

PULSE

APB SERIES Power Amplifiers

APB1400, APB2100, APB2700



Introduction

Thank you for choosing a Pulse APB series power amplifier as part of your sound reinforcement system. This high output amplifier is designed to offer high quality, dependable service for mobile and installed systems. Please read this manual fully and follow the instructions to achieve the best results with your new purchase and to avoid damage through misuse.

Warning

To prevent the risk of fire or electric shock, do not expose any of the components to rain or moisture. If liquids are spilled on the casing, stop using immediately, allow unit to dry out and have checked by qualified personnel before further use. Avoid impact, extreme pressure or heavy vibration to the case
No user serviceable parts inside – Do not open the case – refer all servicing to qualified service personnel.

Safety

- Check for correct mains voltage and condition of IEC lead before connecting to power outlet
- Ensure speaker leads are good condition with no short connections or damaged plugs
- Check impedance of speaker loads do not exceed the minimum stated load for the amplifier
- Do not allow any foreign objects to enter the case or through the ventilation grilles

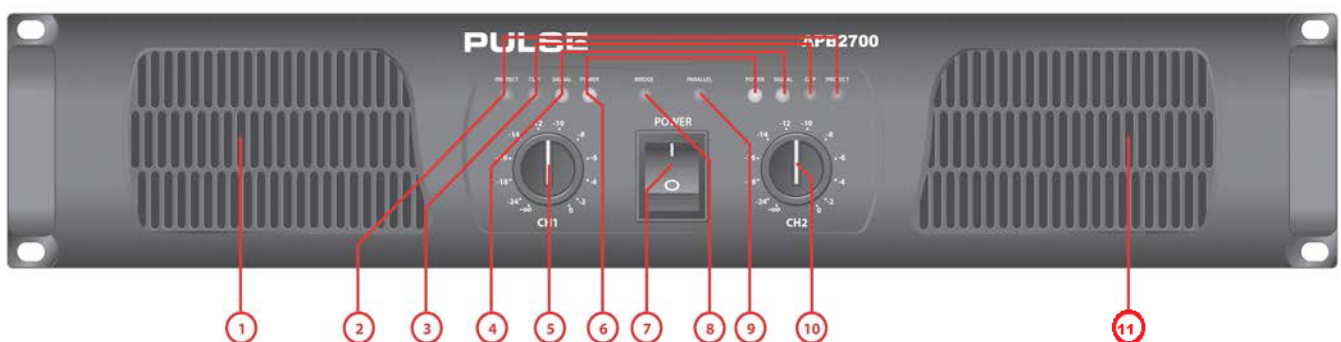
Placement

- Keep out of direct sunlight and away from heat sources
- Keep away from damp or dusty environments
- When rack-mounting, ensure adequate support for the base of the amplifier and firm fixings for the front
- Ensure adequate air-flow and do not cover cooling vents at the front and rear of the amplifier
- Ensure adequate access to controls and connections

Cleaning

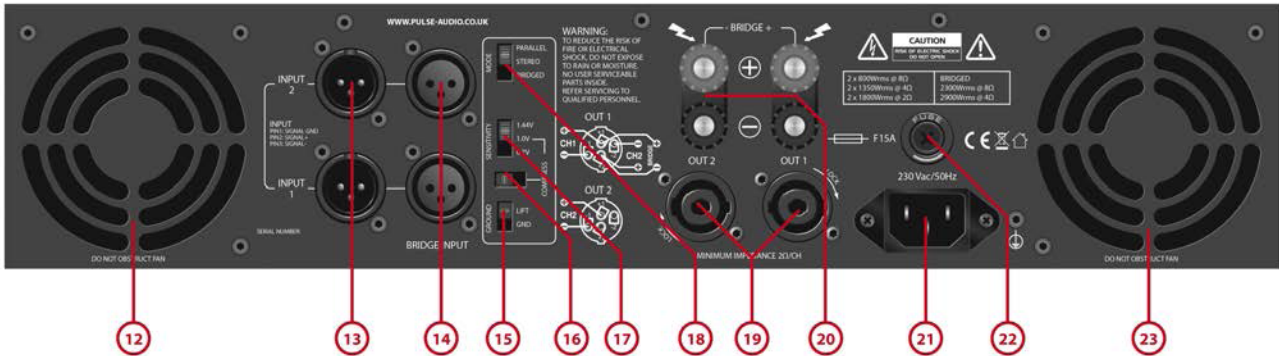
- Use a soft cloth with a neutral detergent to clean the casing as required
- Use a vacuum cleaner to clear ventilation grilles of any dust or debris build-ups
- Do not use strong solvents for cleaning the unit

Front Panel



- | | |
|---------------------|----------------------|
| 1. Cooling vent | 7. Power switch |
| 2. Protect LEDs | 8. Bridge LED |
| 3. Clip LEDs | 9. Parallel LED |
| 4. Signal LEDs | 10. CH2 gain control |
| 5. CH1 gain control | 11. Cooling vent |
| 6. Power LEDs | |

Rear Panel



- | | |
|------------------------------------|--|
| 12. Cooling fan | 18. Parallel/Stereo/Bridge mode switch |
| 13. Parallel signal outputs | 19. Speaker outputs 1 and 2 |
| 14. Signal inputs | 20. 4mm binding post speaker outputs (inc. Bridge) |
| 15. Ground lift switch | 21. IEC mains inlet |
| 16. Compress (clip limiter) switch | 22. Mains fuse holder |
| 17. Input sensitivity switch | 23. Cooling fan |

Operation

Connect speaker cabinets to channel outputs using good quality leads via the SPK connector or binding posts and ensure that the combined load on each channel is no lower than 2Ω.

For speaker loads connected in parallel...
 Therefore...
 $1/\text{speaker impedance} + 1/\text{speaker impedance}... = 1/\text{TOTAL impedance}$
 $8\Omega + 8\Omega = 4\Omega \text{ total}$
 $4\Omega + 4\Omega = 2\Omega \text{ total}$
 $8\Omega + 8\Omega + 8\Omega + 8\Omega = 2\Omega \text{ total}$

Both channels can be used to drive a single load at the combined volume of each by switching to BRIDGE mode. In this mode, the input is on channel 1 and output from CH1 SPK connector (pins 1+ and 2-) or across the red "+" terminals as indicated on the rear panel - WARNING - Minimum load for bridge mode is 4Ω

Connect each signal input from mixer or other line level source via the XLR connectors on the rear panel using good quality signal leads. Depending on output level of the mixer, select the appropriate sensitivity on the rear panel.

For protection in high power situations, the onboard COMPRESS function may be switched in to protect from overload. In situations with excessive mains hum coming through the speakers, it may help to switch the GROUND to the LIFT position. This may help in some situations but otherwise, it is preferred to be switched to GND.

XLR inputs and outputs for each channel are wired in parallel, allowing signal to be carried forward to further amplifiers.

Connect the amplifier to a mains outlet, ensuring that the IEC lead is earthed, in good condition and connected securely. With channel gain controls turned fully down, switch on the power to the amplifier. This unit has a "soft-start" function which makes some checks before engaging power to the amplifiers, which may take a few seconds.

With mixer (or other signal source) levels turned down, gradually increase the amplifier's channel level controls to the required level (normally 3/4) and then gradually increase the signal level from the mixer or sound source until sound can be heard through the speakers and then continue increasing up to the required level.

During use, green "SIGNAL" LEDs will illuminate to show when a signal is present and yellow "CLIP" LEDs illuminate if the output is reaching clip level. If the red CLIP LEDs illuminate more than very briefly, reduce the volume until they hardly light up at all.

If the internal protection circuitry detects a fault in the speakers or amp, the channel(s) will enter Protect Mode and red "PROTECT" LEDs will illuminate on the front panel to show this. Switch the amplifier off and check the entire system (including leads) before powering up again. If still in Protect Mode, seek advice from qualified service personnel.

Before powering down, turn the channel gain controls fully down to avoid loud noises when switching off.

Specifications

Model	APB1400	APB2100	APB2700
Power supply	230Vac, 50Hz (IEC)		
Controls	CH1 gain, CH2 gain, ground, compress, mode		
Input impedance	20k ohms		
Frequency response	5Hz - 50kHz		
Total harmonic distortion	0.05%		
S/N ratio	>105dB		
Protection	Short-circuit, overload, D.C. and thermal protect		
Output: RMS @ 2Ω	2 x 1000W	2 x 1400W	2 x 1800W
Output: RMS @ 4Ω	2 x 700W	2 x 1050W	2 x 1350W
Output: RMS @ 8Ω	2 x 400W	2 x 600W	2 x 800W
Bridge power: RMS @ 4Ω	1700W	2300W	2900W
Bridge power: RMS @ 8Ω	1250W	1750W	2300W
Circuit protection	Short-circuit, DC, Overload, Boot-strap short test		
Dimensions	88 x 482 x 453mm		
Weight	22.5kg	25.0kg	26.0kg

Troubleshooting

No power light on either channel	Ensure IEC inlet is connected to mains and lead is in good condition
	Ensure mains outlet is switched on
Power lights on but no other LEDs and no output	Check input signal and connection leads
	Ensure channel gain controls are not turned fully down
Power light and Signal LEDs are lit but no output	Check speaker cabinets are in good working order
	Check speaker leads are in good condition and connected properly
PROTECT LED is lit and there is no output	Switch off and disconnect from mains
	Check speakers are in good working order and not shorted out (using a multi-tester)
	After checking all connected items, power up again
	If still in Protect Mode, switch off again and refer to qualified service personnel
	Ensure cooling vents are clear and amplifier is not overheated
Output is very distorted and "CLIP" LEDs are lighting	Check the speaker impedance is not below 2Ω per channel (4Ω if bridged)
	Turn down the input level from audio source
	Turn down channel gain controls
Output is working but at very low level	Ensure input source is at line level
	Increase input level from audio source
	Turn up channel gain controls

*Errors and omissions excepted.
Copyright© 2014. Pulse*