



prospecelectronics.com | 843.849.9037



# MPRO

## MPRO SERIES AMPLIFIERS OWNER'S MANUAL

**A1006**

**A1002**

**A8001**

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**Premium Marine Amplifiers**

This product is serviced exclusively by Prospect Electronics Inc. and must be returned to Prospect for in and out of warranty repairs.

For service contact us :  
3325 South Morgans Point Road Mt Pleasant SC 29466  
Tel 843-849-9037 Or visit: [www.mpromarine.com](http://www.mpromarine.com)



**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**Notice:** The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**Thank you for purchasing an MPro Amplifier for your marine sound system.**

Your amplifier has been designed and manufactured to exacting standards in order to ensure years of musical enjoyment in your vessel.

For maximum performance, we highly recommend that you have your new amplifier installed by a professional installer. The professional installer has the training, expertise and installation equipment to ensure optimum performance from this product.

Should you decide to install the amplifier yourself, please take the time to read this manual thoroughly so as to familiarize yourself with its installation requirements and setup procedures.

**PROTECT YOUR HEARING!**

We value you as a long-term customer. For that reason, we urge you to practice restraint in the operation of this product so as not to damage your hearing.

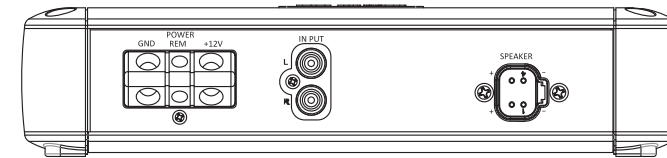
Studies have shown that continuous exposure to high sound pressure levels can lead to permanent (irreparable) hearing loss. This and all other high-power amplifiers are capable of producing such high sound pressure levels when connected to a speaker system. Please limit your continuous exposure to high volume levels.

While driving, operate your audio system in a manner that still allows you to hear necessary noises to operate your boats safely (horns, sirens, etc.).

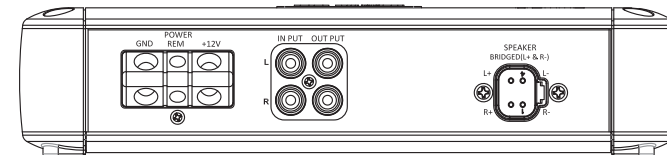
In the event that your amplifier requires service or is ever stolen, you will need to have a record of the product's serial number. Please take the time to enter that number in the space provided below. The serial number can be found on the bottom panel of the amplifier and on the amplifier packaging.

**SERIAL NUMBER:** \_\_\_\_\_

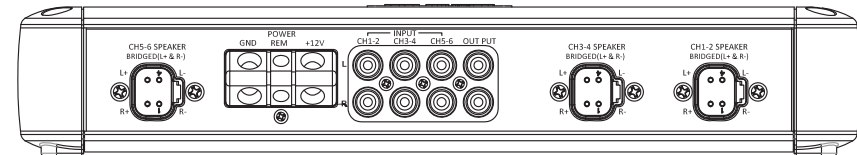
**A8001: 800W x 1 marine subwoofer amplifier**



**A1002: 100W x 2 marine amplifier**



**A1006: 100W x 6 marine amplifier**



## INSTALLATION APPLICATIONS

The amplifier is designed for operation in vessels with a 12 volt, negative-ground electrical system. Use of this product in vessels with positive ground and/or voltages other than 12V may result in damage to the product and will void the warranty. This product is not certified or approved for use in aircraft.

Do not attempt to "bridge" the outputs of this amplifier with the outputs of a second amplifier, including an identical one.

### PLANNING YOUR INSTALLATION

It is important that you take the time to read this manual and that you plan out your installation carefully. The following are some considerations that you must take into account when planning your installation.

### Cooling Efficiency Considerations:

The outer shell of your MPro amplifier is designed to remove heat from the amplifier circuitry. For optimum cooling performance, this outer shell should be exposed to as large a volume of air as possible. Enclosing the amplifier in a small, poorly ventilated chamber can lead to excessive heat build-up and degraded performance. If an installation calls for an enclosure around the amplifier, we recommend that this enclosure be ventilated with the aid of a fan. In normal applications, fan-cooling is not necessary.

### Safety Considerations:

Your amplifier needs to be installed in a dry, well-ventilated environment and in a manner which does not interfere with your vessel's factory installed electronic devices. You should also take the time to securely mount the amplifier using screws so that it does not come loose in the event of a collision or a sudden jolt to the vessel.

### Mistakes to Avoid:

- \* Check before drilling any holes in your vessel to make sure that you will not be drilling through the hull, a fuel tank, fuel line, wiring harness or other vital vessel system.
- \* Do not run system wiring outside the vessel. This is an extremely dangerous practice which can result in severe damage to your vessel and person.
- \* Protect all system wires from sharp edges (metal, fiberglass, etc.) by carefully routing them, tying them down and using grommets and loom where appropriate.
- \* Do not mount the amplifier in the engine compartment or in any other area that will expose the amplifier circuitry to the elements.

### IMPORTANT

1. Mounting the amplifier upside down is strongly discouraged.
2. While this amplifier is specially designed for marine applications, it is not waterproof and it should not be mounted where it is likely to get wet.
3. The two recommended mounting orientations are flat, with the heatsink facing upwards, or vertical, with the heatsink facing outwards. Avoid covering the heatsink surface in either position, allowing enough air circulation for the amplifier to cool itself.
4. If mounted vertically, it is highly recommended to mount the amplifier with the adjustment panel facing upwards covered by the protective panel, and the connections facing downwards.

## Five-Year Protection Plan

As an extended guarantee, beyond the third year and for the period of an additional two years, the company will repair or replace a defective product with a new or reconditioned model for a predetermined, single flat rate charge. Exclusions to this repair guarantee is obvious abuse or neglect, cosmetic damage due to mishandling, exposure to harsh chemicals, corrosion, improper installation, alteration causing the stereo to become defective, exposure to water, or use for which the product is not designed, wherein the repair charge may be higher.

More information and instructions available on our website.

**PROSPEC LIMITED WARRANTY  
MPro Series Electronics  
3-YEARS PARTS/LABOR**

Mpro series electronics carry a three-year warranty from the original date of purchase. The terms of this warranty are offered through Prospec Electronics of SC, Inc. ["Company"].

Should the product need repair or replacement (at the Company's discretion) within the terms of this three-year warranty, Prospec will provide said service without charge to the owner. To obtain repairs or replacements, the owner must file a warranty claim with Prospec prior to returning the defective product to Prospec. A copy of the Bill of Sale for the vehicle in which the defective product was originally installed by the vehicle's manufacturer, or retail sales receipt is required. The Owner shall ship the defective product to Prospec Electronics at the Owner's expense. Prospec will ship the repaired/replacement product back to the Owner at Prospec's expense via Ground shipping. Any expedited requests will be at the expense of the owner. Visit our website (below) for more information and instructions.

This warranty extends only to the original purchaser. It is not transferable beyond the first owner.

This warranty does not extend to the elimination of static or motor noise, costs incurred in the removal or reinstallation of the unit, or damage to the product. This warranty does not apply to any product or part thereof that has been misused, abused, neglected, altered, damaged due to accident or used in violation of the operating instructions.

ANY IMPLIED WARRANTY IS LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. IN NO EVENT SHALL THE COMPANY BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES RESULTING FROM THE USE OR INABILITY TO USE THIS PRODUCT.

The warranty gives you specific legal rights which vary from state to state. Some states do not allow the exclusion or limitation on how long an implied warranty lasts, so the above limitations may not apply to you.

Prospec Electronics of SC, Inc.  
+1 (843) 849-9037  
<https://mpromarine.com>

**INSTALLATION APPLICATIONS (CONTINUED)**

**TYPICAL INSTALLATION SEQUENCE**

The following represents the sequence for a typical amplifier installation. Additional steps and different procedures may be required in some applications.

- 1) Disconnect the negative battery post connection and secure the disconnected cable to prevent accidental re-connection during installation. **This step is not optional.**
- 2) Run proper gauge power wire from the battery location to the amplifier mounting location, taking care to route it in such a way that it will not be damaged and will not interfere with vessel operation. Use 2 AWG or larger power wire and a power distribution block if additional amplifiers are being installed with the A-Series Amplifiers.  
A1006: 4 AWG or 6 AWG power wire recommended.  
A1002: 6 AWG or 8 AWG power wire recommended.  
A8001: 4 AWG or 6 AWG power wire recommended.

For wire runs longer than 15' (5m), increase wire gauge accordingly.

**Note:** Smaller AWG numbers mean bigger wire and vice-versa (1/0 AWG is the largest, 2 AWG is smaller, then 4 AWG, then 8 AWG, etc.). We recommend to use of marine-grade tinned copper wire. Never use wire containing aluminum for marine applications.

-To connect the power wires to the amplifier, first back out the set screw on the top of the terminal block, using the supplied 2.5mm hex wrench. Strip 1/2 inch (12mm) of insulation from the end of each wire and insert the bare wire into the terminal block, seating it firmly so that no bare wire is exposed. While holding the wire in place, tighten the set screw firmly, taking care not to strip the head of the screw.

- 3) Connect power wire to the positive battery post. Fuse the wire with an appropriate fuse block (and connectors) within 18inches (45cm) wire length of the positive battery post.  
**This fuse is essential to protect the vessel. Do not install the fuse until the power wire has been securely connected to the amplifier.**

- 4) Connect negative power wire to the negative battery post. Use the same size power wire as the wire connected to the "+12V" connection.
- 5) Run signal cables and remote turn-on wire from the source unit to the amplifier mounting location.
- 6) Run speaker cable from the speaker systems to the amplifier mounting location.
- 7) Securely mount the amplifier.
- 8) Connect the positive and negative power wires to the amplifier. A fuse near the amplifier is not necessary if the amplifier is the only device being run from the fused main power wire. If the fused main power wire is shared by the amplifier and other amplifiers or devices, fuse each amplifier/device within 12 inches (30cm) of wire length, via a fuse distribution block or multiple individual fuse blocks/on-board fuse.
- 9) Connect the remote turn-on wire to the amplifier.
- 10) Connect the input cables to the amplifier.
- 11) Connect the speaker cables to the amplifier.
- 12) Adjust the amplifier's control settings following the procedure on Pages 7-10.
- 13) Install the power wire fuse and reconnect the negative battery post terminal. Install the fuse near the amplifier (if applicable).
- 14) Turn on the source unit at a low level to double-check that the amplifier is configured correctly. Resist the temptation to crank it up until you have verified the control settings. Make necessary adjustments to the input sensitivity controls to obtain the right overall output and the desired balance in the system.

## IMPORTANT

Many vessels employ small (10 AWG – 6 AWG) wire to connect the alternator's positive connection to the battery. To prevent voltage drops, this wire should be upgraded to the specified wire gauge when installing amplifier systems with main fuse ratings specified as below:

- A1006: 90A fuse or circuit breaker recommended.
- A1002: 30A fuse or circuit breaker recommended.
- A8001: 60A fuse or circuit breaker recommended.

It is common for the alternator to be grounded through its chassis. If the alternator is not grounded through its chassis and instead employs a small (10 AWG – 6 AWG) wire to connect to ground, this wire should also be upgraded to the specified wire gauge when installing amplifier systems with main fuse ratings specified above.

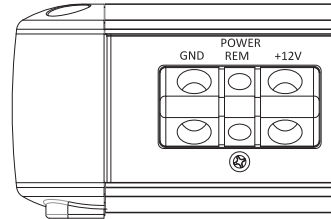
## FUSE REQUIREMENTS

It is absolutely vital that the main power wire(s) to the amplifier's in the system be fused within 18 inches (45cm) of the positive battery post connection. The fuse value at each power wire should be high enough for all of the equipment being run from that power wire. If only the A8001/A1002/A1006 is being run from that power wire, we recommend to use fuse as specified above.

If fusing the amplifier near its power connections (when more than one amp is being run from the main power wire), use a higher rating fuse than specified. MAXI™ (big plastic-body) fuses are recommended.

## TURN-ON AMPLIFIER

The amplifier can be switched on and off using +12V remote turn-on lead.



**+12V Remote Turn-On:** The amplifier will turn on when +12 V is present at its "Remote" input and turn off when +12 V is switched off. This +12 V remote turn-on signal is typically controlled by a source unit's remote turn-on wire. The amplifier's "Remote" turn-on connector will accept 18 AWG – 12 AWG wire. To connect the remote turn-on wire to the amplifier, first back out the set screw on the top of the terminal block, using the supplied 2.5mm hex wrench. Strip 1/2 inch (12mm) of wire and insert the bare wire into the terminal block, seating it firmly so that no bare wire is exposed. While holding the wire in the terminal, tighten the set screw firmly, taking care not to strip the head of the screw and making sure that the wire is firmly gripped by the set screw.

### "My amplifier shuts off once in a while, usually at higher volumes."

Check your voltage source and grounding point. The power supply of the amplifier will operate with charging system voltages down to 10V. Shutdown problems at higher volume levels can occur when the charging system voltage (or remote turn-on voltage) drops below 10V. These dips can be of very short duration making them extremely difficult to detect with a common DC voltmeter. To ensure proper voltage, inspect all wiring and termination points. It may also be necessary to upgrade the ground wire connecting the battery to the vehicle's chassis and the power wire connecting the alternator to the battery. Many vehicles employ small (10 AWG – 6 AWG) wire to ground the battery to the vehicle's chassis and to connect the alternator to the battery. To prevent voltage drops, these wires should be upgraded to the 8 AWG – 4 AWG as specified in Specification when installing amplifier systems with main fuse ratings above the specified fuse. Grounding problems are the leading cause of misdiagnosed amplifier "failures."

Check connections, fuses, and wiring for corrosion. Clean or replace as needed

### "My amplifier turns on, but there is no output"

Check the input signal using an AC voltmeter to measure the voltage from the source unit while an appropriate test tone is played through the source unit (disconnect the input cables from the amplifier prior to this test). The frequency used should be in the range that is to be amplified by the amplifier (example: 50 Hz for a sub bass application or 1 kHz for a full range / high-pass application). A steady, sufficient voltage (between 0.2 and 5.0-volts) should be present at the output of the signal cables.

Check the output of the amplifier. Using the procedure explained in the previous check item (after plugging the input cables back into the amplifier) test for output at the speaker outputs of the amplifier. Unless you enjoy test tones at high levels, it is a good idea to remove the speaker wires from the amplifier while doing this. Turn the volume up approximately halfway. 3 volt AC or more should be measured at the speaker outputs. This output level can vary greatly between amplifiers but it should not be in the millivolt range with the source unit at half volume. If you are reading sufficient voltage, check your speaker connections as explained below.

Check to ensure that the speaker wires are making a good connection with the metal inside the terminal block. The speaker wire connectors are designed to accept up to 8 AWG wire. Make sure to strip the wire to allow for a sufficient connection with the metal inside the terminal block.

### "Corroded terminals, wiring, and mounting hardware"

The marine environment can be extremely harsh on mobile electronics. Care should always be taken to select durable materials during system design and installation. Stainless steel hardware is preferred, and tinned solid copper wires are vastly preferable to copper-clad aluminum.

## APPENDIX C: TROUBLESHOOTING

### “How do I properly set the gain (input sensitivity) on my amplifier?”

Please refer to Appendix A to set the input sensitivity for maximum, low-distortion output.

### “My amplifier doesn’t turn on.”

Check the fuse, not just visually, but with a continuity meter. It is possible for a fuse to have poor internal connections that cannot be found by visual inspection. It is best to take the fuse out of the holder for testing. If no problem is found with the fuse, inspect the fuse holder.

Check the integrity of the connections made to each of the “+12VDC”, “GND”, and “REM” terminals. Ensure that no wire insulation is pinched by the terminal set screw and that each connection is tight.

Check to make sure there is +12V at the “REM” connection of the amplifier. In some cases, the turn-on lead from the source unit is insufficient to turn on multiple devices and the use of a relay is required. To test for this problem, jump the “+12VDC” wire to the “REM” terminal to see if the amplifier turns on.

Check connections, fuses, and wiring for corrosion. Clean or replace as needed.

### “I hear a repetitive ticking or popping sound coming out of the speaker(s).”

Check the speaker wires for a possible short, either between the positive and negative leads or between either speaker lead and the vehicle’s chassis ground. If a short is present, you will experience distorted and/or attenuated output. The “Protection LED” will turn red in this situation. It may be helpful to disconnect the speaker wires from the amplifier and use a different set of wires connected to a test speaker.

Check the nominal load impedance to verify that the amplifier is driving a load equal to or greater than 2 ohms.

Check connections, fuses, and wiring for corrosion. Clean or replace as needed.

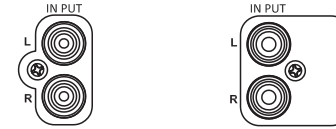
### “My amplifier’s output fluctuates when tap on it or hit a bump.”

Check the connections to the amplifier. Make sure that the insulation for all wires has been stripped back far enough to allow a good contact area inside the terminal block.

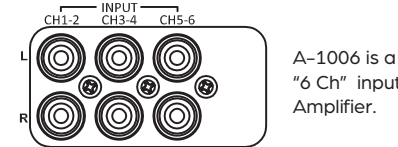
Check the input connections to ensure that they all are making good contact with the input jacks on the amplifiers.

## INPUT SECTION

The amplifier input section allows you to send signals to the amplifier section via traditional RCA-type jacks.



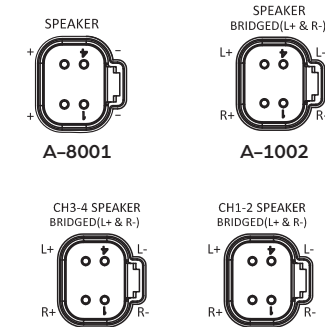
A8001 and A1002 is a “2 Ch” input Amplifier.



A-1006 is a “6 Ch” input Amplifier.

## SPEAKER CONNECTIONS

The amplifier input section allows you to connect to speakers with the wire harness packed in the box. We recommend the use of marine-grade tinned copper wire. Never use wire containing aluminum for marine applications.



A-1006

## OUTPUT SECTION (A1002, A1006)

A1002 and A1006 include a 2CH buffered, pass-through preamp output section, so that additional amplifiers can be easily added to the system. The preamp output delivers the same signal that is connected to the amplifier’s inputs.



### Note:

The preamp output signal is not affected by the amplifier’s filter controls. If the input signal is full-range, then preamp output will be full-range.

### IMPORTANT

If you plan to use the “OUTPUT” to feed a stereo amplifier, you must connect a stereo signal to the inputs of the amplifier. A mono signal into the amplifier will result in a mono signal out of the preamp output.

A-1002 and A-1006 provide bridge connection for speakers.

Bridging is a special feature which lets you get the maximum amount of power they can produce by using a built-in channel-sharing design. It means using 2 amplifier channels working together to drive a speaker or a set of speakers with by using the power that normally is split between 2 separate amplifier channels with more power than the two original channels. For example, a 100-watts-per-channel amplifier may output a single channel of 300 watts after bridging.

Typically, amplifiers operating in bridged mode can only do so with speakers that have twice the impedance of the minimum rating load on the amp. For example, an amp rated at 4 ohms running in normal mode will generally require 8 ohms in bridged mode.

### How to bridge the speakers?

To bridge the amplifier, connect the subwoofer or bridged speaker positive (+) terminal to the positive amplifier bridged terminal label, and the speaker negative (-) terminal to the negative bridged amplifier terminal also.



It's important to use a good reliable connection for speakers. Vessels are subject to vibration and lots of movement, so a poor connection can cause problems over time.

Since bridging means that much more power is now available to you speakers (more often than not this is used for subwoofers) it's best to use a quality speaker wire and make secure, tight connections on both ends.

Before doing so, verify that you have met the required minimum impedance (speaker load, in Ohms) as specified on your amplifier or its instruction manual

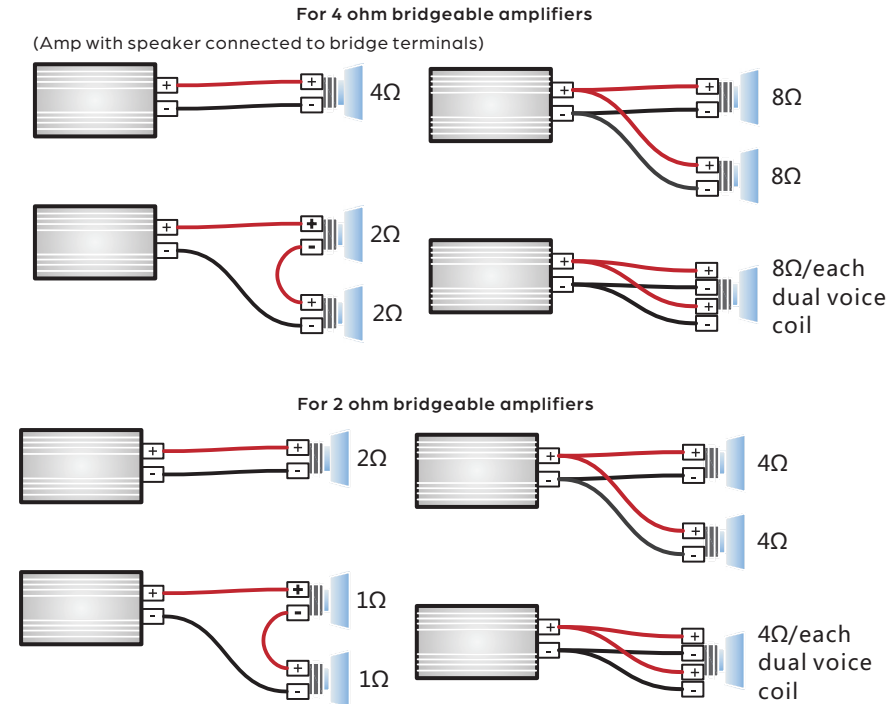
For today's amplifiers (including the MPro Series) this is usually a minimum of 4 ohms when bridged.

**Here are the basic rules for correctly connecting speakers in bridged mode:**

1. You can connect a SINGLE speaker of the required minimum impedance or higher.
2. You can connect MULTIPLE speakers if the total adds up to the required minimum impedance or more (see diagram).
3. Dual-voice coil speakers can be used if they can be wired to give the correct amount.

**Amp bridging wiring diagram**

Here's a diagram showing the most common wiring setups most people will use for typical amplifiers.



- Notes:**
1. Additional speakers can be used – just be sure to calculate the total load the amplifier will be connected to.
  2. For 1 ohm stable bridged amps, use the same as the 2 ohm example but use 2 ohm speakers or greater.

**APPENDIX B: Specifications**

**A8001 Specifications:**

**Amplifier Technology:** Premium Class D Marine Amplifiers

**Power Supply:** 14.4 VDC

**Rated Continuous (RMS) Power @14.4V:**

- > 400W RMS X 1 @ 4Ω
- > 800W RMS X 1 @ 2Ω

**Frequency Response (-3dB):** 25Hz – 320Hz

**Signal to Noise Ratio:**

- >95 dB referenced to rated power – 400W
- >75 dB referenced to 1W (CEA2006)

**THD + Noise @ 1/2 Power (22kHz filter):** <0.15%

**Damping Factor:** >100 @ 4Ω / 50Hz

**Recommended Fuse Value:** 60A

**Minimum Copper Power/Ground Wire Gauge:**

4 ~ 6 AWG (Do not use Copper Clad Aluminum wire).

**Dimensions (LxWxH):**

9-7/8" x 7-3/4" x 2-5/16"  
(251mm x 197mm x 58mm)

**A1002 Specifications:**

**Amplifier Technology:** Premium Class D Marine Amplifiers

**Power Supply:** 14.4 VDC

**Rated Continuous (RMS) Power @ 14.4V:**

- > 100W RMS X 2 @ 4Ω
- > 200W RMS X 2 @ 2Ω
- > 400W RMS X 2 @ 4Ω bridged

**Frequency Response (-3dB):** 10Hz – 20kHz

**Signal to Noise Ratio:**

- >95 dB referenced to rated power – 100W
- >75 dB referenced to 1W (CEA2006)

**THD + Noise @ 1/2 Power (22kHz filter):** <0.15%

**Damping Factor:** >100 @ 4Ω / 50Hz

**Recommended Fuse Value:** 30A

**Minimum Copper Power/Ground Wire Gauge:**

8 AWG (Do not use Copper Clad Aluminum wire).

**Dimensions (LxWxH):**

9-7/8" x 7-3/4" x 2-5/16"  
(251mm x 197mm x 58mm)

**A1006 Specifications:**

**Amplifier Technology:** Premium Class D Marine Amplifiers

**Power Supply:** 14.4 VDC

**Rated Continuous (RMS) Power @14.4V:**

- > 100W RMS X 6 @ 4Ω
- > 180W RMS X 6 @ 2Ω
- > 360W RMS X 3 @ 4Ω bridged

**Frequency Response (-3dB):** 10Hz – 20kHz

**Signal to Noise Ratio:**

- >95 dB referenced to rated power – 100W
- >75 dB referenced to 1W (CEA2006)

**THD + Noise @ 1/2 Power (22kHz filter):** <0.15%

**Damping Factor:** >100 @ 4Ω / 50Hz

**Recommended Fuse Value:** 90A

**Minimum Copper Power/Ground Wire Gauge:**

4 ~ 6 AWG (Do not use Copper Clad Aluminum wire).

**Dimensions (LxWxH):**

12-5/8" x 7-3/4" x 2-5/16"  
(321mm x 197mm x 58mm)

**Input Section (all models)**

**No. of Inputs:**

- One Pair for A8001 and A1002
- Three Pair for A1006

**Input Type:** Differential-balanced with RCA jack inputs

**Input Range:** 200mV – 5V RMS

**Signal Processing (all modes):**

**Filter Type:**

- Low Pass for A8001
- Low Pass and High Pass for A1002, A1006
- 12 dB/octave Butterworth with continuously variable cutoff frequency from 32 – 320Hz. (not defeatable on A8001.)

**Bass Boost:** Single-band with 65Hz center frequency, adjustable from 0 to +12dB.

**Preamp Output:** Buffered pass-through type.

## APPENDIX A :

### GAIN Control (Input Sensitivity Setting)

Follow the steps below to adjust the input sensitivity of each amplifier channel pair, simply and easily, in just a few minutes to achieve overall system balance.

### Necessary Equipment

– Sine-wave test tone recorded at a 0dBfs reference level in the frequency range to be amplified for that set of channels (50 Hz for subwoofer amplifier models or 1 kHz for a full range amplifier models).

Do not use attenuated test tones (-10 dB, -20 dB, etc.).

Depending on your type of source unit, the sine-wave may be played via a CD, USB thumb drive or portable media player. Make sure to disable any EQ/DSP modes on your portable media player during level setting.

### The Seven-Step Procedure

- 1) Disconnect the speaker(s) from the amplifier's speaker output connectors.
- 2) Turn off all processing (bass/treble, loudness, EQ, etc.) on the source unit, processors (if used) and amplifier. Set the fader control to center position and the subwoofer level control to 3/4 of maximum, if used.
- 3) Turn the "GAIN" control all the way down.
- 4) Set the source unit volume to 3/4 of full volume. This will allow for reasonable gain overlap with moderate clipping at full volume.
- 5) Verify that you have disconnected the speakers before proceeding. Play a track with the appropriate sine wave (within the frequency range to be amplified at 3/4 source unit volume.
- 6) Slowly increase the "GAIN" control until the LED "Clipping" is solidly lit, indicating maximum, unclipped output.
- 7) Once you have adjusted the amplifier's gain control to its maximum, unclipped output level, reduce the source unit's volume to prevent sudden output bursts and reconnect the speaker(s). Play music and adjust the "GAIN" control downward if the amplifier requires attenuation to achieve the desired system balance.

## IMPORTANT

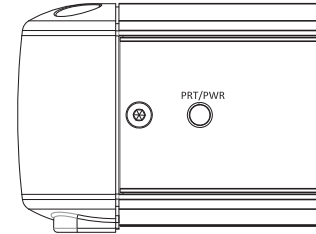
**Do not increase any "GAIN" control for any amplifier channel or channel pair in the system beyond the maximum level established during this procedure. Doing so will result in audible distortion and possible speaker damage.**

It will be necessary to re-adjust the "GAIN" if any equalizer boost is activated after setting the amplifier's gain with this procedure. This applies to any EQ boost circuit, including source unit tone controls or EQ circuits. EQ cuts will not require re-adjustment.

## LED INDICATOR (PRT/PWR LED, CLIP LED)

### PRT/PWR LED / PROTECTION CIRCUITRY

There is a single multi-color LED on the rear surface of the amplifier (PRT/PWR) to indicate the amplifier's operating status.



**1) Flashing Green:** amplifier is powering up, audio output is muted.

**2) Constant Green:** amplifier is on and functioning normally, audio output is active.

**3) Constant Red:** indicates that the amplifier has exceeded its safe operating temperature, putting the amplifier into a self-protection mode, which reduces the peak power output of the amplifier. When its temperature returns to a safe level, the red light will return to green and the amplifier will return to full-power operating mode.

**4) Constant Amber (yellow):** indicates that an over-current condition has occurred and is accompanied by a muting of the affected channel(s). Because the muting behavior may be very short in duration, it may manifest itself as an audible, repetitive ticking noise in the output. Over-current conditions can be caused by a speaker impedance lower than the optimum load impedance range for the amplifier or a short circuit in the speaker wiring. The latter can result from a short circuit between the positive and negative speaker wires or between either speaker wire and the vessel chassis. The "PRT/PWR LED" will remain amber for a few seconds, even if the over-current condition is of a very short duration. This functionality can be used to diagnose a short-circuit by only connecting one channel at a time. The "PRT/PWR LED" will turn amber when you connect the channel that is experiencing that problem and turn the volume up.

### 5) PRT/PWR LED off / Amplifier Shuts Off Unexpectedly

The only condition that will shut down an undamaged amplifier completely is if battery voltage or remote turn-on voltage drops below 10 volts. The "PRT/PWR LED" will turn off when this occurs. The amplifier will turn back on when voltage climbs back above 11 volts. If this is happening in your system, have your charging system and power wiring inspected.

For more information on troubleshooting this amplifier, refer to Appendix D.

### CLIP LED

The Clip LED is designed to be used to accurately set the amplifier Gain controls on initial installation without requiring expensive test equipment such as an oscilloscope:

#### For most users using music to set Gains:

The source unit should be set at maximum undistorted pre-amp output with dynamic program material, and the amplifier Gain controls should be adjusted so that the Clip LED(s) briefly flash but do not remain on constantly. That allows the amp to deliver its full rated output but avoids excessive clipping and distortion.

#### For installers using sine wave signals to set Gains:

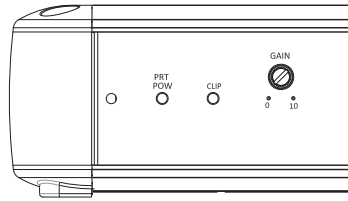
The source unit should be set at maximum undistorted pre-amp output with 1kHz sine wave (for A1006 and A1002) or 100Hz sine wave (with A8001), and the amplifier Gain controls should be turned up until the Clip LED(s) just begin to illuminate but no higher. That allows the amp to deliver its full rated output but avoids excessive clipping and distortion.

The advantage of the Clip LEDs is that they provide a clear indication of maximum, undistorted power output from the amplifier to aid in correct Gain adjustment. When Gains are properly adjusted, sound quality and overall system reliability is greatly enhanced.



**GAIN CONTROL (INPUT SENSITIVITY CONTROLS)**

The controls labeled "GAIN" can be used to match the source unit's output voltage to the input stage of each pair of amplifier channels for maximum clean output. Rotating the control clockwise will result in higher sensitivity (louder for a given input voltage). Rotating the control counter-clockwise will result in lower sensitivity (quieter for a given input voltage).



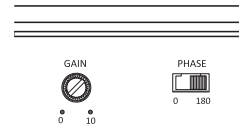
To properly set the amplifier for maximum clean output, please refer to Appendix A in this manual. After using this procedure you can then adjust any or all "GAIN" level downward if this is required to achieve the desired system balance.

**Do not increase any "GAIN" setting for any channel(s) of any amplifier in the system beyond the maximum level established during the procedure outlined in Appendix A. Doing so will result in audible distortion and possible speaker damage.**

**PHASE SETTING (A8001 only)**

Phase, or more accurately, relative phase, describes the relationship between two alternating current signals.

The PHASE setting allows you to compensate for the subwoofer location relative to the main speakers. Adjust the PHASE setting a level that results in the highest subwoofer audio output.



**X-OVER (Filter) CONTROL**

Most speakers are not designed to reproduce the full range of frequencies audible by the human ear. For this reason, most speaker systems are comprised of multiple speakers, each dedicated to reproducing a specific frequency range is sent to each section of a speaker system. The division of frequency ranges to different speakers can be done with passive filters (coils and/or capacitors) between the amplifier outputs and the speakers), which are acceptable and commonly used for filtering between mid-range speakers and tweeters. Filtering between subwoofer systems and satellite speaker system is best done with active filters, which cut off frequency content at the input to the amplifier. Active filters are more stable than passive filters and do not introduce extraneous resistance, which can degrade subwoofer performance.

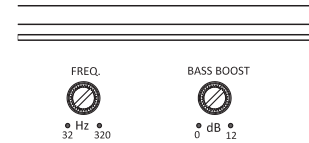
The active filter built into each channel section of the amplifier can be used to eliminate potentially harmful and/or undesired frequencies from making their way through the amplifier sections to the speaker(s). This serves to improve tonal balance and to avoid distortion and possible speaker failure. Correct use of these filters can substantially increase the longevity and fidelity of your audio system.

A1002, A1006 are designed with a three position X-OVER (filter) - OFF, HP, and LP; And A8001 designed with only LP.

**OFF:** Defeats the filter completely, allowing the full range of frequencies present at the inputs to feed the amplifier. This is useful for systems utilizing outboard active crossovers or requiring full-range reproduction from one or more of the A1002, A1006 channel pairs.

**LP (Low-Pass):** Configures the filter to attenuate frequencies above the selected filter frequency at a rate of 12dB per octave. This is useful for connection of subwoofer(s) to one or more of the amplifier's channel pairs in a bi-amplified system.

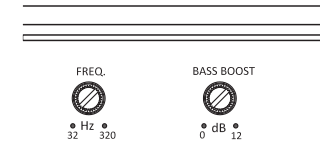
**HP (High-Pass):** Configures the filter to attenuate frequencies below the selected filter frequency at a rate of 12dB per octave. This is useful for connection of component speakers to one or more of the amplifier's channel pairs in a bi-amplified system.



**Filter Freq. (Hz):** The filter frequency markings surrounding this rotary control are for reference purposes and are generally accurate to within 1/3 octave or better. If you would like to select the filter cutoff frequency with a higher level of precision, consult the chart in Appendix B.

**BASS BOOST**

The amplifiers feature a single band, boost-only bass equalizer controlled by a rotary knob marked "BASS BOOST (dB). This control has a boost range of 0dB (full-counterclockwise) to +12dB (full-clockwise) and is centered at 65Hz.



**SERVICING YOUR AMPLIFIER**

If your amplifier fails or malfunctions, please return it to your authorized dealer so that it may be sent back for service. There are no user serviceable parts or fuses inside the amplifier. The unique nature of the circuitry in the amplifiers requires specifically trained service personnel. Do not attempt to service the amplifier yourself or through unauthorized repair facilities. This will not only void the warranty, but may result in the creation of more problems within the amplifier.

