



# Impedance Matching Speaker Volume Controls

Model: VC-50R, VC-100R, VC-50S, VC-100S  
User Manual

## Features and Technical Information:

- Can be used with any combination of 4 ohm, 8 ohm, or 16 ohm speakers
- Impedance is adjusted by positioning two shorting bars to the appropriate terminals
- 12 steps of attenuation: first position is “off”, steps 2 through 7 at 3db each, steps 8 through 11 at 6db each, and final position allows the signal from the amplifier to pass through completely.
- Frequency response: 35 Hz to 20kHz (+0/-2db) at rated power
- Input and Output connections accept up to 14 gauge speaker cable
- Independent grounds for use with any amplifier
- Fits most deep single gang electrical junction boxes

## Installation:

- Select a convenient mounting location for the volume control.
- Run 4-conductor speaker cable from the amplifier (positive and negative for both the left and right channel) to the volume control. Similarly, run 2-conductor speaker cable from each of the first pair of speakers to the volume control. Label the cables for future reference.
- Connect the speaker cable to the volume control:
  - a. Strip 1/4” of insulation from the end of each cable
  - b. Tightly twist the wires in each cable until there are no frayed ends
  - c. Insert the 4-conductor speaker cable from the **amplifier** into the **input** terminals
  - d. Insert the two 2-conductor speaker cables from the first pair of **speakers** into the **output** terminals
- Connect additional speakers in parallel.
- Make certain that all connections between your amplifier and the volume control, and between the volume control and each speaker, are “phase correct”, that is + to + and – to –.
- Turn the volume knob to the “off” position (all the way counterclockwise), turn on the amplifier, and test the functionality of the volume control.

## Installation Considerations

- Type of Speaker Cable  
For most applications, we recommend you use 14 or 16 gauge, oxygen free copper (OFC) speaker cable for the volume control connections. For individual lengths greater than 80 feet, 14 gauge cable is recommended
- Impedance Correction  
This process ensures that the impedance load shown to the amplifier (or receiver) never goes below the rated capabilities of the amplifier. See the charts (opposite page) for specific impedance loads that will be presented to your amplifier, depending on the quantity and impedance of the speakers you are using. Most amplifiers are rated at 8 ohms (stable down to 4 ohms).

### If you are using a 2 ohm rated amplifier:

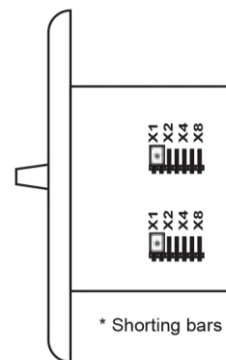
4 ohm speakers	x1	x2	x4	x8
	2 pairs	4 pairs	8 pairs	16 pairs
8 ohm speakers	x1	x2	x4	x8
	4 pairs	8 pairs	16 pairs	32 pairs
16 ohm speakers	x1	x2	x4	x8
	8 pairs	16 pairs	32 pairs	64 pairs

### If you are using a 4 ohm rated amplifier:

4 ohm speakers	x1	x2	x4	x8
	1 pairs	2 pairs	4 pairs	8 pairs
8 ohm speakers	x1	x2	x4	x8
	2 pairs	4 pairs	8 pairs	16 pairs
16 ohm speakers	x1	x2	x4	x8
	4 pairs	8 pairs	16 pairs	32 pairs

### If you are using an 8 ohm rated amplifier:

4 ohm speakers	x1	x2	x4	x8
	----	1 pairs	2 pairs	4 pairs
8 ohm speakers	x1	x2	x4	x8
	1 pairs	2 pairs	4 pairs	8 pairs
16 ohm speakers	x1	x2	x4	x8
	2 pairs	4 pairs	8 pairs	16 pairs



x1, x2, x4, x8 = Positions for the Shorting Bars

