

Duecanali 3904

Powersoft

2-Channel Power Amplifier for High-Performance Installed Sound Systems



Touring

Installation

2CH



DSP
optional



- ▶ Medium to large-scale venues
- ▶ Main systems, central or distributed, subwoofers, hi-Z/lo-Z
- ▶ Stadiums, arenas
- ▶ Theaters, concert halls
- ▶ Houses of worship
- ▶ Convention centers
- ▶ Amusement parks, themed entertainment
- ▶ Cruise ships

Designed for long-term safe and reliable operation, the **Duecanali 3904** suits both low impedance and constant voltage systems equally well.

Duecanali Series amplifiers are born from Powersoft's K Series, which has acclaimed top-level reputation in the ever-demanding domain of touring sound systems.

Excellent sound quality and ample output power results from Powersoft's unique approach to Class D amplification, making the **Duecanali Series** the ideal main system in any venue where performance is priority.

Providing access to all relevant amplifier parameters yet easily set up, the **Duecanali 3904** is versatile in use, providing status feedback via its front panel display or a connected PC running Armonia Pro Audio Suite™ software.

Powersoft's legendary efficiency saves valuable energy, keeping both operational cost and 'carbon footprint' at a minimum: the **Duecanali 3904** shines with outstandingly low power consumption and heat dissipation; this has direct positive effects on investment in and recurring costs from the AC mains supply and air conditioning/cooling systems – not to mention the benefits to the environment for a more eco-friendly planet.

2-channel mode				mono-bridged mode	
4 Ω / Ch	8 Ω / Ch	70 V ¹⁾	100 V ¹⁾	4 Ω / Ch pair	8 Ω / Ch pair
1,950 W	1,000 W	1,800W	2,400 W	4,800 W	3,900 W

1) with voltage limiter activated (70V/100V) and an external HPF (100V)

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 (1U) 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
 - ▶ Numerous amp/system/venue parameters can be configured, locked, and monitored
- ✓ **Communication:**
 - ▶ Fully digitally controlled amplifier providing feedback of status information
 - ▶ RS485 serial communication port standard on board, for amplifier control and monitoring via Armonia Pro Audio Suite™ software²⁾
 - ▶ Proven reliability, yet downloadable log file of all functional fault events with time-related trace
- ✓ **Practically versatile:**
 - ▶ Directly driving either low impedance loads or 70 V/100 V lines
 - ▶ 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
 - ▶ Armonia Pro Audio Suite, free at www.armoniasuite.com
 - ▶ Power Control Hub, RS485 distribution and remote Power-on unit for up to eight Duecanali Series amplifiers, 19"/1U
 - ▶ KDSP Board, for DSP integration:
 - Optional 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 musical signal
 - AES3 digital audio signal input via XLR
 - ▶ KAESOP Board (Ethernet/AES3 interface)

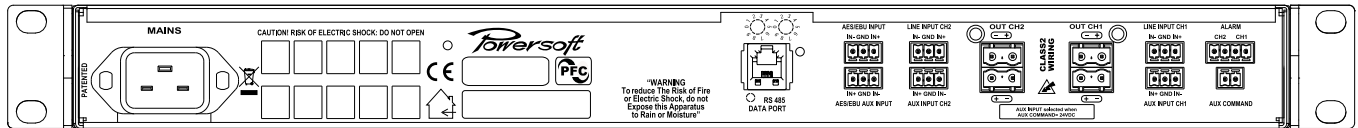
2) Serial communication is relatively slow; hence, max 4 amps can be monitored simultaneously and information is reduced, e.g. no signal level metering.

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2-Channel Power Amplifier for High-Performance Installed Sound Systems



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 70 V/ch ¹⁾ 100 V /ch ¹⁾
	2,400 W 1,950 W 1,000 W 1,800 W 2,400 W 4,800 W 3,900 W
Max output voltage / current	140 V _{peak} / 102 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
Idle	75 W 1.3 A
1/8 of max output power @ 4 Ω	609 W 3.1 A
1/4 of max output power @ 4 Ω	1,219 W 5.7 A
	@ 115 V
Idle	64 W 1.12 A
1/8 of max output power @ 4 Ω	609 W 6.3 A
1/4 of max output power @ 4 Ω	1,219 W 11.4 A
Thermal	
Environmental operating temperature	0° - 45° C / 32° - 113° F
Thermal dissipation	Fan, continuously variable speed, temperature controlled, front to rear airflow
Idle	382 BTU/h 96 kcal/h
1/8 of max output power @ 4 Ω	722 BTU/h 182 kcal/h
1/4 of max output power @ 4 Ω	1,062 BTU/h 268 kcal/h
Audio	
Gain, selectable	26 dB 29 dB 32 dB 35 dB
Input Sensitivity @ 8 Ω	4.48 V 3.17 V 2.25 V 1.59 V
Max input level	27 dBu 24 dBu 21 dBu 18 dBu
Gate	-54 dBu -57 dBu -60 dBu -63 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	> 70 dB @ 1 kHz
Input Impedance	10 k Ω balanced
THD+N/SMPTE IMD/DIM I00 IMD	<0.2% 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 (optional)	
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 & presets	8 MB (RAM) plus 2 MB (flash for presets); 50 presets 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, 6 dB/oct to 48 dB/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
Pilot Tone Detection, Generation and Output Load Monitor (optional)	
Input pilot tone detection	0 V _{RMS} - 1 V _{RMS} in steps of 10 mV _{RMS} ; 20 Hz - 22 kHz in steps of 10 Hz
Output pilot tone detection	0 V _{RMS} - 30 V _{RMS} in steps of 0.1 V _{RMS} ; 20 Hz - 22 kHz in steps of 10 Hz
Impedance alarm	20 Ω - 1000 Ω in steps of 0.1 Ω; 20 Hz - 22 kHz in steps of 10 Hz; Impedance vs frequency measurement
Output generator	1 V _{RMS} - 10 V _{RMS} in steps of 1 V _{RMS} ; 20 Hz - 22 kHz in steps of 10 Hz, one independent generator for each channel
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; mains switch
Maintenance	SmartCard reader/writer for firmware updates and preset storage. Dust filter foam behind front panel
Rear Panel	
Audio signal input connectors	Analog: main & aux each 2 x 3-pin Phoenix MCI.5/3-ST-3.81, electronically balanced (aux activated per aux voltage)
Loudspeaker output connectors	4 x 2-pin Phoenix type GMSTB2.5/2-ST
Fault alarm connector	1 x 4-pin Phoenix type MCI.5/2-ST-3.81
Aux command input	1 x 2-pin Phoenix MCI.5/2-ST-3.81
Aux external voltage	1 x 2-pin Phoenix MCI.5/2-ST-3.81
Network data port Ethernet	2 x RJ45 with activity LEDs
Network dataport AESOP incl. AES3	AES3: main & aux each 2 x 3-pin Phoenix MCI.5/3-ST-3.81, electronically balanced (aux activated per aux voltage)
AC mains	IEC C19/22.2 20 A, AC mains cord with 20 A 3-pin plug 20 A for US, IEC Schuko 16 A for every other nation
Controls	1 x link switch, linking analog inputs 1 and 2
Construction	
Dimensions	W 483 mm / 19"; H 44.5 mm / 1.75"; D 360 mm / 14.2"
Chassis	1 mm / 0.04" steel chassis; 3 mm / 0.12" screw hole protection, side reinforcement & rear support, 0.8 mm (0.03") steel removable dust cover
Weight	8 kg (17.7 lb)

1) with voltage limiter activated (70V/100V) and with an external HP filter (100V)

Data is subject to change without notice.
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