

TEAC

CAR POWER AMPLIFIER

MODEL: TE-A480

FOR 12V APPLICATION

INSTALLATION CONNECTION MANUAL

Specifications

Circuit system	OTL(output transformer less) circuit
Inputs	RCA pin jacks
Input level adjustment range	0.3V~6.0V(RCA pin jacks)
Outputs	Speaker terminals
Speaker impedance	2~8Ω(stereo),4~8Ω(when used as a bridging amplifier)
Rated output (RMS)	4×80W (20Hz~20kHz, 10% THD, 4Ω) 4×100W (20Hz~20kHz, 10% THD, 2Ω) 2×200W (20Hz~20kHz, 10% THD@Bridge, 4Ω)
Current	Power input pin : 60A
	Remote input : 1.5mA
Frequency response	20Hz~22kHz (-3dB ~ +3dB)
Harmonic distortion	less 0.7% (at 1kHz , 4Ω , 10W)
Signal-to-noise ratio	>90dB (IHF, A-weighting)
Bass boost range	0dB~+12dB @≈50Hz
Low-pass filter	30Hz~250Hz , -12dB/oct continuously variable
Hi-pass filter	30Hz~ 5kHz , -12dB/oct continuously variable
Power requirements	12V DC car battery(negative ground)
Power supply voltage	10.5~16V
Box dimensions / weight	TE-A480: Approx. 365× 310 × 87mm (w/d/h); Approx. 3.2kg

*Design and specifications are subject to change without notice.

|| Troubleshooting guide ||

The following checklist will assist in the correction of most problems, which you may encounter with your unit. Before going through the checklist below, refer to the connection and operating procedures.

Problem	Cause	Solution
The POWER / PROTECTOR indicator does not light up.	Low or no remote turn-on voltage	Check remote turn-on voltage at amplifier and repair as needed.
		The system employs too many amplifiers, so use a relay.
	Power wires not connected	Check power wire and ground connections and repair or replace as needed.
		Check the battery voltage (10.5~16V)
	The ground lead is not securely connected.	Fasten the ground lead securely to a metal point of the car.
The fuse is blown.	Check power wire and ground connections and repair or replace as needed.	
Audio cycles on and off No output	Thermal protection engages when amplifier heatsink temperature exceeds 90°C (190 F)	Make sure there is proper ventilation for amplifier and improve ventilation as needed.
	Loose power connections	Check power wire and ground connections and repair or replace as needed.
	Loose or poor audio input	Check RCA connections and repair or replace as needed.
	Speaker wires not connected	Check speaker wires and repair or replace as needed.
	Speakers are blown	Check system with known working speakers and repair or replace as needed.
Distorted output Poor bass response	Amplifier level sensitivity set too high exceeding maximum capability of amplifier	Readjust gain. Refer to adjusting the sound of the system section of this manual for detailed instructions.
	Impedance load to amplifier too low	Check speaker impedance load, rewire speakers to achieve higher impedance.
	Speaker not connected to amplifier properly	Check speaker wiring and repair or replace as needed. Refer to the Speaker Connections section.
	Internal crossover not set properly for speakers	Readjust crossovers. Refer to the internal Crossover section of this manual for detailed instructions
	Speakers wired with wrong polarity causing cancellation at low frequency.	Check speaker polarity and repair as needed.
Battery fuse blowing or Amplifier fuse blowing	Speaker not connected to amplifier properly	Check speaker wiring and repair or replace as needed. Refer to the Speaker Connections section.
	Loose power connections	Check power wire and ground connections and repair or replace as needed.
	Speaker is blown with shorted outputs	Check system with known working speakers and repair or replace as needed.
	Fuse used is smaller than recommended	Replace with proper fuse size.

|| Product Resume ||

Thank you for your purchasing our power amplifier with perfect design, good quality and reasonable price. To ensure perfect performance and component reliability of the products, please read this manual carefully.

TE-A480 Bridgeable 4 channel amplifier, 4/3/2channel operation.

|| Features ||

- Dual channel input volume adjustment.
- Dual channel 12dB bass gain.
- Dual channel control-adjusts the low-pass frequency point filter circuit.
- Dual channel control-adjusts the high-pass frequency point filter circuit.
- Dual channel signal frequency range selection crossover circuit.
- Built in protection circuit

- The unit is overheated
- A DC current is generated
- The speaker terminals are short circuited

POWER / PROTECTOR When the POWER/PROTECTOR indicator changes from green to red, the unit will be shut down forcefully. In this case, turn off the connected equipments, take out the cassette tape or disc, and determine the cause of the malfunction. If the unit is overheated, wait until the unit cools down before use.

■ Pulse power supply

A built-in power regulator converts the DC 12 V car battery to high-speed pulses by a semiconductor switch, so that the pulses are boosted up by a built-in pulse transformer gradually, and separated into positive power and negative power supplies before being converted to DC again for the purpose of regulating the fluctuating voltage from the car battery. The light-loaded power supply system provides a highly efficient power supply with a low impedance output.

- The unit can be operated dual mode connection for a multi-speaker system.

Notice

For possibly best performance of the unit, please have the unit installed by authorized dealer. If you want to install the unit by yourself, please read this manual carefully. If you need assistance while installing the unit, consult to the local authorized technician.

This manual is designed to answer your questions about this unit. If you have questions exclusive of this manual, please refer your questions to the local authorized dealer.

Precautions

- This unit is designed to operate on negative ground 12V DC operation only.
- Use speakers with an impedance of 2 to 8Ω (4 to 8Ω when used as a bridging amplifier).
- Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit, otherwise, may damage the speakers.
- Avoid installing the unit in areas subject to
 - High temperatures such as from direct sunlight or hot air from the heater
 - Rain or moisture
 - Dust or dirt
- If your car is parked in direct sunlight and there is a considerable rise in temperature inside the car, allow the unit to cool down before use.
- When installing the unit horizontally, be sure to keep the fins clear.
- If this unit is placed too close to the car radio or antenna, interference may occur. In this case, relocate the amplifier away from the car radio or antenna.
- If no power is being supplied to the master unit, check the connections.
- This power amplifier employs a protection circuit to protect the transistors and speakers if the amplifier malfunctions. Do not attempt to test the protection circuits by covering the heat sink or connecting improper loads.
- Do not use the unit on a weak battery as its optimum performance depends on a good power supply.
- For safety reasons, keep your car audio volume moderate so that you can still hear sounds outside your car.

Supplied accessories

- Amplifier (1)
- Installation connection manual (1)
- Mounting screws (4)
- Fuse(2)

*All the connection leads are not supplied (additional purchase).

Adjusting the sound of the system

Turn the signal source volume control down all the way. Set any tone controls to their flat or defeated positions. This includes the loudness control. Turn the level controls of the amplifier to their minimum positions. Choose music with high dynamic content that you like, that you are familiar with and will be most often used in the system. Turn the unit up to its highest undistorted output level. If you lack test equipment, this point occurs between 3/4 to full volume depending on the quality of your source unit. Listen for any audible distortion. If any distortion is audible, reduce the volume of the source unit until you have an undistorted output. Leave the volume control at this position during your system tuning.

The X-BASS control allows you to boost your bass by up to 12dB! X-BASS boost the low-end bass centered at 50Hz, by anywhere from 0dB to 12dB. This will dramatically alter your bass response. Set according to personal listening tastes and woofer capabilities. Listen carefully for distortion when setting the boost. (Be careful when determining the amount of X-BASS. Adding too much to a subwoofer that is not capable could result in damage to your subwoofer. X-BASS should NEVER be used on mid-range speakers)

Continuous exposure to sound pressure levels over 100dB may cause permanent hearing loss. High powered automotive sound systems can generate sound pressure levels in excess of 130dB. When playing your system at high levels, please use heat protection and prevent long term exposure.

Installation tips

Choosing mounting locations

The location of your unit will depend on several important issues. Due to the low profile size of the unit, there are many possible installation locations that will yield satisfactory amplifier on a stable, flat mounting surface. As with any amplifier, there are several possible mounting locations and configurations that can be optimal. We will cover the most obvious of situations.

Passenger compartment mounting

If you are going to mount the amplifier in the passenger compartment, make sure you have adequate room for ventilation. The unit have been designed to make possible under a seat mounting. When mounting your amplifier under a seat or similar area, keep a minimum of 1" of clearance around the amplifier for adequate cooling.

Trunk compartment mounting

Mounting the unit in the trunk provides excellent performance as long as you do not mount the amplifier upside down or restrict the airflow around the heats ink of the amplifier. For optimal results, mount the amplifier with the cooling fins in the vertical position. This type of mounting will yield the best cooling due to the convection effect of the amplifier chassis.

Engine compartment mounting

Do not mount the unit in the engine compartment. The amplifier was not designed to endure the harsh environment of the exterior elements.

General precautions and installation tips

Be careful not to cut or drill into gas tanks, fuel lines, brake lines, hydraulic lines, vacuum lines, or electrical wiring when working on your vehicle.

Disconnect the vehicles ground wire at the battery before making or breaking connections to the audio systems power supply terminals.

Do not use the unit unmounted. Failing to securely mount the amplifier can result in damage or injury, particularly in the event of an accident. An unmounted amplifier acts like a heat-seeking missile in the event of a crash. Never mount the unit where it might get wet. Mount the unit so the wire connections will not be pulled. Route the wires where they will not be scraped, pinched or damaged in any fashion.

The +12V power supply wire must be fused as close as possible to the battery terminal, ideally within 18". Use the recommended fuse size or circuit breaker listed in the POWER CONNECTIONS section of this manual.

Make sure all the equipment in the system is turned off when making or breaking connections to the HCCA input RCAs or speaker terminals. Turn on the system and slowly turn up the volume control only after double-checking all wire connections.

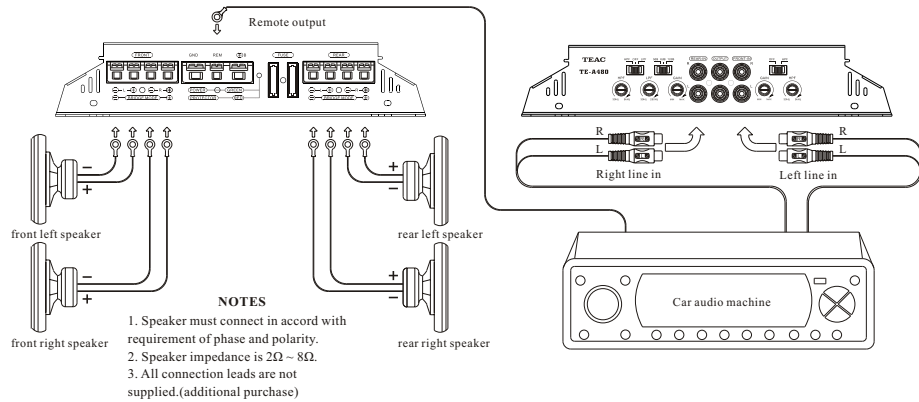
Power for system with the single unit can be supplied by most any automotive electrical system. Systems with multiple amplifiers may require a higher capacity battery, alternator or the use of a storage capacitor. We strongly recommend the use of both a transient storage capacitor and an MBR70 with an extra battery in larger stereo systems.

The unit generate a certain amount of heat as part of their normal operation. Be sure the area around the cooling fins is unobstructed to allow adequate air circulation. Remember, beach blankets, last week's laundry, school books and homework papers located on top of the amplifier does not improve air flow.

27. REAR OUTPUT R (-) speaker connections (-).

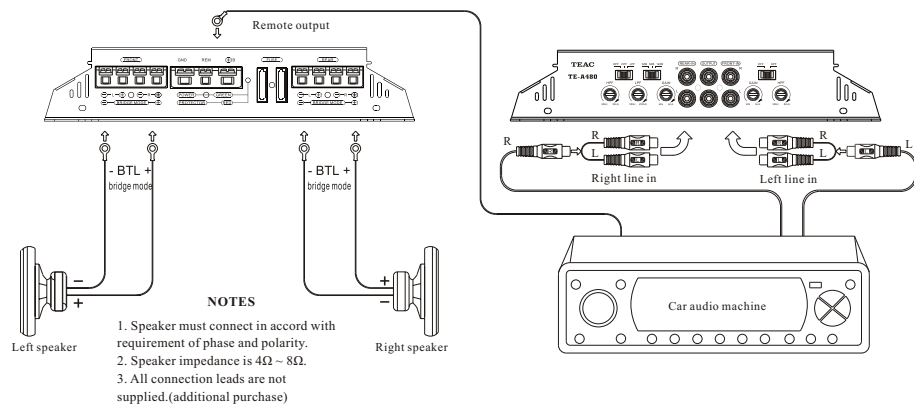
28. REAR OUTPUT R (+) speaker connections (+), when used as a bridging amplifier, bridge mode(+).

4-channel series speaker connections (standard)

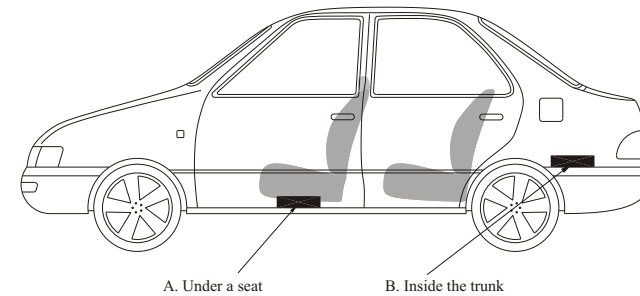


Note: if you want to use a standard 4CH speaker, connect the speaker as illustrated above and choose the CROSSOVER to OFF. The output signals to speaker will be a standard stereo of the front and rear output signals.

4-channel series speaker connections (bridge mode connection)



Note: if you want to use a normal as 2CH speaker, connect the speaker as illustrated above and choose the CROSSOVER to OFF. The output signals to speaker will be a standard stereo of the right and left output signals.



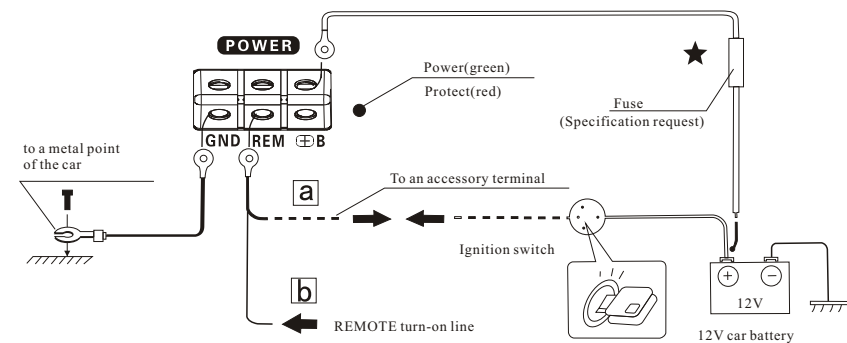
Before installation

Mount the unit either inside the trunk or under a seat. (As illustrated above)

Choose the mounting location carefully so the unit will not interfere with the normal movements of the driver and it will not be exposed to direct sunlight or hot air from the heater.

Do not install the unit under the floor carpet, where the heat dissipation from the unit will be considerably impaired. First, place the unit where you plan to install it, and mark the positions of the four screw holes on the mounting board (not supplied). 4-channel is different from 2-channel/mono block amplifiers (notes on the dimensions for installation). Then drill a 3mm pilot hole at each mark and mount the unit onto the board with the supplied mounting screws. The mounting screws are all 15 mm long; so make sure that the mounting board is thicker than 15mm.

Power Connections



*Place the fuse in the power supply lead as close as possible to the car battery.

▲ Notes on the power supply

Dangerous amounts of current exist in an automobile's electrical system, solid power and ground connections will improve both the performance and reliability of your amplifier. Read the following section carefully to ensure proper performance and safety.

Connect the +12V power supply lead only after all the other leads have been connected.

During full-power operation, a current more than 20 A will run through the system. Therefore, make sure that the leads to the +12V and GND terminals of this unit are larger than 14-gauge (AWG-14) or have a sectional area more than 2mm².

It is very important to use proper fuse for your positive power connection. This fuse (or circuit breaker) should be placed in the positive power connection no more than 18 inches away from your battery, see diagram on following page.

Your amplifier ground should be located as close as possible to your amplifier. Use the same gauge wire as your power connection. Using a sheet metal screw or a bolt, attach the ground to the bare metal. Be sure to connect the ground lead of the unit securely to a metal point of the car. A loose connection may cause a malfunction of the amplifier.

We recommend that you coat both sides of the connection with silicone or some similar material to prevent corrosion and performance decreases.

As a loose connection may cause malfunction of the unit, be sure to connect the ground lead of the unit securely to the car metal chassis.

When using a car audio without a remote output on the amplifier, connect the remote input terminal (REMOTE) to the accessory power supply.

When you tighten the screw, be careful not to apply too much torque as doing so may damage the screw. (The torque value should be less than 1 N·m).

▲ Fuse replacement

If the fuse is blown, check the power connection and replace the fuse. If the fuse is blown again after replacement, there may be an internal malfunction. In this case, consult your nearest dealer.

When replacing the fuse, be sure to use one matching the amperage stated above the fuse holder. Never use a fuse with an amperage rating exceeding the one supplied with the unit, or may damage the unit.

Use specifications:

TE-A480
30A (2)

▲ Caution

Before starting to run your power connections. Make sure that you disconnect the negative(-) terminal of your battery. This will prevent a short of your battery to ground. It will also help to keep you from getting shocked during the install process.

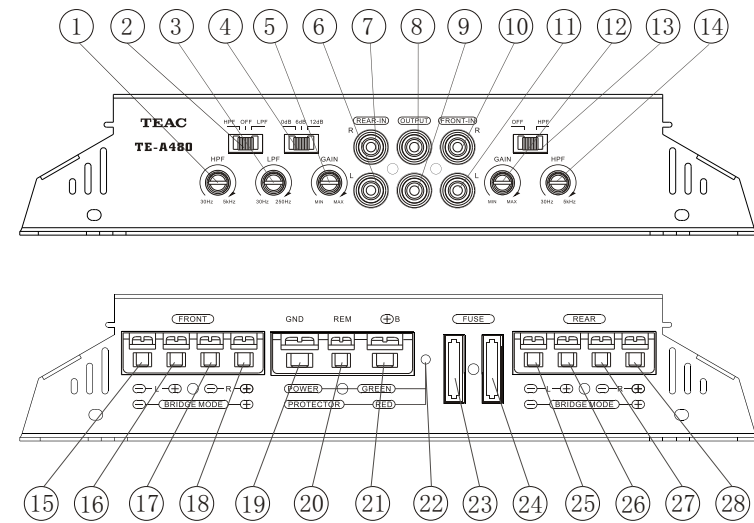
Be sure to use speakers with an adequate power rating. If you use small capacity speakers, they maybe damaged. Do not connect the (-) terminal of the speaker system to the car chassis, and do not connect the (-) terminal of the right speaker with that of the left speaker.

Install the input and output cords away from the power supply lead as running them close together can generate some interference noise.

This unit is a high powered amplifier. Therefore, it may not perform to its full potential if used with the speaker cords supplied with the car.

If your car is equipped with a computer system for navigation or some other purpose, do not remove the ground wire from the car battery. If you disconnect the wire, the computer memory may be erased. To avoid short circuits when making connections, disconnect the +12V power supply lead until all the other leads have been connected.

4-channel amplifier panels



- 1.**REAR HPF** adjusts the high pass frequency point from 30Hz to 5kHz.
- 2.**REAR CROSSOVER** There are 3 optional modes for the CROSSOVER: HPF, OFF, LPF.
- 3.**REAR LPF** adjusts the low pass frequency point from 30Hz to 250Hz.
- 4.**BASS BOOST** controls the volume of 50Hz boost 0dB / 6dB / 12dB.
- 5.**REAR GAIN** adjusts the input gain of the unit to accept different level of signal inputs.
- 6.**REAR-IN (L)** accepts the line level RCA inputs from the left channel of a head unit or other signal processor.
- 7.**REAR-IN (R)** accepts the line level RCA inputs from the right channel of a head unit or other signal processor.
- 8.**OUTPUT (R)** accepts the line level RCA outputs from the right channel of a head unit or other signal processor.
- 9.**OUTPUT (L)** accepts the line level RCA outputs from the left channel of a head unit or other signal processor.
- 10.**FRONT-IN (R)** accepts the line level RCA inputs from the right channel of a head unit or other signal Processor.
- 11.**FRONT-IN (L)** accepts the line level RCA inputs from the left channel of a head unit or other signal processor.
- 12.**FRONT GAIN** adjusts the input gain of the unit to accept different level of signal inputs.
- 13.**FRONT CROSSOVER** There are 2 optional modes for the CROSSOVER: HPF, OFF.
- 14.**FRONT HPF** adjusts the high pass frequency point from 30Hz to 5kHz.
- 15.**FRONT OUTPUT L (-)** speaker connections (-), when used as a bridging amplifier, bridge mode(-).
- 16.**FRONT OUTPUT L (+)** speaker connections (+).
- 17.**FRONT OUTPUT R (-)** speaker connections (-).
- 18.**FRONT OUTPUT R (+)** speaker connections (+), when used as a bridge amplifier, bridge mode(+).
- 19.**POWER (GND)** to a metal point of the car.
- 20.**REMOTE** connect the remote input terminal.
- 21.**+B (+12V)** connect the +12V power supply of car battery. (Notes on the power supply).
- 22.**POWER --- (GREEN)** illuminates green when the amplifier is on.
- 23.**PROTECTOR-(RED) LED** will turn to red when the amp goes into protection mode.
- 24.**FUSE - (1)** protects the amp from damage of dangerous amounts of current.
- 25.**REAR OUTPUT L (-)** speaker connections (-), when used as a bridging amplifier, bridge mode(-).
- 26.**REAR OUTPUT L (+)** speaker connections (+).