



Technical Notes

SPA Series Power Amplifiers



Standby in SPA Series amps

Overview

Like other QSC power amplifiers that feature switch-mode power supplies, the SPA Series amps have provisions for remotely putting their power supply (and consequently, the amp) into standby, a mode that consumes only a small trickle of electricity.

On the SPA2-60—the two-channel model—a pair of remote standby terminals on the rear panel provide this capability. When you short the two terminals by means of a switch or relay, the amp goes into standby. When the connection opens, the amp restarts and operates normally.

The SPA4-60—the four-channel model—has two pairs of standby terminals. Although the pairs are isolated from each other by resistors, they do the same thing: put the amp into standby and take it out again.

A single amp

To have remote standby control on a single amplifier, connect a pair of wires to the two standby terminals (on the SPA4-60, it doesn't matter which pair you use). Run the wires to the switch or relay as shown in Figure 1 with the upper amplifier. There is no actual limit on the distance you may run these wires, but to ensure reliable switching in and out of standby you should make sure the total series resistance of

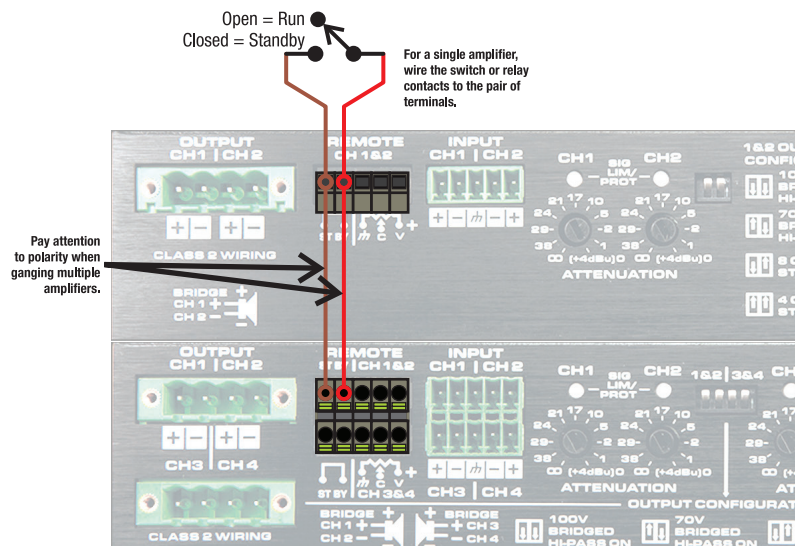


Figure 1. Connect amplifier standby terminals to a pair of switch or relay contacts. When wiring multiple amplifiers, make sure the wire polarity is consistent throughout all of them.

the wire and the switch contacts, when closed, is less than about 50Ω.

Multiple amps

A useful feature of this remote standby capability is that it can be used on multiple SPA amplifiers ganged together, allowing you to switch any number of them on or to standby simultaneously from a single switch or relay contact pair.

One caveat with making the connections on two or more amplifiers is that you must use consistent wire polarity on all the amplifiers (see Figure 1). If you happen to cross-connect the wires, the amplifiers will all go into standby and stay that way. This is because the left terminal on each remote standby pair is the amplifier's chassis ground, and the standby circuit actuates when the right terminal is connected to chassis ground. Cross-connecting the wires will therefore tie all the right terminals to chassis ground.

It is advisable, then to use color-coded wire pairs to make it easier to keep track of polarity.

Independent standby switching in the SPA4-60

The four-channel model, the SPA4-60, has two pairs of standby switching terminals. They do exactly the same function, but they are isolated through resistors so they can operate independently of each other (see Figure 2). Thus, you can use two independent switch contact closures to put the amplifier into standby. To come out of standby, both switch contact pairs must be opened.

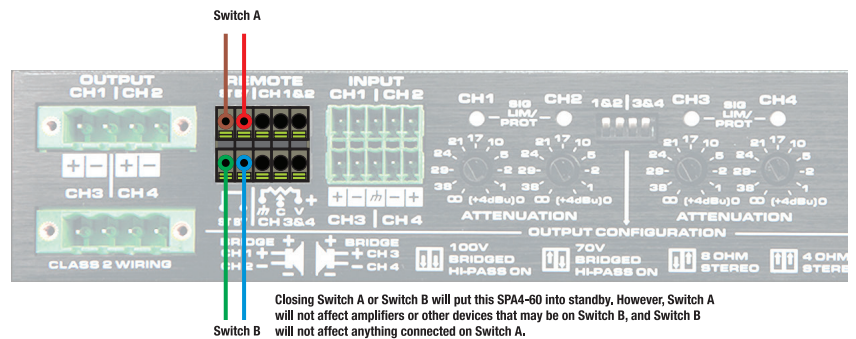


Figure 2. The two pairs of remote standby terminals on the SPA4-60 allow it to be switched into standby by either of two different switch closures.