

D-SERIES

CLASS-D QUAD POWER AMPLIFIER

Order ref: D4200 - 172.142UK

Order ref: D4350 - 172.144UK

User Manual



Version 1.0



Caution: Please read this manual carefully before operating
Damage caused by misuse is not covered by the warranty

Introduction

Thank you for choosing a Citronic D-series quad power amplifier as part of your sound reinforcement system. These amplifiers use class-D circuit architecture for light weight and efficient performance. Please read this manual fully and follow the instructions to achieve the best results from your amplifier and to avoid damage through misuse.

Warning

To prevent the risk of fire or electric shock, do not expose any of the components to rain or moisture. If liquids are spilled on the casing, stop using immediately, allow unit to dry out and have checked by qualified personnel before further use. Avoid impact, extreme pressure or heavy vibration to the case.

No user serviceable parts inside – Do not open the case – refer all servicing to qualified service personnel.

Safety

- Check for correct mains voltage and condition of IEC lead before connecting to power outlet.
- Ensure speaker leads are good condition with no shorted connections or damaged plugs.
- Check that the impedance of speaker loads do not exceed the minimum stated load for the amplifier.
- Do not allow any foreign objects to enter the case or through the ventilation grilles.

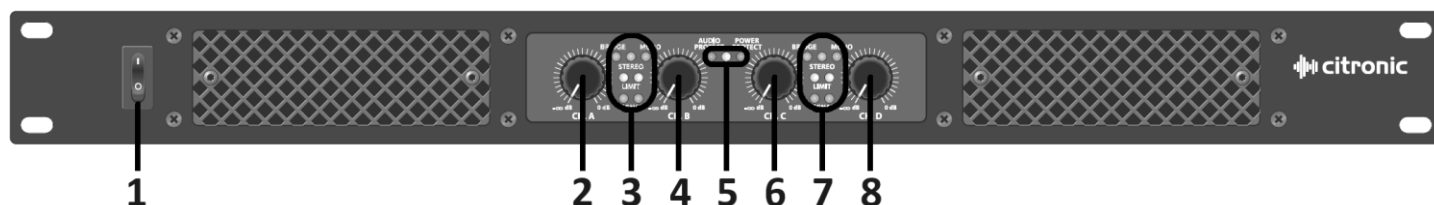
Placement

- Keep out of direct sunlight and away from heat sources.
- Keep away from damp or dusty environments.
- When rack-mounting, ensure adequate support for the base of the amplifier and firm fixings for the front.
- Ensure adequate airflow and do not cover cooling vents at the front and rear of the amplifier.
- Ensure adequate access to controls and connections.

Cleaning

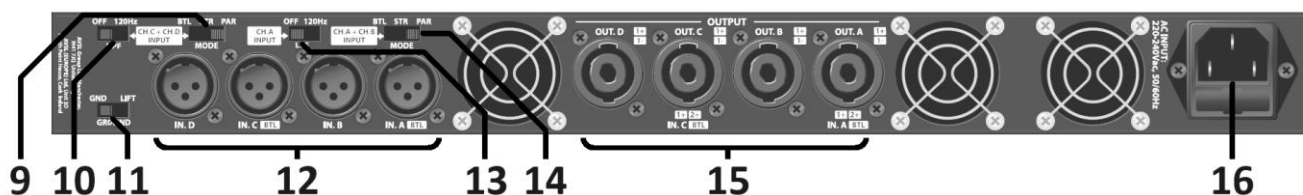
- Use a soft cloth with a neutral detergent to clean the casing as required.
- Use a vacuum cleaner to clear ventilation grilles of any dust or debris build-ups.
- Do not use strong solvents for cleaning the unit.

Front Panel



- | | |
|----------------------------|----------------------------|
| 1. Power on/off switch | 5. Power status LEDs |
| 2. Channel A level | 6. Channel C level |
| 3. Channel A+B status LEDs | 7. Channel C+D status LEDs |
| 4. Channel B level | 8. Channel D level |

Rear Panel



- | | |
|--|--|
| 9. Channel C+D amplifier mode switches | 13. Channel A input Low Pass Filter switch |
| 10. Channel C+D inputs High Pass Filter switch | 14. Channel A+B amplifier mode switches |
| 11. Ground Lift switch | 15. Channel A, B, C, D speaker outputs (SPK) |
| 12. Channel A, B, C, D inputs (balanced XLR) | 16. IEC power inlet and fuse holder |

Setting up

Connect speaker cabinets to the channel outputs A, B, C, D using good quality Speakon® leads (15) and ensure that the combined load on each channel is no lower than 4Ω.

Note: Most PA speakers are with 8Ω nominal impedance. Connecting a single 8Ω load to each speaker output is OK. 2 x 8Ω speakers wired in parallel (+ to + and - to -) will present a combined load of 4Ω to the speaker output. Ensure that the speakers can handle the power delivered at the rated (or combined) load impedance.

On the rear panel, each pair of channels has a MODE switch (9, 14), which determines the way that the amplifier operates. The standard operating mode is **STEREO**, with each input (A, B, C, D) feeding its relative amplifier output.

PARALLEL mode sums 2 inputs together in mono so that each amplifier channel receives a mix of both inputs. In this mode, channels A+B and/or channels C+D will receive the mono summed signals from the paired inputs.

Also, either or both pairs of channels can be combined to drive a single load at higher power by selecting **BRIDGE** mode. This is also called Bridge Tied Load or **BTL**.

In this mode, the input is on channel A (for amps A+B) or C (for amps C+D) and the output is from the A or C speaker outputs as indicated on the rear panel (Speakon connection should be wired to pins 1+ and 2+ on a 4-pole Speakon plug) **WARNING – The minimum load for BRIDGE mode on either pair of channels is 8Ω.**

The D-series quad amplifiers have 2 switchable filters, which can obviate the need for a separate external crossover.

Channel A has a switchable Low Pass Filter (LPF) for use with subwoofers and can be combined with Bridge or Parallel mode to use both A+B amplifiers (only channel A input has the LPF because sub-bass performs better in mono) Channels C+D each have a 120Hz High Pass Filter (HPF) which are switchable as a stereo pair for mid-top cabinets. For example: Enable the 120Hz LPF on channels A+B in Bridged into a high power 8Ω subwoofer and enable the 120Hz HPF on channels C+D in stereo mode into 2 mid-top cabinets to provide a fully bi-amped 2.1 system.

Once the operating modes are selected, connect each signal input from the mixer or other line level source to the balanced (or unbalanced) XLR connectors on the rear panel (12) using good quality signal leads. Wiring connections for balanced or unbalanced inputs are as follows...

Balanced Wiring		
Signal hot +	Signal cold -	Ground (GND)
Pin 2	Pin 3	Pin 1

Unbalanced Wiring	
Signal hot +	Ground (GND)
Pin 1	Pins 1+3

Connect the amplifier to a mains supply (16), ensuring the IEC lead is earthed, in good condition and connected securely. With Channel A/B/C/D controls (2, 4, 6, 8) turned fully down, switch on the power to the amplifier (1). This unit has a "soft-start" function which makes some checks before engaging power to the amplifiers, which may take a few seconds.

With the mixer (or other signal source) levels turned down, gradually increase each channel level control to the required level (normally full) and then gradually increase the signal level from the mixer or sound source until sound can be heard through the speakers and then continue increasing up to the required level. If there is excessive 50Hz hum from the mains power supply, it may be improved by switching the **GROUND LIFT** switch (11) from GND to LIFT.

Each channel has an LED to indicate the input **SIGNAL** and another to show when the **LIMIT** circuit is activated (3, 7). Above these are also **BRIDGE**, **STEREO** and **MONO** status LEDs to show how each pair of channels is configured.

The **LIMIT** function reduces the peak signal levels to avoid overloading the amplifier and should only flash briefly to tame peaks or transients in the signal. If the **LIMIT** LED lights more persistently than this or continually, the level or input signal needs to be lowered to restore the true dynamics of the audio signal.

In the centre of the front panel are 3 further LED indicators (5).

AUDIO PROTECT lights when the protection circuit is triggered by overload that could otherwise damage the amplifier.

POWER is lit when mains power is connected and switched on. This should always be on during normal operation.

POWER PROTECT lights when the protection circuit is triggered by overload in the power supply circuit.

If either of the **PROTECT** LEDs are lit, it is advised to lower all channel levels and switch off the amplifier.

If the amplifier is still in a **PROTECT** state when re-started, refer to a qualified service technician.

Before powering down the amplifier, it is advised to turn down all channel levels to avoid loud pops or transients which could damage connected speakers.

Specifications

Model	D4200	D4350
Power supply	220-240Vac, 50/60Hz (IEC)	
Modes	2 x Stereo, Parallel (mono), Bridge (mono)	
Input sensitivity	0dB = 0.775Vrms	
Crossover	Input A 120Hz LPF and C+D 120Hz HPF (all switchable)	
Input connections	4 x XLR female	
Sound output	4 x SPK connectors	
Dimensions	482 x 308 x 44mm (without feet)	
Output: rms @ 4 Ohms	4 x 200W	4 x 350W
Output: rms @ 8 Ohms	4 x 100W	4 x 200W
Bridge power @ 8 Ohms	2 x 400W (both pairs of channels bridged)	2 x 700W (both pairs of channels bridged)
Weight	4.393kg	5.083kg

Troubleshooting

POWER LED not lit	Ensure IEC inlet is connected to mains and lead is in good condition
	Ensure mains outlet is switched on
POWER LED on but no other LEDs and no output	Check input signal and connection leads
	Ensure channel gain controls are not turned fully down
POWER LED and SIGNAL LEDs are lit but no output	Check speaker cabinets are in good working order
	Check speaker leads are in good condition and connected properly
AUDIO PROTECT and/or POWER PROTECT LED is lit and there is no output	Switch off and disconnect from mains
	Check speakers are in good working order and not shorted out (using a multi-tester)
	After checking all connected items, power up again
	If still in Protect Mode, switch off again and refer to qualified service personnel
Output is very distorted and LIMIT LEDs are lighting	Ensure cooling vents are clear and amplifier has not overheated
	Check the speaker impedance is not below 4Ω per channel (8Ω if bridged)
	Turn down the input level from audio source
Output is working but at very low level	Turn down channel level controls
	Ensure input source is at line level
	Increase input level from audio source
	Turn up channel level controls



Disposal: The "Crossed Wheelie Bin" symbol on the product means that the product is classed as Electrical or Electronic equipment and should not be disposed with other household or commercial waste at the end of its useful life. The goods must be disposed of according to your local council guidelines.

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