- Designed for driving LED strips through 6 high power channels
- 12V and 24V DC output units available
- Easy addressing interface (physical switches and RDM)
- Isolated DMX input
- 6 x 5 Amps constant voltage controllable outputs
- 250 watts total output power
- Fused outputs with surge protection
- Power, status and output LED indicators
- Stand-alone output sequences (if configured, no external controllers required)
- Up to 8 units stackable using standard 19" modular rack accessory (sold separately)
- Ideal for white or RGB LED Tapes
- Standard IEC mains input connector
- Auto-selectable Multi voltage mains input

Safety

- Make all the connections before you plug in the main power
- Do not expose the ALEPH 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)
- Do not remove the cover whilst the unit is powered
- Never plug this unit in to a dimmer pack

ID: 82325

- 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 manner
- 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 driver 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 on ALEPH CV DRIVER requires an ENTTEC USB Pro or a Pro Mk2 device plugged in to a PC USB port and to the ALEPH CV unit through a standard 5 pin DMX cable.

Please download and install the latest firmware for ALEPH CV from www.enttec.com website, connect the device to the unit, power it up and run the application.

To make sure the process has been successful and to 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.

Thermal Management

ALEPH CV DRIVER (RevB onwards) has an in-built thermal control system. It constantly monitors the hardware's internal temperature and acts on the condition of overheating.

When internal temperature is higher than the limit, the thermal control system will gradually lower the intensity of all the connected LED strips or loads to cool down the driver. Once the internal temperature is within the limit, the driver will resume its normal operation.

The below graph shows a relationship between ambient temperature versus output loads:

Output Derating

Surge Protections

ALEPH CV DRIVER has enhanced the surge protections for all the output channels. This feature is designed to prevent unexpected high voltages from permanently damaging the channels. The chart below shows its operating parameters:

Please note: Surges are usually caused by installation issues such as unnecessary long cables, short-circuits, and connecting the 4 pin XLR connector when driver is on etc. It is highly recommended that users check the connections before turning on the driver.

LED Status

The CV driver comes with eight LED indicators located in the front panel. Two set of RGB LEDs on the bottom indicate the channel activities. The red LED on top section indicates the internal power supplies are working properly.

The top green LED next to the red LED indicates the driver status and should be constantly flashing. Please refer to the following table for information about current operating status:

Flashing Frequency	Unit Status
0.5 Hz	Idle
2 Hz	DMX/RDM received
8 Hz	Overheating

ID: 82325

Dip Switches Configuration

The ALEPH 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 an external DMX source to control the lights and in auto mode the unit will generate pre-defined sequences in stand-alone manner.

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

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

Auto Mode (Switch#10 is ON)		
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

Standard Mode (Switch#10 is OFF)		
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

RDM Capabilities

The ALEPH 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

3

- o [DMX] Strikes upon receiving DMX
- o [ON] Strikes Auto at Power Up
- DMX Personality
  - o 8 Bit 6-Channel Mode
  - o 9-Channel Extended Mode
  - o 16 Bit 12-Channel Mode
- DMX Start Address
- PWM Adjustment
- 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)

Extended 9-Channel 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	8th Channel	9th Channel			
STROBE RATE	MASTER DIMMER	STROBE DURATION			

Strobe Rate Value	Output Observed
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 (keeps the colour and master dimmer values from the other channels)
253-255 →	Full Output depending on current CH1- CH6 and Master Dimmer channels

Master Dimmer Value	Output Observed
000 →	All outputs will be OFF (dimmed to 0%)
255 →	Full Output (100%) depending on current CH1-CH6 and Strobe frequency channels.
000-255 →	Dims all channels merging them with the current CH1-CH6 and Strobe rate channels. 000 is 0% and 255 is 100% intensity.

| Strobe Duration Value	Output Observed
000 →	Shortest time that the LED stays on while strobing
255 →	Longest time that the LED stays on while strobing

Changing Fuses

The ALEPH CV DRIVER has 6 Amps, UL glass fuses for protecting the outputs and can be changed by removing the metal lid following these steps:
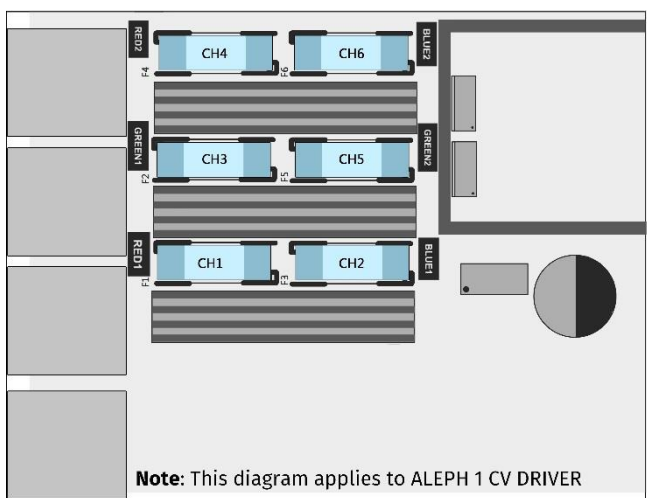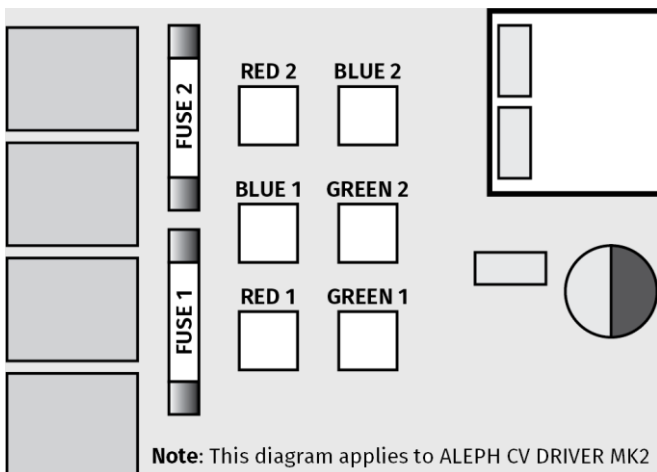
Fuses Specifications	
Size	5 x 20 mm
Current Rating	6 Amps
Voltage Rating	125V
Response time	Fast

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:
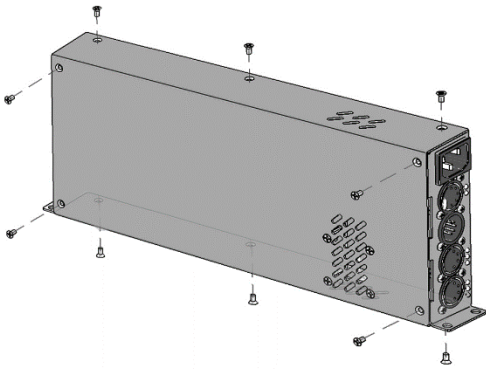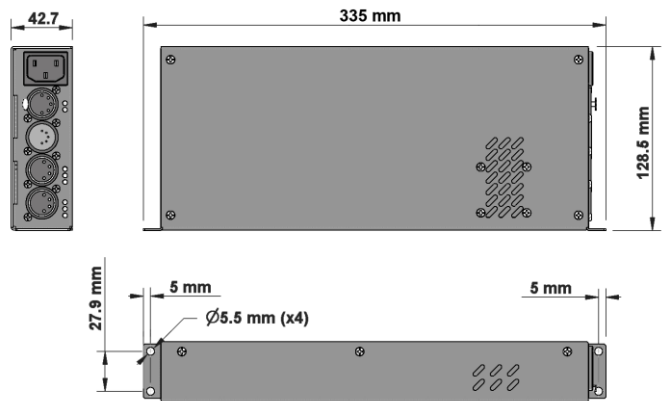
3- Locate and change the desired fuse in the main controller board using one of the diagrams below:

Dimensions

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

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

Revision Log

Revision	Description
Aleph 1 CV Driver	Constant voltage driver with UL glass fuses for each of the six channels
Aleph CV Driver MK2	Constant Voltage driver with a fuse for each output

Stackable Modular Rack (Accessory)

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

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

ID: 82325

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.

Ordering Information

The ALEPH CV DRIVER MK2 and compatible products can be ordered from our website or through your ENTTEC dealer using the following part numbers. Different voltage and protocol units are made under special order (please contact us).

Part Number	Description
73520	ALEPH CV DRIVER MK2 (24V)
73522	ALEPH CV DRIVER MK2 (12V)
73526	XLR 4PIN TO SCREW TERMINAL OUTPUT CONVERTER
73530	A1 - 8 WAY CV RACK (240V AC)

enttec.com

MELBOURNE AUS / **LONDON** UK / **HILLSBOROUGH** NC, USA

ID: 82325