MS-AM806

MARINE AMPLIFIER

User/Installation Manual

FUSION®

FUSIONENTERTAINMENT.COM

Contents

NOTE: Not for use in 12 Volt Systems

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MODEL NUMBER_____DATE OF PURCHASE_____AFFIX RECEIPT HERE

2010 Version 1.0

Feature Overview

- 2 Ohm Stable Class-D Amplifier Design
- Variable LP and HP Electronic X-OVER @ 12dB/octave
- 4 Gauge Power and Ground Connections
- Nickel Plated Audio Input RCA Connections

2-OHM STABLE STEREO

Provides the option of connecting an extra pair of speakers in parallel, 2 per channel at 2-Ohms (A total of 12 speakers).

MARINE GRADE CONNECTIONS

Nickel plated RCA connectors and stainless components improve signal flow for optimum output

CLASS-D DESIGN

The 6 x 80 Watt RMS 2-Ohm stable (per channel) design ensures clean and powerful amplification of the input signal, enough to rock the boat.

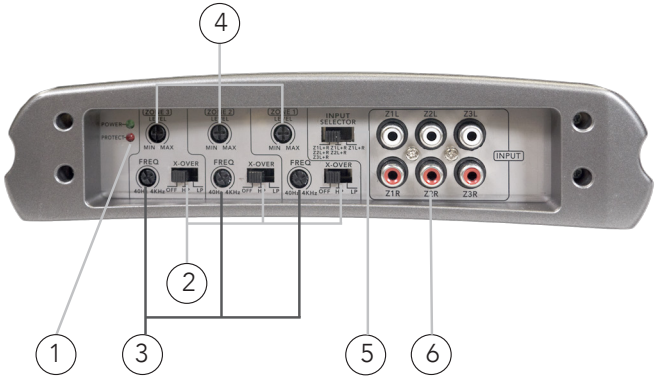
CONFORMAL COATED CIRCUITRY

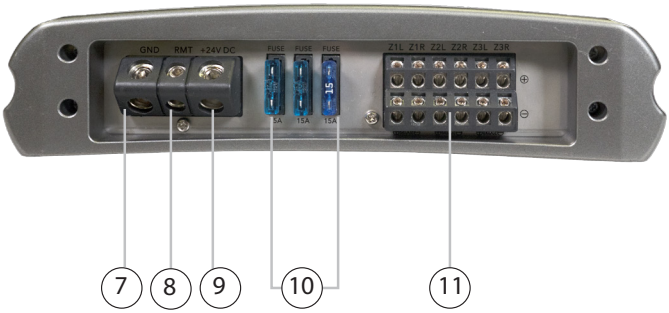
Provides added protection from salt air and moisture to ensure maximum product life.

MARINE GRADE CHASSIS

Stainless steel end and bottom plates provide a stunning finish coupled with environmental protection.

Control Descriptions





1 Power And Status LEDs:

This shows if the amplifier has been correctly powered up and if any faults are present.

2 Crossover Selector:

Sets the appropriate mode of operation. The 3 positions available are OFF, LP and HP.

3 FREQ Control:

Low Pass:

Set the crossover switch 2 to LP when a subwoofer is connected. Ensure the crossover frequency is set at 100Hz or below, this feature is designed to filter all mid to high frequencies that only FULL RANGE speakers should produce. NOTE: Failure to do so could result in speaker damage.

High Pass:

Set the crossover switch 2 to HP and turn this control to 65Hz or above when using speakers smaller than 6", this feature is designed to filter all low bass frequencies that only SUBWOOFERS should produce. NOTE: Failure to do so could result in speaker damage.

4 Level:

This allows level adjustment of the input signal. Use this control to correctly match the head unit to the amplifier. To set this control correctly, turn the amplifier level to MIN and the head unit to 3/4 volume, with the BASS and TREBLE on zero , then slowly turn up this amplifier level control towards the MAX end of the control. NOTE: If the sound becomes distorted, turn this control down.

5 Input Selector:

The MS-AM806 input section allows you to send signals to the amplifier section through the use of two, four or six differential inputs. Input connections are made via one, two or three pairs of traditional RCA-type jacks.

If you wish to send six discrete channels into the amplifier, simply use all six inputs and set the "Input Mode" switch to " Z1L+R, Z2L+R, Z3L+R" position.

If you wish to feed all six channels by using only four channels of full-range input, set the "Input Mode" switch to "Z1L+R, Z2L+R" and use only the inputs to channels Z1L & Z1R, Z2L & Z2R. In this mode, channels Z3L & Z3R will operate with a sum of the Z1L & Z2R and Z2L & Z2R input signals, respectively.

If you wish to feed all six channels by using only two channels of full-range input, set the "Input Mode" switch to "Z1L+R" and use only the inputs to channels Z1L & Z2R. In this mode, channels Z2L & Z2R, Z3L & Z3R will operate from the Z1L & Z2R input signals, respectively.

6 RCA Input (Zone 1 & 2, Zone 3 & 4, Zone 5 & 6):

Connect these RCA connectors to the LOW LEVEL output connection from the head unit.

7 Ground Connection:

Connect directly to suitable ground point via a 4 gauge power cable. NOTE: This is to be the first wire to connect. Damage could result if this is not done.

8 Remote Connection:

This input is for turning the amplifier on and off. This requires a switched positive (+12V - 24V) To power 'ON' the amplifier, this can be found on the rear of the head unit in the form of an electric antenna output, or a remote on output. If not available you can wire to a switched +12V - 24V supply.

9 Power +24V Connection:

This must be connected to the battery positive (+) terminal via a 4 gauge power cable and with an inline fuse or circuit breaker at the battery end. NOTE: This is to be the last wire to connect up during installation as damage could result.

10 Fuses:

Please ensure the correct type of fuse is fitted, as specified in this manual. PLEASE NOTE: the MS-AM806 has 3x 15A fuses.

11 Speaker Output:

See channel installation diagrams in this manual for correct speaker connection

Installation

Mounting

Appropriate mounting is very important for the prolonged life expectancy of any amplifier. Select a location that allows enough space so sufficient airflow is maintainable and a location that provides protection from moisture. Keep in mind that an amplifier should never be mounted upside down. Upside down mounting will compromise heat dissipation through the heatsink and could engage the thermal protection circuit. Excessive heat will shorten your amplifiers life. To maximise heat dissipation, be sure to leave at least 2.5" of clearance around the amplifier. If space is of the essense and the amplifier must be mounted in an enclosed or restricted area, a small 3 inch fan should be used in correspondence with a duct so the heat can flow past the Heatsink.

To avoid scratching your new FUSION amplifier, pre-drill the mounting holes with either a 3mm or 9/64" diameter drill bit and use the screws supplied in the accessory kit. Be sure to investigate your mounting area thoroughly to avoid electrical wires, vacuum lines or fuel lines.

Installation Options

The quality of installation will affect the performance and reliability of your FUSION amplifier. For maximum performance we recommend you have your new FUSION amplifier installed by an authorised FUSION dealer. Our highly skilled dealers have vast knowledge of our products and their installation techniques are necessary to unleash the high performance capabilities of your amplifier.

If you decide to connect the amplifier yourself, it is important that you read this manual carefully and throughout before starting. Once you have finished reading and you still have questions regarding installation, we recommend your FUSION dealer.

Connection

DISCONNECT THE NEGATIVE BATTERY POST CONNECTION

FUSION 24VDC amplifiers are designed to work within a 22 to 30 volt DC range. Before any wires are connected, the vessel's electrical system should be checked for correct voltage supply with the help of a voltmeter. First, check the voltage at the battery the voltmeter should read between 24 and 28.8 Volts. If your vessel's electrical system is

not up to these specification, we recommend having it checked by an auto electrician before any further installation. Once the vessel is checked, make certain the correct cable size is used.

Power

FUSION amplifiers should be wired directly to the battery using the appropriate sized cable. Start at the vessels battery and run the power cable through to the amplifier. FUSION recommends the use of grommets when passing the power cable through any metal wall to avoid sharp corners or sharp body parts that may easily cut through the insulation on the cable.

Avoid running the power cable over engine components. The use of an inline fuse or circuit breaker is a must, this will prevent the risk of a potential fire caused be a short in your power cable. The main power wire(s) to the amplifier(s) in the system is recommended to be fused within 18 inches (45 cm) of the positive battery post connection. In a multi-amplifier installation from one power cable, the fuse value at the battery should be high enough for all of the equipment being run from that power wire. Each individual amplifier is recommended to be fused within 12" (30cm) via a fused distribution block.

You may now connect the cable to the battery, but remember to leave the fuse out or circuit breaker off until all other cable connections are made. If only one MS-AM806 is being run from that power wire, we recommend a 60A fuse or circuit breaker.

Ground

When grounding your FUSION amplifier, use the same gauge cable for ground as you did for the power. Secure the ground cable to the appropriate ground point, now its time to connect the power and ground cables to the amplifier. Cut both cables to length. Use a hex type screwdriver to loosen the +24V and the GND connections on the amplifier. Terminate the ground first, and then the +24V and please make sure that you terminate them into the correct terminals. Then tighten the screws down securely.

Speaker Load

Keep in mind FUSION 'AM' series amplifiers are high power amplifiers and not high current amplifiers. In other words they require a minimum impedance of 2 ohms STEREO and 4 ohms bridged MONO to operate trouble free. Too low of an impedance could send your FUSION amplifier into protection mode and/or damage the amplifier.

Remote Turn-on

This terminal uses a standard +12 to +24V remote turn-on lead, this can be provided by the source unit's 12V remote turn-on output. The amplifier will turn on when any voltage between +12V and +24V is present at its "Remote" input and turn off when this voltage is switched off. However if a source unit does not have a dedicated remote turn-on output, the amplifier's turn-on lead can be connected via a correct voltage relay from +12V to +24V that derives power from an ignition-switched circuit.

Run a minimum of 18 gauge wire from the amplifier location to the source of the switched +12V to +24V lead. Connect the source remote output to the wire. Go back to the amplifier and cut the wire to length. Loosen the screw terminal marked REM on the amplifier using a hex type screwdriver. Slip the wire into the connector and tighten the screw securely.

Inputs & Gain Setup

Low Level Inputs

Be extra careful with your RCA interconnects. Hiss, engine noise, and fan noise can easily be picked up through RCA cables if run incorrectly. Avoid running your RCAs near large wire looms and electric fans if possible. Run your RCA cables away from any power cable. Be sure to check for correct balance (Red is right and Black or White is left)

Level Control

On the amplifier, is the LEVEL control, this control allows you to match the input level of the amplifier to the output level of your head unit. Matching the input can be accomplished in three simple steps:

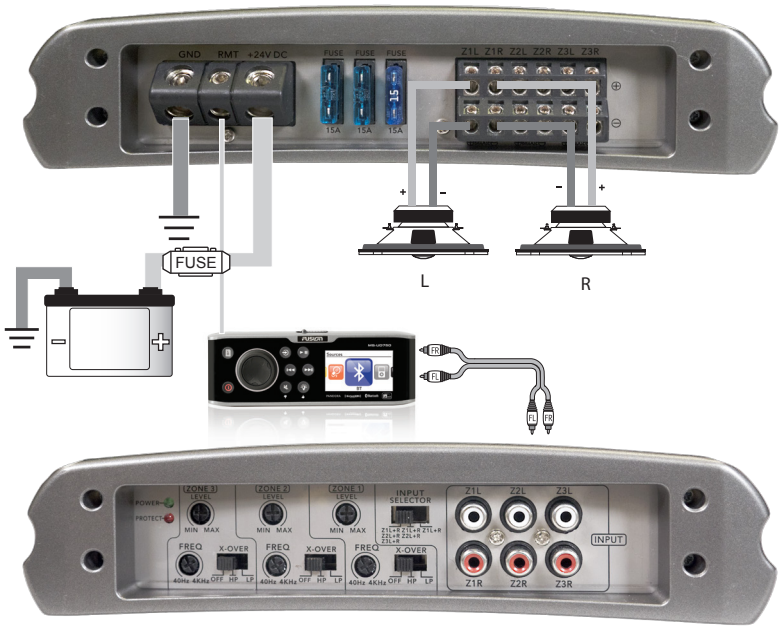
1. Turn the LEVEL control on the amplifier to minimum.

2. Turn up the head unit and adjust to 2/3 maximum volume ensuring that the BASS and TREBLE are set to zero.

3. Adjust the LEVEL control until the desired volume is achieved without audible distortion.

Remember, the gain control is not a volume control. Ignoring the three steps above may leave you with damaged speakers and/or a damaged amplifier.

Two Channel Installation



Three Channel Installation

Four Channel Installation

Five Channel Installation

Six Channel Installation

Trouble Shooting

Problem	Cause	Solution
Power LED not 'ON	Fuse at battery blown or not installed	Replace with correct type and rated fuse.
	Improper connections	Check that the ground wire, power wire and the remote wires are connected to the correct terminal
Status LED 'ON'	Fuse blown	Replace with correct type and rated fuse.
	Amplifier too hot	Move the amplifier into a more ventilated area
	Speaker wires shorted	Check that there are no speaker wires shorted to any other wire and also check if any wire is shorted to ground
	Internal malfunction	Disconnect all wires except ground, power and remote. Then turn the amplifier 'ON', if the protection light is still 'ON' then return for service

Specifications

Signal to Noise	>97dB
Input Sensitivity	300mV - 8V
LP Variable Crossover	40Hz - 400Hz @ 12dB/octave
HP Variable Crossover	400Hz - 2.4KHz @ 12dB/octave
Input Impedance	20kΩ
Damping factor	>200
T.H.D	0.05%
Fuse Ratings	3 x 15A
Dimensions(mm)	229 (W) x 405(L) x 53(H)

25 Volt power output specification

65 Watts RMS x 6 @ 4Ω 1% THD+N
105 Watts RMS x 6 @ 2Ω 1% THD+N
230 Watts RMS x 3 @ 4Ω Bridged 1% THD+N

28.8 Volt power output specification

80 Watts RMS x 6 @ 4Ω 1% THD+N
130 Watts RMS x 6 @ 2Ω 1% THD+N
275 Watts RMS x 3 @ 4Ω Bridged 1% THD+N

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