

SPEAKER SELECTOR

Models SPS-4

User Manual



Table of Contents

| | |
|------------------------------------|---|
| Important Safety Precautions | 2 |
| What's Included | 2 |
| Introduction | 3 |
| Front Panel | 3 |
| Rear Panel | 3 |
| Typical Hook up | 4 |
| Installation Tips | 4 |
| Installation | 4 |
| Operation | 5 |
| Trouble Shooting | 7 |
| Technical Specifications | 7 |

Important Safety Precautions

When using this product, basic safety precautions should always be followed to reduce the risk of fire and electric shock, including the following:

Read and understand all instructions.

Follow all warnings and instructions marked on this product.

Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.

To prevent fire or shock hazard, do not expose this product to rain or moisture.

Do not use near a bath tub, wash bowl, sink, or laundry tub; do not use in a wet basement or in a swimming pool.

To avoid electrical shock, do not open the case of this product.

The unit should be situated away from heat sources such as radiators, stoves, etc.

What's Included

- 1 - SPS-4 Speaker Selector
- 1 - Sheet of labels
- 1 - This instruction manual

Date Purchased: _____

Trouble Shooting

| Problem | Solution |
|---|---|
| No sound | Make sure correct speaker is selected. Make sure no wires are touching each other or the case of the amplifier or selector. |
| One or both speakers turn off when music is playing | Reduce volume level and unit will automatically reset. Internal protection circuit is detecting overload or excessive volume level and is shutting off speakers. |
| Slight drop in volume when PROTECTION is turned on | Normal - This is due to the additional resistance added to protect your amplifier. |
| Unit gets very hot | Reduce volume level. Turn unused speakers off. If only one speaker pair is used, turn PROTECTION switch off. |

Technical Specifications

Input

100 watt per channel max

Outputs

4 Speaker pairs

4 to 16 ohm impedance

Protection Circuit

Amplifier Protection: 3 ohm resistor per channel

Unit Protection: Automatic resetting poly switch

Wire gauge

14 to 22 gauge

Size: 11.75" wide, 6.5" deep, 2" high

Weight: 3 lbs

Supplied accessories

User Manual (this document)

Sheet of front panel labels

Sheet of rear panel labels

Design and specifications are subject to change without notice.

Refer to your amplifier or receiver's user manual or on the rear panel of the amplifier to determine the minimal speaker impedance that your amplifier can handle.

If your amplifier can handle 4 ohm loads

| | 4 ohm speakers | 6 ohm speakers | 8 ohm speakers | 16 ohm speakers |
|------------|----------------|----------------|----------------|-----------------|
| 1 selected | Protection OFF | Protection OFF | Protection OFF | Protection OFF |
| 2 selected | Protection ON | Protection ON | Protection OFF | Protection OFF |
| 3 selected | Protection ON | Protection ON | Protection ON | Protection OFF |
| 4 selected | Protection ON | Protection ON | Protection ON | Protection OFF |

If your amplifier can handle 2 ohm loads

| | 4 ohm speakers | 6 ohm speakers | 8 ohm speakers | 16 ohm speakers |
|------------|----------------|----------------|----------------|-----------------|
| 1 selected | Protection OFF | Protection OFF | Protection OFF | Protection OFF |
| 2 selected | Protection OFF | Protection OFF | Protection OFF | Protection OFF |
| 3 selected | Protection ON | Protection OFF | Protection OFF | Protection OFF |
| 4 selected | Protection ON | Protection ON | Protection OFF | Protection OFF |

Calculating Impedance

If you want to calculate the impedance of speakers with different impedance here is how to do it.

Parallel Impedance is equal to $(R1 \times R2) / (R1 + R2)$.

Say you had a 6 ohm and an 8 ohm speaker. The parallel impedance if you selected these two speakers would be:

$$(6 \times 8) / (6 + 8) = 48 / 14 = 3.4 \text{ ohms.}$$

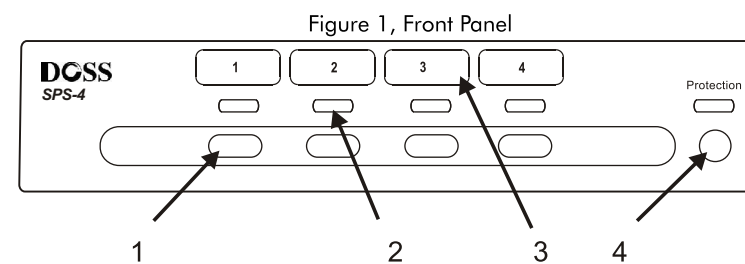
If the calculated impedance is less than the minimal amplifier allowed impedance, turn the PROTECTION mode on.

Introduction

The speaker selectors (SPS-4) have been designed to let you add additional speakers around your home or office and turn them on and off without purchasing additional amplifiers. The speaker selectors (SPS-4) have the following features:

- Ability to add up 4 speaker pairs to your amplifiers
- Left and right "commons" are isolated to work with all types of amplifiers
- Protection for amplifier and unit
- Small size to fit with any system
- No power required for operation.
- Easy installation.
- Can handle up to 100 watts amplifier power with unique protection circuitry

Front Panel



Controls

1 Speakers 1 through 4- Press button in to select desired speaker.

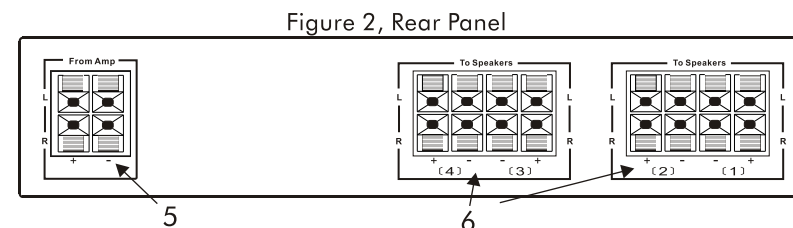
Orange indicator will show which speakers are active.

2 Indicators - Indicates selected speakers when orange.

3 Labels - To customize your selector to make speaker selection fool-proof.

4 Protection Switch: Press in, with the white indicator showing, to activate impedance protection to protect your amplifier from low speaker impedance

Rear Panel



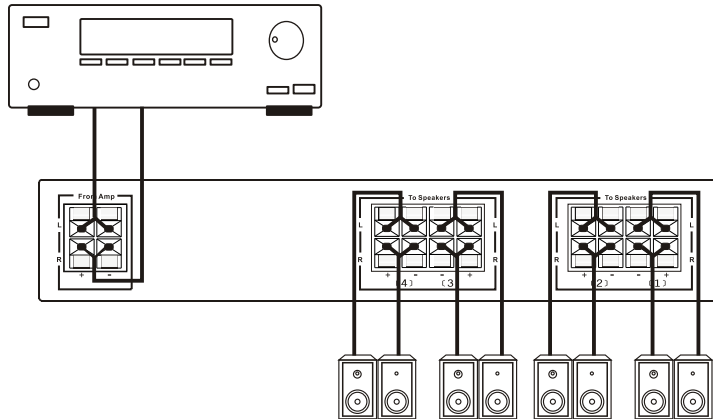
5 - Connection from amplifier - from the speaker output of your receiver or amplifier (100 watts Max).

6 - Speaker Connections - Connect your speakers to these terminals

Typical Hook up

The diagram below shows a overview of a typical system with the SPS-4 using 6 speaker pairs or SPS-4 using 4 speaker pairs.

Figure 3, Overview of typical system



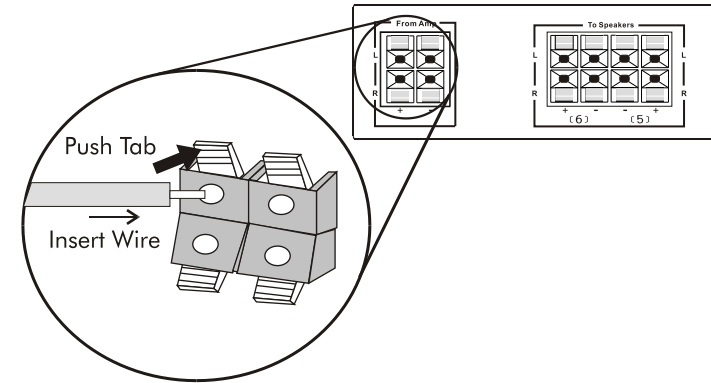
Installation Tips

- It is recommended to use 18 or 16 AWG gauge stranded wire. For runs longer than 50', 14 gauge is recommended.
- You can mix 4, 6, 8 and 16 ohm speakers.
- Since speakers have different efficiencies, more efficient speakers will sound louder than less efficient speakers. Either select your speakers to have the same efficiencies (a typical measurement is 90 db/watt) or add a speaker volume control between the SPS-4 and the speaker in the room where the speaker is located where you want to adjust the volume.
- Wire according to state and local laws. Most places require that you use special in-wall speaker wire with a specific "CL" fire rating. Consult your dealer about obtaining such wire.
- Keep the speaker wiring from running close to AC power wiring for safety and to avoid any noise pick up.

Installation

Make sure power is turned off on your receiver or power amplifier before doing any wiring.

- To make a connection, using a wire stripper, strip 3/8" of insulation from the end of the wire. To avoid short circuits and possible amplifier damage, do not strip too much insulation from the wire.
- Tightly twist the end of the wire so that there are no frayed wires.



- Push the tab and simultaneously insert the wire into the correct hole.
 - Verify that there are no wire frays.
- Connect the wires from the speaker output from your receiver or amplifier to the SPS-4 terminals marked AMPLIFIER. Pay attention and connect the "+" output from the right front output on the amplifier to the right "+" input on the SPS-4 and connect the "-" output from your amplifier to the "-" input on the SPS-4. Likewise, connect the left channel wires to the left input of the SPS-4.
- Next, connect the wires from each of the speakers to the corresponding connection on the SPS-4.
- Finally, attach one of the pre-printed labels to the front of the unit in the recessed area so the button matches the location of the speaker.

Operation

Initial connection

It is recommended that you select only one speaker pair in the same room you are in for initial turn on. Select this speaker pair and turn on your receiver/amplifier. Make sure sound is coming from both speakers. Before you turn on additional speakers, read the information below.

Inputs

Pushing an input button on the front panel will select another speaker pair to turn on. The orange indicator above the button will indicate the active button.

Protection Circuit

When to use the protection switch

When you have more than one speaker pair selected (see chart on page 6). This circuit provides additional impedance so your amplifier does not drive too low of a impedance. In addition, the protection circuit has an electronic circuit breaker to automatically turn off if the volume level is excessive. It will automatically reset when the overload is removed and/or the volume is reduced.

It is recommend not to use the protection when:

When you want to listen to just one speaker pair, especially at loud levels.