



POWERFUL AND COMPACT, CLASS D AMPLIFIERS

Model: **ZR6004 / ZR10001 / ZR20001**

SPECIFICATIONS

- **High Level Auto-Turn On** - powers on the amp when audio signal is supplied
- **OEM Connection Ready** - compatible with aftermarket/original source units
- **Remote Bass Ready** - control bass with included ZRBC (ZR10001 & ZR20001)
 - **Fanless Design** - regulates temperature internally for quiet operation
 - **High & Low Level Inputs** - versatile connectivity to suit any vehicle
 - **Heavy Duty Connector Block** - enables maximum current supply
 - **4-Way Protected Circuit** - protection against thermal damage, reversed power, speaker polarity and low voltage

All specifications subject to change without notice.

	ZR6004	ZR10001	ZR20001
Class	Class D	Class D	Class D
Frequency Response	20Hz-20KHz	20Hz-400Hz	20Hz-400Hz
Dims (LxWxH(mm))	253 x 160 x 48	243 x 160 x 48	383 x 160 x 48
RMS Power Ratings	175W x 4 @ 2ohm 105W x 4 @ 4ohm 350W x 2 @ 4ohm bridged	1015W x 1 @ 1ohm 670W x 1 @ 2ohm 385W x 1 @ 4ohm	2015W x 1 @ 1ohm 1310W x 1 @ 2ohm 740W x 1 @ 4ohm
Signal to Noise Ratio	>96dB	>96dB	>96dB
High & Low Pass Crossover	12dB per Octave	24dB per Octave	24dB per Octave
Subsonic Filter	N/A	12dB per Octave	12dB per Octave
Crossover Range	40Hz-6KHz	50Hz-250Hz	50Hz-250Hz
Subsonic Crossover Range	N/A	10Hz-55Hz	10Hz-55Hz
Bass Boost @ 45Hz	N/A	0 to +18dB	0 to +18dB
Low Level Input Range	0.2V to 10V	0.2V to 10V	0.2V to 10V
High Level Input Range	1V to 30V	1V to 30V	1V to 30V
Minimum Load Impedance	2ohm stereo & 4ohm bridged	1ohm	1ohm

Note:

Phoenix Gold Amplifiers have a minimum load impedance of 2ohm per channel 4ohm bridged

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.

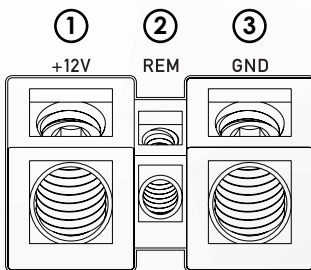
Total Amps	Cable Length >	M	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-9
		FT	0-4	4-7	7-10	10-13	13-16	16-19	19-22	22-28
0-20			14	12	12	10	10	8	8	8
20-35			12	10	8	8	6	6	6	4
35-50			10	8	8	6	4	4	4	4
50-65			8	8	6	4	4	4	4	2
65-85			6	6	4	4	2	2	2	0
85-105			6	6	4	2	2	2	2	0
105-125			4	4	4	2	0	0	0	0
125-150			2	2	2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

The above chart shows cable gauges to be used if no less than a 0.5V 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

1. +12V 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 spec 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.



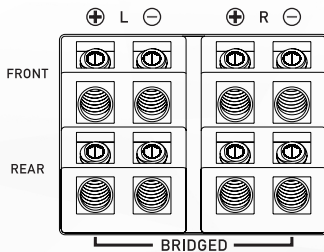
2. Remote Turn-On

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.

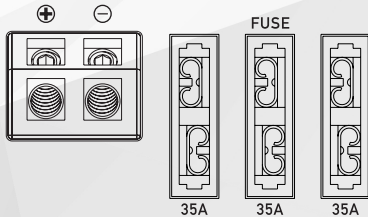


4A. Speaker Output Connection (ZR6004 ONLY)

Ensure the correct polarity is observed when connecting speakers/subwoofers.

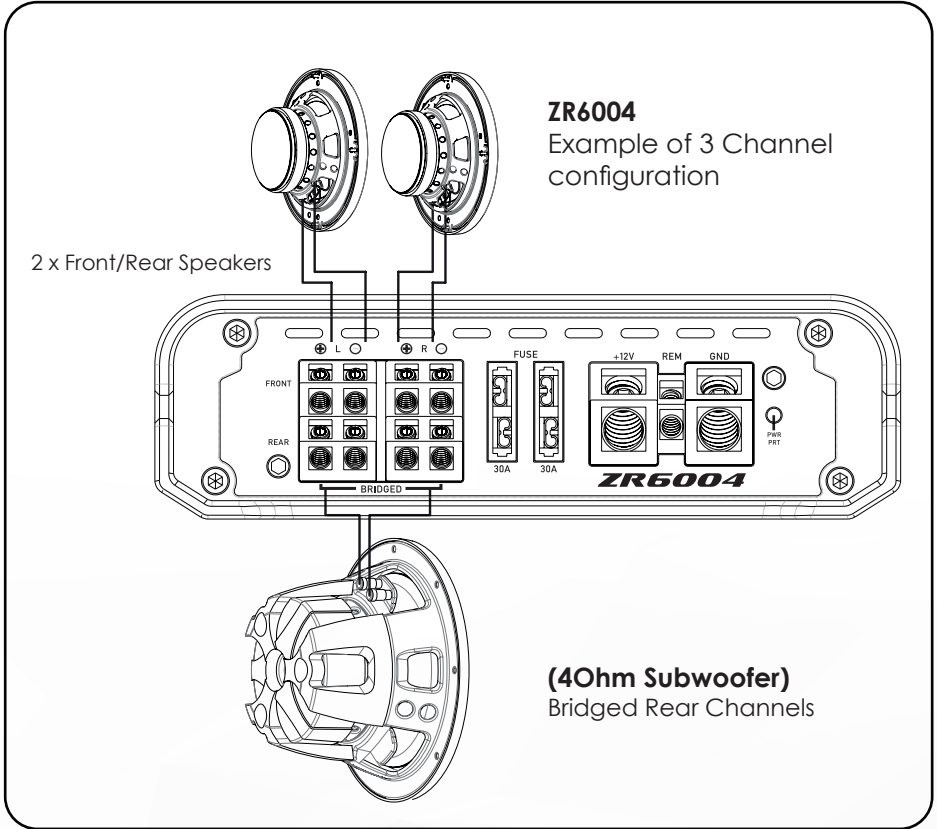
2ohm minimum speaker impedance for stereo operation (per channel).

4ohm minimum speaker impedance for bridged operation.

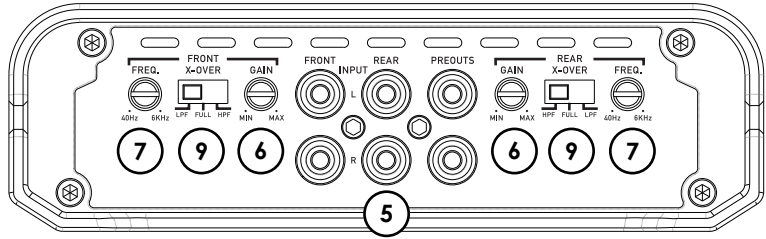


4B. Internally Linked Output (ZR10001 - ZR20001)

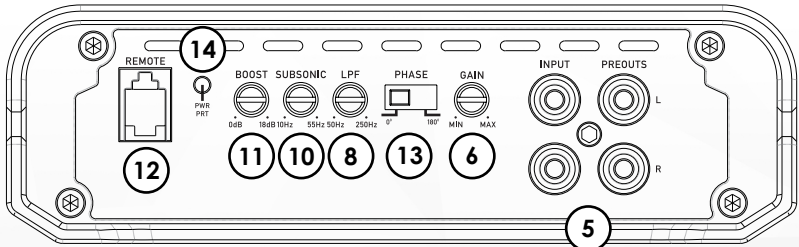
The ZR20001 Monoblock amplifier provides dual output connections to simplify wiring when using 2 subwoofers or a dual voice coil subwoofer. Both positive and negative terminals and internally connected or linked in parallel. For dual coil (2 x 4ohm) or two single coil (4 ohm) subwoofers connect each coil to positive or negative terminal. For a standard single coil subwoofer connect to either positive and either negative terminal.



ZR6004



**ZR10001/
ZR20001**



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. The RCA inputs also accept 'high level input', when using a high level signal, the amplifier will autostart without the need of a remote signal.

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. 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.

7. 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.

8. 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

9. Crossover Switch (ZR6004 ONLY)

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.

10. Subsonic Filter

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.

11. Bass Boost

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.

12. Remote Bass Controller Port

This connection should be used with the included remote control (*ZRBC - included in both ZR10001 & ZR20001*) to adjust the bass level from any location within the vehicle.

13. Phase Switch

This control adjusts the phase shift 180 degrees for the subwoofer. This means that the subwoofer will move inwards instead of outwards on a sinus wave.

14. Power / Protect LED

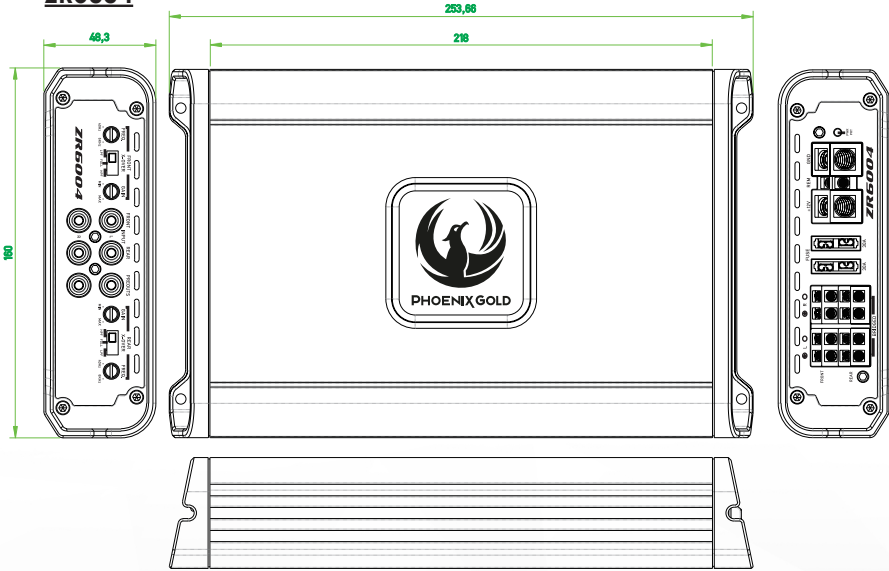
1. When illuminated Blue, indicates normal operation. Amplifier is powered on with no faults detected.

2. When illuminated Red, indicates the amplifier is in protection mode / fault state. See troubleshooting section on the next page.

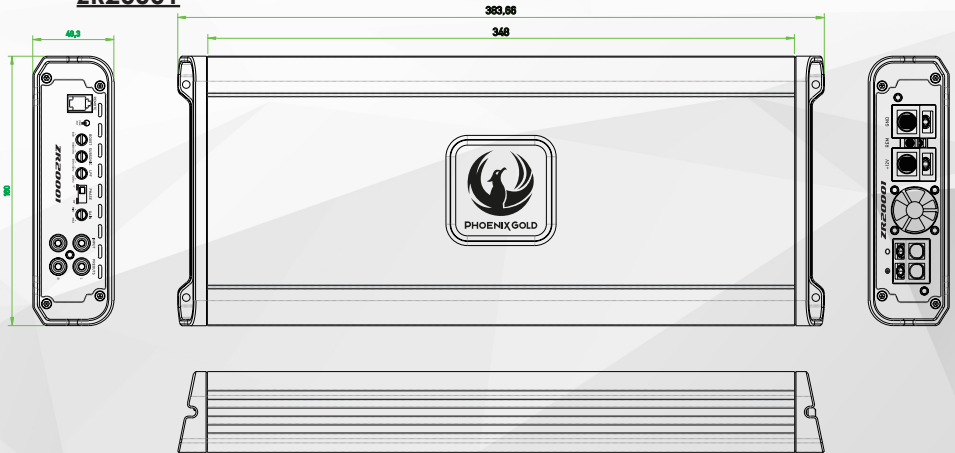
AMPLIFIER TROUBLESHOOTING

PROBLEM	POSSIBLE REASON	SOLUTION
Amplifier not switching ON LED = OFF (not 'Red or Blue')	No 12V to power wire	Check fuses and connections to battery
	No power to remote wire	Check remote turn on connections to head unit
	Blown Fuse	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 = Blue	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

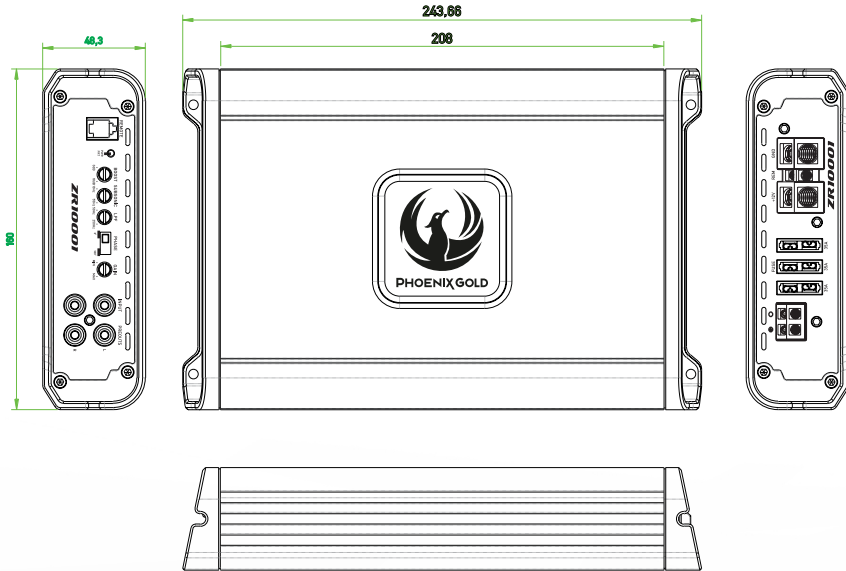
ZR6004



ZR20001



ZR10001



Disclaimer

Always ensure the enclosure is securely attached, to avoid movement. PHOENIX GOLD accepts no responsibility for damage or injury in relation to inappropriate securing of this product.

Phoenix Gold Product Warranty

LIMITED WARRANTY ON AMPLIFIERS:

Phoenix Gold warrants this product to be free of defects in materials and workmanship for a period of one (1) years from the original date of purchase. This warranty is not transferable and applies only to the original purchaser from an authorized Phoenix Gold dealer in the United States of America only. Should service be necessary under this warranty for any reason due to manufacturing defect or malfunction, Phoenix Gold will (at its discretion) repair or replace the defective product with new or re-manufactured product at no charge. Damage caused by the following is not covered under warranty: accident, misuse, abuse, product modification or neglect, failure to follow installation instructions, unauthorized repair attempts, misrepresentations by the seller. This warranty does not cover incidental or consequential damages and does not cover the cost of removing or reinstalling the unit(s). Cosmetic damage due to accident or normal wear and tear is not covered under warranty.

INTERNATIONAL WARRANTIES:

Products purchased outside the United States of America are covered only by that country's Authorized Phoenix Gold reseller and not by Phoenix Gold. Consumers needing service or warranty information for these products must contact that country's reseller for information.