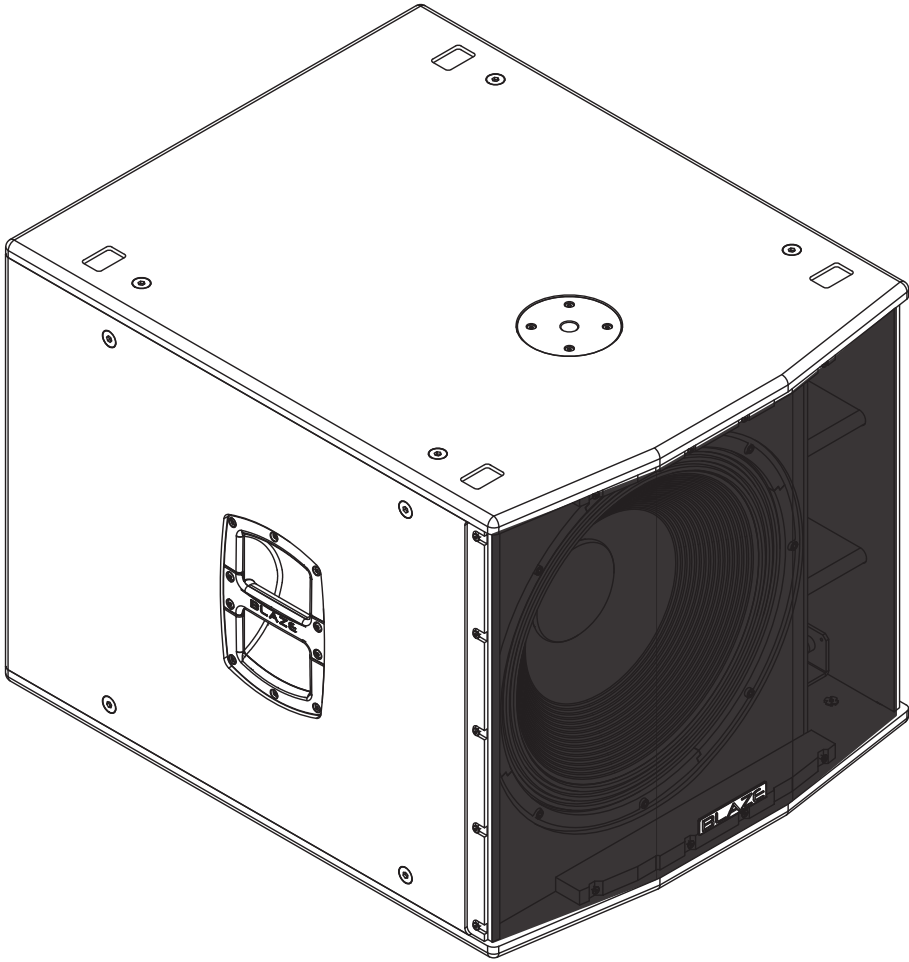


BLAZE



INSTALLATION MANUAL

BL18S Subwoofer

1. Introduction and Overview

1.1 Introduction

Thank you for purchasing the Blaze Audio BL18S subwoofer. The BL18S is a high power passive subwoofer designed for use in small to medium-sized venues that require versatile and scalable low frequency solutions. It is particularly suited for use with the Blaze Audio CBL528 constant directivity full range loudspeaker. The BL18S subwoofer is primarily intended to be installed free-standing.

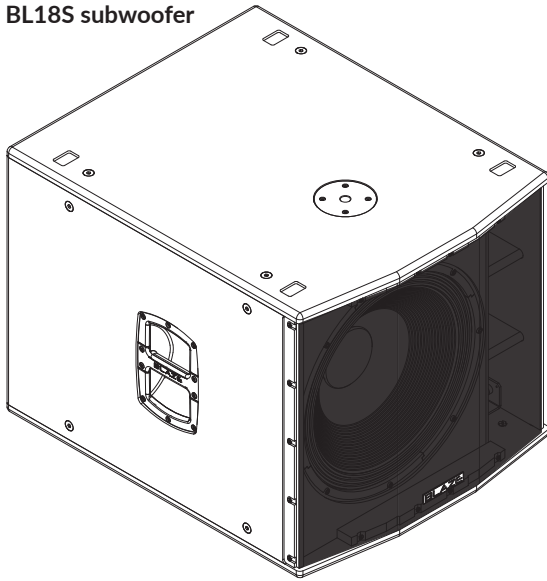
The BL18S is intended to be driven by a PowerZone™ Connect power amplifier (3004 or higher) with the appropriate speaker presets enabled. When installed in multiple arrays, BL18S subwoofers can be configured via amplifier speaker presets to provide either omnidirectional or cardioid directivity characteristics. The BL18S is supplied with casters that can optionally be fitted to its rear panel to ease manual handling and installation.

The BL18S subwoofer incorporate one 18 inch bass driver in a reflex loaded enclosure. It provides low frequency bandwidth to 31 Hz at -10 dB and maximum sound pressure levels of 136 dB at 1m.

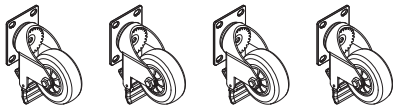
1.2 Subwoofer Pack Contents

Each package contains a single subwoofer, four optional casters and a document pack.

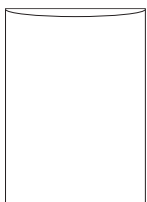
BL18S subwoofer



Casters (x4)



Document Pack



2. Applications and Deployment



2.1 Important Safety Instructions

WARNING: Failure to observe the following safety precautions may result in severe injury or death. Installations such as described in this guide should only be attempted by a trained professional.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Before installing or suspending a BL18S subwoofer, inspect all hardware, the enclosure, and associated equipment for damage. Missing, corroded, or deformed components, or components without correct load ratings, could significantly reduce the strength of the installation or placement and should immediately be repaired or replaced.
- Always make sure that the structure the loudspeaker is to be suspended from has been approved by the building or structural engineer and will support the weight of all the components of the speaker system including speakers, speaker cable, wire rope, etc.
- Consult a licensed professional structural engineer regarding physical equipment installation.
- Do not suspend loudspeakers directly over people.
- Use only hardware that is rated for the load conditions of the installation and that allows for a possible short-term, unexpected overload. Never exceed the rating of the hardware or equipment.
- Blaze Audio strongly recommends that the system be inspected at least once a year and logged. If any sign of weakness or damage is detected, remedial action should be taken immediately.
- All installation crew members must be trained for loudspeaker rigging and mounting.
- Make sure that all relevant health and safety regulations are known, are followed by the installation crew, and follow applicable local laws. Local government offices can help with this information.
- Suspended installations must be completed or supervised by a certified rigger.
- The system should be designed so that it is a static suspension. There should be no dynamic or shock loading.
- Personal protective equipment (hard hats, steel-toed footwear, safety glasses, etc.) should be always worn by the installation crew.
- If called for in the design, make sure all installation personnel are trained to work at height and have certifications for scissor lifts, theatrical hoists, etc.
- Make sure all lifting equipment (slings, span-sets, deck chain, scaffolding, etc.) is in good working order. Thoroughly inspect all components prior to use.
- Inspect all the components associated with the project for damage before assembly. Any parts with damage or suspected damage should not be used. Contact the component manufacturer for replacement parts if necessary.
- Keep a tidy workplace. Do not leave tools, rigging items, etc., on top of loudspeakers during installation. Loose items can fall and cause injury.
- Never leave the system unattended during the installation process. Make sure that the workspace is isolated from public access. No one should be allowed to pass beneath the loudspeakers during installation.
- Do not suspend any other components or loudspeakers other than the supported configurations described in this manual.
- If secondary steel safeties are required, they should be installed once the entire system is at operating height and before public access is allowed.

2. Applications and Deployment

2.2 Installation Options

The BL18S subwoofer is intended to be installed free-standing either singularly or in pairs arranged to provide cardioid directivity.

2.2.1 Free-standing Installation

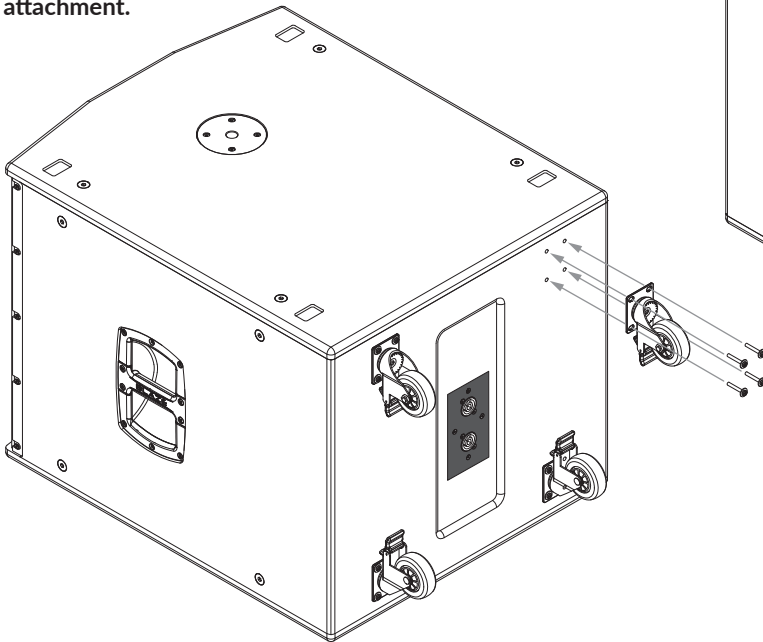
The BL18S subwoofer can be installed free-standing on floors or other structures able to support their weight.

Note: It is important to ensure that any structure on which a BL18S subwoofer is supported is able to bear its weight with an appropriate factor of safety. If there is any doubt in this respect, a specialist structural engineer must be consulted.

2.2.2 Caster Installation

The BL18S subwoofer is supplied with optional casters that can be fitted to its rear panel to aid manual handling and installation. To fit the casters remove the screws at the caster attachment points and replace them with the casters in place. The diagram below illustrates caster attachment.

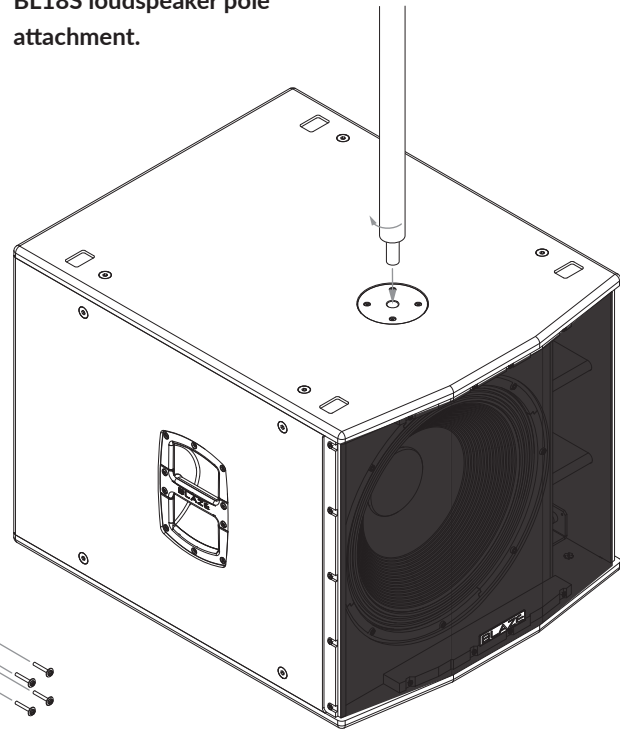
BL18S subwoofer caster attachment.



2.2.3 Loudspeaker Support Pole

The upper panel of the BL18S incorporates a tapped hole fitting in which a standard M20 threaded loudspeaker support pole can be inserted to provide a raised mounting location for a Blaze Audio CBL528 constant directivity loudspeaker. The diagram below illustrates loudspeaker support pole attachment.

BL18S loudspeaker pole attachment.



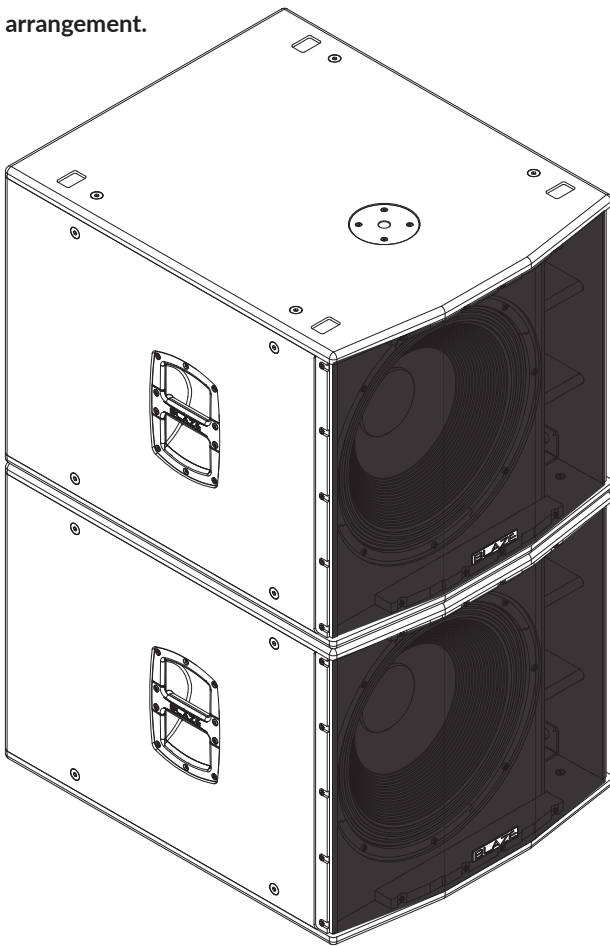
2. Applications and Deployment

2.2.4 Subwoofer Directivity Options

In combination with use of the appropriate Blaze PowerZone™ Connect amplifier Speaker Presets, pairs of BL18S subwoofers can be configured to offer omnidirectional or cardioid directivity.

For omnidirectional directivity, the two subwoofers should be positioned either adjacent to each other or one above the other with both facing in the same direction as illustrated in the following diagram. The amplifier outputs driving each subwoofer should have the same standard speaker preset enabled (BL18S).

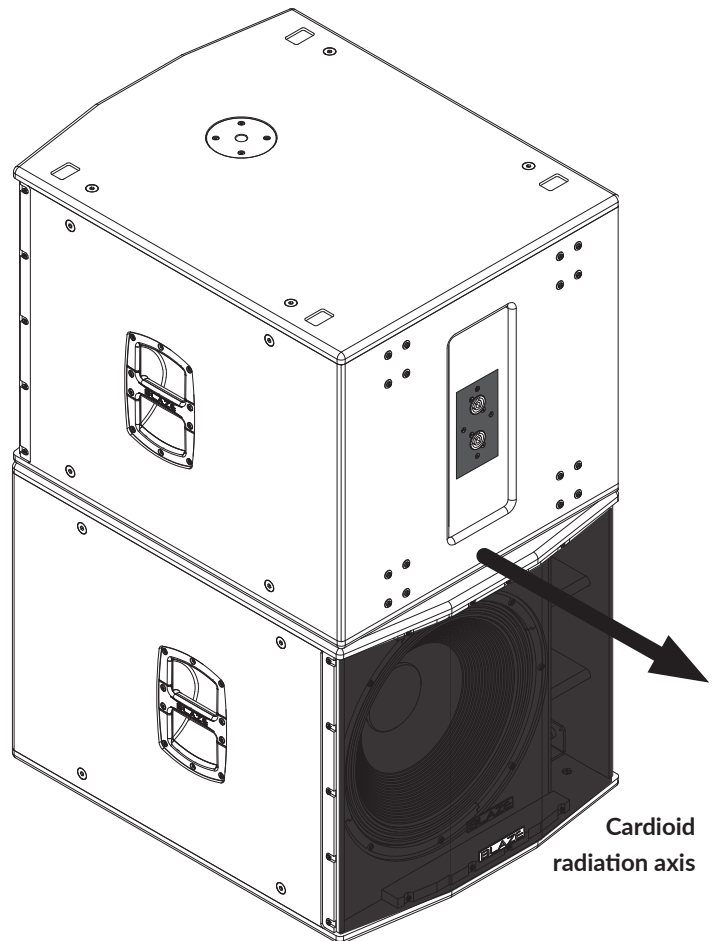
BL18S subwoofer pair in omnidirectional arrangement.



zcp).

For cardioid directivity, the two subwoofers should be positioned either adjacent to each other, or one above the other, with one facing forwards and one facing backwards as illustrated in the following diagram. The cardioid forward radiation lobe will coincide with the forward facing subwoofer. The amplifier output driving the forward facing subwoofer should have the standard speaker preset enabled (BL18S.zcp) and the amplifier output driving the backwards facing subwoofer should have the cardioid speaker preset enabled (BL18S-cardioid.zcp).

BL18S subwoofer pair in cardioid arrangement.



3. Connection and Amplification

3.1 BL18S Connections

The BL18S subwoofer is fitted with two Neutrik NL4 Speakon sockets on its rear panel. One socket is intended for connection to one or two bridged channels of a Blaze PowerZone™ Connect 3004 Amplifier and one socket provides an optional parallel output connection for a second subwoofer. The driving amplifier must be configured in Bridged Output (BTL) mode, as described in Section 3.2.2 of this manual, before it is connected to the BL18S .

Subwoofer input and output connections are described and illustrated below. Amplifier connections to the BL18S subwoofers are described and illustrated on the following pages.

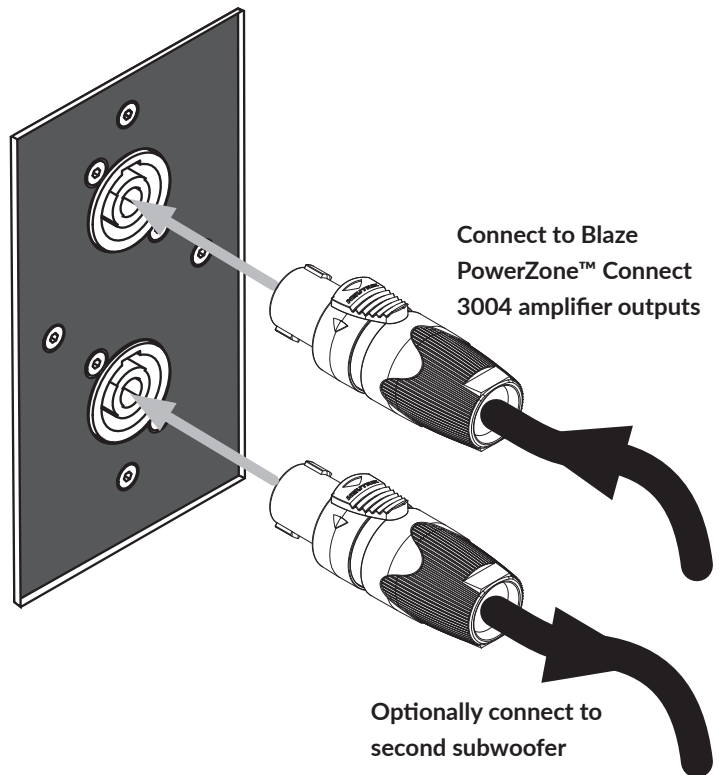
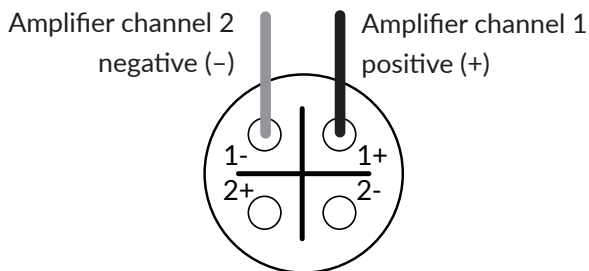
3.1.1 BL18S Connection Sockets

BL18S connection sockets are configured as indicated in the following table and diagrams. The two sockets are wired in parallel to enable the connection of a second subwoofer when increased output is required.

Note: A pair of parallel connected subwoofers must be the same model.

BL18S Socket Connections	
Signal Routing	Connection Pin
Amp Ch 1 (+)	1 (+)
Amp Ch 2 (-)	1 (-)

Neutrik Speakon NL4 Pins



When used to drive BL18S subwoofers, Blaze PowerZone™ Connect 3004 Amplifiers must be configured in Bridged Output mode. Do not connect an amplifier to a BL18S subwoofer before it is configured appropriately.

3. Connection and Amplification

3.1.2 BL18S Amplifier Connections

The BL18S subwoofer is designed to work with the Blaze PowerZone™ Connect 3004 (or higher) power amplifier. This amplifier incorporates the DSP equalisation facilities required to optimise the subwoofer acoustic performance, while also providing appropriate output power capabilities.

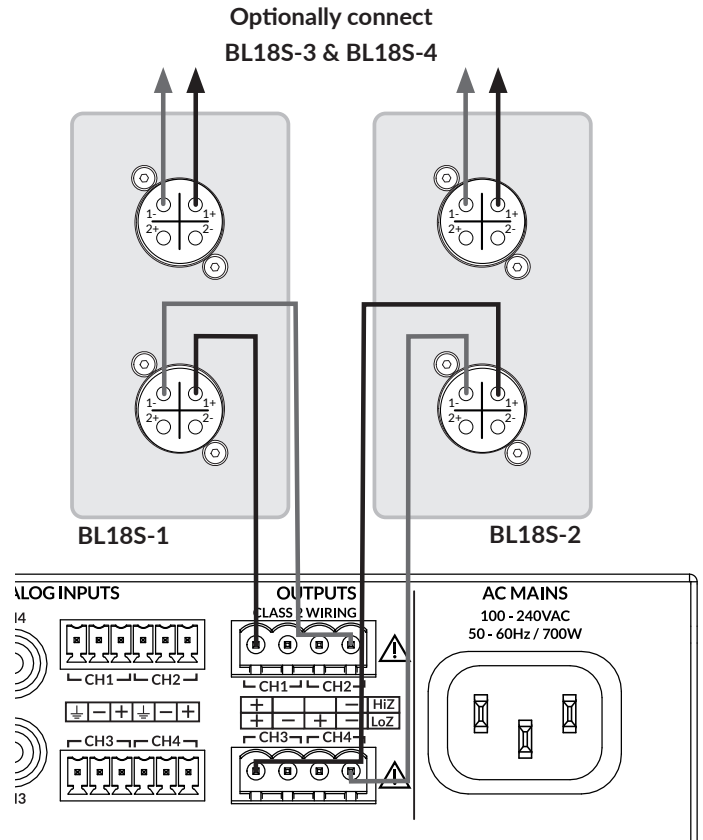
One PowerZone™ Connect 3004 power amplifier is able to drive up to four BL18S subwoofers. The subwoofers can be configured in standard, omnidirectional directivity mode or as cardioid pairs.

BL18S subwoofer and PowerZone™ Connect amplifier connections are illustrated in the diagram alongside.

Note: *The PowerZone™ Connect is a four output amplifier. When used with BL18S subwoofers it must be configured in Bridged (BTL) mode to provide two outputs.*

Note: *No more than four BL18S subwoofers must be connected to one amplifier.*

Note: *The Blaze PowerZone™ Connect Installation Manual, available for download from the Blaze website (blaze-audio.com), contains comprehensive amplifier installation and operational information.*



Two or four BL18S subwoofers connected to one Blaze PowerZone™ Connect 3004 amplifier.

- For omnidirectional directivity, both amplifier outputs require speaker preset BL18S.zcp enabled.
- For cardioid directivity, amplifier Output 1 (CH1 & CH2) requires speaker preset BL18S.zcp enabled, and amplifier output 2 (CH3 & CH4) requires speaker preset BL18S-cardioid.zcp enabled. The BL18S physical arrangement then requires cardioid pairs comprising BL18S-1 (forward facing) with BL18S-2 (backwards facing) and optionally BL18S-3 (forward facing) with BL18S-4 (backwards facing)



When used to drive BL18S subwoofers, Blaze PowerZone™ Connect 3004 Amplifiers must be configured in Bridged Output mode. Do not connect an amplifier to a BL18S subwoofer before it is configured appropriately.

3. Connection and Amplification

3.2 PowerZone™ Connect Amplifier Output Configuration and Speaker Presets

The Blaze PowerZone™ Connect amplifier incorporates mode configuration and loudspeaker management functions, accessed via a web page interface. Amplifier functional options can be configured, and preconfigured filter and equalization speaker presets can be enabled.

When used to drive the BL18S subwoofer, PowerZone™ Connect 3004 amplifiers must have the appropriate speaker presets enabled. Speaker presets for the BL18S subwoofer are available for download from the Blaze website and must be used for correct subwoofer performance. Standard and Cardioid speaker presets are available. The procedure for downloading and enabling PowerZone™ Connect 3004 speaker presets is described in the following sections.

3.2.1 PowerZone™ Control Network Connection

In order to install the BL18S speaker preset files, the PowerZone™ Connect amplifier requires either a wired or wireless connection via a TCP/IP network, or to connect via its own wireless access point, to a computer or mobile device from which speaker preset files can be uploaded. Internet access for speaker preset file download is also required.

Note: *The PowerZone™ Connect amplifier Quick Start Guide and Installation Manual documents cover network connection and can be downloaded from the Blaze website: <https://blaze-audio.com/support/#Manuals>*

3.2.2 Speaker Preset Download and Application

Follow the steps below to download and enable the BL18S speaker preset to the amplifier outputs.

Step 1. Using a computer or mobile device, visit the Blaze website (blaze-audio.com/products/speakers) and select the speaker preset files for download.

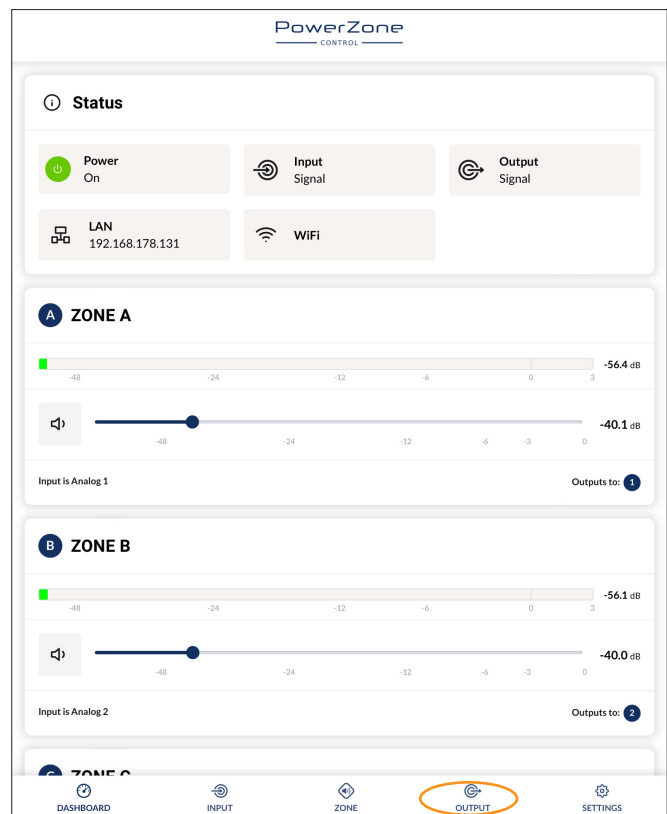
It is important that the correct speaker preset files are downloaded:

BL18S Standard - File name: **BL18S.zcp**

BL18S Cardioid - File name: **BL18S-cardioid.zcp**

NOTE: *The speaker preset files will download in a compressed .zip archive format. Expand the .zip archive and store the files in an appropriate location on the download device.*

Step 2. On the computer or mobile device, navigate to the PowerZone™ Connect 3004 amplifier web interface and select the **Output** tab.



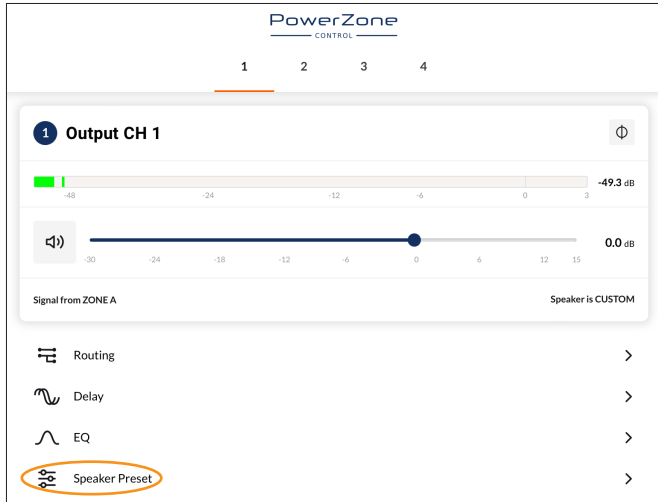
NOTE: *The exact appearance and layout of the amplifier web interface may vary slightly depending on the device and browser in use.*



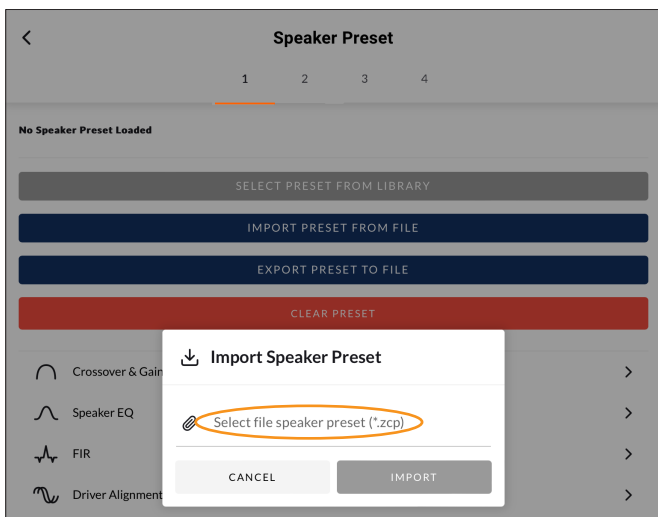
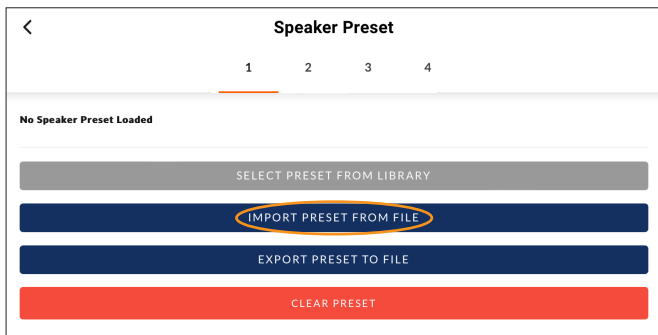
When used to drive BL18S subwoofers, Blaze PowerZone™ Connect 3004 Amplifiers must be configured in Bridged Output mode. Do not connect an amplifier to a BL18S subwoofer before it is configured appropriately.

3. Connection and Amplification

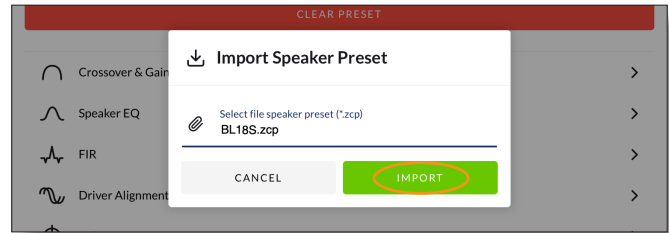
Step 3. From the **Output** page select the required **Output** tab at the top of the display and then select the **Speaker Preset** menu option.



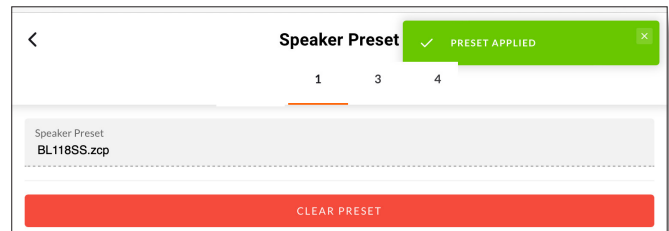
Step 4. Selecting **IMPORT PRESET FROM FILE** will open the **Speaker Preset Import** pop-up box that provides the option to choose a preset file.



Step 5. Browse the download device for the files downloaded in **Step 1** and select the appropriate file. It will be named : **BL18S.zcp** or **BL18S-cardioid.zcp**, Select **IMPORT**.



Step 6. The speaker preset file will now be applied to amplifier **Output 1**.



Step 7. With the appropriate speaker preset file applied to amplifier Output 1, repeat **Step 2** to **Step 6** for Output 3 if required.

NOTE: *BL18S speaker presets configure PowerZone Connect 3004 amplifiers in bridged output mode, so enabling the presets will reduce the number of available output channels.*



IMPORTANT: It is vital for the correct operation of BL18S subwoofers that the correct speaker preset file is enabled.

4. Technical Information

4. BL18S Specifications

4.1.1 Technical Specifications	
Frequency Response (-3 dB)*	36 Hz - 150 Hz
Frequency Range (-10 dB)*	31 Hz - 150 Hz
Recommended Low-Pass Filter	90 Hz
Nominal Directivity (-6dB)	Omnidirectional or cardioid
Long Term Power Handling Capacity**	1200 W AES, 2400 W (4800 W peak)
Impedance	8 Ω
Maximum SPL @ 1m***	136 dB
Transducer Components	1 x 18 inch, 4" voice-coil

*Frequency response and range measured on-axis with anechoic environment.

**Power handling tested using pink noise filtered to meet IEC 268-5, 6 dB crest factor, 100 hours, with recommended EQ.

***Peak level measured at 1m under free field conditions using 10 dB crest factor pink noise with specified ([Blaze Audio] preset) and corresponding EQ settings.

4.1.2 Physical Characteristics	
Enclosure	Baltic birch plywood, engineered plastics.
Finish	Two-part spray catalyzed Polyurea coating on plywood.
Grille	14-gauge (2 mm) perforated steel, powder-coated finish, black.
Environmental	Indoor use only.
Connectors / Bi-Amp	Two (2) parallel-wired NL4 Neutrik® Speakon® connectors.
Suspension / Mounting	Freestanding, M20 threaded pole mount.
Dimensions (HxWxD)	22.5" x 24.5" x 30" 571.5 mm x 622.3 mm x 762 mm
Net Weight	131.5 lbs / 59,65 kg
Shipping Weight	147 lbs / 66,69 kg
Color Variants	Black
Product Version	BL18S

4. Technical Information

4.2 BL18S Dimensions

