• 44C series

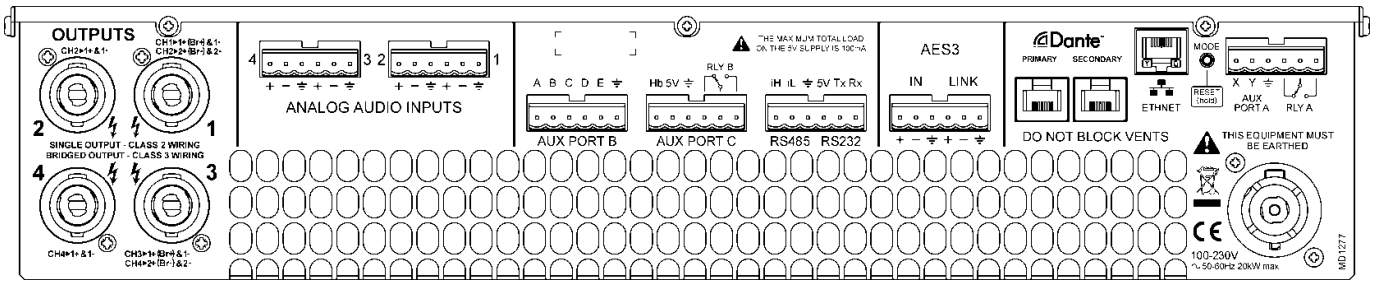
4 Channel Advanced Contractor Amplifiers

Linea Research 4 channel amplifiers present a unique combination of power and audio performance combining advanced DSP and network control with many contractor friendly features. Sharing the same feature set and form factor as the 88C series amplifiers and available in models developing between 1,500 Watts and 5,000 Watts per channel (or 10,000 Watts for a bridged pair). Uniquely each channel can be optimised to deliver its power into 2, 4 or 8 Ohm nominal loads as well as 25V, 70V & 100V constant Voltage (CV) lines. This offers designers and integrators unparalleled flexibility and cost-effectiveness. Using state of the art components and a finely optimised design results in generous power reserves that ensure pristine sound quality is maintained even under the most extreme conditions.



- Four channels of sonically pure Class D amplification
- Unique, precise, 96kHz digital signal processing
- Over-designed switch mode power supply
- Tamper-proof front panel
- Contractor friendly connectors
- Contact closure control ports and relay status outputs
- Ethernet, RS232 and RS485 for system control and monitoring
- Analogue, AES3 and Dante™ / AES67 audio inputs
- Powerful grouping and multi-layer EQ
- Accepts 48kHz and 96kHz FIR files via System Engineer
- Fully designed and engineered by Linea's in-house development team
- Manufactured, tested, and supported entirely in the UK

Power per channel, all channels driven			
Model	**44C20**	**44C10**	**44C06**
2 Ohm	**5,000**	**2,500**	**1,500**
4 Ohm	**3,000**	**2,500**	**1,500**
8 Ohm	**1,500**	**1,500**	**1,500**



General Specifications

Number of output channels	Four
Total power output, all channels driven	20,000, 10,000 and 6,000 Watts RMS
Audio inputs	4x Analogue, 2x AES3 and 4x Dante™ / AES67 (factory fitted option)
Digital Signal Processing	High performance 96kHz DSP on all inputs and outputs
Control, monitoring and system status alarms	Ethernet network, RS232 & RS485 Volt-free relay and contact closure ports. Heartbeat system health output
Power-save modes	Standby after user defined time with fast wake up on audio Deep ECO sleep after user defined time with wake up on command
System standby and wakeup	Network command, audio detection & contact closure

Power Output

Model	44C20	44C10	44C06
Power specification	RMS output power per channel, all channels driven with continuous program material and a nominal ambient temperature of 40°C / 105°F		
Crest Factor of 4 (12dB), 2 Ohm nominal load	5,000W	2,500W	1,500W
Crest Factor of 2.8 (9dB), 4 Ohm nominal load	3,000W	2,500W	1,500W
Crest Factor of 2 (6dB), 8 Ohm nominal load	1,500W	1,500W	1,500W
Bridged, per channel pair, 4 Ohm load	10,000W	5,000W	3,000W
25V line (CV) operation, Crest Factor 4 (12dB)	1,250W	885W	685W
70V line (CV) operation, Crest Factor 4 (12dB)	3,500W	2,500W	1,500W
100V line (CV) operation, Crest Factor 4 (12dB)	5,000W	2,500W	1,500W

Audio Performance

Amplifier topology	Linea Research high performance Class D
Amplifier modulation scheme	Low feedback, multiple loop, with feed-forward error correction
Dynamic range Measured relative to the amplifier output	Analogue input, better than 113dBA typical AES / Dante™ input, better than 114dBA typical
Gain (with all the DSP level controls set to 0dB)	32dB
Frequency response, 4 Ohm load	<7Hz to >30kHz, 4 Ohms, -2.5dB points
Total harmonic distortion, THD	<0.05% typical, 1kHz signal, AES17 filter, 4 Ohm load
Inter-channel crosstalk, worst case combination	Better than -85dBr at 1kHz and -75dBr at 10kHz
Slew rate	>60V per microsecond typical
Damping factor (Ref 8 Ohms)	>800 at amplifier output (see Linea's "Damping factor debunked" white paper)
Maximum analogue input level	+20dBu
Analogue input sensitivity range for full output	0dBu to +20dBu, continuously adjustable
Analogue input (four channels)	Input 20k Ohm, electronically balanced, link directly connected to input
Analogue ground scheme	AES48 standard compliant
AES3 input (two audio channels)	Transformer isolated with unique active cable equalisation for extended range
AES3 link (two audio channels)	Active AES3 signal regeneration. Automatic direct bypass to the AES3 input ensuring the audio signal will still flow even when the amplifier is powered down
AES3 supported sampling rates	24kHz to 192kHz (auto locking)

Digital Signal Processing

Resolution	40 bit, Linea Research proprietary algorithms
Sample rate	96kHz throughout
Physical inputs to DSP drive modules	4x Analogue, 2x AES & 4x Dante™ inputs can be routed to four DSP drive modules
Drive module input processing	Input signal routing, Delay, Gain, HPF, Phase, Mute **EQ:** 2x low shelf, 6x PEQ / band pass and FIR shelving filters
Drive module output processing	Source, Delay, Gain, Phase, Mute, Crossover filters, VX limiters **EQ:** low shelf, 8x PEQ / band pass and shelving filters / 768 tap FIR
Preset management	20 snapshots for device wide setup, 50 presets for loudspeaker settings Presets can be recalled to sets of outputs or individual outputs as required
Unique high-performance processing	
Overlays	Twelve additional independent overlays of EQ, Delay and Gain Flexible grouping for effective control of many amplifier channels in large systems
Class leading VX limiters	See the 'speaker protection systems' section
Hardman crossover filters	Better out of band rejection than Linkwitz-Riley
LIR crossover filters	Unique Linear Phase alignments without the compromises of FIR filters

Power Supply

Topology (main power supply)	Linea Research high performance Series Resonant
Topology (auxiliary and standby supplies)	Low quiescent Eco-Flyback
Internally stored energy	>600 Joules
Nominal mains input voltage range	85V to 240V, Power supply automatically detects voltage and configures accordingly
Mains input frequency range	47Hz to 63Hz
Mains inrush current (max for <10ms)	6A at 115V, 12A at 230V

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**
Excessive power supply current or amplifier output current	Sustained clipping prevention
Excessive temperature per sub system: PSU, amplifier and DSP	DC offset protection
Mains voltage within acceptable limits	Excessive HF energy (VHF) limiter
Internal power rails producing correct output	
Fans operating at correct speed	**VX audio output limiters**
	Vx provides a linear phase virtual crossover and two limiter paths on each output. This unique system delivers effective protection for systems that incorporate passive crossovers.
Power distribution protection systems	Vx Limit Multiband peak limiter, two per output
Mains inrush current limiting for soft start and anti-surge	Vx Max Multiband overshoot limiter, two per output
Mains average current limiting for mains breaker management	T-Max Driver thermal limiter (long term power limiter)
Randomised initialisation when remotely powered up	
Monitoring, measurements recorded against time	**Monitoring, device statistics and counters**
Supply current	Number of power cycles counted
Supply voltage	Number of mains brownout events counted
Thermal Capacity	Fan speeds continuously monitored
Each driver current	Fan under-speed events counted
Each driver impedance	Various protection mute events counted
Protection limiting for each output	Driver Impedance continuously monitored

An inbuilt notification system is provided that indicates problems to remote devices either via the network or the Volt-free changeover relay contacts accessible on the rear panel.

Physical

Cooling	Dual vari-speed fans, front to back airflow. Washable, tool-less change filter media.
Analogue IN and LINK	Phoenix™ pluggable terminal block (mating plug supplied)
AES3 IN and LINK	Phoenix™ pluggable terminal block (mating plug supplied)
Amplifier output	Neutrik Speakon™ NL4 connectors
Mains input connector	Neutrik 32A Powercon™
Dante™ Primary and Secondary	2x Shielded RJ45
Ethernet network	Shielded RJ45
RS232 and RS485	Phoenix™ pluggable terminal block (mating plug supplied)
Relay, 'heatbeat' outputs	Phoenix™ pluggable terminal block (mating plug supplied)
Contact closure inputs	Phoenix™ pluggable terminal block (mating plug supplied)
Front panel LED indicators	Per channel - Input level, output level & status
Enclosure, all models	Standard 19" 2U (88mm), 357mm (14") deep with handles and optional rear support
Net Weight	12.5kg (27.5 Lbs)



For more information about the 44C series amplifiers or Linea's other high-performance audio products, please contact us or your local dealer.

Linea Research Ltd
Units 1 & 2 Aylesford Court
Works Road
Letchworth Garden City
Herts, U.K.
SG6 1LP

Tel: +44(0)1462 893 500
Tel: +1 949 436 4745 (USA Office)
Email: info@linea-research.co.uk
www.linea-research.co.uk