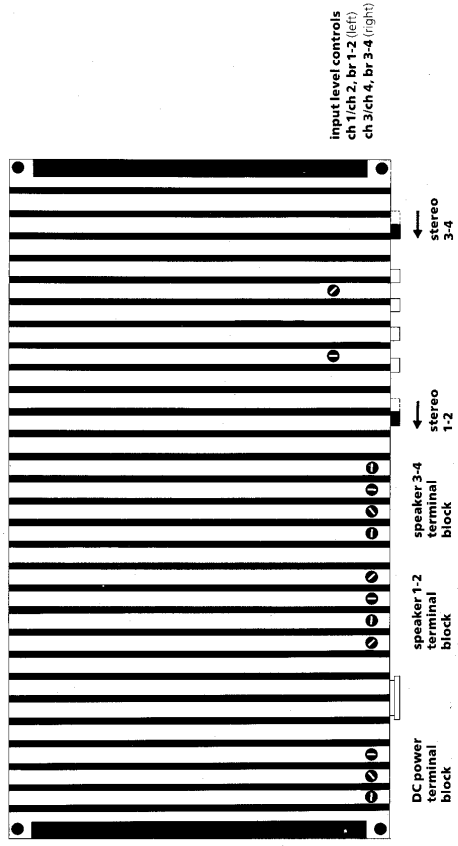
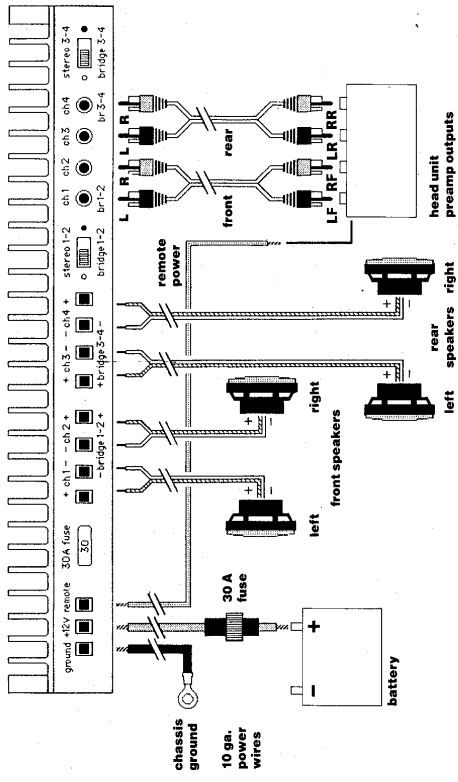




Four channel automotive  
power amplifier

# PQ10

**PQ10 connections**



3	<b>Introduction</b>
4	<b>Controls and features</b>
7	<b>Warnings</b>
8	<b>Associated equipment</b>
9	<b>Installation and connection</b>
24	<b>Operation</b>
26	<b>In case of difficulty</b>
28	<b>Maintenance</b>
28	<b>Other PQ10 applications</b>
29	<b>Specifications</b>

Thank you for purchasing the ADS PQ10, an automotive four channel power amplifier of advanced mechanical and electrical design. In its performance, styling and finish, the PQ10 ably extends the ADS tradition of excellence in automotive sound products.

The PQ10 combines a highly efficient switching-mode power converter and four channels of high fidelity power amplification in one small, rugged, aluminum chassis. The small dimensions of the PQ10 allow placement where convenient in the automobile, while the aluminum chassis with integral heatsink provides mechanical strength, cool circuit operation and long operating life.

The PQ10's four channels of amplification give it unusual flexibility. It can be used as a four channel amplifier to drive four separate speaker

systems (or two subwoofers and two satellite speakers) as a three channel amplifier to drive a single subwoofer and two satellite speakers, or as a high-power, bridged two channel amplifier to drive two speaker systems.

Connections to the PQ10 are quick and easy, with secure, high-current power supply and speaker terminals. Its amplifier design places the PQ10 among the best of home high fidelity amplifiers, and its power supply design gives the PQ10 its high-power bridging capability. Its high level of performance, rugged physical design and convenience of use make the PQ10 an outstanding value.

4 This manual provides information on the connection and use of your PQ10. Whether or not you plan to install the PQ10 yourself, please read it thoroughly. We suggest you save this manual and the PQ10 packing materials for future use.

Thank you,

**ADS, Analog & Digital Systems, Inc.**

**About names—Signal sources and processors for the car have many names—radio, head unit, compact disc player, radio/CD player, equalizer, and so on. We call all signal sources head units except for electronic crossovers.**

**DC power terminal block** provides connections for the 12V DC power wires. The wires are clamped securely in the terminals by screws accessible through holes in the top of the chassis, between the heatsink fins, directly above the terminals.

**ground** terminal connects the ground wire to the PQ10. The ground wire runs between the PQ10 and a connection point on the chassis of the automobile.

**+12V** terminal connects the power supply wire which runs between the PQ10 and the positive terminal of the battery.

**remote** terminal connects the control wire which provides remote power turn-on of the PQ10 by the head unit or a dash-mounted switch.

**30A fuse** protects both the PQ10 and the automobile's electrical system from fault conditions. The fuse is a standard automotive plug-in type ATO.

**ch 1, ch 2, bridge 1-2 speaker terminal block** connects the wires of two speaker systems to the PQ10. The wires are clamped securely in the terminals by screws accessible through holes in the top of the chassis between the heatsink fins, directly above the terminals.

**ch 3, ch 4, bridge 3-4 speaker terminal block** connects the wires of two more speaker systems to the PQ10 in the same way as the ch 1, ch 2 terminal block.

**stereo 1-2/bridge 1-2** switch sets the PQ10 for proper operation with either one system connected per channel when in stereo mode, or a single speaker system driven from both channels when in bridge mode.

**ch 1/br 1-2, ch 2** input jacks receive the output signals from two channels of the head unit or a signal processor such as an electronic crossover.

**ch 3, ch 4/br 3-4** input jacks receive the output signals from two channels of the head unit or a signal processor such as an electronic crossover.

**stereo 3-4/bridge 3-4** switch sets the PQ10 for proper operation with either one system connected per channel when in stereo mode, or a single speaker system driven from both channels when in bridge mode.

**Hardware kit** for the PQ10 contains:  
 4 ea. Spacers to raise the PQ10 above the mounting surface.  
 4 ea. Phillips-head sheet metal screws to attach the PQ10 to the vehicle.  
 1 ea. Screwdriver to tighten power and speaker wire terminal clamp screws and to adjust the input level controls.

**ch 1/ch 2/bridge 1-2 and ch 3/ch 4/bridge 3-4** **Input level controls** adjust the gains of pairs of channels for balancing and for matching the output level of the signal source. Each of the PQ10's level controls adjusts two channels simultaneously in **stereo** mode, and each adjusts the level of a bridged pair in **bridge** mode. The controls (one adjustment for both channels 1 and 2, and one for both channels 3 and 4) are screwdriver adjustable and are accessible through holes in the top of the chassis between the heatsink fins.

**Extruded aluminum chassis** with integral heatsink makes the PQ10 mechanically strong and physically small, while providing excellent cooling for the power supply and amplifier circuitry.

Study the layout of your automobile thoroughly before you drill or cut any holes. **Take extra care when working near gas tanks, fuel lines, brake or hydraulic lines and electrical wiring.**

**Do not use the PQ10 unmounted.** Attach the PQ10 securely to the vehicle to prevent damage to either the PQ10 or the vehicle and its contents, particularly in the event of an accident.

Keep the PQ10 away from locations subject to immersion in water or leakage.

Do not mount the PQ10 so that the wire connections are unprotected or are subject to pinching or damage from nearby objects (or people's feet).

Make sure the **stereo 1-2/bridge 1-2** and **stereo 3-4/bridge 3-4** switches are correctly set for your installation. Set them both to the left-hand, **stereo** positions for the typical four channel system having four speakers. When using the PQ10 in either three channel or two channel bridge mode, set one or both of the switches to the right-hand **bridge** position.

**The +12V power supply wire must be fused at the battery positive terminal connection. Disconnect the +12V wire at the battery end before making or breaking power connections at the PQ10 power terminals.**

8 Make sure your head unit and/or other equipment is turned off while connecting to the PQ10 input jacks and speaker terminals. Turn on the various components and slowly advance the volume control *only* after checking and double checking all connections.

If you need to replace the PQ10 power fuse, replace it only with a fuse identical to that supplied with the PQ10. Use of a higher rating fuse may result in damage to the PQ10 which is not covered by the warranty.

There are many automotive audio products available today. Naturally, your ADS PQ10 should be used with only the finest car stereo components. Although the PQ10 will work well with many different types of signal sources and speakers, the final result depends on your choice of equipment. Your ADS dealer can help you select components to complement the high performance of the PQ10. ADS automotive loudspeaker systems are particularly well suited for use with the PQ10, thanks to their broad frequency response, low distortion and wide dynamic range. Consult your ADS dealer for information.

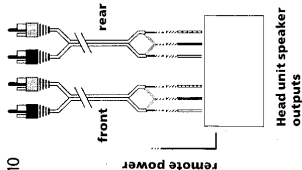
**Who should do the installation?** Installing an automotive audio system is no trivial matter. The quality of the installation will affect the system's performance and reliability, not to mention appearance. When you consider that you will be making possibly irreversible modifications to your automobile, you may well decide to seek professional installation services. The dealer from whom you purchased your PQ10 may provide such services or will be able to recommend a professional installer in your area. A professional installation can reduce the risk of damage both to your car and your audio components.

If you decide to install the PQ10 yourself, you will find the following a valuable guide. Your installation will probably be, or be like, one of the following three typical applications:

- A** Four channel, four speaker stereo (full range or subwoofer/satellite speakers).
- B** Three channel, single subwoofer/dual satellite stereo.
- C** Two channel, two speaker stereo.

#### Typical applications

- A Four channel, four speaker stereo** This system may have four full-range speaker systems, or have two subwoofers and two satellites. Except for the electronic crossover, used only in the subwoofer/satellite system, the two systems are identical.



Usually, the four channels of the PQ10 are driven from the four outputs of the head unit. These outputs typically are Left Front, Right Front, Left Rear and Right Rear, and the speakers connected to the PQ10 are located in the corresponding positions in the vehicle. When the head unit has only two stereo outputs, left and right, the outputs are split with "Y" adapters to provide two left outputs and two right outputs.

In the case of the subwoofer/satellite system, the head unit's outputs are fed through the electronic crossover to the PQ10, so that the front outputs drive the satellite speakers in the front and the rear outputs drive the subwoofers in the rear. This wiring lets the head unit's front/rear fader control the relative balance of the subwoofers and satellites. When the head unit

has only two outputs, the electronic crossover takes two inputs and provides four outputs as a normal part of its function.

In either application, set the PQ10 for stereo by putting the two **stereo/bridge** switches in the left-hand, **stereo** positions.

**B Three channel, single subwoofer/dual satellite stereo** In this system, two channels of the PQ10 are bridged to drive the subwoofer while the other two channels are used in stereo mode to drive the satellite speakers. The two subwoofer (low-pass) outputs of the electronic crossover are "Y"ed together to provide a sin-

gle output to the bridged channel of the PQ10. The head unit's connections to the electronic crossover are the same as in the four channel system.

**C Two channel, high-power stereo** In this system, both pairs of amplifiers in the PQ10 are bridged to provide two high-power channels of amplification to drive two speaker systems. The speakers can be full-range systems or subwoofers or satellites—but only two can be used.

There are many other permutations possible—for example, two PQ10's can be used to make a six channel system with dual subwoofers and four satellites. Whatever form your system takes, we suggest you begin by carefully planning your installation.

**Planning the installation** The small size of the PQ10 makes it possible to mount the unit in locations which are convenient to the head unit and to the speakers, such as beneath a seat, or in the trunk or rear cargo space. In choosing a mounting location, keep the following in mind:

Plan to route all power and speaker wiring inside of the automobile using existing wire channels, panels, sills, mats, etc. to conceal and protect the wiring.

Do not run wiring outside or beneath the vehicle where it will be subject to wear or snagging by road hazards or the moving parts of the vehicle.

Plan to mount the PQ10 so that the wire connections are protected and free from strain, and where the PQ10 will not be tightly covered or have cooling air blocked for any reason. Be sure that the cooling fins of the PQ10 are in free air and are not against a panel or other surface.

Mount the PQ10 where it will not be subject to water immersion, seepage or splashing. Do not mount the PQ10 outside of the vehicle, such as in the engine compartment, where moisture and dirt can damage the unit.

**Required tools and hardware** You will need to assemble a set of tools in order to perform the installation. You will need screwdrivers, pliers, wire cutters, wire strippers, electrical tape and an electric drill with a set of bits.

Hardware for typical mounting of the PQ10 has been included. You will need to supply hardware for unusual mounting methods. You will also need to supply the wires for power and speaker connections.

**Wiring tips** The +12v and ground wires should be heavy gauge stranded copper wire with heavy insulation; 10 AWG wire is required. Smaller gauge wire (12, 14, or 16) will cause increased power losses and can lead to dangerous overheating conditions. The remote wire

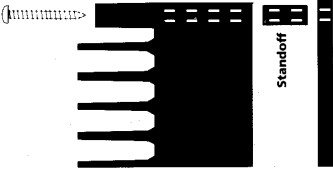
can be relatively light wire; 18 AWG is recommended. Keep the length of all wires as short as possible.

Make all speaker connections with 18 AWG or larger (16 gauge) wire. Most hardware stores carry 18 gauge or heavier lamp cord (also known as "zip" cord) and it is well suited for speaker connections. Make sure the wiring does not rub against sharp edges. If wiring is routed through holes drilled in metal, make sure there are no burrs which may cut into the wire. Use rubber grommets or hoses wherever necessary. Use electrical tape to reinforce any

section of wire which is subject to wear. Color-code or label the free ends of all wires before routing so that there will be no doubt as to their origins. This is especially important with speaker wires, which may look the same for both channels.

**Caution** Before you begin drilling or cutting any holes, study your intended mounting location carefully. Will the mounting screws clear all obstructions? Is there clearance for the screwdriver to tighten the mounting screws? Do you know what is beneath the surface into which you will be drilling? Will there be free air circulation for the PQ10? Will the terminals and jacks of the PQ10 be accessible after installation?





**PQ10 mounting** Measure the mounting hole center spacings and mark the locations for the mounting screws on the mounting surface with a punch, scribe or felt-tip pen. Drill 3mm/1/8" pilot holes in the mounting surface. When the mounting surface is carpeted, cut the carpeting away from the hole locations so that the drill bit does not pull threads and ruin the carpet. Attach the PQ10 securely to the mounting surface with the supplied Phillips-head sheet metal screws.

Use the supplied spacers between the PQ10 and the mounting surface where there is any chance of water or other liquids getting on the mounting surface.

**Polarity and phasing**

**Power wiring** You *must* install the power wires so that the wire connected to the PQ10's +12v terminal is also connected to the positive, + terminal of the battery, and the wire connected to the PQ10's ground terminal is connected to the automobile chassis (see **System grounding**, below). The PQ10 is protected against reversed power connections, but obviously the unit will not work if incorrectly wired.

**Speaker wiring** You must observe proper phasing (polarity) when connecting speakers to an amplifier. This means that you must connect all of the speakers with identical polarity. Speaker wires and "zip" cord usually have raised ribs or a color stripe running the length of the insulation of one of the conductors,

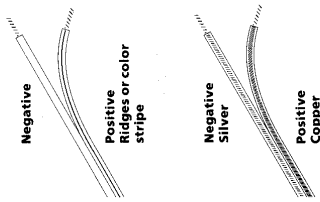
while some speaker wires have clear insulation with wires of different color, one silver and one copper. These markings, shown in the drawings, enable you to clearly distinguish one conductor from the other. Decide on a convention for identifying which of the conductors is the "positive" and which the "negative," and be consistent. For example, by calling the ribbed, colored or copper conductor the positive wire and connecting that conductor to the positive, + or red terminals of the amplifier and speakers, you can avoid phasing error.

**Input signal wiring** The PQ10 can receive input signals either from low level sources (the pre-amp outputs on the head unit or the outputs from an electronic crossover used in a subwoofer/satellite system) or from high level sources such as the speaker outputs of the head unit.

The PQ10's *ch 1/br 1-2*, *ch 2* and *ch 3*, *ch 4/br 3-4* input jacks are used for either type of source. The adjustment range of the PQ10's input level controls lets it work with either type of source. See **Operation**, following, for information on setting levels.

You can use standard audio signal cables with phono type connectors to carry signals from either type of source to the PQ10, with the far ends prepared to match the connectors at the source.

Remove insulation approximately 3/8"



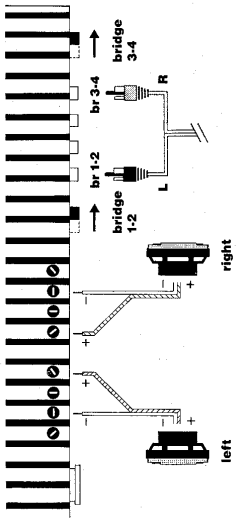
**Caution:** If your head unit has bridged speaker output amplifiers, the center conductor of each channel's audio cable must be connected to the matching positive or + wire (or connecting pin) of the head unit, with the corresponding negative or - wire (or connecting pin) of the head unit left unconnected. Connect the shield of each channel's audio cable to the head unit's ground wire or chassis.

When you are connecting to the high level speaker outputs of the head unit, be certain that the positive, + or 'speaker' wire (or connecting pin) of each channel of the head unit is connected to the center conductor of the matching PQ10 input cable, and that the negative, - or ground wire (or connecting pin) of each channel is connected to the outer conductor or shield of the matching PQ10 input cable. Please see the **Caution** note in the sidebar.

The speaker outputs of a few head units need to be loaded down with a resistance much lower than the PQ10's high input resistance in order to work correctly. When you have this situation, connect a 33 Ohm, 1 Watt (or higher Wattage) resistor from the center conductor to the shield of each audio cable at the head unit end.

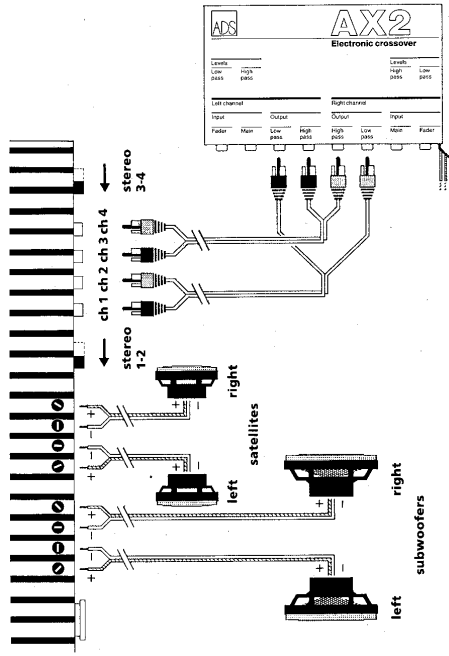
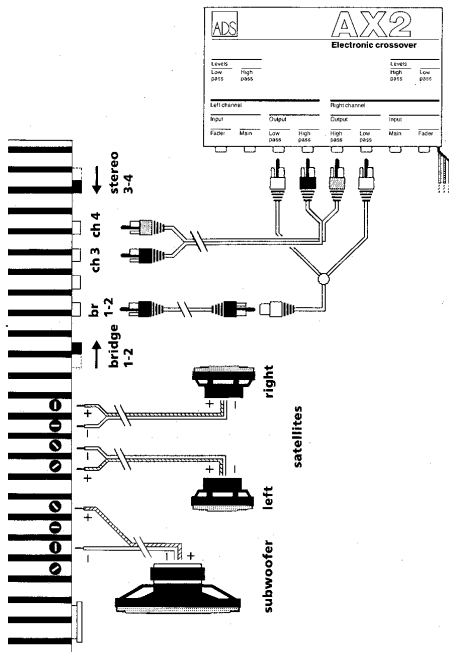
Consult the Owner's Manual of your head unit if you are uncertain about the connections. Insert the phono plugs of the audio cables into the PQ10's input jacks, being careful to connect the source's outputs to the appropriate PQ10 input jacks. See the drawing of a typical four channel system inside the front cover.

**Bridge mode input wiring** Using the PQ10 in bridge mode makes it a powerful 3-channel or 2-channel amplifier. Follow the instructions in *Input signal wiring*, above, connecting *only* to the *ch 1/br 1-2* input and/or the *ch 4/br 3-4* jack of the PQ10. Which jacks you use depend upon your application—see the accompanying drawings and *Typical applications*, preceding.



Two channel, two speaker bridge mode wiring

Three channel subwoofer/satellite wiring



Four channel subwoofer/satellite wiring

**Speaker output wiring** The positive or (+) wire of each speaker system goes to the (+) outer speaker terminal of each channel of the PQ10, while the negative or (-) wire goes to the adjacent (-) inner terminal.

The wire ends need to be exposed from the insulation only about 3/8". Avoid stripping the insulation back so far that bare wires in adjacent speaker terminals can touch one another.

Connect the speaker system wires to the PQ10's speaker terminals by loosening the clamping screw of each terminal, inserting the stripped end of the wire into the open hole and tightening the screw.

The holes in the PQ10's speaker terminals are large enough to accept nearly any speaker wire.

**Note:** When you are using a pair of amplifier channels in bridge mode, set the appropriate stereo/bridge switch to the right-hand, bridge position.

**Note:** Always be sure that the far ends of the +12V and remote wires are disconnected from the automobile's +12V supply before making or breaking the power connections at the PQ10.

**Bridge mode speaker wiring** You can connect only one speaker system (4 Ohm load, minimum) to a pair of PQ10 channels in bridge mode. The positive or (+) speaker wire goes to the PQ10's bridge, + terminal, while the negative or speaker wire goes to the PQ10's bridge, - terminal. Which terminals you use depends upon your application. Prepare and attach the wires as described in **Speaker output wiring**, above.

**Power wiring** Make the +12V and ground connections to the PQ10 with heavy gauge stranded copper wire. Please use 10 AWG wire. Because the remote power control wire carries relatively little current, much lighter gauge wire can be used. 18 AWG wire is a good choice, since it is mechanically strong and easy to handle.

Leave their far ends unconnected and strip the PQ10 ends of the +12V ground and remote wires back about 3/8". Take each wire in turn and twist the strands at the end of the wire tightly together. Use the screwdriver supplied to loosen the screws of the PQ10's terminal block so that the opening of each terminal is unobstructed. Insert the bare ends of the wires into the proper terminals and tighten the screws securely.

Once you've connected the power wires to the PQ10, connect their far ends to the appropriate sources. Make the ground wire connection first, then the +12V connection and finally the remote connection.

**Note:** Be certain that the switch controlling the remote power connection is open (off), so that the PQ10 will not turn on until your system wiring is complete.

The PQ10's ground wire attaches to a chassis ground connection point. The background noise level of the system will vary with different ground connection points and you may need to experiment to achieve minimum noise. Be prepared to try different grounding points for the PQ10 ground wire; initially leave the ground wire long enough to reach the head unit even though you may not need this much wire. Any connections you try must be securely made. See **System grounding**, following.

You must fuse the +12V wire (or connect it through an automotive type circuit breaker) at the battery end for protection against possible damage to the wire's insulation and resultant damage to the automobile. This wire's battery-end fuse (or circuit breaker) is best connected directly to the positive terminal of the battery

itself. When such connection is not possible, the +12V wire/fuse should go to the nearest high-current connection to the battery, such as the starter solenoid's battery terminal. The fuse should be a slow-blow type of the same current rating as the PQ10's power fuse.

Attach the **remote** wire to a switch connected to a convenient +12V source, or to the remote power terminal available on many head units. Check the Owner's Manual of your head unit for information about this feature.

**System grounding** The background noise level of the system will vary widely with different equipment and the choices of individual component grounding points. This noise usually consists of "alternator whine," a buzzing sound which changes in pitch as the engine RPM changes.

Do not confuse this noise with the normal background "hiss," which occurs when playing tapes at high levels, or the various "static" noises which normally occur with AM and FM radio reception. The tape hiss and static noises are either normal or the result of problems with the head unit and have nothing to do with the PQ10. Most noise problems resulting from ground potential differences occur when the volume control of the head unit is turned fully down.

Often, the lowest noise results from connecting the PQ10's ground wire to the automobile chassis where the head unit is grounded. Some head units are electrically grounded through the mounting hardware which holds them in

the auto, while others require a ground wire or strap to be connected from the unit to the chassis of the auto. On the other hand, connecting the PQ10's ground wire to the automobile chassis near the PQ10 will sometimes give best results.

Be sure that the ground connection point for the PQ10's ground wire can safely carry the maximum current of the PQ10. Connecting the PQ10's ground wire to the chassis of the head unit, for example, may yield minimum noise, but the ground wire of the head unit itself may not safely carry the PQ10's current, and must be replaced with larger wire. Similarly, do not use ground wires which you may find in the wiring harness of your auto, since they will not safely carry the PQ10's maximum current. Make your ground connections to a clean, bare-metal point of the chassis.

Many noise problems appear unsolvable and yet are very simply eliminated once the correct ground points are established. Systems which include equalizers, electronic crossovers or other signal processors often require special care with the ground paths of these units. Consult with your ADS dealer or installer for assistance with difficult problems.

Operation of the PQ10 consists of correctly setting the **stereo/bridge** switches, adjusting the input level controls, and avoiding use conditions which result in distortion and poor sound quality.

#### Setting the stereo/bridge switches

When you are using the PQ10 as a four channel amplifier with four speaker systems connected, set the **stereo/bridge** switches to the left-hand, **stereo** positions. When you are using the PQ10 as a high-power, two channel bridged amplifier driving two speaker systems, set the switches to the right-hand, **bridge** positions. When you are using the PQ10 as a three channel amplifier, set the switch of the two channels you are bridging to the **bridge** position, and set the other switch to the **stereo** position.

**Trying the system** Once you have securely made all connections to the PQ10 (including trial ground wire connections), you may try the system. Initially set the PQ10's input level controls to full clockwise rotation (fully on). Turn on the power to your head unit, and then, if the PQ10 is separately switched, turn on the remote switch for the PQ10. Leave the volume control on the head unit turned down for a moment to allow the PQ10 to power up. You may hear a mild 'pip' through the speakers when the PQ10 turns on.

Select a program source on the head unit and slowly turn up the volume control. If no sound or distorted sound is heard, immediately turn off the system, check fuses and check all power and signal wiring for correct and secure connections. If the problem persists, consult with your dealer or service technician.

**Note:** Be sure that the **stereo/bridge** switches are in the correct positions before adjusting the PQ10's input level controls.

**Note:** In some head units, the output levels from the radio and from cassette tapes or compact discs may be substantially different. Check all sources when setting the PQ10's input level controls to be sure that all provide maximum undistorted output.

**Input level adjustment** Before following the procedure for adjusting input levels, be sure your speakers are rated for the maximum power output capability of the PQ10.

Turn the PQ10's input level controls fully counter-clockwise (fully down) and set the tone and balance controls of the head unit to mid-rotation. Set the head unit's volume control to full clockwise rotation (fully on). Each of the PQ10's level controls adjusts two channels simultaneously in **stereo** mode, and each adjusts the level of a bridged pair in **bridge** mode.

Adjust the PQ10's level controls clockwise until the sound is at a comfortable level for you and the pairs of channels are balanced. Now listen for clarity and freedom from distortion in the

sound. If you hear distortion, slowly turn the head unit's volume control down until the sound is clear. If you don't initially hear distortion, leave the head unit's volume control at full rotation. The resulting volume control setting is the maximum for undistorted output from the unit.

Now turn the PQ10's input level controls up until the sound is distorted (limited by either the amplifier or the speakers). The sound level will likely be very loud, so when the levels are reached where distortion occurs, quickly turn down the head unit's volume control. The above procedure maximizes the system signal-to-noise ratio and its overall reliability. These settings of the input level controls should result in a satisfactory range of sound levels from very soft to full output.

The most common difficulties are noise and/or distortion, and thermal cycling. A blown PQ10 fuse is an unusual occurrence.

Noise in the system may be normal, depending on its source. Tape "hiss" and radio "static" are common and sometimes unavoidable noises in the system; review **Input level adjustment**, above, to minimize these noises. Engine speed related noises, especially those heard at low volumes, may be solvable. See **System grounding**, above, for comments about ground problems.

Distortion, especially when it occurs at high volume, may simply be the result of overdriving the amplifier or the speakers or both. Overcoming the noise resulting from driving at highway

speeds with the windows down, for example, will tax the abilities of any automotive sound system. The obvious cure is to reduce the volume level of the system.

The PQ10 is protected from excessive temperatures by a thermal cutoff which turns off the power converter when the heatsink temperature exceeds approximately 80°C. Normal operation of the PQ10 resumes automatically when the heatsink cools down.

The PQ10 may run excessively hot when:

- cooling air to the heatsink is blocked
- the ambient temperature of the air around the PQ10 is very high
- more than one speaker system is used with a pair of PQ10 amplifiers in bridge mode (the load is less than 4 Ohms)

Check the setting of the **stereo/bridge** switches, and remove anything which blocks the flow of air over the PQ10.

A blown PQ10 fuse is unusual and may result from problems within the PQ10. Use only a replacement fuse of the exact type and rating specified for the PQ10. The power fuse plugs into a fuse block in the PQ10's connector panel. If a replacement fuse blows immediately, take the PQ10 to your ADS dealer or authorized service agency for assistance.

Occasionally, the protection circuits of the PQ10 which detect power output beyond the safe capabilities of the amplifier may turn the PQ10 off momentarily. When this occurs, reduce the volume level of the system and check the position of the **stereo/bridge** switches. A defective loudspeaker also may trigger this condition. Listen for distortion from the speakers at medium volume levels; if distortion is heard, try to determine which speaker is defective and replace it.

The PQ10 requires little routine maintenance. Keep the chassis free from dust and dirt, and check the quality of the various connections every few months, with the power off.

Do not use solvents or liquid cleaners of any kind on the PQ10's chassis. Dust and dirt can be removed with a dry cloth or soft brush.

The PQ10 can be used effectively in applications which require equipment operating from 12V DC, such as marine, aircraft, mobile home and alternative energy source installations. The wide DC voltage operating range of the PQ10 permits use where other amplifiers may not work.

Be sure that the DC power source can safely supply the large currents required by the PQ10, and that the power wiring meets the requirements of the PQ10.

**Continuous average power output per channel, at 14.4VDC power input, with no more than the specified total harmonic distortion:**

**Guaranteed performance**

**4-channel mode, all channels driven, 20Hz to 20kHz:**  
30 Watts into 4 Ohms,  
THD = 0.05%  
40 Watts into 2 Ohms,  
THD = 0.1%

**Bridge mode, two channels driven, 20Hz to 20kHz:**  
80 Watts into 4 Ohms,  
THD = 0.1%

**4-channel mode, all channels driven, 20Hz to 20kHz:**  
35 Watts into 4 Ohms,  
THD = 0.5%  
45 Watts into 2 Ohms,  
THD = 0.5%

**Bridge mode, two channels driven, 20Hz to 20kHz:**  
90 Watts into 4 Ohms,  
THD = 0.5%

**4-channel mode, all channels driven, 1kHz, 1% THD:**  
40 Watts into 4 Ohms  
50 Watts into 2 Ohms

**Bridge mode, two channels driven, 1 kHz, 0.5% THD:**  
100 Watts into 4 Ohms

**Typical performance**



**IHF dynamic headroom** 2.2 dBA into 4 Ohms

**Damping factor**

> 100 into 4 Ohms  
> 50 into 2 Ohms

**Frequency response**

+ 0, - 0.5dB, 20Hz to 20kHz

**IHF signal to noise ratio, 1W into 4 Ohms**

93dBA

**Input sensitivity/impedance, for rated output into 4 Ohms**

45mV/50kOhms

**Input level control attenuation range**

28dB

**DC power supply voltage**

10 to 16V

**Remote power on/off current**

10mA

**DC power supply current**

0.8A

**Maximum output**

30A

**Power fuse**

Type ATO, 30A

**Accessories supplied**

4 spacers, to put between PQ10 and mounting surface  
4 phillips-head sheet metal screws, for mounting PQ10 to vehicle

1 insulated shaft screwdriver for power and speaker connections, and input level adjustments

**Dimensions**

285mm/11 1/4" w by 50mm/2" h by 156mm/6 1/8" d

**Weight**

3 kg/6.6 lbs

**Owner's record** Please complete this section and retain for your records.

PQ10 serial number

Date of purchase

Dealer's name

Date warranty registration mailed

We urge you to save your sales receipt for future reference; you may want to attach it to this manual. Completing and mailing your Owner's Registration Card enters your purchase into our files.

### ADS Power Plate System PS5 and Power Plate System PQ10 limited warranty

Analog & Digital Systems, Inc. ("ADS") warrants to the first consumer purchaser of a new ADS Power Plate System PS5/PQ10, that the Power Plate System is free from defects in material and workmanship. ADS' sole obligation under this warranty shall be to provide, without charge, parts and labor necessary to remedy defects, if any, which appear within one year from the date of purchase.

This warranty is the sole and exclusive express warranty given with respect to the Power Plate System and all other express warranties are hereby excluded. Neither ADS nor the licensed ADS dealer who sells the Power Plate System is responsible for indirect, incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you.

The ADS warranty does not extend to any defect, malfunction or failure caused by misuse, abuse, accident, faulty hookup, defective associated equipment, or the use of the Power Plate System with equipment for which it was not intended. Please read your owners' manual carefully.

This warranty is valid only for a Power Plate System purchased in the U.S. and when the Power Plate System is returned to the licensed ADS dealer from whom it was purchased or directly to ADS at the address shown below, freight prepaid, together with proof of date of purchase. For the names and addresses of other licensed ADS dealers in your area who will provide warranty service, simply contact ADS.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

#### ADS, Analog & Digital Systems, Inc.

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