Optimal Audio Amp 100 Performance Power Amplifier User Guide

Contents

Optimal Audio

Optimal Audio Amp 100 Performance Power Amplifier

Specifications

- **Amp 100:** Two channels of Class A/B amplification, 350W per channel at 4Ω, 250W per channel at 8Ω, and 700W Bridged at 8Ω.
- **Amp 200:** Two channels of Class A/B amplification, 700W per channel at 4Ω, 400W per channel at 8Ω, and 1400W Bridged at 8Ω.
- **Amp 300:** Two channels of Class A/B amplification, 1350W per channel at 4Ω, 800W per channel at 8Ω, and 2700W Bridged at 8Ω.

Product Usage Instructions

Start Using Your Amp

All models in the Amp range feature identical rear panel layouts. The input signal can be direct from an Optimal Audio Zone controller or a line signal from an external source.

Front Panel Controls

- Amplifier channel volume control & signal indicator
- Power and Temperature status LEDs
- Inlet for cooling (do not cover)
- Power switch

Powering Up

- Amp is supplied in two voltage models, 240V AC 50/60Hz and 120V AC 60Hz. Use the mains cable appropriate to your region as supplied with the amplifier and connect it to a switched mains supply.
- Amp has a mains power switch on the front panel. Position ‘0’ is OFF and position ‘I’ is ON. Ensure that all signal and output connections are made and that all switch options are selected appropriately before connecting the amplifier to the main power.
- **NOTE:** On power up, the ‘Temp’ LED will flash red; the unit is ON when the ‘Power’ LED is illuminated white.
- If the Temp LED remains illuminated or illuminates during operation, excessive temperature has been detected. Please power OFF and check all connections.

Rear Panel Connections & Controls

All models in the Amp range feature identical rear panel layouts.

- Overcurrent CH1 speakON breaker
- Output CH2 speakON Output
- AC inlet
- CH1 & CH2 Binding Post Outputs
- CH1 Input Output Mode selector
- Air cooling system (do not cover)
- Gain selector CH2 Input

FAQ

Q: What should I do if the ‘Temp’ LED remains illuminated or illuminates during operation?

A: If this happens, it indicates that excessive temperature has been detected. In such cases, please power OFF the amplifier and check all connections to ensure proper ventilation and cooling.

Congratulations

- Congratulations on your choice of Optimal Audio for your latest sound system installation.
- The Optimal Audio range of compatible audio zoners, controllers, amplifiers, and loudspeakers are designed to work together simply and effectively.
- Our quick start guides will take you through connectivity and set up in a straightforward style that reflects the Optimal Audio brand.

MODELS

There are three amplifiers in the Amp range:

- **Amp 100** Two channels of Class A/B amplification, 350W per channel at 4Ω, 250W per channel at 8Ω and 700W Bridged at 8Ω

- **Amp 200** Two channels of Class A/B amplification, 700W per channel at 4Ω, 400W per channel at 8Ω and 1400W Bridged at 8Ω

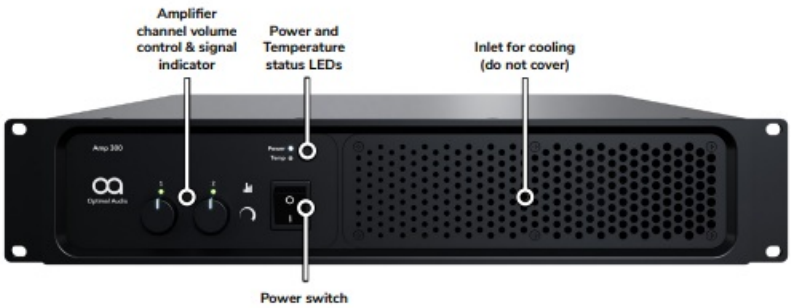
- **Amp 300** Two channels of Class A/B amplification, 1350W per channel at 4Ω, 800W per channel at 8Ω and 2700W Bridged at 8Ω

Start using your Amp

All models in the Amp range feature identical rear panel layouts. Input signal can be direct from an Optimal Audio Zone controller, or a line signal from an external source.

- If using a Zone controller make sure the rear panel gain switch is depressed in the ‘Zone’ position. If using with another source set to ‘32dB’ position
- Input is via balanced or unbalanced XLR or ¼” TRS Jack connector
- Select the operation mode STEREO-BRIDGE-PARALLEL detailed later in this user guide
- Connect amplifier outputs to loudspeakers via speakON® or binding post. Refer to the diagrams in this user guide or information on the Amp rear panel for the correct wiring
- Once you have connected everything up, plug your Amp into the mains power and turn it on
- Turn the relevant amplifier channel volume knob on the front panel up
- Green LEDs will illuminate the channels to which the signal is applied. These will illuminate Red if the amplifier is in the clip.

Front Panel Controls



Powering Up

- Amp is supplied in two voltage models, 240V AC 50/60Hz and 120V AC 60Hz. Use the mains cable appropriate to your region as supplied with the amplifier and connect it to a switched mains supply.
- Amp has a mains power switch on the front panel. Position ‘0’ is OFF and position ‘I’ is ON. Ensure that all signal and output connections are made and that all switch options are selected appropriately before

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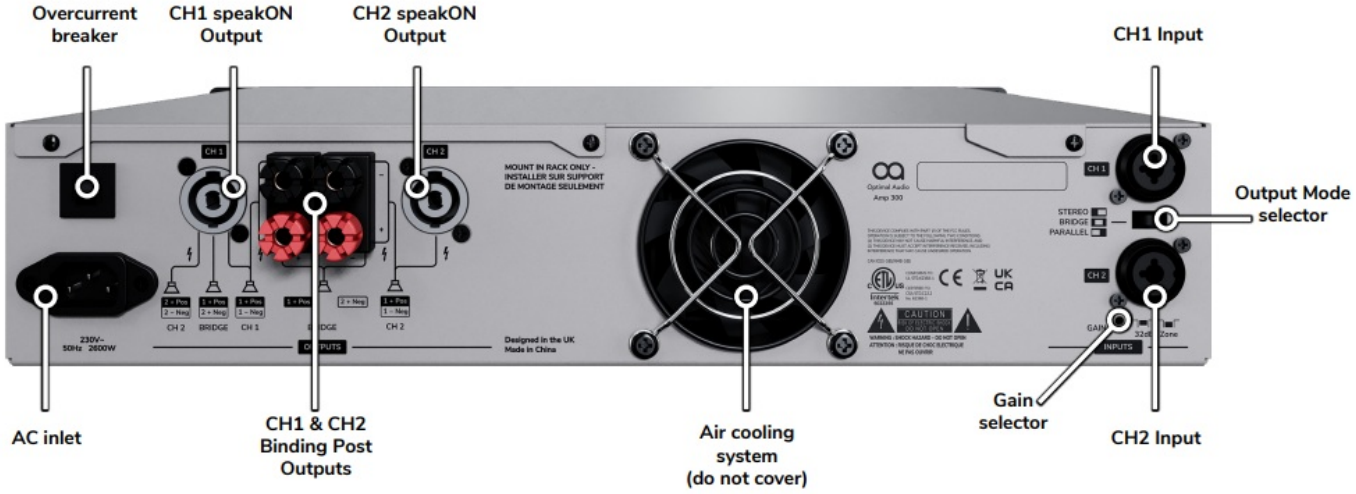
Rear Panel Connections & Controls

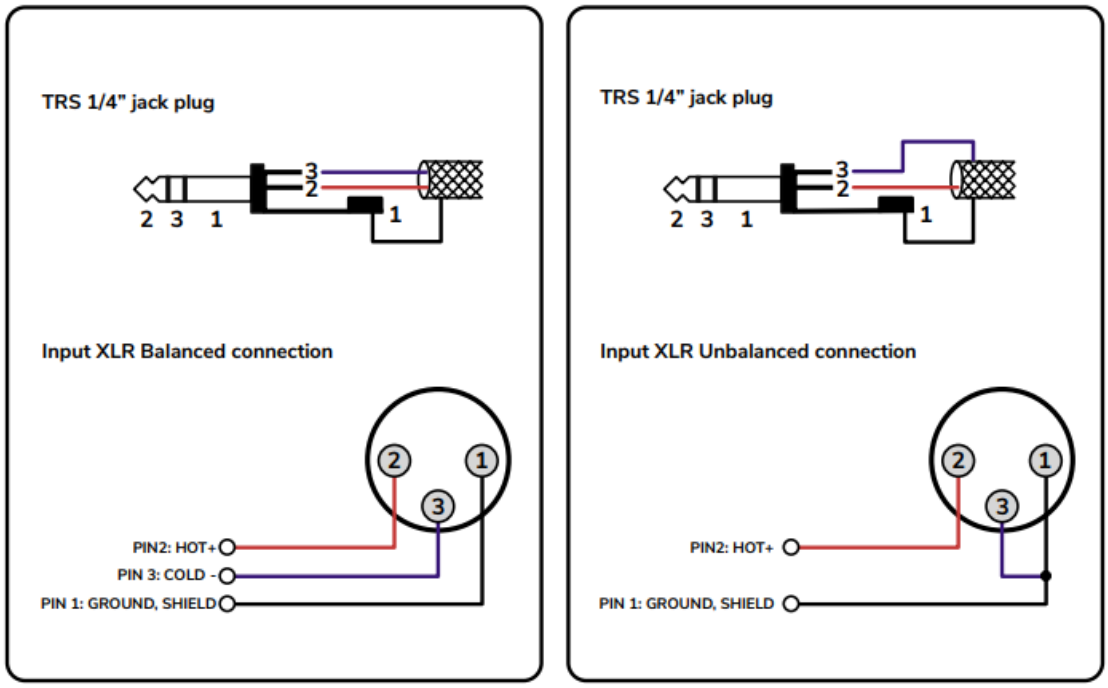
Amp 100, 200 and 300

All models in the Amp range feature identical rear panel layouts.



Input Connections

- Amp inputs are balanced with an impedance of 15kΩ and an unbalanced impedance of 7.5kΩ. They require the use of suitable two-core, screened signal cable.
- Input connections to Amp are achieved via a Combi style XLR / ¼” TRS jack connector. Connecting cables to the supplied female input connectors is illustrated.



Input gain selector

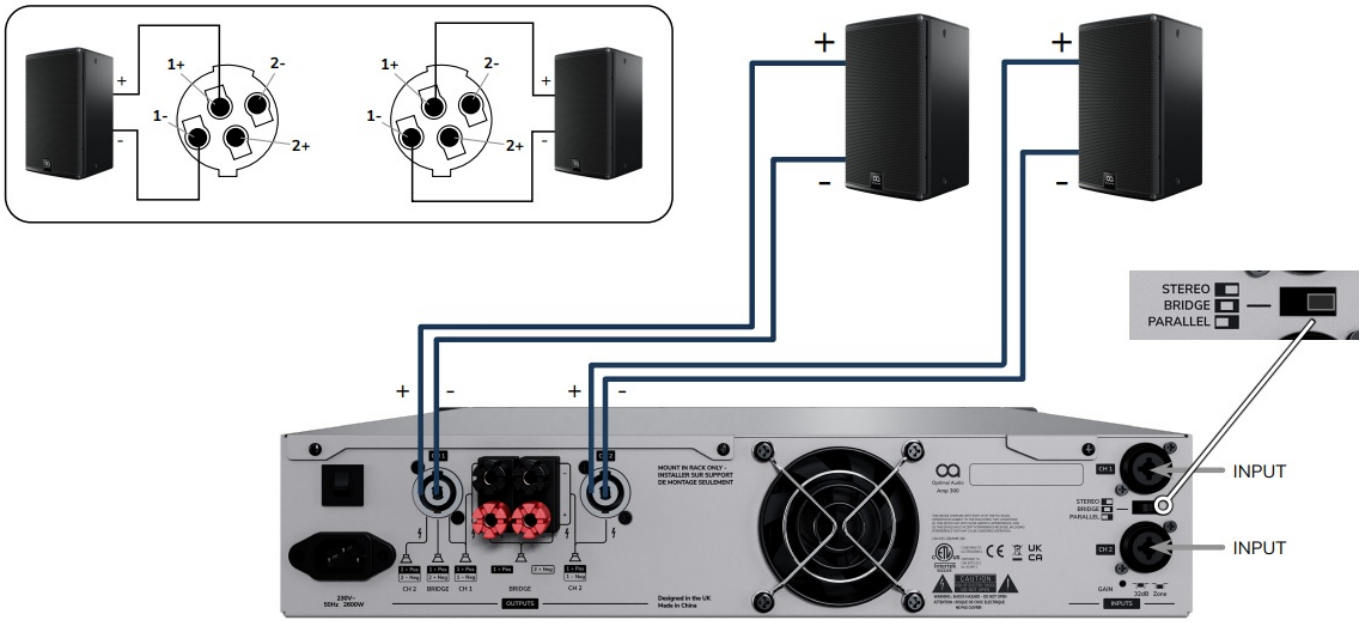
- Amp features a selectable input gain. This can be set via a push switch on the rear of the unit. Use a screwdriver, pen, or similar device to locate and push the gain switch.
- Pushing the switch to its depressed position configures Amp's input gain structure to be compatible for use with an Optimal Audio Zone processor line outputs (20dBu max).
- Pushing the switch again releases it to its upper/ outward position, this configures the input to 32dB gain, for use with traditional professional audio equipment.

Loudspeaker Outputs

- Output connections from Amp are achieved via either a speakON® or binding post connector per amplifier channel.
- Ensure that speaker connection polarity is correct throughout the installation: positive (+) amplifier terminals should always be connected to positive speaker terminals and negative (–) amplifier terminals always connected to negative speaker terminals.
- Together with output mode switch configuration, Amp can be set up to output in Stereo (dual) channels, Bridge mono, and Parallel, via either output connector type as detailed in the following diagrams.

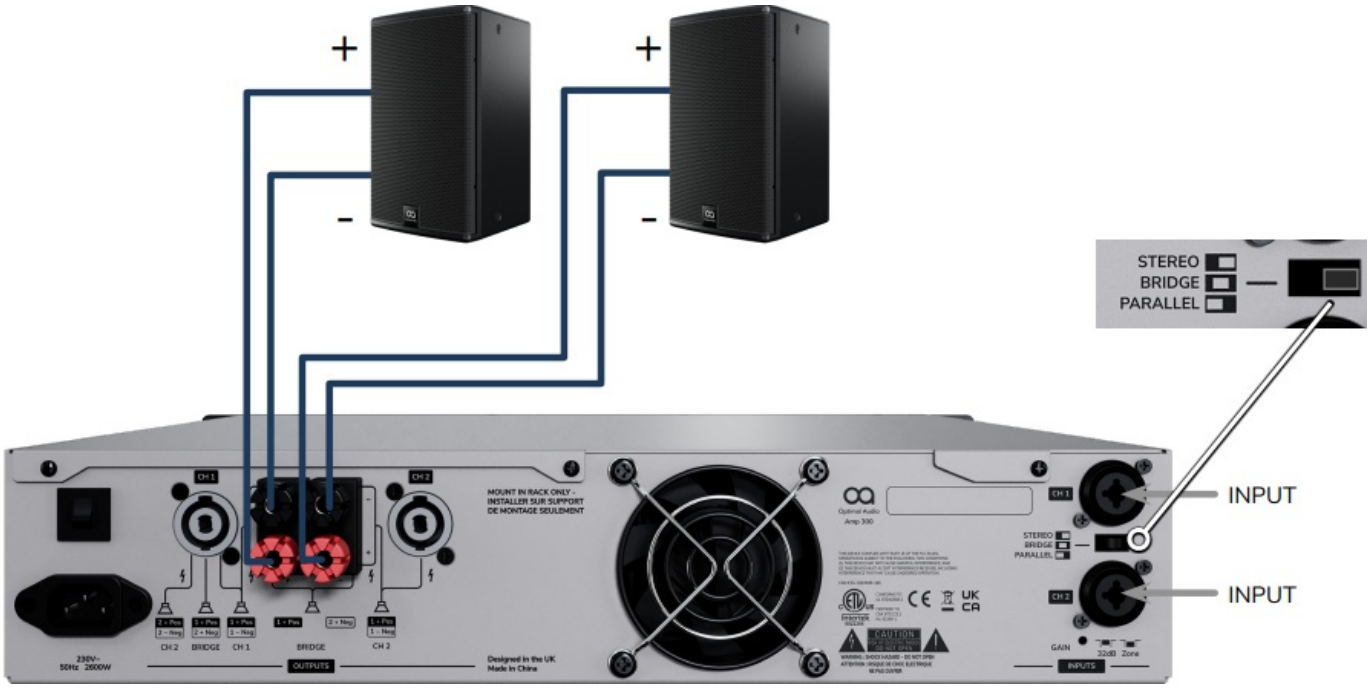
Stereo output using speakON® connectors

Set Output Mode Switch to STEREO



Stereo output using Binding Post connectors

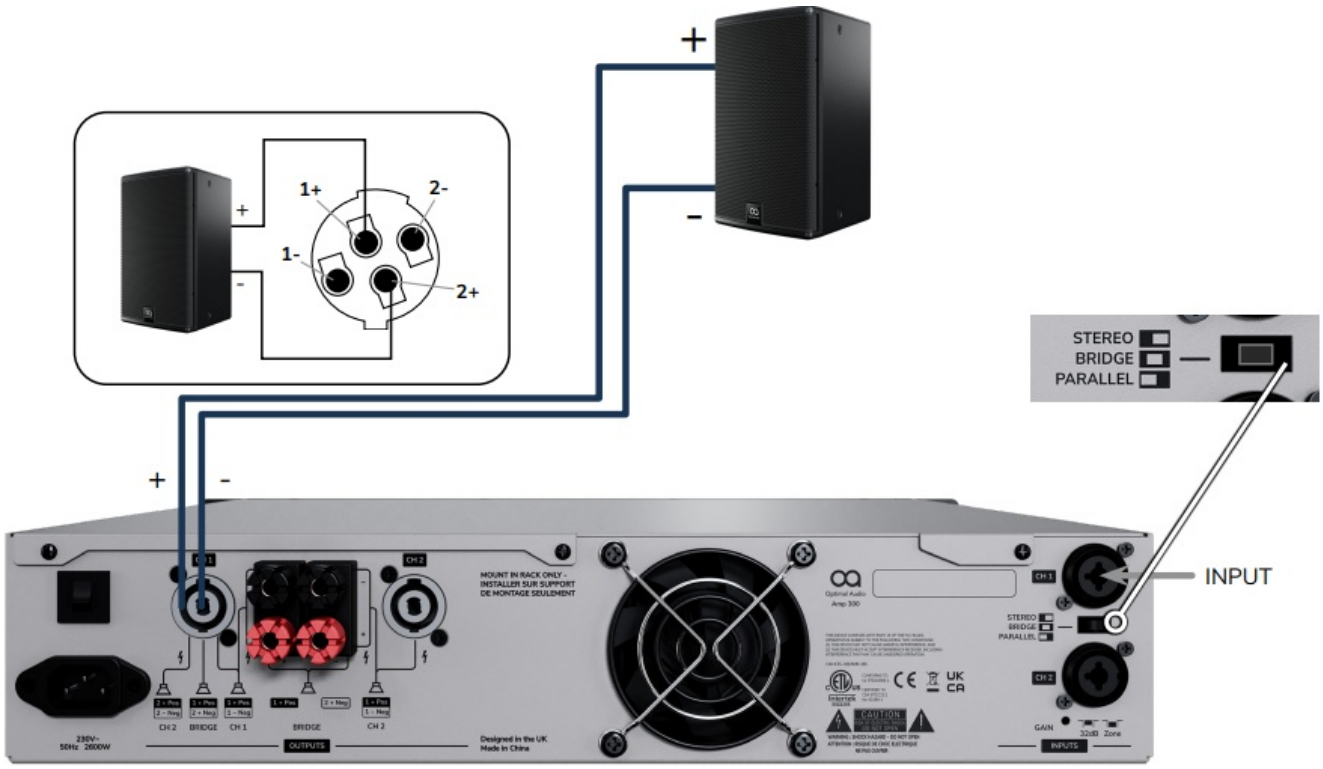
Set Output Mode Switch to STEREO



Bridge mono output using speakON® connector

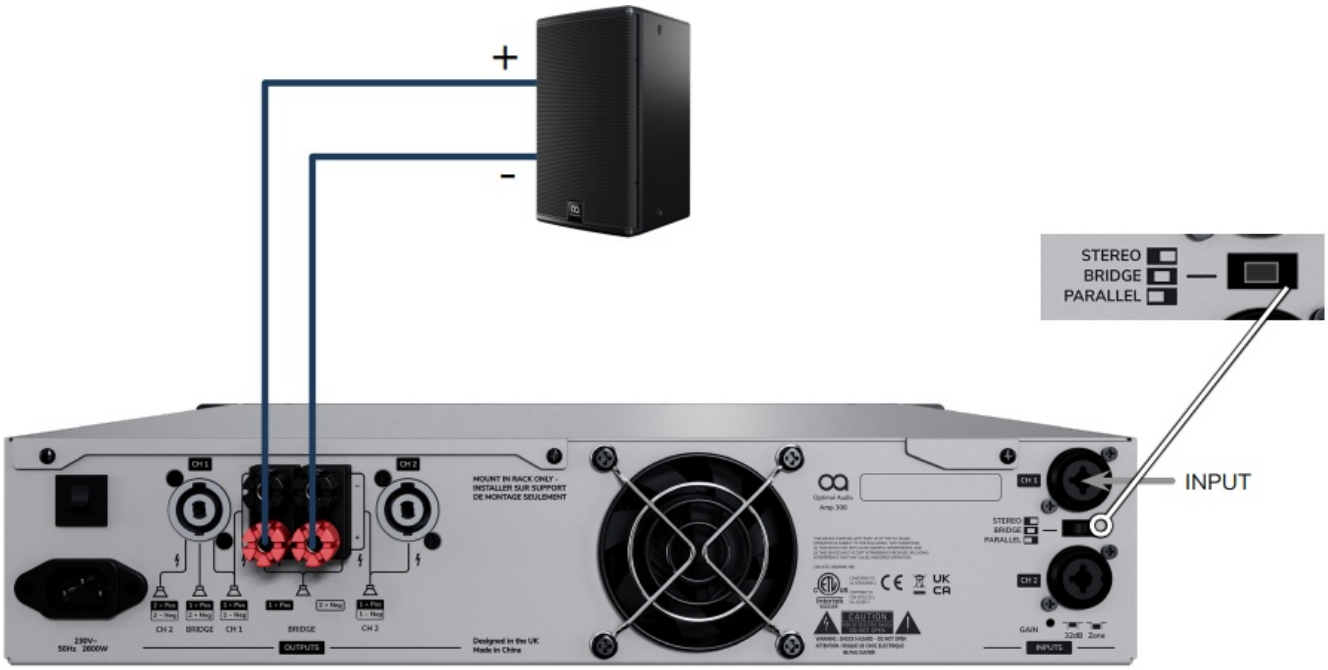
- Set Output Mode Switch to BRIDGE

  Note only Channel 1 volume control works in BRIDGE mode



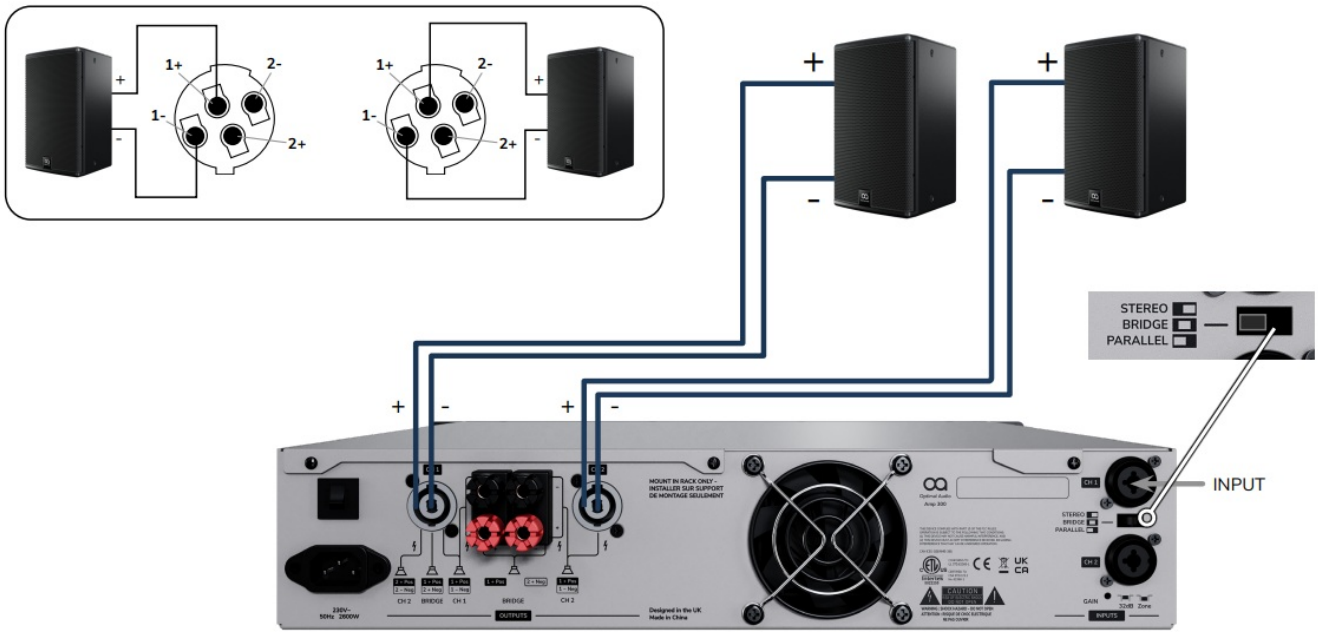
Bridge mono output using Binding Post connectors

- Set Output Mode Switch to BRIDGE
- **Note** only Channel 1 volume control works in BRIDGE mode



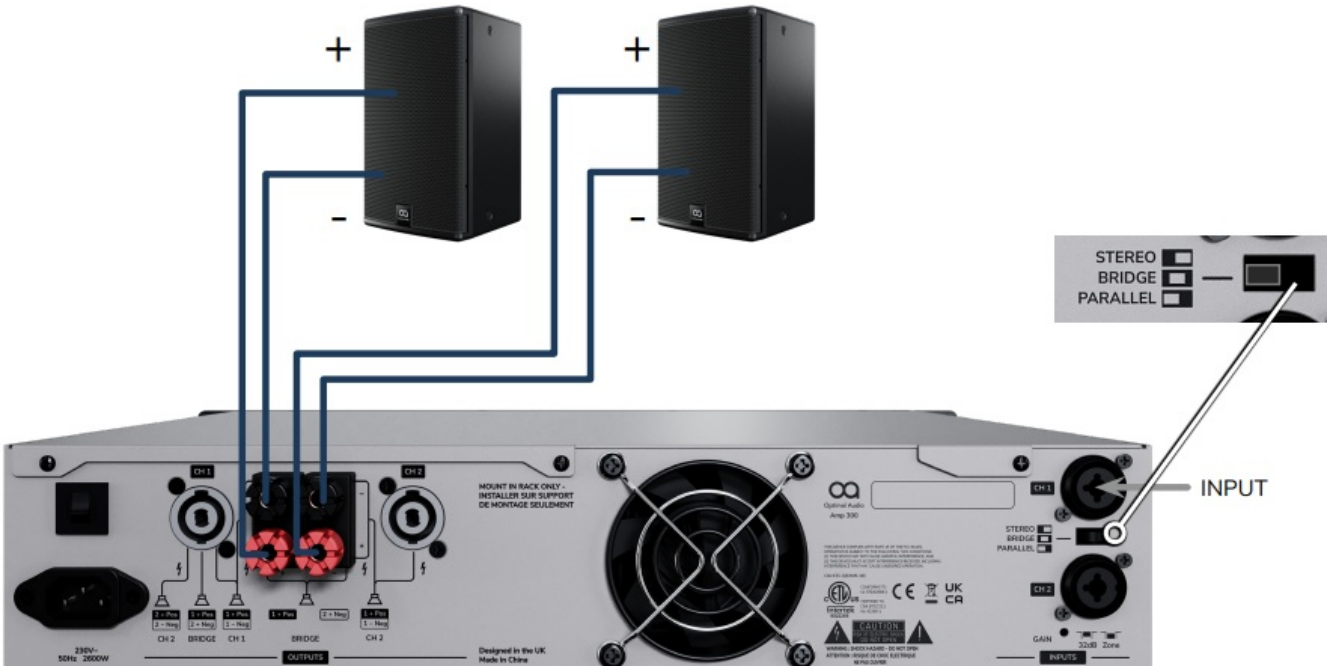
Parallel output using speakON® connectors

- Set Output Mode Switch to PARALLEL
- A signal sent to one input channel is output on both speaker output channels



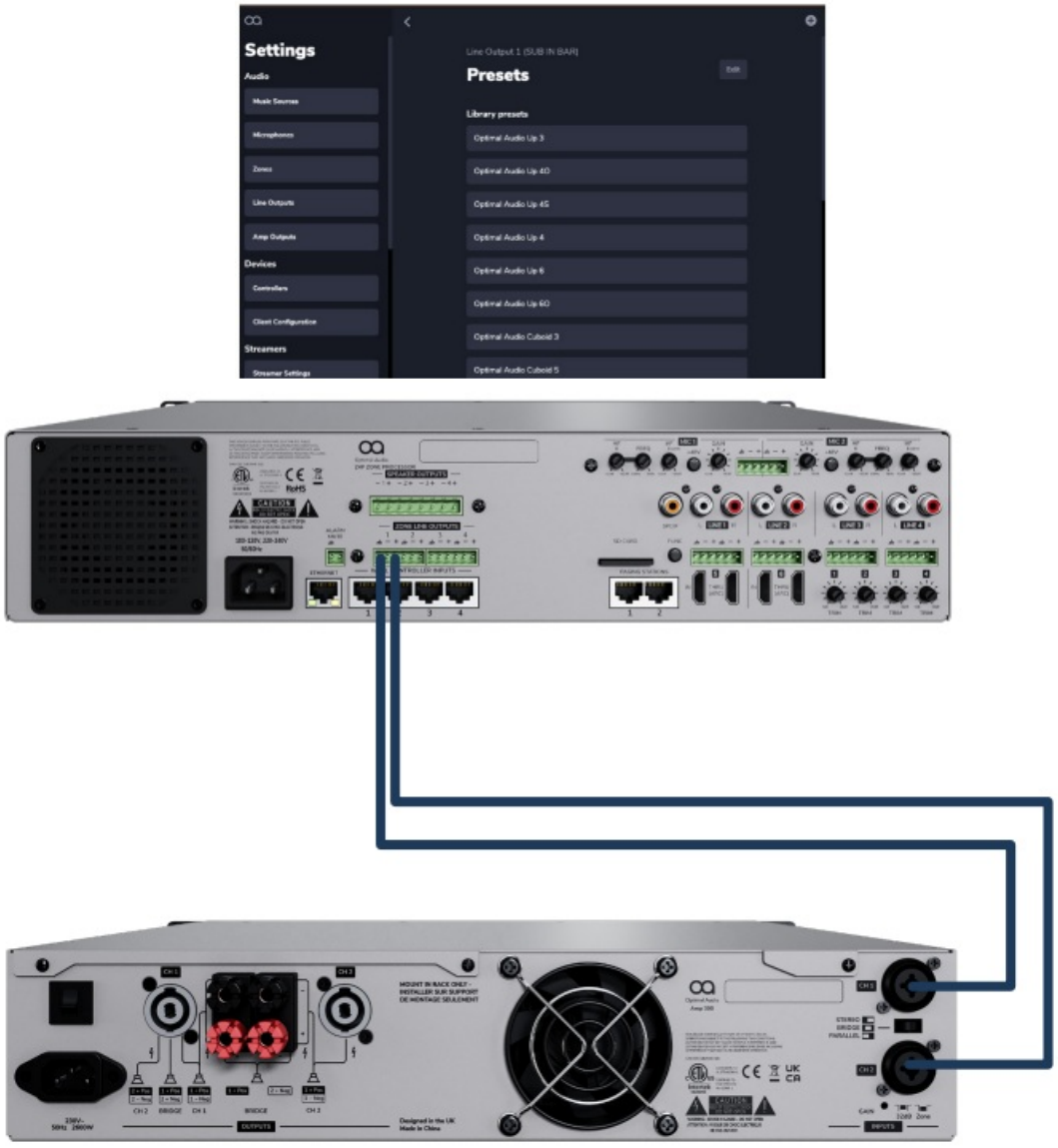
Parallel output using Binding Post connectors

- Set Output Mode Switch to PARALLEL
- Signal sent to one input channel is output on both speaker output channels



Zone & Amp – The perfect partners

- Connect Amp to Zone processor to access a full suite of Optimal Audio loudspeaker presets, limiters, and much more, easily configurable via Zone's onboard WebApp. Amp does not come with onboard DSP.



Maintenance

- Your Optimal Audio Amp should require minimal maintenance and prove to be a reliable workhorse in your sound system.
- If in doubt, contact your distributor, who will help you with whatever you need to keep your Optimal Audio system running at its best.

	Amp 100	**Amp 200**	**Amp 300**
TYPE	CLASS AB power amplifier	CLASS AB power amplifie r	CLASS AB power amplifier
POWER OUTPUT (4Ω-16Ω)	4Ω: 350W / 8Ω: 250W / 8Ω BRIDGED: 700W	4Ω: 700W / 8Ω: 400W / 8Ω BRIDGED: 1400W	4Ω: 1350W / 8Ω: 800W / 8Ω BRIDGED: 2700W
COOLING	Forced air cooling with a fa n	Forced air cooling with a f an	Forced air cooling with a fa n
ANALOGUE IN/LINK	Jack/XLR combo inputs	Jack/XLR combo inputs	Jack/XLR combo inputs
ANALOGUE INPUT IM PEDANCE	7.5kOhms unbalanced, 15 kOhms balanced	7.5kOhms unbalanced, 15kOhms balanced	7.5kOhms unbalanced, 15 kOhms balanced
MAXIMUM ANALOGU E INPUT LEVEL	+20dBu	+20dBu	+20dBu
AMPLIFIER OUTPUTS	Speakon / 4mm binding po sts	Speakon / 4mm binding p osts	Speakon / 4mm binding po sts
SIGNAL-TO-NOISE RA TIO	102dB	104dB	107dB
FREQUENCY RESPON SE	20-20k, +0, -0.5dB	20-20k, +0, -0.5dB	20-20k, +0, -0.5dB
TOTAL HARMONIC DI STORTION	<0.03% @ 1W	<0.03% @ 1W	<0.03% @ 1W
SLEW RATE	9.31V/us, 8 ohm load	9.31V/us, 8 ohm load	9.31V/us, 8 ohm load
DAMPING FACTOR	>400, 8ohm load	>400, 8ohm load	>400, 8ohm load
MAINS POWER INPUT	120V, 230V variants	120V, 230V variants	120V, 230V variants
MAINS CONNECTOR	IEC	IEC	IEC
DIMENSIONS	(W) 482mm x (H) 88mm x (D) 426mm (W) 18.97” x (H) 3.45” x (D) 16.77”	(W) 482mm x (H) 88mm x (D) 426mm (W) 18.97” x (H) 3.45” x (D) 16.77”	(W) 482mm x (H) 88mm x (D) 426mm (W) 18.97” x (H) 3.45” x (D) 16.77”
WEIGHT	14.76kg (32.54lbs)	17.06kg (37.61lbs)	20.09kg (44.29lbs)
ACCESSORIES (optio nal)	Rear rack support	Rear rack support	Rear rack support

- **WARNING!** DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.
- This symbol is intended to alert the user to the presence of important operating and maintenance (servicing)

instructions in the literature accompanying the appliance.

- **CAUTION** RISK OF ELECTRIC SHOCK DO NOT OPEN
- This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

THIS EQUIPMENT MUST BE EARTHED

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation opening. Install under the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. To reduce the risk of electrical shock, the power cord shall be connected to a main socket outlet with a protective earthing connection.
10. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for the replacement of the obsolete outlet.
11. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
12. Do not unplug the unit by pulling on the cord, use the plug.
13. Unplug this apparatus during lightning storms or when unused for long periods.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as a power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. The appliance coupler, or the AC Mains plug, is the AC mains disconnect device and shall remain readily accessible after installation.
16. The apparatus shall not be exposed to dripping or splashing and
    no objects filled with liquids, such as vases, shall be placed on the apparatus.
17. Do not remove any covers, loosen any fixings, or allow items to enter any aperture.

FCC Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, according to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used under the instructions, may cause harmful interference to radio communications.

- **Relax, It's Optimal Audio.**
- **Optimal Audio Group Ltd. Century Point, Halifax Road, Cressex Business Park, High Wycombe, Buckinghamshire, HP12 3SL**
- optimal-audio.co.uk

Documents / Resources

	Optimal Audio Amp 100 Performance Power Amplifier [pdf] User Guide Amp 100, Amp 200, Amp 300, Amp 100 Performance Power Amplifier, Amp 100, Performance Power Amplifier, Power Amplifier, Amplifier

References

- User Manual