

Systemline MRA-2 MRA-4

TECHNICAL SPECIFICATIONS

MRA-4 Amplifier

Number of Audio Inputs	2 Stereo Pairs
Number of Audio Channels	2 Stereo Pairs
Recommended Speaker Loading	4 to 16 Ohms
Dimensions	430(W) x 104(H) x 360(D) mm
Weight	11.2Kg

Line In and Line Out

Input Impedance	100k Ohms
Input Impedance (Combined Stereo)	100k Ohms
Output Impedance	220 Ohms
Frequency Response	20Hz - 20Khz \pm 0.25dB

Power Amplifier

Frequency Response	20Hz - 20Khz \pm 0.25dB
Power Output	95W rms into 5 Ohms @ 0.5% THD+N
Distortion	0.015% THD+N @ 53W rms into 8 Ohms @ 1kHz

MRA-2 Amplifier

Number of Audio Inputs	1 Stereo Pair
Number of Audio Channels	1 Stereo Pair
Recommended Speaker Loading	4 to 16 Ohms
Dimensions	430(W) x 104(H) x 360(D) mm
Weight	8.5Kg

Line In and Line Out

Input Impedance	100k Ohms
Output Impedance	220 Ohms
Frequency Response	20Hz - 20Khz \pm 0.25dB

Power Amplifier

Frequency Response	20Hz - 20Khz \pm 0.25dB
Power Output	95W rms into 5 Ohms @ 0.5% THD+N
Distortion	0.015% THD+N @ 53W rms into 8 Ohms @ 1kHz



Multi-Room Amplifiers

I n s t a l l a t i o n M a n u a l



DECLARATION OF CONFORMITY

The MRA₄ and MRA₂ Multiroom amplifiers have been designed and independently tested to be in compliance with the following standards: Safety - EN60065:1993/IEC65, EMC-EN55013:1990, EN50082-1:1997, EN61000-3-2:1995, EN61000-3-3:1995

SYSTEMLINE AMPLIFIER (MRA-4 & MRA-2)

Important Safety Information

Read all the instructions before connecting or operating the power amplifier. Pay particular attention to safety information. Keep this manual in a safe place so you can refer to these safety instructions.

WARNING:

There are no user serviceable parts inside this unit. Refer all servicing to qualified service personnel.

WARNING:

To reduce the risk of fire or electric shock, do not expose the amplifier to moisture or water. Do not allow foreign objects to get inside the enclosure. If moisture or water, or a foreign object gets into the enclosure, immediately disconnect the power cord from the wall. Take the unit to a qualified service person for inspection and necessary repairs.

The unit should only be connected to a power supply only of the type and voltage stated on the rear of the unit.

The unit should only be cleaned using a dry cloth or a vacuum cleaner.

The amplifier should be placed on a fixed level surface, strong enough to support its weight. Keep the amplifier away from radiators, heat registers, stoves and any other appliance that produces heat.

If the amplifier is placed in an enclosure, there must be sufficient ventilation of the enclosure to ensure proper cooling. Keep all ventilation inlets clear, especially the fan inlet on the rear of the unit. Anything placed on the unit should have sufficient clearance, to allow for airflow.

Connect the amplifier to the power outlet only with the supplied 3-pin grounded power supply cable or an exact equivalent. The cable should be connected to a properly grounded 3-pin wall outlet. Do not modify the supplied cable in any way. Do not use extension cords.

Do not route the power cord where it will be crushed, pinched, bent at severe angles, exposed to heat, or damaged in any way. If the power cord shows any signs of wear or damage, immediately disconnect from unit and obtain a proper replacement from a qualified service agency, or from the Systemline service department.

If the amplifier shows signs of improper operation, or if it has been dropped or damaged in any way, immediately disconnect the power cord from the wall. Take the amplifier to a qualified service person for inspection and necessary repairs.

The unit should not be placed near high outputs of RF signals, as this will affect the performance of the amplifier.

Heed all the warnings and safety information in this manual, and on the product itself. They are there to protect you.

GUARANTEE

All products are covered by a 2 year guarantee for parts and labour. Site visits are not covered by this guarantee and will normally result in a call-out charge if such a visit is deemed necessary.

Bass and Treble adjustment

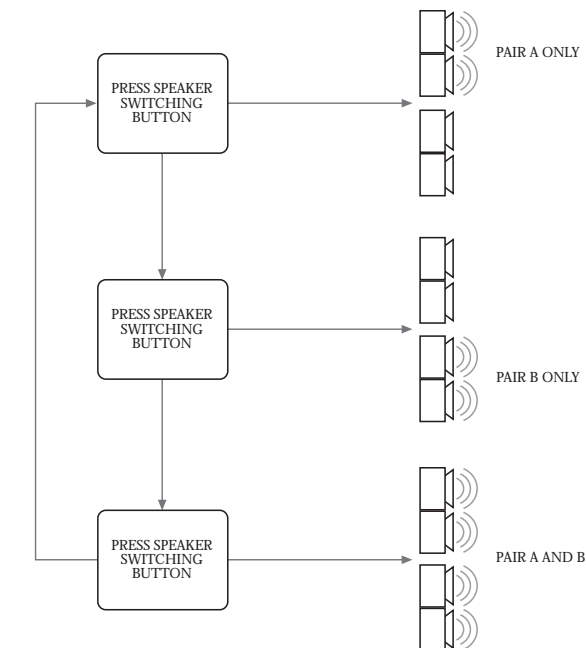
Depending on the speakers and the room acoustics you may wish to alter the amplifier's frequency response. This can be achieved by adjusting the individual bass and treble controls via the front panel.

The best way to set these controls is to have a source playing through the amplifier and slowly adjust the bass and treble controls until the desired lift or cut in response is achieved. Clockwise adjustment will cause frequency response "lift", and anticlockwise adjustment frequency response "cut".

Note: There is no click centre position for "flat" response. The bass and treble controls should be returned to a midway position between maximum and minimum to return to a flat response if required.

- SPEAKER SWITCHING

If two pairs of speakers have been connected to one of the amplifiers then they can be switched in the following way:



- FAN OPERATION

Both the MRA₄ and MRA₂ have an internal fan to provide automatic forced air cooling when the amplifier is under load. The fan is temperature operated and under most conditions will be off or running at half speed. The level of fan assistance used will depend on both the temperature of the surrounding environment and the level at which the amplifier is being operated.

TROUBLESHOOTING TIPS

Question: Why when I turn the unit ON are there no LED indicators illuminating?

Check the mains cord is fully "home" in its socket, and that the mains switch is ON at the AC outlet. Also check that the amplifier's fused inlet has the fuse correctly inserted and of the correct rating. You should find two fuses in the fuse draw, one of which is a spare.

Question: Although I've connected different sources to each Line-In on the MRA-4, I hear the same source in both amplifier zones, why?

Make sure that the COM-INPUT switch at the rear of the amplifier is set OFF. The second switch down should be set to its Right Hand position. Always ensure that the amplifier is switched OFF when you change the switch settings.

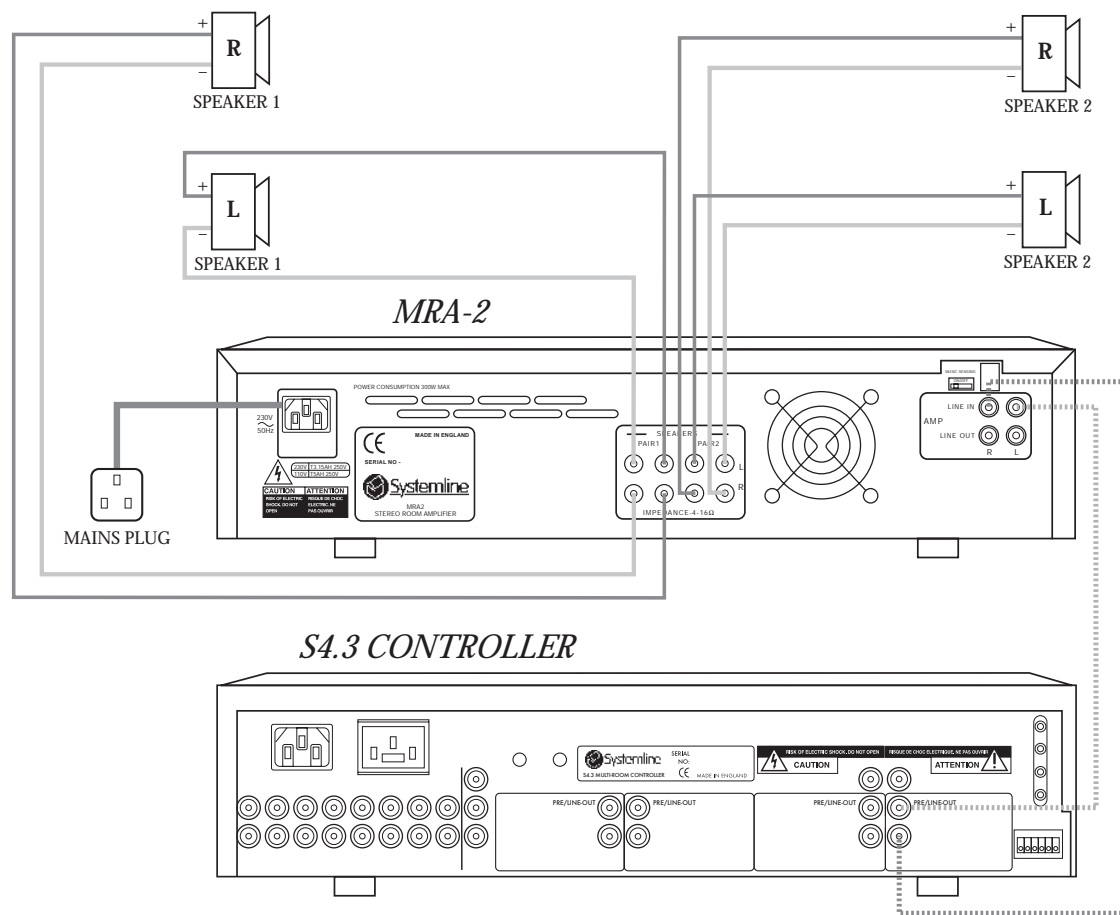
Question: The amplifier is ON and the "signal" LED is glowing but I don't hear any sound, why?

- Check which output the speakers are connected to and then ensure that the Green "speaker active" LED is illuminated for the amplifier and pair output connected.
- Check that the source connections are in the LINE IN sockets and not the LINE OUT.
- Ensure if using an S4.3 controller that the Zone is activated and the source is playing.
- Check that the Level control is not set at minimum.

Question: Why does the amplifier switch itself off a few minutes after the music stops?

The amplifier will be set to Music Sensing mode. If you want the amplifier to always be active you will need to set the MUSIC SENSING feature OFF. The switch is at the rear of the amplifier and should be set to its Right Hand "OFF" position.

Completed connections including power cord



- OPERATION

Once all the connections have been made to the amplifier as detailed in the previous sections the unit can be used without further adjustment, particularly if being used with the S4.3 Systemline Controller. The amplifier is factory set to produce the same switch ON volume level as the internal S4.3 controller amplifiers. The frequency response is also factory set to "flat".

- ADJUSTMENT OF THE LEVEL, BASS AND TREBLE.

As described in the features, the MRA-4 and MRA-2 have recessed Level, Bass and Treble controls which are accessed through small openings in the front panel. On the MRA-4 both Amplifier 1 and Amplifier 2 have their own independent set of controls. These are best adjusted using a small flat bladed screwdriver with a blade size no larger than 2.5mm.

When making adjustments ensure that the blade of the screwdriver is located in the slot on top of the Level, Bass or Treble control. Never force the controls beyond their operating range.

Note: Once you feel resistance to turning you have reached the maximum level of adjustment in that direction.

Level Control

The Level control sets the level of the signal being amplified. In most installations this control will be set fully clockwise to the maximum setting. The volume level is then controlled by the source, such as the S4.3 Controller.

If you wish to limit the maximum volume from a zone then the following procedure should be adopted once the units are correctly connected and powered ON.

- 1) Set the level control to minimum on the MRA amplifier and turn ON the S4.3 Controller zone connected to the MRA amplifier.
- 2) Select a source which is playing on the S4.3 and slowly increase the Level control on the MRA amplifier until you can just hear the music.
- 3) Increase the volume on the S4.3 until it reaches its maximum level. This should still be relatively low because the level control on the MRA amplifier is set near to minimum.
- 4) Slowly increase the Level control on the MRA amplifier clockwise until you reach the desired maximum volume level.

The level control is then correctly set.

Notes: If you are using the level control to limit the volume in combination with an S4.3 Controller, it is advisable not to use the Controller's internal speaker output from that Zone.

Note2: When reducing the maximum volume level you will also reduce the turn ON volume. Therefore to reach a normal listening level you may have to increase the volume level on the S4.3 controller's zone at switch ON.

Note3: Not all music sources have the same output level. Different programme material also has varying output levels. The setting of the maximum level should therefore not be taken as an absolute level but a general upper volume setting.

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INTRODUCTION

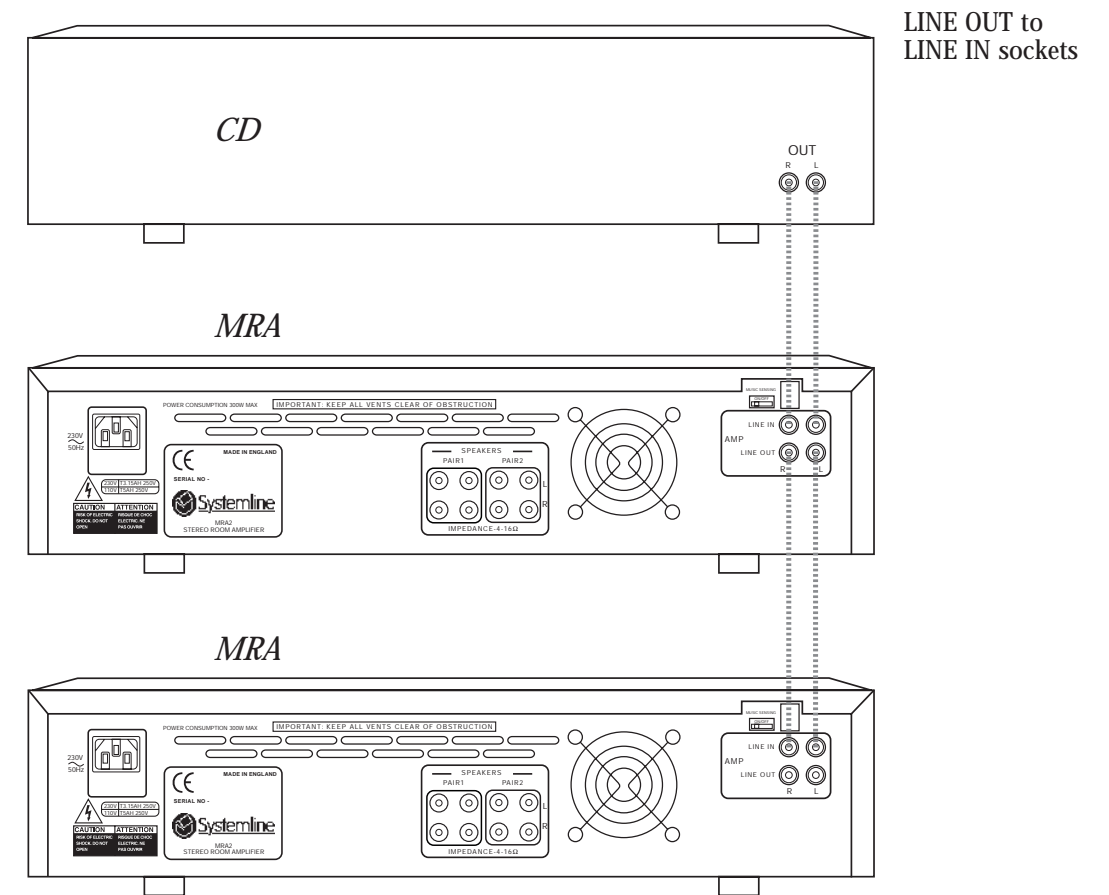
This manual covers the Systemline Multi-room Amplifiers, the MRA-4 and MRA-2. The MRA-2 is a two channel version of the four channel MRA4. These units have been designed specifically to meet the demands of the custom installation market for high power and performance. Special features such as music sensing, tone controls and cool running ensure easy installation and use. Both amplifiers use the same high quality chassis and front panel as the S4.3 controller providing an ideal match.

Features

- ▶ **MUSIC SENSING**
This feature saves power by ensuring the amplifier is switched to standby when no audio signal is present.
- ▶ **INDEPENDENT LEVEL CONTROLS**
Tamper proof front panel adjustment of the audio volume that can be used for level matching, or setting of a maximum volume limit.
- ▶ **BASS & TREBLE CONTROLS**
Enables adjustment of the frequency response to the user's preference and also helps to compensate for room acoustics. Tamper proof front panel adjustment.
- ▶ **SPEAKER SWITCHING**
Easy connection of a second pair of speakers to each stereo amplifier. A simple button press from the front panel controls the output to both speaker pairs. Front panel LED indicators show speaker output status. The amplifier also remembers the speaker settings when it is switched off. BFA speaker plugs are provided.
- ▶ **SIGNAL MONITOR**
Front panel LED illuminates when an audio signal is present at the amplifier's input. This helps when checking source connections and wiring.
- ▶ **LOOP THROUGH STEREO INPUTS**
Line Out sockets are provided for each Line Input. This enables easy daisy chaining when you want to add more than one MRA-4 or MRA-2 amplifier to a Zone.
- ▶ **SUPER COOL OPERATION**
An advanced power supply reduces heat output by up-to 60% at low to medium power levels when compared to conventional class AB amplifiers. When high output powers are demanded a microprocessor controlled fan ensures that the amplifier stays cool under the most stressful conditions.
- ▶ **EASY CONFIGURATION**
If you want to drive both stereo amplifiers in the MRA-4 with the same audio signal, there is no requirement for extra leads or adapters. A "Common Input" configuration switch is provided on the rear panel.
- ▶ **HIGH PERFORMANCE**
The MRA-4 features a powerful 600VA power supply and the MRA-2 a 350VA unit. Long cable runs and high quality speaker systems are easily driven. Both units are fully protected against short circuits and thermal overloads, and are designed specifically to deliver long term reliability and performance in the toughest installations.

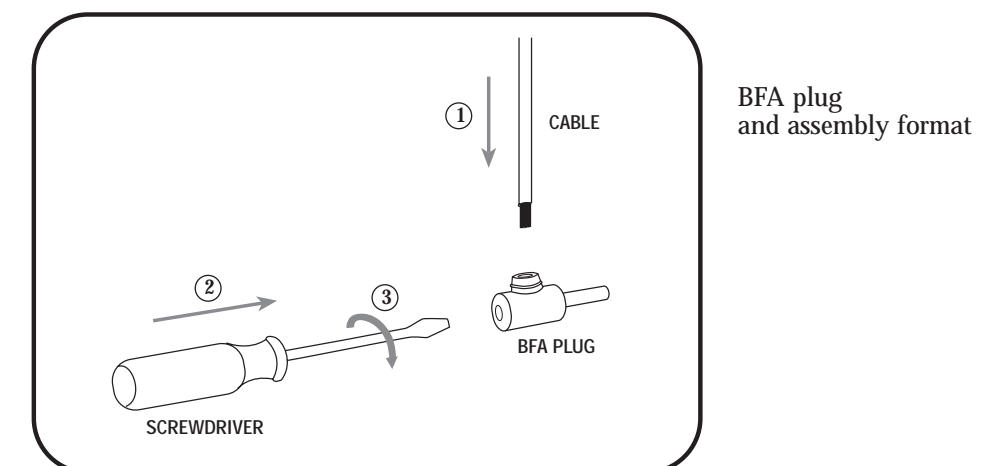
- LINE OUTPUT CONNECTIONS

When connecting multiple MRA-2 or MRA-4 amplifiers together, additional units can receive their LINE IN signal feed from the AMP LINE OUT sockets of the previous unit. An additional shielded Phono to Phono cable should be taken from the LINE IN Right and Left sockets on the receiving amplifier to the LINE OUT Right and Left sockets on the sending unit.



- SPEAKER OUTPUT CONNECTIONS

The speaker connections on the rear of the MRA-4 AND MRA-2 amplifier use BFA style speaker sockets. Supplied with the amplifier are a set of black and red BFA speaker plugs to enable the proper termination of the speaker cables. To terminate the speaker cables first split the cable into its left and right channels halves. By convention the right channel should be terminated into the RED connector. Strip back approximately 7mm of insulation from the cable to leave bare copper. Insert the cable into the cable entry point on the plug as indicated on the diagram and use a small flat bladed screwdriver.

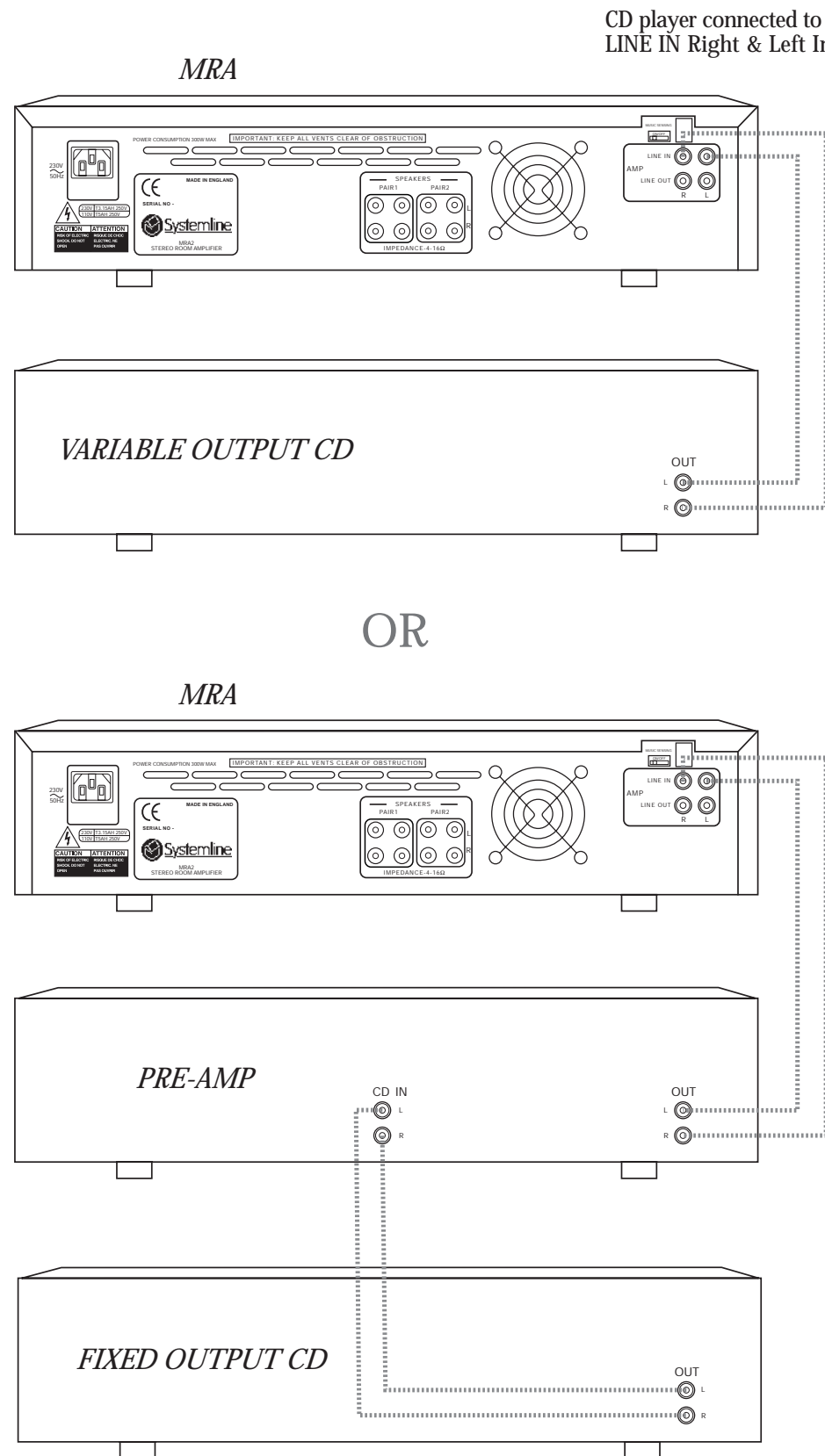


Locate the correct speaker outputs for the appropriate zone, and push the BFA plugs securely home.

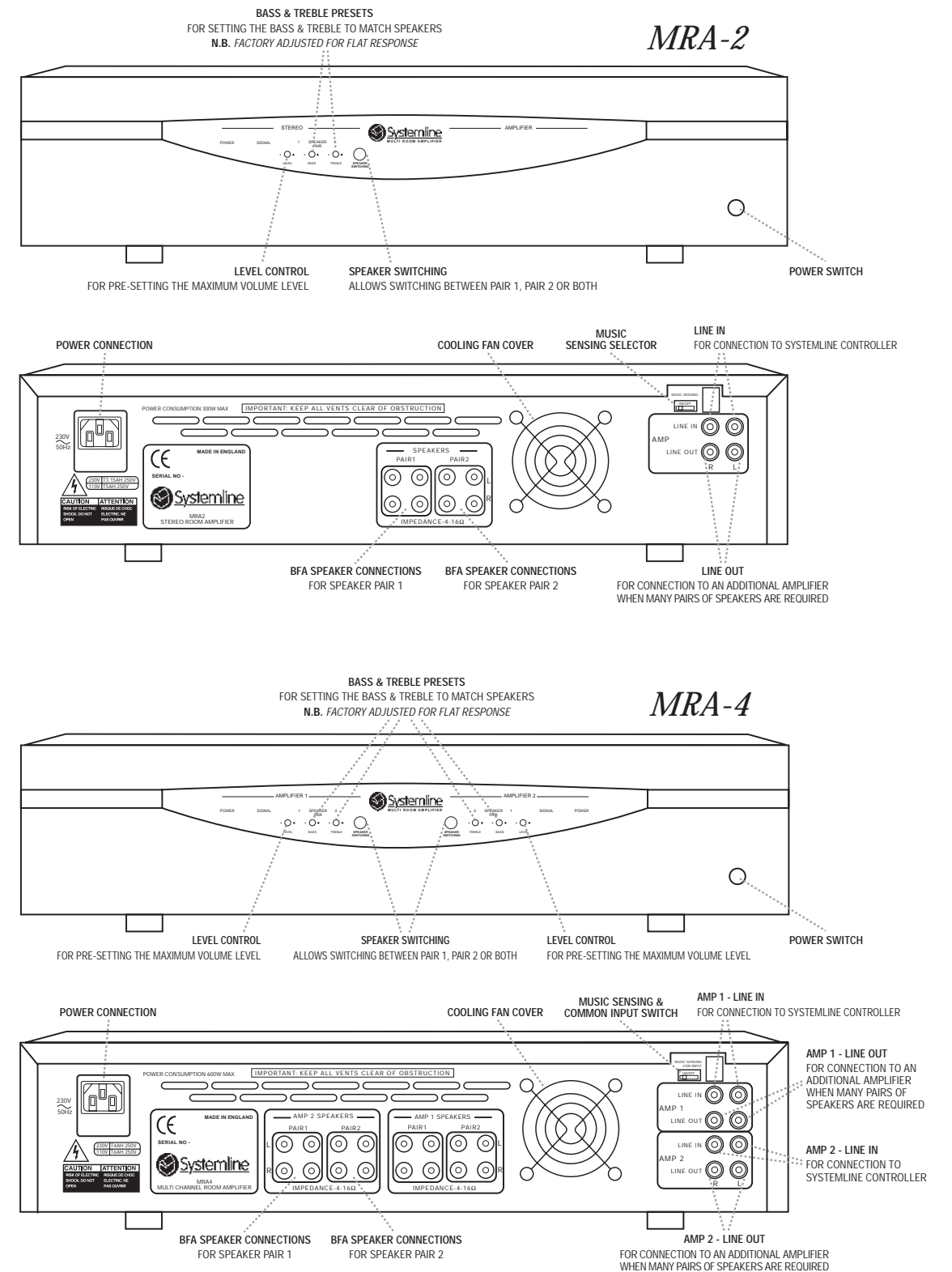
Configuration and Set-up

Using the MRA-4 and MRA-2 with non Systemline sources

The MRA-4 and MRA-2 have been designed for all custom install applications where high performance and features are demanded. Both units will interface to most line level outputs from audio sources and source control products. If required it is even possible to connect sources such as a CD player directly to the LINE IN sockets and have a fixed volume, or if the CD player has a variable output or is connected via a Pre-Amplifier then variable volume is possible.



Features & Installation



INSTALLATION

IMPORTANT:
As with any electrical device that produces heat, it is very important that the unit is located in a position where it will receive adequate ventilation. Under no circumstances should the ventilation slots at the top and rear of the unit be obstructed. If the unit is to be mounted in a cabinet, ensure that cool air can circulate when the doors are closed. Ventilation slots or holes should be provided at the top of any enclosed compartments enabling warm air to be expelled. The minimum requirements for the internal enclosure dimensions are 500mm wide by 300mm high by 500mm deep.
Before placing the MRA-4 or MRA-2 on a shelf, ensure that the shelf can support the total weight of the equipment on it. Each MRA amplifier weighs nearly 12kg and may need to be placed on a separate shelf if using more than one unit. It is also not recommended to stack any more than three Systemline components, S4-3 or MRA units on top of one another.

CONFIGURATION AND SET-UP

Before connecting the amplifier it is advisable to set the configuration switch, just above the LINE IN sockets on the rear panel, to suit the installation requirements.

Note: Changes in the configuration switch settings will have no effect if changed while the amplifier is switched ON. Changes to the switch settings should be done with the unit switched OFF.

- MUSIC SENSING

Both the MRA-4 and MRA-2 contain a sophisticated music sensing circuit which causes the amplifier to switch from "standby" to "active" in the presence of an audio signal. The switch ON is almost instantaneous, and in most installations should be the preferred mode of operation. For the MRA-4 both Amplifier 1 and Amplifier 2 music sensing operate independently; so a signal present at AMP 1 LINE IN will not activate Amplifier 2 and visa versa.

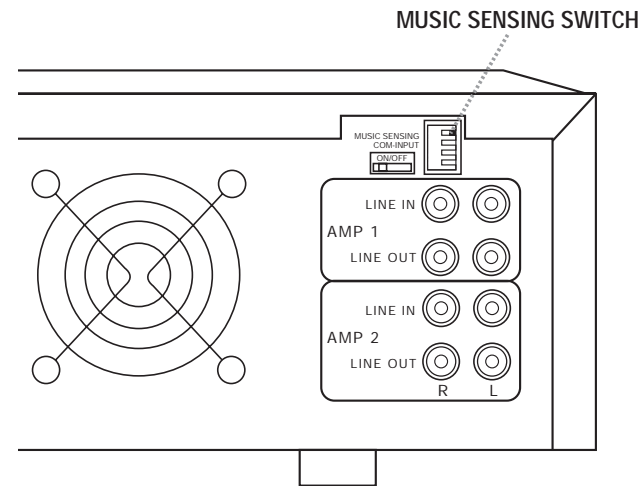
When the amplifier detects that no audio signal has been present for around 2 and one half minutes it will automatically switch to standby (ALL LEDs off) until the LINE IN signal becomes active again.

When an audio signal is detected at either the Right or Left LINE-IN socket, the amber Signal LED will illuminate on the front panel indicating signal presence, and the amplifier will switch ON.

Note: The Signal present LED will turn OFF during levels of extremely low signal input and between "tracks" when the output is muted.

The factory shipping position for MUSIC SENSING is ON.

To switch the music sensing feature OFF, move the MUSIC SENSING top switch to the OFF (right) position.

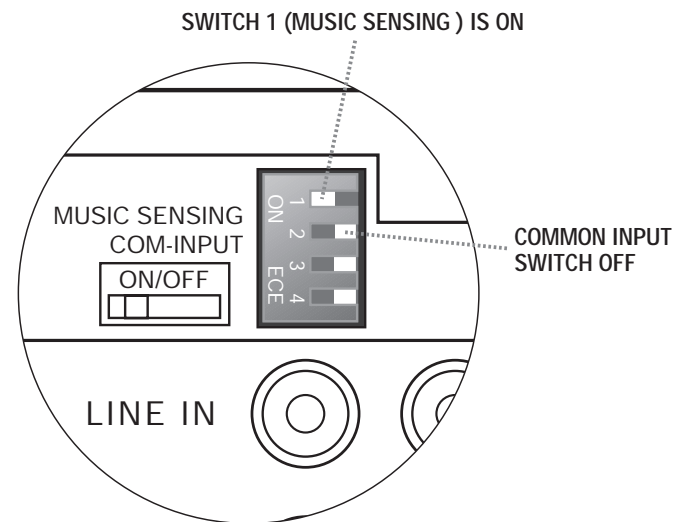


When MUSIC SENSING is set OFF the amplifier will always be active whilst the unit is connected to the mains supply and the front panel Power Switch is ON. In this mode the amplifier will show which speakers are selected via the green LED speaker pair 1 and 2 indicators on the front panel.

- COMMON INPUT (MRA-4 Only)

In an installation where all four speaker outputs are required to act as a single zone, the MRA-4 incorporates a feature to simplify the connection of both Amplifier 1 Right & Left LINE IN and Amplifier 2 Right & Left LINE IN to the same stereo signal. This prevents the need for extra phono leads or "Y" adapters. This feature should only be used when you want Amplifier 1 and Amplifier 2 to play the same source.

To switch this feature the ON, move the COM - INPUT switch to the (left) ON position.



The factory shipping position for Common Input operation is OFF.

Note: When MUSIC SENSING is ON in and COM - INPUT is ON both Amplifier 1 and Amplifier 2 will switch ON and OFF in synchronisation.

- LINE INPUT CONNECTIONS

Using the MRA-2 and MRA-4 with a Systemline S4.3 Controller.

Before connecting an S4.3 Controller, it is important to ensure that the S4.3 Pre-amplifier Zone Output to be used with the amplifier is configured as "Pre-Out" and not "Line-Out".

Notes: S4.3 controllers are factory set for all zones to be "Pre-Out". Refer to Sections 5.51 and 5.6 of the Systemline S4.3 manual if the Line Driver configuration needs to be changed.

Using shielded Phono to Phono cables connect the Controller Zone's Pre-Out Right and Left sockets to the AMP₁ LINE IN Right and Left sockets at the rear of the amplifier.

When installing an MRA-4, a second S4.3 Controller Zone's Pre-Out Right and Left output can be connected to the AMP₂ Right and Left LINE IN sockets at the rear of the amplifier.

Notes: When connecting a power amplifier to a Zone's pre-out sockets it is still possible to use the S4.3 Controller's internal amplifier. This can be useful when driving multiple pairs of speakers from a single controller zone.

Note: Only the AMP 1 LINE IN Right & Left sockets should be used to connect the audio source when using the Common Input feature on the MRA-4.

Input connections from S4.3 to MRA amplifiers

