

FRONT COVER



BACK COVER



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INTRODUCTION

Thank you for purchasing the Skar Audio SA-50.4D 4 Channel Amplifier! We appreciate your trust in our products and are confident that this amplifier will exceed your expectations in delivering high-quality audio performance. At Skar Audio, we are dedicated to providing our customers with top-tier audio equipment that combines innovative technology with exceptional craftsmanship. Your new SA-50.4D amplifier is designed to enhance your listening experience, whether you're a car audio enthusiast or simply seeking superior sound. If you have any questions or need assistance, our customer support team is here to help. Enjoy your new Skar Audio amplifier, and thank you for choosing us for your audio needs!

INSTALLATION APPLICATIONS

This amplifier is specifically designed for use with 12-volt, negative ground electrical systems. Using this product in systems with a positive ground or voltages other than 12 volts may cause damage to the amplifier and will void the warranty. Additionally, this product is not certified or approved for use in aircraft.

PLANNING YOUR INSTALLATION AND SAFETY PRECAUTIONS

Take the time to read this manual thoroughly and plan your installation carefully. Modern vehicles have complex systems that are easy to damage, so always consult a reliable wiring diagram and use the correct test equipment. If you're unsure about any part of the process, seek help from your authorized Skar Audio dealer. They have the expertise and tools to ensure the best performance. Keep the following safety considerations in mind as you plan your installation:

- Install the amplifier in a dry, ventilated area away from safety equipment (airbags, seat belts, ABS, etc.).
- Do not mount the amplifier in the engine compartment or areas of extreme heat.
- Secure the amplifier to prevent movement during collisions or vibrations.
- Check for fuel tanks, gas/brake lines, wiring, etc., before drilling.
- Avoid running wiring outside or underneath the vehicle/vessel.
- Take precautions when connecting to the battery.
- Protect wires from sharp edges using grommets, loom, and secure routing.
- Use cable ties or wire clamps to secure all wiring away from moving parts and sharp edges.

WARNING

IMPORTANT: Failure to follow these instructions in this manual with this WARNING badge could result in severe injury or death.

CAUTION

IMPORTANT: Failure to follow these instructions in this manual with this CAUTION badge could result in injury or amplifier damage.

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SPECIFICATIONS

SA-50.4D 4-Channel Amplifier			
Amplifier Type	4-Channel Class D		
Operating Voltage	8.5V - 14.4V		
Rated RMS Power @ 14.4V	60W x 4 @ 4Ω	100W x 4 @ 2Ω	110W x 2 @ 4Ω (Bridged)
Frequency Response	10 Hz - 25 kHz		
Low Pass Filter Range (LPF)	50 Hz - 250 Hz		
High Pass Filter Range (HPF)	50 Hz - 250 Hz		
THD @ 80% Power	0.1%		
S/N Ratio	89 dB		
Idle Current Draw	±1.1A		
Input Sensitivity @ 4Ω	210mV		
Minimum Power/Ground Wire Size	4 AWG		
Fuse Rating	30A		

DIMENSION A	DIMENSION B	DIMENSION C
5.20"	8.85"	2.12"

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CONNECTIONS

Power/Ground/Remote Plug

The SA-50.4D's easy-to-use quick-detach plug ensures a secure connection for your power, ground, and remote turn-on wires

CAUTION

Ensure the Positive (+) wire and Ground (-) wire are installed into the correct terminals. Failing to do so could lead to electrical arcing and cause harm to yourself or damage the amplifier.

Ground
Negative Ground Connection

Power
Positive (+12V) Battery Connection

Remote
Positive (+12V) Turn-On Input From Source Unit

Note: Power, Ground, and Remote wires are all sold separately

Preamp Outputs

Effortlessly transmit a high-quality audio signal from your SA-50.4D amplifier to another component in your system via the RCA preouts

Note: RCA Interconnects sold separately

High Level Inputs

If your signal source does not have RCA outputs, connect the audio signal directly from the speaker outputs to your SA-50.4D using the High Level Input connectors

Note: The Auto Remote Turn-On feature can only be used when the amplifier is receiving input signal via the high level inputs

RCA Inputs

The SA-50.4D amplifier features line-level analog inputs for channels 1-4, using RCA interconnects to deliver a high-quality signal and ensure peak output performance

Speaker Output Harness

This quick-detach speaker output harness provides a convenient and secure way to connect your speakers to the SA-50.4D amplifier

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INSTALLATION & FEATURES

Installation Tips

Below are some tips that will help you when it comes time to install your SA-50.4D:

- **CAUTION** Before installation, disconnect the negative battery terminal (-) to prevent damage to the amplifier, fire, and/or possible injury.
- Keep all RCA cables routed together and away from any high current wires.
- **CAUTION** Always safeguard the battery and electrical system with proper fusing. Install a fuse holder and the correct fuse on the +12V power wire within 18 inches (45.7 cm) of the battery terminal.
- When grounding to the chassis, remove paint for a clean connection. Keep the ground wire short and attach it to welded metal on the vehicle's body. Avoid using seat belt bolts for grounding.
- For optimal performance and to prevent overheating, mount the amplifier with at least a 1-inch (25.4 mm) air gap around the heat sink for proper cooling.
- Mount the amplifier securely to metal or a sturdy amp rack. Avoid mounting on cardboard or plastic, as screws may loosen from road vibrations or sudden stops.
- **CAUTION** Always turn off or disconnect power before connecting RCA cables to prevent damage to the amplifier or other components.
- **CAUTION** Lastly, if you're unsure or lack the necessary skills or tools, have a qualified professional handle the installation of this amplifier.

Setting the Crossover

Below is a breakdown of what each crossover setting means and does to help you better setup your SA-50.4D for your specific system:

- **Low Pass Filter (LPF)** - When this setting is selected on the Crossover Selector, the SA-50.4D will only allow frequencies BELOW where the Crossover Control knob is set to pass through.
- **Full** - When this setting is selected on the Crossover Selector, the SA-50.4D will allow ALL frequencies to pass through, regardless of where the Crossover Control knob is set to.
- **Use this mode only if your source unit or DSP is already handling the Low Pass or High Pass filtering*
- **High Pass Filter (HPF)** - When this setting is selected on the Crossover Selector, the SA-50.4D will only allow frequencies ABOVE where the Crossover Control knob is set to pass through.

Advanced Protection Circuitry

The SA-50.4D features advanced protection circuitry, setting the standard for safeguarding both the amplifier and your audio system, ensuring optimal performance and reliability. Below are some reasons why your SA-50.4D may have gone into protect mode:

- **Overheating** - The SA-50.4D is equipped with an internal temperature sensor that activates protect mode if the amplifier's temperature exceeds 158°F (70°C). To prevent this, ensure the amplifier has adequate airflow and is not installed in a poorly ventilated area.
- **Low Voltage / High Voltage** - The SA-50.4D operates within a voltage range of 8.5V to 14.4V. If the input voltage falls below or exceeds this range, the amplifier will enter protect mode. To avoid this, ensure your electrical system can provide stable voltage within the specified range.
- **High Current Draw** - The SA-50.4D is stable at 2.0 stereo (4.0 when bridged). Using speakers with an impedance below these ratings can cause excessive current draw, triggering protect mode. To prevent this, ensure your speakers match the amplifier's impedance specifications and verify the final impedance after wiring.
- **DC Signals** - The SA-50.4D continuously monitors its output for any DC (Direct Current) signals. Since the amplifier should only output AC (Alternating Current) signals, activating protect mode upon detecting a DC signal helps protect both your speakers and the amplifier from potential damage.

If your SA-50.4D enters protect mode due to **overheating**, let it cool down, and it will automatically resume normal operation once the temperature drops below 158°F (70°C). If protect mode is triggered by **low or high voltage**, **high current**, or **DC signals**, try turning your vehicle off and on. If the issue persists, disconnect all wiring and let the amplifier sit overnight before reconnecting.

2-Year Limited Warranty

Skar Audio takes immense pride in offering a 2-Year Hassle-Free Limited Warranty on all products sold directly through Skar Audio's official website or any authorized Skar Audio retailer within the Contiguous United States, ensuring unparalleled peace of mind for our valued customers.

Please note your warranty will be voided if the amplifier is damaged by improper installation, improper use, tampered with, modified, or repaired by an individual that is not Skar Audio.

CAUTION Skar Audio is not liable for any damages caused to your vehicle by improper installation or improper use of this amplifier.

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CONTROLS

1 Auto Remote Turn On

The SA-50.4D can be switched on and off using two different methods configured by the "Auto Remote Turn On" switch.

- When in the ON position, the SA-50.4D will use the Signal Sense* feature to power on the amplifier.
- When in the OFF position, you will need to wire the Remote Turn On input to turn on the amplifier.

**This feature ONLY will work if using High Level Inputs*

2 Input Selector

This control selects the number of inputs (high-level or low-level), letting you connect 1 or 2 sets of RCA's to distribute the signal to all amplifier outputs.

- 2 CH - This utilizes the FRONT inputs only.
- 4 CH - This utilizes the FRONT and REAR inputs.

3 Channels 1/2 Gain Control

Use this control knob to adjust the gain level for channels 1 and 2.

4 Channels 1/2 Crossover Selector

Select the type of crossover setting you would like to run on Channels 1 and 2, Low Pass Filter (LPF), Full, or High Pass Filter (HPF).

5 Channels 1/2 Crossover Control

Adjusts the output of channels 1 and 2 on the SA-50.4D to match the frequency range of the connected speakers.

6 Channels 3/4 Gain Control

Use this control knob to adjust the gain level for channels 3 and 4.

7 Channels 3/4 Crossover Selector

Select the type of crossover setting you would like to run on Channels 3 and 4, Low Pass Filter (LPF), Full, or High Pass Filter (HPF).

8 Channels 3/4 Crossover Control

Adjusts the output of channels 3 and 4 on the SA-50.4D to match the frequency range of the connected speakers.

9 Amplifier Status LED

Keep an eye on your SA-50.4D's performance with the easy-to-read Amplifier Status LED, which provides clear visual feedback on the amplifier's operational status and health.

- Blue - Amplifier is on and in working order.
- Red - There is an issue in your system that has caused the amplifier to go into protect mode.

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