

K20

High Efficiency 2 Channels Amplifier for Professional Applications



PRODUCT DESCRIPTION

The Powersoft K20 is a professional power amplifier designed to meet the most stringent requirements of professional users in concert touring, sound reinforcement and professional fixed installations.

Designed by Powersoft R&D team the K20 is exclusively built in Italy with internal components selected for premium quality and proven durability.

Each modular subassembly is pre-tested, and the assembled K20 receives a rigorous 48 hours burn-in before through final check-out on precision test equipment for total quality control.

The K20 incorporates the legendary patented Powersoft universal switching mode power supply up to 300VAC tolerant with Power Factor Correction providing users with worldwide AC acceptance and low consumption.

Powersoft bridgeable switch mode fixed frequency class D patented outputs provide high quality sound, excellent damping factor and cooler circuits for stable performances over time and longer amplifier life.

LCD display with lockable user menu for easy control of all amplifier settings.

Optional DSP provides full high quality on board sound processing.

Sensing and communication board, standard on RS485 bus, Ethernet optional, provides full control and monitoring through proprietary software running on external PC, compatible with all other Powersoft K, D, Q and QTU Series amplifiers.

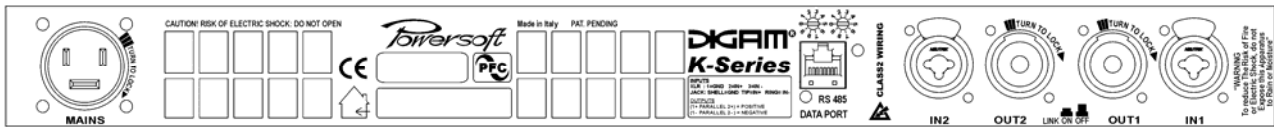
The Powersoft K20 is CE approved with CSA pending.

K20 FEATURES

- Powersoft legendary universal switch mode power supply up to 300VAC tolerant with Power Factor Correction
- Fixed frequency switch mode bridgeable output
- Patented output filter with ripple cancellation network
- LCD interactive display and front panel meters
- Lockable user menu for setting max output voltage, max mains current draw, digital output attenuation, gain selection, gate selection, limiter and real time monitoring of: load impedance, AC mains voltage, output voltage, internal temperature with downloadable log file of all functional fault events with time related trace
- Neutrik® XLR balanced inputs and Speakon® outputs connectors
- Fully protected circuit design with:
 - AC protection: shut down power supply when AC mains voltage is outside operating range
 - Turn on/off muting: for 4s at turn on and soon after turn off amplifiers outputs are muted
 - Clip limiter: prevents severely clipped waveforms from reaching loudspeakers, while still maintaining full peak power output
 - DC protection: protects against infrasonic signal at the outputs
 - VHF protections: protects the loudspeakers against non audible, strong, non musical very high frequency signals
 - Short circuit protection: protects the amplifier from short circuit or other stressful events for the output circuits
 - Thermal protection: when output rails reach 75°C (167°F) amplifier will reduce max output to help cooling while when rails reach 85°C (185°F) outputs will be muted
 - Long term limiter: protects the loudspeaker against steady long term rms (non audio) signals reducing maximum output
- Optional DSP, with fixed latency of 2 ms, with up to 48dB/oct cross-over filters, up to 16 eq filters per output channel, up to 8s of total delay, peak limiter and true power limiter, patented damping factor and cable resistance compensation network
- Optional Ethernet board travels, on the same CAT5 cable, control and up to 2 AES3 digital audio channels with full redundant ring topology
- Temperature controlled continuous variable speed fan, front to back airflow
- Smart card reader for preset load/save and firmware upgrades
- Detachable AMP CPC 45A AC mains cable with AMP socket
- Modular construction
- Full four years warranty

POWER SPECIFICATIONS	8 Ω Stereo	4 Ω Stereo	2 Ω Stereo	8 Ω Bridged	4 Ω Bridged
EIAJ test, 1 kHz, 1% THD	2 x 2700 W	2 x 5200 W	2 x 9000 W	1 x 10400 W	1 x 18000 W

K20 Datasheet



GENERAL SPECIFICATIONS

Power requirements	AC 95V-265V, 50/60 Hz up to 300V tolerant
Power factor cos (φ)	more than 0,95 from 500W to full power
Idle power	235 VA (1A @ 230V / 2A @ 115V)
Consumption	1807 VA, 7,85A @ 230V, 15,7A @ 115V (1/8 max output power @ 4 Ohm) 3373 VA, 14,66A @ 230V, 29,3A @ 115V (1/4 max output power @ 4 Ohm)
Thermal emission (1/8 power @ 4 Ω)	1589 BTU/Hour
Thermal emission (1/4 power @ 4 Ω)	2497 BTU/Hour
Cooling	Temperature controlled continuous variable speed fan, front to rear airflow
Environmental operating temperature	0°-45° C (32°-113° F)
Construction	1 mm (0,04 in) steel chassis, 3 mm (0,12 in) steel front panel, 3 mm (0,12 in) screw hole protection, 3 mm (0,12 in) steel side reinforcement & rear support, 3 mm (0,12 in) steel removable dust cover
External dimensions	1 standard rack unit, 475 mm deep (18,7 in)
Net Weight-Shipping Weight	12 Kg (26,5 Lbs) – 13,5 Kg (29,8 Lbs)

FRONT & REAR PANEL SPECIFICATIONS

Input connectors	Balanced Neutrik® Combo (XLR+Jack) with positive on XLR pin 2 and Jack tip
Output connectors	Neutrik® Speakon® NL4MD (positive on paralleled 1+/2+, negative on 1-/2- for stereo mode, positive on 1+/2+ of channel 1 and negative on 1-/2- of channel 2 for bridge mode)
Power switch	Front panel push on/push off mains power switch
LED indicators	7 led meter (5 green, 1 yellow, 1 red), show current or voltage (user menu selectable), top yellow and red show alarm with protect description on LCD panel
Power connector	AMP CPC 45A on rear panel
Power cable	AMP CPC 45A connector mounted on a 3x6mmq (10AWG) cable with open end for worldwide use
Analog/AES input switch	Rear panel switch to select AES3 digital input on channel 2 XLR input on DSP equipped amplifiers
Link switch	Rear panel link switch to connect input channel 1 to input channel 2

AUDIO SPECIFICATIONS

Input impedance	10 KΩ, balanced	Crosstalk	>70 dB @ 1 KHz
Input sensitivity @ 8Ω	5,29V@26dB, 3,76V@29dB, 2,66V@32dB, 1,88V@35dB gain	Slew Rate @ 8 Ω	50V/μs input filter bypassed
Maximum input level	27dBu@26dB, 24dBu@29dB, 21dBu@32dB, 18dBu@35dB gain	Damping factor	>5000 @ 20-200 Hz
Gate	-52dBu@26dB, -55dBu@29dB, -58dBu@32dB, -61dBu@35dB gain	THD+N	<0,5% from 1W to full power (typically <0,05%)
Gain	26, 29, 32, 35 dB user menu selectable	SMPTE IMD	<0,5% from 1W to full power (typically <0,05%)
Frequency response	20Hz-20KHz (+/-0,2dB) for 1W @ 8Ω	DIM100 IMD	<0,5% from 1W to full power (typically <0,05%)
S/N ratio	> 110 dB/A (20-20K Hz A weighted)	Max Output V / A	225 V / 102A

DSP SPECIFICATIONS

A/D Converter	Dual 24 bit 96 KHz Tandem® architecture with 127dBA of dynamic range and THD<0,005% (20-20K Hz)	Cross-over filters	Butterworth, L-R, Bessel, Arbitrary Asymmetric 6dB/oct to 48dB/oct (IIR), linear phase (FIR), Hybrid (FIR+IIR)
D/A Converter	Dual 24 bit 96 KHz Tandem® architecture with 122dBA of dynamic range and THD<0,003% (20-20K Hz)	Equalizer filters	16 full parametric per channel, IIR: peaking, hi/lo Shelving, hi/lo Pass Eq., Band pass, Band stop, All pass
Memory	8MB RAM, 2MB flash for presets	Graphic equalizer	30 bands variable Q per output channel
Digital input	AES3 with selectable glitchless analog audio inputs back-up	Cable Compensation Network	Up to 2 Ohm negative/positive compensation of cable resistance for optimal speaker control
Delay	Up to 8s @96KHz, 4s on the input section, 2s for each output, sample by sample stepping	Limiters	Peak limiter and true power limiter on each output

Powersoft reserves the right to make improvements in manufacturing or design who may affect product specifications



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