

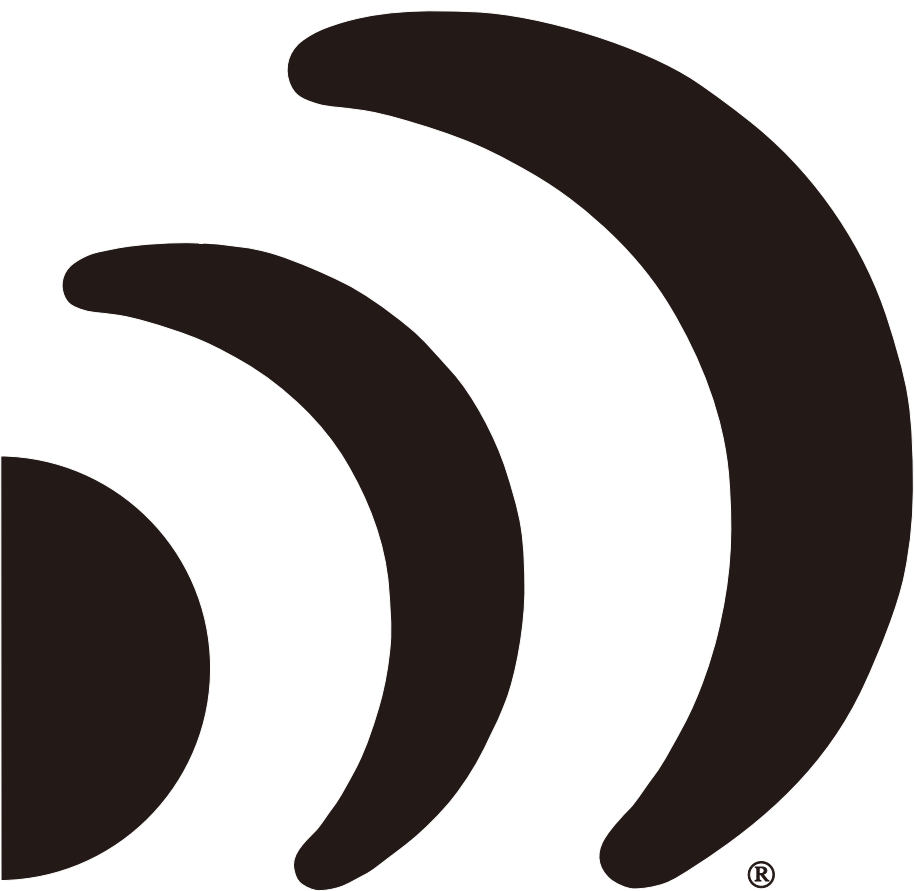
# MASSIVE<sup>®</sup>

PRIMO SERIES AMPLIFIERS

P2/P3/P4/P8

PX4/PX4S/PX4R

PX2R/PX6



# INTRODUCTION

## **Congratulations!**

And thank you for purchasing a Massive Audio® Primo series amplifier for your car audio system. You now own an amplifier of uncompromising design and engineering incorporating the latest advances in micro topology. This handcrafted amplifier is designed to deliver the demands of serious sound competitors. You will soon discover that "Primo series" amplifiers display a fine balance between high quality, performance and reliability; all proven qualities of Massive Audio® products.

Massive Audio® amplifiers are the result of American Craftsmanship using only the highest quality components and quality control standards. In order to provide you with many years of listening pleasure, we recommend you to have your new amplifier installed by an Authorized Massive Audio®. This will ensure the proper installation of your product, and will also increase the length of your warranty to **ONE YEAR**.

(Please see the warranty section of this manual for more details.)

Please take a moment to thoroughly read this manual to ensure that you get the maximum benefit from this new addition to your car audio system. When installed properly, this unit will provide years of trouble-free performance.

Should your amplifier ever need service or replacement due to theft, please record the following information, which will help protect your investment.

Model #: \_\_\_\_\_

Dealer's Name: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_

Installation Shop and Date: \_\_\_\_\_

# DESIGN FEATURES

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- ✓ EXTREME POWER IN A SMALL FOOTPRINT
- ✓ LOW DISTORTION FULL BAND WIDTH FOR SOUND QUALITY TUNING
- ✓ 1 OHM STABLE DESIGN (MONO AMPS)
- ✓ MIL SPEC DOUBLE SIDED PCB DESIGN WITH SMD PARTS
- ✓ BUILT-IN NOISE REDUCTION CIRCUITRY
- ✓ FULL MOSFET WITH HIGH GRADE SWITCHING DEVICES
- ✓ BUILT-IN AUTO SENSING TURN ON FUNCTION (HI-INPUTS)
- ✓ 12V REMOTE OUTPUT FOR EXTERNAL DEVICES (HI-INPUTS)
- ✓ 0~12DB VARIABLE BASS BOOST
- ✓ NEXT GENERATION ADVANCED 5 WAY PROTECTION CIRCUITRY
- ✓ 2CH / 4CH INPUT MODE SWITCH (PX4S)
- ✓ WORLD WIDE STANDARDS COMPLIANT.  
(ROHS,E-MARK,CEA-2006,CE)

**PRIMO SERIES**  
PRIMO SERIES



# AMPLIFIER FUNCTIONS

## 1. SPEAKERS

CONNECT SPEAKERS/SUBWOOFERS TO THESE TERMINALS. BE SURE TO CHECK WIRING FOR PROPER POLARITY. NEVER CONNECT THE SPEAKER CABLES TO CHASSIS GROUND.

## 2. +12 VOLT POWER

CONNECT THIS TERMINAL THROUGH A FUSE OR CIRCUIT BREAKER TO THE POSITIVE TERMINAL OF THE VEHICLE BATTERY OR THE POSITIVE TERMINAL OF AN ISOLATED AUDIO SYSTEM BATTERY.

## 3. AUTO SENSING TURN-ON / REMOTE IN OR OUT

WHEN USING HI-INPUT, THE AMP CAN DETECT THE DC OFFSET (HI-INPUTS) FROM THE HIGH LEVEL INPUT SIGNAL TO AUTO TURN ON/OFF. WHEN THE AMP TURNS ON, THE REM TERMINAL WILL OUTPUT +12V DC TO CONTROL THE OTHER DEVICE TURN ON/OFF.

REM IN: WHEN USE LOW LEVEL INPUT, THE AMP REM IN SHOULD BE CONNECTED TO THE REM OUT OF THE SOURCE UNIT. THE HEAD UNIT CONTROLS THE AMP TURN ON/OFF.

## 4. GND

CONNECT THIS CABLE DIRECTLY TO THE FRAME OF THE VEHICLE. MAKE SURE THE METAL FRAME HAS BEEN STRIPPED OF ALL PAINT DOWN TO THE BARE METAL.

USE THE SHORTEST DISTANCE POSSIBLE. IT IS ALWAYS A GOOD IDEA TO REPLACE THE FACTORY GROUND AT THIS TIME WITH A LARGER CABLE EQUAL TO THE NEW DIRECTLY TO THE VEHICLE BATTERY GROUND TERMINAL OR ANY OTHER FACTORY GROUND POINTS.

## 5. RCA INPUT / AUTO HI-LOW LINE CONVERTOR

THESE RCA INPUT JACKS CONNECT WITH YOUR SOURCE UNIT RCA LOW LEVEL OUTPUTS OR VIA OPTIONAL ADAPTER WITH YOUR SOURCE UNIT SPEAKER HIGH LEVEL OUTPUTS. THE USE OF HIGH QUALITY OF TWISTED PAIR CAR AUDIO CABLES IS RECOMMENDED TO PREVENT THE POSSIBILITY DISTURBANCE OF THE AUDIO SIGNAL.

## 6. REMOTE (MONO BLOCK)

CONNECT THE REMOTE CONTROLLER TO CONTROL THE SUBWOOFER AMPLIFIER VOLUME FROM THE DRIVER SEAT LOCATION.

## 7. GAIN CONTROL (MONO BLOCK)

THE GAIN CONTROL WILL MATCH THE AMPLIFIERS SENSITIVITY TO THE SOURCE UNITS SIGNAL VOLTAGE. THE OPERATING RANGE IS 10V TO 400MV. THIS IS NOT A VOLUME CONTROL!

## 8. LOW PASS FILTER CONTROL ( P2 , P3 , P4 , P8 , PX4 , PX4S , PX6 )

THIS CONTROL IS USED TO SELECT THE DESIRED LOW PASS X-OVER FREQUENCY . THE FREQUENCY CAN BE ADJUSTED FROM 60HZ TO 220HZ FOR ALL BASS MONO MODELS .

## 9. SUBSONIC FILTER CONTROL ( P2 , P3 , P4 , P8 , PX4S , PX6 )

THIS CONTROL CAN FILTER OUT UNWANTED LOW FREQUENCIES FROM 0HZ (OFF) TO 60HZ. THIS FUNCTION WILL INCREASE THE POWER HANDLING OF YOUR WOOFERS.

## 10. BASS BOOST LEVEL KNOB ( MONO BLOCK )

THIS CONTROL ADJUSTS THE BOOST LEVEL OF THE BASSBOOST CENTER FREQUENCY. IT CAN BE ADJUSTED FROM 0 TO 12DB . COMBINING WITH BASSBOOST FREQUENCY, YOU CAN ACCURATELY MATCH THE AMPLIFIERS PERFORMANCE TO WOOFER RESPONSE .

## 11. BASS BOOST FREQ KNOB ( MONO BLOCK )

THIS CONTROLS THE BOOSTED CENTER FREQUENCY. THE FREQUENCY CAN BE ADJUSTED FROM 30HZ TO 120HZ ACCORDING TO YOUR CARS AUDIO SYSTEM PERFORMANCE. (EG. WHEN YOU ADJUST THIS KNOB TO 50HZ, AMPLIFIER WILL BOOST THE FREQUENCY AROUND 50HZ). THIS FUNCTION SHOULD BE ADJUSTED IN COMBINATION WITH BASS BOOST LEVEL TUNING .

## 12. X-OVER MODE ( FULL RANGE )

THIS SWITCH WORKS TOGETHER WITH THE FREQ TO ADJUST THE OPERATING FREQUENCY RANGE OF THE AMP. WHEN SWITCH TO LPF OR HPF, THE CORRESPONDING FILTER CAN ADJUST THE OPERATING FREQUENCY RANGE BETWEEN 10HZ TO 300HZ ( OR 100HZ TO 3KHZ ) . WHEN PUSHING THE SUBWOOFER, PLEASE SWITCH TO LPF MODE WHEN PUSHING SMALL CALIBER FULL FREQUENCY SPEAKER, MIDDLE AND HIGH FREQUENCY LOUDSPEAKER , PLEASE SWITCH TO HPF MODE . WHEN PUSHING LARGE CALIBER

FULL FREQUENCY SPEAKERS , PLEASE SWITCH TO FULL MODE . WHEN SWITCHED TO FULL MODE , THE FILTERS WILL NOT FUNCTION.

WARNING : USE BUTTONS AND HPF KNOB CORRECTLY TO PREVENT LOW FREQUENCY DAMAGE TO TWEETERS.

### **13. FREQUENCY CONTROL ( PX4 , PX4R , PX2R )**

THESE SWITCHES WORK WITH THE CROSSOVER. THE X1 & X10 BUTTONS ARE FOR HIGH PASS & LOW PASS FREQUENCY ADJUSTMENTS. WHEN THIS BUTTON IS SET AT THE "X1" THE HPF/LPF RANGE IS FROM 10HZ-300HZ. WHEN THIS BUTTON IS SET AT THE "X10" POSITION, THE RANGE ADJUSTMENTS ARE 100HZ-3KHZ.

CAUTION: USE HPF & LPF BUTTONS AND KNOBS CORRECTLY TO PREVENT INCORRECT FREQUENCY DAMAGE TO CORRESPONDING DRIVERS.

### **14. FREQUENCY CONTROL ( PX4S )**

X1 & X18 BUTTONS ARE USED FOR HIGH PASS AND LOW PASS FREQUENCY ADJUSTMENTS. THESE BUTTONS WORK WITH THE CROSSOVER. FOR HPF: WHEN THIS BUTTON IS SET AT THE "X1" THE RANGE IS FROM 20HZ-334HZ. WHEN THIS BUTTON IS SET AT THE "X18" POSITION, THE RANGE ADJUSTMENTS ARE 360HZ-6KHZ. FOR LPF: THE "X1" RANGE IS FROM 50HZ-550HZ AND THE "X18" RANGE IS FROM 550HZ-6KHZ.

CAUTION: USE HPF & LPF BUTTONS AND KNOBS CORRECTLY TO PREVENT INCORRECT FREQUENCY DAMAGE TO CORRESPONDING DRIVERS.

### **15. EXTERNAL CAPACITOR INPUT**

FOR CONNECTING AN OPTIONAL (SOLD SEPARATELY) EXTERNAL HI-VOLTAGE CAPACITOR . THIS WILL HELP STABILIZE THE AMPLIFIERS NEEDED VOLTAGE DURING OPERATION WHILE IMPROVING FIDELITY AND MAXIMIZING HEAD ROOM.

### **16 . POWER / PROTECTION**

THIS LED WILL LIGHT UP WHEN THE AMPLIFIER IS WORKING PROPERLY.

WHEN THE LED IS BLUE, THE AMPLIFIER IS IN SAFE OPERATION . WHEN THE LED IS RED THE AMPLIFIER IS IN PROTECTION MODE .

### **17 . AUTO SENSING TURN ON INDICATOR**

THE LED WILL LIGHT UP BLUE WHEN THE ATO IS BEING USED (AUTOMATIC TURN ON).

### **18. 2 / 4 CH SWITCH ( PX4S )**

SET THIS SWITCH IN CONJUNCTION WITH HOW MANY INPUT CABLES ARE BEING USED, IN THE 2 CHANNEL SETTING ALL FOUR OUTPUTS WILL BE ACTIVATED.

### **19. CLIP**

THE LED INDICATOR IS TO SHOW SIGNAL CLIPPING IF THE INPUT SIGNAL WAVE IS BEYOND THE RANGE.

BY LOWERING THE GAIN, THE CLIPPED PORTION WILL GO BACK WITHIN THE INPUT RANGE AND THE LED INDICATOR WILL TURN OFF.

OCCASIONAL LED "ON " (OCCASIONAL FLICKERING) OF THE LED WOULD BE PERMISSIBLE IN SOME INSTALLS OR BASED ON PERSONAL PREFERENCE.

# PANEL LAYOUT

FIG 1. MONO AMPLIFIER PANEL LAYOUT

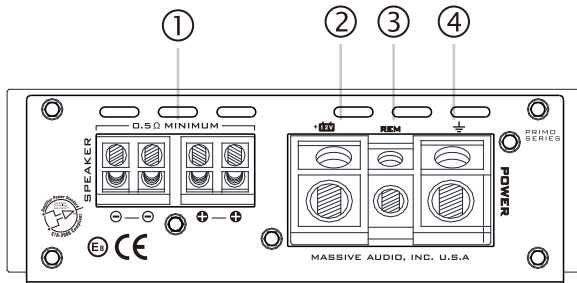
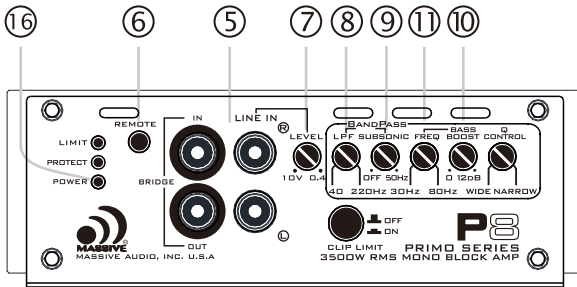
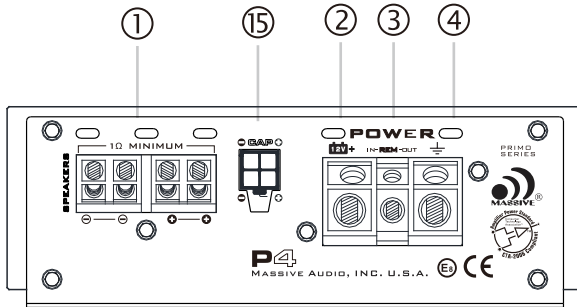
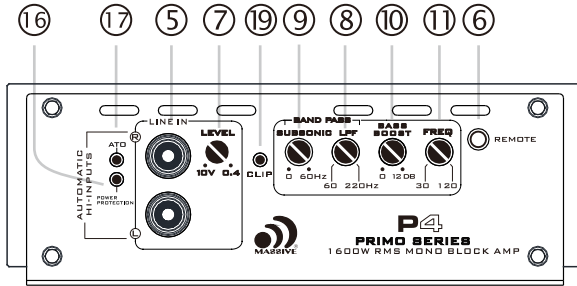
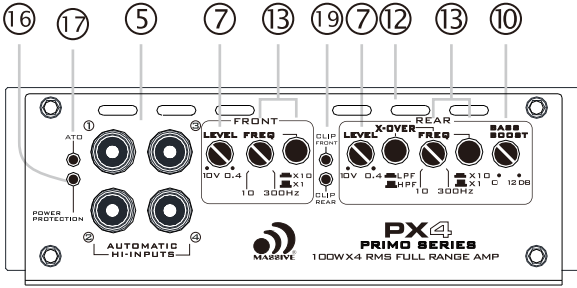
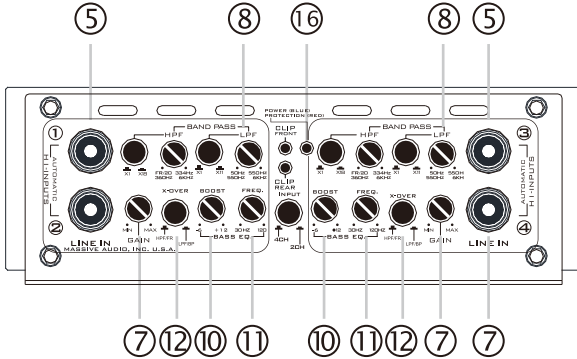


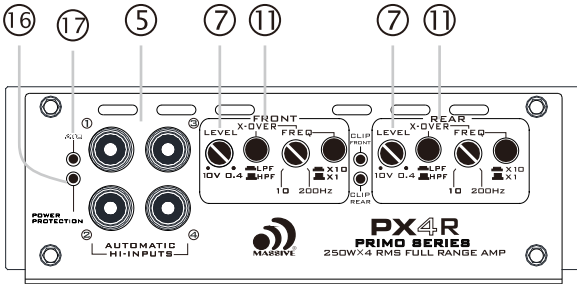
FIG 2. 4-CH AMPLIFIER PANEL LAYOUT



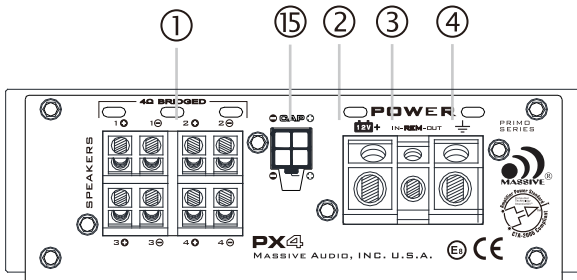
PX4



PX4S



PX4R



PX4/PX4S/PX4R 6

FIG 3. 2-CH AMPLIFIER PANEL LAYOUT

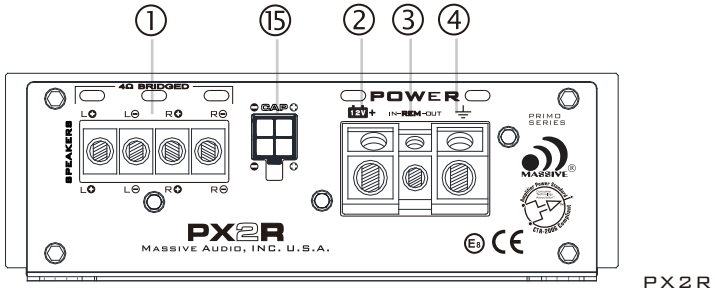
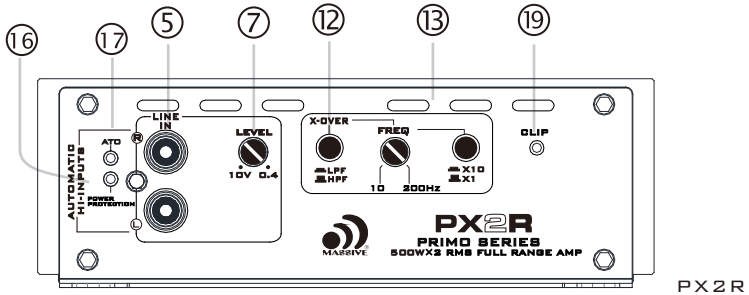
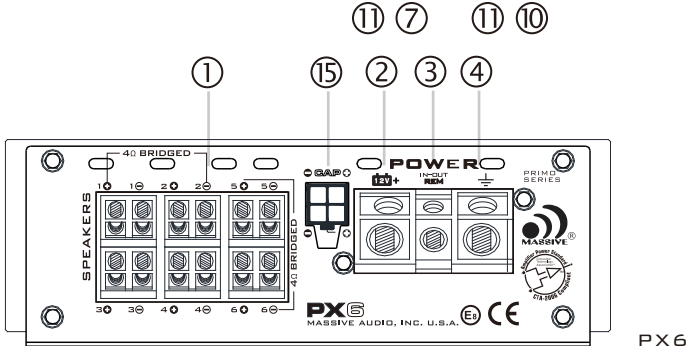
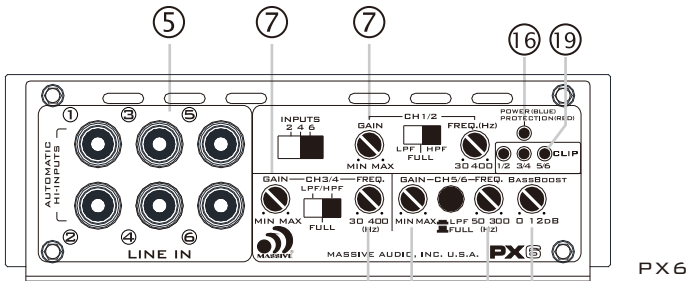


FIG 4. 6-CH AMPLIFIER PANEL LAYOUT





# WIRING DIAGRAM

FIG 5. MONO AMPLIFIER WIRING  
(SINGLE WOOFER LOAD)  
P2/P3/P4/P8

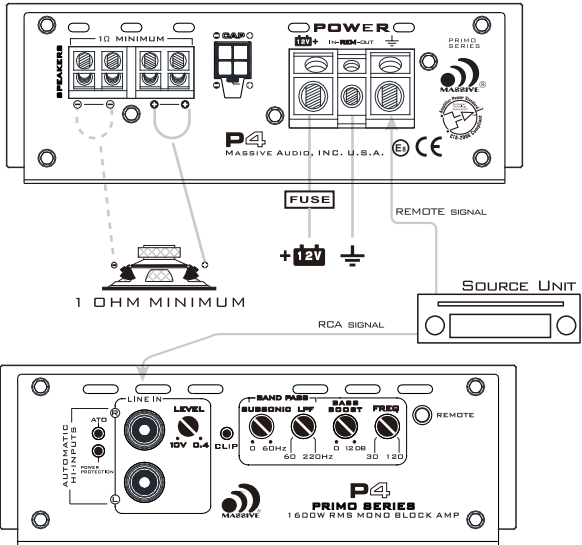
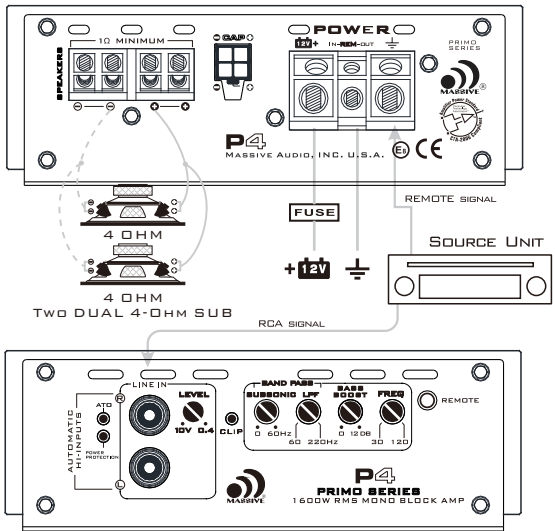


FIG 6. MONO AMPLIFIER WIRING  
(MULTI-WOOFER LOAD)



\* EQUIVALENT PARALLEL WOOFER LOADS CANNOT BE LESS THAN THE MINIMUM STABLE LOAD RATED IN THIS MANUAL. THE TWO NEGATIVE AND TWO POSITIVE SPEAKER TERMINALS ARE WIRED INTERNALLY INSIDE EACH AMPLIFIER. ONLY ONE NEGATIVE AND ONE POSITIVE ARE NEEDED WHEN WIRING TO THE AMPLIFIER. THESE ARE MONO-BLOCK AMPLIFIERS AND NOT MULTI-CHANNEL AMPLIFIERS. THE MINIMUM LOAD FOR ALL "PRIMO SERIES" (MONOBLOCK) AMPLIFIERS ARE ONE OHM.





# TROUBLE SHOOTING

Symptom	Possible Remedy
Amplifier will not power up	Check to make sure you have a good ground connection. Check that there is battery power on the (+)terminal . Check all fuses, replace if necessary . Make sure that the Protection LED is not illuminated.
Protection LED Comes on	Check for short circuits on speaker leads. Check that the speaker load is not beyond the minimum load. Remove speaker lead, and reset the amplifier. If the protection LED still comes on, then the amplifier is faulty and needs servicing .
No output	Check that the RCA audio cables are plugged into the proper inputs. Check all speakers wiring. Check the headunit output and the amplifier level setting.
Low output	Reset the level Control. Check the Crossover Control settings.
High hiss in The speakers	Check the RCA cable is not shorted to power ground at amplifier side. Check the amplifier grounding.
Distorted sound	Check that the Input level control is set to match the signal level of the head unit. Always try to set the Input level as low as possible. Check that all crossover frequencies are properly set. Check for short circuits on the speaker leads
Amplifier gets Very hot	Check that the minimum load impedance for the amplifier model is correct. Check that there is good air circulation around the amplifier. In some applications, It may be necessary to add an external cooling fan. Do not mount amplifier upside down.

# SPECIFICATIONS

MODEL Description	P2 MONO BLOCK	P3 MONO BLOCK	P4 MONO BLOCK	P8 MONO BLOCK	PX4 4 -CHANNEL	PX4S 4 -CHANNEL	PX4R 4 -CHANNEL	PX2R 2 -CHANNEL	PX6 6 -CHANNEL
<b>Power output @ 14.4V</b>									
0.5 Ohm RMS Power (Watt)	N/A	N/A	N/A	3500x1	N/A	N/A	N/A	N/A	N/A
1 Ohm RMS Power (Watt)	600x1	1000x1	1600x1	2300x1	N/A	N/A	N/A	N/A	N/A
2 Ohm RMS Power (Watt)	400x1	700x1	1000x1	1400x1	150x4	240x4	350x4	700x2	180x6
4 Ohm RMS Power (Watt)	250x1	500x1	700x1	1000x1	100x4	150x4	250x4	500x2	130x6
4 Ohm Bridged Power (Watt)	N/A	N/A	N/A	N/A	300x2	400x2	700x2	1400x1	350x3
<b>FEATURES</b>									
400mV-10V(hi inputs or low inputs)									
Input Level									
Frequency Response	17Hz-230Hz	17Hz-230Hz	20Hz-250Hz	10Hz-216Hz	20Hz-30kHz	20Hz-30kHz	20Hz-30kHz	20Hz-45kHz	20Hz-45kHz
LPF	42Hz-230Hz	42Hz-230Hz	50Hz-250Hz	32Hz-216Hz	20Hz-300Hz/ 200Hz-3kHz	20Hz-300Hz/ 200Hz-3kHz	20Hz-300Hz/ 250Hz-3kHz	50Hz-6kHz	50Hz-6kHz
SubSonic Filter (HPF)	17Hz-39Hz	17Hz-39Hz	15Hz-40Hz	10Hz-58Hz	N/A	N/A	N/A	20Hz-6kHz	20Hz-6kHz
THD @ 4 ohm load, 30% Rated Power	<0.03%								
S/N Ratio	>110dB								
BassBoost Level	0 -12DB								
BassBoost FREQ.	30Hz-120Hz								
Minium Load	1 Ohm(Only P8 is 0.5 Ohm)								
Optional Remote	YES								
Auto Turn On	YES (HIGH INPUTS)								
Low Voltage Protection	YES PROTECT < BV								
Short Circuit Test @ Max Power	PASS								
Current Drawn @ RMS Power	50A	80A	120A	200A	40A	60A	100A	100A	100A
Current Drawn @ MAX Power	70A	110A	170A	300A	60A	90A	150A	150A	150A
Recommend External Fuse	60A	100A	160A	220A	50A	80A	140A	140A	140A
Overheat Protection Temperature	PROTECT AT 80C/176F								
Components & PCB	SMT PARTS / DOUBLE SIDE FR4 PCB								
<b>Dimensions</b>									
HEIGHT	2.0"								
WIDTH	5.9"								
LENGTH	6.9"	9.2"	13.5"	22.0"	8.5"	9.6"	10.2"	10.2"	11.9"

# WARRANTY

Massive Audio, Inc. warrants all manufactured amplifier products to be free from defect in material and workmanship for a period not to exceed **ONE YEAR\*** from the date of original purchase when installed by an authorized Massive Audio® dealer. Units that are not installed by an authorized Massive Audio® dealer maintain a warranty not to exceed 90 days from the original purchase date by the original purchaser.

**Products that display abuse such as power deficiency, over driving the amplifier or clipping the input require purchase of a new PCB for replacement.**

Massive Audio® obligations under this warranty are limited to repairing or replacing, at its own sole option, any such defective products. This warranty does not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in anyway. This warranty applies only to the original purchaser who must have properly registered the product within 30 days of purchase.

*Except as provided herein, Massive Audio, Inc. makes no warranties or representations, express or implied, including any warranty implied by law, whether for merchantability or fitness for a particular purpose and shall be effective only for the period that this express warranty is effective. SEE THE WARRANTY REGISTRATION CARD TO ADDITIONAL INFORMATION.*

\*DUE TO CONSTANT IMPROVEMENT PRICES AND SPECS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTIFICATION.

[www.massiveaudio.com](http://www.massiveaudio.com)

**Massive Audio Inc.**  
**P. O. BOX 252004**  
**Los Angeles, CA 90025 U.S.A.**