Gravity 1000.4

Gravity 1000.4 Class AB Car Amplifier User Manual

1. Introduction

Thank you for choosing the Gravity 1000.4 Class AB Car Amplifier. This amplifier is designed to enhance your car audio system with powerful and clear sound reproduction. This manual provides essential information for proper installation, operation, and maintenance of your amplifier. Please read it thoroughly before installation and use to ensure optimal performance and safety.

2. Safety Information

Always observe the following safety precautions during installation and operation:

- **Professional Installation Recommended:** Car audio system installation requires experience with electrical wiring and automotive systems. If you are unsure, consult a qualified professional.
- **Disconnect Battery:** Before starting any wiring, disconnect the vehicle's negative battery terminal to prevent electrical shorts and damage.
- **Proper Wiring:** Use appropriate gauge wiring for power, ground, and speaker connections as specified in this manual. Incorrect wiring can cause overheating, fire, or damage to the amplifier and vehicle.
- **Fuse Protection:** Always use the correct fuse rating for the amplifier. Never replace a fuse with one of a higher rating.
- **Ventilation:** Ensure the amplifier is mounted in a location with adequate ventilation to prevent overheating. Do not cover the amplifier or mount it in an enclosed space without airflow.
- **Avoid Moisture:** Do not expose the amplifier to moisture or water.
- **Secure Mounting:** Mount the amplifier securely to prevent it from coming loose during vehicle movement, which could cause injury or damage.

3. Product Overview

The Gravity 1000.4 is a 4-channel Class AB amplifier designed for versatility and performance. It features a MOSFET power supply for stable operation and is capable of driving speakers or subwoofers with 1000 Watts maximum power output.

Key Features:

- 1000W Max 4-Channel Class A/B Amplifier
- Stable at 2 Ohm and 4 Ohm loads
- Signal-to-Noise Ratio (S/N) > 80 dB
- Frequency Response: 20 Hz ~ 20 kHz
- Total Harmonic Distortion (THD) < 0.5%
- Variable Bass Boost: 0 ~ 12 dB
- Variable Low Pass Filter (LPF): 50 Hz ~ 500 Hz
- Variable High Pass Filter (HPF): 50 Hz ~ 1.2 kHz
- Subsonic Filter: 0 ~ 50 Hz
- High and Low Level Inputs
- Dimensions (L×W×H): 223.5mm (8.8 in) × 211mm (8.3 in) × 64.5 mm (2.5 in)

Component Identification:

Figure 3.1: Top view of the Gravity 1000.4 amplifier, showing the overall design and branding.

Figure 3.2: Input and control panel of the amplifier, featuring RCA inputs, gain controls, crossover settings (LPF, HPF), and bass boost.

Figure 3.3: Power and speaker terminal side of the amplifier, showing connections for +12V, REM, GND, and speaker outputs for channels 1-4, along with fuse slots.

Figure 3.4: Included remote bass knob, allowing convenient adjustment of bass levels from the driver's seat.

Figure 3.5: Example of a 4-gauge, 4-channel amplifier installation kit, typically including power wire, ground wire, remote wire, RCA cables, speaker wire, fuse holder, and terminals.

4. Installation

Careful installation is crucial for the performance and longevity of your amplifier. Follow these steps for a successful setup.

4.1 Mounting Location

- Choose a dry, well-ventilated location away from direct sunlight and heat sources.
- Ensure the mounting surface is sturdy enough to support the amplifier's weight.
- Common locations include under a seat, in the trunk, or mounted to a custom amplifier rack.
- Allow at least 2 inches (5 cm) of space around the amplifier for proper airflow.

4.2 Wiring Connections

Before making any connections, ensure the vehicle's battery negative terminal is disconnected.

4.2.1 Power Wiring (+12V)

1. Run a heavy-gauge power cable (e.g., 4-gauge, as shown in Figure 3.5) directly from the positive terminal of the car battery to the amplifier's +12V terminal (see Figure 3.3).
2. Install an in-line fuse holder (included in the wiring kit, Figure 3.5) within 18 inches (45 cm) of the battery. The fuse rating should match the amplifier's requirements (e.g., 35A x 2 for this model).
3. Ensure all connections are secure and free from corrosion.

4.2.2 Ground Wiring (GND)

1. Connect a heavy-gauge ground cable (e.g., 4-gauge) from the amplifier's GND terminal (see Figure 3.3) to a clean, unpainted metal surface on the vehicle chassis.
2. The ground cable should be as short as possible, ideally less than 3 feet (1 meter).
3. Scrape away any paint or rust from the chassis connection point to ensure a good electrical contact.

4.2.3 Remote Turn-On Wiring (REM)

1. Connect a smaller gauge wire (e.g., 18-gauge) from the amplifier's REM terminal (see Figure 3.3) to the remote output of your car's head unit.
2. This wire signals the amplifier to turn on when the head unit is activated.

4.2.4 Speaker Wiring

1. Connect your speakers to the amplifier's speaker terminals (FRONT CH1/CH2, REAR CH3/CH4) (see Figure 3.3).
2. Ensure correct polarity (+ to + and - to -) for each speaker. Incorrect polarity can lead to poor sound quality.
3. The amplifier is 2/4 Ohm stable. Ensure your speaker impedance matches the amplifier's capabilities.

4.2.5 Input Connections (RCA / High-Level)

- **Low-Level Input (RCA):** If your head unit has RCA pre-outs, connect RCA cables from the head unit's front and rear outputs to the amplifier's INPUT CH1/CH2 (FRONT) and CH3/CH4 (REAR) RCA inputs (see Figure 3.2).
- **High-Level Input:** If your head unit does not have RCA pre-outs, use the high-level input feature. Connect the speaker wires from your head unit directly to the amplifier's high-level input terminals (if available, consult specific model diagram).

4.2.6 Remote Bass Knob Connection

1. Connect the remote bass knob cable (Figure 3.4) to the dedicated REMOTE BASS input on the amplifier (see Figure 3.2).
2. Mount the bass knob in a convenient location for easy access while driving.

5. Operating Instructions

Once installed, adjust the amplifier settings for optimal sound performance.

5.1 Gain Control (Input Level)

- The GAIN control (see Figure 3.2) matches the amplifier's input sensitivity to the output level of your head unit.
- To set: Turn the amplifier gain to minimum. Turn your head unit volume to about 75% of maximum. Slowly increase the amplifier gain until you hear slight distortion, then back off slightly.
- *Note:* Gain is not a volume control. Setting it too high can cause distortion and damage to speakers.

5.2 Crossover Settings (LPF, HPF)

The amplifier features variable Low Pass Filter (LPF) and High Pass Filter (HPF) controls (see Figure 3.2) to direct specific frequency ranges to your speakers or subwoofers.

- **LPF (Low Pass Filter):** Allows frequencies *below* the set point to pass through. Use for subwoofers (typically 50 Hz - 120 Hz).
- **HPF (High Pass Filter):** Allows frequencies *above* the set point to pass through. Use for full-range speakers or tweeters (typically 80 Hz - 200 Hz).
- Adjust these settings based on your speaker types and desired sound profile.

5.3 Bass Boost

- The BASS BOOST control (see Figure 3.2) allows you to increase the bass output at a specific frequency.
- Adjust sparingly to avoid distortion and potential speaker damage.
- The remote bass knob (Figure 3.4) provides convenient adjustment of this feature.

5.4 Subsonic Filter

- The SUBSONIC FILTER (see Figure 3.2) removes extremely low frequencies that are inaudible but can waste amplifier power and potentially damage subwoofers.
- Typically set between 20 Hz and 30 Hz for most subwoofer applications.

6. Maintenance

Regular maintenance helps ensure the longevity and performance of your amplifier.

- **Cleaning:** Periodically wipe the amplifier's exterior with a soft, dry cloth. Do not use harsh chemicals or abrasive cleaners.
- **Ventilation:** Ensure the cooling fins and ventilation openings remain clear of dust and debris. Use compressed air to gently clear any blockages.
- **Connections:** Occasionally check all power, ground, and speaker connections to ensure they are secure and free from corrosion.
- **Fuses:** If a fuse blows, replace it only with a fuse of the exact same type and rating. Repeated fuse blowing indicates a problem that needs to be diagnosed.

7. Troubleshooting

If you experience issues with your amplifier, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Amplifier does not turn on (POWER LED off)	Blown fuse Poor power or ground connection No remote turn-on signal	Check and replace fuses (both in-line and on amplifier). Verify +12V, GND, and REM connections. Ensure good chassis ground. Check remote wire connection to head unit.

Problem	Possible Cause	Solution
No sound (POWER LED on)	RCA cables disconnected or faulty Speaker wires disconnected or shorted Gain set too low Head unit volume too low or muted	Check RCA connections and test cables. Inspect speaker wiring for shorts or disconnections. Adjust gain control (refer to Section 5.1). Increase head unit volume.
Distorted sound	Gain set too high Improper crossover settings Speaker impedance mismatch Poor ground connection	Reduce gain control. Adjust LPF/HPF settings (refer to Section 5.2). Verify speaker impedance is within amplifier's stable range. Check ground connection for cleanliness and security.
Amplifier overheats (PROTECT LED on)	Insufficient ventilation Speaker impedance too low Internal fault	Ensure adequate airflow around the amplifier. Check speaker impedance. If problem persists, disconnect and seek professional service.

8. Specifications

Feature	Specification
Model	Gravity 1000.4
Amplifier Class	Class AB
Channels	4
Max Power Output	1000 Watts
Impedance Stability	2 Ohm and 4 Ohm
Signal-to-Noise Ratio (S/N)	> 80 dB
Frequency Response	20 Hz ~ 20 kHz
Total Harmonic Distortion (THD)	< 0.5%
Bass Boost Level	0 ~ 12 dB
Low Pass Filter (LPF)	50 Hz ~ 500 Hz
High Pass Filter (HPF)	50 Hz ~ 1.2 kHz
Subsonic Filter	0 ~ 50 Hz
Inputs	High and Low Level (RCA)
Dimensions (L×W×H)	223.5mm (8.8 in) × 211mm (8.3 in) × 64.5 mm (2.5 in)

9. Warranty and Support

For warranty information or technical support, please refer to the documentation included with your purchase or contact Gravity customer service. Keep your proof of purchase for warranty claims.