



**CLASS D  
MONOBLOCK AMPLIFIER**

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M3d, M5a

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**OWNER'S MANUAL**

# INTRODUCTION

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Thank you for purchasing a DD Audio amplifier. DD Audio amplifiers are painstakingly designed to provide years of high-performance listening pleasure. To achieve optimum performance we suggest you have your amplifier installed by an Authorized DD Audio Dealer. It is also highly recommended that you read this Owner's Manual to familiarize yourself with the many features of your amplifier.

The M Series contains monoblock amplifiers engineered specifically for low frequency car audio reinforcement. These amps feature compact chassis, strong power, logical controls and efficient design. No shortcuts were taken when deciding on the internal components and feature sets. Our engineers paid extremely close attention to every stage of the M Series circuit design; and utilized high speed controller chipsets, efficient power devices, precise thermal management and the latest in IC technology. We hope you enjoy using this DD Audio product, and if you have any questions regarding setup or installation, please contact the DD Audio technical support team.

## WARNING

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**DD Audio** amps are built to push speakers to extremely high volumes beyond what your ears can safely handle for extended periods of time. Prolonged exposure to excessively high volume can cause permanent damage to your hearing. In addition, operation of a motor vehicle while listening to audio equipment at high volume levels may impair your ability to hear external sounds such as: horns, warning signals, or emergency vehicles; thus, constituting a potential traffic hazard. You may also find your state has laws governing the volume of an audio system in a car. Please be aware of all local and state laws in your area. So, be smart, and behave yourself...As much as possible.



### **M SERIES DESIGN FEATURES:**

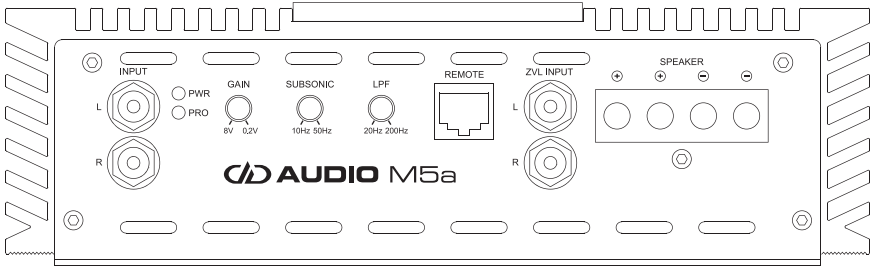
- **0 Gauge Power Terminals**
- **10 Gauge Speaker Terminals**
- **3oz Heavy Duty Double Sided Through-Hole PCB**
- **VARIABLE 24d/Oct. CROSSOVERS**
- **ZVL Input for Linking and Strapping Multiple Amplifiers w/ optional ZVL Module**
- **Custom Vanity Plate Ready**
- **Remote Subwoofer Control: Level Control, Voltage Display, Clipping Indicator**
- **5-WAY Protection: Speaker Short, Thermal Overload, Hi/Low Voltage, DC Offset**

# TECHNICAL SPECIFICATIONS

	M3d	M5a
Test Voltage 14.4V		
Operating Voltage	9-16v	9-16v
Channels	1	1
Continuous Wattage 4Ohm	1,350	2,670
Continuous Wattage 2 Ohm	2,500	4,666
Continuous Wattage 1 Ohm	4,000	8,000
Dynamic Wattage 1 Ohm	5,000	10,000
Max Current Draw	400A	800A
Frequency Response	13~213Hz	13~208Hz
S/N Ratio	>93dB	>96dB
Damping Factor	>340	>210
RCA Input Voltage Sensitivity	8V~0.2V	8V~0.2V
Remote Subwoofer Control	Yes	Yes
Power Wire Gauge In	2x0	3x0
Speaker Wire Gauge Out	10	10
Dimensions: in	19.6 x 9 x 2.6	27.6 x 9 x 2.6
Dimensions: mm	500 x 230 x 66	700 x 23 x 66

# CONTROL AND CONNECTION FOR M SERIES AMPLIFIERS

## PRE-AMP PANEL



### INPUT:

Used for connecting RCA preamp signal cables from the source unit to the amplifier.

### PWR LED:

Indicates the amplifier is grounded, and receiving +12V and REM power.

### PRO LED:

Indicates a general malfunction due to speaker short, thermal limits, power amp overload, out of operating voltage range, or DC offset.

### GAIN:

Matches the output voltage of the source signal to the amplifier's input section.

### SUBSONIC:

Controls the high pass cutoff point for the speaker outputs. This helps to eliminate extremely low frequencies that can waste amplifier power and cause damage to your subwoofers.

### LPF:

Controls the low pass cutoff point for

the speaker outputs.

### REMOTE:

This port is for connecting the remote subwoofer control.

### ZVL INPUT:

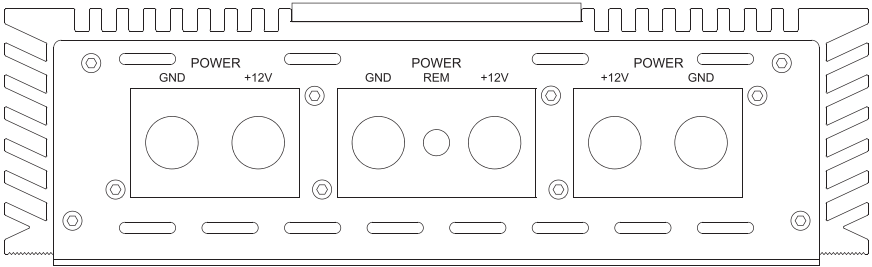
Used when the amplifier is connected to a ZVL module. The ZVL module will allow you to link or strap multiple amplifiers while syncing their preamps. When using the ZVL INPUT the gain control and crossovers will have no effect on the audio. Do not simultaneously connect signals to the INPUT and the ZVL INPUT.

### SPEAKER:

Connect to the speaker's + and - leads. Minimum suggested speaker cable size is 12~10 gauge. M Series amplifiers have two + and two - terminals for easier connection of multiple speaker cables. Minimum connected impedance is 1 Ohm.

# CONTROL AND CONNECTION FOR M SERIES AMPLIFIERS

## POWER PANEL



**GND:**  
Connect to a ground wire going directly to the chassis of your vehicle. Minimum cable size is 0 gauge.

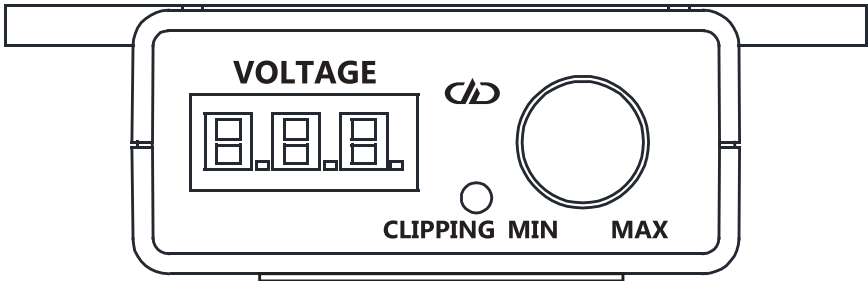
**REM:**  
Connect to a switched +12V cable.

**+12V:**  
Connect to a fused cable from the positive terminal of your battery. Minimum power cable size is 0 gauge.

*NOTE: It is required to run separate 0 gauge power cables to each power terminal. Not doing so will result in decreased performance and damage to the amplifier.*

## REMOTE CONTROL

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Connect the remote control to the REMOTE port on the amplifier with the supplied data cable.

### **VOLTAGE:**

Displays the charging system voltage at the amp.

The voltage display will need to be calibrated after installation.

1. Test the resting voltage at the amplifier's power terminals with a multimeter.
2. Use the provided adjustment screwdriver to rotate the adjustment screw on the topside of the remote to adjust the display up or down until it matches the reading on your multimeter.

### **CLIPPING LED:**

Illuminates red when the amplifier is being overdriven. When illuminated the user should decrease the volume to avoid damage to the speakers and/or amplifier. The CLIPPING indicator is calibrated to be as precise as an oscilloscope allowing for easy amplifier setup and real time clip monitoring.

### **MIN/MAX:**

Controls the amplifier's output level. MAX level will be determined by the gain setting on the amplifier or ZVL module.

## MOUNTING YOUR AMPLIFIER

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- Mount your amplifier in a dry, well-ventilated environment.
- Before mounting the amplifier be sure the mounting location and screw placement will not present a hazard to any cables, wiring, fuel lines, fuel tanks, hydraulic lines or other vehicle systems or components.
- Securely mount the amplifier using appropriate hardware so that it does not come loose in the event of a collision or a sudden jolt to the vehicle.
- Do not mount the amplifier to any area that may have excessive vibration (like the subwoofer box).
- Take into consideration your vehicle's safety equipment (air bags, seat belt systems, ABS brake systems, etc.) and avoid interfering with such equipment.

## POWERING YOUR AMPLIFIER

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Make sure your vehicle's charging system is adequate for the amplifier you're installing. Amplifiers don't make power, they simply convert the current and voltage you give them into wattage. If your charging system is insufficient, your amp will not produce its full rated output. If the current or voltage supply drops too low, even for milliseconds, damage can be caused resulting in amplifier failure. This type of failure is not considered a manufacturer's defect. The addition of even a small amplifier will increase the demand on your charging system. If you are unsure or have questions about your charging system, have it tested by a professional technician to determine its capability.





# INSTALLATION

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1. Disconnect the negative cable from the car battery.
2. Due to the power requirements of the Amplifier, the +12V connection should be made directly to the positive (+) terminal of the battery. For safety measures, install an in-line fuse holder (not included) as close to the battery's positive (+) terminal as possible. The fuse ampere rating should not exceed the total value of the amplifier's rated maximum current draw. If the fuse is further than 18 inches (wire length) from the battery you should re-evaluate the wire and fuse placement.



Run the power wire from the battery to the amplifier. To avoid a potential short to the body and a possible fire, this cable should never be run outside of the vehicle. You will also need to make sure no trim screws or sharp body metal will penetrate the power cable shielding. Don't install the fuse yet. This will be the last thing you do.

3. Connect the ground wire directly to the chassis of your vehicle. The grounding location should be made on metal as close to the amplifier as possible. Remove all paint, sound deadener, etc. from the area of grounding connection. Do not use seat belt bolts for grounding. It is advisable to test the ground with an ohmmeter. Test between the grounding point and the negative battery cable to insure a good low resistance connection (<0.5 Ohm).
4. Run the REM Turn-On wire from an ignition controlled +12V source. This will turn "ON" the amplifier remotely when the vehicle's stereo is turned "ON".  
NOTE IF YOUR RADIO DOES NOT HAVE A +12 VOLT OUTPUT LEAD WHEN THE RADIO IS TURNED ON, THE AMPLIFIER CAN BE CONNECTED TO AN ACCESSORY CIRCUIT IN THE VEHICLE THAT IS LIVE WHEN THE KEY IS "ON".
5. Run the RCA cables if they will be used for the application or make your high-level signal connections.
6. Run the speaker wire to the speakers. It is advised that you leave some extra wire at this point. You can "clean it up" later.
7. Connect the power and ground to the amplifier. Make sure the polarity (+ and -) is correct to avoid damaging the amplifier. Only after this step should you install the fuse at the battery.
8. Connect the remote wire from the head unit to the amplifier. At this time you should turn on the amp and make sure it turns on properly and does not go into protect.

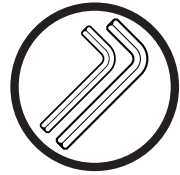
## INSTALLATION *(continued)*

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9. Turn the amp off and connect the speaker wire to the amp. Pay attention to the polarity (+ and-). If hooked up incorrectly it can cause poor sound due to phasing issues.
10. Connect the RCA cables or high-level harness to the amp.
11. Double check the amplifier controls to verify they are set correctly for your system.
12. Now you can turn on the system and begin the fine tuning process. Turn the amp gain all the way down. Turn the head unit volume to somewhere around 75%.
13. Now you can tune the amp. Take your time and make only one adjustment at a time. It may take some time to get the system fully adjusted. During this time the amp is drawing current from the battery. You should check the battery voltage from time to time and re-charge it if it gets low. Battery voltage can affect the way the amplifier performs.
14. You may have to do some slight re-tuning at a later date if you are installing new speakers at the same time as the amp due to the speakers breaking in.

## TROUBLESHOOTING:

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### NO POWER

- Check GND connection.
- Check voltage at the amplifier's +12V and REM terminals.
- Check fuses.

### NO SOUND ( NO OUTPUT )

- Check all cable routing for shorts or faulty connections.
- Check speakers to verify they are in proper operating condition.

### PROTECTION (Most Common Causes)

- **SPEAKER SHORT:** A connected speaker has a shorted or damaged speaker lead or voice coil.
- **THERMAL:** The amplifier overheated. The amplifier will automatically return to normal operation once its temperature drops below the thermal shutoff temperature. Make sure there is proper airflow with no obstructions around the amplifier to avoid further issues. In some applications an external fan may be required to keep the amplifier temperature below the thermal protection level.
- **OVERLOAD:** The connected speaker or speakers have too low of an impedance.
- **HI/LOW VOLTAGE:** The power input voltage has gone outside the voltage range of 8.5V-16V.
- **DC Offset:** There is a damaged transistor in the output section.

### DISTORTION

- Make sure the input gain level is set appropriately. Also check the speaker quality when playing on another amplifier.

## TROUBLESHOOTING *(continued)*:

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### POOR BASS RESPONSE

- Check speaker cables for reverse polarity of one channel.

### BUZZING SOUND

- Check the amplifier and source unit ground connections.
- Check RCA cable connections and possibly replace RCA cables with a better shielded cable or reroute RCA cables away from power cables.

### WHINING NOISE

- Engine noise can be caused by poor grounding of amplifiers, source units, signal processors, batteries or alternators. If you can remove the signal cables from the amplifier and the noise goes away the sound is not being generated by your amplifier, but by an external grounding issue. If you can feed a signal into the amp from an external source unit and the noise is not present the sound is not being generated by your amplifier.

If you have any questions regarding setup, installation or warranty please contact the DD Audio technical support team by email at [service@ddaudio.com](mailto:service@ddaudio.com) or by phone at **(405) 239-2800**.

DD AUDIO

**DD AUDIO** TRUE TO THE SOURCE.

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[DDAUDIO.COM](http://DDAUDIO.COM)

