MC•300

THREE HUNDRED WATT
MULTIPLE-CHANNEL
AMPLIFIER

Owner's Manual

SOUNDSTREAM
TECHNOLOGIES

MC •300 Amplifier Owner's Manual

Thank you for purchasing a Soundstream amplifier. You now own one of the finest power amplifiers available, a precision component capable of audiophile-quality performance.

To get the most out of your MC-300. we suggest you carefully acquaint yourself with its capabilities and design. Please retain this manual for future reference.

Soundstream products are the result of American craftsmanship and the highest quality control standards; your MC-300 should deliver many years of pleasure. Should it ever require service or replacement, recording the information below for your own records will help protect your Investment:

Model Number _____

Serial Numbers

Dealer's Name _____

Date of Purchase _____

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Figure 1 Z-Channel Operation

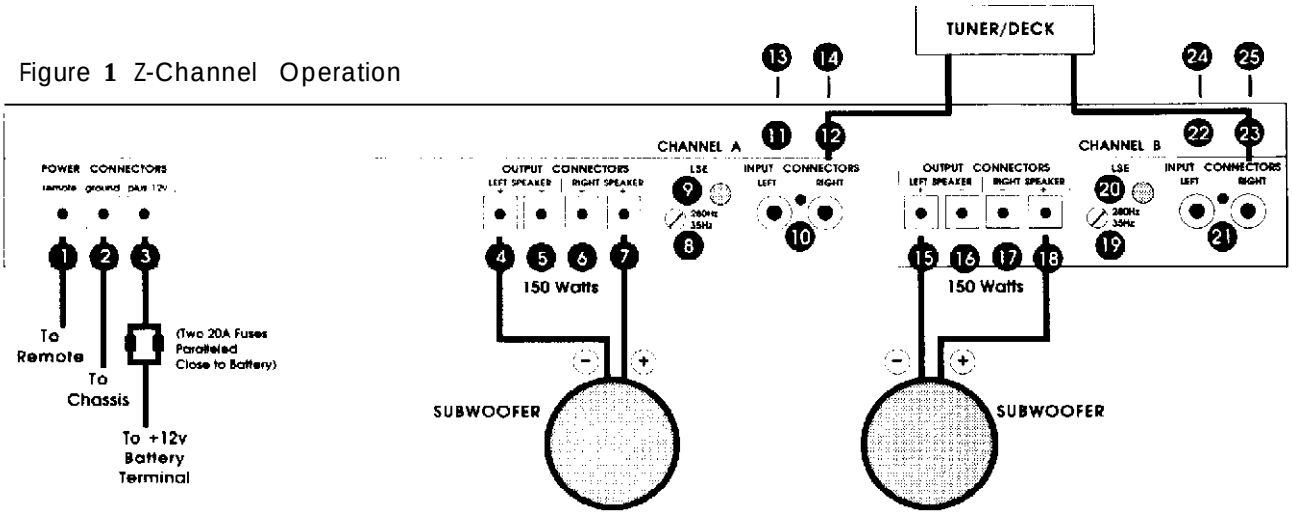


Figure 2 3 Channel Operation

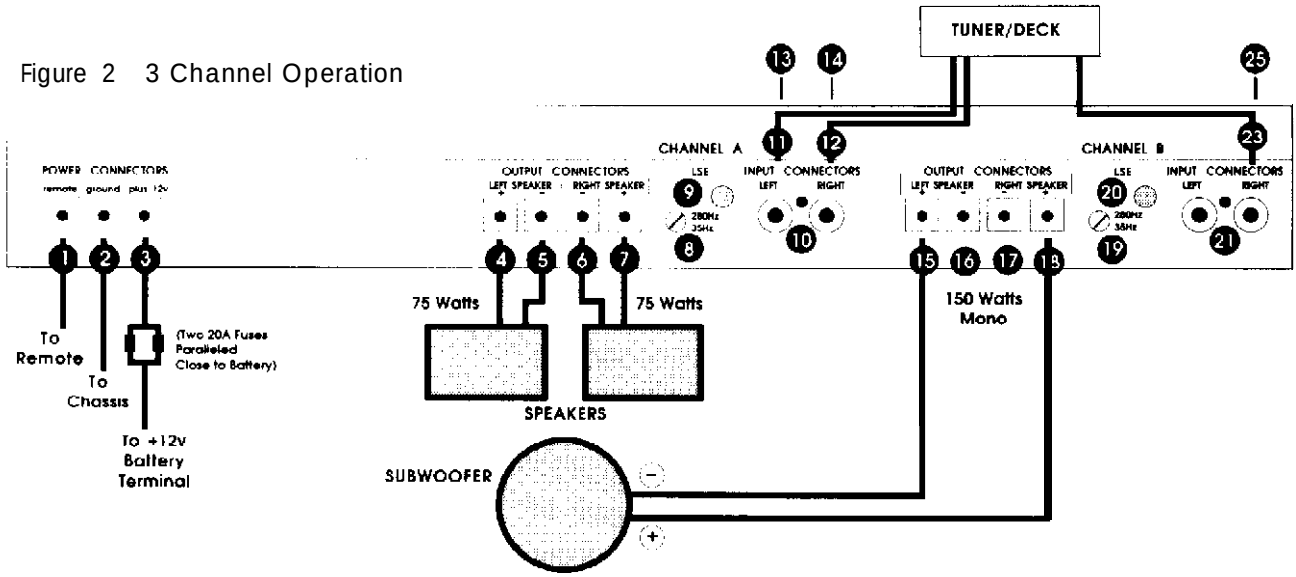
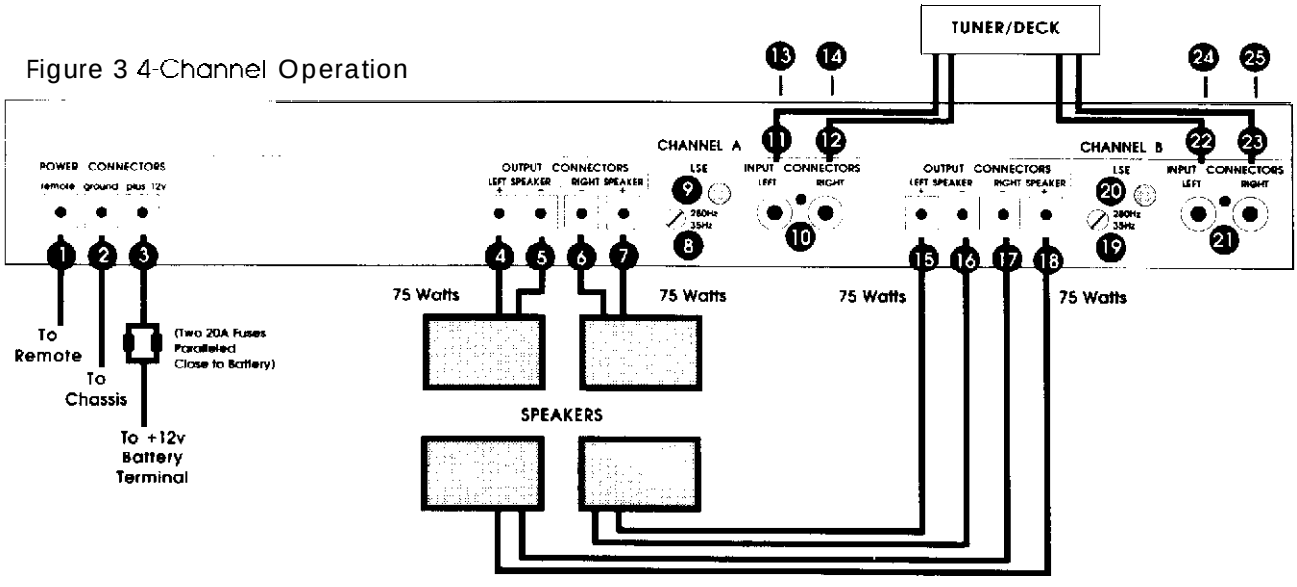


Figure 3 4-Channel Operation



DESIGN FEATURES

The MC-300 isconservatively rated at 300 watts into 4 ohms. This power can be divided into four channels (4x75 watts), three channels (2x75 watts. 1x150), two channels (2x150 watts). The design topology utilizes multiple Darlington output devices with a total capability of 1200 watts. With such reserves and no current limiting, the MC-300 operates without strain even at maximum output. Power, ground, and speaker connectors are rated to handle up to 60 amps and up to 8 gauge wire.

To provide lull circuit protection necessary for an amplifier thispowerful, the MC•300 incorporates a unique dual "smart" power supply that works silently and effectively to prevent overheating without the need for a fan. Should the amplifier begin to overheat, the power supply slightly reduces output power, which allows the unit to run much cooler. Once the amplifier returns to normal operating temperature. full output capacity is then restored. The entire process is automatic and inaudible. In the case of an amplifier malfunction, secondary thermostats will shut down the amplifier in a conventional manner. To prevent potentially damaging turn-on or turn-off thumps. a pair of relays at the outputs allow the amplifier to fully stabilize before sending the audio signal to the loudspeakers.

An especially useful feature of the MC-300 is Linear Subwoofer Extension (LSE). which compensates for the natural rolloff of most speakers and extends bass as much as one full octave. LSE provides a linear boost of 6 dB/octave, starting at a point which is continuously variable over the range 35-280 Hz. A subsonic filter attenuates the signal below 20 Hz.

Only premium parts are used in the MC•300, such as metal film resistors, gold-plated input connectors, and immersible sealed potentiometers. The case is equipped with generous heat sinks. Input sensitivity is adjustable to match any tuner! deck, the MC-300 can even be interfaced with OEM speaker level signals.

INSTALLATION

Proper installation and adjustment will reward you with reliable operation and optimum performance. Automotive_ sound system installations can be tricky. especially for first timers. For this reason, you may want to consider using a professional installer who has the tools and, more importantly, the experience, to do the right job. If you decide to install your equipment yourself, we hope that this manual will serve as a helpful guide.

LOCATION AND MOUNTING

The first step in installation is thorough planning. Choose the location for your amplifier carefully. The amplifier should be located in either the passenger compartment or the trunk, never in the engine compartment or in any outside location exposed to din and moisture. Adequate ventilation is important. allow enough space so that air can circulate around the heat sinks.

Make sure that the installed amplifier will not interfere with normal operation of the car. It is best not to locate the amplifier near your vehicle antenna, since the switching powersupplycan interfere with AM reception. Your amplifier should be mounted firmly to your car's sheet metal with the four screws provided. Usc your amplifier as a template for making pencil marks where you intend to drill. (Make sure thatthelocationyouareplanning todrillthroughisfreeofany obstacles such as wiring or gas tanks.)

It's a good idea to bench test your system before mounting* thecomponents. If you have a 12-volt power source, you can connect and test all components outside the car. Or, you can connecttheminsidethevehiclepriortofinal mounting. Either way, connect the components exactly as you intend to in the final installation; make all power connections last; test the system; then disconnect all power until the final installation is complete.

WIRING

Determine how your vehicle's wiring is laid out. Keep all wiring inside the car. Good standard audio practice suggests keeping signal wires short and away from wires carrying power. Wires can be run under carpet. If you drill a new passage hole through metal, make sure that all burrs have been filed away to prevent scraping; use grommets where needed. All wires should be hidden: an exposed wire can inadvertently be pulled, causing disconnection or shorting. Wires should never be under tension or subject to moisture. Use cable ties to bundle excess wire.

SELECTING OPERATING MODE

The three hundred watts available from the MC-300 can be divided into two channels (stereo) [Figure 1], threechannels (stereo plus a single mono channels) [Figure 2], or four channels (front and rear stereo; or stereo bi-amp) [Figure 3].

To select any of these modes, remove the access plugs on the bottom of thc amplifier and set the internal switches according to the desired mode of operation.

For two-channel operation, set both switches to MONO.

For three-channel operation, set one switch to STEREO and the other to MONO. Note carefully which is which, because you must connect wires accordingly.

For four-channel operation, set both switches to STEREO.

OPTIMIZING FOR SPEAKER IMPEDANCE

As delivered from the factory. your MC-300 has been optimized for 4 ohm operation. It is possible to optimize this amplifier to deliver maximum performance into 2.4. or8 ohm loudspeakers. This is done by moans of switches inside the amplifier.

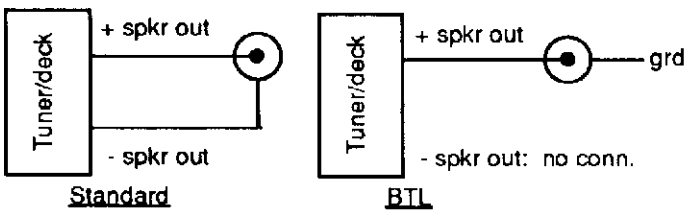
Remove the plugs on the bottom of the amplifier marked for Impedance optimization. Behind the plugs locate the two switches. one for CHANNELS A and one for CHANNELS B. Set these switches separately based on the load which that specific pair of channels will be driving. If you are unsure of the impedance of your speakers, or you are wiring more than one speaker to a set of terminals, consult your dealer or installer for the best settings.

INPUT CONNECTIONS

Inputs to the amplifier attach by means of standard RCA-type jacks. The MC.300 achieves a level of performance at which cable and connector quality is significant: the **jacks** on your amplifier are gold plated. and we recommend Soundstream Interconnecting cable or an equivalent premium cable.

In most cases, the signal source will be the preamp output jacks of a tuner/deck. Some tuner/decks use preamp output connectors other than RCA jacks, in which case you will need a special adapter available from your dealer.

If your tuner/deck has speaker outputs and no preamp outputs. you can use the speaker outputs. Wire an RCA connector to the end of your tuner/deck's output wires. making sure that you maintain consistent polarity in all channels.



If you have an equalizerorlow-level crossover network(s) for bi or tri-amping, these components will be inserted between your tuner/deck and your amplifier(s). Refer to the manuals for these components for further details.

In four channel mode, all four input jacks (11 12.22, and 23) are active for CHANNEL A left and right, and CHANNEL B left and right, respectively.

In two CHANNEL mode, use only the "right" jack (12) for CHANNEL A. and only the "right" jack (23) for CHANNEL B.

In threechannel mode, use only the "right" jack for whichever of main CHANNEL A or CHANNEL B is operating in mono. and both jacks for the other main channel,

OUTPUT CONNECTIONS

Use high quality Soundstream speaker cable or an equivalent premium cable for best results.

In four channel mode, all four terminals (4, 5, 6, 7) are active for main CHANNEL A, and all four terminals (15. 16. 17, 18) are active for main CHANNEL B.

In two channel mode, use only the "+" terminals (15, 18) for CHANNEL B. The "+ right" terminals (4, 7) have positive polarity in this mode.

In three channel mode, use only the "+" terminals for whichever of main CHANNEL A or CHANNEL B is operating in mono, and all four terminals for the other main channel.

The terminals on your loudspeakers are marked for polarity. and loudspeaker wire is coded bycoloror by markings on the jacket. Be sure to connect the left and right channels with the same polarity. Loudspeaker manufacturers are not consistent in their polarity markings, so if you have loudspeakers of different types connected to the same amplifier terminal. verify correct polarity by ear. The correct polarity produces the most bass; incorrect polarity produces less bass and a strangely dislocated sound image on mono material.

If you have more than one amplifier: for each amplifier and its loudspeakers, the left and right channels must always be wired with the same polarity. But from one amplifier to the next. correctpolarity may bethesame, or it may be reversed. This is because of differences in amplifier design. the nature of crossover filters. and other factors. Again experiment and verify the correct polarity by ear.

POWER CONNECTIONS

Note: **your amplifier can** *only be operated from a 12-Volt Negative Ground electrical system. If your car was produced before 1970, or if you have any doubts. mahesureofthe type Of electrical system you have before making any connections.*

The MC.300 will draw up to 45 amperes if used to its fullest capacity. Determine the alternator rating of your car and the Current consumption of the car's other accessories. It may be necessary to upgrade the alternator or to install a separate battery and battery isolator.

For power wiring. use Soundstream power cable or an equivalent premium cable. The PLUS 12V terminal [(3) in the wiring diagram] should be connected directly to the positive (+) terminal of your car battery. Install two (2) 20 amp fuses (in parallel) in the line close to the battery terminal. If you have more than one amplifier, each amplifier should be separately fused.

The GROUND terminal (2) should be connected directly to the automobile chassis with 8 gauge wire. Make this wire as short as possible to prevent noise in the system A nearby bolt can serve as a ground terminal. Make sure that the wire contacts bare metal, not coated metal or paint. It is important that the ground connection you select have minimal noise resistance to the battery ground post (a maximum of 0.1 ohm).

REMOTE POWER-ON CONNECTION

If your tuner/deck has a remote power-on control wire, connect it to the REMOTE terminal (1) on your amplifier. This isacontrol line. notapowerline. so small wire (18-20 gauge) is acceptable.

If your tuner/deck has no remote power-on control labeled as such, but has a power antenna control, it may be possible to wire the power antenna control to the REMOTE terminal.

If your tuner/deck has neither a remote power-on control wire nor a usable power antenna control; it will be necessary either to connect the REMOTE terminal to a +12 volt source which is switched by the ignition key. or to connect the REMOTE terminal to a constant +12 volt source through an on/off switch you install in series with the ignition switch in a location accessible to the driver. Note: *If an outboard switch is used. make sure it is switched off when you leave the vehicle or when the sound system is not in use.*

POWERING UP THE SYSTEM

Once the installation is complete, turn on the system. Both LED indicators on the MC.300 should now be lit. If they did not light up, turn thesystem off immediately. Proof wiring and check for shorts or poor connections.

If wiring is okay, check the relay or fuse in the power line. If blown, replace it with another identical fuse.

If one LED indicator is out, check the internal fuses located behind the bottom cover of the amp. Also check the interior power supply fuses. If any of those are blown replace with the same value fuse.

INPUT LEVEL ADJUSTMENT

Input levels are adjusted by means of four independent controls that are accessible through the heat sink directly above the input connectors. The controlscan be turned with a small. flat-head screwdriver.

In four channel mode. the left and right halves of CHANNEL A are set by controls (13) and (14) respectively; the left and right halves of CHANNEL Bare set by controls (24) and (25).

In twochannel mode, only the "right" control (14) is operative for CHANNEL A, and only (25) for CHANNEL B.

In three channel mode, use only the "right" control for whichever of main CHANNEL A or CHANNEL B is operating in mono, and both controls for the other main channel.

Depending on how you are using your MC.300 (number of channels, biamplification. associated equipment, etc.), different factors may apply for optimum gain settings. In general, begin by turning all level controls to minimum (full counter-clockwise). Turn the system on, and set the volume control on your tuner/deck at its mid-point. Advance the amplifier input level controls until you have reached a comfortable listening level and both channels are in balance. *Note: with many tuner/decks, the radio output level is significant/y different than the tape output /eve/. Check both sources. and set /eve/s using the lesser of the outputs (usually the tape).*

LINEAR SUBWOOFER EXTENSION (LSE)

The LSE circuit will compensate for the natural rolloff of most loudspeakers, and can extend deep bass as much as one full octave. For CHANNEL A, LSE is engaged by pressing switch (9). and the frequency is adjusted by control (8). For CHANNEL B, LSE is engaged by pressing switch (20), and the frequency is adjusted by control (19). If either CHANNEL A or CHANNEL B is operating in stereo, LSE will be applied to both left and right.

The control allows for continuously variable adjustment, over the range from 35 Hz to 280 Hz, of the frequency at which LSE beginsits boost. Below thechosenfrequency. the boost is applied at 6 dB per octave. When properly adjusted, LSE will "linearize" the low end of the woofer(s) and provide remarkably smooth and deep bass. A word of caution: small or inexpensively constructed woofers may be unable to handle the equalization which results from setting the LSE to above 100 Hz.

PROTECTION CIRCUITS

Your amplifier is protected against both overheating and short circuits. Because of the "soft' thermal protection (see the Design Features section on page 3), it is highly unlikely that the amplifier will shut off because of thermal overload.

If your amplifier shuts down, turn off the system, wait for a few moments, and turn the system on again.

SERVICE

Your Soundstream amplifier is protected by a limited warranty. Please read the warranty enclosed with the product.

SPECIFICATIONS

Power output:

2-channel 150 watts continuous per channel
x 2 into 4 or 8 ohms, 20 Hz 20 kHz

3-channel 150 watts continuous mono
into 4 or 8 ohms, 20 Hz - 20 kHz
75 watts continuous per channel
x 2 into 2 or 4 ohms, 20 Hz 20 kHz

4-channel 75watts continuous per channel
x 4 into 2 or 4 ohms, 20 Hz - 20 kHz

Total Harmonic Distortion <0.1%, 20 Hz 20 kHz
at full rated power
into 2, 4 or 8 ohms

Signal-to-Noise Ratio >100 dB

Damping Factor .....>200

IHF Dynamic Headroom 3 dB

Maximum Current Draw 45 amps

Idle Current Draw 2.5 amps

Input Sensitivity 250 mV 2.5 V
continuously variable

L S E 35Hz–280Hz,
infinitely variable

Dimensions . . . .14-l/5" W x 2-3/5" H x 10" D
with bottom plate
14-1/5" W x 2-3/5" H x 8-1/2" D
heat sink