

ESP4000 Technical Data Sheet

Introduction

The ESP4000 is an ultra high definition 4 channel rack mountable power amplifier from KV2 Audio, specifically designed for optimised performance with ESD loudspeakers, as well as with other passive systems. For the ESP4000 all electronic circuit boards are first mounted on individual aluminium heat sinks, then on a secondary, internally sealed chassis, this leaves only the heatsink fins exposed. Two separate power supplies ensure increased reliability and continuous delivery of full power. Two shock mounted fans move air across the fins but never directly across the electronic components. This minimises maintenance cycles and improves the components lifespan and reliability. The ESP4000 is housed in a professional 4U road rugged steel metal case with aluminium handles and evenly distributed weight.

Features

- Ultra high definition
- 4 channel rack mountable power amplifier
- Specifically designed for optimised performance with ESD loudspeakers, as well as with other passive systems
- 4× 1000 W / 2 Ω
- Two separate power supplies ensure increased reliability and continuous delivery of full power
- Two shock mounted fans move air across the fins but never directly across the electronic components. Minimises maintenance cycles and improves the components lifespan and reliability



Application

Designed to drive the ESD and ESM range of passive loudspeaker units with superior sound quality

- Portable PA
- Fixed installations
- Monitor Amplifier

System Acoustic Perfomance	
-1 dB Response	3 Hz to 40 kHz
Channel Crosstalk	>60 dB
Signal to Noise Ratio	>115 dB
Total Harmonic Distortion	<0.005% (1W) / <0.01% (clip -1 dB)

Output Channels	
Amplifier Type	High efficiency, Emitter coupled
Number of Channels	4
Total Output Power	4000 W
Max. Output Voltage	78 V (peak) per channel
Max. Output Current	48 A (peak) per channel
Minimum load impedance per channel	2 Ω
Out. Power 16 Ω - 1 channel / 2 channels loaded	175 W / 160 W (RMS)
Out. Power 8 Ω - 1 channel / 2 channels loaded	340 W / 300 W (RMS)
Out. Power 4 Ω - 1 channel / 2 channels loaded	600 W / 500 W (RMS)
Out. Power 2 Ω - 1 channel / 2 channels loaded	1000 W / 800 W (RMS)
Out. Power 16 Ω - bridged	600 W (RMS)
Out. Power 8 Ω - bridged	1000 W (RMS)
Out. Power 4 Ω - bridged	1600 W (RMS), 2000 W short term

Signal Input	
Input Channels	XLR
Input Sensitivity	2.0 V RMS
Input Impedance	20 kΩ (balanced)
Signal Output	XLR Through

Speaker Input	
Speaker Input	- / 4× Binding posts, Neutrik Speakon®

Features	
Level Control	-∞ to 0dB
Loudness bass enhancement	+6 dB @ 60 Hz
RMS Limiter	On / Off
Indicators	Power ON/Thermal, Signal/Limiter

Power	
Power Connector	2× Neutrik PowerCon®
Operating Voltage	115 V / 230 V / 250 V
Operating Voltage Range	100 to 120 V @ 60 Hz 205 to 240 V @ 50 Hz 225 to 260 V @ 50 Hz
Recommended Amperage	2× 20 A 115V 2× 10 A 230V 2× 10 A 250V
Soft Start	YES
Protection	Thermal breaker
Cooling	2× temperature controlled fans

Physical Dimensions	
Height	177 mm (6.96"), 4RU
Width	481.4 mm (18.95")
Depth	455.3 mm (17.9")
Weight	37.5 kg (82.7 lb)

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Architectural Specifications

The Power Amplifier shall provide four individual application specific electronic channels of amplification for ESD Loudspeaker enclosures, with internal loudspeaker protection, filter networks and equalization using SLA Technology - (Super Live Audio).

The output Topology shall be High Efficiency Emitter Coupled design.

The input sensitivity shall be 2.0 V RMS, the input Impedance shall be 20 K Ω . Maximum Power Outputs of each channel shall be 1000 W RMS @ 2 Ω . The Power Amplifier-Controller shall have an operating bandwidth of 3 Hz to 40 KHz (-1 db) and an operating distortion factor of less than <0.005% across all output channels.

The Power Amplifier shall have electronically balanced XLR input connectors, with XLR thru and insert connectors.

The rear panel shall incorporate: Loudspeaker Output connectors shall be Neutrik Speakon™ accompanied by four double Binding posts for bare wire connections. There shall be four individual channel attenuation knobs.

The front panel shall incorporate: Limiter ON/OFF Push Button switch and Bass EQ Push Button switch for each channel.

The Power Amplifier shall have front panel indicators for Power/Thermal, Signal/Limiter.

Two large Thermal Breaker switches shall be used for switching on/off.

The Power Amplifier shall have two Neutrik PowerCon connectors for mains supply to two individual transformers with an operating voltage range of 100 to 120 V @ 60 Hz, 205 to 240 V @ 50 Hz and 225 to 260 V @ 50 Hz. A soft start circuit will limit inrush power.

The Power Amplifier shall have recommended Amperage of 2x 20 A @ 115 V, 2x 10 A @ 230 V, 2x 10 A @ 250 V.

2x Temperature controlled variable speed fans will assist internal convection cooling systems.

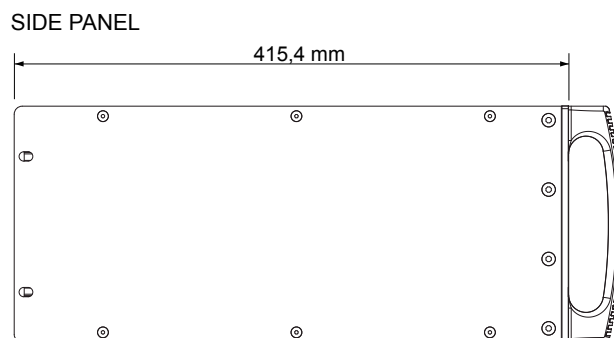
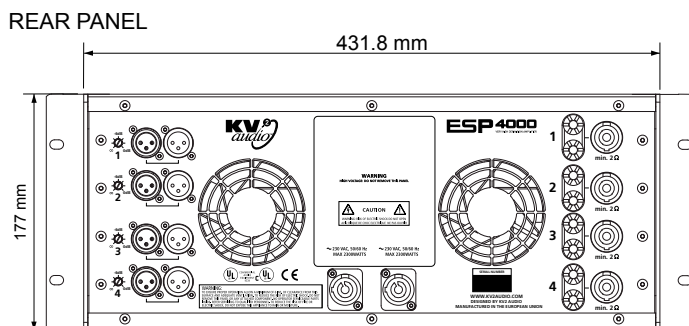
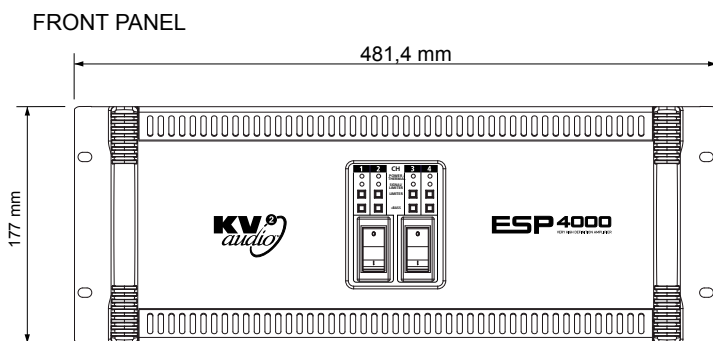
The Amplifier chassis and enclosure shall have dimensions of 177 mm / 6.96" 4RU x 481.4 mm / 18.95" x 455.3 mm / 17.9".

The total weight will not exceed 37.5 kg / 82.7 lb.

The Power Amplifier shall be the KV2 Audio ESP4000.

The Power Amplifier shall be specifically for the ESD range of Loudspeaker units and third party loudspeakers.

Dimensional Drawings



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