

DO NOT CONNECT THE WIRES FROM THE VOLUME CONTROL TO THE AMPLIFIER UNTIL THE FOLLOWING CHECKS HAVE BEEN PERFORMED!

1. With an Ohmmeter, measure the resistance between the + and - of each pair of wires that is to be connected to the amplifier's speaker outputs. Under no circumstances should this reading be below 4 Ohms. A reading of less than 4 Ohms may mean that the Input and Output plugs on the Volume Control may have been hooked up backwards (potentially causing damage to the amplifier). An open reading may indicate a polarity reversal.
2. Make sure amplifier is not powered up when making connections or testing.

Operation

Once the MACVMO/MACVSO is connected to both amplifier and speakers, adjustment and testing can occur. When using a receiver or integrated amplifier with it's own Volume functions, turn the Volume all the way down. Turn Volume all the way up on the MACVMO/MACVSO, then slowly adjust the Volume on the receiver until a comfortable listening level is obtained. Leave the receiver's Volume at that level and adjust Volume from the MACVMO/MACVSO. When connected directly to an amplifier, follow the above procedures, but adjust the amplifier's Gain Control rather than the Volume knob of a receiver. Once the gain has been established, no further adjustment should be necessary.

Specifications

Power Rating.....75 Watts Peak/35 Watts RMS per Ch
Frequency Response.. 20-20 KHz, +/- 0.5 dB into 8 Ohms
Total Harmonic Distortion..... < 1%
Impedance Setting (MACVSO).....Variable 1X/2X/4X/8X
Impedance Setting (MACVMO).....Variable 2X/4X/8X/16X
Minimum Speaker Load..... 4 ohms
Dynamic Range.....49 dB (Max to Min audible)
Available in White, Ivory, Almond, Black, and Brown

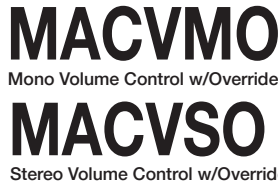
Warranty

ELAN HOME SYSTEMS, L.L.C. ("ELAN") warrants the MACVSO Stereo Volume Control and the MACVMO Mono Volume Control to be free from defects in materials and workmanship for ten years (10 years) from the date of purchase. If within the applicable warranty period above purchaser discovers such item was not as warranted above and promptly notifies ELAN in writing, ELAN shall repair or replace the items at the company's option. This warranty shall not apply (a) to equipment not manufactured by ELAN, (b) to equipment found to have been installed by other than an authorized ELAN installer, (c) to installed equipment which is not installed to ELAN's specifications, (d) to equipment found to have been repaired or altered by others than ELAN, (e) to equipment found to have been subject to negligence, accident, or damage by circumstances beyond ELAN's control, including, but not limited to, lightning, flood, electrical surge, tornado, earthquake, or any other catastrophic events beyond ELAN's control, or to improper operation, maintenance or storage, or to other than normal use of service. With respect to equipment sold by, but not manufactured by ELAN, the warranty obligations of ELAN shall in all respects conform and be limited to the warranty actually extended to ELAN by its suppliers. The foregoing warranties do not cover reimbursement for labor, transportation, removal, installation, or other expenses which may be incurred in connection with repair or replacement. Except as may be provided and authorized in writing by ELAN, ELAN shall not be subject to any other obligations or liabilities whatsoever with respect to equipment manufactured by ELAN or services rendered by ELAN.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESSED AND IMPLIED WARRANTIES EXCEPT WARRANTIES OF TITLE, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

WARNING TO OUR VALUED CUSTOMERS

To ensure that consumers obtain quality pre-sale and after sale support and service, ELAN Home Systems™ products are sold exclusively through authorized dealers. ELAN products are not sold online. The warranties on ELAN products are NOT VALID if the products have been purchased from an unauthorized dealer or an online E-tailer. To determine if your ELAN reseller is authorized, please call ELAN Home Systems at (859)269-7760.



STRUCTURED WIRING

by ELAN

Introduction

The ELAN MACVSO Stereo Volume Control w/Override is a twelve-step stereo Volume Control with Variable Impedance Match settings. The MACVMO is a mono Volume Control w/ Override conforming to the same specifications (except stereo capability). This Volume Control was designed to connect speakers to amplifiers with power ratings up to 75 Watts peak music power. Based on proven technology, the MACVMO/MACVSO provide a perfect solution when using multiple speakers in multi-room applications or when basic volume functions are needed with a receiver or amplifier. This device was specifically designed to be compatible with the ELAN MAC24 Music & Communications Distribution Center and will work with other amplifiers, as well.

Features

- 75 Watts Peak Per Channel Music Power
- 1X/2X/4X/8X MACVSO
- 2X/4X/8X/16X MACVMO
- Volume Control Override
- Ten Year Warranty
- Twelve-Position Volume Steps
- Decora® Styling
- ELAN Quality

Rough-In

The MACVMO/MACVSO will fit into the majority of single-gang boxes and P-rings. If local building codes allow, P-rings provide easier installation due to the greater mounting depth that can be obtained. This Volume Control should not be mounted in the same rough-in box as 110 Volt devices--this can cause undesirable noise in the speakers. High-wattage light dimmers can also cause noise issues.

Wiring

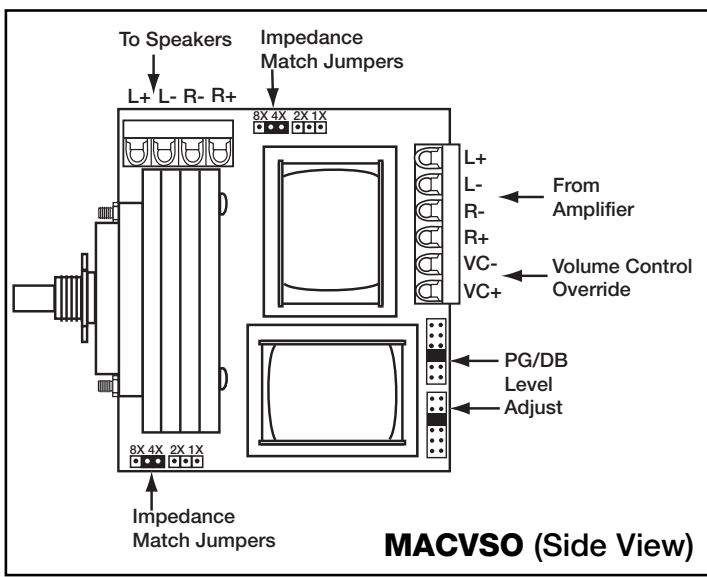
ALWAYS CHECK LOCAL BUILDING AND FIRE CODES FOR LOW-VOLTAGE DEVICE INSTALLATION AND WIRING REQUIREMENTS.

IN RETROFIT APPLICATIONS, ALWAYS CHECK FOR OBSTRUCTIONS SUCH AS PIPES, CONDUIT, OR ELECTRICAL WIRING BEFORE CUTTING DRYWALL

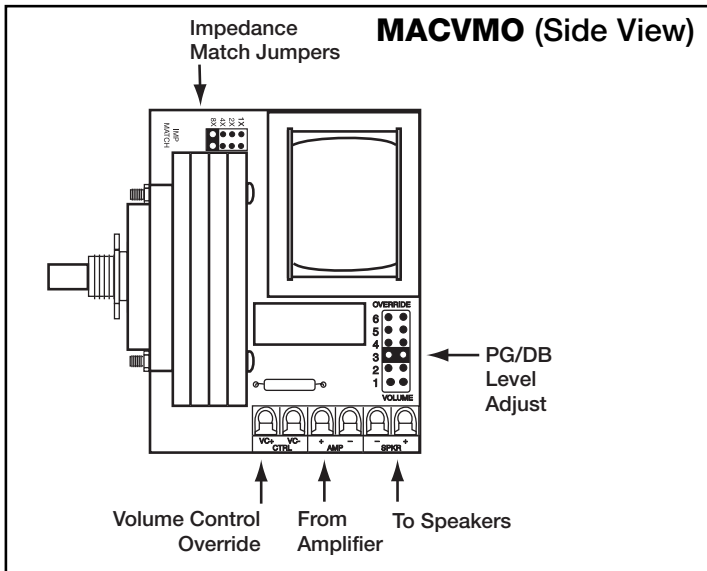
Wiring for the MACVMO/MACVSO consists of speaker wire and Cat-5 when connecting to the MAC24. The MACVMO/MACVSO can accommodate from 14 to 24 gauge speaker wire. Typical installations will use 16 or 18 gauge stranded copper wire, while longer runs (greater than 80 feet) should use 14 gauge wires. In-wall runs should utilize twisted pair wiring. Please consult local building codes before attempting in-wall wire runs.

DO NOT REVERSE THE AMPLIFIER INPUT AND SPEAKER OUTPUT CONNECTIONS! THIS CAN RESULT IN DAMAGE TO EQUIPMENT AND/OR PROPERTY.





MACVSO (Side View)



MACVMO (Side View)

Impedance Match Settings

Jumper settings on the MACVMO/MACVSO determine the Impedance Match settings. See diagram for position of Override Jumpers. Jumper position depends on three things:

1. The minimum impedance rating of the amplifier being used.
2. The number of speakers being connected to the amplifier channel.
3. The nominal impedance of the speakers being utilized.

Once the above information has been determined, use the following equations to determine the correct Impedance Match setting for each specific application. Two equations are necessary:

$$\frac{\text{Impedance Rating of Speakers}}{\text{\# of Speakers Connected to Amp Channel}} = \text{System Impedance}$$

$$\frac{\text{Minimum Impedance Rating of Amp}}{\text{System Impedance}} = \text{Impedance Match Jumper Setting}$$

Example:

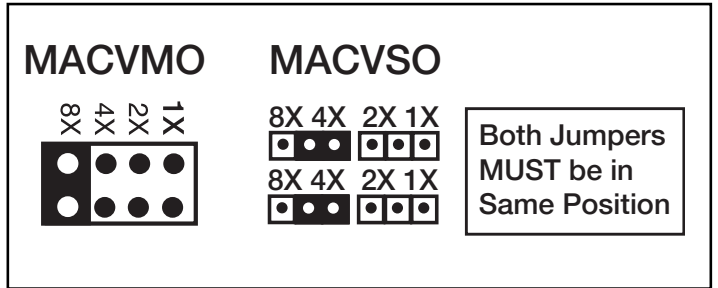
Amplifier's minimum impedance rating = 8 ohms
 # of speakers on this channel = 4
 Speaker impedance = 8 ohms

$$\frac{8 \text{ Ohm Speaker}}{4 \text{ Speakers}} = 2 \text{ Ohm System Impedance}$$

$$\frac{8 \text{ Ohm Stable Amp}}{2 \text{ Ohm System Impedance}} = 4 \text{ X Jumper}$$

Impedance Match Settings (continued)

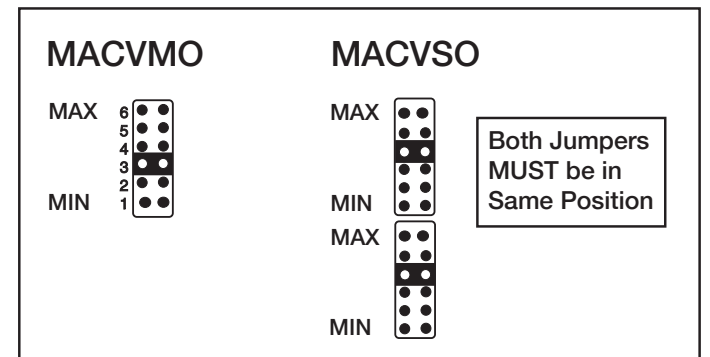
Most speakers are rated at 4, 6, or 8 ohms. If connecting speakers of different impedances to an amplifier, an average impedance must be determined; i.e. one pair of 4 ohm speakers is the equivalent of 2 pair of 8 ohm speakers. All 6 ohm speakers should be entered into the equation as 4 ohm speakers. All volume controls connected to an amplifier channel should have the same Impedance Match setting.



Never create settings that cause the amplifier to see an impedance below its minimum impedance rating as this can cause damage to the amplifier.

Page & Doorbell Level Adjustment

When utilizing ELAN's Page and Doorbell features, it will be necessary to adjust the Page & Doorbell Volume level. Locate the Page & Doorbell Volume jumpers as shown on the diagram below. On the MACVSO, both jumpers MUST be set to the same position or damage to the unit could occur. Test the Page and Doorbell functions and monitor the audio levels. Adjust shunts higher to increase Page & Doorbell volume, adjust lower to reduce volume.



Installation

With the rough-in box or P-ring installed and speaker wires and Cat-5 pulled to the location, installation can commence. Make wiring connections first, then mount the Volume Control in the wall.

1. Disconnect amplifier from electricity before starting.
2. Snap colored faceplate on to Volume Control. Push knob in place.
3. Strip back 1/4" of the insulation from the end of the speaker wires.
4. Twist bare wires tightly making sure their are no frayed ends.
5. Secure each wire from the amplifier to its respective connector. Use screw terminals to tighten.

L+ to L+, L- to L-, R+ to R+ and R- to R-

6. Next, make connections to the speakers using the same L+/-, R+/- scheme.
7. Connect VC+ and VC- from an ELAN MAC24 Music & Communications Controller to the VC+ and VC- connections of the MACVMO/MACVSO.
8. Carefully place the Volume Control in the rough-in box making sure not to put strain on the speaker connections.
9. Insert two 1" screws into the mounting holes of the MACVMO/MACVSO to mount the unit into the rough-in box. Tighten these screws until the unit is at the proper depth to mount flush with the wall.
10. Place Decora cover over Volume Control. Insert and tighten short screws until the cover is tight and flush with the wall.
11. Connect speaker wires to amplifier. Make sure proper polarity is maintained or sound quality will suffer.
12. Connect amplifier to power and then test.