

DALI

# DALI PHANTOM CI AMP-4125 DSP

INSTALLATION GUIDE  
USER MANUAL



# TECHNICAL AND SAFETY NOTICES

Please read the following important technical, safety and environmental notices before installing and using your amplifier.

## TECHNICAL NOTICES

All reasonable design and engineering steps have been taken to ensure that this amplifier always performs satisfactorily in its intended application and environment and will provide appropriate levels of support to ensure that all reasonable customer needs and expectations are met. Such support however is contingent on the following provisions.

Specific warranty terms are the responsibility of the amplifier re-seller.

## SAFETY AND ENVIRONMENTAL NOTICES

**Note:** The intent of the lightning flash with arrowhead symbol in a triangle is 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 humans.

**Note:** The intent of the exclamation point within an equilateral triangle is to alert the user to the presence of important safety, and operating and maintenance instructions in this manual.

### WARNING! TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.



**Ambient Temperature Note:** If this equipment is operated in a confined or multiple rack installation, the internal ambient operating temperature may exceed the external ambient temperature. It is important to ensure in these circumstances that the published maximum operating temperature for the equipment is not exceeded.



**Reduced Air Flow:** Ensure that rack or other closed installation does not restrict the cooling airflow required for safe and reliable operation of the equipment.



**Class 2 Wiring:** Exposed high voltage on the loudspeaker terminals. Touching the uninsulated terminals or wiring may result in an unpleasant sensation.

## 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. Do not submerge the equipment in water or liquids.
7. Do not use any aerosol spray, cleaner, disinfectant or fumigant on, near or into the equipment.
8. Clean only with a dry cloth.
9. Do not block any ventilation opening. Install in accordance with the manufacturer's instructions.
10. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
11. To reduce the risk of electrical shock, the power cord shall be connected to a mains socket outlet with a protective earthing connection.
12. 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 are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
13. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
14. Do not unplug the unit by pulling on the cord, use the plug.
15. Only use attachments/accessories specified by the manufacturer.
16. Unplug this apparatus during lightning storms or when unused for long periods of time.
17. 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.
18. The appliance coupler, or the AC Mains plug, is the AC mains disconnect device and shall remain readily accessible after installation.
19. Adhere to all applicable, local codes.
20. Consult a licensed, professional when any doubt or questions arise regarding a physical equipment installation.

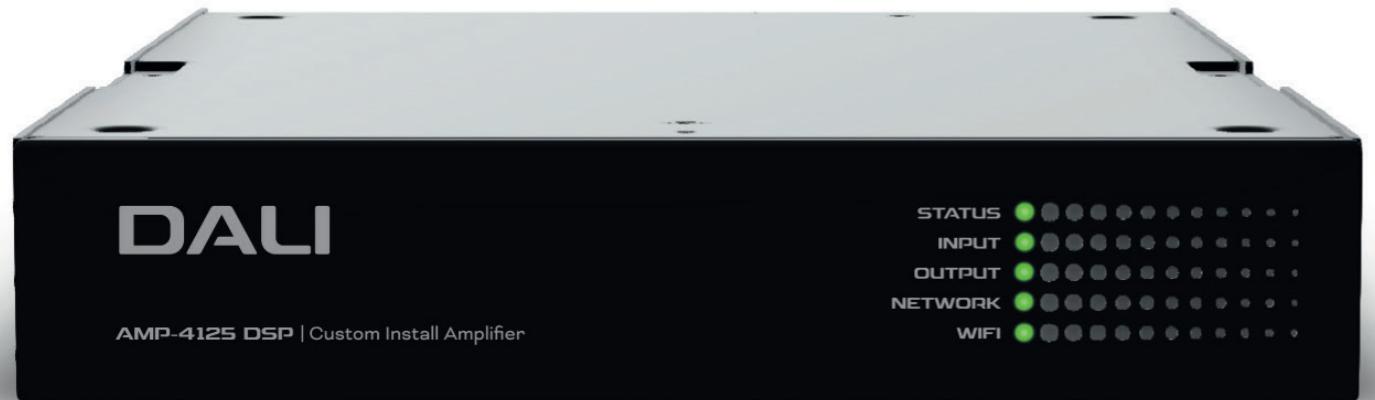
## ENVIRONMENTAL STATEMENT



This product complies with international directives, including but not limited to the Restriction of Hazardous Substances (RoHS) in electrical and electronic equipment, the Registration, Evaluation, Authorization and restriction of Chemicals (REACH) and the disposal of Waste Electrical and Electronic Equipment (WEEE). Consult your local waste disposal authority for guidance on how properly to recycle or dispose of this product.

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## 1. INTRODUCTION

The DALI PHANTOM CI AMP-4125 DSP amplifier is designed to provide high performance and configurable audio power amplification for DALI PHANTOM custom install loudspeakers. It can however also be used to power conventional DALI passive hi-fi loudspeakers.

This manual covers the features, installation and functions of the AMP-4125 DSP. Please read the manual fully before installing and using the amplifier. If you have any questions regarding amplifier configuration, installation or operation please contact your DALI retailer or installer, or DALI directly via the support pages at [dali-loudspeakers.com](http://dali-loudspeakers.com).

## 2. OVERVIEW

The AMP-4125 DSP is a half rack width, 1U format four channel power amplifier rated at 125 Watts per channel. It is able to power up to eight mixed DALI loudspeakers simultaneously. The AMP-4125 DSP provides four analogue inputs and one stereo S/PDIF digital input.

The AMP-4125 DSP is comprehensively equipped with DSP (digital signal processing) functions that enable it to be configured via the DALI PHANTOM CI AMP CONFIGURATOR and with specific presets designed for individual DALI loudspeaker models.

The AMP-4125 DSP is by default configured without any loudspeaker presets assigned to output channels, however it incorporates a locally stored library of DALI loudspeaker presets. Installing and assigning presets is covered in **Section 5** of this manual. Additional or updated DALI loudspeaker presets may also be downloaded from: [dali-loudspeakers.com](http://dali-loudspeakers.com)

### NOTE:

The AMP-4125 DSP amplifier can be used without any loudspeaker presets installed and assigned. In this case it will behave as a conventional four output power amplifier.

## 2.1 DALI PHANTOM CI AMP CONFIGURATOR

The DALI PHANTOM CI AMP-4125 DSP provides comprehensive DSP based configuration menus accessible via the DALI PHANTOM CI AMP CONFIGURATOR interface.

Access to the AMP CONFIGURATOR interface is made through wired (Ethernet) or wireless (WiFi) network connection to the AMP-4125 DSP either directly from a configuration device such as a smart phone or computer, or via a network router or switch.

The AMP CONFIGURATOR covers Loudspeaker presets, Inputs, Outputs and General Settings and is described in **Sections 5 and 8** of this manual. Connecting the AMP-4125 DSP to a wired or wireless configuration device or network is described in **Section 5.2**.



## 2.2 AMPLIFIER CONNECTIONS AND POWER SWITCHING

AMP-4125 DSP signal input and output connections are accomplished via RCA Phono and Euroblock style connectors. A GPIO (General Purpose In/Out) Euroblock connector enables some amplifier functions to be controlled externally, and wireless or RJ45 socket Ethernet network connection options are also provided. Cable connectors and connections are described and illustrated in **Section 6** of this manual. Connection and use of the GPIO socket is described in **Section 5.5**.

AMP-4125 DSP amplifier incorporates a front panel mounted power button. Press the button once to switch the amplifier on or off. Amplifier power management behaviour can be configured via the AMP CONFIGURATOR interface [**Settings**] menu described in **Section 5** of this manual.

## 2.3 FIRMWARE

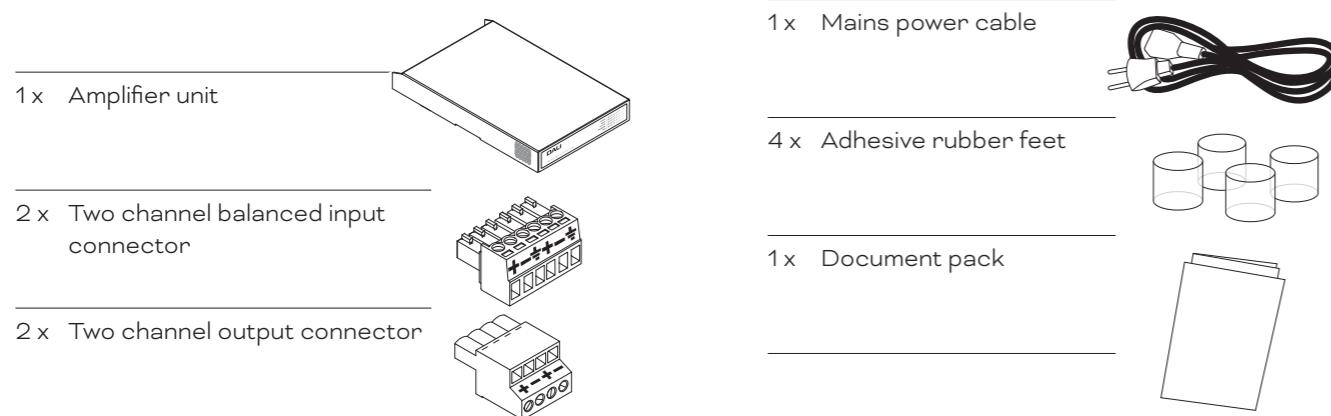
This manual describes the features, functions and user interface of the AMP-4125 DSP amplifier running **Firmware Version 1.8.x**.

**It is strongly recommended that the firmware version installed in the amplifier in use is checked initially, and regularly thereafter. If updated firmware is available, the amplifier should be updated as a priority.**

The firmware installed in the amplifier can be identified and updated by selecting the [**Device**] option in the AMP CONFIGURATOR interface [**Settings**] menu. Firmware versions can be checked, and firmware downloaded, from the website: [dali-loudspeakers.com](http://dali-loudspeakers.com)

### 3. PACK CONTENTS

The AMP-4125 DSP amplifier is shipped in a cardboard carton containing the amplifier unit, accessories, a mains cable appropriate for the sales territory, and a document pack. The full contents is illustrated below.

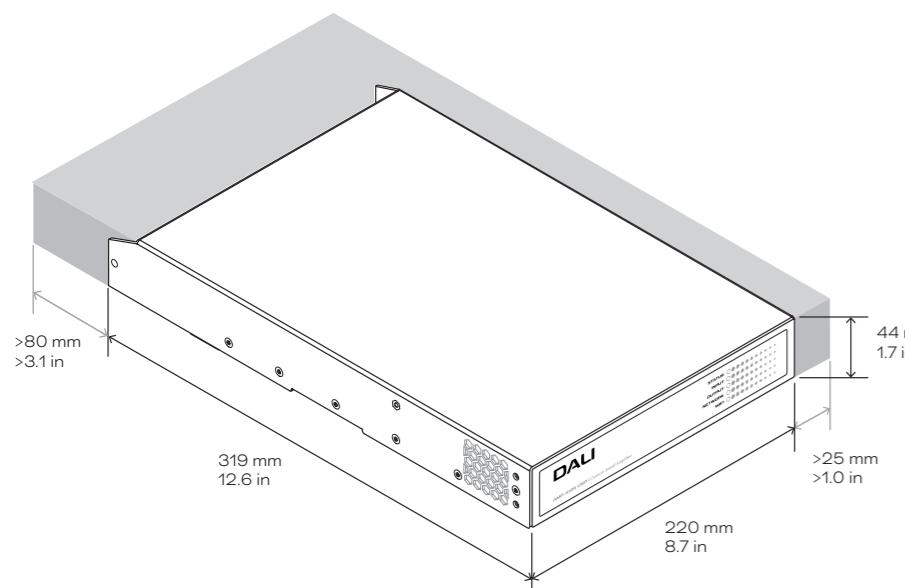


### 4. INSTALLATION

The AMP-4125 DSP amplifier can be installed in a standard (19-inch) equipment rack with the optional DALI CI AMP - 1 RU Rack Mount Kit. (Available to purchase as accessories. Contact your DALI dealer for more information.)

DIAGRAM 4A

AMP-4125 amplifier dimensions.  
(Shaded area defines ventilation space.)



Grey regions illustrate ventilation space requirements.



For rack mount installation the DALI CI AMP - 1 RU Rack Mount Kit can be purchased as an accessory. Contact your DALI dealer for more information.



For free-standing installation attach the supplied adhesive feet to the amplifier underside.



Do not switch on the amplifier until all input and output connections have been made.

#### 4.1 RACK MOUNT KIT

The AMP-4125 DSP can be configured for rack installation using one standard rack 'ear' and one half-rack extension piece from the 1 RU Rack Mount Kit as illustrated in Diagram 4B.

Multiple AMP-4125 DSP half rack width amplifiers can also be mechanically connected using the accessory connecting plate. Diagram 4C illustrates the use of the connecting plate. A connection plate is included in the 1 RU Rack Mount Kit shown in Diagram 4D. Together with 2 x rack ears the connection plate enables a pair of amplifiers to be joined and installed in a full width (19-inch) rack space.

DIAGRAM 4B

AMP-4125 Rack Ear + Half-rack Extension.

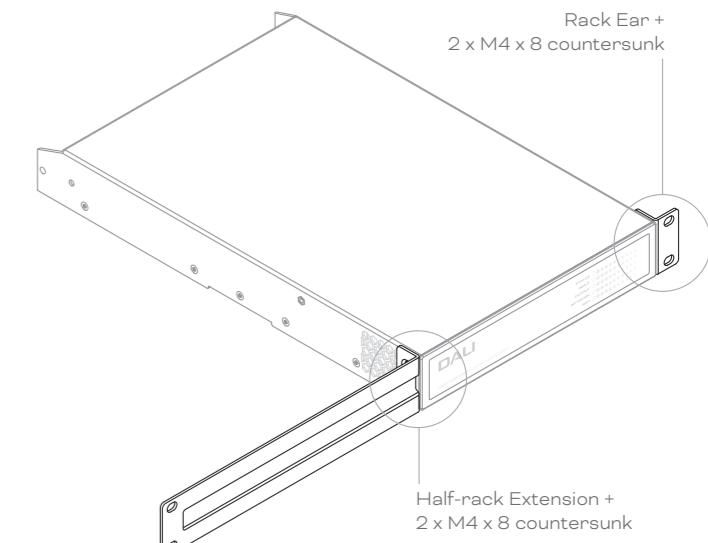


DIAGRAM 4C

2 x AMP-4125 with Connection Plate. 2 positions

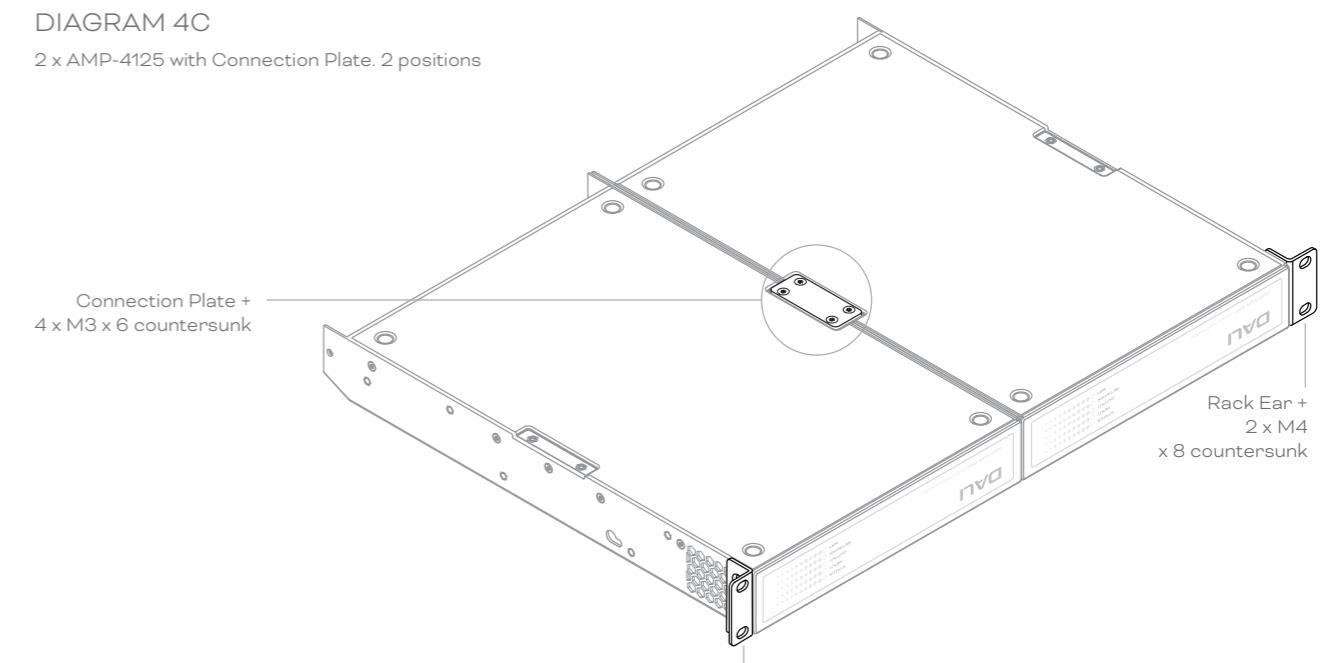
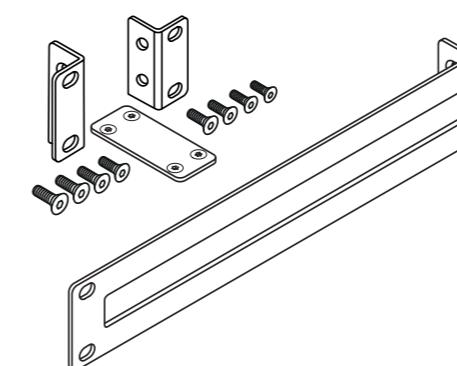


DIAGRAM 4D

DALI CI AMP - 1 RU Rack Mount Kit



## 5. INITIAL CONFIGURATION



Before making input, output or GPIO connections to an AMP-4125 DSP amplifier it is important that it is configured correctly, and if necessary, has the presets required for the loudspeakers that are to be used assigned to the appropriate channels.

The AMP-4125 DSP is by default configured without any DALI loudspeaker presets assigned to output channels, however a library of DALI loudspeaker presets is stored locally within the amplifier for assignment to output channels. Assigning functional presets requires that the AMP-4125 DSP amplifier is connected to mains power, switched on, and connected to either a TCP/IP network or directly to a configuration device for access to the DALI CI AMP CONFIGURATOR interface.

### NOTE

If access to the AMP CONFIGURATOR is not required, jump to Section 6 of this manual for guidance on audio signal and loudspeaker or subwoofer connections. Establishing network access to the AMP CONFIGURATOR is however recommended in all cases.



### BEFORE YOU BEGIN:

We recommend starting with Wi-Fi Hotspot setup, before configuring a Wi-Fi or LAN connection.

Wi-Fi Hotspot Mode Setup:  
The default Wi-Fi IP address is: 192.168.4.1

Ethernet/LAN Setup:  
The default (fixed/static) LAN IP address is  
**192.168.64.100**

### 5.1 MAINS POWER CONNECTION

The AMP-4125 DSP amplifier incorporates a power factor corrected universal power supply and can be used with mains input voltage from 100V AC to 240V AC, 50/60Hz. Use the mains cable supplied with the amplifier and connect it to a mains supply.

Press the front panel power button to switch on the amplifier. After a short delay the front panel Status indicator will illuminate green.

### 5.2 AMPLIFIER NETWORK CONNECTION

The AMP-4125 DSP amplifier is configured via the DALI PHANTOM CI AMP CONFIGURATOR interface. Before the configuration menus can be accessed, the AMP-4125 DSP amplifier must be either connected to the same network as the configuration device, or connected directly to a configuration device via either WiFi or Ethernet. The configuration device can be a smart phone, tablet or computer.

### 5.2.1 WIRED (ETHERNET) CONNECTION

To connect an AMP-4125 DSP amplifier to a TCP/IP network or directly to a configuration device using a wired connection (Ethernet) follow the steps below.

1. Use an Ethernet cable to connect the AMP-4125 DSP amplifier rear panel **[Network Control]** socket to a free socket on a network router or switch, or directly to an Ethernet equipped laptop or desktop computer.
2. With the AMP-4125 DSP amplifier connected to mains power and switched on, the front panel **[Network]** indicator will illuminate green to indicate that the amplifier has network connectivity.
3. The AMP-4125 DSP amplifier default LAN IP address is 192.168.64.100. Configure the laptop or desktop computer for a fixed IP address in the same IP range; eg. 192.168.64.10, with Subnet mask of 255.255.255.0 (or prefix 24) and set the Gateway to 192.168.64.1.
4. Open a smart phone, tablet or computer web browser and enter the IP address: <http://192.168.64.100>. The DALI PHANTOM CI AMP CONFIGURATOR interface will open to enable amplifier configuration as required.

### NOTE:

AMP-4125 DSP amplifiers can be configured to use DHCP for network connection if required. However, if a AMP-4125 DSP amplifier using DHCP is switched off and on, it is possible that the TCP/IP network router will assign it a different IP address, leaving its configuration page inaccessible via the previous IP address. If this occurs, a network scanning app can be used to identify the new IP address. DHCP and Fixed IP address option settings can be found in the AMP CONFIGURATOR **[Settings]** menu described in **Section 8** of this manual.

### 5.2.2 WIRELESS (WIFI) CONNECTION

To connect an AMP-4125 DSP amplifier to a TCP/IP network or directly to a configuration device using a wireless connection (WiFi) follow the steps below.

1. With the AMP-4125 DSP amplifier connected to mains power and switched on, the front panel WiFi indicator will illuminate green to indicate the WiFi is available.
2. Use a mobile, laptop or desktop device to search for available WiFi networks. Connect to “[AMP-4125 DSP] (product serial number)” using the password “[password]”. The amplifier serial number can be found on its rear panel.
3. Open a smart phone, tablet or computer web browser and enter the IP address: 192.168.4.1. The DALI PHANTOM CI AMP CONFIGURATOR interface will open to enable amplifier configuration as required.
4. If it is required to connect the amplifier to an alternative WiFi network, select the AMP CONFIGURATOR **[Settings] Tab** followed by **[WiFi] > WiFi Mode > Client** to configure the amplifier to connect to the required WiFi network. The WiFi network name and password will be required.

**It is strongly recommended that the AMP-4125 DSP amplifier Access Point WiFi password is changed following initial wireless connection.**

## 5.3 THE DALI PHANTOM CI AMP CONFIGURATOR

- When you use an Ethernet connection to the AMP-4125 DSP open the IP address **192.168.64.100** in a web browser on your device.
- When you use an WiFi connection to the AMP-4125 DSP open the IP address 192.168.4.1 in a web browser on your device.

This will display the DALI PHANTOM CI AMP CONFIGURATOR interface Dashboard, illustrated in **Diagram 5A**. The Dashboard is the AMP CONFIGURATOR “home page” from which all other configuration options can be accessed.

The Dashboard displays the amplifier status, output zones and the configuration menu tabs. It provides access to the menus that enable DALI loudspeaker or subwoofer presets to be assigned to amplifier outputs. This is described in the following paragraphs.

### NOTE:

Further amplifier configuration using the AMP CONFIGURATOR is described in **Section 8** of this manual.

### 5.3.1 LOUDSPEAKER PRESET INSTALLATION



**When an AMP-4125 DSP is used with a DALI loudspeaker or subwoofer that requires a preset for correct operation, it is important that the correct DALI preset is assigned on the output channel to which the loudspeaker or subwoofer is connected. Assigning DALI presets to output channels is described in the following paragraphs.**

- Using a web browser app, open the DALI PHANTOM CI AMP CONFIGURATOR and select **[Output]** from the Dashboard followed by the appropriate output channel number **[1, 2, 3 or 4]** from the top of the page. Then select the **[Speaker Preset]** option. See **Diagrams 5A** and **5B**.
- Selecting the **[Speaker Preset]** option will open the **[Speaker Preset]** menu. Choose **[SELECT PRESET FROM LIBRARY]** to open the locally stored loudspeaker preset library. See **Diagram 5C**.
- Choosing **[SELECT PRESET FROM LIBRARY]** will open a dialogue box that enables selection of the appropriate speaker or subwoofer from the stored library. Select the required speaker or subwoofer model followed by **[Use Selected]**. See **Diagrams 5D** and **5E**.

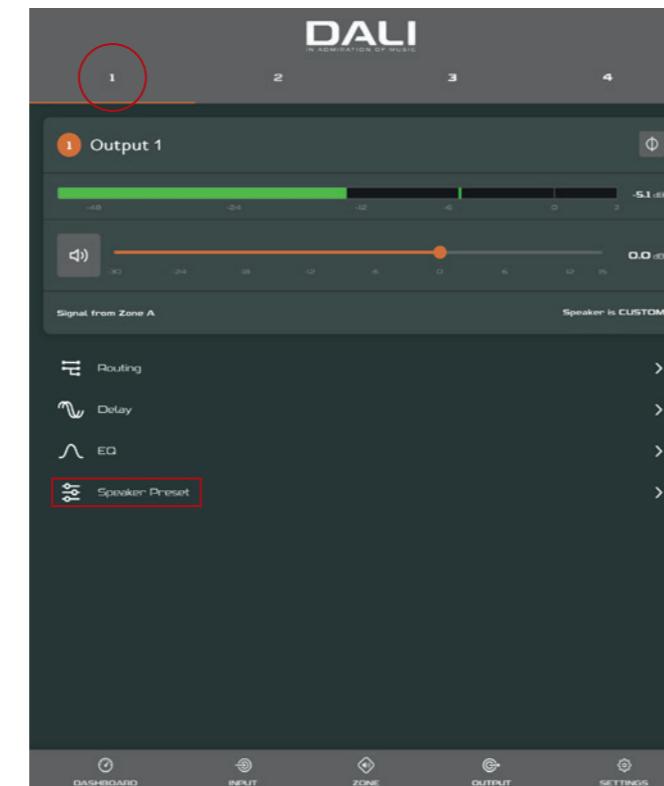
### DIAGRAM 5A

AMP CONFIGURATOR Dashboard display



### DIAGRAM 5B

AMP CONFIGURATOR **[Output]** menu



- If the same or different presets are required for other amplifier output channels, repeat steps 1 to 3 with an alternative amplifier output selected.

With the appropriate presets installed it is recommended that the amplifier is switched off while input, output and GPIO connections are made.

### NOTE:

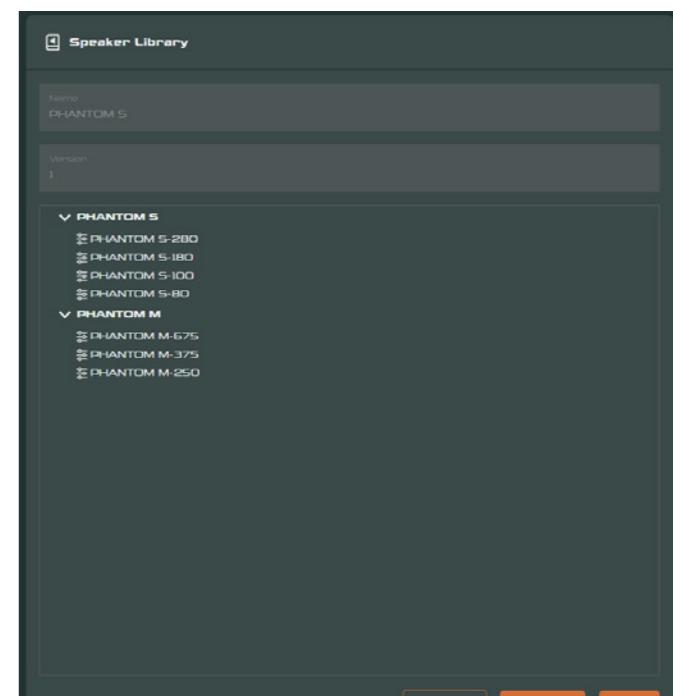
Always check when assigning presets that the correct amplifier output channel is selected.

### NOTE:

DALI may occasionally release an updated loudspeaker preset library or individual preset updates. Individual DALI presets can be uploaded from the **[Speaker Preset]** menu, while speaker library updates are described in **Section 8.5** of this manual.

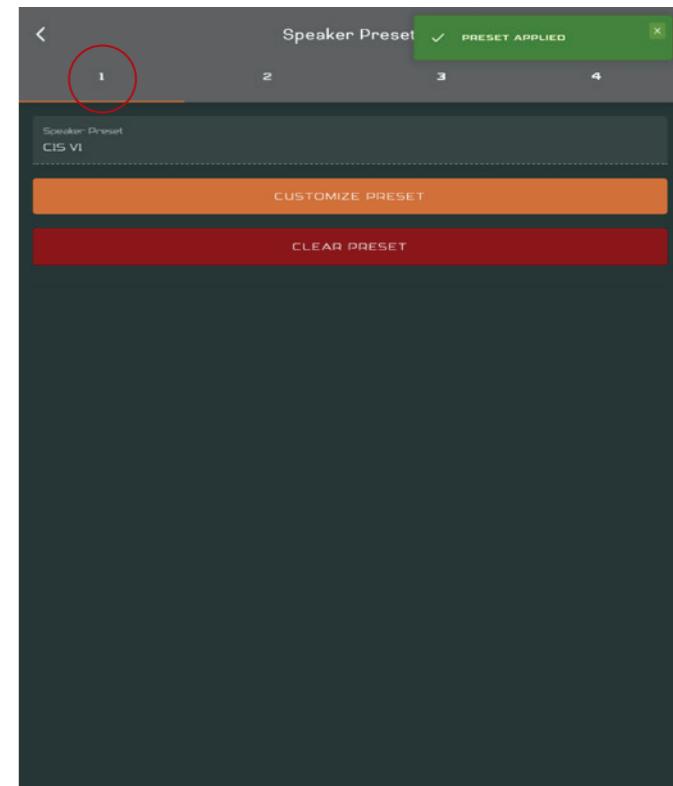
### DIAGRAM 5D

AMP CONFIGURATOR **[Speaker Library]** menu



### DIAGRAM 5E

AMP CONFIGURATOR **[Preset Applied]** notification



## 6. CONNECTIONS

DALI PHANTOM CI AMP-4125 DSP amplifier rear panel connections are illustrated in **Diagram 6A**.

### 6.1 MAINS POWER CONNECTION AND ON/OFF SWITCH

The AMP-4125 DSP amplifier incorporates a power factor corrected universal power supply and can be used with mains input voltage from 100V AC to 240V AC, 50/60Hz. Use the mains cable supplied with the amplifier. Press the power button on the front panel once to switch the amplifier on or off.

### 6.2 AMPLIFIER INPUT CONNECTION

The AMP-4125 DSP amplifier provides four balanced or unbalanced analogue audio inputs and a stereo S/PDIF digital audio input. Any input channel can be routed to any output channel. Input routing options can be configured via the DALI PHANTOM CI AMP CONFIGURATOR interface. See **Section 8** of this manual.

#### Analogue Inputs

AMP-4125 DSP analogue inputs are of line level format with a default input sensitivity of +4dBu (full output voltage swing/sensitivity) in all output modes. Depending on the selected sensitivity, the inputs can handle up to +24 dBu without clipping. Input sensitivity options can be set via the AMP CONFIGURATOR interface [**Input**] tab. See **Section 8** of this manual.

Balanced input connections to the amplifier are made via male "Euro Block" connectors. Connecting cables to the supplied female **input** connectors is illustrated in **Diagram 6D**.

Unbalanced input connections to the amplifier are made via RCA phono sockets connected in parallel with the balanced inputs.

#### Digital Inputs

AMP-4125 DSP S/PDIF stereo digital audio input connections are made via the **[DIGITAL IN]** RCA Phono socket. The S/PDIF input is connected by default to amplifier installation Zones 1 (left) and 2 (right).

#### Digital Outputs

AMP-4125 DSP S/PDIF stereo digital audio output connections are made via the **[DIGITAL OUT]** RCA Phono socket. The S/PDIF output signal by default reflects the input to amplifier installation Zones 1 and 2 and is intended to be used for daisy-chaining AMP-4125 DSP amplifiers.

#### NOTE:

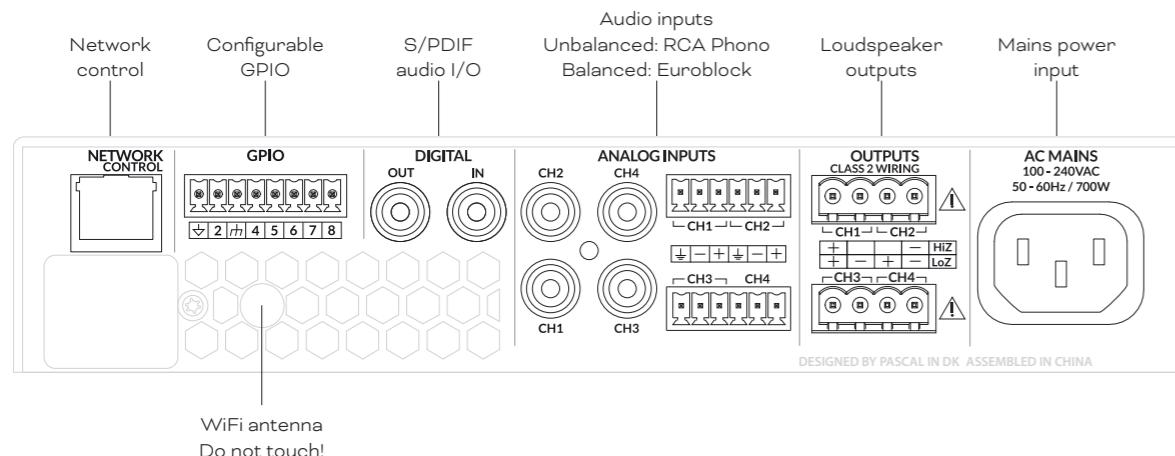
75 ohm RCA phono cables specifically intended for digital audio should always be used for S/PDIF connections. Standard Phono cables can be used but may not result in optimal performance.

#### NOTE:

The S/PDIF output level is by default set at -10 dB to reduce the possibility of downstream input clipping.

### DIAGRAM 6A

AMP-4125 DSP rear panel connections



### 6.3 SPEAKER CONNECTIONS

Speaker connections from the AMP-4125 DSP amplifier are made via male "Euro Block" connectors. Ensure that loudspeaker connection polarity is correct throughout the installation:

**In the case of conventional Lo-Z loudspeaker connections, positive (+) amplifier terminals should always be connected to positive loudspeaker terminals and negative (-) amplifier terminals always connected to negative loudspeaker terminals.**



**In the case of Hi-Z or BTL loudspeaker connections, the two loudspeaker cable conductors should be connected between the positive (+) terminal of Output 1 and the negative terminal (-) of Output 2 or the positive (+) terminal of Output 3 and the negative terminal (-) of Output 4.**

#### NOTE:

Hi-Z and BTL loudspeaker connection is not typically relevant to home audio systems and requires specialist knowledge. It should only be carried-out by appropriately qualified audio technicians.

BTL mode should only be used for 8-ohm and 16-ohm los.

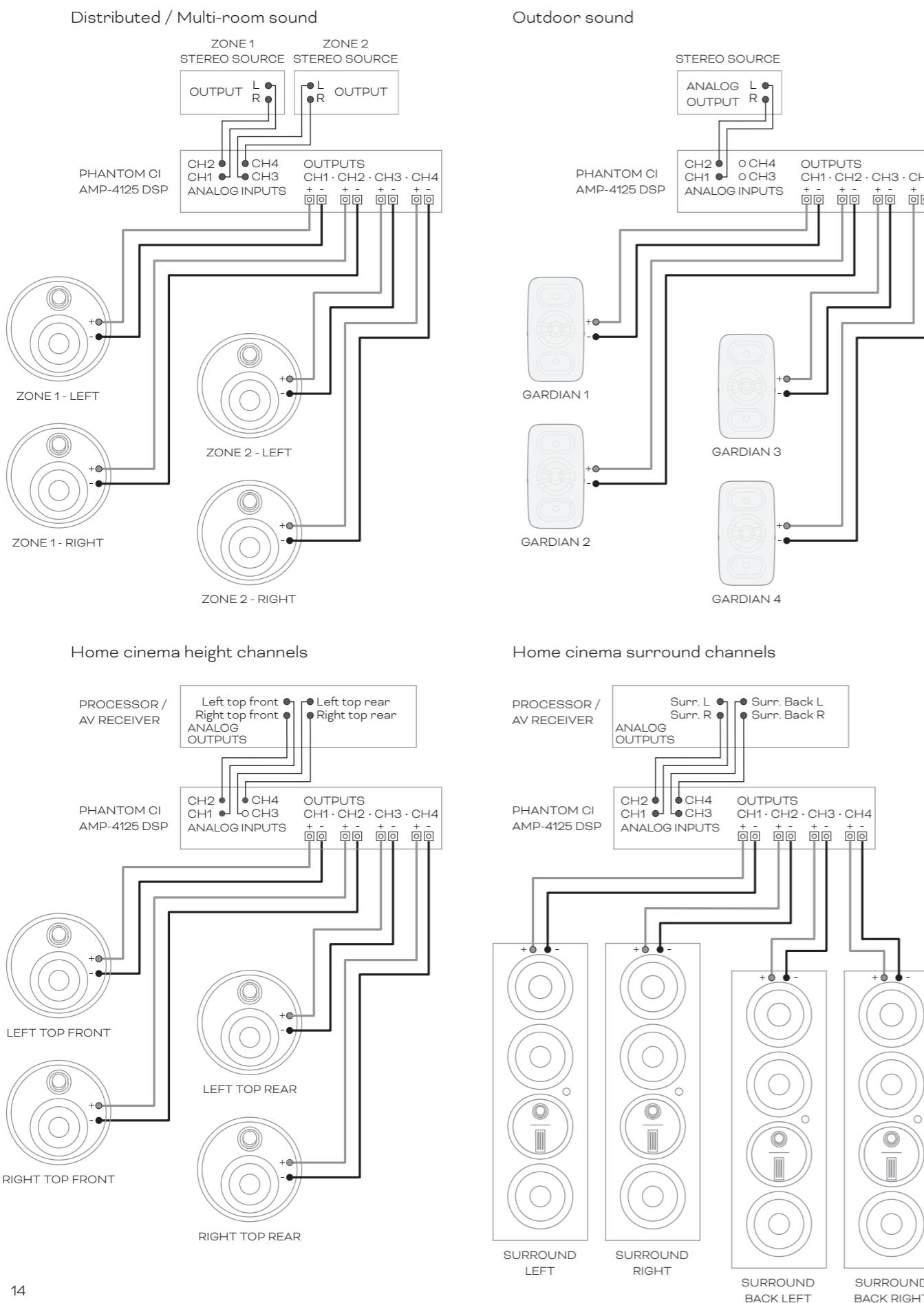
Output mode options (Lo-Z or Hi-Z) can be configured via the AMP CONFIGURATOR **[Output]** tab. See **Section 8** of this manual.

Connecting cables to the supplied female output connector is illustrated in **Diagram 6E**.

#### Power sharing

The PHANTOM CI AMP-4125 DSP is designed with intelligent power sharing to maximize performance. The amplifier uses two internal power supplies, each serving a pair of channels. This allows 250W to be distributed flexibly across channels 1 & 2 and another 250W across channels 3 & 4. Depending on your setup, the amp can deliver anything from 4 x 125W to 2 x 250W in single ended mode. To achieve full 250W on two channels, use channel 1 and 3 (or 2 and 4), as each pair is linked to a separate power supply. The system automatically reallocates power when one channel needs more and its partner needs less, ensuring optimal output for dynamic music and demanding speaker loads.

DIAGRAM 6B  
AMP-4125 DSP common applications



## 6.4 LOUDSPEAKER CONNECTION OPTIONS

The AMP-4125 DSP is able to power a variety of DALI PHANTOM custom install or hi-fi loudspeakers. It is by default setup without any loudspeaker presets installed. If connecting loudspeakers that require presets, their installation is described in [Section 5.3.1](#) of this manual.

Each AMP-4125 DSP output channel is able to drive a maximum of two loudspeakers. **If two loudspeakers are driven by one channel they must be the same model.**

Some loudspeaker connection schemes are illustrated in the [Diagram 6B](#).

### NOTE

The supplied "Euro Block" loudspeaker connectors can accept up to 2.5 mm<sup>2</sup> / 14 gauge loudspeaker wire.

### CABLE GAUGE TABLE

Lo-Z installations, 0.5 dB attenuation  
2 ohm, 4 ohm & 8 ohm loads

Cable Cross Section (mm <sup>2</sup> )	Cable Gauge (AWG)	Max Cable Length (Metres, 2 ohm load)	Max Cable Length (Metres, 4 ohm load)	Max Cable Length (Metres, 8 ohm load)
0.75	≈18	N/A	5	10
1.5	≈16	5	10	20
2.5	≈14	8	17	35
4.0	≈12	14	28	55

### NOTE

Diagram 6B shows examples of input and output configurations. Alternative input and output schemes can be configured via the PHANTOM AMP CONFIGURATOR interface.

## 6.5 SPEAKER CABLE GAUGE

AMP-4125 DSP loudspeaker connection cable gauge should be chosen appropriately to reflect the type of installation. The adjacent tables specify the appropriate cable gauge and maximum cable length for less than 0.5dB cable loss in Lo-Z mode and less than 1.0 dB cable loss in Hi-Z mode.

## 6.6 GPIO CONNECTIONS

If any AMP-4125 DSP GPIO functionality is required, cables will need to be connected to the supplied GPIO connector. Connecting cables to the GPIO connector is illustrated in [Diagram 6F](#).

## 6.7 NETWORK CONNECTIONS

The AMP-4125 DSP amplifier is a TCP/IP network connected device that is configured via a web page based interface. Wired (Ethernet) and wireless (WiFi) connection options are available. Connecting the AMP-4125 DSP amplifier to a TCP/IP network is described in [Section 5](#) of this manual.

### CABLE GAUGE TABLE

70 V Hi-Z installations, 10 dB attenuation  
20 loudspeakers evenly distributed

Cable Cross Section (mm <sup>2</sup> )	Cable Gauge (AWG)	Max Cable Length (Metres), (1000 W/channel)	Max Cable Length (Metres), (1200 W/channel)
0.75	≈18	25	20
1.5	≈16	50	40
2.0	≈14	80	60
3.5	≈12	125	100

### CABLE GAUGE TABLE

100 V Hi-Z installations, 1.0 dB attenuation  
20 loudspeakers evenly distributed

Cable Cross Section (mm <sup>2</sup> )	Cable Gauge (AWG)	Max Cable Length (Metres), (1000 W/channel)	Max Cable Length (Metres), (1500 W/channel)
0.75	≈18	50	30
1.5	≈16	100	60
2.0	≈14	160	100
3.5	≈12	250	160

The exclamation point printed next to the output terminals of the amplifier is, in addition to the "CLASS 2 WIRING" text, intended to alert users to the risk of hazardous voltages. Output connectors that could pose a risk are marked with the exclamation point. Do not touch the output terminals while the amplifier is switched on. Make all connections with the amplifier switched off.

DIAGRAM 6C

Unbalanced analogue input cable connections

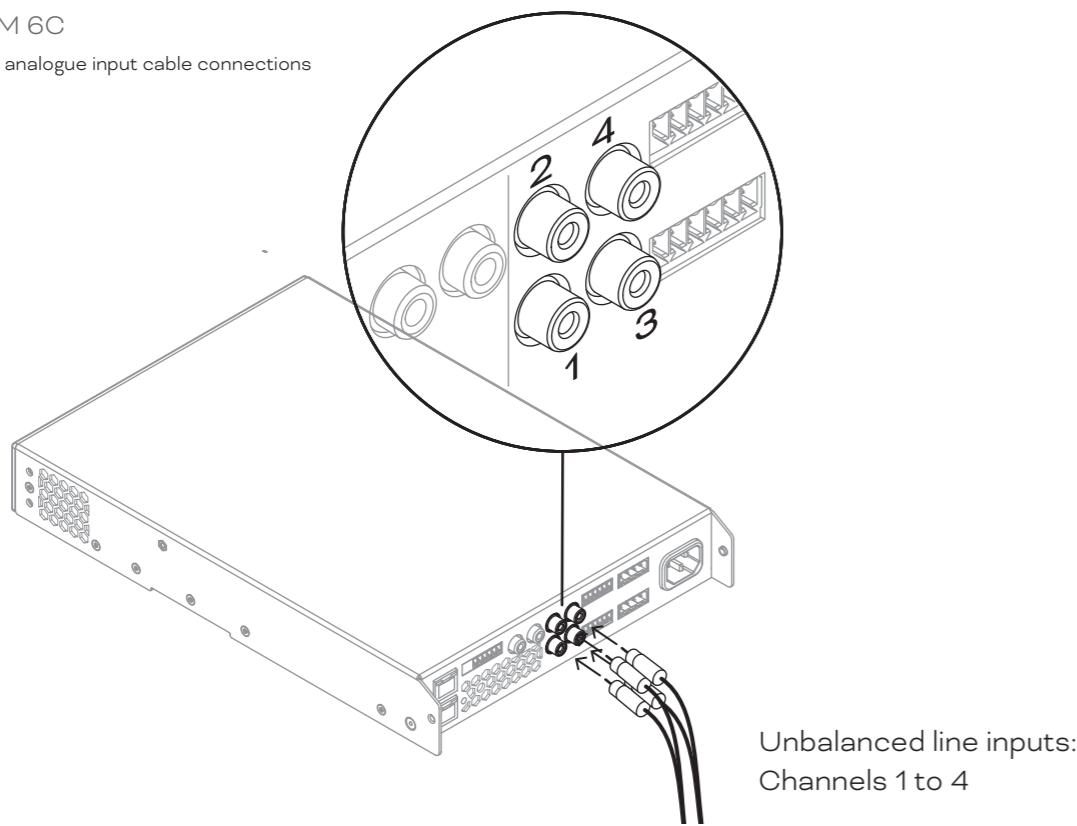


DIAGRAM 6D

Balanced analogue input cable connections

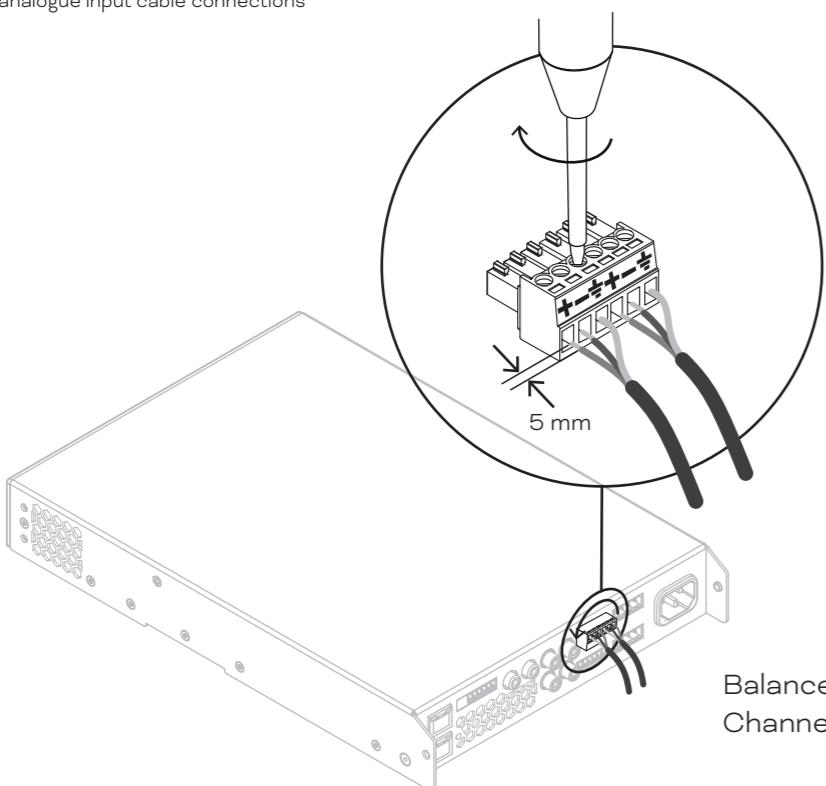


DIAGRAM 6E

Speaker cable connections

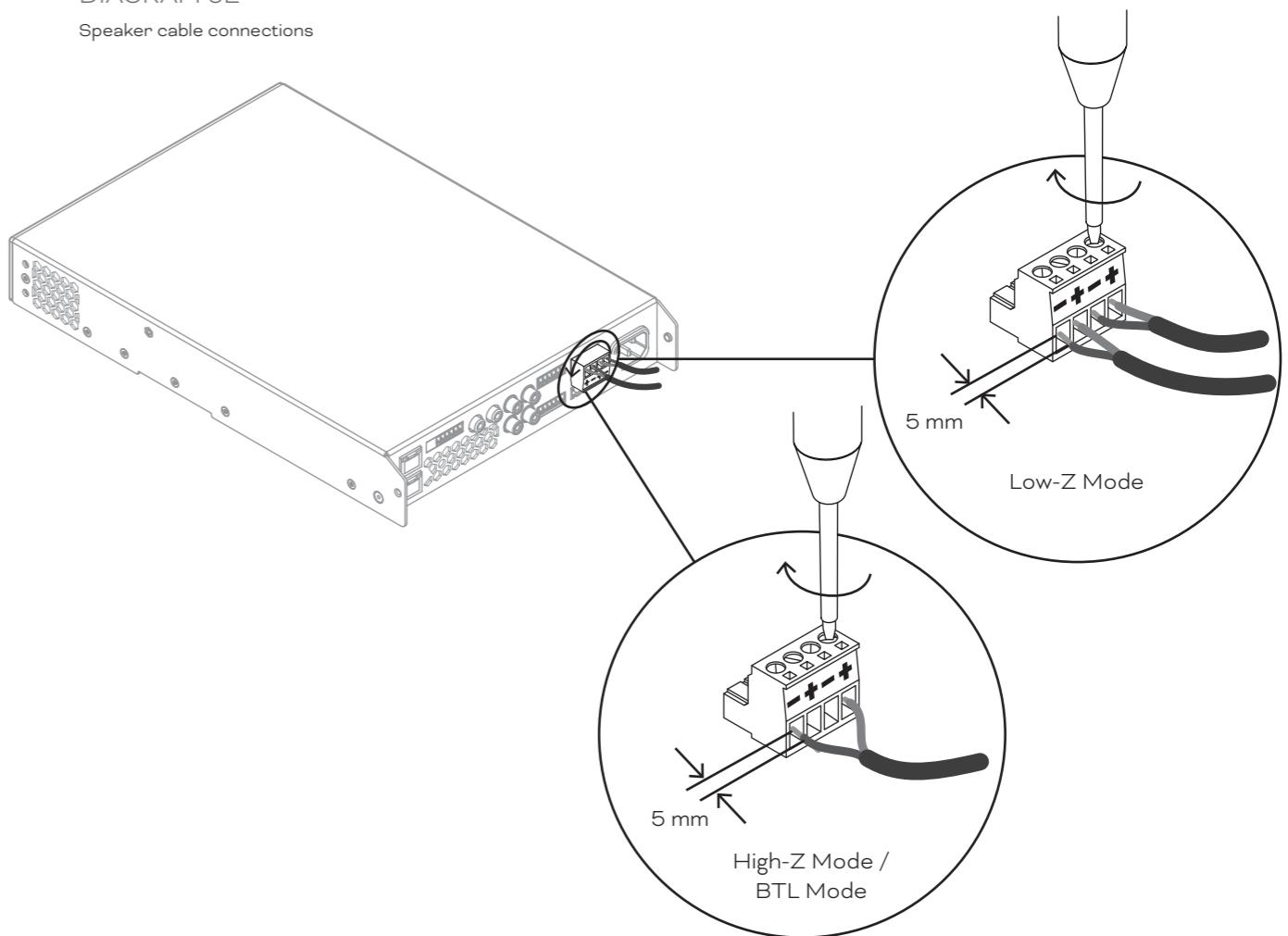
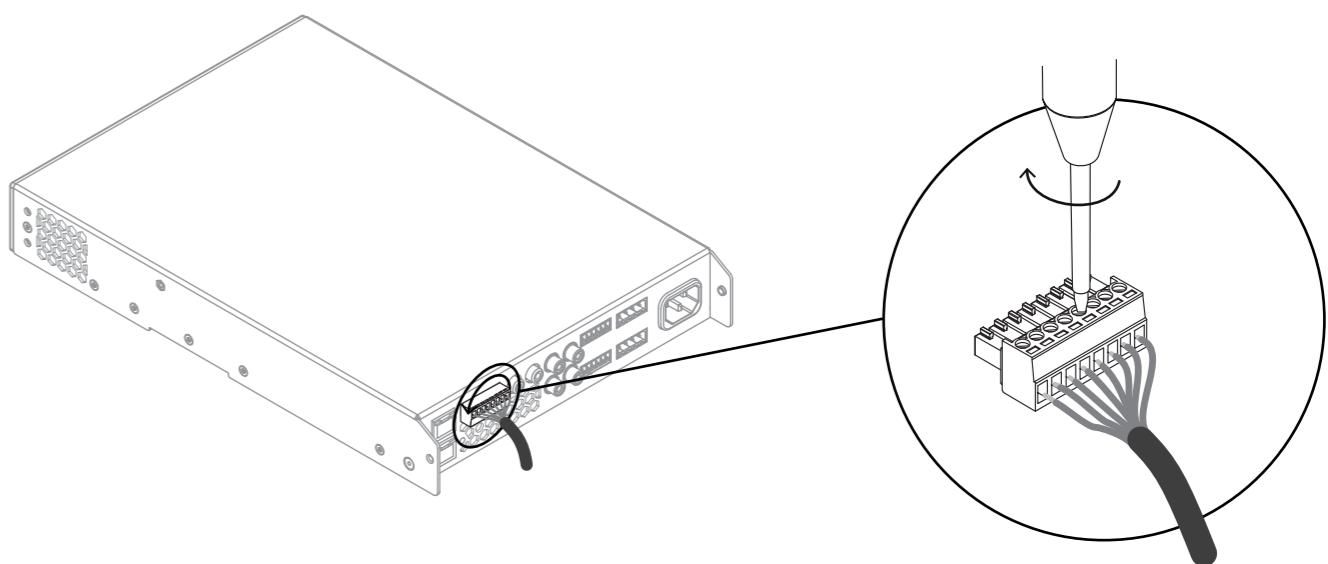


DIAGRAM 6F

GPIO cable connections



## 7. OPERATION

Once all connections have been made and configuration options selected, the AMP-4125 DSP amplifier is ready for use. If an input signal above -60 dB is present on any input, the front panel **[Input]** and **[Standby]** indicators will illuminate green to indicate normal amplifier operation. Audio will be heard from any connected loudspeakers.

### NOTE

The AMP-4125 DSP amplifier will by default not wake from Standby Mode unless an input signal is present, a network “ON” command is received, or an external standby switch (or 12V trigger) is operated. Standby behaviour can be configured via the **[Power Management]** menu of the AMP CONFIGURATOR **[Settings]** Tab.

Amplifier outputs will mute if no input signal is present for 5 minutes, and the amplifier will switch automatically to Standby Mode if no signal is present on any input for more than 15 minutes. Alternative standby and mute delay times can be selected via the AMP CONFIGURATOR **[Settings]** tab. Amplifier cooling fan speed is temperature controlled. The fan will switch off when the amplifier enters standby mode.



### 7.1 FRONT PANEL INDICATORS

AMP-4125 DSP amplifier front panel indicators illuminate to indicate the following operational states:

#### [STATUS]

Off	Mains power disconnected
Green	Amplifier operational
Pulse Green	Standby Mode
Amber	GPIO triggered Standby Mode

#### [INPUT]

Off	No input signal present
Green	Signal present on one or more inputs
Amber	Signal limiting/clipping on one or more inputs

#### [OUTPUT]

Off	No input signal present
Green	Signal present on one or more outputs
Amber	Signal limiting/clipping on one or more outputs
Red	One or more channel pair is in overload/protection mode

#### [NETWORK]

Off	No Ethernet network detected
Green	Ethernet network detected

#### [WIFI]

Off	WiFi disabled
Green	WiFi enabled

### 7.2 DEFAULT RESET

The AMP-4125 DSP amplifier can be returned to its default settings via either the AMP CONFIGURATOR **[Settings]** tab or through the front panel power button.

To reset the amplifier using the front panel power button, follow the steps below:

- Disconnect the amplifier from mains power.
- Press and hold the front panel power button while simultaneously reconnecting mains power.
- Continue to hold the front panel power button for 3 to 5 seconds as the amplifier restarts.

The amplifier will restart with all settings at their baseline state. Any previously configured settings or preset data will be deleted.

## 8. ADVANCED CONFIGURATION

In addition to the installation of DALI presets described in **Section 5.3** of this manual, the DALI PHANTOM CI AMP-4125 DSP can be further configured to meet a variety of more advanced installation requirements. The advanced configuration options are described in the following paragraphs.

**Adjustment of AMP-4125 DSP advanced configuration parameters demands specialist knowledge and should only be carried-out by appropriately qualified audio technicians.**

Begin by connecting the AMP-4125 DSP to a network enabled device such as a smart phone, tablet or computer. Open a web browser on the connected device and browse to the DALI PHANTOM CI AMP CONFIGURATOR interface. The AMP CONFIGURATOR Dashboard, illustrated in Diagram 8A, will be displayed.

### NOTE

AMP-4125 DSP network connection is described in **Section 5.2** of this manual.

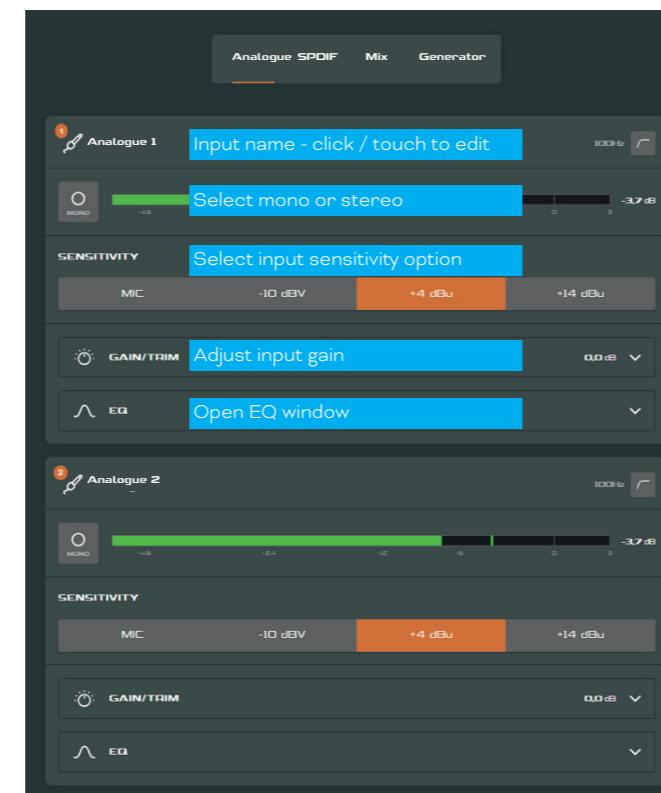
DIAGRAM 8A

AMP CONFIGURATOR **[Dashboard]** display



DIAGRAM 8B

AMP CONFIGURATOR **[Input]** tab display



The **[Dashboard]** displays the amplifier status, output zones and the configuration menu tabs. It also enables immediate access to volume control. The advanced functions available under each configuration menu tab are described in the following paragraphs.

### 8.1 AMP CONFIGURATOR **[INPUT]** TAB

The **[Input]** tab provides the following configuration parameters for each amplifier input channel:

- Input name
- Mono/Stereo selection
- Input sensitivity
- High-pass filter
- Gain trim
- Five band equalisation

The **[Input]** tab also enables input signals to be mixed and routed to specific amplifier zones.

The mix function enables any amplifier input, including stereo or split mono S/PDIF inputs, to be grouped with any other input or inputs to create multiple predefined mixes.

### NOTE

The number of individual mixes possible is equal to the number of amplifier analogue inputs.

Mix inputs are muted by default with their level adjustment sliders set to zero. Mix operations take place following high-pass filter, input equalisation and mono/stereo selection.

A pink noise or sine wave audio signal generator, appropriate for audio system testing and set up, can also be enabled, disabled, and adjusted for gain and frequency via the **[Input]** tab.

### NOTE

When adjusting input gain, the input level display should remain green. If it displays red, the input gain should be reduced.

## 8.2 [ZONE] TAB

The **[Zone]** tab enables installation zones to be defined and named, and provides access to further sub-menus. Zones might be lounge or dining areas for example, or different rooms in the home. For all **[Zone]** tab menus, the installation zone under configuration is selected by highlighting one of the zone identifiers (A, B, C or D) at the top of the page. **Diagram 8E** illustrates the **[Zone]** tab.

- The **[Source]** menu enables inputs to be assigned to zones and Input Priority or Input Ducking to be configured.
- The **[Input Priority]** function enables an alternative input to replace and mute the input primarily routed to the zone under configuration when the alternative input exceeds a preset level.
- The **[Input Ducking]** function enables an alternative input to replace and attenuate the input primarily routed to the zone under configuration when the alternative input exceeds a preset level.
- The **[GPIO Volume Control]** option enables external volume control to be applied to individual zones.

- The **[GPIO]** configuration menu can be found under the **[Settings]** tab.
- The **[Restrictions]** menu enables zone inputs or input mixes to be restricted from routing to particular zones. Note: Routing restrictions cannot be applied to priority zone inputs.
- The **[Compressor]** option enables default or custom signal compression to be applied to individual installation zones.

DIAGRAM 8C

AMP CONFIGURATOR **[Input]** EQ display

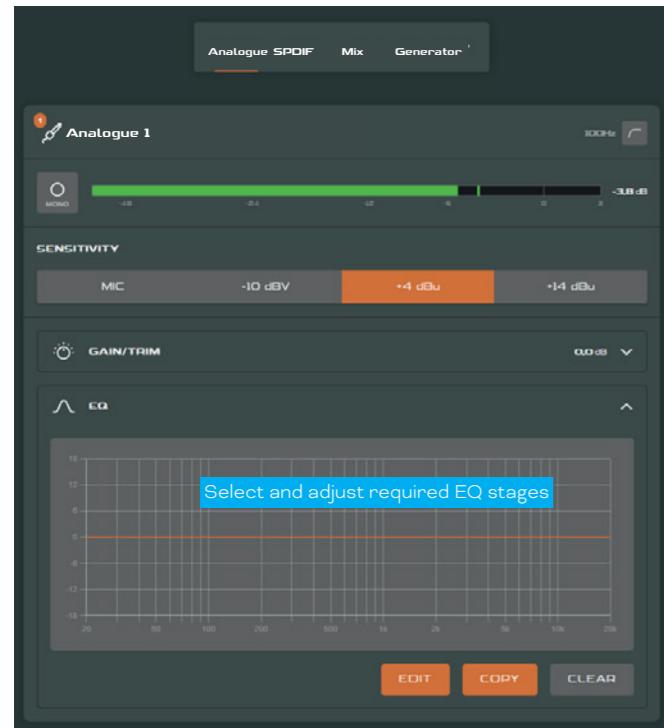
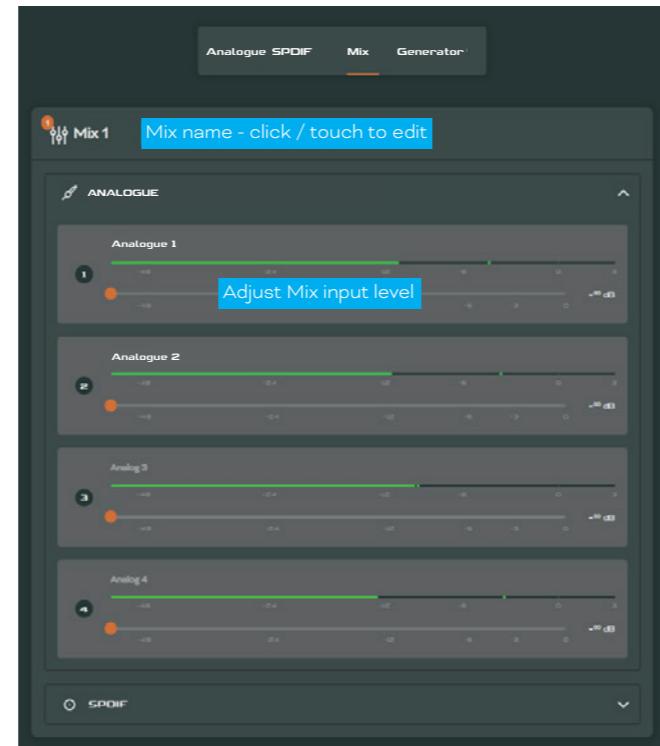


DIAGRAM 8D

AMP CONFIGURATOR **[Input]** Mix display



## NOTE

Compression can be useful to reduce the volume difference between loud and quiet audio material. The lower the compression threshold is set, the more the difference between loud and soft will be reduced. The overall zone volume may need to be increased when compression is used. The default compression parameters are appropriate for most installations.

**[Input Priority]** and **[Input Ducking]** parameters can be either set to default values, or their **[Threshold]**, **[Attack]**, **[Hold]** and **[Release]** values can be set as required.

**[Input Priority]** can also be set to ignore the volume level set for the specified zone and take a specific override volume.

If an amplifier is controlled via a third-party control system API, input routing restrictions set via the **[Input]** tab will not apply.

DIAGRAM 8E

AMP CONFIGURATOR **[Zone]** tab display

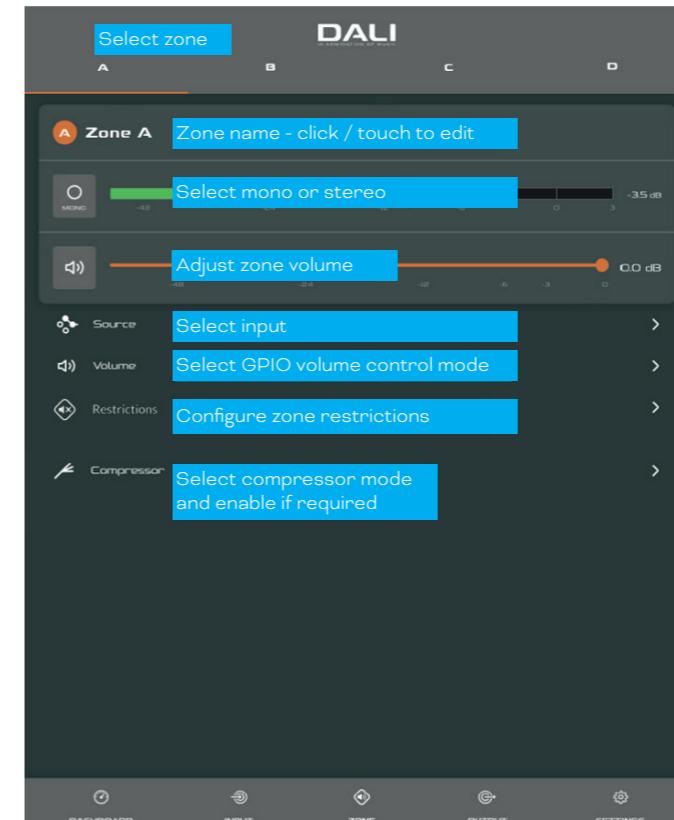
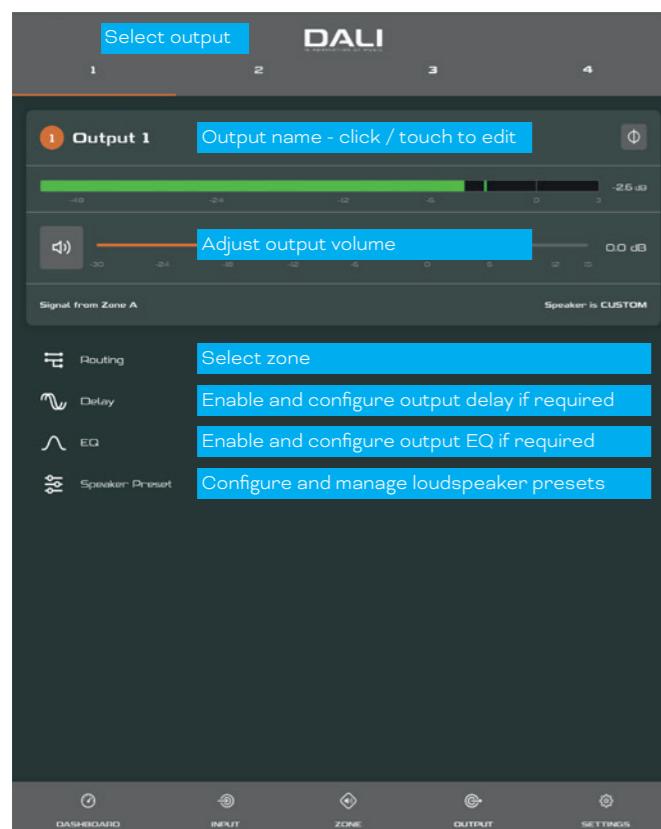


DIAGRAM 8F

AMP CONFIGURATOR [Output] tab display



### 8.3 [OUTPUT] TAB

The [Output] tab enables loudspeaker outputs to be named and provides access to further sub-menus. For all [Output] tab menus, the amplifier output under configuration is selected by highlighting one of the output identifiers (1, 2, 3 or 4) at the top of the display. The [Output] tab also enables **Speaker Preset** configurations to be created, exported, imported or cleared. Diagram 8F illustrates the [Output] tab.

- The [Routing] menu enables zones to be assigned to amplifier outputs.
- The [Delay] menu enables delay to be applied to individual amplifier outputs.
- The [Speaker EQ] menu enables parametric equalization to be applied to individual amplifier outputs. Equalizer settings configured for one amplifier output can be copied and applied to other outputs.
- The [Speaker Preset] menu enables a set of loudspeaker parameters to be adjusted, and loudspeaker preset configurations to be created.
- Speaker Presets can be simply applied to the selected amplifier output or imported, chosen from a library, exported or cleared. The preset configurations can include any or all of the parameters described in

**Section 7.3.4** and can be locked to prevent inadvertent modification. Diagrams 8G to 8J illustrate the application of loudspeaker presets.

- Speaker Preset data provided by third parties for use with specific loudspeakers can be imported and applied to amplifier outputs. To import loudspeaker preset parameters follow the steps described below and illustrated in the diagrams.

- 1 Select either the [IMPORT PRESET FROM FILE] or [SELECT PRESET FROM LIBRARY] option from the [Speaker Preset] menu. If no import option is visible, select [CLEAR] to delete any existing loudspeaker preset data.
- 2 Select the appropriate ".zcp" format loudspeaker preset data file to import from either a Library or a computer folder. The preset data will be applied to the selected amplifier output as soon as the file import is complete.
- 3 If the Speaker Preset data requires modification it can be customized by selecting the [CUSTOMIZE PRESET] option.

### NOTES

The number of individual outputs available for configuration will depend on the AMP-4125 DSP input, zone and output mode configuration.

Routing for zones specified as stereo will automatically offer three output options: [Left], [Right] or [Sum] (summed mono). The summed mono signal can potentially be used to power a mono subwoofer from a stereo source.

AMP-4125 DSP Speaker Presets are distinct from Functional Profiles in that they don't include amplifier input, zone or signal routing parameters.

The [SELECT PRESET FROM LIBRARY] option will be unavailable if no loudspeaker preset libraries have been created. Speaker preset library creation and management is described in **Section 7.5**.

If an imported Speaker Preset data file includes locked parameters, they will be unavailable for modification.

The AMP-4125 DSP is by default installed without any presets assigned to the outputs. If a custom preset is desired you can import or create your own.

DIAGRAM 8G

AMP CONFIGURATOR [Speaker Preset] parameters

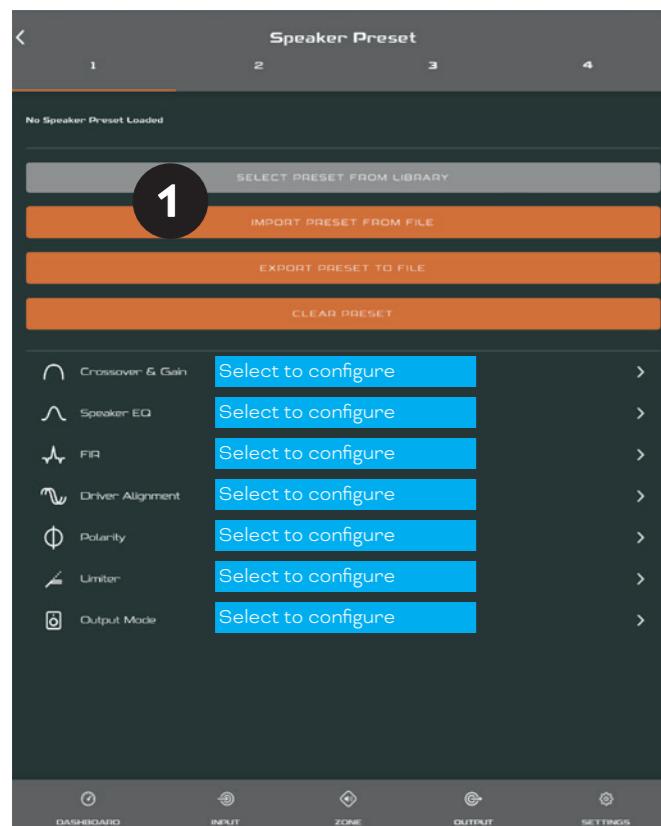


DIAGRAM 8H

AMP CONFIGURATOR [Speaker Preset] Import

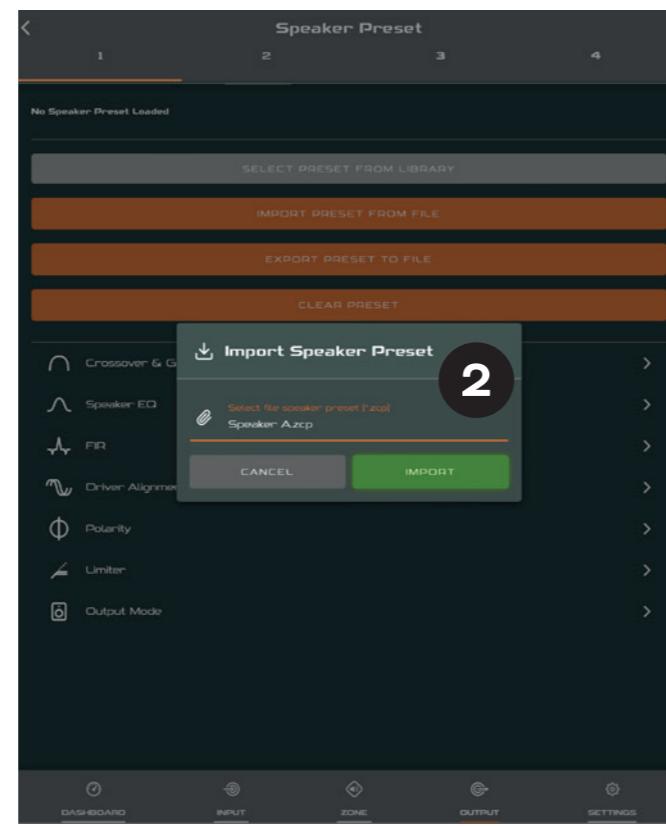


DIAGRAM 8I

AMP CONFIGURATOR [Speaker Preset] applied

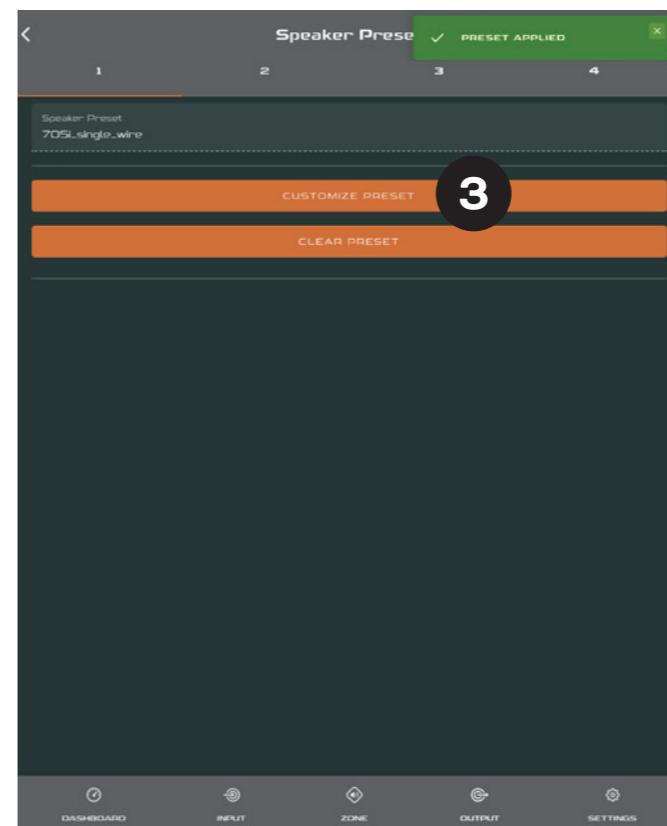


DIAGRAM 8J

AMP CONFIGURATOR [EQ] parameters



## 8.4 SPEAKER PRESET MENU PARAMETERS

- The **[Crossover & Gain]** preset menu enables high or low-pass crossover filters and gain adjustment to be applied to individual amplifier outputs.
- The **[Speaker EQ]** preset menu enables parametric equalization to be applied to individual amplifier outputs.
- The **[FIR]** preset menu enables FIR (Finite Impulse Response) based equalization filter coefficients generated by external loudspeaker measurement software to be imported and applied to individual amplifier outputs.
- The **[Driver Alignment]** preset menu enables delay to be applied to individual amplifier outputs.
- The **[Polarity]** preset menu enables the polarity of individual amplifier outputs to be reversed.
- The **[Limiter]** preset menu enables signal limiting to be applied to individual amplifier outputs. Clip limiting, peak limiting and RMS limiting can be individually or collectively engaged. The Peak limiter can be set to either automatic or custom parameter values. The RMS limiter has default parameter values that can be adjusted but has no automatic option.
- The **[Output Mode]** preset menu enables individual amplifier outputs to be switched off or configured for Lo-Z, Hi-Z or Lo-Z BTL modes. In Hi-Z modes, a high-pass filter can also be configured and applied to the output. The number of outputs available will depend on the input setup and zone setup. For example, a four output amplifier will have four outputs available if Lo-Z mode is selected but only two output available if Hi-Z mode is selected.

### NOTES

FIR coefficient files in either .csv or .txt format can be imported.

In automatic mode, the peak limiter parameters adjust automatically in response to Crossover & Gain high-pass filter settings.

In Lo-Z BTL (bridge-tied load) mode, two amplifier output channels are combined to create a single, double power output channel.

Use of a high-pass filter with Hi-Z mode loudspeakers is useful to avoid the possibility of distortion caused by low frequency line transformer saturation. Begin with the default filter setting of 70 Hz. If low frequency distortion is still audible, increase the frequency setting one step at a time until the distortion is no longer audible.

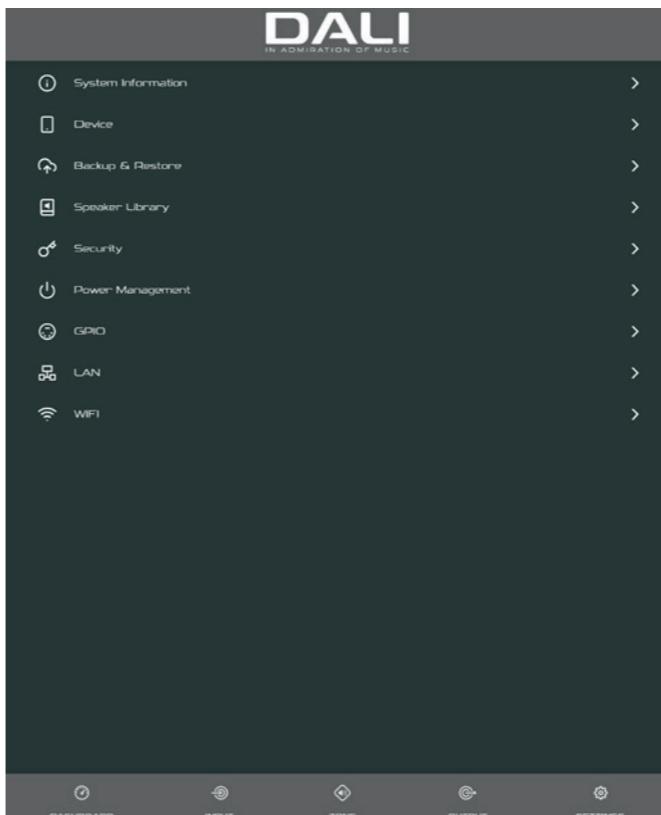
## 8.5 [SETTINGS] TAB

The **[Settings]** tab enables miscellaneous amplifier settings to be configured and installation data to be recorded. The **[Settings]** tab provides access to further sub-menus. **Diagram 8K** illustrates the **[Settings]** tab.

- The **[System Information]** menu provides text fields for the recording of installation data.
- The **[Device]** menu records amplifier specific information such as the model number and firmware version. A firmware update routine and identifier button can also be found under the **[Device]** menu.
- The **[Backup & Restore]** menu enables amplifier presets to be downloaded to an external archive, and enables previously saved configuration files to be uploaded and adopted by the currently connected amplifier. Explained in Section 5.3.1.
- The **[Speaker Library]** menu enables management of loudspeaker preset libraries. Libraries of loudspeaker preset files (.zcl) can be created, and existing libraries can be imported, edited or fully deleted. **Diagram 8L** illustrates the creation and management of loudspeaker preset libraries.
- The **[Power Management]** menu enables various automatic switch-on and standby options to be engaged. The Power Management menu also offers a timed Mute function.

DIAGRAM 8K

AMP CONFIGURATOR **[Settings]** tab menu



• The **[GPIO]** menu enables configuration of the multi-purpose GPIO interface pins.

• The **[LAN]** menu enables configuration and reset of the wired network options and parameters.

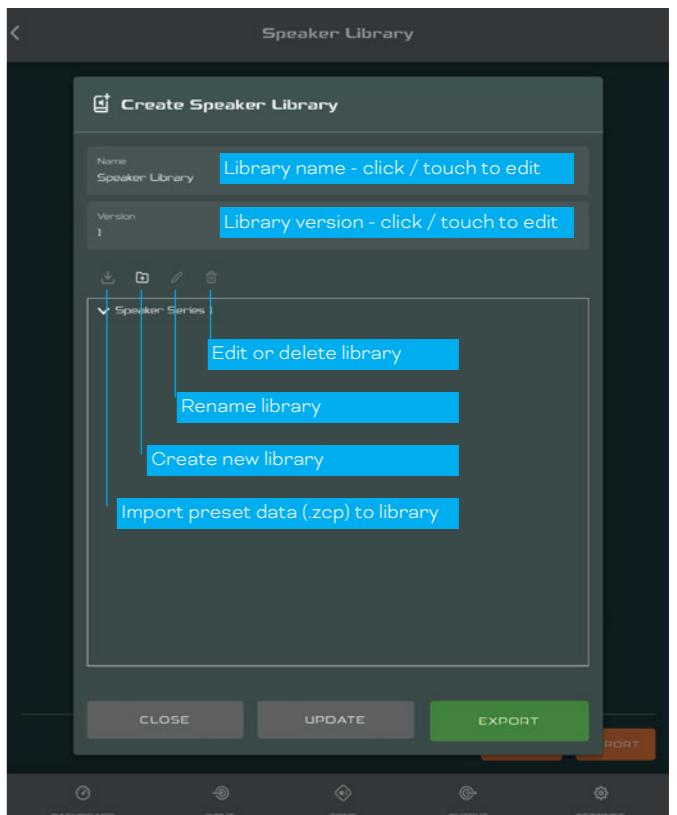
• The **[WiFi]** menu enables configuration and reset of the wireless network options and parameters.

### NOTE

The front panel power switch will override any power management settings.

DIAGRAM 8L

AMP CONFIGURATOR **[Settings]** tab menu  
Speaker Library Creation and Management



## 8.6 SETUP AND SIGNAL ROUTING

Thanks to the DALI PHANTOM CI AMP CONFIGURATOR the AMP-4125 DSP amplifier offers considerable versatility in terms of sources, signal routing, installation zones and output modes. Inputs can be freely assigned to installation zones, and those zones assigned freely to the available amplifier outputs in either Lo-Z or Hi-Z modes.

This versatility enables, for example, different inputs to be routed to different output zones.

The following paragraphs describe and illustrate the recommended procedure for configuring input, zone and output routing. A general signal flow schematic is also illustrated in **Diagram 8M**.

## 8.7 INPUT SETUP

Open the configuration Dashboard and select the **[Input]** tab. The **[Input]** tab is shown in **Diagram 8B**.

- To edit default input names simply select and type in the Input Name field.
- Define a mono or stereo input by selecting the appropriate option. Defining a stereo input will reduce the total number of discrete inputs available.
- Select an input sensitivity option from the **[Sensitivity]** drop-down menu: +14 dB, +4 dB, -10 dB and **[Microphone]** options are available. Generally, the +14 dB or +4 dB options are appropriate for “professional audio” source hardware with balanced outputs, while the -10 dB option is more appropriate for “consumer audio” source hardware with unbalanced outputs. The **[Microphone]** option provides the significantly greater sensitivity required for microphones.

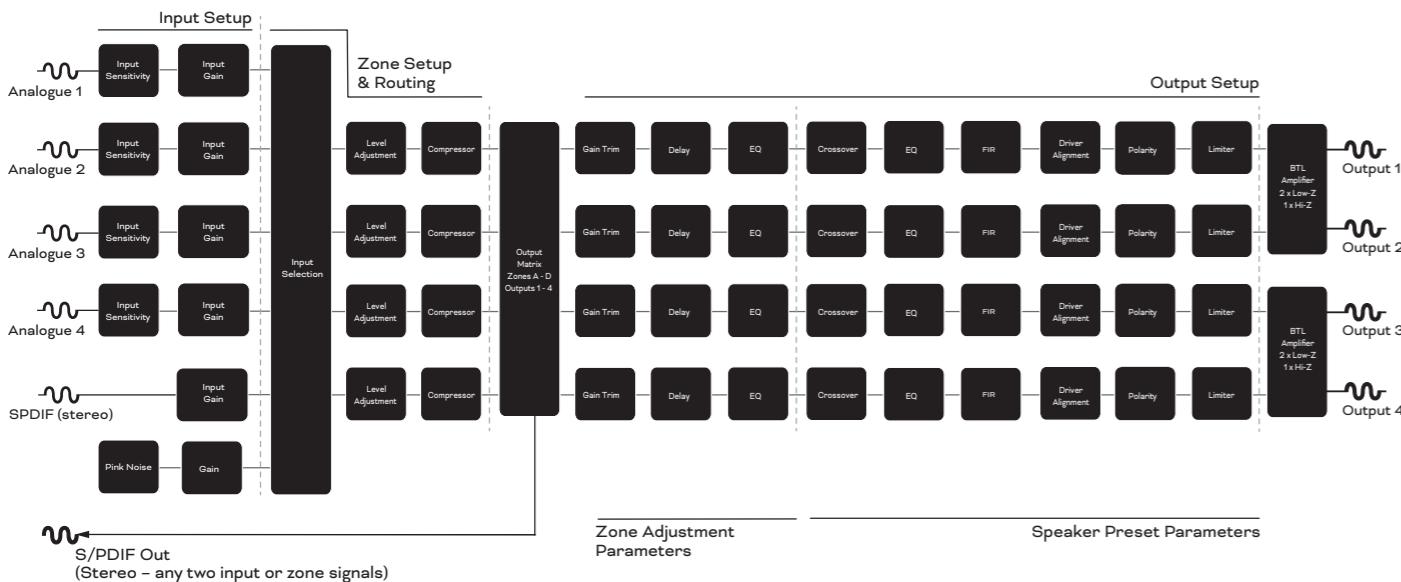
### NOTE

Only dynamic microphones are suitable for connection. Phantom power for condenser microphones is not provided.

- If necessary, adjust the input gain using the slider or up/down icons. Gain adjustment is intended to be used for fine output level adjustment following initial use.

## DIAGRAM 8M

Amplifier Signal Flow Schematic



## 8.8 ZONE SETUP & ROUTING

Open the configuration Dashboard and select the **[Zone]** tab. The **[Zone]** tab is shown in **Diagram 8E**.

- Select the zone to be configured. The number of zones available and their channel format (stereo or mono) will depend on the amplifier input setup and output mode (Lo-Z or Hi-Z). For example, a four output amplifier can have the following zone configurations:
  - 2 x stereo Lo-Z zone
  - 4 x mono Lo-Z zones
  - 2 x mono Hi-Z zone
  - 2 x mono Lo-Z BTL zone
- Name zones by typing in the Zone Name field.
- Adjust the zone volume if required by using the slider.
- Define a mono or stereo zone by selecting the appropriate option. Defining a stereo zone will reduce the total number of further zones available.
- Specify an input for the zone by selecting from the drop-down menu. Selecting a stereo input for a mono zone will automatically sum the stereo channels to mono.

## NOTES

When configured in Lo-Z BTL mode or Hi-Z mode, the AMP-4125 DSP amplifier operates in “bridged” mode where the output of two channels is combined. This means that the number of output channels available in these modes is half that available in Lo-Z mode.

Mono signals might be mono at source, created through combining the left and right channels of a stereo signal (summed mono) or treating the left and right channels of a stereo signal independently (split mono).

BTL mode is only allowed for speakers with an impedance of 8 ohm or higher.

## 8.9 GPIO SETUP AND CONNECTION

The AMP-4125 DSP amplifier provides a GPIO socket that enables remote control of volume, standby, mute and trigger functions. The GPIO connector pin functions are described in the **[GPIO]** Settings menu illustrated in **Diagram 8N**. The connection of GPIO based remote volume control and standby/mute are illustrated in **Diagram 8O** and **Diagram 8P** respectively.

### NOTES

**!** The GPIO connector must not be used for any unintended purpose. Amplifier damage may result from incorrect use of GPIO.

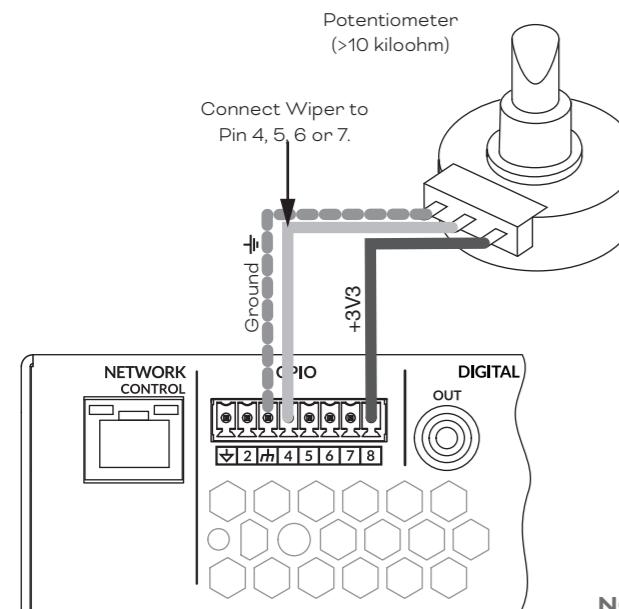
**!** Shielded cable must be used when connecting standby switches and potentiometers via GPIO.

**!** GPIO Pin 8 has a low output impedance and is able to supply a maximum current of 10 mA.

**!** GPIO Pin 1 and Pin 3 both offer ground connections: Pin 1 is connected directly to the amplifier chassis. Pin 3 is connected to the chassis via a 220 ohm resistor. The "soft ground" connection of Pin 3 is potentially useful for managing ground loops that may cause audible hum.

### DIAGRAM 8O

Potentiometer connections for remote volume control via GPIO

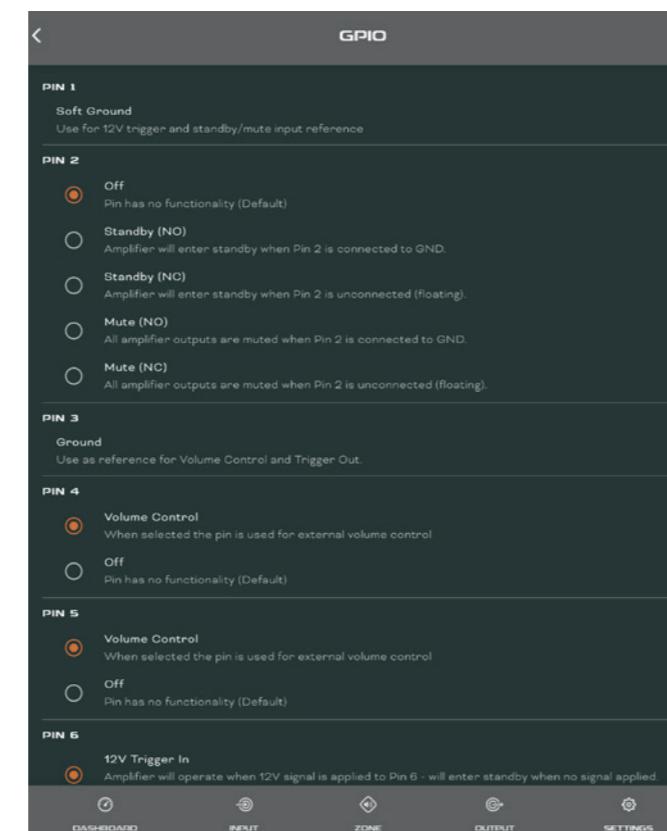


### NOTE

Diagram 6F illustrates use of the GPIO connector.

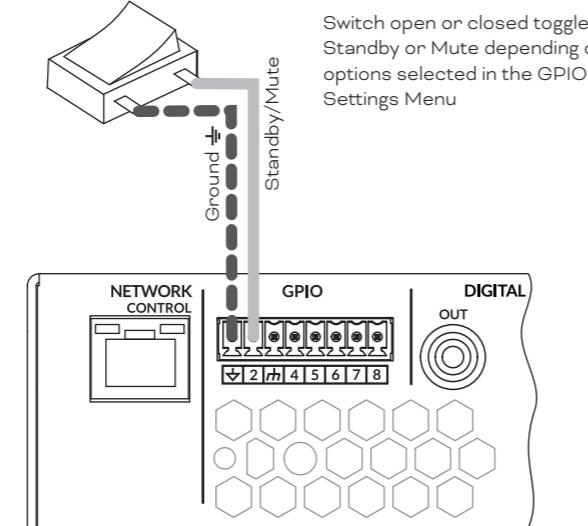
### DIAGRAM 8N

AMP CONFIGURATOR **[GPIO]** Settings Menu



### DIAGRAM 8P

Connections for remote standby/mute switch via GPIO



### NOTE

Diagram 6F illustrates use of the GPIO connector.

## 9. SPECIFICATIONS

### DALI PHANTOM CI AMP-4125 DSP

<b>Frequency range</b>	13 Hz – 20 kHz (+/- 1 dB, 8 ohm load, 3 dB below rated power)
<b>Connection input(s)</b>	4 x Analogue unbalanced, RCA 4 x Analogue balanced, Euroblock connector 1 x S/PDIF digital in, RCA
<b>Output channels</b>	4 x Lo-Z loudspeaker (4 - 16 ohm) 2 x Hi-Z loudspeaker (70V / 100V) 1 x S/PDIF digital out, RCA
<b>Maximum speaker cable cross section</b>	2,5 mm <sup>2</sup> / AWG 14 (Euroblock/"Phoenix" standard)
<b>Output power @ 4 ohm</b>	4 x 125 W (SE)* 2 x 250 W (BTL)**
<b>Output power @ 8 ohm</b>	4 x 125 W (SE)* 2 x 250 W (BTL)**
<b>Output power @ 70 V</b>	2 x 250 W (BTL)**
<b>Output power @ 100 V</b>	2 x 250 W (BTL)**
<b>Total system power</b>	500 W
<b>Output voltage</b>	SE: 70Vp / 140Vpp (unloaded) BTL: 140Vp / 280Vpp (unloaded) 70/100V (High-Z)
<b>Output circuitry</b>	UMAC™ Class D. Full bandwidth PWM modulator with ultra-low distortion
<b>Signal to noise-ratio</b>	>106 dB (A-weighted, 20 Hz - 20 kHz, 8 ohm load)
<b>THD+N (typical)</b>	< 0.05 % (20 Hz - 20 kHz, 8 ohm load, 3 dB below rated power)
<b>Other features</b>	Short circuit protection DC protection Undervoltage protection Temperature protection Overload protection Rack mountable
<b>Power supply</b>	UREC™ universal mains switch mode power supply with Power Factor Correction (PFC) and standby converter
<b>Operating temperature</b>	0 - 40° C
<b>Operating voltage/ frequency</b>	Universal mains 100 V-240 V, 50 Hz-60 Hz
<b>Power ratings</b>	1% THD @ 120 Vac and 230 Vac
<b>Standby consumption</b>	< 0.6 W
<b>Outer dimensions (H x W x D)</b>	44 x 220 x 319 mm 1.70 x 8.70 x 12.60 inches
<b>Weight</b>	1.97 kg 4.34 lb
<b>Shipping weight</b>	2.71 kg 5.97 lb
<b>Accessories</b>	2 x Two channel balanced input connector 2 x Two channel speaker output connector 1 x GPIO socket connector 1 x Mains power cable 4 x Adhesive rubber feet
<b>Optional accessories</b>	DALI CI AMP - 1RU Rack Mount Kit

\*SE – Conventional, single ended output mode

\*\*BTL – Bridge-tied load output mode. (8/16 ohms only)