

PHOENIX GOLD



USER MANUAL

Z150.2

Z300.1

Z300.4

Z600.5

Z1000.1

PHOENIX GOLD®

Amplifier Specifications

	Z300.4	Z150.2	Z300.1	Z600.5	Z1000.1
Class	Class A/B	Class A/B	Class A/B	Class A/B	Class D
Power (MAX)	1200 Watts	600 Watts	1200 Watts	2400 Watts	2000 Watts
Frequency Response	20Hz-20KHz	20Hz-20KHz	20Hz-400Hz	20Hz-20KHz	20Hz-300MHz
Dimensions (mm)	312x186x49	232x186x49	312x186x49	372x186x49	312x186x49
RMS Power Ratings	60W x 4 @ 4ohm 75W x 4 @ 2ohm 150W x 2 @ 4ohm bridged	60W x 2 @ 4ohm 75W x 2 @ 2ohm 150W x 1 @ 4ohm bridged	200W x 1 @ 4ohm 300W x 1 @ 2ohm	60W x 4 @ 4ohm +1 x 200W @ 4ohm 75W x 4 @ 4ohm +1 x 300W @ 4ohm 150 x 2 @ 4ohm bridged +1 x 300 @ 2ohm	400w x1 @ 4 ohms 700w x 1 @ 2 ohms 1000w x 1 @ 1 ohm
Signal to Noise Ratio	>50dB	>50dB	>50dB	>50dB	>90dB
High & Low Pass Crossover	12dB per Octave	12dB per Octave	12dB per Octave	12dB per Octave	12dB per Octave
Subsonic Filter	N/A	N/A	12dB per Octave	12dB per Octave	12dB per Octave
Crossover Range	50Hz-250Hz	50Hz-250Hz	50Hz-400MHz	50Hz-250Hz (CH1,2,3,4) 50Hz-400Hz (Subwoofer)	30Hz to 300Hz
Subsonic Crossover Range	N/A	N/A	10Hz-40Hz	10Hz-40Hz	10Hz to 55Hz
Bass Boost @ 45Hz	N/A	N/A	0 to +18dB	0 to +18dB	0 to +18dB
Low Level Input Range	0.35 Volts to 10 Volts	0.35Volts to 10 Volts	0.35 Volts to 10 Volts	0.35 Volts to 10 Volts	200 millivolts to 8 volts
High Level Input Range	1 Volt to 30 Volts	1 Volt to 30 Volts	1 Volt to 30 Volts	1 Volt to 30 Volts	200 millivolts to 20 volts
Minimum Load Impedance	2 Ohm Stereo & 4 ohm bridged	2 Ohm Stereo & 4 ohm bridged	2 Ohm	2 Ohm Stereo & 4 ohm bridged	1 Ohm

NOTE:

PHOENIX GOLD Z-SERIES AMPLIFIERS HAVE A MINIMUM LOAD IMPEDANCE OF 2 OHM PER CHANNEL 4 OHM BRIDGED.

(except Z1000.1 - which is 1 Ohm)



Amplifier Installation

Installation Warnings

1. Ensure the +12V lead is disconnected from the battery before you connect any new equipment
2. Ensure that the amplifier mounting location and holes will not interfere with the petrol tank, brake lines or electrical wiring.
3. Ensure the amplifier is securely fastened to the vehicle to prevent the amplifier moving and causing damage in the event of an accident
4. Ensure all wiring is protected from sharp objects and from pinching or crushing which could result in damage to the audio system
5. Ensure the mounting location has sufficient air flow around the amplifier. If the amplifier is mounted in an enclosed space a 3" fan with ducting should be used to assist with cooling.
6. Do not mount any amplifier on a subwoofer enclosure as extended exposure to vibration may cause damage to the amplifier.
7. Ensure the minimum recommended gauge wire/cable or larger for all amplifier connections
8. Appropriate mounting is very important for prolonged life expectancy of any amplifier. Select a location that provides protection from moisture. Keep in mind that an amplifier should never be mounted upside down. Upside down mounting will compromise heat dissipation through the heat sink and could engage the thermal protection circuit.



Connection

Ensure the audio system is turned off before making any connections to the amplifier, speakers or source unit. Failure to do so could result in permanent damage to the audio system.

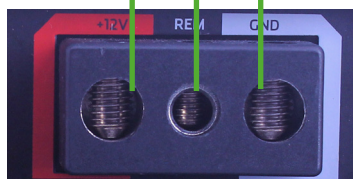
Ensure the correct gauge cable is used for all connections; consult the cable calculator diagram below for the correct gauge cable for your installation.

Total Amps	Cable Length >	M	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-9
		FT	0-4	4-7	7-10	10-13	13-16	16-19	19-22	22-28
0-20			14	12	12	10	10	8	8	8
20-35			12	10	8	8	6	6	6	4
35-50			10	8	8	6	4	4	4	4
50-65			8	8	6	4	4	4	4	2
65-85			6	6	4	4	2	2	2	0
85-105			6	6	4	2	2	2	2	0
105-125			4	4	4	2	0	0	0	0
125-150			2	2	2	0	0	0	0	0

The above chart shows cable gauges to be used, if no less than a 0.5 volt drop is acceptable. If aluminium wire is used, the gauges should be of an even larger size to compensate. Cable gauge size calculation takes into account terminal connection resistance.

AMPLIFIER CONNECTION

Z150.2 - Z300.4 - Z300.1 - Z600.5



Z1000.1

1. +12Volt Power

Ensure ALL other cable connections are completed before connecting this cable to the battery. PHOENIX GOLD amplifiers should be connected directly to the 12v battery terminal using the appropriate gauge cable. Start at the vehicles battery and run the cable through to the amplifier. PHOENIX GOLD recommends the use of rubber grommets when passing any cable through metal panels to avoid sharp corners or panels that could cut through the insulation of the cable. An inline fuse or circuit breaker MUST be used within 30cm (12") of your battery; this will prevent the potential

risk of a fire caused by a short in your power cable (see specifications table for recommended inline fuse/circuit breaker ratings). Connect the other end of your power cable to the battery, but remember to leave the fuse out or circuit breaker off until all other cable connections are made.

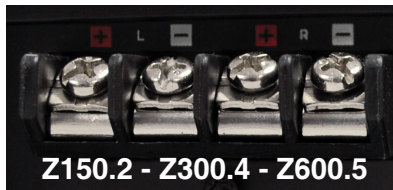
2. Remote Turn-On

This connection turns the amplifier on and should be connected to the 'Remote Turn on' wire from the Head Unit. If one is not available a switched +12v source must be used, such as a power antenna wire or ACC +12v.

If you are using high level (speaker) inputs and a remote turn on wire is not available, then instead the 'Auto Turn-On' switch must be set to ON

3. Ground

Connect the Ground/Earth cable for your amplifier first. Ensure that the location is a good source of ground (preferably the chassis/floor pan). Investigate the area you wish to use to ensure it is free of wiring, vacuum lines, brake and fuel lines. Use either a wire brush or sandpaper to expose bare metal, this will provide a high current contact for your ground connection. Use the same gauge cable for the ground cable as you did for the power cable. Secure the ground cable to the ground point with a bolt, star washer and nut. Apply some neutral cure silicon to the bolt and bare metal to prevent possible water leaks and rust. Connect the other end of your ground cable to the amplifier.



4. Speaker Output Connection (Z300.4 - Z150.2 - Z600.5)

Ensure the correct polarity is observed when connecting speakers/subwoofers
2 Ohm minimum speaker impedance for stereo operation (per channel)
4 Ohm minimum speaker impedance for bridged operation



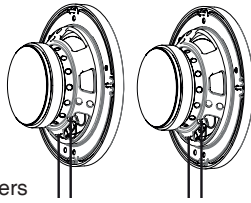
4B. Internally Linked Output (Z300.1 ONLY)

The Z300.1 Monoblock amplifier provides dual output connections to simplify wiring when using 2 subwoofers or a dual voice coil subwoofer. Both positive and negative terminals and internally connected or linked in parallel. For dual coil (2 x 4 ohm) or two single coil (4 ohm) subwoofers., connect each coil to positive or negative terminal. For a standard single coil subwoofer connect to either positive and either negative terminal.



4C. Single Channel Output (Z1000.1 ONLY) (1 Ohm minimum)

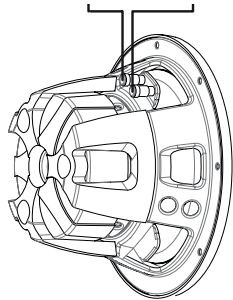




2 x Front/Rear Speakers

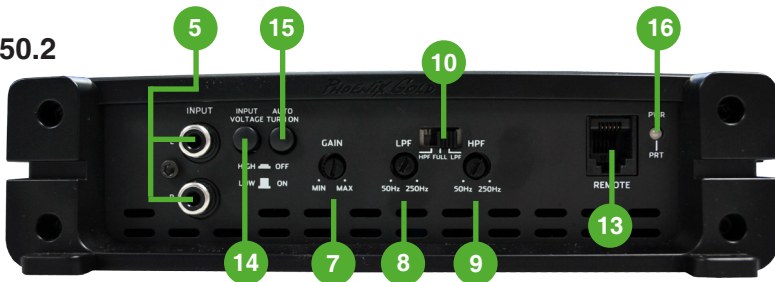
Z300.4

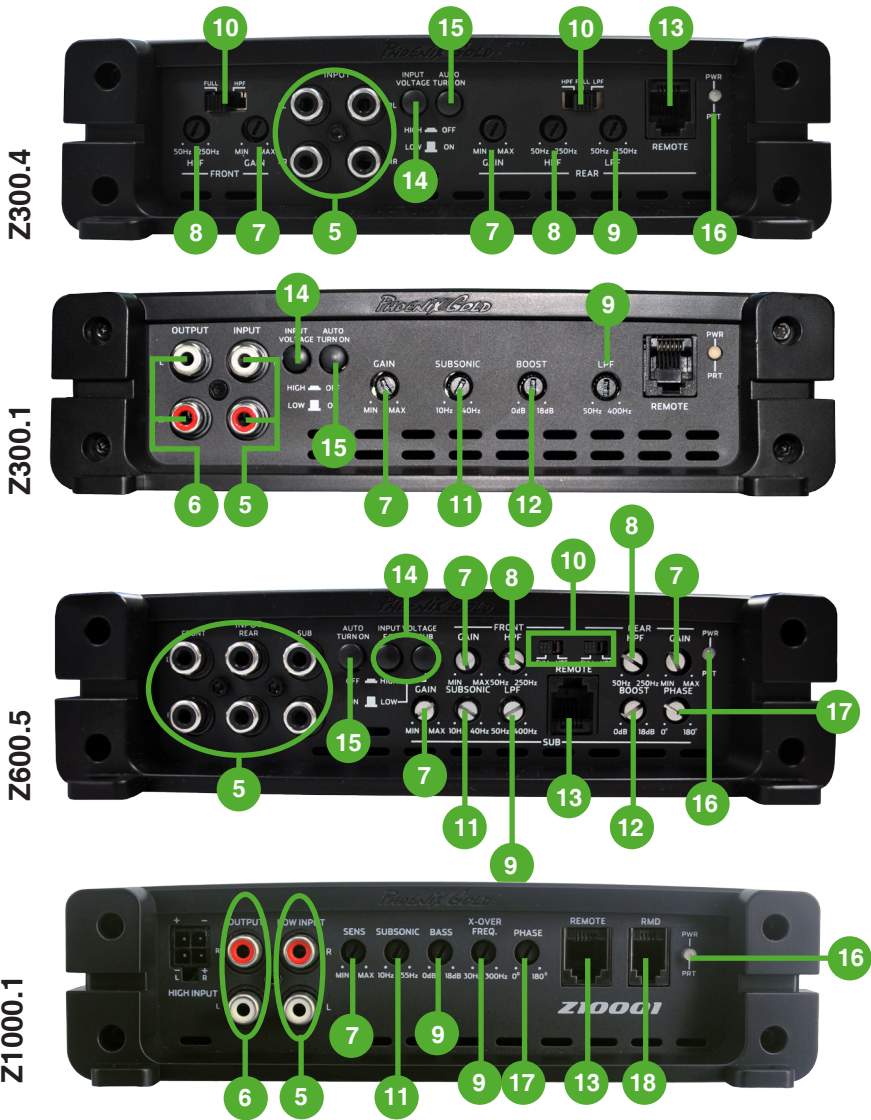
Example of 3 Channel configuration



(4 Ohm Subwoofer)
Bridged Rear Channels

Z150.2





5. RCA Inputs Front-Rear-Subwoofer

Choose the correct length RCA cables to connect the RCA outputs of the source/head unit, to the input connectors of the amplifier. Run the RCA cables on the opposite side of the vehicle, to the power cable and vehicle wiring loom. Avoid the electric fan motor and wiring. Ensure you follow the correct balance. (L LEFT = White or Black. R Right = Red)

6. Low Level RCA outputs (Z300.1 + Z1000.1 only)

Use these RCA connectors to connect to a secondary amplifier. This output is a pass-thru connection from the RCA input connectors so that the signal level and frequency response is the same as the original input signal.



7. Gain/Level Control (Sub/Front/Rear)

This control is used to match the input level of the amplifier to the output level of your head unit. We recommend the method below, as failure to follow these steps may damage the audio system.

1. Turn the amplifier Gain to zero
2. Turn the volume of the head unit to $\frac{3}{4}$ and the bass and treble to zero
3. Adjust the amplifier Gain/Level control until the desired maximum volume is achieved without distortion.
4. Make fine adjustments to tune your install.

8. High Pass Crossover Filter

Set the crossover switch to HP and turn this control to 65Hz or above when using speaker's smaller than 6 x 9". When a subwoofer is used in the system, this feature is designed to filter out all low bass frequencies that only subwoofers should produce. See specification table for adjustable frequency range

9. Low Pass Crossover Filter

Ensure the crossover frequency is set at 100Hz or below. This feature must be used with a subwoofer to filter out all mid to high frequencies that only full range speakers should produce. See specification table for adjustable frequency range

10. Crossover Switch

Full - This setting is for large speakers (e.g. 6 X 9") or speakers when a subwoofer is not included in the system. The amplified audio signal is not filtered so the full range audio signal is sent to the speakers.

Low - This setting is used when using a subwoofer and will only allow frequencies below the low pass filter setting to pass through.

High - Used to run mid-range speakers when a separate subwoofer is connected. This setting will only allow frequencies above the set high pass filter setting to pass through.

11. Subsonic Filter (Z300.1 + Z1000.1)

This is a variable control that filters out all subsonic bass frequencies below the set point. These are frequencies that are not audible. These frequencies can damage subwoofers. See specification table for adjustable frequency range.

12. Bass Boost (Z300.1 + Z1000.1)

This control adjusts the bass boost at 45Hz, from 0 to +18dB. Start from 0 and slowly increase to the desired level. Use this control with extreme care as failure to do so may result in damage to the subwoofers.

13. Remote Bass Controller Port

This connection should be used with the optional remote control (ZRBC - sold separately) to adjust the bass level from any location within the vehicle.





14. Input Voltage

This function switches the amplifier input between Low level (RCA cable) and High level (speaker wire) connection. Where possible RCA (Low Level) connections are preferable.

High

The High setting is selected when the Phoenix Gold High Level adaptor (sold separately) is used to connect a full range signal from the source (head) unit speaker connections to the amplifier. Simply connect the speaker wires to the input connections observing polarity and then connect the PHOENIX GOLD ZRHC to the RCA inputs on the Amplifier.

Low

The Low setting is for RCA connection from the source (head) unit to the amplifier. Connect the RCA interconnects to the appropriate Line Out connectors on the source head unit and connect to the RCA inputs of the Amplifier. This is the preferred installation method, as this provides a higher quality audio signal.

15. Auto Turn-On

Auto Turn on switch = 12V

If you are using a 12V switched supply to the remote terminal of the amplifier this switch should be in the off position. If you are not using a switched supply and the amplifier is connected to high level inputs this switch should be in the on position

16. Power / Protect LED

1. When illuminated Green, indicates normal operation. Amplifier is powered on with no faults detected
2. When illuminated Red, indicates the amplifier is in protection mode / fault state. See troubleshooting section on the next page.

17. Phase (Z1000.1 ONLY)

This adjusts the phase of the subwoofer relative to the rest of the system. 0-180°

18. RMD (Z1000.1 ONLY)

Use this port to connect to the optional Remote Voltage Display (RMD-1)



TROUBLESHOOTING

PROBLEM	POSSIBLE REASON	SOLUTION
Amplifier not switching ON LED = OFF (not 'Red or Green')	No 12V to power wire	Check fuses and connections to battery
	No power to remote wire	Check remote turn on connections to head unit
	Fuse broken	Replace fuse with correct type and amperage
	No ground connection	Check ground cable is correctly connected to the amplifier and vehicle / body chassis
Amplifier not working, status LED = RED	Amplifier too hot	Move amplifier to vented area Turn head unit down
	Speaker wires shorted	Check that there are no speaker wires shorted to another wire or to the vehicle chassis
No Sound LED = Green	RCA Signal	Check RCA connection to head unit
	Gain control not set up	Ensure you have set up the amplifier gain level control
	Head unit	Check head unit volume
	Amplifier	Check all power, remote on and ground connections
	Speakers	Check speakers are correctly connected Check speakers for shorts





An aerial photograph of a forest, showing a mix of green and gold/brown tones, suggesting a mix of tree types or a seasonal change. The texture is grainy, typical of a printed image.

PHOENIX GOLD

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