K6 DSP+AESOP

Powersoft

2-Channel Power Amplifier with DSP and Networking for High-Performance Touring

☑ Touring
☐ Installation

2CH

[1U] · PFC · **DSP** on board · Armonía Pro Audio Suite · Green Audio Power

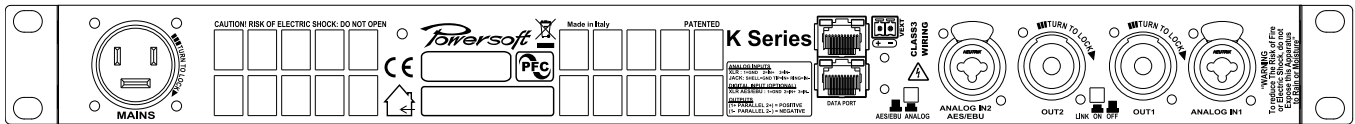| 2-channel mode			mono-bridged mode	
2 Ω / Ch	4 Ω / Ch	8 Ω / Ch	4 Ω / Ch pair	8 Ω / Ch pair
3,600 W	2,500 W	1,300 W	7,200 W	5,000 W

EIAJ Test Standard, 1 kHz, 1% THD

- ▶ Medium-scale touring systems, FoH & subwoofers
- ▶ Large-scale touring systems, MF/HF
- ▶ Stage monitoring

  for
- ▶ Arenas, concert halls, live clubs
- ▶ Corporate & open-air events

Like all K Series models, the **K6 DSP+AESOP** is designed for, and absolutely stable with, 2 Ω loads. Hence, with multiple speakers/drivers in parallel, a single K6 is well capable of powering e.g. a major section of a medium-sized line array, or a number of full-range speakers, effectively reducing the number of amps needed for powering a specific system.

The **K6 DSP+AESOP** can be software upgraded to become a K8 DSP+AESOP, and even a K10 DSP+AESOP, making it a safe investment that grows with loudspeaker systems without the need for replacing the amp hardware. This fact reveals the otherwise hidden power density deriving from unique Powersoft technologies despite running off a single mains phase, while fitting into a single 19" rack unit and weighing only 12 kg/26.5 lb, all a result of efficiency exceeding 85%.

A fully integrated state-of-the-art **DSP** yields extensive system management functionality. IIR/FIR filters, safety features like TruePower™ limiting and LiveImpedance™, as well as the convenient Active DampingControl™ are intuitively manageable with the free PC software Armonía Pro Audio Suite™.

The **AESOP** interface provides four standard Ethernet ports, adding hub functionality for two AES3 digital audio streams equivalent to 4 analog signal channels over the same RJ45, allowing for a redundant ring architecture too.

✓ Legendary Powersoft efficiency:
- ▶ Unequaled Class D design with fixed switching frequency
- ▶ Universal switch mode power supply with PFC (Power Factor Correction)
- ▶ Space and weight saving: only one rack space (1 RU) and 12 kg/26.5 lb
- ▶ Green Audio Power®: more amplifier output power from the AC mains power distribution due to >85% efficiency

✓ Outstanding performance and operational safety:
- ▶ Excellent sonic quality by design, including amp clip limiters and patented ripple cancellation network
- ▶ Proven reliability, yet downloadable log file of all functional fault events with time-related trace
- ▶ Numerous amp/system/venue parameters can be configured, locked, and monitored; i.e. AC mains voltage/current draw to protect from breaker tripping

✓ Highly integrated:
- ▶ Top-grade DSP with high dynamic range and extensive feature set
- ▶ Separate input/output EQ's with numerous filters of various types up to 48 dB/oct (IIR), linear phase (FIR), and hybrid (FIR+IIR)
- ▶ Sophisticated limiter system comprising peak, RMS voltage, RMS current, and TruePower™ limiting
- ▶ Speaker wire compensation with Active DampingControl™
- ▶ LiveImpedance™ load monitoring with regular musical signal

✓ Plug & play communication and redundancy for control and digital audio:
- ▶ Fully digitally controlled amplifier providing feedback of all status information
- ▶ 4-port AESOP Ethernet/AES3 interface allowing daisy-chaining and redundant ring architecture
- ▶ Fully manageable via Armonía Pro Audio Suite™ software, intuitive system setup and maintenance, control and monitoring
- ▶ AES3 digital audio distribution over Cat-5e cable: two streams equaling four analog channels, low latency, glitchless fallback to analog backup signal

✓ Safe investment: Step-up program allows smooth upgrade to K10 DSP+AESOP

✓ Practically versatile:
- ▶ Mono-bridgeable amplifier channels; switch for linking analog signal inputs
- ▶ AC inrush current limiting; channel output voltage limiting
- ▶ Digital gain attenuator for gain/sensitivity selection

✓ Front panel interactive LCD display for local access and configuration

✓ SmartCard reader/writer for firmware updates, preset storage, and Step-up

✓ Front-to-rear airflow cooling with variable-speed fan, temperature controlled

✓ Full protection circuitry: over/under AC voltage; troublesome signals (clipping, VHF, long-term RMS); DC; thermal; short circuit; mute at power on/off

✓ Full four years warranty

✓ Options & accessories:
- ▶ SmartCard, for firmware updates or preset storage; Step-up card
- ▶ Armonía Pro Audio Suite, free at www.armoniasuite.com

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Specifications

General						
	Number of channels			2		
	Output power		stereo mode		mono-bridged mode	
	EIAJ Test Standard, 1 kHz, 1% THD	2 Ω/ch	4 Ω/ch	8 Ω/ch	4 Ω	8 Ω
		3,600 W	2,500 W	1,300 W	7,200 W	5,000 W
	Max output voltage / current			$153\ V_{peak}$ / $125\ A_{peak}$		

AC Mains Power					
	Power supply	Universal, regulated switch mode with PFC (Power Factor Correction)			
	Operating voltage	100-240 V ±10%, 50/60 Hz			
	Power factor cos (φ)	>0.95 @ >500 W			
	Consumption / current draw	@ 230 V		@ 115 V	
	Idle	84 W	1.17 A	91 W	1.3 A
	1/8 of max output power @ 4 Ω	781 W	4.1 A	781 W	8.2 A
	1/4 of max output power @ 4 Ω	1,563 W	7.4 A	1,563 W	14.8 A

Thermal			
	Environmental operating temperature	0° - 45° C / 32° - 113° F	
	Thermal dissipation	Fan, continuously variable speed, temperature controlled, front to rear airflow	
	Idle	546 BTU/h	138 kcal/h
	1/8 of max output power @ 4 Ω	982 BTU/h	248 kcal/h
	1/4 of max output power @ 4 Ω	1,419 BTU/h	358 kcal/h

Audio					
	Gain, selectable	26 dB	29 dB	32 dB	35 dB
	Input Sensitivity @ 8 Ω	5.11 V	3.62 V	2.56 V	1.81 V
	Max input level	27 dBu	24 dBu	21 dBu	18 dBu
	Gate	-52 dBu	-55 dBu	-58 dBu	-61 dBu
	Frequency response	20 Hz - 20 kHz (1 W @ 8 Ω, ±0.5 dB)			
	S/N ratio (amplifier section)	>110 dBA (20 Hz - 20 kHz, A weighted)			
	Crosstalk separation	> 66 dB @ 1 kHz			
	Input Impedance	10 k Ω balanced			
	THD+N/SMPTE IMD/DIM 100 IMD	<0.5% from 1 W to full power (typically <0.05%)			
	Slew rate	50 V/µs @ 8 Ω, input filter bypassed			
	Damping factor @ 8 Ω	>5000 @ 20-200 Hz			

DSP		
	A/D converter	Dual 24bit 96 kHz Tandem® architecture with 127 dBA of dynamic range and THD <0.005% (20 Hz - 20 kHz)
	D/A converter	Dual 24bit 96 kHz Tandem® architecture with 122 dBA of dynamic range and THD <0.003% (20 Hz - 20 kHz)
	Memory	8 MB (RAM) plus 2 MB (flash for presets)
	Presets	50 stored locally + 150 stored on a smartcard
	Digital audio input	AES3 (glitchless fallback to analog audio selectable)
	Delay for time alignment	up to 4 s on the input section, up to 32 ms per output, sample-by-sample stepping
	Crossover filters	Butterworth, Linkwitz-Riley, Bessel, Arbitrary Asymmetric, 6dB/oct to 48dB/oct (IIR), linear phase (FIR), hybrid (FIR+IIR)
	Output equalizer	16 fully parametric filters per channel, IIR: peaking, hi/lo shelving, hi/lo pass eq, band pass, band stop, all pass. Custom FIR up to 384 taps @ 48 or 96 kHz
	Input equalizer	Three layers (PEQ, raised cosine, shelving), 32 filters each + group filters, up to 256 filters per channel
	Cable compensation network	up to 2 Ω negative/positive wire compensation (Active DampingControl™)
	Limiters	Power limiter (TruePower™, RMS voltage, RMS current) + Peak Limiter

Front Panel		
	Indicators	7 meter LEDs: 5 x green, 1 x yellow, 1 x red, top yellow and red show alarm with protect description on LCD panel
	Controls	4 pushbuttons, function depending on user menu
	Power switch	Mains switch
	Network data port AESOP incl. AES3	2 x RJ45 with activity LEDs
	Maintenance	SmartCard reader/writer for firmware updates and preset storage. Easily accessible dust filter foam behind two steel covers

Rear Panel		
	Audio signal input connectors	Analog: 2 x balanced Neutrik® Combo XLR female/1/4'' jack; AES3: use channel 2 XLR
	Loudspeaker output connectors	2 x Neutrik® Speakon NL4MD
	Network data port Ethernet	2 x RJ45 with activity LEDs
	Aux voltage	1 x 2-pin Phoenix P. 3.81mm
	AC mains	AMP CPC 45A on rear panel; AMP CPC 45A connector mounted on a $3 \times 5mm^2$ (10AWG) cable
	Controls	1 x link switch, linking analog inputs 1 and 2; AES3/analog input switch

Construction		
	Dimensions	W 483 mm / 19'', H 44.5 mm / 1 RU, D 475 mm / 18.7''
	Chassis	1 mm / 0.04'' steel chassis and removable dust cover ; 3 mm / 0.12'' steel front panel, screw hole protection, side reinforcement & rear support
	Weight	12 kg (26.5 lb)