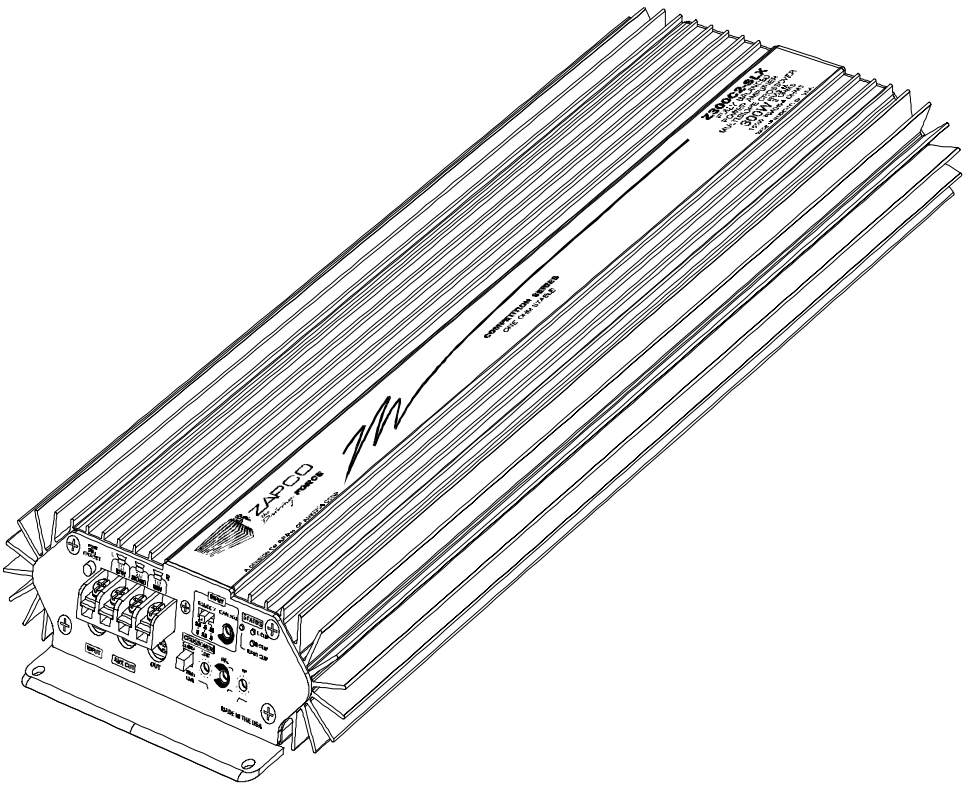




SymbiLink™  
System

Model Z600C2-SL  
Balanced  
Competition Power Amplifier



# Contents

<b>Z600C2-SL KEY FEATURES</b>	<b>3</b>
<b>POWER CONNECTIONS</b>	<b>4</b>
<b>SIGNAL CONNECTIONS</b>	<b>5</b>
<b>SPECIFICATIONS</b>	<b>6</b>
<b>POWER VS DISTORTION</b>	<b>7</b>
<b>INSTALLATION</b>	<b>7</b>
<b>THE Z600C2-SL ALSO WORKS WITH THE SYMBILINK™ LINE DRIVER</b>	<b>9</b>
<b>WHY USE THE BALANCED SYMBILINK™ SYSTEM?</b>	<b>10</b>
<b>NON-LINEAR INDUCED DISTORTION</b>	<b>11</b>
<b>CABLE AND CONNECTOR PINOUT</b>	<b>12</b>
<b>OPTIONAL RSD REMOTE STATUS DISPLAY</b>	<b>12</b>
<b>THE Z600C2-SL SUPPLIES POWER TO SIGNAL PROCESSORS, SUCH AS THE SP7-SL</b>	<b>13</b>
<b>TECHNICAL ASSISTANCE</b>	<b>14</b>

Thank you for purchasing the Z600C2-SL.

The Z600C2-SL is a no compromise stereo amplifier conservatively rated at 150 watts per channel into four ohms, 325 watts per channel into 2 ohms, and 400 watts per channel into a one ohm load.

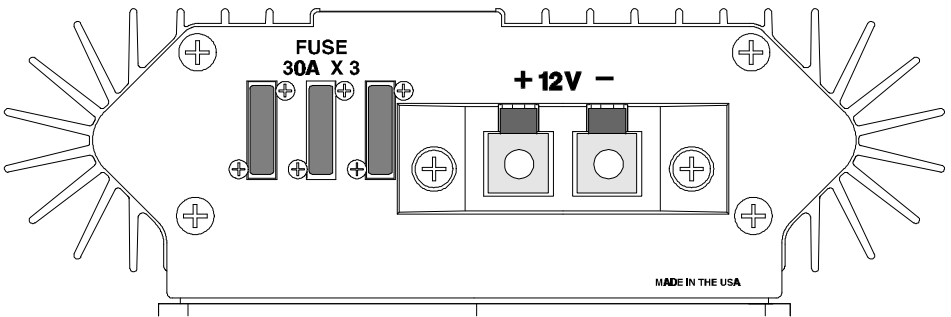
The fully regulated power supply in the Z600C2-SL is a new design that dramatically increases power and efficiency.

New Gate Drive Boost circuitry greatly improves the MOSFET switching performance and allows for cooler operation. The Z600 C2-SL is the perfectionist's no compromise amplifier as evidenced by such features as its four layer PC board, and twenty four power devices.

## **Z600C2-SL Key Features**

• Balanced SymbiLink™ Technology	• Very high damping factor
• Dual pro audio balanced differential Inputs	• Triple path global feedback
• Four layer PC board	• Massive power / ground planes on all four layers
• Ultra Low Distortion	• Can drive highly reactive loads
• Symmetrical, discrete power amplifier circuitry	• Massive regulated switching supply with internal energy storage
• Separate LED's for Power and Protection	• Short circuit, high temperature, reverse, DC offset, and over-voltage protection
• Stable to one ohm	• Sixteen 25-ampere bipolar amplifier output transistors
• Very high current output stage - Greater that 200 amps / channel	• Quality ZAPCO construction / Made in the U.S.A.
• Precision 1% resistors used throughout	• Three year warranty (Dealer installed)
• Surface mount technology	• Eight 50-ampere MOSFET switching devices
• Low radiated noise for clean AM / FM reception	• Designed and manufactured in the USA

# Power Connections



Use # 8 gauge or heavier stranded wire for both power and ground connections.

Although the amplifier is fused on the endplate, ***an additional 100 ampere fuse must be placed in line within 12" of the battery.*** Failure to install this additional fuse ***will cause smoke or fire if this wire is shorted*** to the chassis. Make this connection directly to the battery.

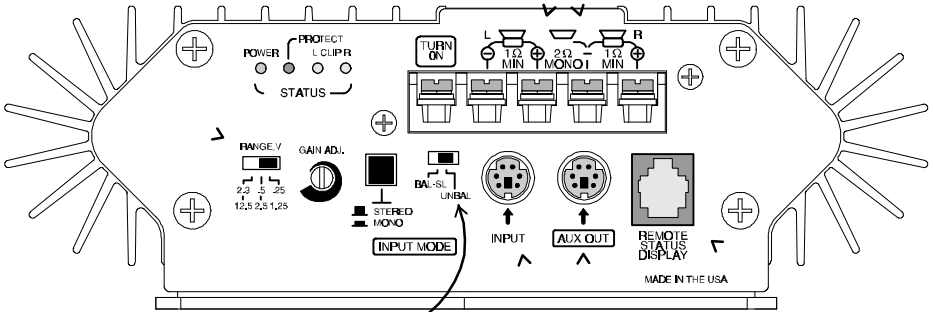
Make the ground (12V-) connection directly to the car chassis. Do not share this connection with other equipment.

The power terminals are designed for bare, stranded wire. ***Do not solder tin*** these connections! Solder tinned connections compress after a few weeks, resulting in a poor connection.

# Signal Connections

**Gain Range Control.**  
For best performance, set the Gain Adj. control to maximum, using the range switch for adjustment.

Speaker outputs, use the center two for mono / bridged operation



Switch to left when using balanced inputs

Balanced Stereo Input / Slave output

Optional Remote Status Display connector

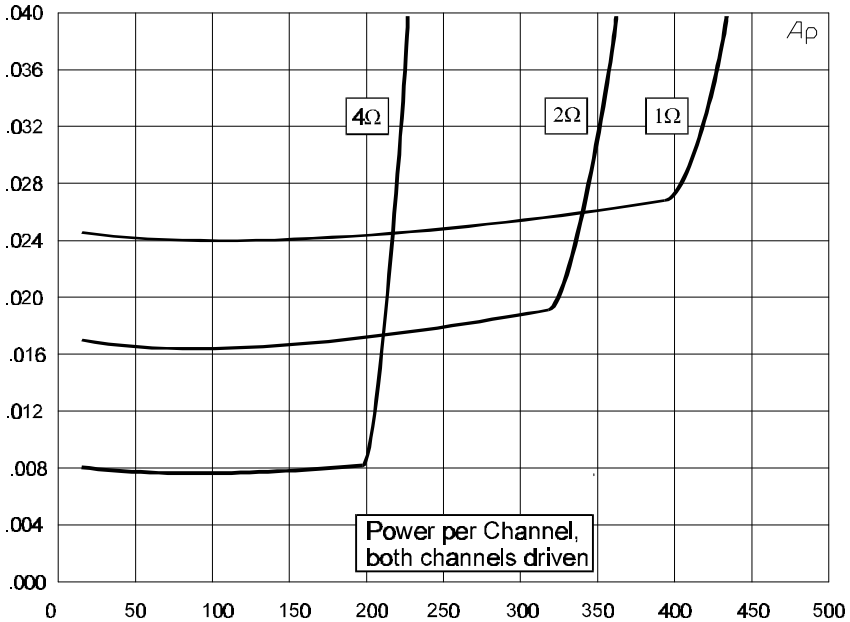
## Note:

Keep the fan on the bottom plate clear from obstruction. When operating in bridged mode, the amplifier is driven by the left input.

# Specifications

<b>Power per channel - 2 channel mode</b>	<b>THD</b>
150 watts x 2 @ 4 $\Omega$ , 20 - 20kHz	< .01%
325 watts x 2 @ 2 $\Omega$	< .02%
450 watts x 2 @ 1 $\Omega$	< .05%
<b>Power - Bridged Mono</b>	
325 watts x 1 @ 4 $\Omega$	< .02%
900 watts x 1 @ 2 $\Omega$	< .05%
<b>Frequency Response</b>	2 Hz - 150 kHz
<b>S/N Ratio</b>	> 100 dB
<b>Transient Distortion</b>	< .002%
<b>Slew Rate</b>	> 75 v/ $\mu$ S
<b>Separation @ 1 kHz, "A" weighted</b>	> 80 dB
<b>Damping Factor</b>	> 1000 @ 4 $\Omega$
<b>Input Sensitivity (in three ranges)</b>	.25 - 12.5 volts
<b>Max. Current Requirements</b>	130 amperes @ 800 watts
<b>Idle Current</b>	2.5 amperes
<b>Dimensions</b>	2.5" x 8" x 19.375"

# Power Vs Distortion



## Installation

Careful thought and planning is essential when installing any piece of equipment in your vehicle. To ensure proper operation and maximum performance of your amplifier, ZAPCO recommends that the installation be performed by a ZAPCO authorized dealer. If this service is unavailable to you, or you wish to do your own installation, the following guidelines must be followed.

### ***MOUNTING***

Always select a dry location in the trunk or passenger compartment only. This unit must be securely fastened to a solid surface. Consideration must be given to air flow for proper heat dissipation.

## ***POWER***

A #8 gauge or larger wire should be used for power and ground connections. A fuse must be installed on the power wire within 18 inches of the battery for safety reasons. The size of this fuse will vary depending on the system configuration. The ground wire should be connected directly to the chassis of the vehicle. This ground point should be clean and sanded to bare metal.

**Never use seat or seatbelt bolts for grounding!**

If you have any questions regarding proper use or installation of this component, please consult your local authorized ZAPCO dealer. The safety of your equipment and your vehicle could depend on proper installation. If you do not have a local dealer, please contact ZAPCO directly at (209) 577-4268 between 9 am and 5 pm Pacific time, and we will be glad to assist you.



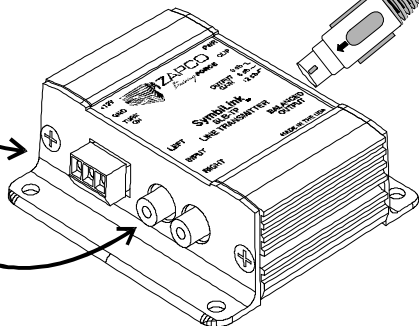
# The Z600C2-SL also works with the SymbiLink™ Line Driver

Up to 300' of cable may be used without audio degradation

**Do not** connect power to the driver when used with any SymbiLink™ amplifier.

Balanced Differential SymbiLink Cable

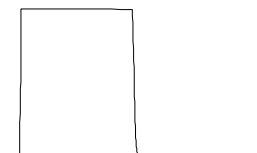
Unbalanced RCA Inputs



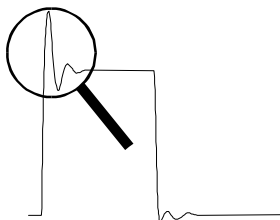
# Why Use the Balanced SymbiLink™ System?

RCA style unbalanced cables have the following disadvantages:

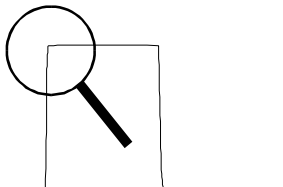
- 1) Magnetic & electrostatic pickup.  
Noise and audio distortion can be induced into the cable because the cable shield is also the audio (-) connection.
- 2) Unbalanced cables are typically driven into very high impedances, causing transient ringing. (See the drawing, below)



Source transient Waveform

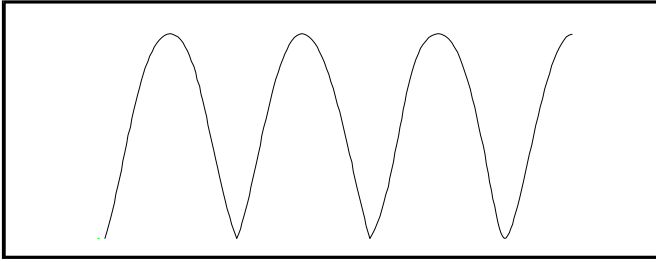


Waveform at the destination end of a long unbalanced RCA cable shows ringing

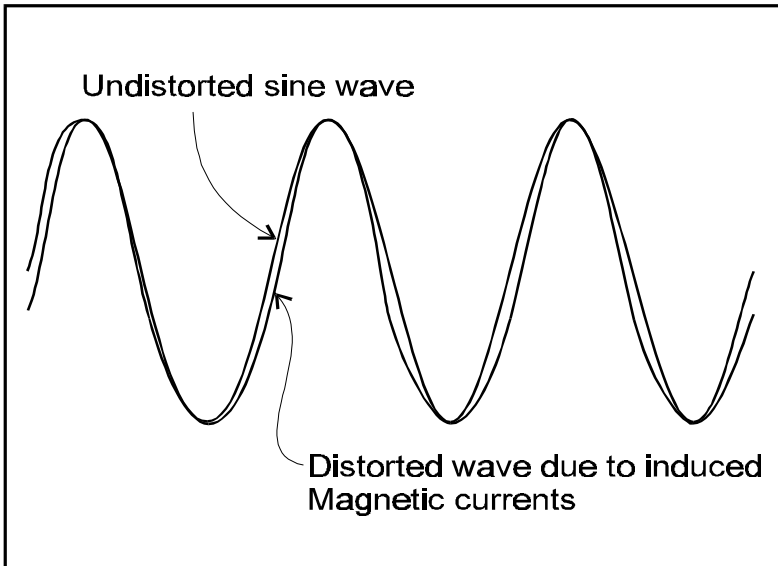


Waveform at the output of the SymbiLink™ system.

# NON-LINEAR INDUCED DISTORTIONS



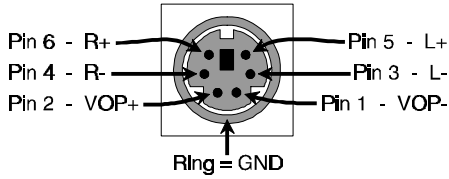
(A) These non-linear currents from the power amp supply are present in the vehicle's chassis and power wiring.



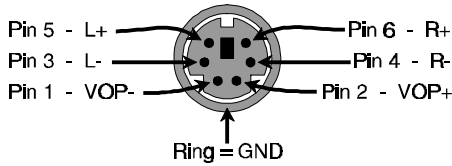
(B) Non-linear distortion from unbalanced cables caused by induced magnet fields (see (A))

# Cable and Connector Pinout

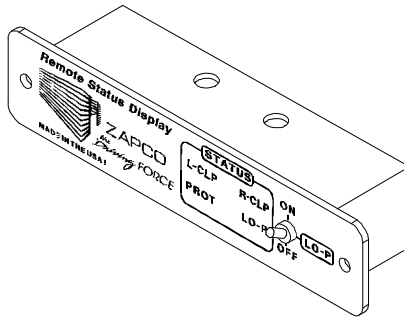
## PCB Connector Front View



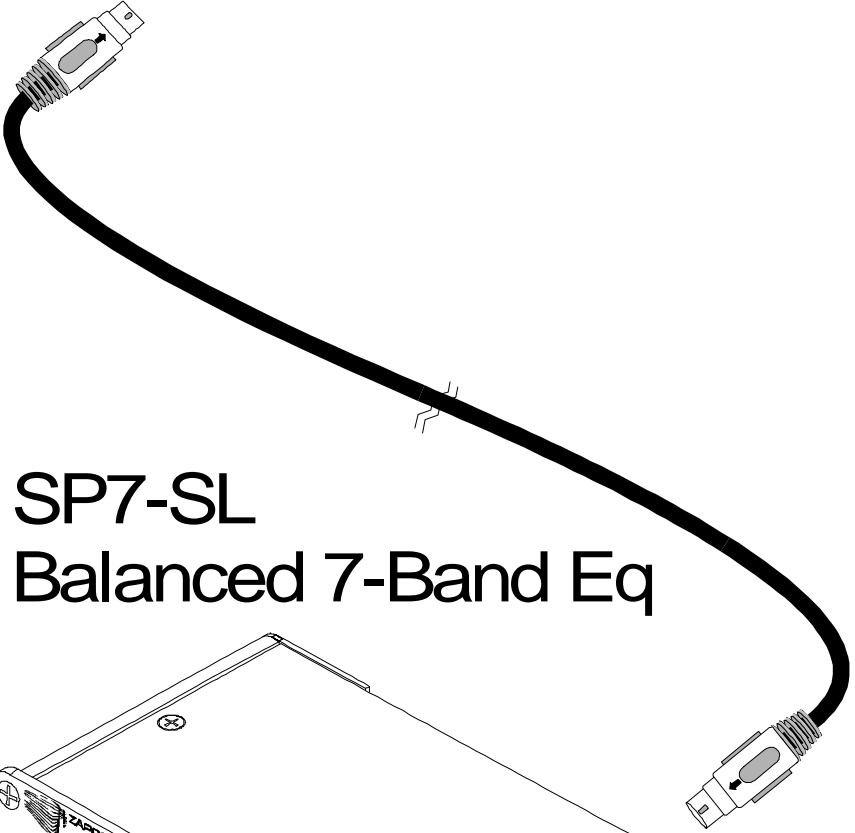
## Cable Connector End View



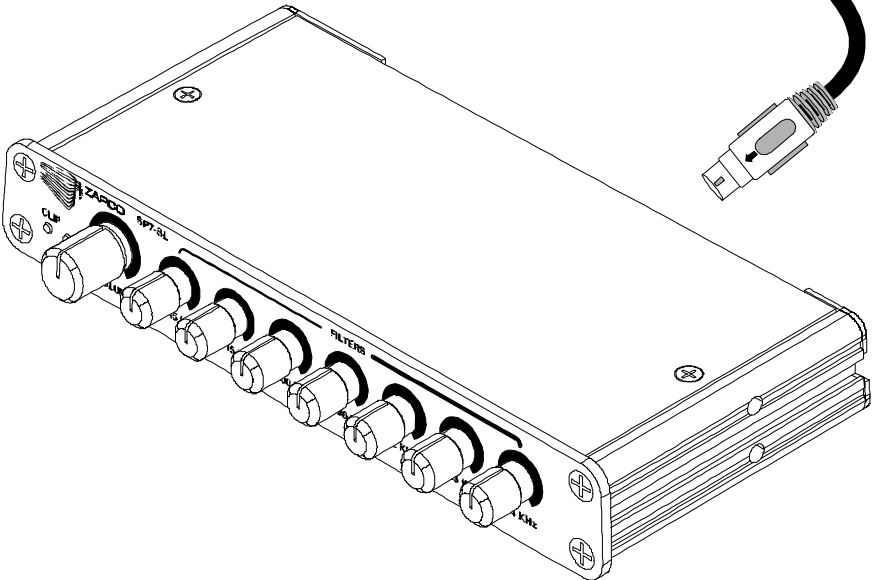
# Optional RSD Remote Status Display



The Z600C2-SL supplies power to signal processors, such as the SP7-SL



# SP7-SL Balanced 7-Band Eq



# Technical Assistance

Should you experience a problem with your Z600C2-SL, please contact the dealer that sold you this product. If your dealer is unable to solve your problem, you may contact the factory service department directly.

Phone: (209) 577-4268 Monday-Friday 8am-5pm Pacific time

Fax: (209) 577-8548

If you need to return this product for repair, please call the factory for a return authorization number. We will ask you for information which will include your name, return shipping address, daytime phone number, model and serial number, and a detailed description of your problem. A photocopy of your original purchase receipt is necessary to determine warranty status and should also be included. Once we issue you a return authorization number, please write it in a highly visible area on the package. Zapco will not accept any packages that do not have a valid return authorization number clearly marked on the outside of the package.

Send all repairs to:

A.R.P.A. of America Corp.  
Attn.: Service Department  
413 S. Riverside Drive, Suite D  
Modesto, CA 95354



**A.R.P.A. OF AMERICA CORP.  
413 SOUTH RIVERSIDE DRIVE. SUITE D  
MODESTO, CA 95354  
(209) 577-4268  
FAX (209) 577-8548**

Z600C2-SL  
REV. E  
11/96