

DNA C series

5K4c



The culmination of intensive effort, the Danley Sound Labs DNA series amplifiers represent the leading edge of amplifier design. In a straightforward robust package, they surpass similar products in power delivery, sonic performance and efficiency.

With 5,000 Watts RMS output power, this model has a high end specification with generous power reserves. The integrated state of the art DSP being the perfect complement to the world's finest loudspeaker systems. This truly revolutionary amplifier platform features no front panel

user interface and powerful USB/BVNet based remote control. This secures the DSP settings safely from unauthorized adjustment whilst maintaining rapid system configuration with full performance monitoring and analytics.



- Four channels of sonically pure Class D amplification
- Unique, precise digital signal processing
- Over designed switch mode power supply
- 5,000 watts RMS total output
- Analog audio inputs
- No front panel user interface
- USB/BVNet based software for system operation and monitoring
- Optional BVNet to Ethernet Bridge devices available for controlling large networks
- Compact 2RU chassis for high power density

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General Specifications

Amplifier topology	Class D
Number of channels	Four
Total power output, all channels driven	5,000 Watts RMS
Audio inputs	4x Analog
Digital Signal Processing	High performance DSP processing on all inputs and outputs
Control, monitoring and system status alarms	USB / BVNet Multi-drop serial interface for linking multiple devices Volt-free relay and contact closure port
Power-save modes	Standby after user defined time, instant wake up on audio (less than 1ms)
System standby and wakeup	Front panel switch and audio detection

Power Output

Model	5K4c
Power specification	RMS output power per channel, all channels driven with continuous program material and a nominal ambient temperature of 40degC / 105degF
2-Ohm nominal load	1,250W
4-Ohm nominal load	800W
8-Ohm nominal load	450W
Bridged, per channel pair, 4-Ohm nominal load	2,500W
Bridged, per channel pair, 8 Ohm nominal load	1,600W
Bridged, per channel pair, 16 Ohm nominal load	900W



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Audio Performance

Amplifier topology	Proprietary High Efficiency Class D
Output Noise	-106dBA typical, Ref max output, 22KHz
Gain (with all DSP level controls set to 0dB)	27dB
Frequency response, 4 Ohm load	20Hz to 20KHz +/-0.5dB
Total harmonic distortion, THD	Less than 0.05% typical, 1kHz signal, -3dB output, 22KHz BW
Maximum analog input level	+20dBu
Analog input sensitivity range for full output	0dBu to +20dBu, continuously adjustable
Analog input and link	Input 10k Ohm, electronically balanced, link directly connected to analog input
Analog ground scheme	AES48 standard compliant
Slew Rate	80V/uS
Damping Factor	120 ref 8 Ohms
Efficiency	Greater than 90%, typical

Digital Signal Processing

Sample rate	96kHz throughout
Physical inputs to DSP	4x analog, inputs can be routed 2x2 to four DSP output modules
Input processing	Input signal routing, delay, gain, high pass filter, low pass filter, polarity EQ: low shelf, 8x parametric, and high shelf filter
Output processing	Source, delay, gain, polarity, mute, high pass and low pass crossover filters, voltage based limiter EQ: low shelf, 6x parametric, and high shelf filters
End of Line monitoring	Impedance monitoring for each output, minimum and maximum values can be set to identify safe operating range

Power Supply

Type	High current, high frequency, switch mode
Number	Two, fully independent
Efficiency	Greater than 90%, typical
Nominal mains input voltage range	85V to 240V Power supply automatically detects voltage and configures accordingly
Mains input frequency range	45Hz to 65Hz
Other features:	Automatic soft start Automatic brown out recovery Remote Shutdown Automatic overvoltage protection

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Mains Current and Thermal Dissipation

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Power Save Mode					
AC Mains Power Draw (Watts)	Current Draw (Amps)		Thermal Dissipation		
	115 VAC	230 VAC	Watts	BTU/Hr	Kcal/Hr
64	4	1	64	220	56

Quiescent (no signal – powered up and standing by)					
AC Mains Power Draw (Watts)	Current Draw (Amps)		Thermal Dissipation		
	115 VAC	230 VAC	Watts	BTU/Hr	Kcal/Hr
180	4.8	2.4	180	616	156

Running in 2 Ohm 4 channel / 4 Ohm Bridge 2 channel (all channels driven)						
Sine wave duty cycle	Input Power (Watts)	Current Draw (Amps)		Thermal Dissipation		
		115 VAC	230 VAC	Watts	BTU/Hr	Kcal/Hr
50%	2960	33.2	16.6	460	1570	396
40%	2350	27.2	13.6	351	1196	300
30%	1780	20.8	10.4	280	956	240
20%	1212	14.8	7.4	212	724	182
10%	652	8.4	4.2	152	520	132
Pink Noise (driven to limit)	1400	18.0	9.0	300	1024	258

NOTES:

- The Pink Noise line shows when operating the amplifier into a 2 Ohm load on all channels using a pink noise source driving the amplifier to limit, the amplifier will sink 1400W from the AC supply. When driven in this manner, the amplifier will have a thermal dissipation of 300 Watts (or 1024 BTU/Hr or 258 Kcal/Hr). This is generally the case that should be used for HVAC load calculations as it is the worst case for typical usage. Loading the amplifier with 4 or 8 Ohm loads will reduce the draw and thermal dissipation.
- The amplifier was configured to have no audio processing
- Measurements were performed with a Hameg HM8115-2 power analyzer
- All measurements were done at 230 VAC, 50 Hz
- The Current Draw figures for 120 VAC are calculated

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Protections Systems

Under all circumstances the control and protection systems will endeavour to deliver the maximum power possible for a given set of conditions, applying limiters only in extreme circumstances. Muting will only occur when a dangerous situation is detected, normal operation automatically resuming when the condition clears.

System protection	Speaker protection
Over Temperature: limiters applied, persistent over temperature causes shutdown	Output over current: Initially gain reduced to maintain control, persistent over current causes shutdown
Excessive power supply current or amplifier output current	Sustained clipping prevention
Mains brownout: Automatic protection and recovery	DC on output: Immediate shutdown, power cycle to recover
Mains inrush current limiting for soft start and anti-surge	
Monitoring, measurements recorded against time	Monitoring, device statistics and counters
Supply current, per pair of outputs	Number of power cycles counted
Thermal Capacity	Driver impedance continuously monitored
Protection limiting for each pair of outputs	

Physical

Cooling	Three vari-speed fans, back to front airflow
Analog IN and LINK	4x female and 4x male Neutrik™ XLR
Amplifiers output	4x Neutrik Speakon™ NL4 connectors
Mains input connector	Neutrik 20A Powercon™
BVNet Port In and Thru	2x Shielded RJ45
Aux Port In and Thru	2x Shielded RJ45
Computer Control	1x USB Type B
Power Switches	2x Rocker type switch
LED indicators, per channel	Signal, -6dB, Limit / Mute
LED indicators, per channel pair	Power, Protect, Bridge, Network, User DSP Active
Enclosure	Standard 19" 2U (88mm), 357mm (14") deep with handles and optional rear support
Net Weight	9Kg (20 pounds).