Antelope

ZODIAC *Platinum* DSD

DSD256 UPSAMPLING DAC

& VOLTIKUS PSU



OWNER'S MANUAL

Contents

1. Safety Notes 2
2. Introduction 3
3. Zodiac Platinum Features 4
4. Quick Start 5
5. Zodiac Platinum Front Panel Explained 6
6. Zodiac Platinum Rear Panel Explained 8
7. Remote Control Unit 9
8. Advanced User Tips 9
    8.1. Source input 9
    8.2. Changing USB mode and/or Headphone amplifier impedance 10
    8.3. Mute 11
    8.4. Digital Audio Quality - factors and settings 11
    8.5. I/O connections 11
    8.6. Ground Loop Hum and Noise 11
9. Additional Information 11
10. In the box 12
11. Zodiac Platinum Technical Specifications 12
Voltikus PSU 13
12. Voltikus Features 14
13. Voltikus Front Panel Explained 14
14. Voltikus Rear Panel Explained 15
15. Replacing a Voltikus fuse 15
16. Voltikus Technical Specifications 16

1. Safety Notes

To reduce the risk of electrical shocks, fire, and related hazards:

- Do not remove screws, cover, or cabinet. There are no user serviceable parts inside. Refer servicing to qualified service personnel.
- Do not expose this device to rain, moisture or spillover of liquid of any kind.
- Should any form of liquid or a foreign object enter the device, do not use it. Switch off the device and then unplug it from the power source. Do not operate the device again until the foreign object is removed or the liquid has completely dried and its residues fully cleaned up. If in doubt, please consult the manufacturer.
- Do not handle the power cables with wet hands!
- Avoid placing things on the cabinet or using the device in a narrow and poorly ventilated place which could affect its operation or the operation of other closely located components.
- If anything goes wrong, turn off the device first and then unplug the power. Do not attempt to repair the device yourself. Consult authorized service personnel or your dealer.
- Do not install near any heat sources such as radiators, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not use harsh chemicals to clean your Unit. Clean only with specialized cleaners for electronics equipment.
- Connect all your devices before powering your Unit.

2. Introduction

Thank you for purchasing the Zodiac Platinum DSD256 D/A Converter & Voltikus Power Supply from Antelope Audio.

Our constant strive to offer Antelope customers the newest and best technologies has resulted in designing a completely new DAC architecture supported by the enhanced second generation of our audiophile power supply.

An unmatched DSD256 D/A converter, utilizing Antelope's 64-bit Oven Controlled Clocking and precise Monitoring Control.

Zodiac Platinum DSD is designed to deliver bit perfect, transparent sound – digital audio that doesn't sacrifice the warmth and fullness typically associated with analog gear.

The Custom designed USB controller chip streams data at 480 Mbits, allowing audio up to 384 kHz with Antelope Audio's ASIO driver for both Mac and PC. Dual-stage headphone driver architecture delivers smooth sound at both high and low levels.

Plus the power that makes the difference:
Voltikus is a sleek heavy-duty Power Supply Unit (PSU) designed to perfectly match your Zodiac Platinum DSD D/A Converter. Carefully tailored to deliver uncompromised power, Voltikus helps Zodiac Platinum achieve the punch and sonic richness of deep lows, a full range of mids, and tightly defined highs. This degree of performance is accomplished by incorporating a hefty, custom-wound, electrostatically shielded toroidal transformer followed by a unique concept of three cascaded power regulators. A precision laser-trimmed voltage reference (LT1021) serves as the backbone of this discrete design, achieving the stability impossible with off-the-shelf voltage regulators.

For further information, you can also visit our support area online for the FAQ, Help Desk and to register your product at: www.antelopeaudio.com.

Enjoy phenomenal sound quality with the new Zodiac Platinum!

All the best,
The Antelope Team

3. Zodiac Platinum Features

- Up to 384 kHz sampling rate
- 10M / WC Input for Antelope's Rubidium Atomic Reference Clock or any Antelope Audio Master Clock
- DSD support including unique 256X Mode
- Switchable 64-bit 8X Linear Phase Upsampler
- Quad DAC Architecture for superb dynamic range
- Quiet stepped relay volume attenuator for precise stereo balance (matched to 0.05 dB)
- Antelope Oven Controlled Clock with Ultra Low Jitter
- Built in 64-bit Acoustically Focused Clocking provides jitter management for all digital inputs
- De-Jittered, re-clocked Digital Outputs: 1x AES/EBU and 2x S/PDIF
- Anti-thumping Speaker & Ear protection on power up & source change
- Stereo inputs: Balanced analog (1/4"), Unbalanced analog (RCA), Computer Data (USB), 2 optical Digital (TOSLINK), 2 coaxial - SPDIF (RCA) and AES/EBU
- Stereo analog outputs – balanced (XLR), unbalanced (RCA)
- Dual-stage headphone driver architecture for superior matching with professional headphone coils
- Large shared volume control, switchable between analog outputs and headphone outputs
- Mute for both headphones and main output, including -12dB attenuation for headphones.
- Adjustable (120 Ω or 0 Ω) headphone output impedance
- Input select button easily toggles between inputs
- Unibody IR remote control with extended angle of reception
- PC/MAC software control panel
- Automatic internet-based firmware upgradeability
- Separate Audiophile Power Supply
- Meets FCC and CE requirements

4. Quick Start

It only takes a few moments to harness the benefits of the Zodiac Platinum Sound.
Follow these simple steps to connect Zodiac Platinum to your system setup:

1. Plug the supplied IEC power cable into the AC Input socket (33) on the rear panel of the Voltikus unit and connect the other end to an AC power outlet.

2. Connect the DC power cable to the 18 VDC Output (35) on the rear panel of the Voltikus and the other end to the 18 VDC input socket on your Zodiac Platinum Unit.

3. Press the power switch (32) on the rear panel of the Voltikus to power up. The power light (30) on the front panel of the Voltikus illuminates to indicate that it is powered up.

4. The Ground/ Lift switch (34) provides the option of lifting your Voltikus PSU to make it 'floating' or keep it grounded.

5. Connect your choice of digital input(s) and analog outputs on the rear panel of the Zodiac Platinum.

6. If you wish to use USB as the digital input, connect the Zodiac Platinum USB cable to your computer.

   Visit: http://antelopeaudio.com/en/support/downloads and download the Zodiac Platinum driver appropriate to your operating system and follow the instructions for installation. The guest operating system will recognize the new output audio device (Zodiac Platinum). You should redirect sound from the computer to your newly indicated output – Zodiac Platinum.

   Mac OS:
   In your **Apple Menu**, go to **System Preferences** and choose **Sound**, select the **Output** tab and select **Zodiac Platinum** from the list.

   Windows:
   Click on your PC's **Start** menu, then select:
   Settings / Control Panel / Sounds & Audio Devices / Audio and ensure that the **Zodiac Platinum** is selected as default audio device.

   Note: If selected as System Sound Output please turn off potentially intrusive system sounds or alternatively select Zodiac Platinum as your output device in your preferred music player.

   See more on **www.antelopeaudio.com** – support area.

7. Turn the unit on with the power button (12).

8. Adjust the main volume/ headphones volume (7) to minimum

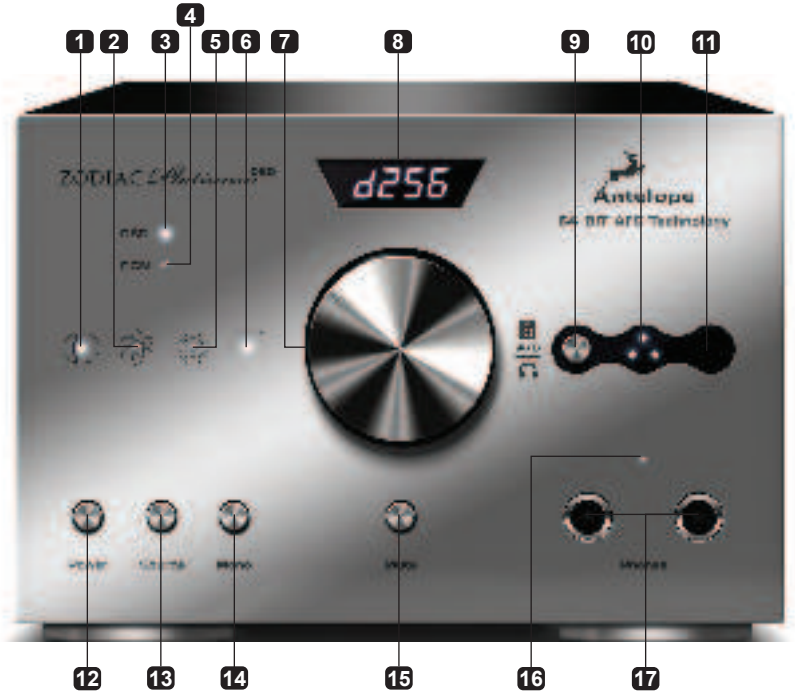
9. Press the Volume select button (9) to switch between headphones and main volume function.

10. Play audio from your preferred digital or analog source.

11. Adjust the main volume/ headphones volume (7) to a comfortable level.

12. Using source button select desired rear panel input. The sample rate of the input (digital inputs only) should be indicated in the status display (8), the Lock indicator (1) should light steadily and audio should be present at the Zodiac's main outputs or headphone outputs.

5. Zodiac Platinum Front Panel Explained



1. **Lock light**

When lit, this indicates Zodiac Platinum is locked to an incoming digital signal via rear panel connectors (24), (25), (27). The light will flash if there is no valid digital signal. When using USB no lock light will illuminate as Zodiac's internal clock takes over.

2. **Atomic Lock light**

When lit, this indicates that the Zodiac Platinum is being atomically referenced.
NOTE: 10M only references USB audio signals.

3. **DSD light**

When lit, this indicates that you are in DSD playback mode.

4. **PCM light**

When lit, this indicates that you are in PCM playback mode.

5. **Word Clock light**

Indicates the device is locked to the incoming Word Clock signal at rear panel BNC connector (23).
NOTE: Word Clock overrides the clock signal present in AES, S/PDIF and TOSLINK.

6. **Mono light**

When lit, this indicates the outputs are summed to mono.

7. Main volume & Headphone volume

Select between the ability to adjust levels for analog outputs (21), (22) and headphone outputs (17). The level is shown on the display (6) when adjusting, with a range of -95dB to 0dB with -1dB steps. A click is heard as each relay engages the precision resistors. The last value is OFF which mutes all analog outputs.

8. Display

Multi-function display can show Sample Rate, DSD Rate, Main Volume & Headphone Level, Source Input, Headphone amplifier impedance and info concerning USB mode. See also (7), (9), (10) for related functions.

9. Volume Select button

This allows you to select between controlling balanced outputs, unbalanced outputs and headphone outputs. To change between balanced outputs and unbalanced outputs: press and hold the A/B button while the balanced outputs are selected. A single illuminated dot indicates that the unbalanced output is selected and three illuminated dots indicate that the balanced output is selected.

10. Main volume light

This indicates if balanced or un-balanced output is selected. When balanced is selected there are 3 LEDs lit and for the other output there is only one center light lit.

11. Infrared receiver

Remote control unit receiver. Do not cover!

12. Standby/Power button

Toggles standby/operation state.

13. Source button

When the display shows the sample rate, pressing this button once, briefly changes the display to show the currently selected input source (for one second).

When the display shows an input source, pressing this button once will switch to the next available input source.

NOTE: Only inputs fed with valid signals appear as options. Example: If only signals on AES and TOSLINK1 inputs are present, they will be the only options available when selecting the source (together with analog input 2).

Hint: When the display shows the sample rate, you should push this button twice in order to switch to the next available source input.

14. Mono button

Pressing the mono button activates the summed outputs to give mono on the analog and headphone outputs. The status of the mono function is indicated by the mono light (6). The mono feature is only available on digital sources and via PCM playback.

15. Mute button

Press the button once for full mute. Press once again to restore normal volume. When mute is selected either Main volume output light or Headphone output light will no longer be illuminated.

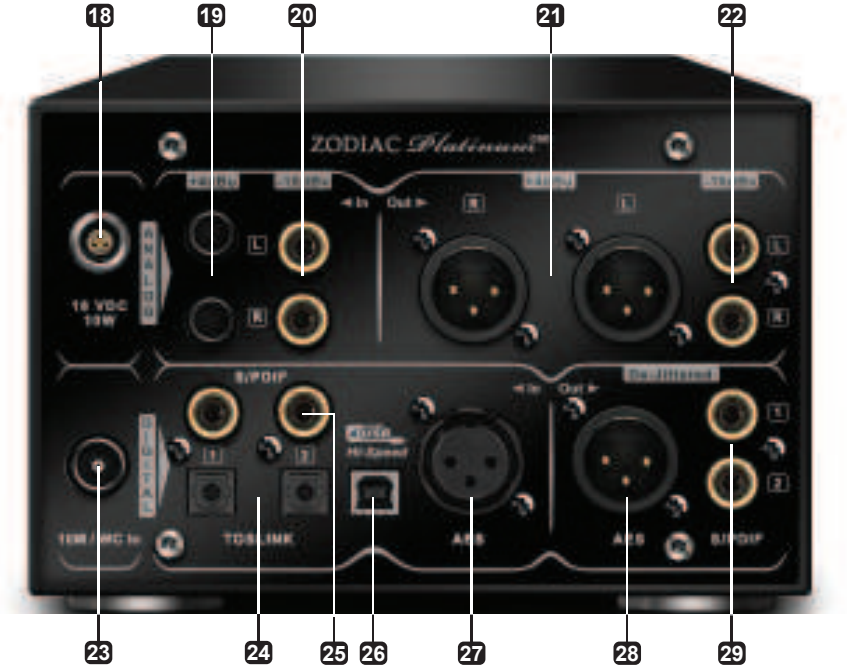
16. Headphone volume light

This indictates that Headphone volume out is being controlled by the Main volume knob. Note that

when muted the light is not illuminated.

17. Headphone Outputs

Two Universal Stereo Headphone jacks for connecting headphones for a wide range of impedances.



6. Zodiac Platinum Rear Panel Explained

18. DC Power Connection

For use with Antelope's Voltikus DC power supply only on Precision locking power connector.

19. Balanced Analog Inputs

1/4" TRS balanced analog inputs @ +4dBu.

20. Unbalanced Analog Inputs

RCA type unbalanced analog inputs @ -10dBv.

21. Balanced Analog Outputs

Balanced XLR outputs for professional use ranging from +14dBu to +26dBu switchable via software control panel.

22. Unbalanced Analog Outputs

Analog Outputs @ -10dBv using RCA type connectors. Switchable unbalanced trims between 0dBv and 12 dBv, adjustable via software control panel.

23. 10M / Word Clock Input

BNC connector used to accept either 10M or Word Clock reference.

NOTE: Auto-detects a 10M Input and Word Clock overrides the Clock Signal present in AES, S/PDIF and TOSLINK.

24. TOSLINK Inputs

TOSLINK/Optical connectors for use with compatible equipment. See also (13) Source Button.

25. S/PDIF Inputs

75 Ω S/PDIF inputs for use with compatible equipment. See also (13) Source Button.

26. USB Hi-Speed

Hi Speed USB (480 Mbits). Zodiac Platinum uses USB connector Type B and operates up to 384 kHz sample rate with Mac and PC ASIO drivers.

27. AES Input

Input for compatible equipment using the 110 Ω AES/EBU connectivity standard. See also (13) Source Button.

28. AES Output

De-jittered digital output using the 110 Ω AES/EBU connectivity standard.

29. S/PDIF Outputs

De-jittered digital outputs using the 75 Ω S/PDIF connectivity standard.

7. Remote Control Unit

Zodiac Platinum comes with a remote control unit. This remote control has the same buttons as those on the front panel of the Zodiac Platinum.

8. Advanced User Tips

8.1. Source input

Input sources can be switched by the source button (13).

Only digital inputs with valid signals are available for switching. (Of the analog inputs, An2 is permanently available and An1 is available once a jack is inserted, without the requirement for the signal to be present.)

Example: If only signals on AES and TOSLINK1 inputs are present, they will be the only options available when selecting the source (together with An2 as stated above).

Whenever a digital input with valid signal is selected, the display will show the selected source input name for about one second. After that, the display reverts to show the sample rate continuously.

When a digital input source is selected and its signal is lost, the Lock light will flash and the display will revert to show the name of the selected input (identifying the lost signal). Now, if you scroll through the available source inputs, the lost input source will no longer be available. You must either select a new input source, or if you re-establish the lost signal, it will be detected immediately and appear as an input source option again.

8.2. Changing USB mode and/or Headphone amplifier impedance and Upsampling enabler

There are 3 available USB operation modes:

- FS1 – USB Full Speed Mode (12Mbits) for backwards compatibility. Supports sample rates up to 96 kHz.
- HS1 – USB High Speed Mode (480Mbits). USB Audio Class 1.0. Sample rates up to 192 kHz (default).
- HS2 – USB High Speed Mode (480Mbits). USB Audio Class 2.0. Sample rates up to 384 kHz.

Use the following procedure to change default USB class:

- Hold the Standby button (12) for 2-3 seconds when the device is switched on. Display (8) will switch to display current Headphone amplifier impedance. Click the Source button twice to scroll through to USB class.
- Press and hold the source button (13) for 2-3 seconds. You can now scroll using the Source button to select between FS1, HS1 & HS2.
- Confirm the change by pressing & holding the Source button. The display will again start to switch between the available settings. Push the power button one more time to exit this mode and go to operating mode.

There are 2 available Headphone amplifier impedances:

- HP1 – 120 Ω (default).
- HP2 – 0 Ω (CAUTION: boosted drive levels can damage your hearing).

Use the following procedure to change default values (FOR SAFETY, before you start, make sure that you are not wearing headphones and that volume levels are turned down as the volume levels can shift suddenly with the risk of damage to your ears and equipment):

- Hold the Standby button (12) for 2-3 seconds when the device is switched on. Display (8) will switch to display current Headphone amplifier impedance.
- Press and hold the source button (13) for 2-3 seconds. You can now scroll using the Source button to select between 120 Ω & 0 Ω.
- Confirm the change by pressing & holding the Source button. The display will again start to switch between the available settings. Push the power button one more time to exit this mode and go to operating mode.

In order to enable or disable PCM & DSD Upsampling:

- Hold the Standby button (12) for 2-3 seconds when the device is switched on. Display (8) will switch to display current Upsampling state (‘USoF or ‘USoN’).
- Press and hold the source button (13) for 2-3 seconds. You can now scroll using the Source button to select between ‘USoF or ‘USoN’.
- Confirm the change by pressing & holding the Source button. The display will again start to switch between the available settings. Push the power button one more time to exit this mode and go to operating mode.

NOTE: For more information, visit the support pages of www.antelopeaudio.com

8.3. Mute

- **Full mute** – Push the mute button once. A muting relay disconnects the signal from the analog outputs (21) & (22). Display fades down.
- Mute for both headphones and main output.
- **Unmuting** – When the device is in one of the above attenuator modes, pushing the mute button once restores the volume to the previous level. Display brightness returns to full illumination.

8.4. Digital Audio Quality - factors and settings

Guidelines to improve the audio performance of your computer-based audio system:

- Keep volume controls at 100% on all operating systems.
- If you are using iTunes and/or Mac OS X, set the sample-rate in the Audio MIDI applet located in the Applications / Utilities folder to match the file being played. By adding iTunes plug-ins such as Amarra and Pure Music the sample rate will be matched automatically.
- For Windows 7 & 8, sample rates can be automatically matched using WASAPI enhanced players such as J River Media Center or Foobar 2000.
- Keep word-length settings at 24 bits. Even if you are playing 16-bit audio, it is recommended to keep 24-bit settings.
- Turn-off operating system sounds.
- Keep all operating system's DSP and plug-ins turned off. Applications, device drivers, sound cards, etc., have various DSP effects such as EQ, Bass boost, surround sound, etc.

For best performance, visit our support pages and web-search for many websites devoted to optimizing your computer for audio performance.

8.5. I/O connections

Proper Digital Audio cables should be used for SPDIF and AES/EBU: Avoid using standard analog audio cables for digital signal. Even though they might look the same, they are not designed for digital audio and performance will be compromised.

- AES/EBU use 110 Ω shielded twisted-pair digital cables.
- SPDIF use 75 Ω coaxial (video) cables.

8.6. Ground Loop Hum and Noise

The design of Zodiac Platinum minimizes the possibility of ground loop hum and noise. However, we recommend the use of short cables and balanced connections for all the audio signals of your system. All power cables of the system should be connected to a dedicated outlet box or power conditioner unit to avoid ground current noise affecting the audio signal path. It's also advisable to keep signal and power cables separate.

9. Additional Information

Additional information regarding operating systems, audio software and media players will be updated through the support area at www.antelopeaudio.com.

10. In the box

- Zodiac Platinum DSD DAC
- Voltikus Power Supply
- Owner's Manual
- USB cable
- TOSLINK cable
- Power cables
- IR Remote Control Unit & spare battery

11. Zodiac Platinum Technical Specifications

Dynamic Range:	129 dB
THD + N:	0.0004%
USB:	2.0 Hi-Speed. Data stream up to 480Mbits/384kHz, Type B
Clocking System:	4th Generation Acoustically Focused Clocking 64 bit DDS Oven Controlled Crystal Oscillator
Clock Stability:	< +/- 0.02 PPM, oven controlled at 64.5°C
Clock Ageing:	< 1 ppm per year
Sample Rates:	44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz, (352.8kHz and 384kHz through USB only)
Inputs:	10M / WC on BNC: 10MHz sine wave 44.1 - 384 kHz 1x AES/EBU XLR: 44.1 - 192 kHz 2x S/PDIF RCA: 44.1 - 192 kHz 2x RCA Analog: -10dBv Unbalanced (2V rms max) 2x ¼" TRS Analog: +4dBu Balanced (26 dBu max) 2x Optical TOSLINK
Outputs:	2x Analog XLR. Balanced, fully-differential drive. Trimmable 14 to 26 dBu @ 0dBFS. Preset to 20 dBu. 56 Ω to GND. ***NOTE:*** This is the peak value with headroom included and should not be mistaken with the averaged value of +4dBu stated on the back panel. 1x AES/EBU De-Jittered, re-clocked Digital Output. 110 Ω. 2x S/PDIF De-Jittered, re-clocked Digital Outputs. 75 Ω. 2x Analog RCA: Trimmable Unbalanced between 0 dBv and +12 dBv with a +6 dBv default. 2Vrms max, 56 Ω. 2x Headphones: 20 dBu @ 0dBFS. 120 or 0 Ω switchable.
Operating Temperature:	0-50°C, 32-122°F
Weight:	2 kg, 4.4 lb
Dimensions (Approx):	165mm (W) x 112mm (H) x 190mm (D) 6.5"(W) x 4.4"(H) x 7.5"(D)
Power Supply:	Input: +18VDC, 15W (no line "Output").

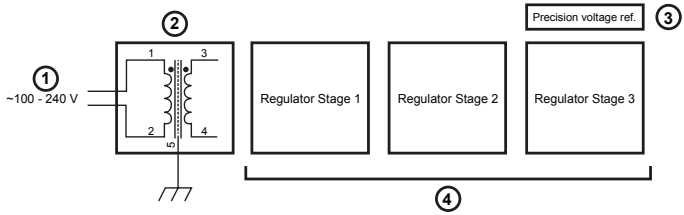
Voltikus PSU

Audiophile grade ultra low noise power supply



12. Voltikus Features

- Audiophile grade PSU perfectly matching Zodiac Platinum DSD in aesthetics and performance
- Unique multi-stage linear regulator topology achieves vastly superior stability
- Toroidal transformer with custom electrostatic shield suppresses power line disturbances
- Ground / Lift switch helps eliminate hum and buzz caused by ground loops
- Wide (90-250V) input voltage range ensures dependable operation under varying line conditions
- Advanced discrete design dispenses with the need for noisy off-the-shelf voltage regulators
- Robust sturdy construction with custom machined aluminum front panel



1. Input Voltage ~100-240 V
2. Custom Design Transformer with Electrostatic Shield
3. Precision Voltage Reference with Ultra-low Drift and Noise
4. Three Stage Regulation

13. Voltikus Front Panel Explained



30. Power light

When lit, this indicates that the Voltikus is powered up.

14. Voltikus Rear Panel Explained



31. Fuse compartment

Takes two fuses: 0.8A, 250 VAC, 5 mm x 20 mm, Type F.

32. Power switch

Toggles power on/off.

33. IEC AC Input C14 Male Connector

For use with supplied AC Power cable.

34. Ground/Lift switch

Toggles grounded or lifted state.

35. 18 VDC Output

For use with supplied Antelope DC Power cable only.

15. Replacing a Voltikus fuse

If the power light is not illuminated and the Voltikus is plugged into a working AC power outlet with the power switch in the on position, the fuse may need to be replaced.

- Disconnect the power cord from the electrical outlet.
- Insert a flat blade screwdriver into the notch at the bottom edge of the fuse holder (31) to release it. (See image below).
- Remove the fuses from the fuse holder. Replace them with 0.5A 250V Time Lag (Slo-Blo) Littelfuse Inc. P/N: 0218.500MXP



- Re-insert the fuse holder into its position in the rear panel. Press the fuse holder gently until it clicks into place.

The Voltikus PSU is now ready for use.

16. Voltikus Technical Specifications

Input Power	
- nominal	100-120/220-240 VAC, 50 or 60 Hz
- actual	90-264 VAC, 50 or 60 Hz
Fuses	0.5A 250V Type T, 5 mm x 20 mm
Input Power Cord	3-Wire grounded / Lifted option
Terminals	C14 panel mounted male connector (inlet)
Output	
Voltage	18 VDC
Power (maximum)	18 W
Terminals	Precision locking power connector
Safety Features:	
Overload/short circuit protection	Automatic power limit / short circuit protection
Input Line Protection	Fuse on both hot and neutral
Environmental	
- Operating Temperature	0-50°C
Dimensions	Width - 106,5 mm / 4,2 “ Height - 111,5 mm / 4,4 “ Depth - 168,0 mm / 6.6 “
Weight	2.9 kg / 6.39 lb

Notes

Notes

Notes



Correct Disposal of This Product
(Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contact. This product should not be mixed with other commercial wastes for disposal.



WWW.ANTELOPEAUDIO.COM

Version 23.01.2014