

# ADVANTAGE

## SKY6025 100/50 watt 12-Position Stereo Impedance Matching Volume Control (White) In Weather-Resistant Outdoor Box

The SKY6025 features high-quality audio transformers, removable and solderless speaker terminals and a computer grade double-sided glass epoxy printed circuit board. Impedance matching jumpers multiply the impedance the amplifier "sees" by 2, 4 or 8 times allowing the parallel connection of multiple controls without damaging the amplifier. 12 level positions provide a maximum of 54dB of attenuation (see attenuation chart below). Each control includes a metal bracket plate, color-coded plastic insert, color-coded knob, wall plate and mounting screws.

### Attenuation (dB)

Jumper Position	Volume Knob Positions											
	1	2	3	4	5	6	7	8	9	10	11	12
X2	0	-3	-6	-9	-12	-15	-18	-21	-27	-33	-39	-48
X4	0	-6	-9	-12	-15	-18	-21	-24	-30	-36	-42	-51
X8	0	-9	-12	-15	-18	-21	-24	-27	-33	-39	-45	-54

### Impedance Matching Jumpers:

These instructions assume that all system speakers are 8 ohm and all speakers require the same amount of power.

- Set all jumpers to the same setting for all controls regardless of the number of speakers connected to each control.



**X1**



**X4**

- Multiple controls must be wired together in parallel. The combined parallel impedance of all controls must be greater than or equal to the lowest allowed amplifier impedance.



**X2**



**X8**

- Use the impedance chart below to determine the impedance of each control with various speaker loads and jumper settings. Find the number of 8-ohm speaker pairs across the top of the chart and read the impedance at various settings.

- Calculate the combined impedance of all paralleled controls using the following formula:

$$Z_t = \frac{1}{\frac{1}{Z_1} + \frac{1}{Z_2} + \frac{1}{Z_3}}$$

Where  $Z_t$  = Combined impedance of all paralleled controls  
Where  $Z_x$  = Single control impedance

**EXAMPLE:** As an example, assume you have 3 Volume controls. The controls must all be connected in parallel to the same amplifier channels. Again as an example, assume Control #1 has 3 pairs of speakers connected, Control #2 has 2 pairs of speakers, and Control #3 has 1 pair of speakers. Setting all impedance multipliers to X4 results in 10.67 ohms for Control #1, 16 ohms for Control #2, and 32 ohms for Control #3. Using the formula above, the combined parallel impedance is 5.33 ohms (most high-quality amplifiers can handle impedances as low as 4 ohms). This method provides Control #1 with more power than the other 2. This is desirable since Control #1 must distribute power to 3 sets of speakers. With a 100-watt-per-channel amplifier, the scenario above would provide each speaker with 16.67 watts.

Jumper Position	Impedance per Controller (ohms) based on Pairs of Speakers							
	1	2	3	4	5	6	7	8
X1	8.00	4.00	2.67	2.00	1.60	1.34	1.15	1.00
X2	16.00	8.00	5.33	4.00	3.20	2.67	2.29	2.00
X4	32.00	16.00	10.67	8.00	6.40	5.33	4.57	4.00
X8	64.00	32.00	21.33	16.00	12.80	10.67	9.14	8.00

**Wiring and Mounting:**

1. Route amplifier and speaker wires into the weather-proof box leaving enough slack for easy servicing.
2. Strip ¼" of insulation from each wire and twist the end to prevent fraying.
3. Insert each wire into the appropriate terminal. Tighten each wire's set screw with a #1 Phillips screw driver.
4. Carefully arrange excess wiring in the weather-proof box to ensure no wire get pinched. Make sure the back of the circuit board is not touching the weather-proof box or excess wires.
5. Secure the Control to the weather-proof box using the supplied hardware.

*NOTE: The speaker connection snap-on connectors are shipped in a vertical position on the volume control PC board connector. They are meant to be removed and attached to the speaker wire. For permanent installation, the connectors mount back on the volume control PC board connector horizontally, which is different from the way they were shipped. There is a notch in the connector which it fits down over the PC board connector and snaps tight in place.*