PHOENIX GOLD

24VOLT

ZT series

POWERFUL 24VOLT CLASS D AMPLIFIERS SUITABLE FOR 24VOLT SYSTEMS

Model: **ZT6004R / ZT15001**

SPECIFICATIONS

- **High Level Auto-Turn On** - powers on the amp when audio signal is supplied
- **OEM Connection Ready** - compatible with aftermarket/original source units
- **Integrated Fan** - regulates temp. for sustained performance *(ZT15001 only)*
- **Remote Ready** - control bass/gain with included ZRBC
- **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.

PHOENIX GOLD

ZT6004R / ZT15001 - ZT-Series Amplifiers

Specifications	ZT6004R	ZT15001
Class	Class D	Class D
Channels	4	1
Frequency Response	12Hz – 22kHz	20Hz – 400Hz
RMS Power Rating (1Ω):	N/A	1 x 1500W
RMS Power Rating (2Ω):	4 x 175W	1 x 1150W
RMS Power Rating (4Ω):	4 x 105W 2 x 350W Bridged	1 x 650W
Signal to Noise Ratio (SNR) (Full Power)	-90dB	-74dB
Total Harmonic Distortion (THD)	<1%	<1%
Low Pass Filter (LPF)	50Hz – 400Hz (12dB/Oct)	50 – 250Hz (24dB/Oct)
High Pass Filter (HPF)	50Hz – 400Hz (12dB/Oct)	N/A
Subsonic	N/A	10Hz – 55Hz (24dB/Oct)
Bass Boost @ 45Hz	0 – +18dB	0 – +18dB
Crosstalk	-60dB	N/A
Input Sensitivity	0.25V – 9.8V	0.29V – 9.3V
Fuses	2 x 20A	N/A
Remote	Yes (Included)	Yes (Included)
High-level Input Via RCA	Yes	Yes
Auto Turn-on	Yes	Yes
Phase Control	N/A	0° - 180°
Operating Voltage	20V – 32V	17V – 31V
Idle Current	0.55A	1.04A
Current Draw (Max)	34A	87A
Total Efficiency (4Ω)	88%	88%
Power Terminal	20mm²	20mm²
Speaker Terminal	4mm²	20mm²
Dimensions (LxWxH)	254 x 160 x 48.3mm	334 x 160 x 48.3mm
Weight	1.76 kg	2.6 kg

Disclaimer
Ensure your safety and the well-being of those around you by following these essential guidelines:
- Keep all product materials and packaging away from children, pets, or anyone at risk of suffocation.
- Exposure to noise levels above 85 dB can cause permanent hearing damage.
- Extreme sound frequencies reduce perception abilities that are essential in road traffic conditions; do not let loud volumes distract from being mindful behind the wheel.
- Phoenix Gold takes no responsibility for any physical harm or damage caused by improper use of their products.
- Ensure that all metals and raw materials are disposed of in accordance with local regulations and environmental

Warranty
Phoenix Gold products come with a limited warranty and are covered by our regional distribution partners and their terms and conditions. You can find out more information by contacting your local retailer or distributor.

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 from moving and causing damage in the event of an accident.
4. Ensure all wiring is protected from sharp objects and pinching or crushing, which could damage 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. Ensure the minimum recommended gauge wire/cable or larger for all amplifier connections.
7. Appropriate mounting is essential for the prolonged life expectancy of any amplifier. Select a location that protects from moisture. Keep in mind that an amplifier should never be mounted upside down. Up side-down mounting will compromise heat dissipation through the heat sink and could engage the thermal protection circuit.

Connection

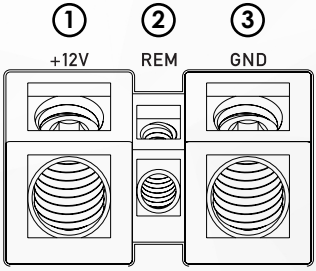
Ensure the audio system is turned off before making any connections to the amplifier, speakers or source unit. Failure to do so could result in permanent damage to the audio system.

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

	CABLE LENGTH															
	0-1 Metre / 0-4 Feet		1-2 Metre / 4-7 Feet		2-3 Metre / 7-10 Feet		3-4 Metre / 10-13 Feet		4-5 Metre / 13-16 Feet		5-6 Metre / 16-19 Feet		6-7 Metre / 19-22 Feet		7-9 Metre / 22-28 Feet	
TOTAL AMPS	MM2	AWG	MM2	AWG	MM2	AWG	MM2	AWG	MM2	AWG	MM2	AWG	MM2	AWG	MM2	AWG
0-20A	4	12	4	12	4	12	4	12	6	10	6	10	6	10	10	8
20-35A	4	12	6	10	6	10	6	10	6	10	10	8	10	8	20	4
35-50A	6	10	6	10	6	10	10	8	10	8	10	8	20	4	20	4
50-65A	10	8	10	8	10	8	10	8	20	4	20	4	20	4	20	4
65-85A	10	8	10	8	10	8	20	4	20	4	20	4	20	4	35	2
85-105A	10	8	10	8	20	4	20	4	20	4	20	4	20	4	35	2
105-125A	20	4	20	4	20	4	20	4	20	4	20	4	35	2	35	2
125-150A	20	4	20	4	20	4	20	4	35	2	35	2	35	2	50	0
150-200A	20	4	20	4	20	4	35	2	35	2	50	0	50	0	50	0
200-250A	35	2	35	2	35	2	50	0	50	0	50	0	50	0	70	2/0
250-300A	50	0	50	0	50	0	50	0	50	0	50	0	70	2/0	70	2/0

If aluminium wire is used, it is recommended to increase the size of the gauges to compensate. The calculation of cable gauge size considers the resistance of terminal connections.

AMPLIFIER CONNECTION

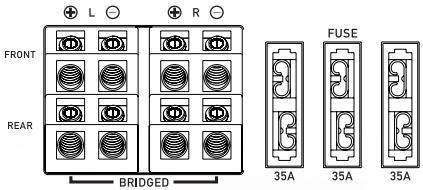


1. +12V Power

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.

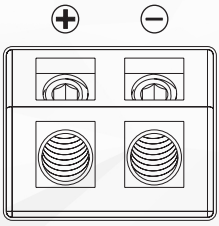
2. Ground

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.



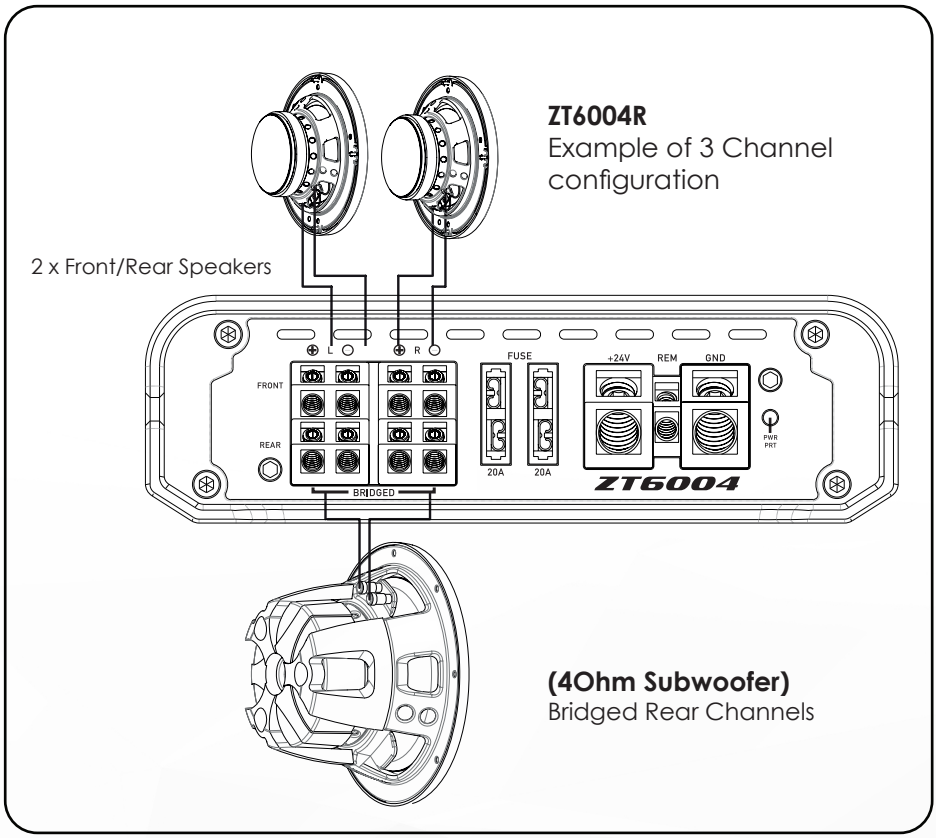
3A. Speaker Output Connection (ZT6004R ONLY)

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.



3B. Internally Linked Output (ZT15001 ONLY)

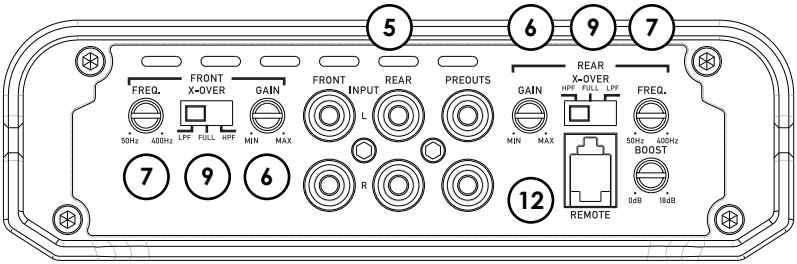
The ZT15001 Monoblock amplifier provides dual output connections to simplify wiring when using 2 subwoofers or a dual voice coil subwoofer. Both positive and negative terminals and internally connected or linked in parallel.
For dual coil (2 x 4ohm) or two single coil (4ohm) subwoofers connect each coil to positive or negative terminal. For a standard single coil subwoofer connect to either positive and either negative terminal.



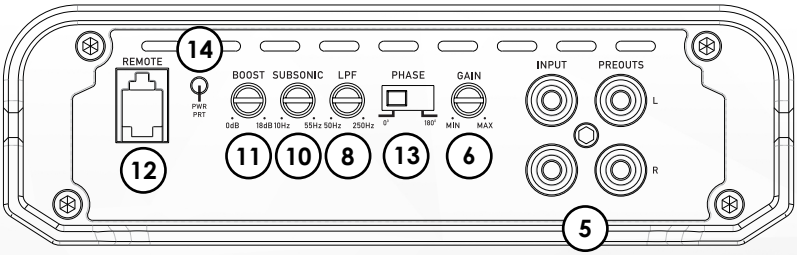
ZT6004R
Example of 3 Channel configuration

(4Ohm Subwoofer)
Bridged Rear Channels

ZT6004R



ZT15001



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 ¾ 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 (ZT6004 ONLY)
Full - This setting is for large speakers (e.g. 6 X 9") or speakers when a sub woofer 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 Control Port
This connection should be used with the included remote control *(ZRBC)* to adjust the bass level from any location within the vehicle.
ZT6004R remote to control the Gain level in the rear channels.

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.

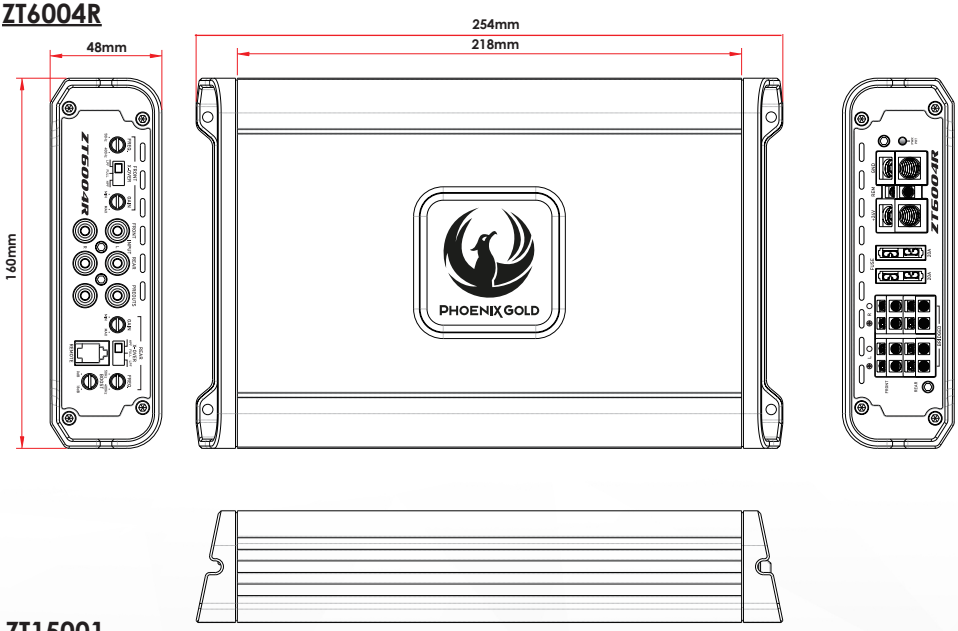
14. Power / Protect LED
1. When illuminated Blue, indicates normal operation. Amplifier is powered on with no faults detected.

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 24V 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

ZT6004R



ZT15001