Remote Turn-on Connections

The Reference 210 has a built-in 12VDC remote turn-on/off circuit for operation by a master control system in a home theater or large audio system. Use a 3.5mm (.140") diameter mono mini plug to connect to the +12V IN jack on the rear of the Reference 210. Two identical paralleled jacks are provided to allow chaining connections to control two or more Reference 210s or other equipment.

The +12V IN jack should be connected to the +12VDC output of the master control system, using a continuous +12VDC signal at 12mA per Reference 210 for the duration of amplifier on-time. Do not use a momentary or data pulse control signal.

The front power rocker switch on the Reference 210 must be off to use the remote turn-on. The front power rocker switch may still be used when the remote turn-on is connected, but the remote will not turn the Reference 210 off if the front power rocker switch is left on. The front power rocker switch will not turn the Reference 210 off if the remote system is on.

The +12VDC remote jacks have polarity protection, so they will not operate if a -12VDC signal is accidentally connected, or if the control wires are reversed. The 12V remote relay in the Reference 210 has click suppression to protect circuits in the master control system.

Operating Procedure

Start-Up:

1. Secure input connection between the amplifier and your preamplifier; attach speaker leads to the appropriate output terminals.
2. Attach supplied power cord to rear IEC inlet of amplifier, and plug other end into grounded A.C. power receptacle.
3. Turn on preamp and all other components; mute preamp output.
4. Turn Reference 210 front-panel control from Off to On; display will show "Low Line" for approximately 3 seconds until power relay engages. A two-minute mute/warm-up cycle will follow.
5. Select display function desired if other than "Power Scale."
6. Unmute preamplifier output, initiate source component signal, and adjust gain as appropriate.

Shut-Down:

1. Mute preamplifier output.
2. Turn Reference 210 front-panel control from Operate to Off.
3. Turn off preamplifier and then the associated input source components.

Bias Adjustment Procedure

1. Amplifier should be turned on and operating for at least 30 minutes before adjusting bias of output tubes.
2. Select bias level function in display screen using the remote control. The 210 will mute. Display will default to V1 location, showing bias level and instructions to adjust bias to 65mA.
3. Using supplied flat-bladed tool, insert into V1 pot opening on front panel and rotate until screen reads 65mA.
4. Using the remote control, switch to V2 location and repeat adjustment procedure.
5. Check bias level for all other output tubes (V3–V6); each should measure in the range of 57mA to 73mA. If a tube persistently measures outside this range, it should be replaced.
6. Once tubes have been adjusted and checked for bias level, return display screen to Power Scale function and amplifier is ready to play.

The Reference 210 is shipped from the factory with all tubes properly biased and ready to use. It is not necessary to check bias each time the amplifier is turned on.

Under typical circumstances, most owners will find that checking the bias level once a month or so will insure proper operation and good service life of the output tubes. Audio Research-supplied output tubes are warranted for 90 days, and under normal conditions should provide up to 2000 hours of service life. This expected life will vary depending on conditions of use–ventilation, speaker loads, average playing level and A.C. voltage and line condition.

Complete sets of replacement tubes or individual tubes are available from Audio Research, and are strongly recommended for best sonic performance and reliability. These tubes are burned in, measured, matched and specifically selected for your Audio Research amplifier. Contact your authorized dealer for suggested retail prices.

Cooling Fan

The high-quality 12V D.C. fan is single-speed and is not adjustable. It operates at a speed selected to provide adequate cooling of the tubes with a minimum of air turbulence or noise.

Servicing

Because of its careful design and exacting standards of manufacture, your Reference 210 amplifier should normally require only minimal service to maintain its high level of performance.