

K20 DSP+AESOP

Powersoft

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



Touring

Installation

2CH



DSP
on board



- ▶ Subwoofers
- ▶ High-power LF drivers in
- ▶ Large-scale touring systems for
- ▶ Stadiums
- ▶ Open-air events
- ▶ Arenas
- ▶ Large concert halls

The **K20 DSP+AESOP** is the masterpiece of the flagship K Series. In addition to headroom in abundance even for the power-hungriest woofers, the most powerful member of the K Series comes preloaded with all options, making the **K20 DSP+AESOP** the ultimate powerhouse in every single aspect, yet packing it all into a single 19" rack unit weighing as little as 12 kg/26.5 lb.

Possible only due to remarkably high efficiency exceeding 85%, the enormous power density paired with unique Powersoft technologies warrants top performance despite running off a single mains phase. Like all K Series models, the **K20 DSP+AESOP** is designed for, and absolutely stable with, 2 Ω 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 Ω / Ch	4 Ω / Ch	8 Ω / Ch	4 Ω / Ch pair	8 Ω / Ch pair
9,000 W	5,200 W	2,700 W	18,000 W	10,400 W

EIAJ Test Standard, 1 kHz, 1% THD

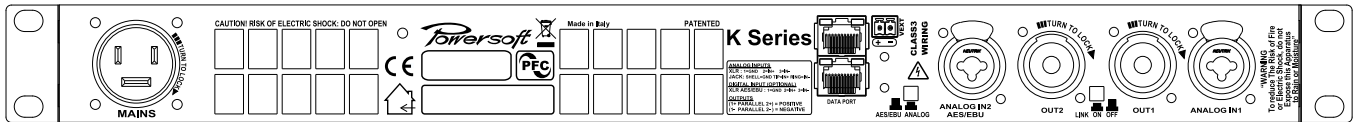
- ✓ **Legendary Powersoft efficiency:**
 - ▶ Unequaled Class D design with fixed switching frequency
 - ▶ Universal switch mode power supply with PFC (Power Factor Correction)
 - ▶ Space and weight saving: only one rack space (1 RU) and 12 kg/26.5 lb
 - ▶ Green Audio Power®: more amplifier output power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

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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
	9,000 W	5,200 W	2,700 W	18,000 W	10,400 W
Max output voltage / current	225 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	90 W	1.31 A	92 W	1.34 A	
1/8 of max output power @ 4 Ω	1,625 W	7.9 A	1,625 W	15.8 A	
1/4 of max output power @ 4 Ω	3,250 W	14.7 A	3,250 W	29.3 A	
Thermal					
Environmental operating temperature	0° - 45° C / 32° - 113° F				
Thermal dissipation	Fan, continuously variable speed, temperature controlled, front to rear airflow				
Idle	682 BTU/h		172 kcal/h		
1/8 of max output power @ 4 Ω	1,590 BTU/h		402 kcal/h		
1/4 of max output power @ 4 Ω	2,498 BTU/h		631 kcal/h		
Audio					
Gain, selectable	26 dB	29 dB	32 dB	35 dB	
Input Sensitivity @ 8 Ω	7.37 V	5.22 V	3.68 V	2.62 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 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)				

Data is subject to change without notice.
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