

AudioControl®

The Architect™
Model 100 & Model 200
High Current Power Amplifier / Speaker Optimizer

**Professional Installer's
Consciousness Guide**

AudioControl®

making good stereo sound better.®

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Important Information

Dealer Name _____

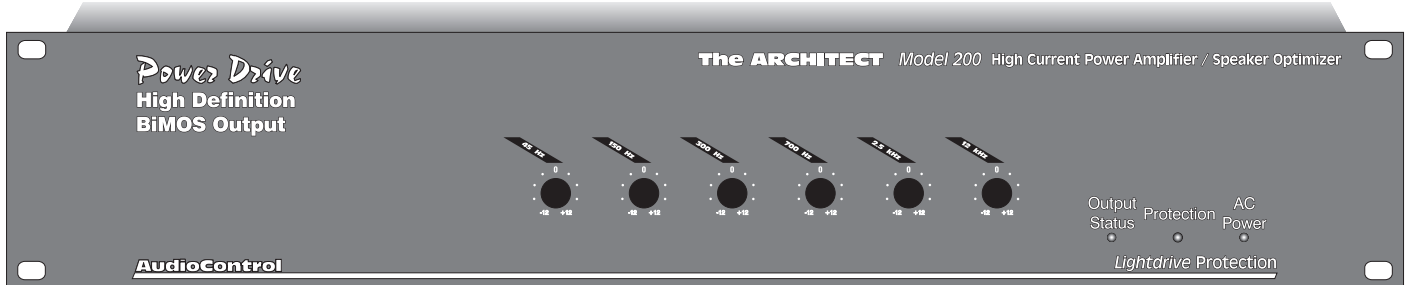
Date Installed _____

Serial Number _____

AudioControl®

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Congratulations!

You are now installing a component which can dramatically improve the performance of any distributed audio system, especially those utilizing in-wall speakers. The Architect[™] Model 100 and Model 200 are American-designed, “set and forget” components which will provide a lifetime of trouble-free service for your multi-room audio system.

The Architect[™] Model 100 and Model 200 are made by the only electronics company in the world that specializes in equalizers, signal processors and audio analyzers. And the company whose professional sound division designed and sells the most popular one-third octave real time analyzer in the world, the SA-3050. AudioControl’s passion for high quality, meticulous attention to detail and pro sound heritage shows itself in the dozens of awards we have won for our designs, products and service. Now, as when we began, our greatest satisfaction is our reputation for sonic excellence and reliability among people just like you throughout the world.

This manual is designed to help you get everything you can out of your new amplifier. So, even though you’re dying to see it in action, please take a few minutes to slog through our not-so-weighty prose and learn how to get the most from The Architect power amplifier. Anything as capable as this amp deserves all the explanation it can get.

High Definition BiMOS Output Design Distributed audio systems can place terrific demands on power amplifiers. Lots of speakers and level controls add up to extremely complex loads that can drive most amps to the point of smoking. The high current drive capabilities of our BiMOS outputs cleanly delivers a minimum of 200 watts into a 2 ohm load. That's the equivalent of paralleling 4 pairs of 8 ohms speakers. This amp loves lots of speakers so go ahead and put a small quarry of stereo rocks by the patio. Then sit back and enjoy the sound.

Built For The Long Haul The Architect_™ Model 100 and Model 200 have been designed with durability in mind. The Lightdrive protection circuitry defends The Architect_™ and your speakers against clipping, distortion, damage, and even teenage parties. Even if the party lasts all weekend. Each channel is independently protected so a problem in one channel will not affect the rest of the system.

Specially-Designed Frequency Controls The Architect_™ Model 200 is intended to provide a dramatic sound improvement for "small" speakers, such as those with 6-inch and 8-inch woofers. The Architect's 45Hz, 150Hz, 300Hz, 700Hz, 2500Hz and 12KHz band centers were chosen to optimize in-wall and 2-way bookshelf speakers at critical frequencies where adjustment is most advantageous. The bandwidths (or 'Q' as our engineering types call it) have also been optimized for the difficulties that in-wall speakers present. This allows The Architect_™ Model 200 to improve the sound of these smaller speakers better than any other equalizer.

PFM Adjustable Subsonic Filter The Architect_™ Model 100 and Model 200's Programmable Frequency Match (PFM) circuitry is an installer adjustable bass-blocking filter which protects small speakers and improves their overall sound. The smaller woofers found in most in-wall or bookshelf speakers cannot reproduce the bass of a larger speaker (the laws of physics intervene). If called upon to reproduce a bass note that would cause the speaker to move PAST it's maximum cone travel, damage can result - and even if the speaker isn't damaged, severe audible distortion does occur. The solution to this problem is AudioControl's exclusive PFM circuitry. It gives small woofers only those frequencies they can use by "chopping off" bass below an installer adjustable frequency (variable from 20Hz to 80Hz). The woofer is protected and can do a better job of reproducing mid-bass and higher frequencies.

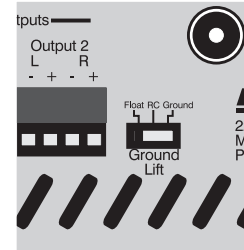
Made in the Northwest Rainforest The Architect_™ Model 100 and Model 200 began its existence at our factory in Mountlake Terrace, Washington, a few miles north of Seattle. Here, we also build precision test instruments, equalizers and analyzers and a totally awesome line of car stereo components. AudioControl started in 1977 and has won so many audio industry awards for design and engineering excellence that our reception room wall is starting to sag. But enough about us. Let's start getting the most from the audio system!

Experienced Installer's Quick Hook-Up Guide

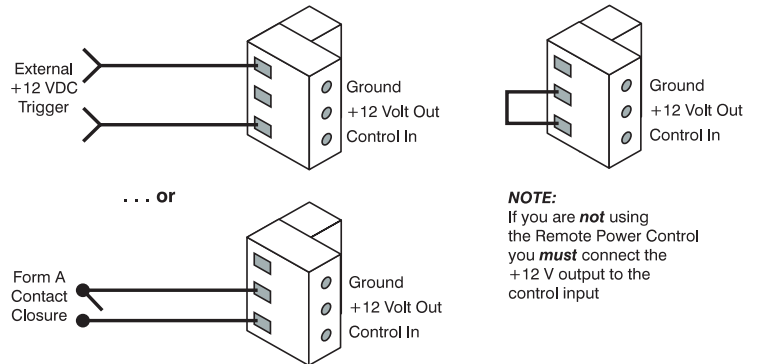
What follows are “Express” hook-up diagrams for professionals and experienced audio buffs.

1) Connect the AC power and Remote Turn-On Control.

(Page 7) Start with the GROUND LIFT switch in the GROUND position. If you have a ground loop hum, try the other two positions for the best operation. This switch ONLY isolates the audio ground from the earth ground. The chassis is ALWAYS connected to earth ground.



2) Connect the Speaker and Audio Inputs. (Page 8) The Architect is designed to drive multiple speaker loads down to 2 ohms. To simplify connection, there are two sets of speaker terminals in parallel. Remember to figure in both sets of connections when calculating the total system speaker impedance.

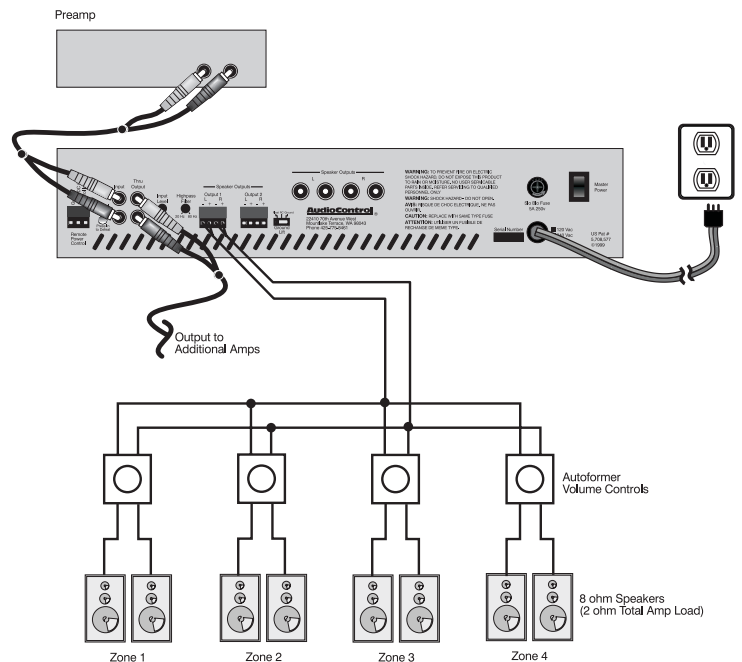


NOTE:
If you are *not* using the Remote Power Control you *must* connect the +12 V output to the control input

3) Adjust the PFM filter. (Page 15)

The PFM bass-blocking filter comes factory set to 40Hz. Please refer to your speaker’s frequency response specifications before adjusting this filter. Don’t be afraid of leaving this filter frequency set fairly high. We have found over the years that a system actually sounds louder and has more bass when the subsonic filter is set at a higher frequency.

Remote Power Control Hookup



4) Set the Equalization (Model 200 only). (Page 12) Adjustment of The Architect(tm) Model 200’s speaker optimizer controls is best done with a one-third octave real time analyzer and pink noise test signal, but it can be done by ear.

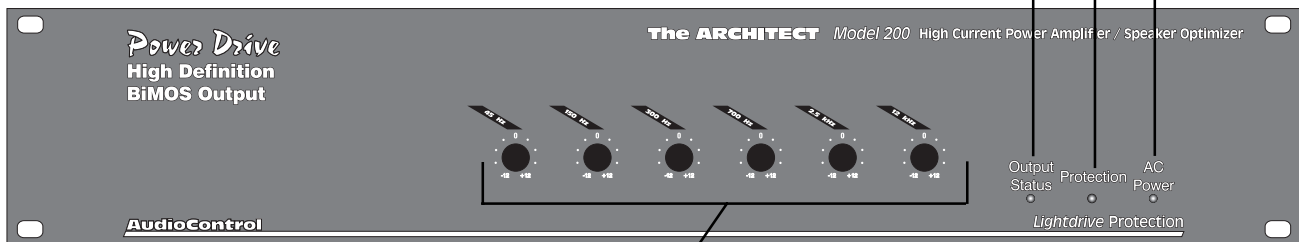
Four Zone System with Model 200 and L-pads

5) Fill Out The Warranty Card. Please make certain the warranty card is filled out and mailed back to our factory. Comments received from these warranty cards are one of the ways we are constantly improving our products.

A Guided Tour Of The Architect™ Model 100 and Model 200



Model 100



Model 200

Front panel: Model 100 and Model 200

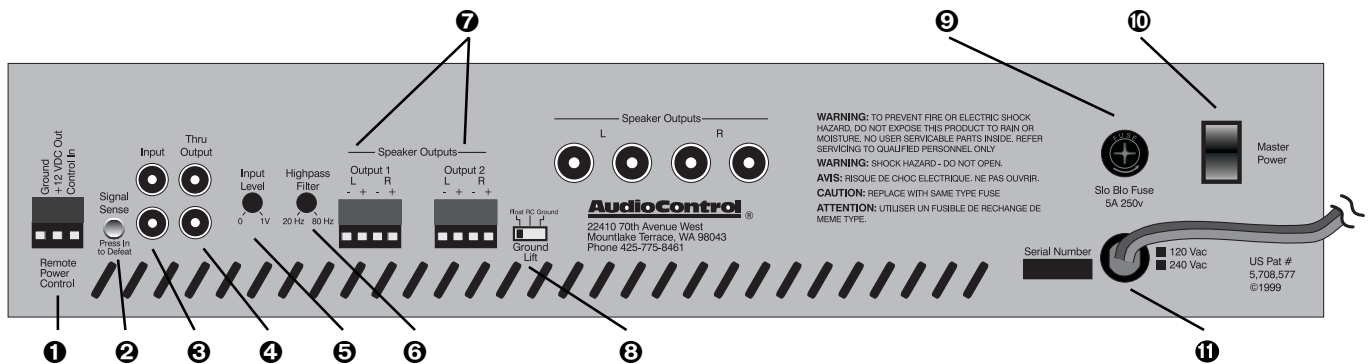
- ❶ **Stereo Speaker Optimizer controls (Model 200 only)** - This array of knobs provide up to 12dB boost or cut at 45Hz, 150Hz, 300Hz, 700Hz, 2500Hz and 12KHz. After initial adjustment the only time you would change the control settings are 1) if you connect different speakers into the system, 2) if (assuming the speakers aren't built-in) you move them significantly, such as from a bookshelf to floor stands, or 3) if your room acoustics change through addition or rearrangement of furniture, wall or floor coverings, large hairy dogs, etc.
- ❷ **Channel Status LED's** - These dual-color LED's serve two purposes. First they illuminate Green when the corresponding channel is active. The second function of the status LED is to

turn Amber if something has caused that zone to go into protection.

Note: When the Signal-Sense is turned on, then the channel LED will not turn on until there is an audio signal present on that channel's input.

- ❸ **Protection LED** - This LED also has two faces. In normal operation it glows Green when the remote power trigger is active and the Architect is in stand-by. If the Protection LED turns Amber, then one of the internal protection circuits have come into use. All the protection circuits automatically reset themselves when the problem causing the fault has been fixed.
- ❹ **Power LED** - Nothing too tricky here...when you have the Master Power switch on the back panel turned on and The Architect is plugged into an active AC outlet, this little red light will shine forth.

The Architect™ A Guided Tour Of Model 100 & Model 200



Rear Panel

- 1 Remote Power Control** - This three pin connector allows you to remotely turn on the Architect. You can either use a contact closure between the Control In and the +12V output or an external 12 volt trigger between the Control In and Ground terminals. The +12 volt output is not designed to power other pieces of equipment. It is a current limited output for switching the Architect only.
- 2 Signal Sense Defeat** - The signal sensing circuitry activates a zone approximately 0.5 second after an audio signal is present on the Input RCA jacks. To defeat this function and leave the Architect ready to play at all times, press this switch in to the recessed (Defeat) position.
- 3 Inputs** - These unbalanced RCA inputs connect to your preamplifier's outputs. Any standard line level audio signal can be connected to these inputs.
- 4 Thru Outputs** - These unbalanced RCA outputs send a buffered audio output to daisy-chain multiple amplifiers together.
- 5 Input Level Control** - This screwdriver adjustment controls the input sensitivity of the Architect amplifier. The sensitivity is variable from 0-1 volt.
- 6 PFM Highpass Filter** - This bass blocking filter adjustment sets the low frequency cut-off point of the Architect. The PFM features an 18dB per octave slope and the filter frequency is adjustable from 20Hz to 80Hz.
- 7 Speaker Outputs** - These terminal blocks are designed to make an installer smile. You can unplug the blocks and connect all of the speaker wires to them without balancing the Architect on your lap. This also makes it very simple to pre-wire a system without ever taking the Architect out to the installation site. The two output blocks are paralleled to simplify connection to multiple speaker zones. The speaker connector blocks will accept up to 12 awg wire.
- 8 Ground Lift Switch** - This switch selects the level of isolation between the audio signal ground and your AC earth ground. In normal operation this switch should be in the Ground position, but if you run into trouble with an AC ground hum, try the other two settings for the best operation. For your safety, the chassis is always connected to the earth ground regardless of the switch setting.
- 9 AC Power Fuse** - The Architect is designed with several layers of protection circuitry. This power fuse is here just in case something really awful goes wrong.
- 10 Master Power Switch** - This switch shuts off the main AC power. Normally the only time you need to turn the master power switch off is if the system is going to be shut down for an extended period of time.
- 11 Power Cord** - The Architect™ draws approximately 500 watts at full power. Make certain that it is plugged directly into the wall outlet or a power strip with sufficient power rating. Since the Architect has remote power switching, you can plug the unit into an outlet that is always active.

Hooking Up Your System

What you'll need:

1. The Architect_™ Model 100 or Model 200.
2. RCA audio hook-up cables.
3. (Optional) A balanced line driver if you are going to mount the Architect more than 20 feet from the preamp.
4. Enough speaker wire to reach all of your speakers.
5. Multi-zone controller, receiver, or preamplifier.
6. Although you can set the speaker optimization controls by ear, a real-time audio analyzer such as the AudioControl Industrial SA-3052 is very helpful.

Installation: The Long Version

What follows is a step-by-step guide to integrating the Architect Model 100 and Model 200 into your multi-zone system. If it seems overly detailed, please forgive us. We would rather tell you too much than too little.

First, check your new Architect for any shipping damage. We pack 'em pretty securely, but it's a vicious world out there and anything can happen twixt Mountlake Terrace, Washington and your installation.

Paperwork

Yes, filling out the warranty registration card is about as exciting as cleaning out your sock drawer, but we'd definitely like the card back after you've hooked up the Architect and played with it a while. We DO read each and every incoming card and react to your suggestions. That's how great products like this are created.

Next, record the serial number on the sales receipt and make certain the home owner puts it away in a safe place. Stashing the receipt away is very important in the unlikely event that your Architect ever needs servicing, or...well things do happen...you need to prove to an insurance adjuster that something as great as the Architect was installed in the system.

Placement

The Architect Model 100 and Model 200 is a very efficient amplifier, but it does need some breathing room to operate properly. Make certain that the air vents on the rear and sides of the Architect are not blocked and have at least 1/2" of air space. Also make certain that heat sensitive components such as CD or Tape players are not directly on top of the Architect. Just as a reminder, you should avoid putting any leaky potted plants on the audio equipment stack.

A benefit of having remote power control on the Architect is that you can install it in another area of the house (such as a basement or utility room) away from the main component stack. Make certain that you use a good quality audio line driver to extend the RCA cables if you choose this type of installation.

Power

Under normal operating conditions, the Architect Model 100 or Model 200 can draw up to 500 watts of AC power. Don't plug it into a switched outlet on your system unless you are certain that it can handle the power rating. Also, please don't cut off the ground pin on the power connector. It is an important safety feature. If you need to plug it into a two prong outlet, use a ground adapter (and connect the ground on it).

Remote Power Control

The Architect has three levels of power control:

1) Main AC Power switch- This is the master control and must be turned ON for the Architect to function. When the main power switch is on, the red Power LED on the front panel lights up. Normally the only time that you would need to turn the AC power switch off is when the system is going to be unused for an extended period.

2) Remote Power Control- This removable 3-pin remote connector on the rear panel allows simple interfacing with external control systems. It accepts either a contact closure or external +12 volts DC. (see diagram) The two-color Protection LED on the front panel illuminates Green to show that the remote power control is active and the Architect is in Stand-by.

An Important Safety Note About Ground Loops and Ground Isolation Switches

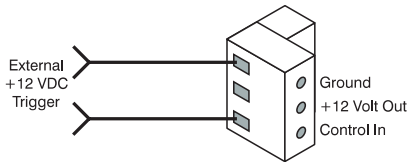
It's an ugly fact: When you wire a system and the electrons have more than one choice for a ground return, there is the possibility of a ground loop occurring. These loops can manifest themselves as hum bars in the video or pops and buzzes in the speakers. Since electricity always takes the path of least resistance, systems designers can try to force the ground currents the direction they want by improving the quality of the grounds (lowering their resistance) and using various isolation techniques on the audio and video equipment (raising their resistance). Unfortunately, one of the most common isolation techniques is to cut off the ground pin of the AC power plug. **NEVER CUT OFF THE GROUND PIN.** The chassis earth ground is your protection against the chance of line voltage shorting to the enclosure. Without this safety, your body could become the path of least resistance when you touch the unit.

To provide necessary isolation to safely break ground loops, the Architect amplifiers have a Ground Isolation switch. This controls the resistance between the audio signal ground and the AC power earth ground. Regardless of this isolation switch setting, the chassis of the Architect is **ALWAYS** connected directly to earth ground.

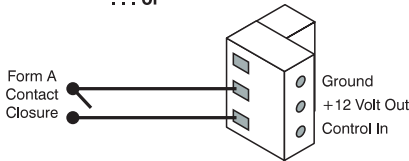
Installation: The Long Version



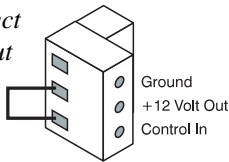
Installation Hint: If your installation doesn't require this remote power turn-on, you must put a short piece of wire between the +12 V output and the Control Input pins.



... or



Note: If you are **not** using the Remote Power Control you **must** connect the +12 V output to the control input.



Remote Power Control Diagrams

3) The third level of power control is the Signal-Sense circuit. This provides individual channel muting control. When active, it senses that an audio signal is present on the RCA inputs then enables the power and unmutes that zone. The zone status LEDs on the front panel light up green when a signal is present.

In some installations it may be desirable to defeat the signal-sense control and leave all zones active regardless of the audio input. To defeat the signal-sense, press in the Signal-Sense Defeat button on the rear panel

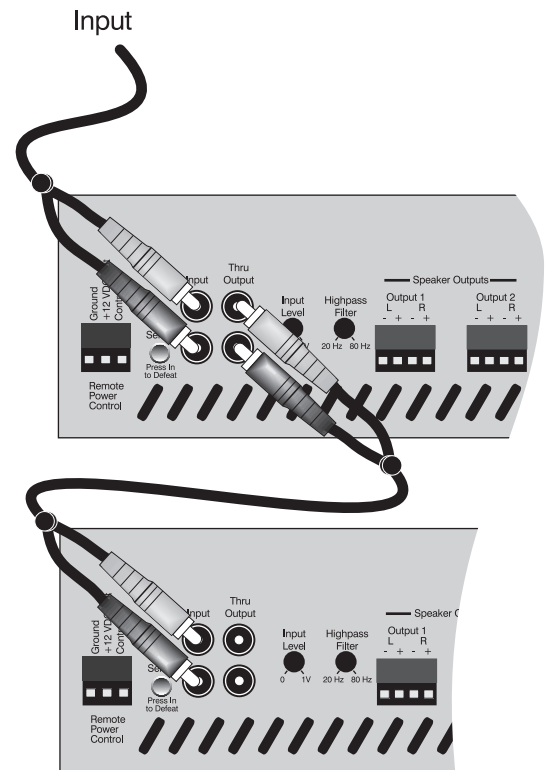
Audio hook-up

If you're an installation veteran, this may seem repetitive, but some things can never be repeated too many times (just ask our Customer Support Department).

- 1) Turn off ALL components before making any connections.
- 2) When making connections, designate RED RCA plugs as RIGHT and WHITE, BLACK, or GREY plugs as LEFT. In fact, this is a good idea for ALL signal connections made in your audio system. The key is consistency. Stick with the same color-coding and you'll reduce possible problems.

3) Whenever possible, keep power cords away from signal cables to prevent induced hum. This is especially important if you bundle the cables to keep the installation neat looking.

4) Use quality interconnect cables. We're not going to get into the debate about whether \$100/meter cables improve the sound, but we know from experience that really, REALLY cheap cables can cause a multitude of problems. They tend to break inside or corrode, causing a loss of signal or hum. They also have poor shielding.

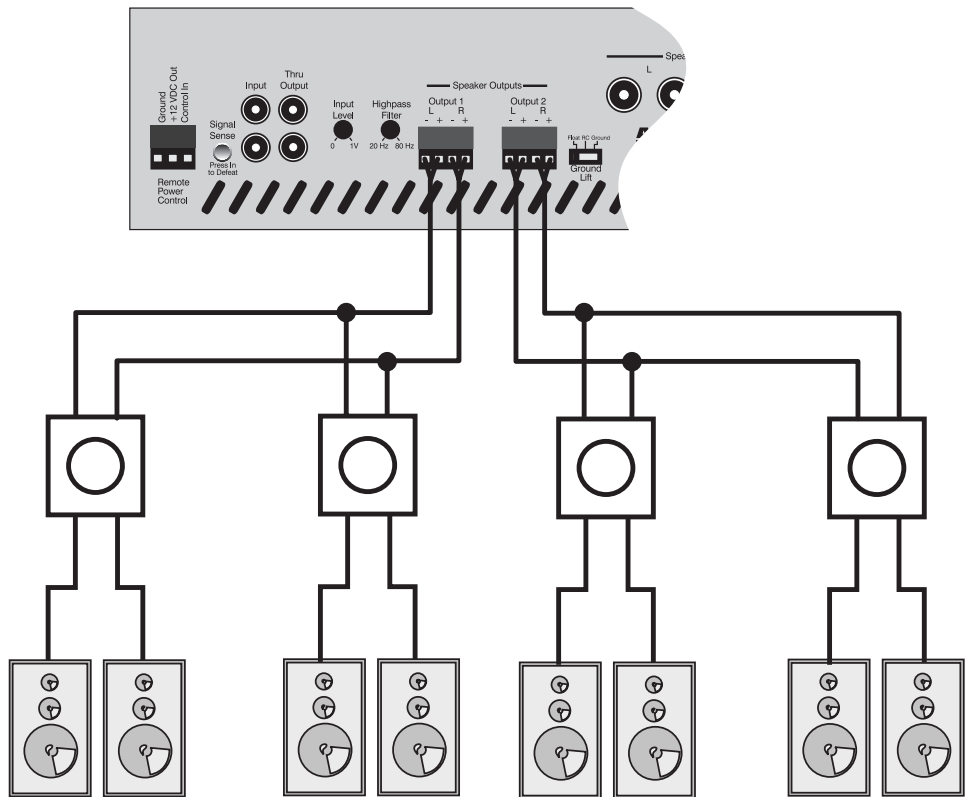


5) If you need to run the RCA audio cables more than 20 feet you should consider using a balanced line driver for the signals. This will provide better noise rejection against nasty things like hum, spikes, local talk radio, etc. The AudioControl balanced line driver components are an excellent way to send audio over long distances with standard Cat-5 wiring. Check them out.

Speaker Hook-up

The same rule applies to the speaker wires as the RCA connections. Establish a standard connection color code and stick with it. One conductor of the speaker wire is normally marked by a different color (silver versus copper) or there is a ribbing on one side. Typically this marked conductor is used for the positive (+) speaker leads. Of course the really good wire has Positive and Negative printed right onto the wire jacket.

The Architect Model 100 and Model 200 are designed with lots of speakers in mind. To make this type of speaker connection simpler, there are two separate output connector blocks. These outputs are paralleled internally so remember to calculate your speaker impedances accordingly.



Your choice of speaker wire gauge and the length of the runs also affects the speaker impedance load presented to the amplifiers. As you can see in this table, even fairly short speaker runs can have a very significant resistance if you use a smaller wire gauge. This can be a benefit if you paralleling lots of speakers. The wire itself acts as an impedance limiter, since the amplifier cannot see a speaker load lower than the resistance of the wire. The downside of this resistance in the wire is that you waste the total power available to the speakers. All that resistance in the speaker wire will turn some of your amp power into heat.

Speaker Wire Resistance

Wire Gauge versus Run Length

	25'	50'	100'	250'	500'
24 GA	1.3Ω	2.6Ω	5.1Ω	12.8Ω	25.7Ω
22 GA	0.8 Ω	1.6 Ω	3.24 Ω	8.1 Ω	16.0 Ω
20 GA	0.5 Ω	1.0 Ω	2.0 Ω	5.0 Ω	10.1 Ω
18 GA	0.3 Ω	0.6 Ω	1.28 Ω	3.2 Ω	6.4 Ω
16 GA	0.2 Ω	.4 Ω	0.8 Ω	2.0 Ω	4.0 Ω
14 GA	0.1 Ω	.25 Ω	0.5 Ω	1.26 Ω	2.5 Ω
12 GA	0.08 Ω	.16 Ω	0.32 Ω	0.8 Ω	1.6 Ω

See the appendix for information about bridging the Architect into mono operation.

Congratulations! You're done with the hook up. Now for the details of operation...

Doing The Deed

Before proceeding on to setting up the Speaker Optimization controls on the Architect, it's a good idea to make sure that you have everything connected and working properly.

1. Double-check all connections. Make certain that all of the audio and speaker connections are firmly seated and tightened down.
2. Turn on your audio system. The Power LED on the Architect should be Red, the Protection LED should be Green and (unless you have defeated the Signal-Sense) the Channel Status LEDs should be off.
3. Start one of the audio sources playing and send that signal to the Architect (how you do this depends on your particular multi-room system). The zone status LED should illuminate Green approximately one second after the music begins.
4. Check each speaker output zone to ensure that each one plays properly.
5. With all the speaker loads turned on, turn up the volume and make certain that the channel status LEDs on the Architect stay green. If they slowly toggle between green and amber, then there is either a short in the speaker wiring, or the combined speaker load is too low.
6. Congratulations! You're ready to go on to setting the Speaker Optimization controls.

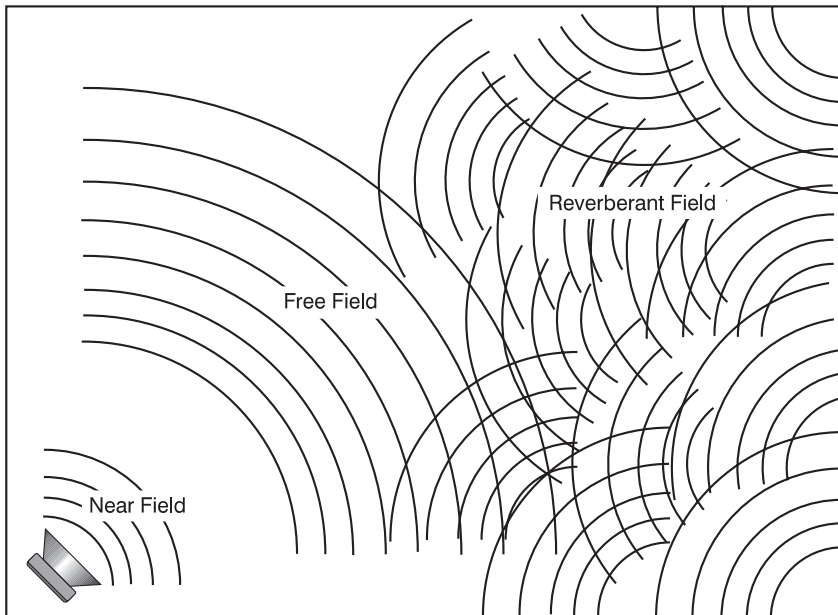


***Note:** For the absolutely best results, The speaker optimizer controls on the Architect_™ Model 200 should be adjusted with a real time analyzer such as the AudioControl Industrial SA-3052.*

A Short Introduction To Equalizers And Acoustics

Magazine reviewers and audio system owners spend much time critically appraising speaker and other stereo components. Unfortunately, a phenomenon that has a very large effect upon sound is not easily judged or changed. That effect is the ACOUSTICS of the environment in which you are listening.

Room acoustics is a complicated subject about which entire textbooks have been written. We simply want you to be aware of a few basics that have a direct effect on real time audio analysis.



Room interaction

Sound is waves, as you probably learned in junior high school. In a stereo system, these waves are created by the speakers. Like waves in a pond created by a splash, sound waves emanate from the transducers (drivers) in your speakers and spread out into the room. If your room were infinitely big, that's all there would be to it. But just as waves in a pond reach the bank and reflect back, sound waves bounce off walls, ceilings, and floors, reflecting, reinforcing and cancel-

ing each other as shown in the figure above. Since sound is energy, the way it reflects depends upon the angle of the surface, the type of material and the frequency of the sound wave. Because your listening position is likely to be towards the back of the Free Field waves shown in the diagram, you also get part of the reflected Reverberant Field as well.

Now we add the next set of complications: Different frequencies of sound have different wave lengths (a function of frequency and the speed of sound). Each frequency's wavelength contributes differently to the Free and Reverberant Fields because they are different sizes. For example, a 32Hz bass note has a wavelength of 35 FEET, while a 16,000Hz note has a wavelength just under a tenth of an inch. Tiny treble waves can be caught and neutralized by draperies, carpeting, upholstered furniture and gangs of indolent Persian cats...while gigantic bass waves simply slosh back and forth in the room.

Another set of variables is the shape and volume of your listening room. Large rooms require more bass energy to excite waves within them. Small rooms need less energy, but reflect it differently. And then there's the fact that most rooms don't have four walls anymore, but open into dining rooms, lofts, cathedral ceilings, etc. All of this means that predicting sound interaction patterns is very difficult due to the irregularities of the room shape.

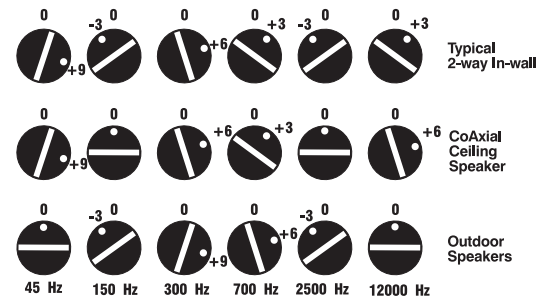
As you can see, room acoustics is an important but complicated subject. To learn more about room acoustics, get a copy of AudioControl's Technical Paper 107, "Small Room Acoustics De-Mythologized". You can download this paper from www.audiocontrol.com or if you're still into the printed page, call us and we'll mail you a copy. The overall point that we're trying to make is that the various rooms in your home function as gigantic mechanical equalizers, boosting or cutting certain frequencies depending on size, shape, volume, acoustic treatment and the position of the speakers.

Audio Analysis Using Pink Noise

It may take several series of adjustments since there is some interaction between each control. We have included some sample settings and general descriptions of each control's function further in this manual.

After initial adjustment the only time you would change the control settings are 1) if you connect different speakers into the system, 2) if (assuming the speakers aren't built-in) you move them significantly, such as from a bookshelf to floor stands, or 3) if your room acoustics change through rearrangement of furniture, wall or floor coverings, large hairy dogs, etc.

The following are examples of typical settings along with short descriptions of each Architect_{tm} Model 200 Speaker Optimizer control. Naturally, the results of adjustments will vary depending on the individual acoustic environment, the type of speakers, and the personal preferences of the listener. These recommendations are not concrete, they are simply good starting points.



Example Settings

Data For Information Fiends

Here is a brief introduction to each of the Speaker Optimization control frequencies and what their affect on your music is.

45Hz — Low bass. This is about the lowest frequency which in-wall, extension and small bookshelf speakers can achieve. Boosting it too far might cause problems, even though The Architect_™ Model 200's PFM filter cuts frequencies under 40Hz. But if your speakers can take it, a mild boost will enhance bass instruments such as Fender bass, kick drum, floor toms, timpani and double bass violas.

150Hz — High bass. There's a lot of bass information at this frequency. In fact, most modern music is mixed to enhance this area of the frequency spectrum. 150Hz also determines the depth of male vocals and contains reverberant information which contributes to the spaciousness of sound. Boosting 150Hz can add "POW!" and impact to bass or it can make the sound "bonky" and "boomy". This is a critical adjustment with small or in-wall speakers. Experiment with it.

300Hz and 700Hz — High and low midrange. These controls directly affect the sound of instruments and vocals. These bands also determine the speaker's presence (whether the music sounds far away or close in). Small speakers often produce too much midrange, so these controls are candidates for being turned down slightly during your initial experimentation. Definitely consider reducing 700Hz if you are only using your extension speakers for background music.

2500Hz — Treble. Female vocals and the "edge" of instruments such as guitars, snare drums, saxes, violins, etc. are found in this range. If accentuated too much (by boosting this control) sounds in the 2500Hz range can seem harsh and fatiguing to the ear due to excessive output by the speaker or because of live, reflective room acoustics.

12kHz — High treble. The fine detail, texture and sheen of music is found here. The breathiness of vocals, the "sheen" of cymbals, the high overtones of piano and strings. Actually, there's audible music information up to 20,000Hz on some CD's and most adult's hearing is still pretty good at 15,000Hz. But we've chosen 12,000Hz because it provides more useful control to compensate for room acoustics and common small-speaker deficiencies.

The Truth About Bass And The Programmable Frequency Match Filter

Now that digital audio is the favorite musical source, there's more low bass running around in a typical system. Low bass injects large amounts of power into ANY kind of speaker — up to 60% of your amplifier's output is being used to reproduce frequencies under 100Hz. That can really tax a system which is driving multiple speakers from a single amplifier channel. The second problem is that bass produces heat in the speaker. If more heat is built-up than the speaker can dissipate, the driver coil can literally go into meltdown (or worse).

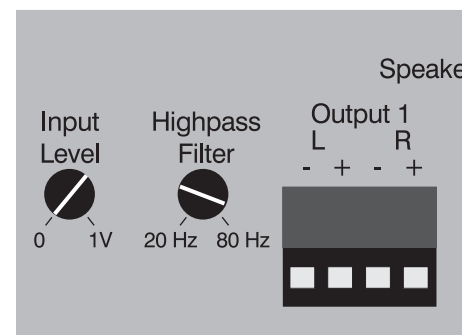
In addition, ultra-low bass and small speakers don't always get along, ESPECIALLY when you DO have ample power. The low bass music content can cause over-excursion: The speaker cone attempts to travel farther than its physical limits, potentially causing damage (in some cases you can actually hear a clacking sound!). Even before destruction sets in, there are other problems with feeding super-low bass to small speakers. Most bookshelf and in-wall loudspeakers are 2-way systems. That means that the woofer also handles a large part of the critical midrange area. When the woofer is bashing around trying to reproduce unrealistically low bass, its ability to produce midrange is compromised due to intermodulation distortion. So not only don't you get low bass, you get lousy vocal and instrumental reproduction.

Pragmatically, it boils down to this: If you want ultra-low, foundation-shaking bass from an in-wall speaker, you should add in a separate subwoofer, a somewhat expensive approach. A more economic approach is to equalize the speaker for maximum low bass output WITHIN IT'S PRACTICAL RANGE and eliminate lower frequencies which either can't be reproduced or which incite excessive cone travel.

The equalization part is handled by The Architect_{tm} Model 200's 45Hz control. The prevention part is handled by The Architect_{tm} Model 100 and Model 200's Programmable Frequency Match (PFM) filter circuitry. While it may seem surprising, actually cutting off some of the lowest bass, will make the bass sound cleaner, punchier and even louder.

AudioControl's Programmable Frequency Match circuit is an adjustable subsonic filter which cuts off low frequencies. The PFM filter's cut-off point is adjustable via a small screwdriver adjustment on the rear of The Architect_{tm} Model 100 and Model 200. When you receive your unit, it is programmed with a 40Hz bass cut-off. Depending on the application, your custom installer or dealer may suggest changing the filter frequency. Don't let ego get in the way and set the PFM too low because somebody thinks that a 6" woofer should be able to play down to 20Hz.

The Truth About Bass & The Programmable Frequency Match Filter



Highpass filter control on back panel

Troubleshooting the Architect

Almost all problems can be eliminated by re-checking the wiring and settings of the Architect amplifier. If a problem cannot be solved using the guide below, please call the AudioControl factory for further assistance.

1. No Sound:

- Verify the Power LED is on.
- Verify Protection LED is Green.
- Verify Channel Status LED is Green.
- Verify Source unit is operating.
- Check the Speaker Connector plug on the rear panel
- Check the AC Power Fuse on the rear panel.

2. Protection LED is Green, but neither Channel Status LED is on:

- Defeat the Signal-Sense circuit using switch on rear panel. Both Channel Status LEDs should turn on. If they do not, call the AudioControl factory.
- Verify Source unit is operating.
- Adjust the preamp volume higher.
- Adjust the Input Sensitivity control lower.

3. Channel Status LED is Amber:

- Check speaker leads for short.
- If the Architect is excessively hot (you cannot hold your hand on the top), turn down the volume and allow it to cool off. The Status LED should turn back to Green after a short while. Verify that the ventilation holes on the rear and sides have not become blocked.
- The speaker impedance may be too low.

4. Protection LED is Amber:

- Something seriously wrong has happened inside the Architect. Call the AudioControl factory.

5. Speaker Buzzing or Cracking at high volume:

- Reduce the equalizer boost at 45Hz or 150Hz.
- Try a higher PFM filter frequency. The factory setting is 40Hz.

6. There is no audio input signal, but the Channel Status LED is still Green:

- Check the Signal-Sense defeat switch on the rear panel. If it is pressed in, the Channel Status LEDs will stay on as long as the Remote Power Control is enabled.
- The Channel Status LEDs stay on for several minutes after the audio signal has stopped to prevent prematurely turning off during quiet passages or disk changes.

A B r a z e n P l u g F o r O t h e r A u d i o C o n t r o l P r o d u c t s

AudioControl started out making graphic equalizers in 1977. Our heritage and designed experience grew from a background in professional audio, so we were never quite satisfied with what was available for the consumer audio market. Since that time, we have continued to expand our product offerings to become a key part of any home audio system. We supply the audio components that can make a greater improvement in the sound of your system than almost any other addition or upgrade. More bass, better bass, less harshness and the ability to hear music the way you want it.

We make our equalizers easy to use by incorporating features such as pairing channel controls together. We help you make the system sound as good as possible with high quality subsonic filters and, in selected models, built-in test analyzers that let you make accurate adjustments to instantly compensate for main system speaker and room deficiencies. In fact, AudioControl was the world's first manufacturer of a SEVEN CHANNEL equalizer for home theater surround sound use.

We also make other enhancement devices so unique and so dramatically enjoyable that we have received patents for them as well as numerous industry awards. These along with our Multi-Room Controller and Balanced Line Driver provide a rich assortment of products to make certain that your audio system sounds it's best.

Okay, enough commercials.

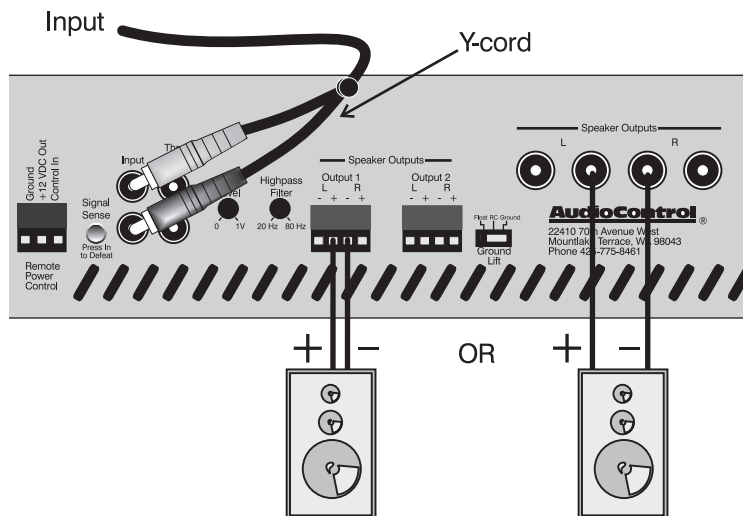
Once again, we thank you for choosing an AudioControl components in your system and hope you enjoy a lifetime of performance and reliability.

Appendix - Bridging The Architect



Caution - When bridging the Architect, the minimum speaker load impedance on that bridged output is 4 ohms. In a bridged system, each channel of the bridged pair “sees” one half of the speaker load. This means that a bridged amp driving a 4 ohm speaker is operating into a 2 ohm load.

To increase the output power of the Architect, you can join (bridge) the two channels of the Architect into a single channel of 400 watts. Accomplishing this is a simple matter. Just connect the audio input to both channels of the amp using a ‘Y’ cord adapter and then connect the speaker terminals as shown in the diagram below.



The WARRANTY

People are scared of warranties. Lots of fine print. Months of waiting around. Well, fear no more. This warranty is designed to make you rave about us to your friends. It's a warranty that looks out for you and helps you resist the temptation to have your friend, who's "good with electronics", try to repair your AudioControl product. So go ahead, read this warranty, then take a few days to enjoy your new Architect before sending in the warranty card and comments.

"Conditional" doesn't mean anything ominous. The Federal Trade Commission tells all manufacturers to use the term to indicate that certain conditions have to be met before they'll honor the warranty. If you meet all of these conditions, we will warrant all materials and workmanship on The Architect for five (5) years from the date you bought it, and we will fix or replace it, at our option, during that time.

Here are the conditional conditions:

1. You have to fill out the warranty card and send it to us within 15 days after installing the The Architect.
2. You must keep your sales receipt for proof of purchase showing when and from whom the unit was purchased. We're not the only ones who require this, so it's a good habit to get into with any major purchase.
3. The Architect must have originally been purchased from an authorized AudioControl dealer. You do not have to be the original owner, but you do need a copy of the original sales slip.
4. You cannot let anybody who isn't: (A) the AudioControl factory; or (B) somebody authorized in writing by AudioControl to service the The Architect equalizer. If anyone other than (A), or (B) messes with The Architect, that voids your warranty.
5. The warranty is also void if the serial number is altered or removed, or if The Architect has been used improperly. Now that sounds like a big loophole, but here is all we mean by it:

Unwarranted abuse is: (A) physical damage (don't use The Architect_{tm} to level your projection TV); (B) improper connections (120 volts into the RCA jacks can fry the poor thing); (C) sadistic things. This is the best product we know how to build, but if you strap it to the front bumper of your Range Rover, something might break.

Assuming you conform to 1 through 5, and it really isn't all that hard to do, we get the option of fixing your old unit or replacing it with a new one.

Legalese Section

This is the only warranty given by AudioControl. This warranty gives you specific legal rights, and you may also have rights that vary from state to state. Promises of how well The Architect will work are not implied by this warranty. Other than what we've said we'll do in this warranty, we have no obligation, express or implied. We make no warranty of merchantability or fitness for any particular purpose. Also neither we nor anyone else who has been involved in the development or manufacture of the unit will have any liability of any incidental, consequential, special or punitive damages, including but not limited to any lost profits or damage to other parts of your system by hooking up to the unit (whether the claim is one for breach of warranty, negligence of other tort, or any other kind of claim). Some states do not allow limitations of consequential damages.

Failure to send in a properly completed warranty card negates any service claims.

The warranty included with the unit shall supersede this plain-text version if there is any inconsistency between the two.



The Architect
Model 100 & Model 200
Installer's Guide

What to do if you need service

What to do if you need service

First, contact AudioControl, either by phone (425)775-8461 or FAX (425)778-3166. We'll verify if there is anything wrong that you can fix yourself, or arrange to have it sent back to our factory for repair. Please include the following items with the returning unit:

- 1) A copy of your proof of purchase (that sales receipt we've been harping about). No originals please. We cannot guarantee returning them to you.
- 2) A brief explanation of the trouble you are having with The Architect_™. (You'd be surprised how many people forget this.)
- 3) A return street address. (No PO Boxes, please)
- 4) A daytime phone number in case our technician has a question about the problem you are having.

You're responsible for the freight charges to us, but we'll pay the return freight back. We match whatever shipping method you use to send it to us, so if you return the unit overnight freight, we send it back overnight. We recommend United Parcel Service (UPS) for most shipments.

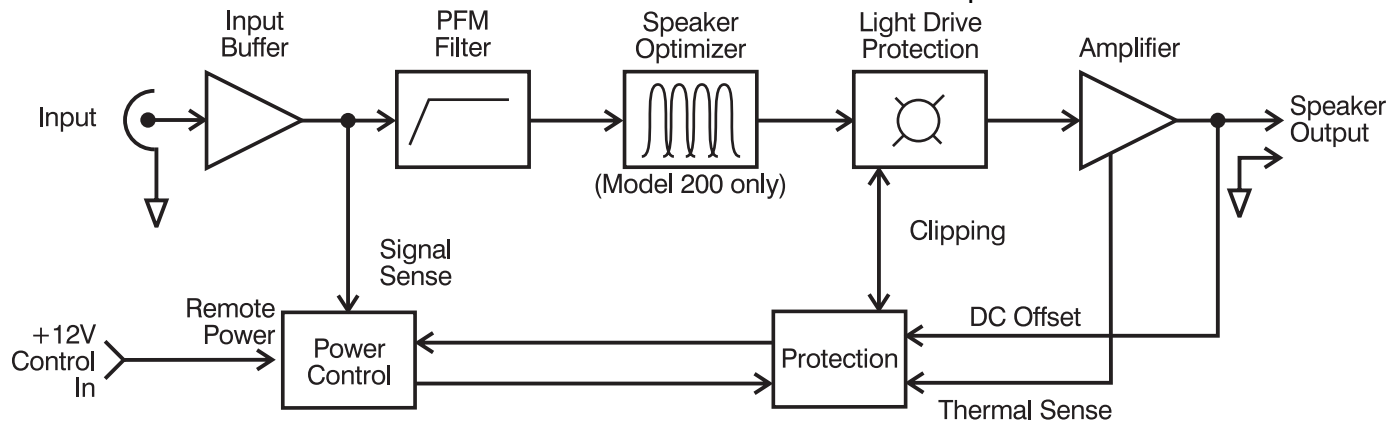
Repair service is available at:

AudioControl

Attn: Service Department
22410 70th Avenue West
Mountlake Terrace, WA 98043 USA
Phone 425/775-8461 • FAX 425/778-3166
e-mail: service@audiocontrol.com



Block Diagram & Specifications



SPECIFICATIONS

Amplifier Power Rating	80 Watts @ 8 ohms
	125v watts RMS @ 4 ohms
	210 Watts RMS @ 2 ohms (minimum)
Minimum Speaker Load	2 ohms
Damping Factor	Greater than 200
EQ Center Frequencies	45, 150, 300, 700, 2500 and 12KHz
S/N ratio	Greater than 100dB , A-wtd, ref. Full Output
Total Harmonic Distortion	0.05% (50 watts/8 ohms 20-20K)
Input Sensitivity	Variable 0-1 Vrms for full output
Input Impedance	30 Kilohms
PFM Highpass Filter Frequency	Variable 20Hz to 80Hz
PFM Highpass Filter Slope	18dB/octave
Protection	Clipping, Thermal, Short Circuit, DC offset
Power Consumption	660 watts (Full output into 2 ohms)
AC Line Fuse	5 amp
Weight	18 pounds
Dimensions	17"W x 12"D x 3.5"H
Options	5-way Binding Posts - Model 105 & Model 205
	Non-Rackmount Face Plate

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This manual was written, designed, printed, folded and stuffed into the box in the U.S.A. Probably on a really soggy day considering where we live.

The Architect
Model 100 & Model 200
Installer's Guide

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making good stereo sound better®

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