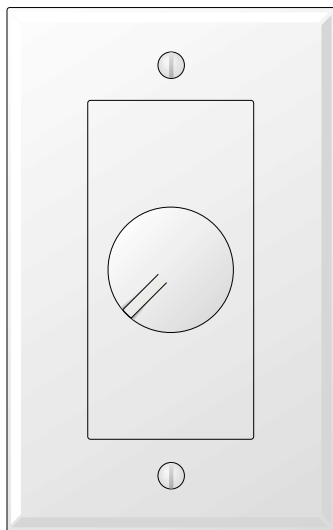


ALTx Volume Control Instruction Manual



INTRODUCTION

The ALTx UltraMatch™ Volume Control you have just purchased is a wall-mounted Decora™ or Standard style, stereo speaker-level volume control. It connects between the speaker outputs of an amplifier or receiver and a pair of speakers. The 1X setting allows the volume control to be used as a standard control. The 2X, 4X, and 8X settings allow it to be used as an UltraMatch™ control. The UltraMatch™ volume control provides a method of matching the minimum output impedance of the amplifier or receiver, in addition to adjusting volume. It eliminates the need for a speaker selector or impedance matching equipment. The ALTx adjusts volume level by attenuating the amplifier signal output of the ALTx to the speakers. All Russound Volume Controls are manufactured using a high-quality autoformer design which provides long life, excellent frequency response, no heat build-up, and maximum power transfer from the amplifier to the speakers. All Russound ALTx volume controls conform to UL Standard 1492 First Edition, and for Canada Certified to CSA Standard 22.2 No. 1-M94. This certification assures that your ALTx volume control has been designed and tested for safety.

INSTALLATION CONSIDERATIONS

- Near other wall controls
- At your bedside
- Near a desk/workstation
- Close to a telephone and an intercom
- In entryways or exits
- Near a jacuzzi

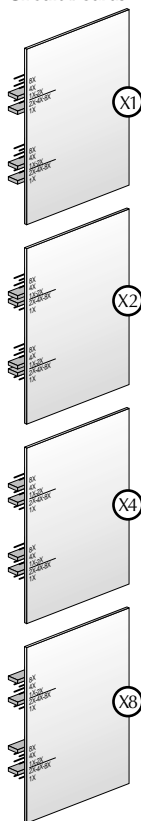
P-RING AND ELECTRICAL BOXES

From the wallplate/faceplate to the back of the ALTx control, the mounting depth of the ALTx is 2 7/8". You must use a minimum of a standard light switch plaster ring (p-ring) or a standard 20 cu. in. (or larger) electrical box. Suitable P-Rings and electrical boxes are available from your Russound dealer or a local electrical supply company. Using the P-Ring during new construction (some building codes require that wall devices be enclosed in electrical boxes. Check your local building code) is best because it gives you unobstructed access to the full depth of the wall.

TYPE OF SPEAKER WIRE

For most applications, we recommend you use 16 or 18 gauge, stranded copper speaker wire for the ALTx speaker connections. For wiring runs longer than 100 feet, 14 gauge wire is recommended. Using speaker wire larger than 14 gauge for ALTx Volume Controls is not recommended as the wire may not fit into the connectors. NOTE - Never use solid-

Jumper
Settings On
Circuit Boards



core, aluminum or Romex® type wire with volume controls. When running speaker wires inside walls, most states and municipalities in the U.S. specify that you must use a special type of speaker wire. Usually, the requirement is that the wire has a specific “CL” fire rating, such as “CL-2” or “CL-3”. Consult your Russound dealer, building contractor, or local building and inspection department if unsure about which type of wire is best for your application. If you need speaker wire, we recommend you order Russound AW series wire. These speaker cables use multi-strand copper wire and high-temperature PVC jackets specially designed for snaking through the walls and for long speaker runs.

CAUTION

Do not install the ALTx into electrical boxes with 110 Volt devices. Some states or municipalities allow devices such as the ALTx to be installed into the same electrical box as 110 volt devices, provided a “low-voltage partition” is used between the devices. Russound does not recommend this. Speaker wires can act as an “antenna” for electrical noise. Locating speaker wires too close to a light switch or dimmer switch may cause a “humming” or “buzzing” sound to be heard through the speakers. If you must locate the volume control near electrical devices, install it in a separate metal electrical box, ground the box to the electrical system ground, and route the speaker wires several feet away from the electrical wiring.

OPERATION

1. Make sure the amplifier or receiver is OFF and set the volume to minimum.
2. Set the ALTx volume to maximum (fully clockwise).
3. Turn on the amplifier or receiver and select a music source, such as 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 capability and should quickly reduce the volume to avoid damaging your speakers.

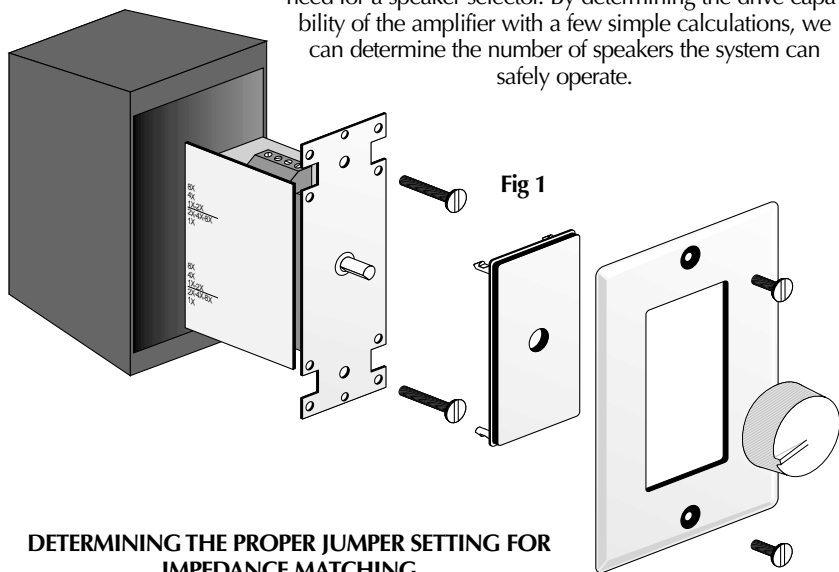
NOTE: 12 o'clock (50%) on most receivers is full volume. An amplifier that is being driven beyond its potential will produce D/C voltage (clipping) which will not pass through a transformer, resulting in improper signal transfer and possible amplifier shut-down or damage.

5. Adjust the volume of the speakers to the desired listening level using the ALTx.
6. You can turn off the speakers in each room by turning the knob on the ALTx completely counter-clockwise.

IMPORTANT: If you are unsure of any of the installation procedures, the products should be installed by a professional custom installer.

ULTRAMATCH™ VOLUME CONTROLS

Russound UltraMatch™ volume controls eliminate the need for a speaker selector. By determining the drive capability of the amplifier with a few simple calculations, we can determine the number of speakers the system can safely operate.



DETERMINING THE PROPER JUMPER SETTING FOR IMPEDANCE MATCHING

The jumper must be set in a position that correctly multiplies the impedance of the system to a level that is equal to or greater than the impedance of the amplifier. The jumper setting can be determined using the following simple steps

1. Determine the amplifier's minimum impedance. The amplifier'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. AC impedance is measured in ohms.
2. Identify the correct impedance-matching chart according to the amplifier's minimum impedance. There are two impedance matching charts, one for 8 ohm amplifiers and one for 4 ohm amplifiers. Choose the chart that describes your amplifier. If your amplifier is 6 ohm stable, use the 8 ohm chart.
3. Determine the impedance for each pair of speakers by referring to its manual.
4. Determine the total number of 4 ohm pairs of speakers. (rows on charts)

- Determine the total number of 8 ohm pairs of speakers. (columns on charts)
- Follow the appropriate row and column to determine jumper settings. (ex. see fig 2)

Fig 2 Impedance Matching Charts For UltraMatch™

Impedance Matching For 4 Ohm Amplifiers

8 Ohm Pairs

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0	-	1X	1X	2X	2X	4X	4X	4X	4X	8X	8X	8X	8X	8X	8X	8X	8X
1	1X	2X	2X	4X	4X	4X	4X	8X	8X	8X	8X	8X	8X	8X	8X		
2	2X	4X	4X	4X	4X	8X	8X	8X	8X	8X	8X	8X	8X				
3	4X	4X	4X	8X	8X	8X	8X	8X	8X	8X	8X						
4	4X	8X	8X	8X	8X	8X	8X	8X	8X								
5	8X	8X	8X	8X	8X	8X	8X										
6	8X	8X	8X	8X	8X												
7	8X	8X	8X														
8	8X																

Impedance Matching For 8 Ohm Amplifiers

8 Ohm Pairs

	0	1	2	3	4	5	6	7	8
0	-	1X	2X	4X	4X	8X	8X	8X	8X
1	2X	4X	4X	8X	8X	8X	8X		
2	4X	8X	8X	8X	8X				
3	8X	8X	8X						
4	8X								

Example: The table to the right shows an 8 ohm minimum impedance amplifier with 1 pair of 4 ohm speakers and 3 pair of 8 ohm speakers. The chart indicates the jumper setting should be set at 8X

CONSIDERATIONS

- Make sure that your amplifier has adequate wattage for the number of speakers. Watts per channel divided by the number of pairs should equal or exceed the individual speaker's minimum wattage requirements.
- You must use an UltraMatch™ volume control for each pair of speakers.
- Every jumper setting must be set on the same setting throughout the system.
- A minimum speaker load of 4 ohms can be connected to the output of each UltraMatch™ volume control.

EZB CONNECTING BLOCKS

The EZB-1 and EZB-2 connecting blocks are Russound accessories that simplify connections of multiple volume controls and speaker pairs. The EZB-1 is a neat, compact wiring device capable of connecting four volume controls to an amplifier's outputs. The EZB-2 expands the EZB-1 to another 4 volume controls. Multiple EZB-2's can be used to expand the system to sixteen volume controls.

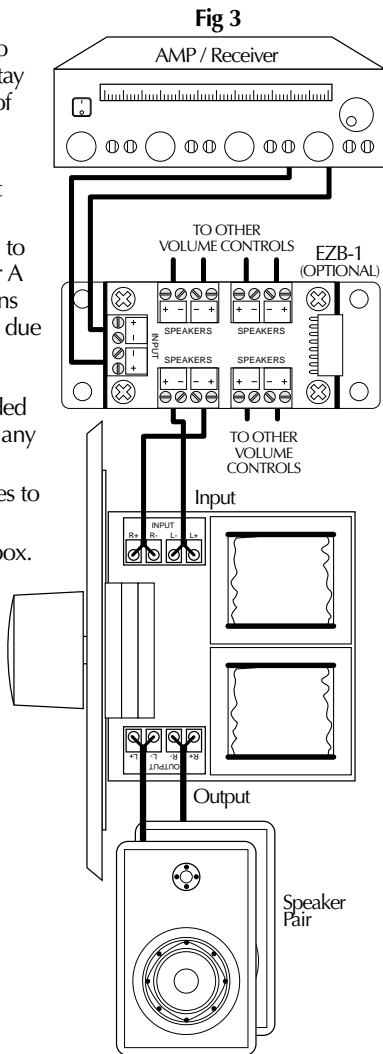
WIRING INSTRUCTIONS

1. Connect the leads from the amplifier's outputs to the connector labeled input. The wires should stay consistent, left + of the amplifier to left + input of the volume control, observing polarity and identification.

CAUTION: Do not reverse the input and output connections!!

CAUTION: A majority of receivers are designed to operate at a rating of 8Ω . On receivers that offer A and B speaker outputs, both A and B connections share the same amplifier. It is important to note, due to the way many receivers are wired, that when using impedance matching devices, such as UltraMatch™ volume controls, it is recommended to wire all speakers to the A output. If you have any questions contact Russound directly.

2. As outlined in step #1, connect the speaker wires to the connector labeled output.
3. Install the completed assembly in the junction box. Insert carefully to avoid excessive strain on the connector. Taking the time to feed the excess wire out the back of the junction box will help you with the final assembly.



WARRANTY

All Russound volume controls are fully guaranteed against all defects in materials and workmanship as long as the original purchaser and user of the volume control owns the unit. During the warranty period, Russound, at its option, will replace or repair any defective part and correct any defect in workmanship without charge for parts or labor. For this warranty to apply, the unit must be installed and used in accordance to its written instructions. If necessary, repairs must be performed by Russound. The unit must be returned to Russound at the owner's expense and with prior written permission of Russound. Accidental damage and shipping damage are not considered defects, nor is damage resulting from abuse, or from servicing performed by an agent or person not specifically authorized in writing by Russound. Damage to or destruction of components due to application of excessive power voids the warranty on those parts. Repairs to components damaged or destroyed due to application of excessive power will be made by charging the owner the retail value of the parts and labor for the repair. To return items for repairs, the unit must be shipped to Russound at the owner's expense, along with a written explanation of the nature of the service required. The unit must be packed in a corrugated container with at least 3 inches of resilient material to protect the unit from damage in transit. Russound reserves the right to request proof of purchase. Except to the extent prohibited by applicable law, no other warranties, whether expressed or implied, other than the express warranties stated herein, shall apply to units sold to the purchaser. Russound shall not be liable for any implied warranty of merchantability or fitness for a particular purpose to any person other than the original purchaser and user. Under no circumstances shall Russound be liable for property damage, economic loss or any consequential damages sustained in connection with the purchase and use of its products. Some states do not allow limitations on how long an implied warranty lasts, or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. Russound neither assumes nor authorizes any representative or other person to assume for it any obligation or liability other than such as is expressly set forth herein. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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