

**For Best Results and to Minimize Cross-Over Interference From Other Electronic Devices,
Use The Following Guidelines When Planning Installation:**

DON'T install in electrical boxes with 120V household wiring.
DON'T install near other wall controls, including light switches and dimmer switches.
DON'T install near a telephone or intercom master.

DON'T install in a bathroom or spa, or near a jacuzzi.
DO use only a power limited listed or recognized stereo amplifier to power this product
 (70 Volt Peak Maximum / 20Hz-20kHz).

**INSTRUCTIONS
FOR
IMPEDANCE-
MATCHING
VOLUME
CONTROLS**

Introduction

By matching the minimum output impedance of the receiver or amplifier and adjusting volume, M&S™ impedance-matching volume controls eliminate the need for speaker selector boxes or other impedance matching equipment.

**Determining the
Jumper Setting for
Impedance Matching**

To protect the amplifier from overload and damage, the jumper must be set in a position that correctly multiplies the impedance of the speaker system to a level that is equal to or greater than the impedance of the amplifier. For reference: All M&S™ Ceiling and In-Wall speakers are 8-Ohm.

Step #1

Determine the amplifier's minimum impedance. (The amp's minimum impedance is usually found following Wattage and Frequency Response in the amplifier's specification page of the manual. It may also be listed on the back panel of the amplifier near the speaker terminals). Impedance is measured in Ohms (8- and 4-ohm systems are common).

Step #2

Determine the total number of speaker pairs.

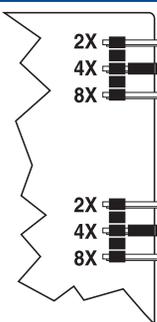
Step #3

Use the chart below to determine the correct jumper settings.

Step #4

Set the jumpers.

| NUMBER OF 8-OHM PAIRS | JUMPER SETTINGS |
|--------------------------|--------------------|
| 1 | 2X |
| 2 | 2X |
| 3 | 4X |
| 4 | 4X |
| 5 | 8X |
| 6 | 8X |
| 7 | 8X |
| 8 | 8X |



**Jumper Settings
Cutaway**

Note:
Be sure every
jumper setting
is set the same
throughout the
system!

**IMPEDANCE-MATCHING WIRING
INSTRUCTIONS**

Electrical Boxes and P-Rings

The mounting depth of the volume control is 27/8" from the face plate to the back of the control. You must use an extended depth box to accommodate the volume control. A P-Ring can be used as an alternative if local building codes allow.

Wiring Instructions

For best results, use M&S 16-gauge stranded MS16X5 copper speaker wire. Never use solid-core, aluminum or "Romex" type wire with volume controls.

Step #1

Strip about 1/4" of the insulation off the ends of all wires. Twist the exposed ends to eliminate loose strands.

Step #2

Connect the leads from the Receiver/Amplifier to the volume control connector labeled INPUT. Insert the LEFT L(+) and L(-) into the corresponding connector openings. Tighten the screws firmly, making sure that the exposed wire is engaged, not the insulation!

Step #3

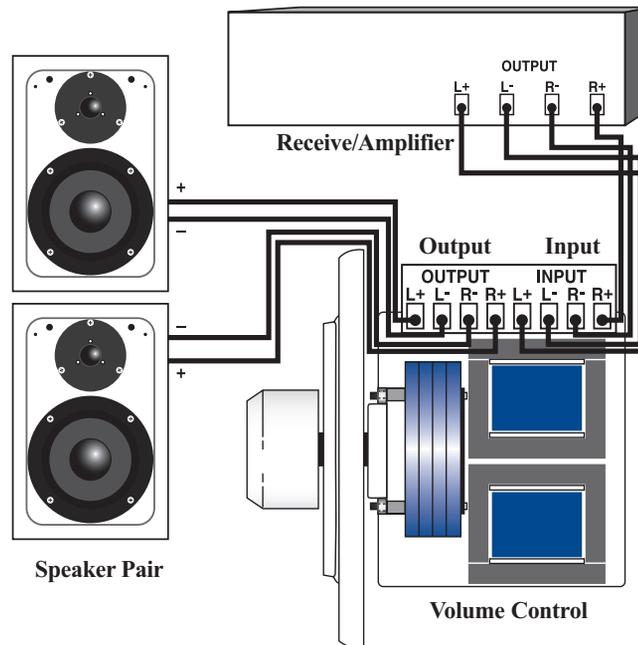
Repeat process while connecting R(+) and R(-) wires from the amplifier.

Step #4

Connect the speaker wires to the connector labeled OUTPUT. Observe channel and polarity output.

Step #5

Install the completed assembly into the junction box. Insert carefully to reduce strain on the connectors. If necessary, pre-dress the wires for easiest mounting.



**VOLUME
CONTROL
OPERATION**

1. Make sure the amplifier or receiver is OFF and set the amp volume to minimum.
2. Set the volume control volume to maximum (fully clockwise).
3. Turn on the amplifier or receiver and select a music source, such as radio tuner or CD player.
4. Slowly turn up the amplifier or receiver volume and set it to a comfortable (not maximum) listening level. BE CAREFUL NOT TO OVERDRIVE YOUR AMPLIFIER. If the sound becomes muddy or distorted, you have reached the limit of your amplifier's volume capacity and should quickly reduce the volume to avoid damaging your speakers.
5. Use the M&S™ volume control to adjust the volume of the speakers to the desired listening level in each room.
6. Turn off the speakers in a room by turning the knob on the volume control completely counter-clockwise.