

H3200

HYBRID CLASS-H POWER AMPLIFIER

Order ref: 172.132UK

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 H3200 power amplifier as part of your sound reinforcement system. These amplifiers use hybrid class-H architecture to offer high power output in a compact, lightweight form factor. 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.

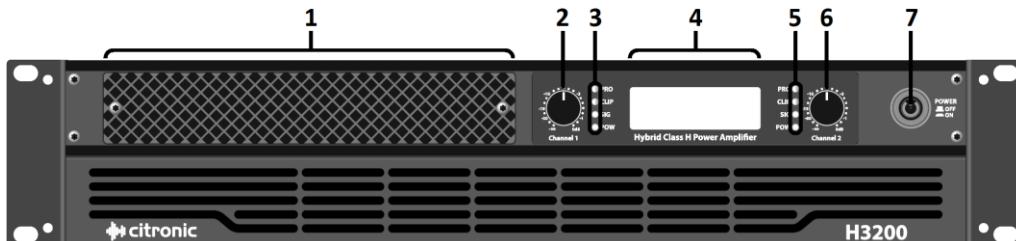
Placement

- 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

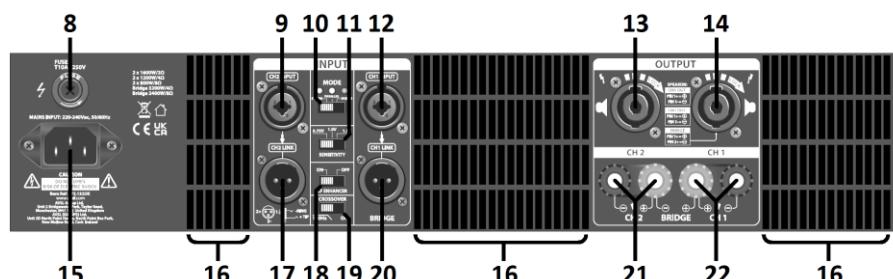
- Use a soft cloth with a neutral detergent to clean the casing as required.
- Use a vacuum cleaner to clear ventilation grilles of any dust or debris build-ups.
- Do not use strong solvents for cleaning the unit.

Front Panel



1. Cooling vent – do not cover or obstruct
2. Channel 1 level
3. Channel 1 indicator LEDs
4. LCD status display
5. Channel 2 indicator LEDs
6. Channel 2 level
7. Power on/off switch

Rear Panel



8. Mains fuse holder
9. Channel 2 line input (XLR/jack)
10. Mode switch - Parallel/Stereo/Bridge
11. Input sensitivity switch 1.0V/1.4V/2.0V
12. Channel 1 line input (XLR/jack)
13. Channel 2 speaker output (SPK)
14. Channel 1 (& Bridge) speaker output (SPK)
15. IEC mains power inlet
16. Cooling vents – do not cover or obstruct
17. Channel 2 line output (XLR)
18. LF enhancer on/off switch
19. Crossover 120Hz LPF on/off switch
20. Channel 1 line output (XLR)
21. Channel 2 speaker output (4mm posts)
22. Channel 1 (& Bridge) speaker output (4mm posts)

Operation

Connect speaker cabinets to channel outputs using good quality Speakon® leads (13, 14) or alternatively with bare wire connection or 4mm plugs (21, 22) and ensure that the combined load on each channel is no lower than 2Ω .

For speaker loads connected in parallel... $\frac{1}{\text{speaker impedance}} + \frac{1}{\text{speaker impedance}} = \frac{1}{\text{TOTAL impedance}}$.

Therefore...

$$\begin{array}{ll} 8\Omega + 8\Omega = & \mathbf{4\Omega \text{ total}} \\ 4\Omega + 4\Omega = & \mathbf{2\Omega \text{ total}} \\ 8\Omega + 8\Omega + 8\Omega + 8\Omega = & \mathbf{2\Omega \text{ total}} \end{array}$$

The rear panel has a MODE switch (10), which determines the way that the amplifier operates, indicated by LEDs above the switch. The standard operating mode is **STEREO**, with each input feeding its relevant speaker output.

PARALLEL mode sums both inputs together in mono so that each amplifier channel receives a mix of both inputs.

Also, both channels can be combined to drive a single load at higher power by selecting **BRIDGE** mode. In this mode, the input is on channel 1 and the output is from the OUT 1 speaker connections as indicated on the rear panel (Speakon connection should be wired to pins 1+ and 2-) **WARNING – The minimum load for BRIDGE mode is 4Ω .**

Below the MODE switch is a SENSITIVITY switch (11), which has 3 settings for different input levels.

The standard setting is 1.0V and further settings for 1.4V and 2.0V higher level inputs will reduce the input sensitivity.

When set to **ON**, the LF PROCESSING switch (18) provides a 2dB boost around 100Hz for enhanced bass response.

If using the H3200 amplifier with a subwoofer cabinet, switching the CROSSOVER switch (19) to **120Hz** will filter out higher frequencies to enable the amplifier to focus all of its energy on the sub-frequencies. The normal setting is **OFF**.

Connect each signal input from mixer or other line level source via XLR or 6.3mm jack connectors to the combo connectors (9, 12) on the rear panel using good quality signal leads. Depending on the output level of the mixer, select the appropriate sensitivity on the rear panel. Wiring connections for balanced or unbalanced inputs are as follows...

Connector type	Signal hot +	Signal cold -	Ground (GND)	Unbalanced wiring
6.3mm jack	Tip	Ring	Sleeve	Ring + Sleeve combined
XLR	Pin 2	Pin 3	Pin 1	Pin 3 + Pin 1 combined

Each channel input also has a corresponding XLR line output (17, 20) for linking onto further equipment, as necessary. XLR inputs and outputs for each channel are wired in parallel, allowing signal to be carried forward to further amplifiers.

Connect the amplifier to a mains supply (15), ensuring the IEC lead is earthed, in good condition and connected securely. With Channel 1 + 2 controls (2, 6) turned fully down, switch on the power to the amplifier (7). This unit has a "soft-start" function which makes some checks before engaging power to the amplifiers, which may take a few seconds.

With mixer (or other signal source) levels turned down, gradually increase the amplifier's channel level controls 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.

The LED indicators for each channel (3, 5) are as shown opposite.

In normal operation, the **POW** indicators will be on and the **SIG** indicators will light when an input signal is present.

PRO	Protect mode
CLIP	Signal clipping (overload)
SIG	Signal present
POW	Power on

If the input signal is overloading the amplifier, this "clips" above the available power limit. When this happens, the **CLIP** indicators will light.

It is acceptable for **CLIP** indicators to flash very briefly in response to loud peaks in the audio signal. However, if they light for any longer than a brief instant or very frequently, the input level should be reduced or channel level controls on the front panel should be turned down until the regular clipping is eliminated.

If the internal protection circuitry detects a fault in the speakers or amp, the channel(s) will enter protect mode and **PRO** will illuminate on the front panel to show this. Switch the amplifier off and check the entire system (including speaker leads) before powering up again. If still in Protect Mode, seek advice from qualified service personnel.

Each H3200 amplifier also has a backlit LCD display (4) on the front panel with the following information for monitoring.

- Mains supply voltage
- Internal temperature of each amplifier channel
- VU signal meters for each channel
- Fan speed

Before powering down, turn the channel gain controls fully down to avoid loud noises when switching off.

Specifications

Power supply	200-240Vac, 50Hz (IEC)
Fuse	T10AL 250V
Output: RMS @ 2Ω	2 x 1600W*
Output: RMS @ 4Ω	2 x 1200W
Output: RMS @ 8Ω	2 x 800W
Bridge power: RMS @ 4Ω	3200W*
Bridge power: RMS @ 8Ω	2400W
Amplifier: construction	Hybrid Class-H
Protection	Short/open circuit, thermal, RF, DC fault, on/off mute, active inrush limiting.
Frequency response	20Hz-20KHz ±0.5dB
Crossover	Switchable 120Hz Low Pass subwoofer filter
THD +N	0.20%
S/N ratio	-95dB
Damping factor	>700
Input sensitivity	1.0V - 1.4V - 2.0V switchable
Input impedance	20KΩ (balanced), 10KΩ (unbalanced)
Dimensions	483 x 361 x 88 mm (1U)
Weight	8.9kg

* Testing @ 2Ω under 40ms burst, 1kHz sine wave (1.0% THD)

Troubleshooting

No power light on either channel	Ensure IEC inlet is connected to mains and lead is in good condition Ensure mains outlet is switched on
Power lights on but no other LEDs and no output	Check input signal and connection leads Ensure channel gain controls are not turned fully down
Power light 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
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 Ensure cooling vents are clear and amplifier is not overheated
Output is very distorted and "CLIP" LEDs are lighting	Check the speaker impedance is not below 2Ω per channel (4Ω if bridged) Turn down the input level from audio source Turn down channel gain controls
Output is working but at very low level	Ensure input source is at line level Switch the SENSITIVITY to a lower voltage Increase input level from audio source Turn up channel gain controls



Disposal: The "Crossed Wheeble 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.