

Installation Amplifiers **2G**

Product Manual

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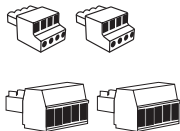
Amplifier Unit



Amplifier Unit



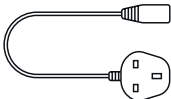
Rack Mount Brackets



Input / Output
Connectors



GPIO Socket
Connector



Mains Cable



Adhesive Feet

Welcome to Installation Amplifiers 2G

Thank you for purchasing this Monitor Audio amplifier.

This product has been designed to provide configurable, consistent and reliable high performance audio power amplification for residential, commercial and entertainment applications.

In this product manual, you'll find information about setting up and maintaining this Installation Amplifier.

If you need any further assistance, please contact our technical team at monitoraudio.com/support

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Connections overview

The Installation Amplifier's 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, and wireless or RJ45 socket Ethernet network connection options are also provided.

Installation Amplifiers have no mains power switch and are operational as soon as mains power is connected via the IEC 60320 mains socket.

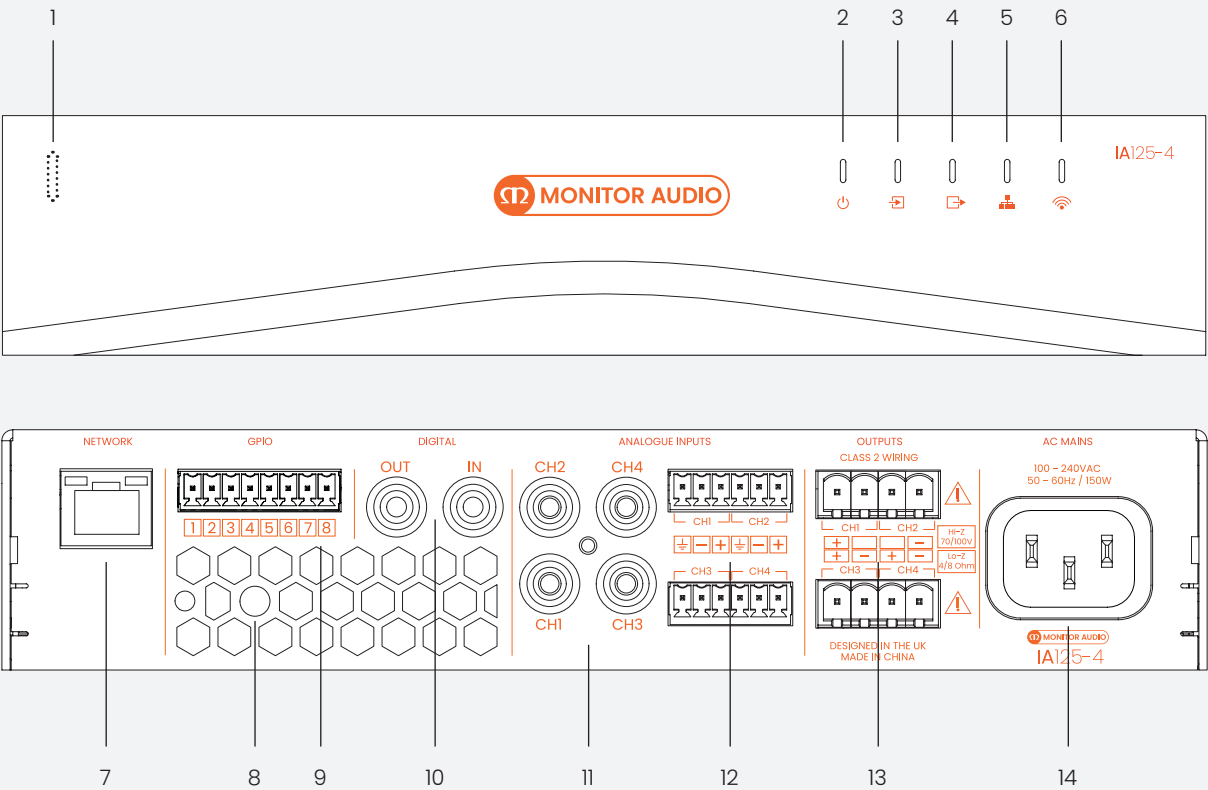
Prior to making any connections to the amplifier we strongly recommend first connecting the amplifier to the network and configuring the amplifier for its intended use, refer to page 6 for network connectivity and page 12 and 18 for output (Lo-Z or Hi-Z) configuration.

Mains Power Connection

Installation Amplifiers incorporate a power factor corrected 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 switched mains supply.

Lo-Z and Hi-Z

Lo-Z refers to low impedance speaker connections (between 4-8Ohms). This is the default Output mode for our Installation Amplifiers. Hi-Z refers to high impedance speakers (70/100 Volt line).



Front Panel

1	Power Button (IA750-2/4 only)
2	Status LED
3	Input LED
4	Output LED
5	Network LED
6	Wi-Fi LED

Back Panel

7	RJ45 Connection
8	Wi-Fi Antenna
9	GPIO (General Purpose Input/Output) (Selectable in Web Interface)
10	Digital Audio Input/Output
11	Unbalanced RCA Inputs
12	Balanced Inputs, Mic Input on Channel 1 & 2 (Sensitivity Selectable in Network Control)
13	Speaker Outputs
14	IEC 60320 mains Input

Before making input, output and GPIO connections, it is particularly important that the output amplifier format is configured appropriately for the speakers that are to be connected. To do this, the amplifier will need to be connected to the network. This can be either wired or wireless.

Wireless Connection

A mobile, laptop or desktop device with Wi-Fi functionality and a web browser is required. Follow the steps below.

1. Connect the Installation Amplifier to mains power using the supplied mains cable and switch it on via the front panel Standby switch. Wait for the front panel Wi-Fi indicator to illuminate orange.
2. Use a mobile, laptop or desktop device to search for available Wi-Fi networks. Connect to, 'MA [Amp Model] XXXX-XXXX' e.g. 'MA IA750-4 2235-00018' using the password, 'password'. The amplifier serial number can be found on its rear panel.
3. Open a web browser and enter the following IP address: 192.168.4.1. The amplifier configuration web interface page will open in the browser app to enable amplifier configuration as required.

It is strongly recommended that the amplifier Wi-Fi password is changed following initial wireless connection.

Continue to page 8 to learn about the configuration menus, setup and routing.

Wired Connection

A laptop or desktop device with Ethernet functionality, a web browser and a network scanning app is required. Follow the steps below.

1. Connect the Installation Amplifier Network Control socket directly to a laptop or desktop device – or through a switch.
2. Connect the Installation Amplifier to mains power using the supplied mains cable and switch it on via the front panel Standby switch. Wait for the front panel Network indicator to illuminate orange to indicate that the amplifier has network connectivity.
3. The default LAN IP address of the amplifier is 192.168.64.100. Configure your laptop or desktop device to a fixed IP address in the same IP range, for example 192.168.64.10, with Subnet mask 255.255.255.0 (or prefix 24) and set Gateway to 192.168.64.1.
4. Open a web browser and enter the address <http://192.168.64.100/> – The amplifier configuration web page interface will open to enable amplifier configuration as required.

Please refer to page 16 for speaker configuration before connecting your speakers.

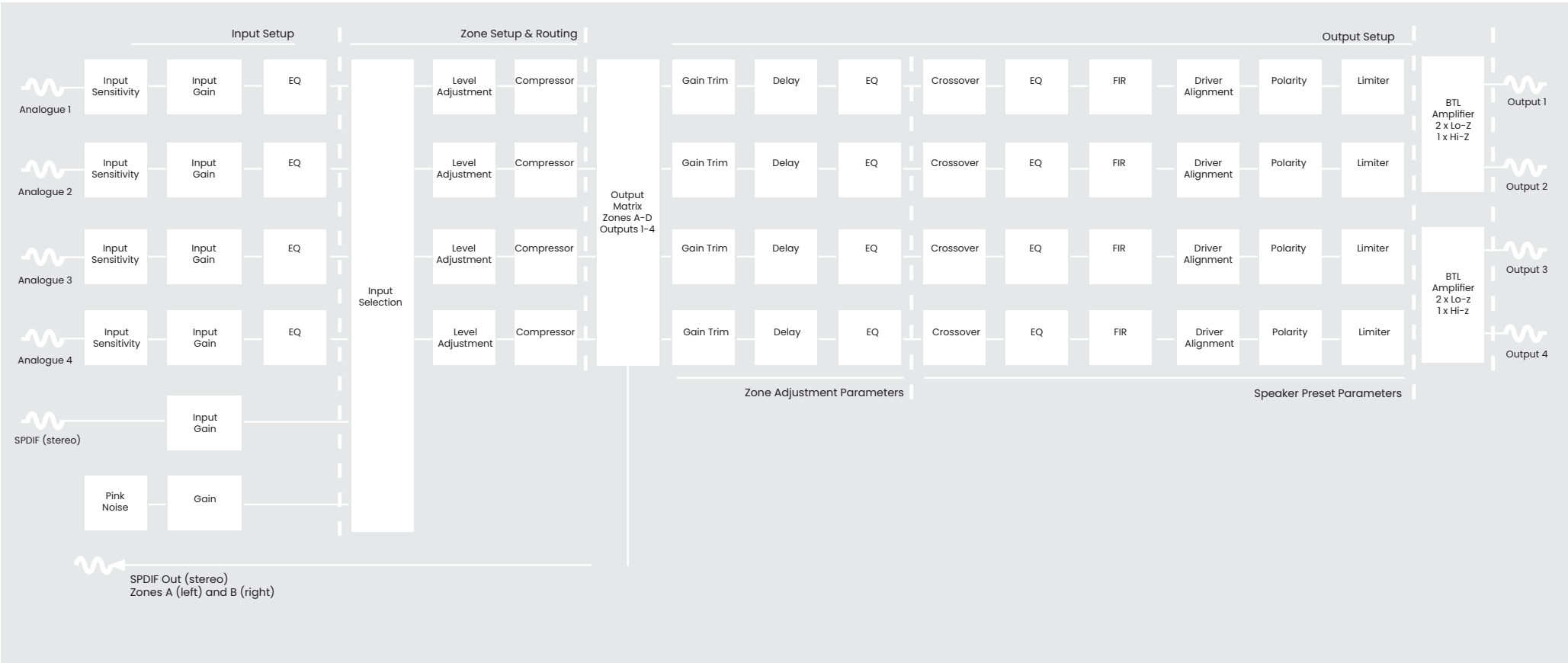
The configuration menus are accessed via a web page interface and cover Input, Zone, Output and General Settings functions. The configuration menus are fully described on pages 8-23.

Setup and signal routing

Thanks to their network based configuration features, our Installation Amplifiers offer 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, one amplifier simultaneously to drive both Lo-Z and Hi-Z speakers, or for 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 the diagram below.



Setup and signal routing

Dashboard

With the Installation Amplifier successfully connected to a network, searching the IP address from a web browser displays the Installation Amplifiers configuration Dashboard screen, as shown in the image opposite.

From the Dashboard the power can be switched On/Off and the volume for each zone can be adjusted. If the name for the zone has been altered within the Zone tab the same name will also be displayed here.

Input Setup

Open the configuration Dashboard and select the Input Tab. The Input Tab is shown opposite.

- 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 drop-down menu: +14dB, +4dB, -10dB and 'microphone' options are available. Generally, the +14dB or +4dB options are appropriate for 'professional audio' source hardware with balanced outputs, while the -10dB 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 enter the value manually. Gain adjustment is intended for fine output level adjustment following initial use. The input level display should remain green. If it displays red, the input gain should be reduced.

- EQ can be applied to each input, with up to 5 bands of adjustment. Enable the band and set the type of EQ to be applied. The Frequency, Gain or Q factor is adjusted using the sliders.

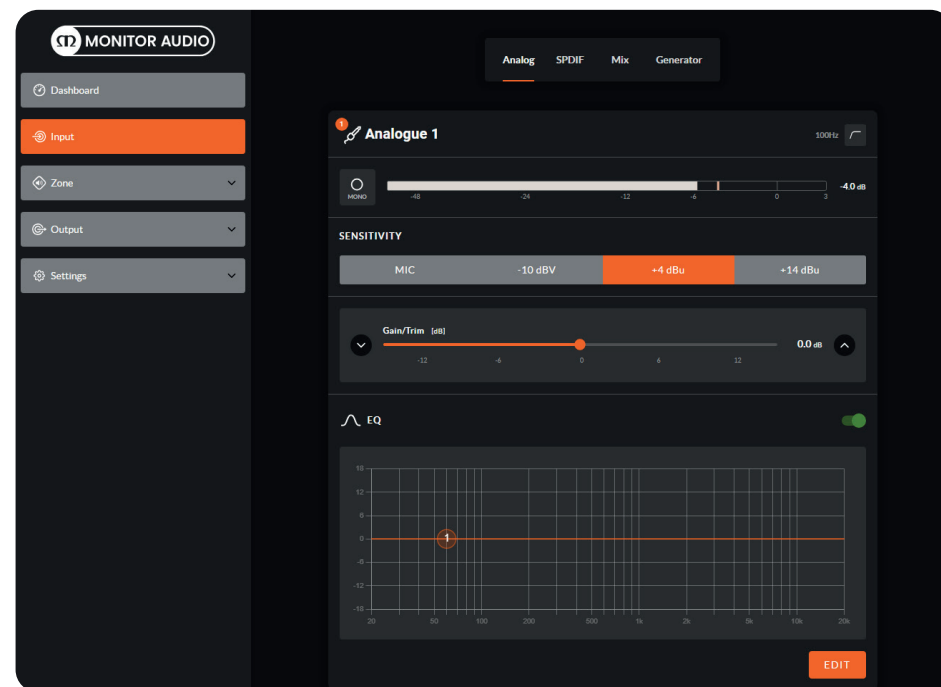
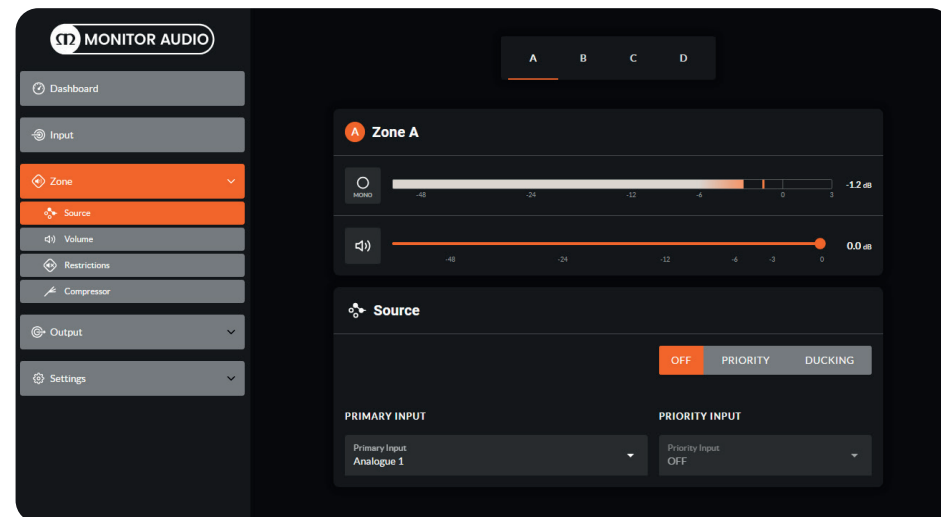
At the top of the screen there is an option for Mix or Generator. The mix tab allows you to create mixes of all inputs (Analogue and SPDIF) using the volume sliders. Mixes can be selected in the source section on the Zone tab (refer to page 12).

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.

The generator function can be used to set a Noise or SINE wave, this can be useful for testing the outputs.

Warning: We recommend not using the SINE wave option if you are not an experienced installer, doing so incorrectly with the gain set too high could damage your speakers.



Setup and signal routing

Zone Tab

The Zone Tab enables installation zones to be defined and named, and provides access to further sub-menus. Zones might be bar or restaurant areas for example, or different rooms in a 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.

Zone Setup & Routing

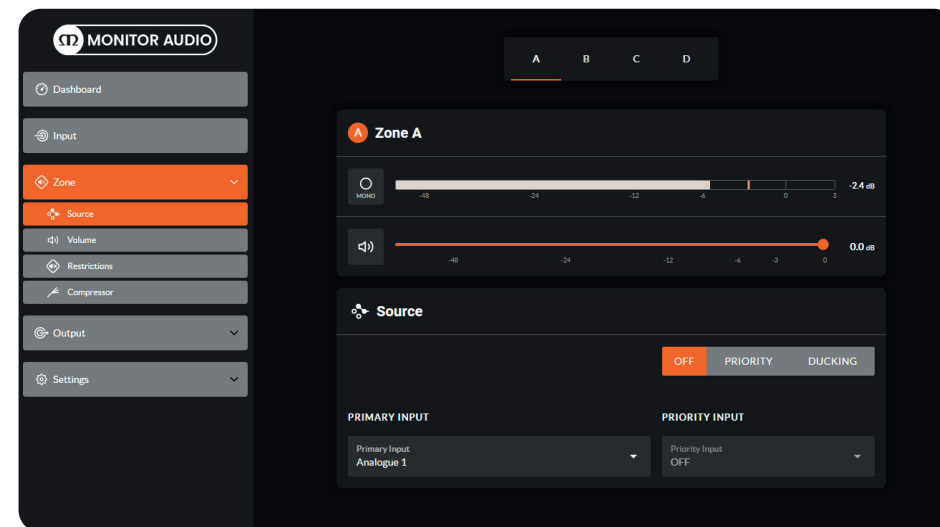
Open the configuration Dashboard and select the Zone Tab. The Zone Tab is shown opposite.

- Select the zone to be configured from the top of the page. The number of zones available will depend on the amplifier model, input setup and output mode (Lo-Z or Hi-Z). For example, a two output amplifier will have two zones available if only mono inputs configured, but have only one zone available if any stereo input is configured. Similarly, a four output amplifier with only mono inputs configured but, one output configured for Hi-Z mode will have only three zones available.

Note: When configured in Hi-Z mode Installation Amplifiers operate in 'bridged' mode. This is where the output of two channels is combined for an increase in power. This means that the number of output channels available in Hi-Z mode is half that available in Lo-Z mode. Outputs can also be bridged in Lo-Z mode if using the IA750-2 or IA750-4.

- Name the zone by typing in the Zone Name field.
- Define a mono or stereo zone by selecting the appropriate option. Defining a stereo zone will reduce the total number of further zones available.
- Adjust the zone volume if required by using the slider.
- 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. (left -6dB + right -6dB).
- 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 installation zones. The GPIO configuration menu can be found under the Settings Tab.
- Restrictions can be added to the Inputs allowed for each Zone so they are not shown in the Zone input selection.
- The Compressor option enables default or custom signal compression to be applied to individual installation zones.

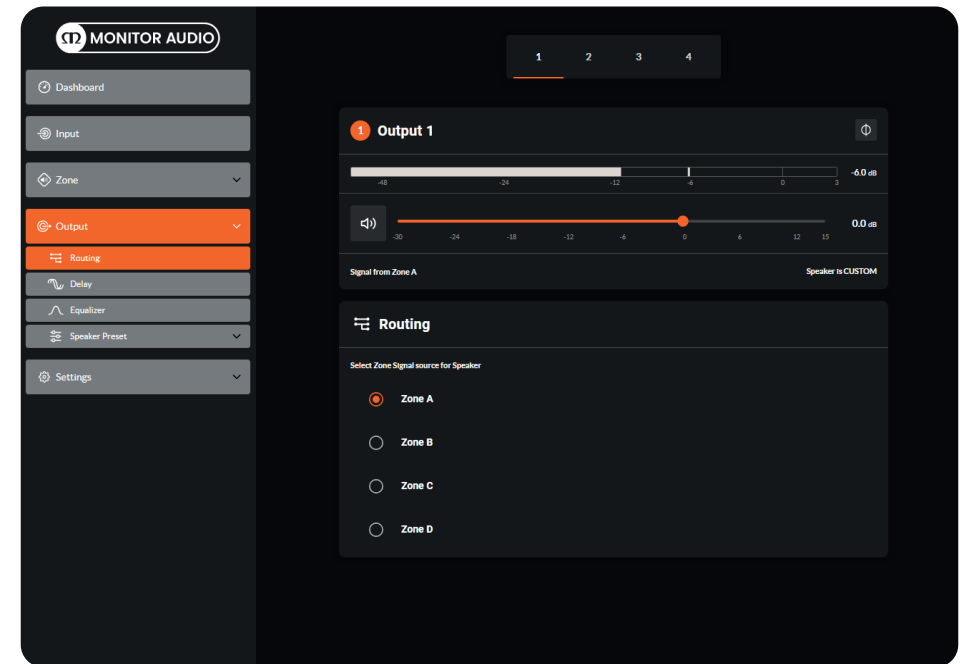
Note: Compression can be useful to reduce the volume difference between loud and quiet audio material. The lower the compression threshold is set, the more the difference between loud and soft will be reduced. The overall zone volume may need to be increased when compression is used. The default compression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



Output Tab

The Output tab enables amplifier 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 page.

Note: The number of individual outputs available for configuration will depend on the Installation Amplifier model and the input, zone and output mode configuration. For example, the IA60-4 will have four outputs available if Lo-Z mode is selected and two outputs if Hi-Z mode is selected. You can also mix by having two outputs in Lo-Z mode and one output in Hi-Z mode.



Setup and signal routing

Output Setup

Open the configuration Dashboard and select the Output Tab.

- Select the output to be configured.
- Specifying a Zone as stereo will automatically generate three output channel options: left channel, right channel or summed mono. The summed mono signal can potentially be used to drive a subwoofer (left -0dB + right -0dB).
- The Routing menu enables zones to be assigned to amplifier outputs.
- The Delay menu enables audio delay to be applied to individual amplifier outputs.
- The Equalizer 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 setting can be altered by pressing the Edit function and using the sliders or by clicking on and dragging the different frequency band numbers on the graph itself, as shown in the example opposite. To save any changes press the OK button.
- Select the mode required for the output.
- The Speaker Preset menu allows you to Import or Export presets. For information on creating speaker presets and adding them to your Speaker Library please refer to page 21.

Selecting the Speaker Preset tab will also expand the listed options to show the following sub-menus:

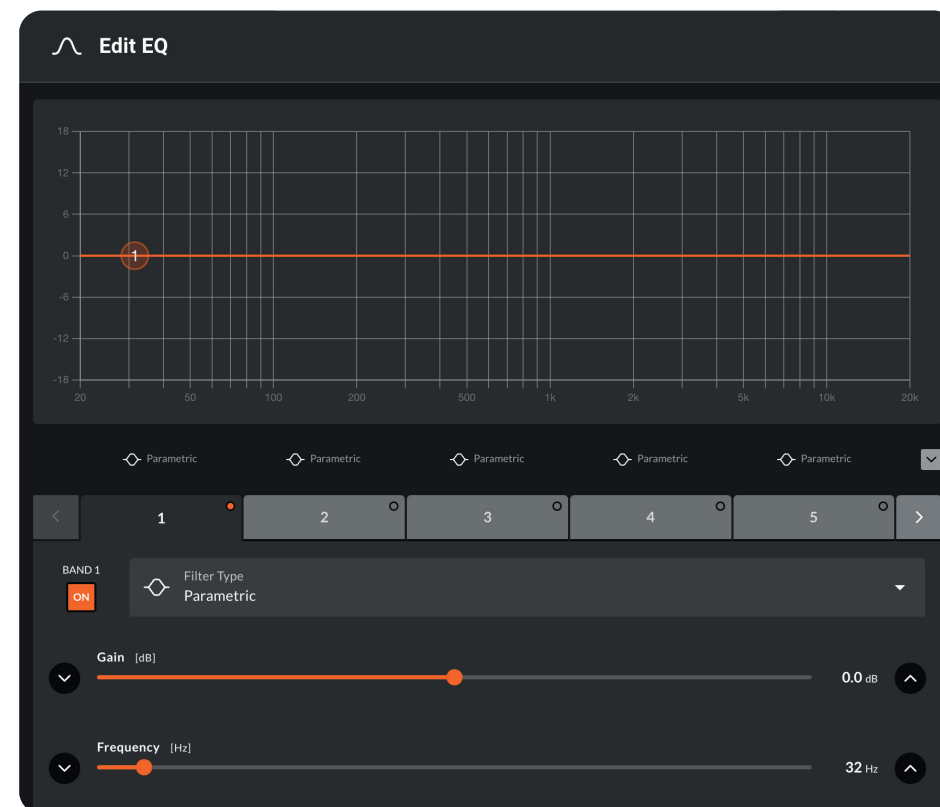
- The Crossover & Gain menu enables high or low-pass crossover filters and gain adjustment to be applied to individual amplifier outputs. Crossover filter settings configured for one amplifier output can be copied and applied to other outputs.
- The Speaker EQ menu enables parametric equalization to be applied to individual amplifier outputs following the application of crossover filtering. Equalizer settings configured for one amplifier output can be copied and applied to other outputs.
- The Driver Alignment menu enables delay to be applied to individual amplifier outputs following the application of crossover filtering.
- The Polarity menu enables the polarity of individual amplifier outputs to be reversed.
- The Limiter menu enables signal limiting to be applied to individual amplifier output. There are options for Clip, Peak and RMS Limiting.

Note: When switching between output modes the limiter voltage setting is reset to default (maximum).

Note: An output limiter can be used to restrict the peak volume level from speakers connected to each output.

- The Output Mode menu enables individual amplifier outputs to be switched off or configured for Lo-Z or Hi-Z modes. In Hi-Z modes, a high-pass filter can also be configured and applied to the output.

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



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.

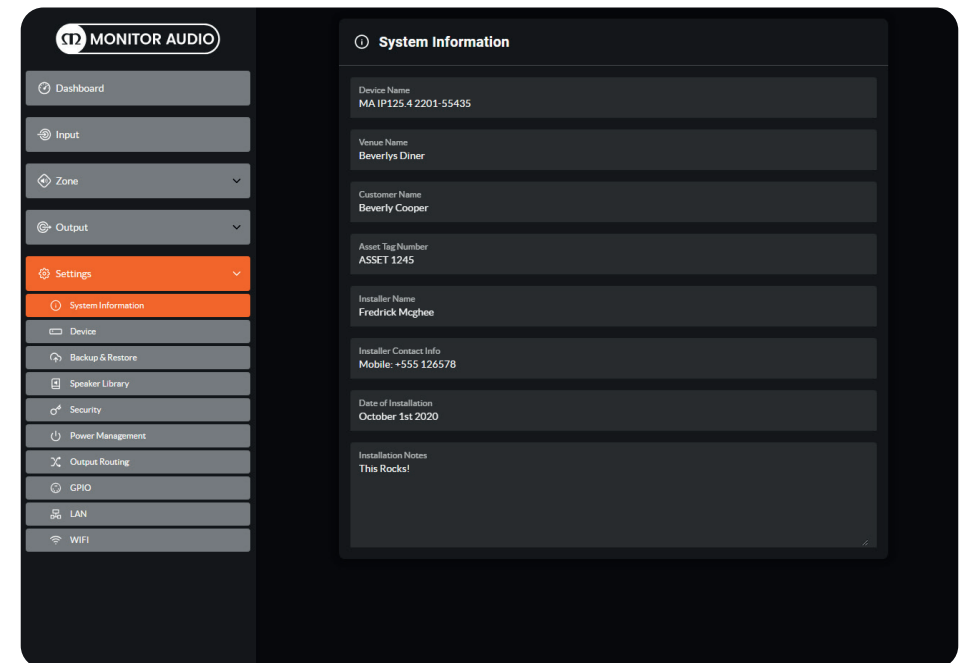
- The System Information menu provides text fields for the recording of installation data.
- The Device menu records amplifier specific information such as the model number and firmware version. The 'Find Me' option can be used to identify the amplifier you are currently connected to. When activated the lights on the front of the amplifier will cycle from left to right.

The firmware can be updated from a file on your computer or device. The latest firmware can be found on our website (monitoraudio.com) in the downloads section on the product page.

- The Backup & Restore menu enables amplifier configuration data to be downloaded to an external archive, and enables previously saved configuration files to be uploaded and adopted by the currently connected amplifier. The connected amplifier can also be reset to factory settings from here.
- The Speaker Library menu allows you to create a Library of presets and order them into folders. Refer to page 20 for instructions on creating presets and adding them to your library.
- The security menu allows you to add password authentication to access the amplifier.
- The Power Management menu enables various automatic switch-on options to be engaged. The Power Management menu also offers timed Standby and Mute function when the amplifier powers on.

Note: When the Standby time is set to OFF the amplifier remains On.

- The GPIO menu enables configuration of the multi-purpose GPIO interface pins, refer to page 22.
- The LAN menu enables selection between Static or DHCP network modes. In Static mode the network parameters can be set.
- The Wi-Fi menu enables configuration and reset of the wireless network options and parameters.



Using the Monitor Audio Speaker Library

Our Monitor Audio Speaker Library includes a large selection of Speaker Presets for our custom installation and home theatre loudspeakers. It is available to download from our website (monitoraudio.com) in the downloads section on the product page.

To import the Library go into the Settings Tab and then Speaker Library. Press the Import button, navigate to the library file (*.zcl) on your computer and press Load. You can now select presets from the library in the Output tab.

NOTE: If using 70/100v line speakers or bridging the outputs, the Output Mode needs to be set to Hi-Z. This is because loading a speaker preset will revert the output mode to the default setting (Lo-Z). To correct this select the Customise Preset option and then re-apply Hi-Z Mode setting.

Creating Your Own Speaker Presets

Speaker Presets can be made from the parameters and settings within the Speaker Preset sub-menus in the Output tab.

Once you have made your adjustments e.g. Crossover & Gain, Speaker EQ, etc you can export it to a preset to use later.

When exporting presets you can select which settings you wish to export from a checklist and also if you want them to be protected. This will prevent others from making further changes to your preset.

To import presets select Import and then locate the preset file (*.zcp). You can also select presets that have been added to your Speaker Library, which can be generated in the Settings tab. Press 'Customise Preset' to modify and enable access to settings.

Creating Your Own Speaker Library

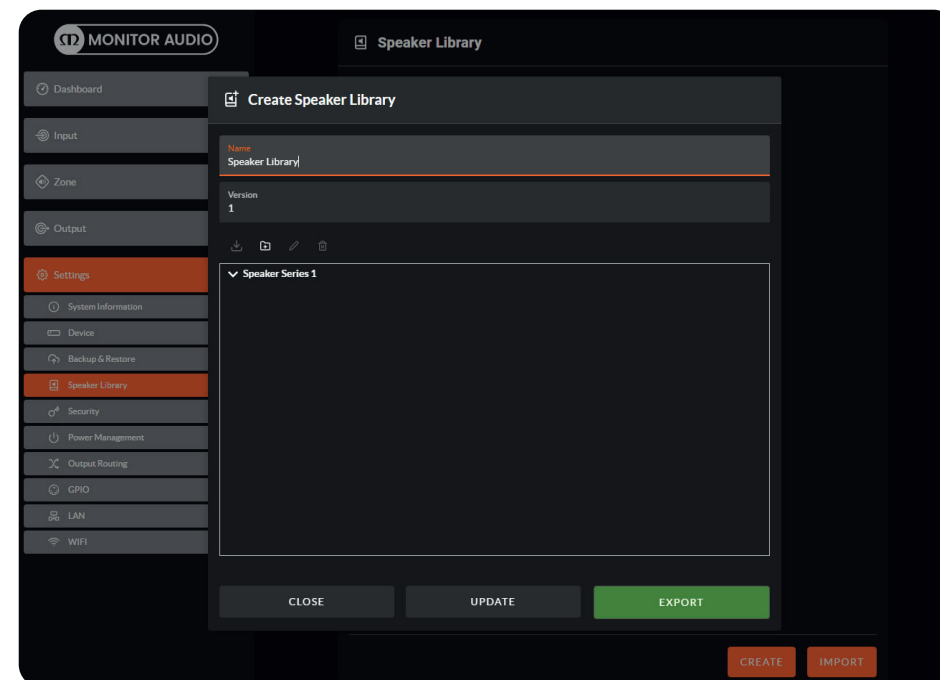
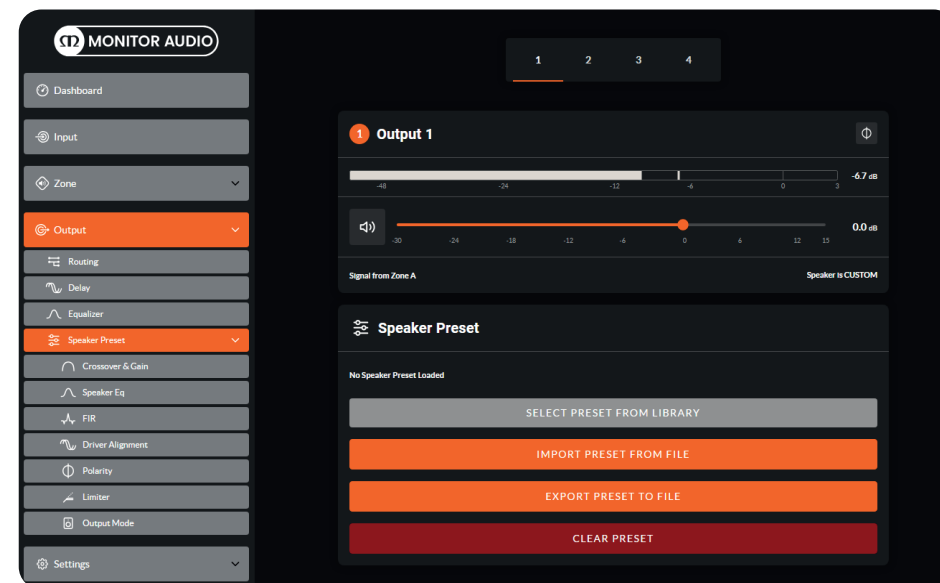
You can add your Speaker Presets to a Speaker Library, which can then be exported and imported between Installation Amplifiers. To make a new Speaker Library go to the tab in Settings and select Create, you will then be asked to name the library and set a version number.

Select Speaker Series 1. Using the icons to the right of the window you can Import Speaker Preset(s), Add Series, Edit Series or Delete.

Using the Import Speaker Preset function you can build your library to include all of your Speaker Presets that you use. Once you have finished press Update to save the changes. You can also Export the Library to use on other amplifiers.


To import the Library go into the Settings Tab and then Speaker Library. Press the Import button, navigate to the library file (*.zcl) on your computer and press Load. You can now select presets from the library in the Output tab.


NOTE: If using 70/100v line speakers or bridging the outputs, the Output Mode needs to be set to Hi-Z. This is because loading a speaker preset will revert the output mode to the default setting (Lo-Z). To correct this select the Customise Preset option and then re-apply Hi-Z Mode setting.




GPIO setup and connection

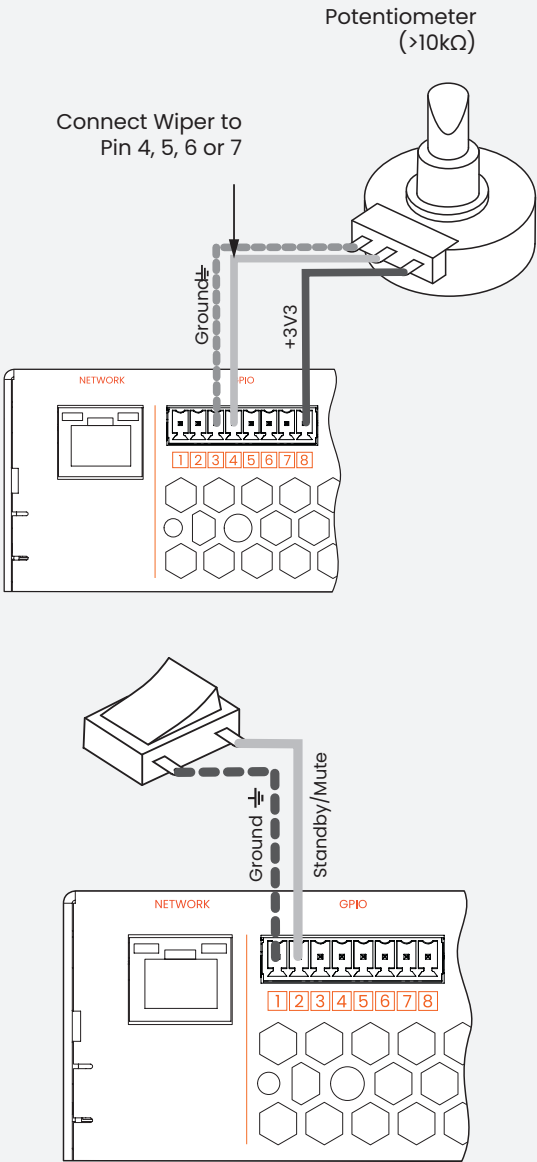
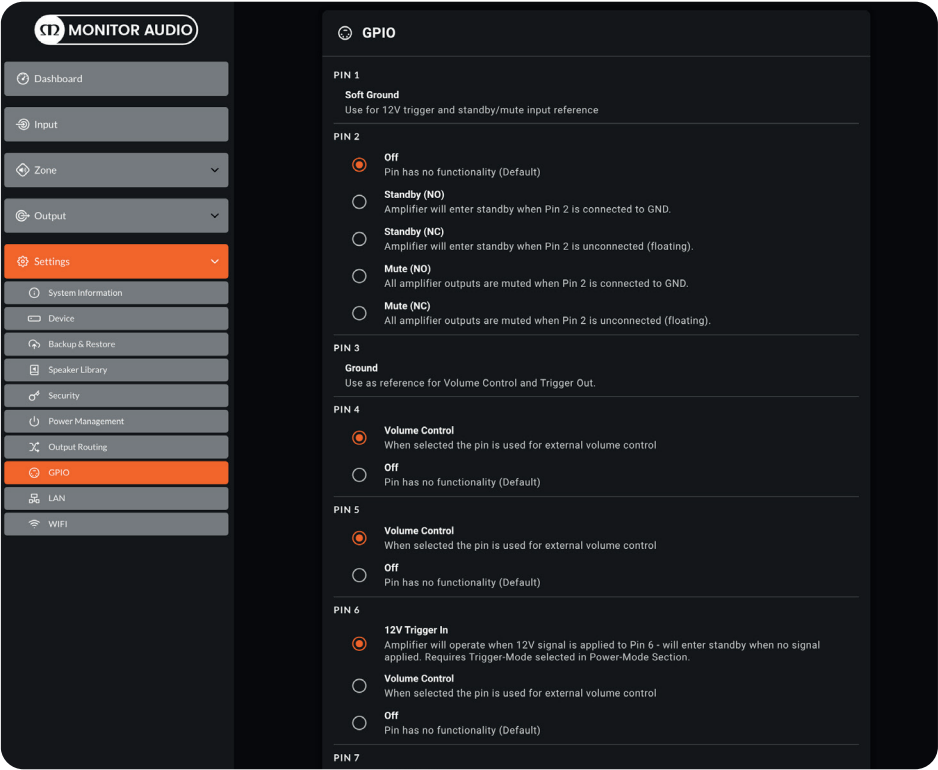
Our Installation Amplifiers provide a GPIO socket that enables remote control of volume, standby, mute and trigger functions. The GPIO connector pin functions are described in the GPIO Settings menu shown below. The connection of GPIO based remote volume control and standby/mute are illustrated on the right.

- 

Note: The GPIO connector must NOT be used for any unintended purpose. Amplifier damage may result from incorrect use of GPIO.
- 

Note: Shielded cable must be used when connecting standby switches and potentiometers via GPIO.
- 

Note: GPIO Pin 8 has an output impedance of 1kΩ. Connected devices must be able to sink 3.3mA.



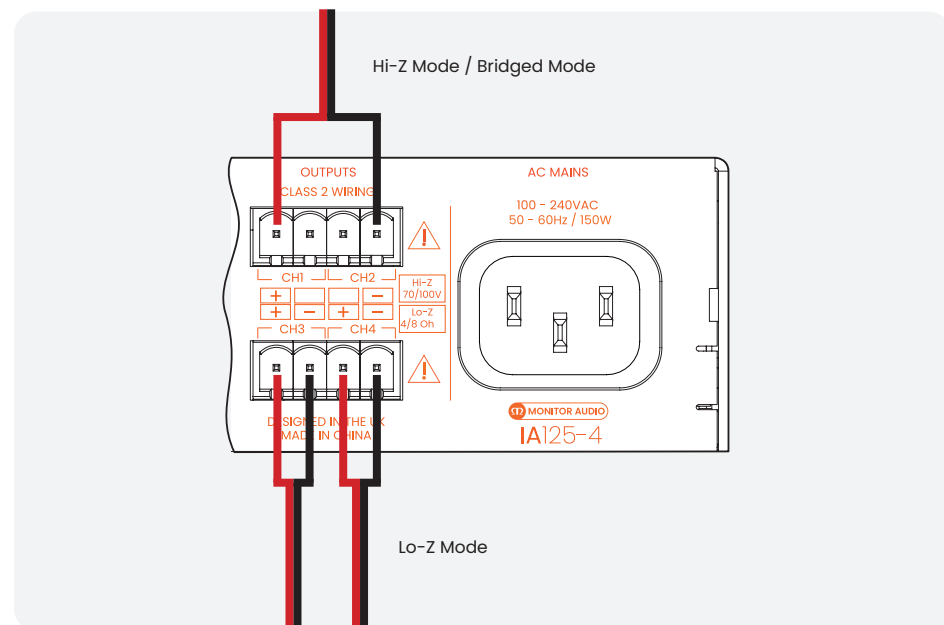
Input, output and GPIO cable connections

Cable connections to the Input and Output block connectors should be made with bare wire with a maximum thickness of 14 AWG for the GPIO connector and 12 AWG for the speaker connector. Insert the cable into the relevant opening on the Phoenix connector and secure it in place using a flat headed screwdriver. Please refer to the diagrams below for wiring your Output, Input and GPIO cable connections.

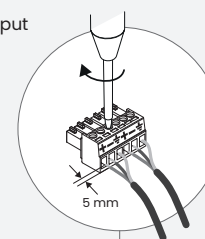


Do not touch the output terminals while the amplifier is switched on. All connections should be made with the amplifier switched off and the mains cable removed.

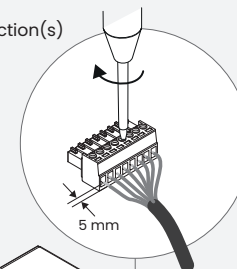
If using the Lo-Z channel Output Mode connections will be made to the positive and negative connections as shown below. If using the channel Hi-Z or Bridged Output Modes both channels are joined to offer increased power and connections are made to outermost positive and negative connections, as shown below.



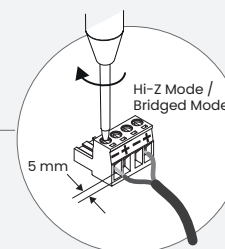
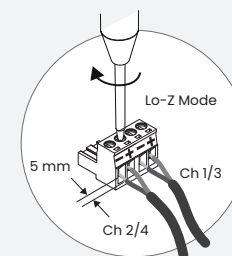
Balanced Analogue Input



GPIO Cable Connection(s)



Output Cable Connection(s)



Mounting

Note: The rack mounting and desk/wall mounting components described and illustrated on the right are not supplied with half rack models, but are available to purchase as accessories. Contact your local MA dealer for more information.

Half rack Installation Amplifier models can be configured for rack installation using our Installation Amplifier Rack Kit (IARACK), which includes one standard rack 'ear' and one half-rack extension piece as illustrated in the right image. A connection plate is also included for securing multiple half rack Installation Amplifiers side by side.

Half rack Installation Amplifiers can also be attached to the underside of desks or wall mounted using our Installation Amplifier Wall/Desk Kit (IAWDK).

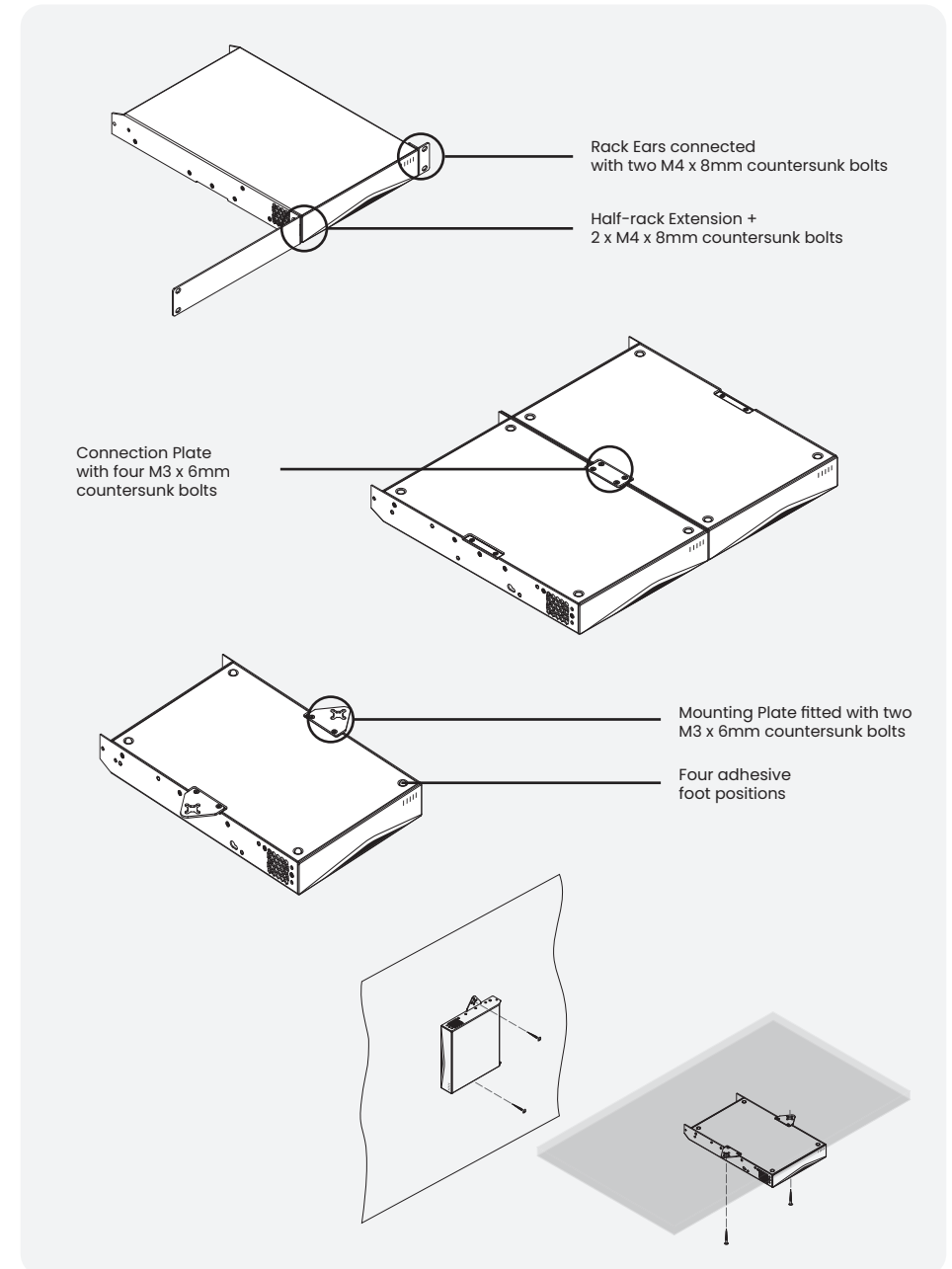
Full rack models will use the two standard rack 'ear' brackets supplied on both sides of the amplifier.

If not installed in an equipment rack, Installation Amplifiers can be placed free-standing on a flat surface. Adhesive rubber feet are supplied for this purpose.

The adhesive rubber feet should also be used in these circumstances to minimise the possibility of vibration between the amplifier and mounting surface. Wall and desk mounting is illustrated opposite.

Providing sufficient airflow

The installation and equipment rack should be configured to provide appropriate ventilation airflow space around the sides and rear of the amplifier, please refer to the next section below. Ventilation airflow space of at least 25 mm (1") should be maintained along at least one side of the amplifier at all times. Ventilation apertures are also located on the rear panel of the amplifier and must not be obstructed. It is important to retain at least 80 mm (3") free space for airflow behind the amplifier rear panel.



Once all connections have been made and configuration options selected, the Installation Amplifier(s) are ready for use. If an input signal above -60dB is present on any input, the front panel Input and Standby indicators will illuminate orange to indicate normal amplifier operation. Audio will be heard from any connected speakers.

Note: Installation Amplifiers will not switch on from Standby Mode unless an analogue input signal is present or a network or external standby switch is operated.

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 Settings Menu. Amplifier cooling fan speed is temperature controlled. The fan will switch off when the amplifier enters Standby Mode.

The front panel LED indicators will illuminate to indicate the following operational states:

Status LED	Off	Mains Power Disconnected
	Orange	Amplifier Operational
	Pulse Orange	Standby Mode
	Pulse Orange	GPIO Triggered Standby Mode
Input LED	Off	No Input Signal Detected
	Orange	Signal Detected
	White	Input Overloaded / Clipping
Output LED	Off	No Output Signal Detected
	Orange	Signal Detected
	White	Signal Limiting / Clipping
	White	Channel is in Overload / Protection Mode
Network LED	Off	No Network Detected
	Orange	Network Detected
Wi-Fi LED	Off	Wi-Fi Disabled
	Orange	Wi-Fi Enabled

Warranty

In the unlikely event that there is a defect with this product, it is covered by the Monitor Audio manufacturer's warranty, provided that the product was supplied by an authorised Monitor Audio retailer.

For the period of cover please refer to the product page on our website at monitoraudio.com

Register your Installation Amplifier

Register your amplifier using the QR code or visit monitoraudio.com/registration



Specifications

Model	IA60-4	IA125-4
Channels	4	4
Output Power @ 4 Ohms/8 Ohms	4 x 60W SE*	4 x 125W SE
Output Power @ 70/100V	2 x 125W BTL**	2 x 250 BTL
Powershare (up to)	1 x 250W	2 x 250W
Power Consumption	75W	150W
Thermal Output	256 BTU***	512 BTU
Polarity (Default)	Non-inverting	
Dimensions	44 x 220 x 325mm (1 ³ / ₄ x 8 ¹¹ / ₁₆ x 1 ¹ / ₅ in)	
Output Voltage	70Vp / 140Vpp (SE unloaded), 140Vp / 280 Vpp (BTL unloaded)	
Signal to Noise-ratio	>106dB (A-weighted, 20Hz - 20kHz, 8 Ohm load)	
THD+N (typical)	<0.05% (20Hz - 20kHz, 8Ohm load, 3dB below rated power)	
Frequency Response	+0/-0.25dB 20Hz - 20kHz (8 Ohm load, 3dB below rated power)	
Protection Circuits	Short circuit, DC, Under-voltage, Temperature and Overload protection	
Power Supply	Switch mode power supply with Power Factor Correction (PFC) and stand-by converter	
Operating Voltage/Frequency	Universal Mains, 100V-240V, 50Hz-60Hz	
Standby Consumption	<0.5W	
Accessories	Rack Mount Kit, Wall/desktop mount kit (sold separately)	
Power Ratings	1% THD @ 120Vac and 230Vac	
Cabinet Finish	Black Anodised	

* SE - Single Ended

** BTL - Bridge Tied Load

*** BTU - British Thermal Unit

Specifications

Model	IA750-2	IA750-4
Channels	2	4
Output power @2 Ohms	2 x 750W SE	4 x 750W SE
Output Power @ 4 Ohms	2 x 750W SE, 1 x 1500W BTL	4 x 750W SE, 2 x 1500W BTL
Output Power @ 8 Ohms	2 x 400W SE, 1 x 1500W BTL	2 x 400W SE, 2 x 1500W BTL
Output Power @ 70V	1 x 1200W BTL	1 x 1200W BTL
Output Power @ 100V	1 x 1500W BTL	2 x 1500W BTL
Maximum Total Output Power, All Channels Driven	1500W	3000W
Power Consumption	350W	700W
Thermal Output	1200 BTU	2400 BTU
Polarity (Default)	Non-inverting	
Dimensions	88 x 440 x 329mm (3 ^{5/16} x 17 ^{5/16} x 12 ^{15/16} *)	
Output Voltage	80Vp / 160Vpp (SE unloaded), 160Vp / 320Vpp (BTL unloaded)	
Signal to Noise-ratio	>108dB (A-weighted, 20Hz – 20kHz, 8 Ohm load)	
THD+N (typical)	<0.05% (20Hz – 20kHz, 8 Ohm load, 3dB below rated power)	
Frequency Response	+0/-0.5dB 20Hz – 20kHz (8 Ohm load, 3dB below rated power)	
Protection Circuits	Short circuit, DC, Under-voltage, Temperature and Overload protection	
Power Supply	Switch mode power supply with Power Factor Correction (PFC) and stand-by converter	
Operating Voltage/Frequency	Universal Mains, 100V-240V, 50Hz-60Hz	
Standby Consumption	<0.5W	
Accessories	Rack mount kit (pre-installed)	
Power Ratings	1% THD @ 120Vac and 230Vac	
Cabinet Finish	Black Anodised	

CEDIA[™]
MEMBER

Monitor Audio Ltd.
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