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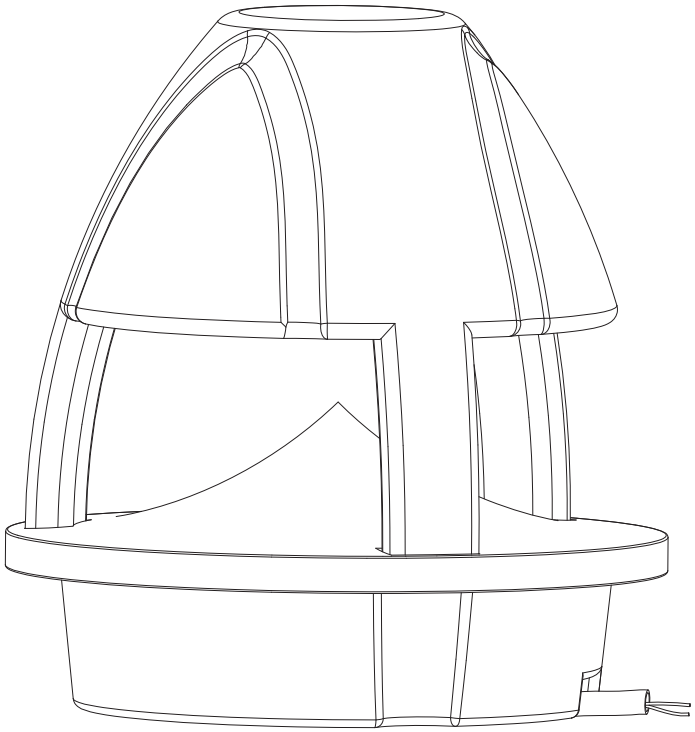


2-WAY OMNI-DIRECTIONAL GARDEN SPEAKER

USER's MANUAL

PID: 13193

SAFETY WARNINGS AND GUIDELINES

- Turn off and unplug all equipment prior to making electrical connections, including speaker wire connections.
- Reduce the volume level prior to making any change to the audio input source, e.g., changing radio stations or changing CDs.
- This speaker carries an IP56 ingress protection rating. This rating only applies when the speaker is installed in an upright position. Installing the speaker upside down or sideways against a wall will allow water to get onto the speaker cones, which will degrade them and possibly cause a short circuit.
- Do not install upside down or sideways. This speaker should be installed only in an upright position.
- Do not install the speaker where standing water can collect. Ensure that there is sufficient drainage to prevent standing water from collecting around the speaker base.
- Speaker wire connections should be protected using waterproof heat shrink tubing, waterproof wire connectors, immersion-resistant crimp splices, grease water caps, or waterproof conduit.
- Speaker wire should be rated for direct burial or protected using waterproof conduit.
- When using this speaker as part of a constant voltage speaker system, ensure that the amplifier power is at least 20% higher than the total power settings of the connected speakers.
- Most speaker damage is caused by clipping, which is heard as distortion. If you hear distortion, reduce the volume level until the audio is no longer distorted.
- Take care to ensure that the speaker wire connections are properly polarized. Inverted polarization can result in unnatural or attenuated sound, especially in the bass frequencies.
- Do not use chemical cleaners or solvents to clean this speaker. Use only a soft, dry cloth. Moisten the cloth with warm water for particularly stubborn deposits.

INTRODUCTION

Thank you for purchasing this Omni-Directional Garden Speaker!

This speaker carries an IP56 ingress protection rating, making it safe for use outdoors in all weather conditions. It has an 8 ohm impedance, for use in an ordinary speaker/amplifier configuration. It also contains a built-in step-down transformer with 6 taps, allowing it to be used as part of a 70V or 100V constant voltage speaker system.

FEATURES

- 8 ohms nominal impedance
- Compatible with 70V and 100V constant voltage speaker systems
- Built-in step-down transformer with 6 taps (1W, 2W, 4W, 8W, 16W, and 32W)
- IP56 ingress protection rating
- 60Hz ~ 20kHz frequency response
- Handles up to 60 watts (RMS), 120 watts (peak) input power

CUSTOMER SERVICE

The Monoprice Customer Service department is dedicated to ensuring that your ordering, purchasing, and delivery experience is second to none. If you have any problem with your order, please give us an opportunity to make it right. You can contact a Monoprice Customer Service representative through the Live Chat link on our website **www.monoprice.com** during normal business hours (Mon-Fri: 5am-7pm PT, Sat-Sun: 9am-6pm PT) or via email at **support@monoprice.com**

PACKAGE CONTENTS

Please take an inventory of the package contents to ensure you have all the items listed below. If anything is missing or damaged, please contact Monoprice Customer Service for a replacement.

- 1x Garden speaker
- 1x User's manual

CONSTANT VOLTAGE VS 8-OHM SPEAKER SYSTEMS

A constant voltage speaker system differs from a traditional 8-ohm speaker system in that it uses a step-up transformer at the audio source to raise the voltage and lower the current on the transmission line. At the speaker end, a step-down transformer converts the signal back to a normal speaker level voltage. This reduces power loss during transmission, which allows for the use of longer speaker wire runs using smaller gauge wire.

Additionally, a constant voltage speaker system allows for the use of multiple speakers on each channel, without the need for complicated impedance calculations and configurations. In a constant voltage system, all speakers on a given channel are connected in parallel and the complicated impedance calculations are replaced by simple wattage calculations.

For example, if you want to connect two speakers per channel in a traditional 8-ohm speaker system, you must either connect them in series, which results in an overall 16-ohm impedance, or in parallel, which results in an overall 4-ohm impedance. In the first case, the 16-ohms impedance effectively halves the output power of your amplifier, resulting in lower overall volume levels. In the latter case, the 4-ohms impedance means that your amplifier will have to work harder and must be rated as stable at 4 ohms. Adding a third speaker to the mix would complicate it further, producing either a 24-ohm or 2-ohm overall impedance. Note that very few amplifiers are stable under 2-ohm loads, so that is usually not an option.

On the other hand, with a constant voltage system, you consider first the RMS output wattage of the amplifier. This should be reduced by 20% to compensate for insertion loss. For example, if using a 100-watt amplifier, the total load from speakers should not exceed 80 watts.

Each individual speaker on a given channel is set to a value such that the total does not exceed the rated power, less 20%. You do not need to worry about making the total as close as possible to the limit; just ensure that the total does not exceed the limit.

If all speakers are set to the same wattage value, they will all have the same volume level. If one speaker is set to a higher wattage value, it will be louder than the others, while a speaker set to a smaller value will be quieter than the others. This allows you to compensate for the environment in which the speaker is placed. For example, a speaker placed outside would need to be louder than a speaker placed in a small room.

INSTALLATION

» Wire Preparation

Regardless of which type of system this speaker will be a part of, you will need to use speaker wire (not included) to connect the speaker's wire leads. If this wire will be buried, it must be rated for direct burial or enclosed within a waterproof conduit.

To prepare a length of speaker wire for connection, perform the following steps:

1. Use a wire stripper (not included) to remove about 3/8" (9.5mm) of insulation from both conductors on one end of the wire.
2. Twist the exposed wire strands to ensure that the exposed section of wire remains in a bundle.
3. Repeat steps 1-2 for the other end of the speaker wire.

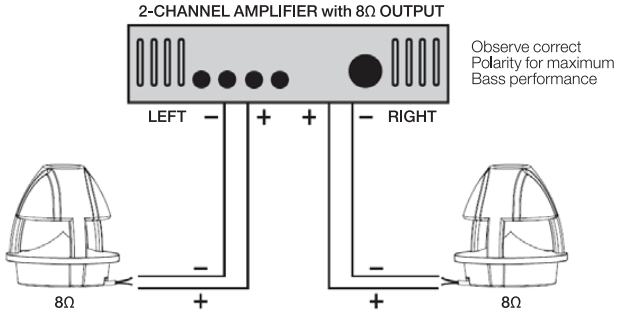
» Wire Connections

Assuming that this speaker will be used in an outdoor, all weather environment, you will need to make waterproof wire connections. Use one of the following methods for making a waterproof connection:

- Solder the wires together, then cover the connection using waterproof heat shrink tubing.
- Use waterproof wire connectors.
- Use waterproof wire splices.
- Use grease caps.

» 8-ohm System

If installing this speaker as part of an 8-ohm speaker system, connect one speaker to each channel, as shown in the diagram below.



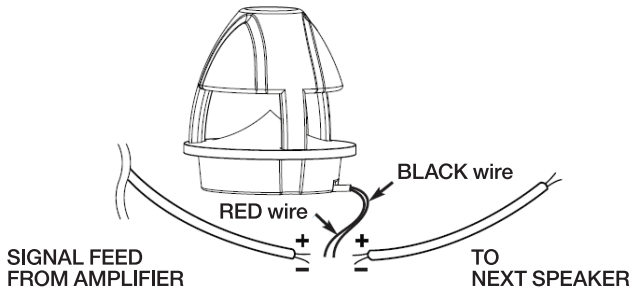
Perform the following steps to connect two speakers to an amplifier as part of an 8-ohm speaker system:

1. Prepare two 2-conductor speaker wires of the appropriate length by following the steps in the Wire Preparation section above.
2. Run a length of wire from the amplifier location to the location of the left channel speaker. Do not connect it to the amplifier yet.

3. Connect the positive lead of the speaker wire to the positive lead on the speaker using one of the connection methods described in the Wire Connections section above.
4. Connect the negative lead of the speaker wire to the negative lead on the speaker using one of the connection methods described in the Wire Connections section above.
5. Repeat steps 2-4 for the right channel.
6. Go to the amplifier location and connect the left channel speaker wire to the amplifier's speaker outputs. Play close attention to ensure that the polarity is connected correctly.
7. Repeat step 6 for the right channel speaker wire connection

» Constant Voltage System

If installing this speaker as part of a constant voltage speaker system with multiple speakers, connect all speakers for each channel in parallel, as shown in the diagram below.



Perform the following steps to connect multiple speakers in parallel:

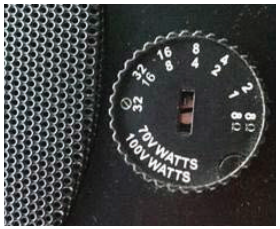
To prepare a length of speaker wire for connection, perform the following steps:

1. Prepare speaker wire by performing the steps in the Wire Preparation section above.
2. Run a length of 2-conductor speaker wire from the amplifier location to the first speaker location. Do not connect it to the amplifier yet.
3. Unless this is the last speaker in the chain, run a length of 2-conductor wire from this speaker location to the location of the next speaker in line.
4. Use one of the connection methods outlined in the Wire Connections section above to connect the positive lead from the signal source (either the amplifier or the previous speaker in the chain), the positive lead of the speaker wire going to the next speaker in line (if applicable), and the positive lead of this speaker.
5. Repeat step 4 for the negative leads.
6. Go to the next speaker location and repeat steps 3-5. Repeat this step for each speaker in the line until the last speaker is connected.
7. Repeat steps 1-6 for each additional channel in a multichannel audio system.
8. Go back to the amplifier location and connect the speaker wire for each channel to the appropriate speaker output on the amplifier. Pay close attention to ensure that the polarity is connected properly.

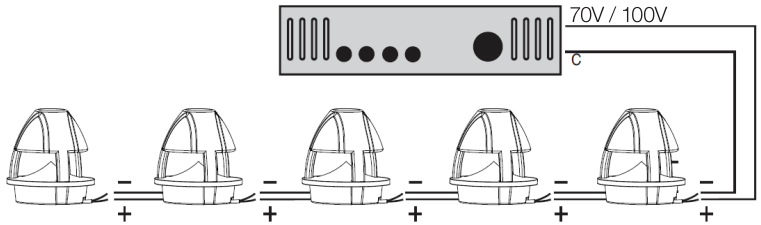
SETUP

This speaker can be configured to operate as a traditional, 8-ohm passive speaker or as part of a 70V or 100V constant voltage speaker system, with power settings from 1 to 32 watts for 70V systems or from 2 to 32 watts for 100V systems.

- To use this speaker in a traditional, 8-ohm environment, set the Switch to the 8-ohm position.
- To use this speaker as part of a constant voltage speaker system, set the Switch to the 1W, 2W, 4W, 8W, 16W, or 32W position (for 70V systems) or to the 2W, 4W, 8W, 16W, or 32W position (for 100V systems).



Note that the total wattage setting of all speakers connected to a channel in a constant voltage speaker system must not exceed 80% of the amplifier's rated RMS power value. For example, if you have five speakers at the 16W setting, the total load is 80 watts, therefore the amplifier must be rated for at least 100 watts. Note also that you do not need to "use" all the wattage available. You could, for example, have four speakers at the 16W setting with a 100 watt amp without any negative effects.



WARNING: Significant damage to the amplifier can occur if the total wattage settings of all speakers connected to a channel exceeds 80% of the amplifier's RMS power!

TROUBLESHOOTING

Q1: The sound from one of the speakers is muddy, with attenuated bass response.

A1: Double check the polarity connections.

Q2: The sound from one of the speakers is louder or quieter than the other speakers in a constant voltage system.

A2: Check the wattage settings of the affected speaker. If it is higher than that of the other speakers, it will be louder. Similarly, if it is set to a lower value, it will be quieter than the other speakers. To get the same volume level, set the switch to the same wattage setting as is used on the other speakers.

Q3: The sound from all the speakers is scratchy, harsh, or fuzzy sounding.

A3: You are hearing audible distortion, which can cause damage to both the speakers and the amplifier. Reduce the volume level until distortion can no longer be heard in any part of the audio signal.

TECHNICAL SUPPORT

Monoprice is pleased to provide free, live, online technical support to assist you with any questions you may have about installation, setup, troubleshooting, or product recommendations. If you ever need assistance with your new product, please come online to talk to one of our friendly and knowledgeable Tech Support Associates. Technical support is available through the online chat button on our website **www.monoprice.com** during regular business hours, 7 days a week. You can also get assistance through email by sending a message to **tech@monoprice.com**

SPECIFICATIONS

Main Driver	: 5.25" polypropylene cone
Tweeter Driver	: 1.2" titanium dome
Maximum Input Power (RMS)	: 60 watts
Maximum Input Power (Peak)	: 120 watts
Frequency Response	: 60Hz ~ 20kHz
Sensitivity	: 90dB (1W@1m)
Nominal Impedance	: 8 ohms
100V Transformer Taps	: 2, 4, 8, 16, and 32 watts
70V Transformer Taps	: 1, 2, 4, 8, 16, and 32 watts
Speaker Wire Lead Gauge	: 18AWG
Ingress Protection Rating	: IP56
Enclosure Material	: LLDPE
Dimensions	: ø 14.4" x 16.1" (ø 365 x 409 mm)
Weight	: 9.9 lbs. (4.5kg)