episode EA-RSP-2D-200 Response Series DSP Amplifiers Instruction Manual

INSTALLATION MANUAL
Response Series DSP Amplifiers
EA-RSP-2D-200/EA-RSP-8D-100
EA-RSP-12D-100/EA-RSP-16D-100

REAL. LIFE. SOUND.

Contents

EA-RSP-2D-200 Response Series DSP Amplifiers

WELCOME TO EPISODE
The Response Series DSP amplifiers deliver high performance and reliable and robust amplification in a compact form factor—providing the perfect audio distribution solution for any size home.
SUPPORTED MODELS
EA-RSP-2D-200
EA-RSP-8D-100
EA-RSP-12D-100
EA-RSP-16D-100

PACKAGE CONTENTS

- Amplifier
- IEC power cable (1)
- Feet (4)
- Rack-mount ears (2) and screws (10)
- Phoenix-style speaker connectors (8-, 12-, and 16-channel models only)

FEATURES

- All-in-one design includes pre-amplification, digital signal processing, matrix switching (8-, 12-, and 16-channel models only) and amplification, in one chassis.
- 8-, 12-, and 16-channel models send multiple audio sources to as many as 4, 6, or 8 stereo audio zones, for reliable multi-room audio distribution.
- Cool-running Class D amplification: 8-, 12-, and 16-channel models provide 100WPC @4 ohm and the 2-channel model provides 200 WPC @4 ohm.
- Bridgeable outputs provide double the amplification for areas that require more power.
- Speaker outputs can be set to stereo or mono operation.
- Subwoofer RCA outputs included for 2.1 audio in every zone.
- Source loop outputs allow multiple amplifiers to be chained together for larger audio installations.

- Independent volume control with real-time volume and mute status for connected user interfaces.
- Independent input gain for each source, with optional anti-clipping feature, providing consistent levels when switching between sources.
- Each output provides powerful DSP volume and mixing capabilities including a 10-band parametric EQ, tone controls, high- and low- pass filters, audio delay, and a limiter.
- Wide assortment of DSP presets including genre-based, custom, and Episode speaker presets.
- Ethernet controlled, with a browser user interface, enabling easy setup of all system parameters.
- OvrC-enabled for remote management, monitoring, and alerts.
- IR input and output for optional infrared remote control.
- Standby mode saves energy by turning off amplifier channels when not in use.
- Voltage trigger input and output enable power control of the amplifier from devices with a voltage trigger output.
- Heat dissipation: Two fans (8-, 12-, and 16-channel models) or passive (2-channel model).

IMPORTANT SAFETY INSTRUCTIONS
Read the safety instructions before using this product.

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 dry cloth.
7. Do not block any ventilation openings. Install in accordance with 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. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with 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 replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as 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. This equipment uses AC power which can be subjected to electrical surges, typically lightning transients which are very destructive to customer terminal equipment connected to AC power sources. The warranty for this

equipment does not cover damage caused by electrical surge or lightning transients. To reduce the risk of this equipment becoming damaged it is suggested that the customer consider installing a surge arrestor.

16. To completely disconnect unit power from the AC mains, remove the power cord from the appliance coupler and/or turn off the circuit breaker. To reconnect power, turn on the circuit breaker following all safety instructions and guidelines. The circuit breaker shall remain readily accessible.

17. This product relies on the buildings installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 20A.

18. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in fire or electric shock.

19. This product can interfere with electrical equipment such as tape recorders, TV sets, radios, computers and microwave ovens if placed in close proximity.

This lightning flash with an arrow head symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to the person.

Caution: To reduce the risk of electric shock, do not remove cover (or back). No user serviceable parts inside. Refer servicing to qualified service personnel.

The exclamation point within the triangle is a warning sign alerting you of important instructions accompanying the product.
See marking on bottom / back of product

Warning! To reduce the risk of electrical shock, do not expose this apparatus to rain or moisture

AC voltage: This symbol indicates that the rated voltage marked with the symbol is AC voltage.

CAUTION: FOR CONTINUED PROTECTION AGAINST THE RISK OF FIRE REPLACE ONLY WITH SAME TYPE OF FUSE.

Warning: To reduce the risk of electric shock, do not remove cover (or back), no user-serviceable parts inside. Refer servicing to qualified service personnel.

Save these instructions

Compliance of this equipment is confirmed by the following label that is placed on the equipment:

REGULATORY INFORMATION

United States—FCC

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant 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 in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To satisfy FCC / IC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.
To ensure compliance, operations at closer than this distance is not recommended.
Limited by local law regulations, version for North America does not have region selection option.

Canada

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

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

Canada Warning Statement: CAN ICES-3 (B)/NMB-3(B)

This product meets the applicable Innovation, Science and Economic Development Canada technical specifications.

Recycling

Correct Disposal of Waste Electrical and Electronic Equipment (WEEE) by User in Private Households in

the EU.

This symbol on the product or accessories indicates that they must not be disposed of with your household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. Instead it is your responsibility to dispose of your waste equipment by handing it over to a designated WEEE collection point for recycling. The separate collection and recycling of your waste equipment will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

For more specific information about where you can take your equipment for recycling please contact your local city/council office, your local waste disposal service or the outlet where you purchased your product.

Statement of WEEE Compliance

Wirepath Home Systems, LLC is committed to meeting all requirements of the Waste Electrical and Electronic Equipment (WEEE) directive (2012/19/EC). The WEEE directive requires the manufacturers of electrical and electronic equipment who sell in EU countries: (1) label their equipment to notify customers that it needs to be recycled, and (2) provide a way for their products to be appropriately disposed of or recycled at the end of their product lifespan. For collection or recycling of Wirepath Home Systems, LLC products, please contact your local Wirepath Home Systems, LLC representative or dealer.

Statement of Commitment to the Environment

Wirepath Home Systems, LLC, understands that a commitment to the environment is essential for a healthy life and sustainable growth for future generations. We are committed to supporting the environmental standards, laws, and directives that have been put in place by various communities and countries that deal with concerns for the environment. This commitment is represented by combining technological innovation with sound environmental business decisions.

Europe Compliance

$C\epsilon$ Compliance of this equipment is confirmed by the following logo that is placed on the product ID label that is placed on the bottom of the equipment. The full text of the EU Declaration of Conformity (DoC) is available on the regulatory webpage.

Australia and New Zealand Compliance

Compliance of this equipment is confirmed by the following logo that is placed on the product ID label that is placed on the bottom of the equipment.

FRONT AND REAR PANEL DESCRIPTIONS
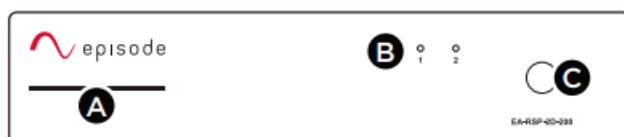
Front panel

EA-RSP-8D-100

EA-RSP-12D-100
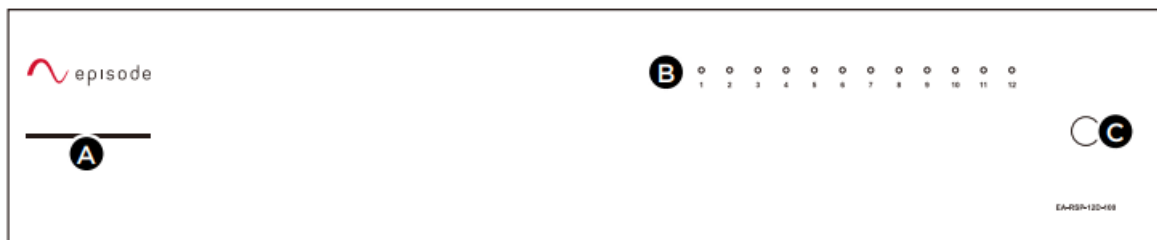
EA-RSP-16D-100

EA-RSP-2D-200

A. Power LED light bar: Blue LED light bar positioned on the left side of the front face panel. Blue LED is at its highest intensity on the left side of the light bar. LED functionality:

- Blue LED On = Amplifier is active or in Standby mode.
- Blue LED Off = Amplifier power is off.

B. Status LED: Bi-color LED to show system status. The LEDs on the front panel indicate the amplifier's operating state. Each channel has one bi-color LED for each zone. LED functionality:

- Blue LED (solid): Amplifier is on and functioning properly.
- Red LED (solid): Amplifier is on but is not functioning properly; check for possible short at speaker output.
- LED off (when power LED is blue): Amplifier channel is off.

C. Power button:

- The Power button is enabled by default but can be disabled using the browser user interface.
- Turn on the amplifier or put it into Standby mode with a press and release of the power button (momentary).
- Put the amplifier into deep Standby mode (<0.5W) with a press and hold of the power button (about six seconds).

Back panel

EA-RSP-16D-100
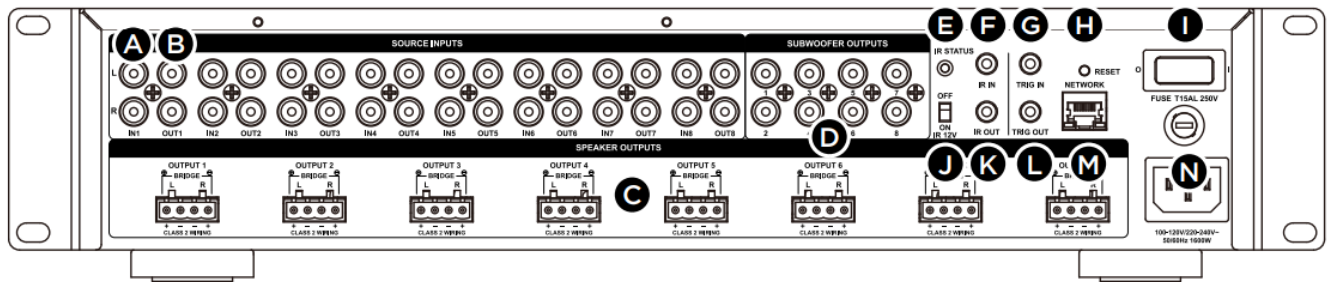
EA-RSP-2D-200
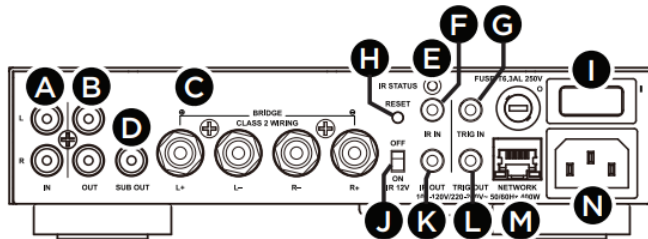
A. Analog inputs: Local line-level inputs, analog RCA unbalanced type.

B. Analog loop outputs: Each input channel has a corresponding stereo RCA analog loop output with a fixed volume level. The loop outputs pass unaltered audio from the input device and remain active when the amplifier is in standby mode or powered off.

C. Zone SPEAKER OUTPUTS: 4-position Phoenix-style connectors (8-, 12-, and 16-channel models) and 5-way binding posts (2-channel model) for speaker wiring connections.

D. SUBWOOFER OUTPUTS: Each zone of the amplifier has a subwoofer analog RCA unbalanced-type output. This output will be comprised of both a left and right channel summed together and includes a fixed low-pass filter, set at 200 Hz. Note: Low-pass filter settings from DSP presets will affect only the speaker outputs, not these outputs.

E. IR STATUS: LED illuminates when the IR signal is received.

F. IR IN: 3.5 mm stereo port. The adaptive IR input circuit supports 38 KHz carrier frequencies.

G. TRIG IN: 3.5 mm port, used to accept a voltage trigger (4.5V-12V) from an external device, to turn on the amplifier or put it into standby.

H. RESET: A recessed micro-controlled push button.
• Quick momentary press = reboot
• Hold RESET button for 5 seconds = Returns network settings to DHCP default
• Hold RESET button for 10+ seconds = Return the device to its factory default configuration.

I. Power switch

J. IR power ON/OFF: If on, +12V DC is applied to the IR IN jack, providing power for an external IR receiver.

Note: Do not turn on IR power if a direct connection to a control system is used.

K. IR OUT: 3.5 mm port, used for looping IR out to additional amplifiers or devices.

L. TRIG OUT: 3.5 mm port, used for looping voltage trigger out to additional amplifiers or devices.
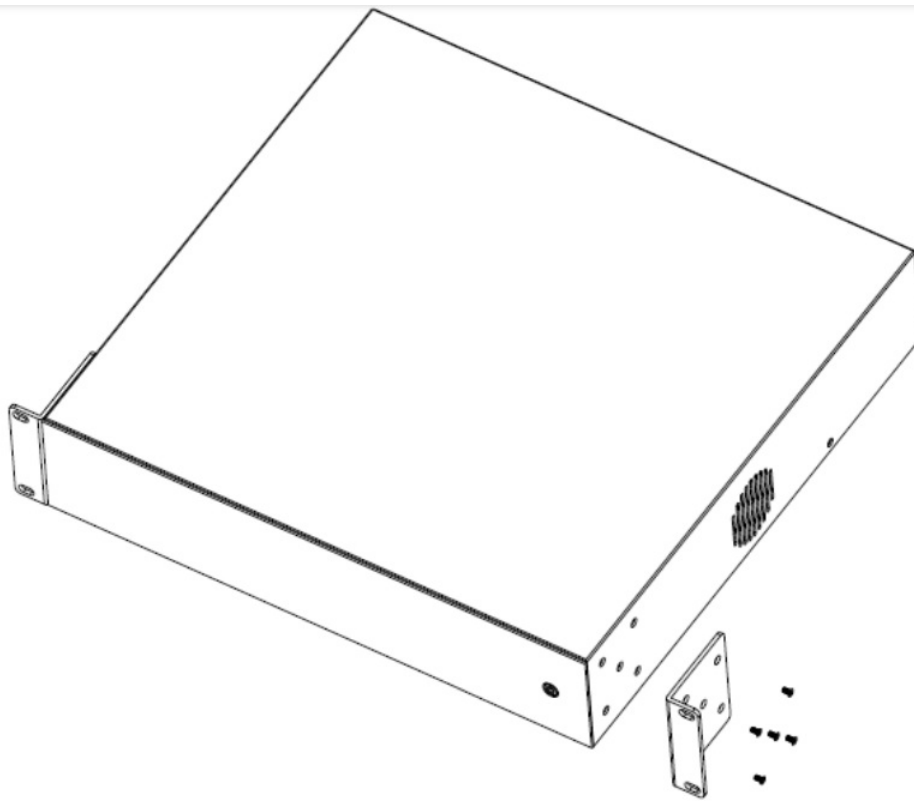
M. NETWORK: Standard RJ45 connector with LED indicator. 10/100 Ethernet. Port remains active when amp is in Standby mode.

N. Power connector: Use the supplied power cord to connect power.
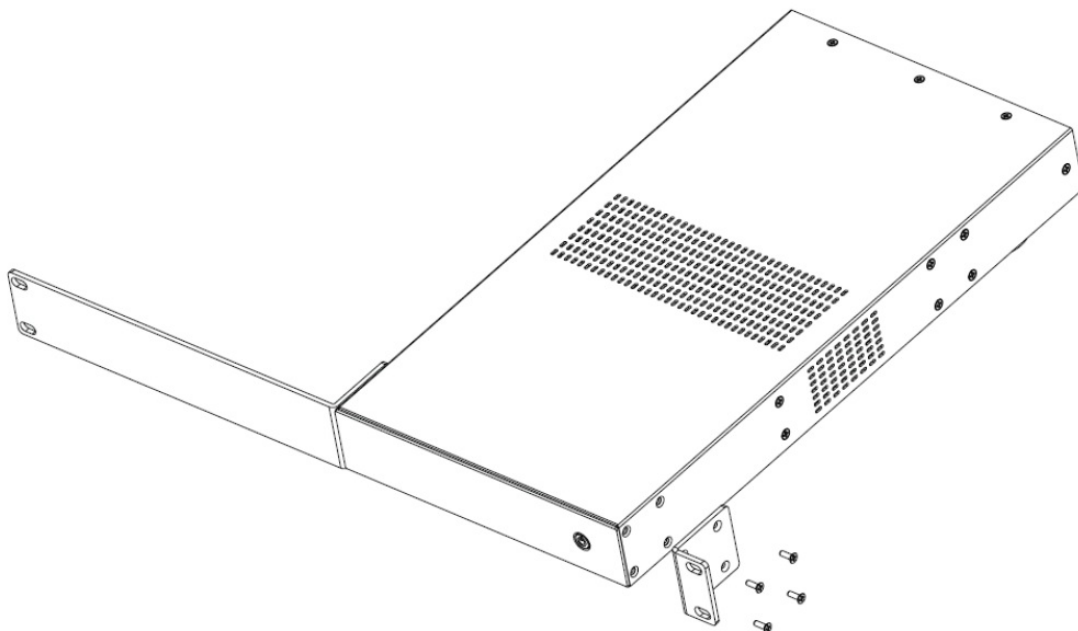
INSTALLING THE AMPLIFIER

The full-width amplifiers (8-, 12-, and 16-channel models) come with rack-mount ears and can be installed in a 2U rack space or on a shelf.

CAUTION! To prevent damage, maintain a 1U space below the amp for fresh air intake, and maintain adequate ventilation space to the sides of the amplifier. Do not place the amplifier directly on top of other components or cabinets unless the optional feet are affixed to the bottom. Do not place the side amplifier up against other components or cabinets. Doing either of these things will block ventilation openings.

The two-channel amplifier comes with rack-mount ears and can be installed in a 1U rack space.

CONNECTING THE AMPLIFIER

These amplifiers are designed to operate as a multi-room audio system, requiring physical audio connections as well as connections to a control system. This section describes how to set up the physical connections required for the amplifier and the devices associated with it.

WARNING! Connecting speaker wires or input cables while the amplifier is powered may cause electrical shock and could damage the amplifier. Unplug the amplifier and the devices associated with it.

CONNECTING NETWORK AND POWER

To connect the amplifier to ETHERNET and POWER ports:

1. Connect an Ethernet Cat5E/6 cable from a local network connection into the RJ45 port.
2. Connect the provided power cable to the amplifier's power input and to a power outlet.
3. When the power cable is connected, turn on the power switch. Initially, the amplifier turns on in Standby mode. Press the frontpanel power button to fully power up.
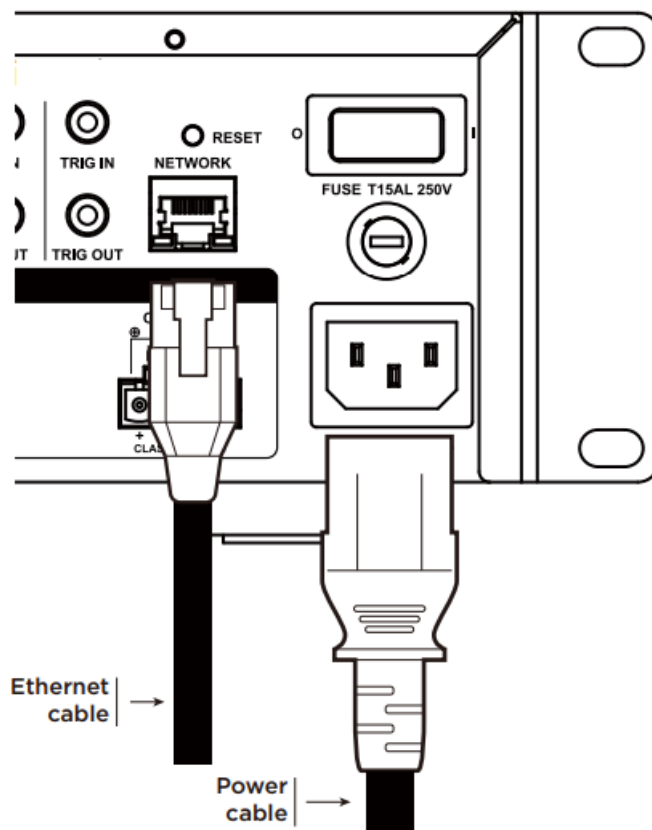

CONNECTING AUDIO INPUTS

Source input jacks accept stereo line-level audio connections. Each source input can be routed to any speaker output.
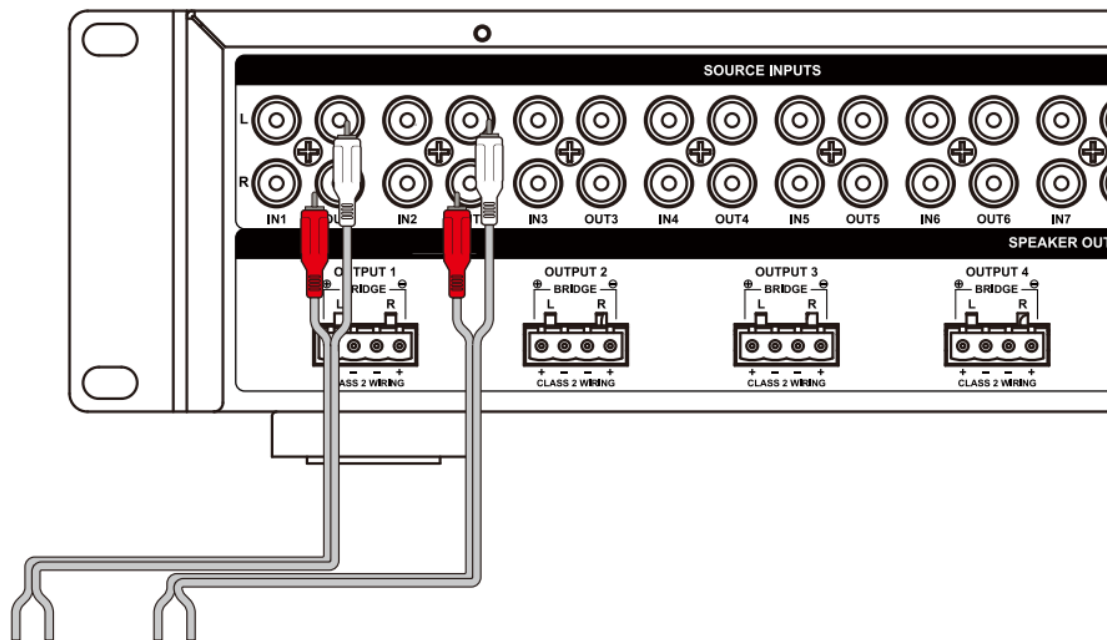
CONNECTING AUDIO OUTPUTS

Audio output jacks allow each source to be looped out to the audio inputs of an additional amplifier creating a larger audio system. A subwoofer output is joined with each speaker output, providing optional 2.1 audio for every audio zone.
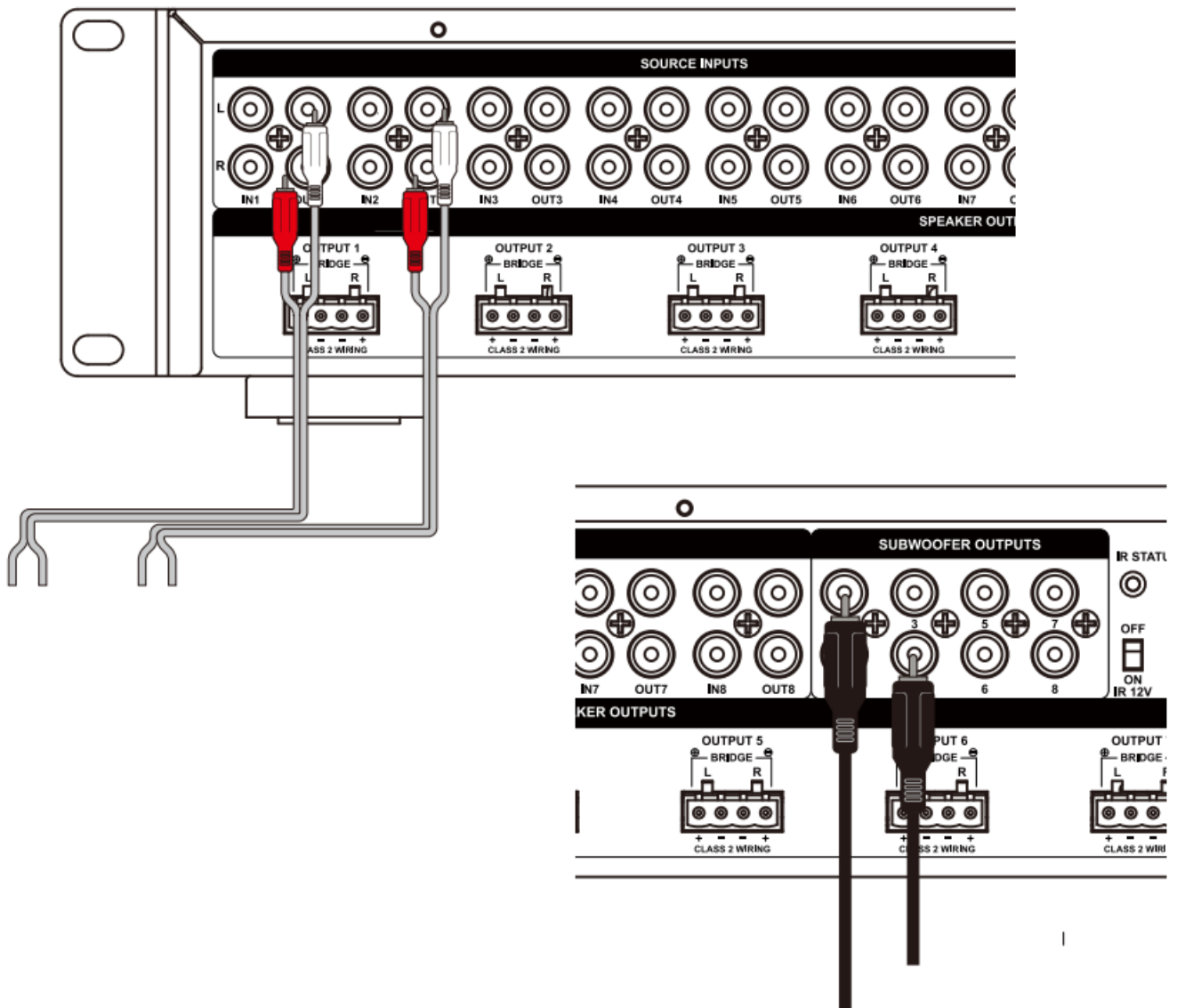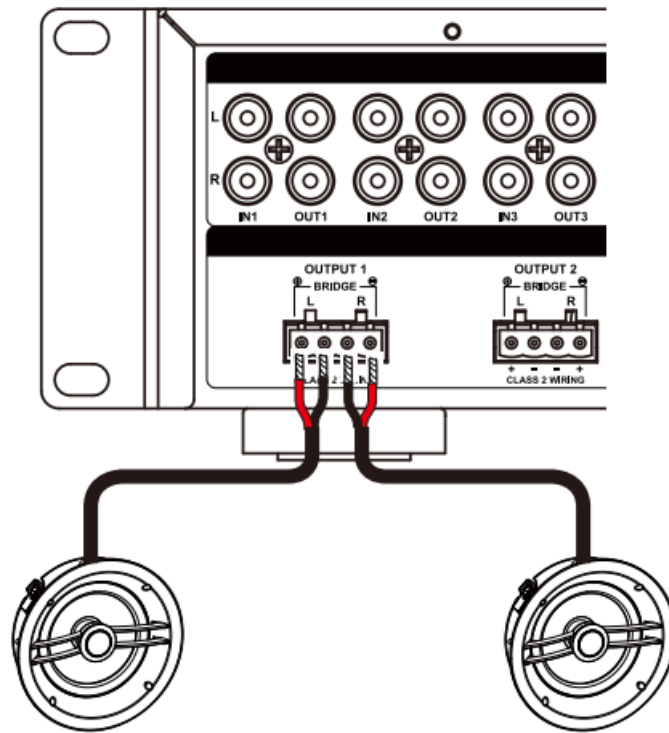
CONNECTING SPEAKERS

These amplifiers have Phoenix-style terminal blocks for speaker connections. Speakers can also be wired to bridge channels to increase the power available to the speakers.

CAUTION! Check the polarity of the speaker and wire before connecting to the amplifier.

To connect stereo speakers:

1. Power off the amplifier, then remove the output's terminal block.
2. Connect speaker wire to the terminal block and reinsert the terminal block into the amplifier.

   IMPORTANT! The common signal of these speaker outputs must not be connected together or to any other common signal.
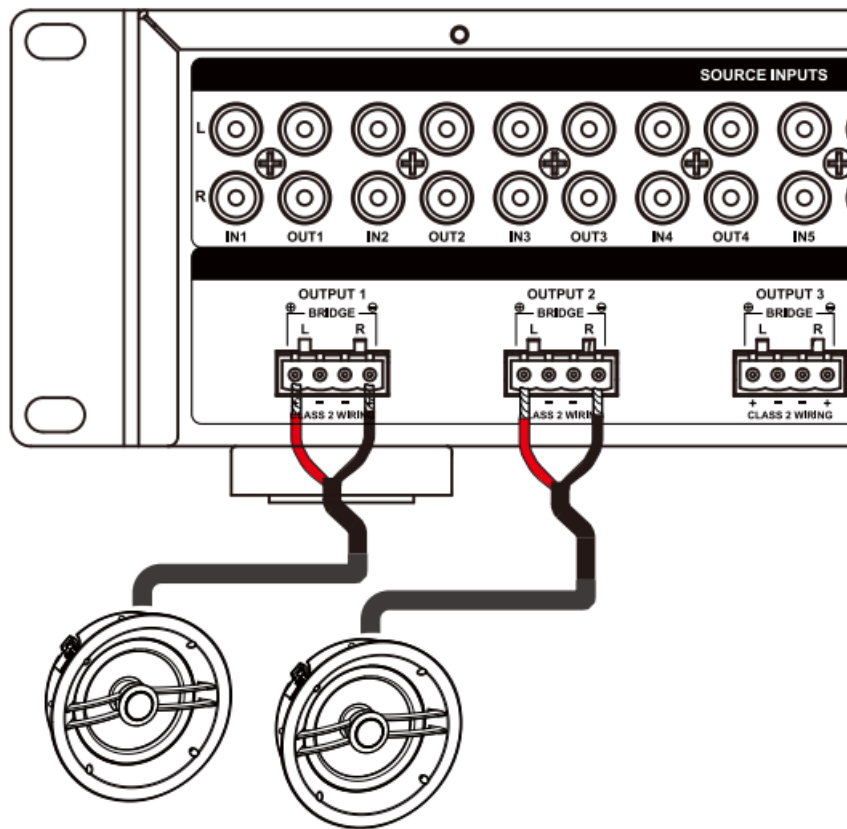
To connect bridged speakers:

1. Power off the amplifier, then remove the output's terminal block.
2. Connect the + terminal from the speaker to the + terminal of the left channel (L) on the amplifier.
3. Connect the – terminal from the speaker to the – terminal of the right channel (R) on the amplifier.
   The two terminals for a bridged pair of speakers are marked by + BRIDGE -.
   In bridge mode, both amplifier channels output the same audio. A mono source can be connected to a bridge input to create a bridged mono output. Or, a stereo source can be connected to two bridge inputs (using two zones) to create a bridged stereo output.
4. Set the Bridge Mode ON through the browser user interface.

USING THE BROWSER USER INTERFACE

1. Connect an Ethernet Cat5E/6 cable from a local network connection into the RJ45 port on the amplifier.
2. Power on the amplifier.
3. In a web browser on the same local network, enter the amplifier's IP address that was assigned by the router (such as 192.168.1.2). The login screen opens.
4. Enter the default (first-time only) password "episode" (the user name is also "episode"). The amplifier's configuration screen opens.
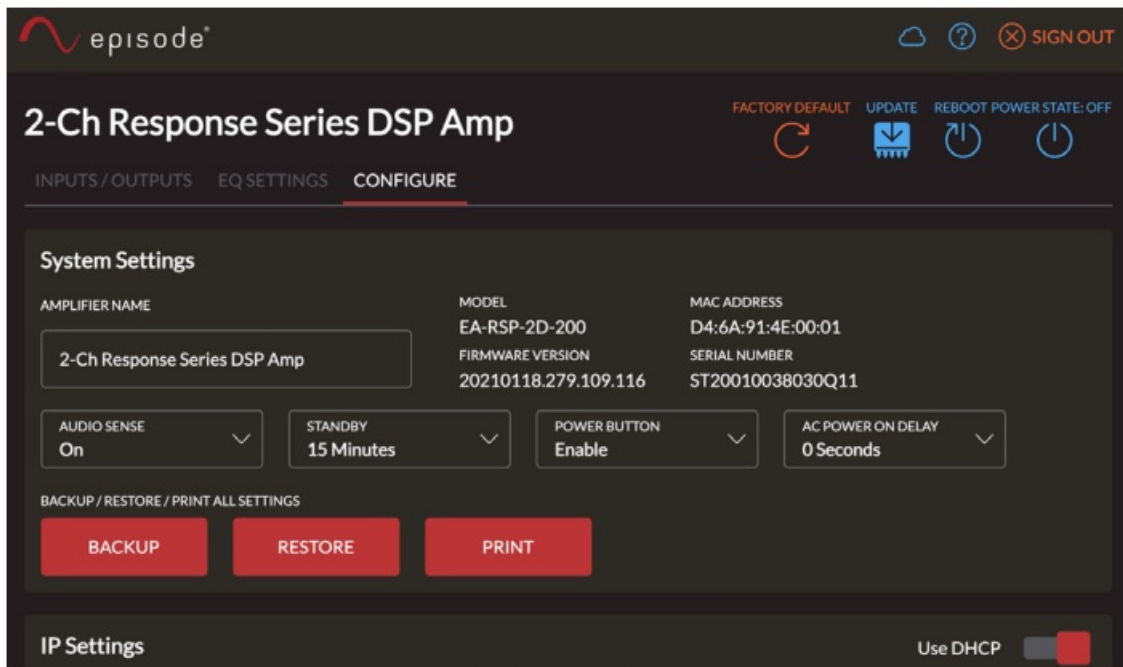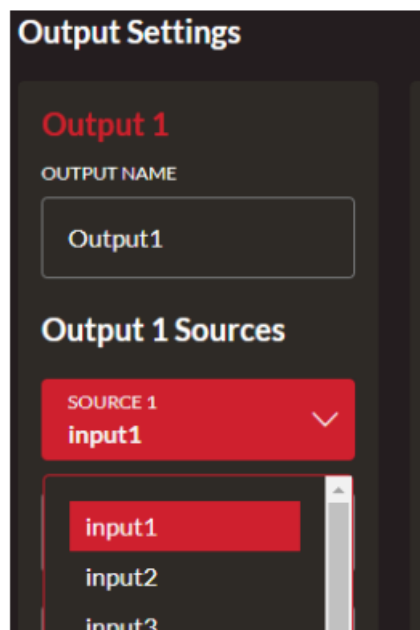
Note: The first time you access the interface, or after a reset to factory default settings, you must change the password.
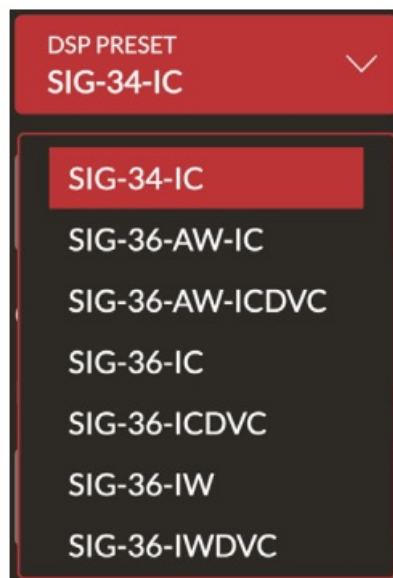
5. Set the zone output volume for mixing using the volume level trim bar.
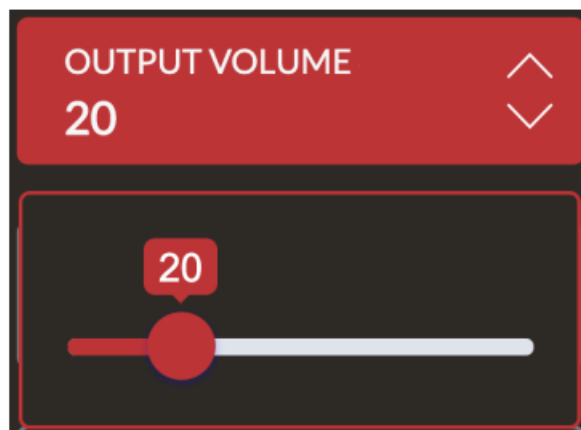
6. Use Source selection to switch input sources corresponding to output channels.

7. Select preset equalizer settings in the DSP PRESET list.

8. Edit presets in the DSP PRESET EDIT menu, including frequency response, limiter, EQ, crossover (high-pass & low-pass), and delay.

For in-depth information on DSP presets and the browser user interface, visit the Episode Response Series Amplifier product page on SnapAV.com and click the Videos tab.

SETTING UP AMPLIFIER POWER OPTIONS

Response Series DSP amplifiers can be powered on and off using IP or IR power commands, the front panel power button (enabled by default), audio sense (enabled by default), or with a connected voltage trigger. The front panel power button and audio sense can be disabled using the browser user interface.
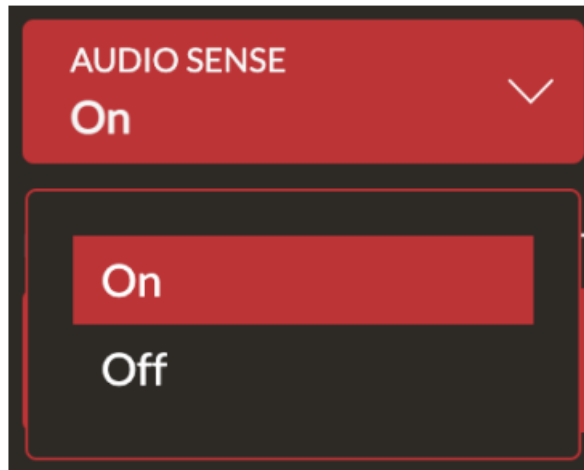
Audio Sense

Audio Sense (on by default) is ideal for installations where no control system is used and the method to turn the amplifier on and off is with the presence or absence of audio. If a control system is used, we recommend to turn

Audio Sense off, as the control system will issue on and off commands for the amplifier.

If Audio Sense is on, the amplifier automatically goes into standby mode when no audio is sensed for 15 minutes (default). However, standby time duration can be changed in the Standby field, explained below. If Audio Sense is off, the amplifier ignores the presense or absence of audio and turns off using other methods.
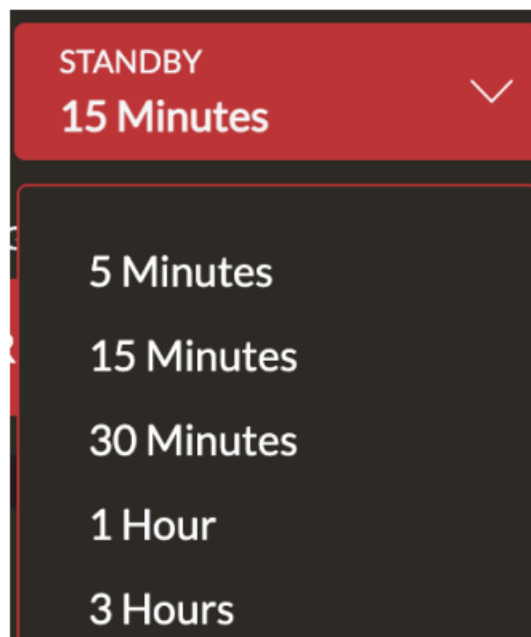

Standby

This setting determines the time it takes for the amplifier to go into Standby after no audio has been sensed. If Audio Sense is set to Off, this setting is hidden.

To set Standby:

1. Using the browser user interface, set Audio Sense to On.

2. Set Standby to one of five options: 5 minutes, 15 minutes, 30 minutes, 1 hour, or 3 hours.

Note: The Standby wakeup time varies based on the selected power mode and amplifier model. See the Specifications section at the end of this guide for details.

Power Button

The Power Button setting (on by default) determines whether the amplifier can be turned on or off using the front panel power button.
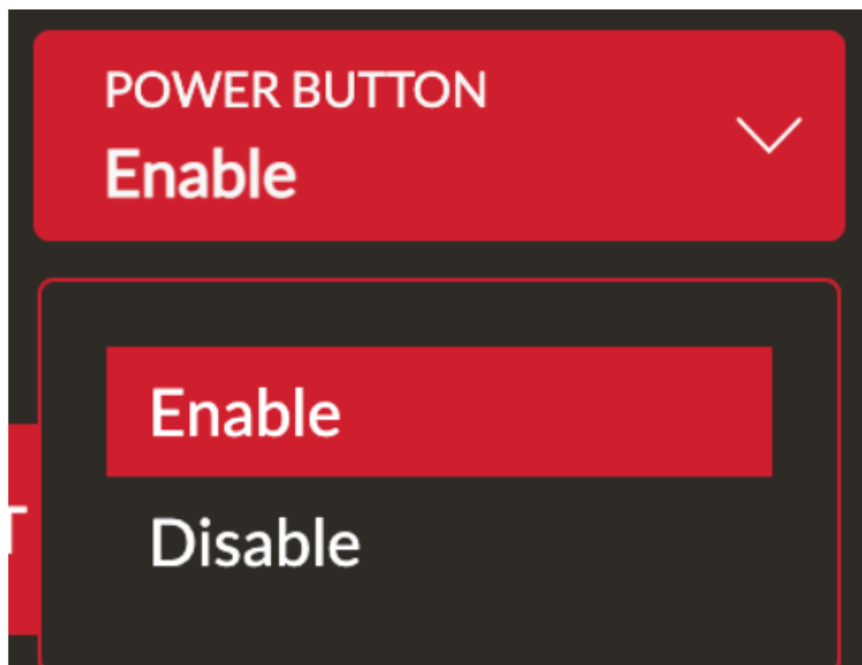
Voltage Trigger

Voltage Trigger control is typically ideal for installations where no control system is used and the desired method to turn the amplifier on and off is with the presence or absence of voltage.

When using Voltage Trigger, no changes need to be made within the browser user interface. When a voltage trigger cable is connected, only the presence or absence of voltage will turn the amplifier on or off. IP/IR power commands, audio sense, and the front panel power button will be ignored.

1. Connect the 4.5V-12V trigger cable from the trigger device to the TRIG IN port.
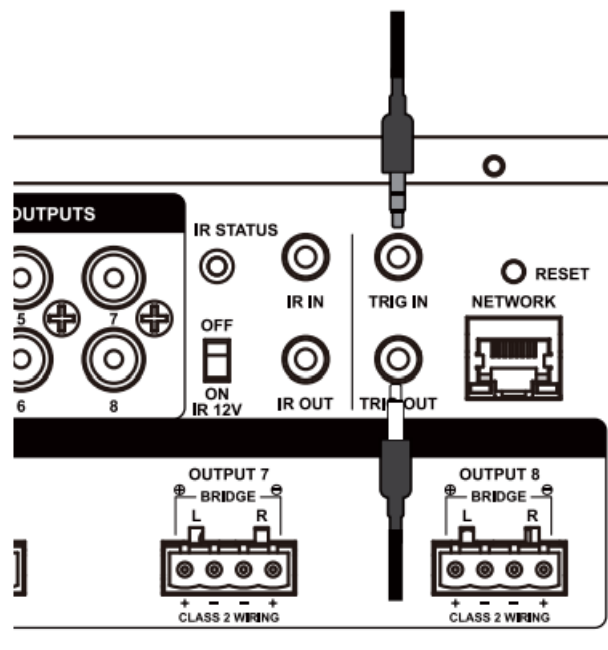
2. (Optional) Connect the TRIG OUT (12V DC) port to another amplifier to link their power controls.

SPECIFICATIONS

General

Specification	EA-RSP-8D-100	EA-RSP-12D-100	EA-RSP-16D-100	EA-RSP-2D-200
Analog inputs	Stereo RCA inputs			
	4 pair	6 pair	8 pair	1 pair
Analog loop outputs	Stereo RCA outputs			
	4 pair	6 pair	8 pair	1 pair
Speaker outputs	8 channels: 4 stereo or bridged outputs	12 channels: 6 stereo or bridged outputs	16 channels: 8 stereo or bridged outputs	2 channels: 1 stereo or bridged output
Trigger control	1 x 3.5 mm (in, 4.5V-12V DC), 1 x 3.5 mm (out,12V DC)			
Trigger voltage range (external)	4.5V-12V DC			
IR control	1 x 3.5 mm (in), 1 x 3.5 mm (out)			
IR power	+12V provides +12V DC to power an IR receiver unit, on/off selectable			
IR voltage range	2V-12V			

Audio specifications

Specification	EA-RSP-8D-100	EA-RSP-12D-100	EA-RSP-16D-100	EA-RSP-2D-200
Frequency response	20 Hz to 20 kHz, ±2 dB at 1/8 power			
Subwoofer output frequency band	20 Hz to 200 Hz, fixed – biquad low-pass filter at 200 Hz, 6 dB/octave slope			
Analog loop outputs	Output 2 Vrms at 10K ohm impedance load			
Power output @ 8Ω, 2 channels driven	2x50W 1 kHz			2 × 100W 1 kHz
Power output @ 4Ω, 2 channels driven	2x100W 1 kHz			2 × 200W 1 kHz
Power output @ 8Ω, all channels driven	8x50W 1 KHz	12x50W 1 kHz	16x50W 1 kHz	2 × 100W 1 kHz

Power output @ 4Ω, all channels driven	8x100W 1 KHz	12x85W 1 kHz	16x80W 1 kHz	2 × 200W 1 kHz
Power output bridged @ 8Ω	4x200W 1 KHz	6x170W 1 kHz	8x160W 1 kHz	1 × 400W 1 kHz
Minimum impedence	2 ohm			1 ohm
Auto sensing sensitivity	2.5 mVrms			
Input sensitivity	1 Vrms			
Input impedance	RCA analog input: 20kΩ			RCA analog input: 22kΩ
Input gain control	Compensate for wide range of sources input levels from 0.5 Vrms to 4 Vrms			
Total harmonic distortion @1W, 1 kHz	<0.05%			
Total harmonic distortion @50W, 1 kHz	1%			1% @ 100W
Signal-to-noise ratio	>95 dB A-weighted @ rated power			
Frequency response	20 Hz – 20 kHz < ± 2 dB			
Crosstalk	< -60 dB @ all channels			
Dynamic range: S/N ratio	> 100 dB A-weighted @ rated power			
THD	0.01% 1 kHz @1/8 rated power 4Ω or 8Ω			0.01% 1 kHz @1/8 rated power 4Ω or 8Ω

Power

Specification	EA-RSP-8D-100	EA-RSP-12D-100	EA-RSP-16D-100	EA-RSP-2D-200
AC mains power	100-120V / 200-240V, 50/60 Hz			
Power consumption	800W	1200W	1600W	200W
Standby power consumption	When Power Button is enabled: 1.4W with network connection, < 0.5W with no network connection When Audio Sense or Voltage Trigger is enabled: 4W			
Standby wakeup time (Power Button)	Up to 9 seconds	Up to 10 seconds	Up to 11 seconds	Up to 4 seconds
Standby wakeup time (Voltage Trigger / Audio Sense)	4 seconds (all models)			
Fuse rating	10A/250V	15A/250V		6.3A/250V
Power connection	NEMA 5/15P 3 prong to IEC 60320 C13, 1.8m length			

Thermal

Specification	EA-RSP-8D-100	EA-RSP-12D-100	EA-RSP-16D-100	EA-RSP-2D-200
Operation temperature	-10 to +50 °C (+14 to +122 °F) (indoor)			
Storage temperature	-30 to +70 °C (-22 to +158 °F)			
Relative humidity	20-90% RH			
Cooling method	Two fans mounted, 1 each in left and right sides			Fanless (passive) cooling

Miscellaneous

Specification	EA-RSP-8D-100	EA-RSP-12D-100	EA-RSP-16D-100	EA-RSP-2D-200
Front power LED	Blue LED light bar			
System status LED	Bi-color LED (8)	Bi-color LED (12)	Bi-color LED (16)	Bi-color LED (2)
Ethernet	1 x RJ45 with LED			
Factory restore button	Yes			
Dimensions (H × W × D)	483 × 424 × 89 mm (19.0 × 16.7 × 3.5 in.)			420 × 211 × 44.5 mm (16.5 × 8.3 × 1.8 in.)
Dimensions with feet (H × W × D)	483 × 424 × 101 mm (19.0 × 16.7 × 4.0 in.)			420 × 211 × 56 mm (16.5 × 8.3 × 2.2 in.)
Weight	8.5 kg (18.7 lb.)	9 kg (19.8 lb.)	9.5 kg (20.9 lb.)	3.6 kg (7.93 lb)
Shipping weight	24.0 kg (52.91 lb.)	25.0 kg (55.12 lb.)	26.0 (57.32 lb.)	16.61 kg (25.58 lb)
Regulatory certifications	UL, CE, FCC			
Topology	Class D			

WARRANTY

Warranty and legal notices
Find details of the product's Limited Warranty at **snapone.com/warranty** or request a paper copy from Customer Service at 866.424.4489. Find other legal resources, such as regulatory notices and patent information, at **snapone.com/legal**.

TECH SUPPORT
For chat and telephone, visit **tech.control4.com/s/contactsupport** • Email: **TechSupport@SnapOne.com**. Visit **tech.control4.com** for discussions, instructional videos, news, and more.

TECHNICAL SUPPORT
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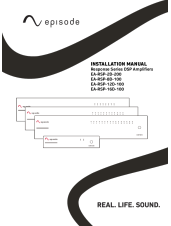
WARRANTY AND LEGAL NOTICES
Find details of the product's Limited Warranty at **snapone.com/legal**/ or request a paper copy from Customer Service at 866.424.4489. Find other legal resources, such as regulatory notices and patent and safety information, at **snapone.com/legal**/ .

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Documents / Resources

	episode EA-RSP-2D-200 Response Series DSP Amplifiers [pdf] Instruction Manual EA-RSP-2D-200, EA-RSP-8D-100, EA-RSP-12D-100, EA-RSP-16D-100, Response Series DSP Amplifiers, DSP Amplifiers, Response Series Amplifiers, Amplifiers

References

- **Welcome to Snap One**
- **Policies**
- **snp1.co/tc**
- **snp1.co/techsupport**
- **tech.control4.com**