

# K10 DSP+AESOP



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



Touring

Installation

2CH



DSP  
on board



- ▶ Subwoofers & LF drivers in
- ▶ Medium to large-scale touring systems
- ▶ High-power stage monitoring for
- ▶ Stadiums & open-air events
- ▶ Arenas & concert halls
- ▶ Live clubs

For medium to large sound systems, the **K10 DSP+AESOP** is the most versatile amplifier within the K Series. Equally useful for most subwoofers as well as high-power fullrange systems, it is ideal as the one amplifier model powering entire systems, resulting in uniform, identical, and ultra-compact amp racks serving any configuration and purpose.

Due to remarkably high efficiency exceeding 85%, the vast power density paired with unique Powersoft technologies warrants top performance despite running off a single mains phase, while occupying only a single 19" rack unit and weighing a mere 12 kg/26.5 lb. Like all K Series models, the **K10 DSP+AESOP** is designed for, and absolutely stable with, 2  $\Omega$  loads, further reducing the number of amps required to power a specific system.

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.

2-channel mode			mono-bridged mode	
2 $\Omega$ / Ch	4 $\Omega$ / Ch	8 $\Omega$ / Ch	4 $\Omega$ / Ch pair	8 $\Omega$ / Ch pair
6,000 W	4,000 W	2,000 W	12,000 W	8,000 W

EIAJ Test Standard, 1 kHz, 1% THD

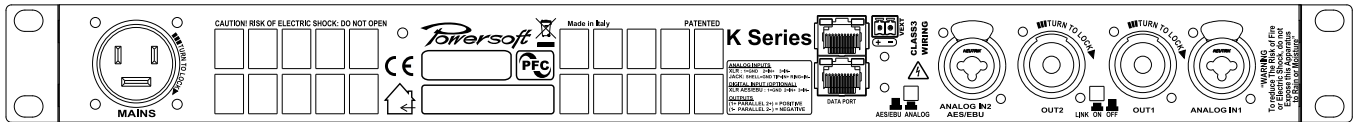
- ✓ **Legendary Powersoft efficiency:**
  - ▶ Unequaled Class D design with fixed switching frequency
  - ▶ Universal switch mode power supply with PFC (Power Factor Correction)
  - ▶ Space and weight saving: only one rack space (1 RU) and 12 kg/26.5 lb
  - ▶ Green Audio Power®: more amplifier output 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
- ✓ **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
- ✓ Front panel SmartCard reader/writer for firmware updates and preset storage
- ✓ 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
  - ▶ Armonía Pro Audio Suite, free at [www.armoniasuite.com](http://www.armoniasuite.com)



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## Specifications

General	
Number of channels	2
Output power	stereo mode
EIAJ Test Standard, 1 kHz, 1% THD	2 Ω/ch    4 Ω/ch    8 Ω/ch
Max output voltage / current	200 V <sub>peak</sub> / 125 A <sub>peak</sub>
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	1,250 W    6.1 A    1,250 W    12.2 A
1/4 of max output power @ 4 Ω	2,500 W    11.3 A    2,500 W    22.6 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	1,244 BTU/h    314 kcal/h
1/4 of max output power @ 4 Ω	1,943 BTU/h    491 kcal/h
Audio	
Gain, selectable	26 dB    29 dB    32 dB    35 dB
Input Sensitivity @ 8 Ω	6.34 V    4.49 V    3.18 V    2.25 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 I00 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 x 5mm <sup>2</sup> (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 / 1.75", 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)

Data is subject to change without notice.  
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