MOBILE POWER AMPLIFIERS

T³2160
2 X 165 WATT
2 CHANNEL AMPLIFIER

T³4320
4 X 140 WATT
4 CHANNEL AMPLIFIER

T³2300
2 X 250 WATT
2 CHANNEL AMPLIFIER

T³4600
4 X 250 WATT
4 CHANNEL AMPLIFIER

T³2600
2 X 425 WATT
2 CHANNEL AMPLIFIER

T³5600
4 X 150 WATT
1 X 300 WATT
5 CHANNEL AMPLIFIER

T³2700
2 X 600 WATT
2 CHANNEL AMPLIFIER

T³1000
1 X 540 WATT
1 CHANNEL AMPLIFIER

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INTRODUCTION

I. Description

This device is a high power, audio amplifier. Use it responsibly. Very loud music can cause permanent hearing loss. This amplifier is intended for installation in vehicles with a 12-Volt, negative ground electrical system. Attempting to connect or operate the amplifier in another type of electrical system may cause damage to the amplifier or the electrical system.

II. About This Manual

Read the Instructions-

Be sure that you have read all operating instructions and understand all safety precautions before installing and operating the amplifier. We recommend that you have your **T3** series amplifier installed by a specialist.

Follow the Instructions-

The instructions are intended to help you safely obtain the best performance from the amplifier. Carefully follow all installation and operating instructions.

Save the Operating Manual-

Keep the manual in a safe place after installing the amplifier. You may have questions later.

Text Conventions used in this Manual-

Bold-

Headings and important information.

Bold, Underlined-

Very important information.

"Bold"-

As labeled on the amplifier, or quoted from elsewhere in this manual.

III. Safety and Operating Precautions-

Caution!

This symbol warns the user of a potential risk or hazard if instructions are not followed.

⇒ This arrow symbol points to a specific instruction for avoiding a potential hazard.

1. Installation

1.1 Installation- Mounting the Amplifier

Step 1- Disconnect the negative (-) battery cable before mounting the amplifier or making any connections. Check the battery and alternator ground (-) connections. Make sure they are properly connected and free of corrosion

Step 2- Choose a mounting location for your amplifier. Find a location on a flat surface away from heat and moisture. Be sure the mounting location and the drilling of pilot holes for mounting will not present a hazard to any wires, control cables, fuel lines, fuel tanks, hydraulic lines, or other vehicle systems or components. Common mounting locations are under the front passenger seat, or in the trunk area. Choose a location with unimpaired air circulation. The amplifier will dissipate heat more efficiently if mounted vertically.

Step 3- Use the supplied screws. Place the amplifier in the mounting location, and mark the positions of the holes with a marker, pen or pencil. Carefully drill the mounting holes in the marked positions.

Caution!

⇒ Check carefully before drilling any pilot holes.

Step 4- Use the supplied mounting screws to securely fasten the amplifier to the mounting surface.

1.2 Installation- Power Connections

Step 1- Run a power cable from the battery to the amplifier mounting location. Use rubber grommets to protect the cable anywhere it has to go through metal.

T3 4600,T3 4320,T3 2700,T3 2600,T3 2300,T3 5600,T3 1000 Use #8 AWG or larger power and ground cable.

T3 2160 - Use #10 AWG or larger power and ground cable.

Step 2- Connect one end of an in-line fuse holder to the power cable. Connect the other end of the fuse holder to the positive battery post with 20 cm (or less) of the same cable. This fuse location will protect the system and the vehicle against the possibility of a short circuit in the power cable. Be sure to use a fuse and fuse holder adequate for the application. Do not place a fuse in the holder at this time.

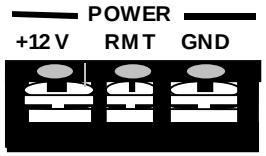
The maximum fuse rating for each amplifier in the **T3** series is:

T3 4600 -2 X 30 A. T3 4320 - 30 A T3 2700 -2 X 30 A.
T3 2600 -2 X 25 A. T3 2300 - 30 A. T3 2160 -15 A.
T3 5600 -3 X 25 A. T3 1000 -2 X 20 A.

Caution!

⇒ **Bridging fuses or replacing a fuse with one of a higher rating may cause damage to the amplifier and the vehicle's electrical system.**

Step 3- Run a remote turn on cable from the switched +12V source you will be using to turn on the system components. This may be a toggle switch, a relay, or your source unit's remote trigger wire, or power antenna trigger wire. Run this lead to the amplifier mounting location. Use #18 AWG wire or larger.



Step 4- Locate a secure grounding connection as close to the amplifier as possible. Make sure the location is clean and provides a direct electrical connection to the frame of the vehicle. Connect one end of a short piece of the same size cable as the power cable to the grounding point. Run the other end of the cable to the amplifier mounting location.

Step 5- connect the ground cable to the screw terminal labeled **"POWER, GND"**.

Step 6- Connect the power cable to the amplifier at the screw terminal labeled **"POWER, +12V"**.

Step 7- Connect the remote turn on cable to the screw terminal labeled **"POWER, RMT"**.

1.3 Installation- Speaker Connections

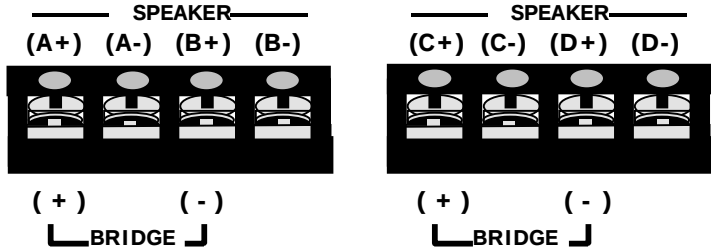
Step 1- Run #16 AWG or larger connecting wire from your speakers to the amplifier mounting location. Keep speaker wires away from power cables and amplifier input cables. Use grommets anywhere the wires have to pass through holes in the metal frame or sheet metal. Connect to the speakers according to the type of terminals on each speaker.

Step 2- Strip 3/8" of insulation from the end of each wire and twist the wire strands together tightly. Make sure there are no stray strands that might touch other wires or terminals and cause a short circuit.

Step 3- Crimp spade lugs over the wire ends or tin the ends with solder to provide a secure termination.

Step 4- Connect the wire ends to your amplifier as follows:

SPEAKER TERMINALS



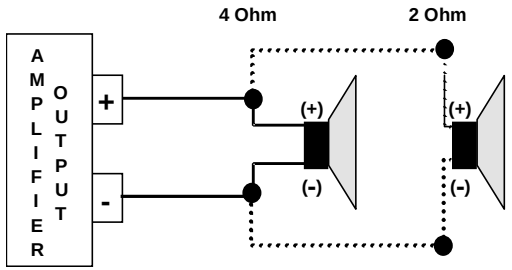
Follow the **(A/B/C/D+) (A/B/C/D-)**, channel and polarity markings, making sure they match the channel and polarity of the connections at the speakers.

MULTIPLE SPEAKER CONNECTION

PARALLEL- Each additional speaker decreases the load impedance for the amplifier. The amplifier delivers more current and works harder.

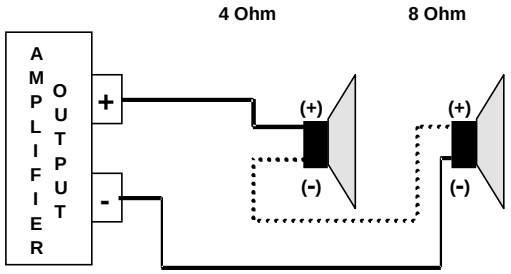
Caution : impedances lower than 2 ohms may cause damage to your amplifier and is not recommended.

PARALLEL CONNECTION USING 4 OHM SPEAKERS



SERIES- Each additional speaker increases the load impedance for the amplifier. Impedances higher than 8 ohms are rarely used for car audio.

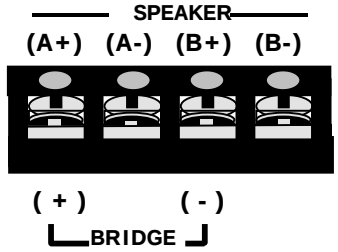
SERIES CONNECTION USING 4 OHM SPEAKERS



1.4 Installation- Self-Bridging, 2+1 Mode

BRIDGED MONO-

Connect a 4Ω ohm speaker to the terminals marked **"(+), BRIDGE, (-)"**, making sure they match the polarity of the connections at the speakers.



Caution!

⇒ Speaker or multiple speaker loads totaling less than 4 ohms are not recommended for **"Bridged"** or **"2+1 Mode",** and may damage the amplifier.

T3 4600, T3 4320-

Set the **"MODE"** switch to **"2CH, 3CH",** or **"4CH"** and connect the speakers accordingly. For **"3CH"** operation, bridge the **"C"** and **"D"** channels.

2+1 MODE- (TRI-MODE)

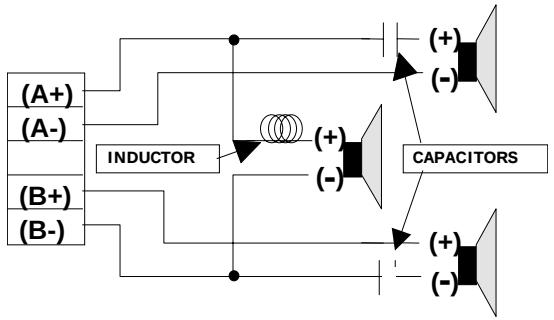
Simultaneous stereo and mono operation, **"2+1 Mode"**, requires a passive crossover to send low frequencies to the mono speaker and higher frequencies to the stereo speakers. The following table lists the component values for a 6 dB/Octave crossover at common frequencies using 4 ohm speakers for stereo and an 8Ω speaker for mono(subwoofer):

FREQUENCY	INDUCTOR	CAPACITOR
80 Hz	16 mH	470 uF
100 Hz	7.5 mH	330 uF
120 Hz	7.5mH	330 uF
150 Hz	7.5 mH	220 uF

2+1 MODE WIRING DIAGRAM-

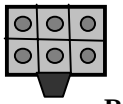
Use 100 Volt, non-polar capacitors, and connect them in series with the stereo speakers as shown in the diagram. Connect the inductor in series with

the mono speaker as shown in the diagram. Be sure the inductor is rated to handle the power of your amplifier.

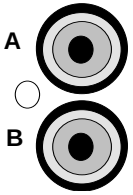


1.5 Installation- Input Connections

HIGH LEVEL



INPUT



Low Level, High Impedance, Gold Plated RCA Input Jacks-

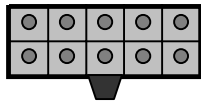
For connecting to a source providing preamp level outputs. Use heavy duty RCA patch cords designed for mobile applications . Run the patch cables carefully, maintaining as much distance as possible from power, speaker, and accessory wiring. Make sure the RCA plugs fit tightly for a secure connection.

Speaker Level Input Connector-

Use the supplied wiring harness to connect the speaker outputs from the source unit(AM/FM/CD/DVD or Cassette) to the **"HIGH LEVEL**" input.

Wiring Harness Color Code- 2 Channel	
White Wire	**A** Channel Positive(+)
White/Black Wire	**A** Channel Negative(-)
Gray Wire	**B** Channel Positive(+)
Gray/Black Wire	**B** Channel Negative(-)
Black Wire	Ground
No Other Connection	

HIGH LEVEL



Wiring Harness Color Code- 4 Channel	
White Wire	Channel A Positive(+)
White/Black Wire	Channel A Negative(-)
Gray Wire	Channel B Positive(+)
Gray/Black Wire	Channel B Negative(-)
Green Wire	Channel C Positive(+)
Green/Black Wire	Channel C Negative(-)
Violet Wire	Channel D Positive(+)
Violet/Black Wire	Channel D Negative(-)
Black Wire	Ground
No Other Connection	

1.6 Installation- Check all Connections

Recheck all connections before reconnecting the negative(-) battery cable. Insert the correct value fuse in the fuse holder at the battery before attempting to turn on the system.

2. Operation

2.1 Operation- Input Level adjustments

Adjust the input level for the marked channel(s) with a small screwdriver through the opening marked **"LEVEL"**. Turn **CW**(clockwise) to increase the level, **CCW**(counterclockwise) to decrease. Amplifiers will run cooler and produce less system noise at lower level settings.

Consult an experienced installation specialist for assistance in balancing the levels in multi-amplifier systems, or systems with signal processing accessories.

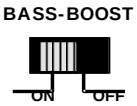
2.2 Operation- Built-in Crossovers

CROSSOVER FILTER SELECTION

The **T3** series amplifiers have built-in low-pass and high-pass crossover filters for bi-amplifying your system. Select **" LPF, FULL or HPF"** by moving the position of the slide switch for each pair of channels. **"LPF"** selects the low pass filter. **"HPF"** selects the high pass filter. Selecting **"FULL"** defeats the crossover functions

FREQUENCY ADJUSTMENT

After selecting the crossover function**,** adjust the low pass or high pass frequency control with a small screwdriver through the opening marked **"LP/FREQ." or "HP/FREQ."**. Turn **CW** to set to a higher frequency, **CCW** to set to a lower frequency.



Turning the **"BASS BOOST"** switch to **"ON"** increases the level of frequencies around 45Hz by 12dB.

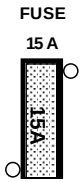
2.3 Operation- Protection Circuits and L.E.D. Indicators

"POWER." L.E.D. INDICATOR- Provides a visual indication that the amplifier is turned on.

"PROTECT" L.E.D. INDICATOR- Provides a visual indication that a problem exists and the protection circuitry has protected the amplifier by shutting it down. Turn the system off and correct the problem before turning the system on.

THERMAL PROTECTION- The amplifier will shut down if its temperature exceeds a safe operating level. The amplifier will remain off until it cools to a safe operating temperature. Exercise care, the exterior of the amplifier may get uncomfortably hot to the touch before shutting down.

OVERLOAD AND SHORT CIRCUIT PROTECTION- The amplifier will shut down if a short circuit condition exists, or if electrical current demands exceed safe levels.

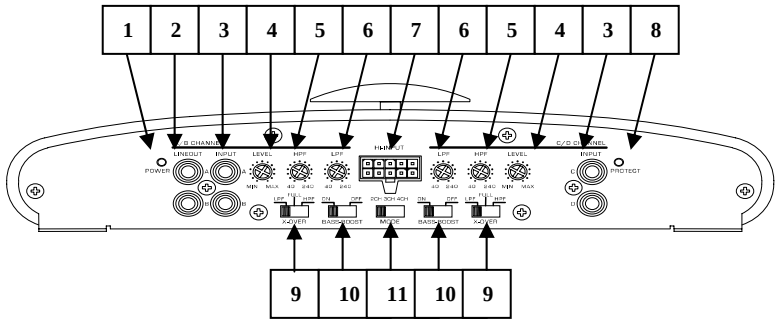


FUSE PROTECTION- A blown fuse indicates a problem that should be corrected before the fuse is replaced. Always replace with the same value fuse. Never substitute a larger value fuse.

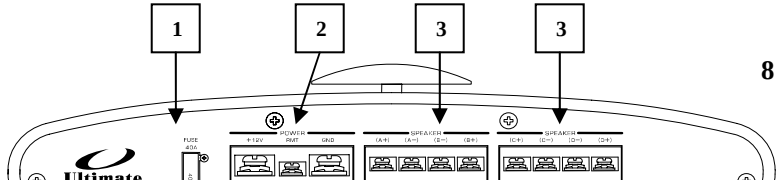
2.4 Operation- Location of Terminals, Controls and LED indicators

T3 4600, T3 4320

1. Power L.E.D.
2. Line level output
3. Line input jacks
4. Input level adjust
5. High pass freq.
6. Low pass Freq. adjust
7. Speaker level input
8. Protection L.E.D
9. Crossover select
10. Bass boost
11. Mode Switch



1. Fuse
2. Power terminals
3. Speaker terminals



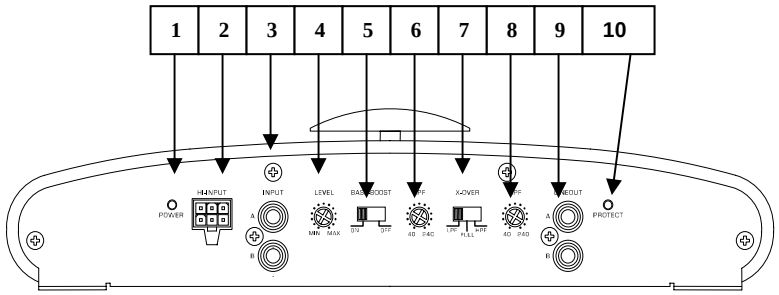
T3 2700 T3 2600 T3 2300, T3 2160

1. Power L.E.D. 2. Speaker level input 3. Line level input

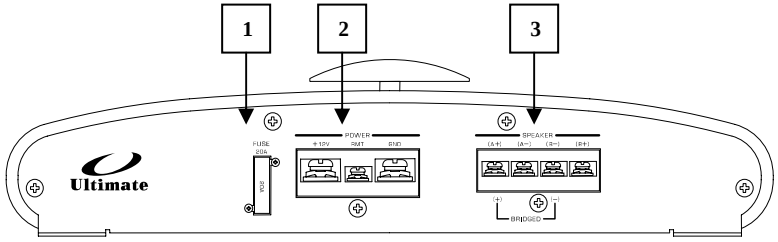
4. input level adjust 5. Bass boost 6. Low pass freq. adjust

7. Crossover select 8. High pass freq. adjust 9. Line level output

10. Protection L.E.D.



1. Fuse 2.Power terminals 3 . Speaker terminals

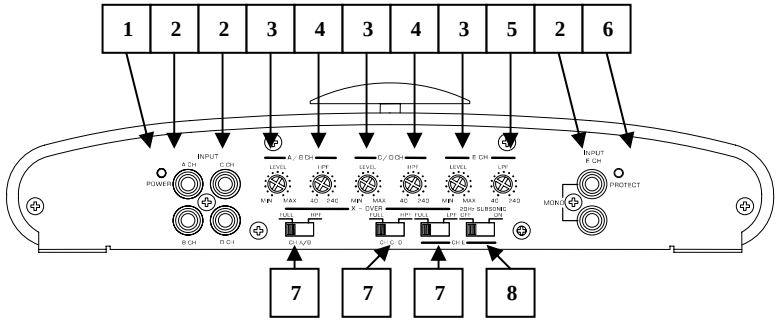

1
2
3
Ultimate
FUSE
10A
POWER
+12V
RMT
GND
SPEAKER
(A+)
(A-)
(B-)
(B+)
(+)
(-)
BRIDGED

T3 5600

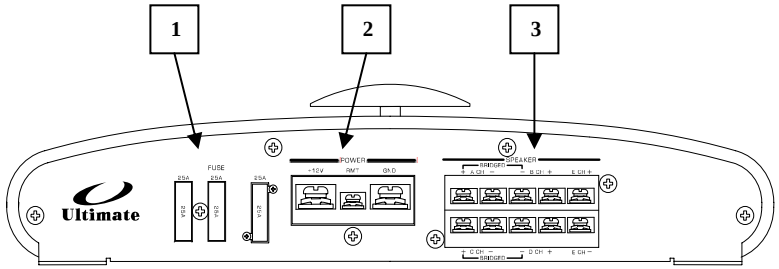
1. Power L.E.D 2. Line level input 3. Input level adjust

4. High pass freq. adjust 5. Low pass freq. adjust

6. Protection L.E.D. 7. Crossover select 8. Sub- sonic freq switch



1. Fuses 2. Power terminals 3. Speaker terminals

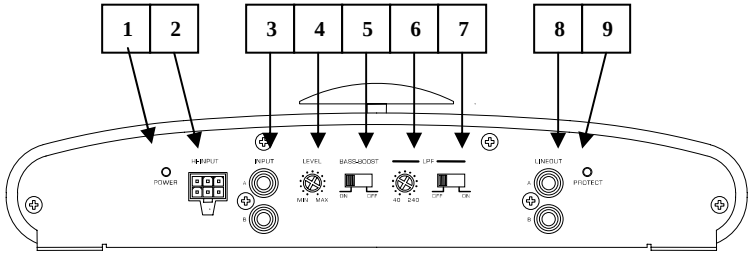


T3 1000

1. Power L.E.D 2. Speaker level input 3. Line input jacks

4. Input level adjust 5. Bass Boost 6. Low pass freq. adjust

7. Crossover select 8. Line level output 9. Protection L.E.D.



1. Fuses 2. Power terminals

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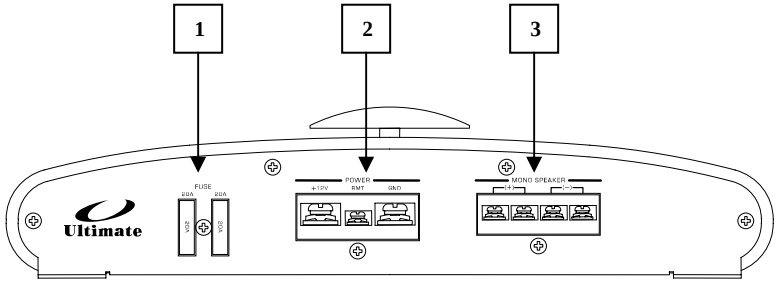
3. Speaker terminals (Duplicated positive and Duplicated negative)



Features and Specifications:

	T3 2700 2 CHANNELS POWER AMPLIFIER	T3 2600 2 CHANNELS POWER AMPLIFIER	T3 2300 2 CHANNELS POWER AMPLIFIER	T3 2160 2 CHANNELS POWER AMPLIFIER
2 ohm Stable	Yes			
Bridgeable	Yes, 4 ohm			
Tri-mode	No			
Terminals	Gold plated RCA jacks, speaker and power terminals			
Soft Start	Yes			
Line level input	RCA line level inputs,			
Crossover	Low pass, High pass, 12dB/Octave, 40Hz-240Hz			
Protection	Thermal, Short- circuit, DC offset, Fuse			
Power Supply	Pulse Width Modulated, MOSFET power supply + 12V / Negative Ground			
Line input	Yes			
Bass Boost	+12dB @45Hz			
High level Input	Yes			
Line output	Yes			
RMS/Max Power, 4Ω, THD <0.03%	2X200/400 Watts	2X180/360 Watts	2X 85/170 Watts	2X50/100 Watts
RMS/Max Power, 2Ω, THD <0.2%	2X300/600 Watts	2X215/425 Watts	2X125/250 Watts	2X80/165 Watts
Bridged RMS/Max Power, 4Ω	600/1200 Watts	425/850 Watts	250/500 Watts	165/330 Watts
Signal to Noise Ratio	-100 dBA	-100 dBA	-100 dBA	-100 dBA
Frequency Response	10Hz-30kHz	10Hz-30kHz	10Hz-30kHz	10Hz-30kHz
Separation	-60dB	-60dB	-60dB	-60dB
Input Sensitivity	100mV-1.5V	100mV-1.5V	100mV-1.5V	100mV-1.5V
Fuse	2 X 30A	2 X 25A	30A	15A
Dimensions /Inches	19.7x11.9 x2.18	11.8x11.9 x2.18	9.8x11.9 x2.18	7.1x11.9 x2.18
Dimensions /mm	500x301.6 x55.3	300x301.6 x55.3	250x301.6 x55.3	180x301.6 x55.3

	T3 4600 4 CHANNELS POWER AMPLIFIER	T3 4320 4 CHANNELS POWER AMPLIFIER	T3 1000 1 CHANNEL POWER AMPLIFIER	T3 5600 5 CHANNELS POWER AMPLIFIER
2 ohm Stable	Yes			
Bridgeable	Yes		No	Yes
Tri-mode	Yes		No	
Terminals	Gold plated RCA jacks, speaker and power terminals			
Soft Start	Yes			
Line level input	RCA line level inputs,			
Crossover	LPP, HPF, 12dB/Oct.40Hz-240Hz		Low pass	High/Low pass
Protection	Thermal, Short- circuit, DC offset, Fuse			
Power Supply	Pulse Width Modulated, MOSFET power supply + 12V / Negative Ground			
Line input	Yes			
Bass Boost	+12dB @45Hz			No
High level Input	Yes			No
Line output	Yes			No
RMS/Max Power, 4Ω, THD <0.03%	4X85/170 Watts	4X50/100 Watts	1x180/360 Watts	4X50/100 1X100/200 Watts
RMS/Max Power, 2Ω, THD <0.2%	4X125/250 Watts	4X70/140 Watts	1X275/540 Watts	4X75/150 1X150/300 Watts
Bridged RMS/Max Power, 4Ω	2x250/500 Watts	2x140/280 Watts	Mono Channels	2X150/300 1X150/300 Watts
Signal to Noise Ratio	-100 dBA	-100 dBA	-100 dBA	-100 dBA
Frequency Response	10Hz-30kHz	10Hz-30kHz	10Hz-30kHz	10Hz-30kHz
Separation	-60dB	-60dB	-60dB	-60dB
Input Sensitivity	100mV-1.5V	100mV-1.5V	100mV-1.5V	100mV-1.5V
Fuse	2 X 30A	30A	2 X 20A	3 X 25A
Dimensions /Inches	13.8x11.9 x2.18	8.7x11.9 x 2.18	8.7x11.9 x2.18	15.7x11.9 x2.18
Dimensions /mm	350x301.6 x55.3	220x301.6 x55.3	220x301.6 x55.3	400x301.6 x55.3

These specifications are subject to change in the continuing effort to improve the product.

Troubleshooting:

Condition	Possible Cause	Possible Solution
No sound	Low or no remote turn on voltage, or no remote turn on connection	Check the remote turn on connection and the voltage at the amplifier and source unit
	Blown fuse(s)	Check all system fuses
	Wiring problems	Recheck all connections Check for short circuits
	Blown speakers	Check speakers on another amplifier
Amplifier shut down	Protection circuit protecting against overheating or overload	Check for adequate ventilation Check load impedance(2 ohm stereo, 4 ohm bridged) Check speaker wiring for short to the vehicle chassis Reduce input level
Distortion	Input level not properly adjusted Speaker damage	Readjust amplifier input level Check speakers on another amplifier
Poor bass response	Speakers out of phase	Recheck speaker wiring Reverse polarity of one channel
Ticking noise	Radiated noise from spark plug wires	Reroute amplifier input wiring Install a noise filter
Whining noise	Alternator noise caused by poor grounding of amplifier, source, other component, battery, or alternator	Check all ground connections Install a noise filter on the source unit's power cable Install a coupling transformer in the signal path to improve ground isolation for the signal path