IM1/IM1D Troubleshooting

A guide for troubleshooting issues with the installation of the IM1/IM1D volume control.

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

DO Use only a power limited listed or recognized Stereo amplifier to power this product (70 Volt Peak Maximum / 20Hz-20kHz).

DO Follow all instructions provided with the IM1/IM1D concerning installation and operation.

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.

INSTRUCTIONS FOR IMPEDANCE MATCHING VOLUME CONTROLS (IM1/IM1D)

Introduction: By matching the minimum output impedance of the receiver or amplifier and adjusting volume — M&S System™ 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 speakersystem to a level that is equal to or greater than the impedance of the amplifier. For reference: All M&S System™ speakers are 8-ohm.

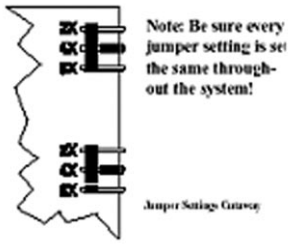
Step #1: Determine the amplifier's minimum impedance. (The amp's minimum impedance is usually found following Wattage and Frequency Response in the amplifier's specification page of the manual. It may also be listed on the back panel of the amplifier near the speaker terminals). Impedance is measured 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.

Impedance-Matching Volume Controls Only								
NUMBER OF 8-OHM PAIRS	1	2	3	4	5	6	7	8
JUMPER SETTINGS	2X	2X	4X	4X	8X	8X	8X	8X

Step #4: Set the jumpers. Example shown right.



IMPEDANCE-MATCHING WIRING INSTRUCTIONS

Electrical Boxes and P-Rings: The mounting depth of the volume control is 2 7/8" from the faceplate 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!

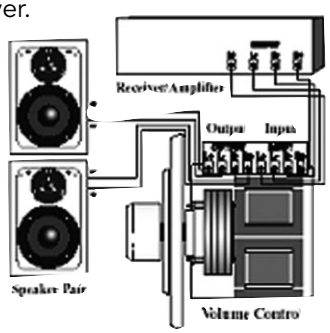
Step #3: Repeat process while connecting R(+) and R(-) wires from the amplifier.

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 OPERATIONS

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&STM 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.



ADDITIONAL INFORMATION FOR INSTALLING VOLUME CONTROLS.

- If the install was pre-wired during new construction, it is always a good idea to check for short on the wire.
  - At one end of the wire run, check for continuity between wire leads.
    - Δ With no equipment installed, there should be infinite ohms between the leads.
    - Δ If there is any continuity, repair or replace the wire prior to final installation.
- Once the speakers and volume controls have been installed and prior to hooking them up to your amplifier, it's a good idea to measure continuity again at the amplifier location.
  - When taking measurements, you should read about 3.6 to 6.4 ohms DC depending on the strapping of each volume control.
  - There should be no continuity between left and right channel speakers.
  - If these readings are not correct, recheck your wiring at the volume control or ohm ratings of speakers being used.
- Upon completion of the installation, check the system operation.
  - Ensure all volume controls are turned counter-clockwise.
  - Turn the system on and select a source.
  - Slowly, turn the volume of the amplifier to mid position.
  - Now slowly turn your volume control knob fully clockwise.
  - You should hear sound coming from the speakers associated that volume control.
  - If there is no sound coning from the speakers, immediately turn the system off. Check for loose or open connections, wrong polarity or shorts through out the system.