

# K10

High Efficiency 2 Channels Amplifier for Professional Applications



## PRODUCT DESCRIPTION

The Powersoft K10 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 K10 is exclusively built in Italy with internal components selected for premium quality and proven durability.

Each modular subassembly is pre-tested, and the assembled K10 receives a rigorous 48 hours burn-in before through final check-out on precision test equipment for total quality control.

The K10 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.

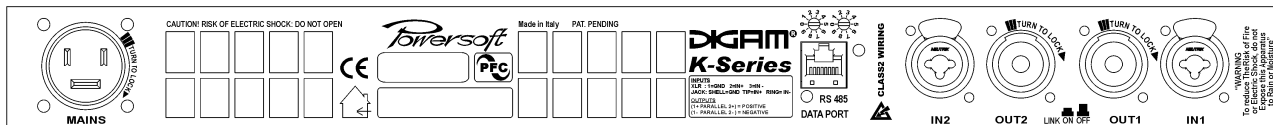
The Powersoft K10 is CE, CSA and KET1 approved.

## K10 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 2000 W	2 x 4000 W	2 x 6000 W	1 x 8000 W	1 x 12000 W

# K10 Datasheet



## GENERAL SPECIFICATIONS

<b>Power requirements</b>	AC 95V-265V, 50/60 Hz up to 300V tolerant
<b>Power factor cos (φ)</b>	more than 0,95 from 500W to full power
<b>Idle power</b>	188 VA (0,8A @ 230V / 1,6A @ 115V)
<b>Consumption</b>	1397 VA, 6,05A @ 230V, 12,1A @ 115V (1/8 max output power @ 4 Ohm) 2602 VA, 11,3A @ 230V, 22,6A @ 115V (1/4 max output power @ 4 Ohm)
<b>Thermal emission (1/8 power @ 4 Ω)</b>	1244 BTU/Hour
<b>Thermal emission (1/4 power @ 4 Ω)</b>	1942 BTU/Hour
<b>Cooling</b>	Temperature controlled continuous variable speed fan, front to rear airflow
<b>Environmental operating temperature</b>	0°-45°C (32°-113°F)
<b>Construction</b>	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
<b>External dimensions</b>	1 standard rack unit, 475 mm deep (18,7 in)
<b>Net Weight-Shipping Weight</b>	12 Kg (26,5 Lbs) – 13,5 Kg (29,8 Lbs)

## FRONT & REAR PANEL SPECIFICATIONS

<b>Input connectors</b>	Balanced Neutrik® Combo (XLR+Jack) with positive on XLR pin 2 and Jack tip
<b>Output connectors</b>	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)
<b>Power switch</b>	Front panel push on/push off mains power switch
<b>LED indicators</b>	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
<b>Power connector</b>	AMP CPC 45A on rear panel
<b>Power cable</b>	AMP CPC 45A connector mounted on a 3x6mmq (10AWG) cable with open end for worldwide use
<b>Analog/AES input switch</b>	Rear panel switch to select AES3 digital input on channel 2 XLR input on DSP equipped amplifiers
<b>Link switch</b>	Rear panel link switch to connect input channel 1 to input channel 2

## AUDIO SPECIFICATIONS

<b>Input impedance</b>	10 KΩ, balanced	<b>Crosstalk</b>	>70 dB @ 1 KHz
<b>Input sensitivity @ 8Ω</b>	5,29V@26dB, 3,76V@29dB, 2,66V@32dB, 1,88V@35dB gain	<b>Slew Rate @ 8Ω</b>	50V/μs input filter bypassed
<b>Maximum input level</b>	27dBu@26dB, 24dBu@29dB, 21dBu@32dB, 18dBu@35dB gain	<b>Damping factor</b>	>5000 @ 20-200 Hz
<b>Gate</b>	-52dBu@26dB, -55dBu@29dB, -58dBu@32dB, -61dBu@35dB gain	<b>THD+N</b>	<0,5% from 1W to full power (typically <0,05%)
<b>Gain</b>	26, 29, 32, 35 dB user menu selectable	<b>SMPTE IMD</b>	<0,5% from 1W to full power (typically <0,05%)
<b>Frequency response</b>	20Hz-20KHz (+/-0,2dB) for 1W @ 8Ω	<b>DIM100 IMD</b>	<0,5% from 1W to full power (typically <0,05%)
<b>S/N ratio</b>	> 110 dB/A (20-20K Hz A weighted)	<b>Max Output V / A</b>	200 V / 85A

## DSP SPECIFICATIONS

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