

Instruction manual



SMART  —
Power Control System 1 ~ 2 OHMS



The installation of this product must be made by a qualified professional.

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Term of warranty

TARAMPS, located at Júlio Budisk highway, SN, KM 30 – Alfredo Marcondes, SP - Brazil, ZIP CODE 19.180-120, guarantees this product against any defects on terms of project, making, assembling, and/or with solidarity, due to project vices which cause it improper or inadequate to its original use within 12 months from the date of purchase. In case of defect during the warranty period, TARAMPS responsibility is limited to the repairing or substitution of the device of its own making.

This warranty excludes:

- Damaged products by improper installation, water infiltration, violation by unauthorized individuals;
- Tamper or torn warranty seal;
- Cases in which the product is not used in adequate conditions;
- Defects caused by accessories, modifications or features attached to the product;
- The product with damage from falling, bumps or nature related problems (flooding, lightning, etc.);
- Warranty card is not properly filled or torn;
- Costs involving uninstallation, reinstallation of equipment as well as shipment to the factory;
- Damage of any kind, due to problems in the product, as well as losses caused by discontinued use of the product.

Technical assistance

For international support, check on our website:

www.taramps.com.br/en/rede-de-assistencias-tecnicas

or contact direct the factory support:

Phones: +55 18 3266-4050 / +55 18 99749-3391

E-mail: service@taramps.com.br

Smart Line Presentation

Multi-impedance: Featuring new control technology and new functions, the SMART 5 brings 5000W RMS rated power in the range of 1 to 2 Ohms: (1 - 1.33 - 1.5 - 1.67 and 2 Ohms with same power);

SMART LEDs: LEDs output signal level indicator on top of product;

RCA input for up to 4V RMS: Input gain adjustment that allows head units up to 4V RMS output level;

Dual RCA IN / OUT Input: RCA connector with input and output function, eliminates the needing of "Y" cables for send the same input signal to another amplifier;

Power connector for cables up to 2/0 AWG: Allows the use of power cables with larger gauge (up to 70mm²) for higher performance;

AUTO-Restart Protections: The amplifier automatically restarts after a protection event;

RAMP audio initialization: After turning on the amplifier, audio is released gradually (ramp).

Introduction

Read this manual before preparing the product. In case of doubt, contact our technical support: **(18) 3266-4050** or **www.taramps.com.br/es**



At the end of its useful life, this product must not be disposed of in household waste. Look for an electronic equipment collection or recycling center for proper disposal.

Declaration of Conformity
CE TARAMPS ELECTRONICS LTDA
Alfredo Marcondes - SP
Brazil

Hereby, Taramps Electronics Ltda declares that the product SMART 5 complies with the Directive 2014/30/EU, according with the following harmonized standard:

-EN 50498:2010 *Electromagnetic compatibility (EMC) - Product family standard for aftermarket electronic equipment in vehicles*

The full text of the EU Declaration of Conformity is available at the following Product Page on Internet.

Safety requirements

To ensure proper use, please read through this manual before using the amplifier. It is specially important that you know the **CAUTIONS** contained here.

- The installation of this amplifier must be done by a qualified professional.
- Wear safety glasses, insulated gloves and correct tools for installing this product.
- This amplifier is for use with 12V batteries. Always check the voltage before installing.
- This amplifier must be installed in a firm place with at least 1" space around the heatsink for proper heat spreading.
- Never install the amplifier in places exposed to dust, humidity and water. Pay attention to install it far from fuel tank, fuel lines, heat sources and other parts of vehicle.
- Be sure to install protection fuse or a circuit breaker near to battery. Follow the ampere rating as indicated here in this manual. Use of improper fuse or circuit breaker could result in overheat, smoke, damage to product, injury or burns.
- Avoid running wires over or through sharp edges. Use rubber or plastic grommets to protect any wires routed through car's body.
- Before make any connection to amplifier, disconnect the battery negative terminal.
- When in use, the external surface of may amplifier becomes hot. Avoid touching the heatsink area and keep childrens far from the amplifier.
- This amplifier may produce high sound pressure levels. Avoid continuous exposure to levels over 85dB to prevent permanent hearing loss.
- Output connections for speakers may have voltage levels when the amplifier is operating. Make sure that the amplifier is turned OFF before proceed any connection or disconnection in this terminals.
- If you want to dispose this amplifier, don't throw it on domestic waste. It must be collected by an used electronic product disposal service for proper recycling.

Safety

As you read this manual, pay attention to the safety symbols.

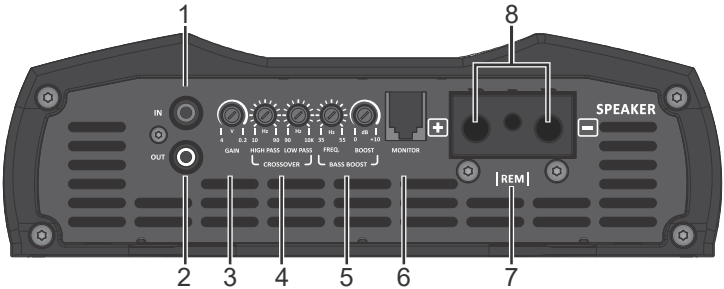
CAUTION

This symbol with **"CAUTION"** is intended to alert the user to the presence of important instructions. Failure to heed the instructions will result in risk of injury to user or product damage.



Taramps reserves the right to modify the contents of this document at any time without prior notice and does not have the obligation to apply the changes in units which were previously produced.

Functions, inputs & outputs



1 - IN: Input of signal to be amplified. Connect the to the RCA output of the Head Unit using good shielded cable to avoid noise interference.

2 - OUT: Audio signal output. Sends the same input (IN) signal to another amplifier, allowing cascading.

3 - GAIN: Adjusts the input sensitivity of the amplifier, allowing a perfect adjustment to the output signal levels of various head units models on the market. It is possible to adjust from 4V (minimum sensitivity) to 0.2V (maximum sensitivity).

4 - CROSSOVER

HIGH PASS FILTER (HPF): Variable setting from 10Hz to 90Hz, which determines the start of the amplifier's operating frequency.

LOW PASS FILTER (LPF): Variable setting from 90Hz to 10KHz, which determines the end of the amplifier's operating frequency.

5 - BASS BOOST

FREQ.: Set the frequency of bass boost from 35Hz to 55Hz.

BOOST: Set the boost level from 0 to + 10dB at the frequency set in FREQ.

6 - MONITOR: Accessory connection that has the function of monitoring the amplifier, displaying clipping and protection status. **(Included accessory).**

7 - TERMINAL REMOTE: It must be connected to the remote output of the head unit using a 18 AWG cable.

8 - SPEAKER: SPEAKER: Output (positive and negative) for connecting transducers (speakers). Follow the indicated polarity.

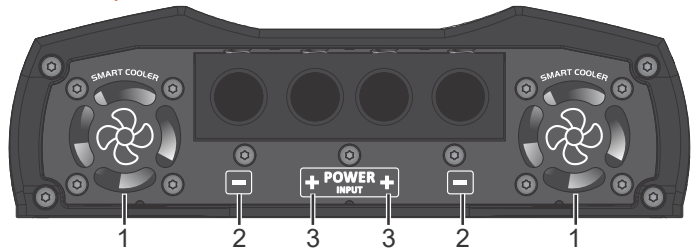
For speaker associations, the impedance to consider is the resulting impedance:

 **CAUTION**

Due to the presence of voltage at the output terminals when the product is turned on, avoid contact with them. Risk of electric shock.

Loudspeakers Parallel connection example	Quantity Impedance	Resulting Impedance	Power
	4 x 4 OHMS	1 OHM	5000W RMS
	3 x 4 OHMS	1.33 OHMS	
	4 x 6 OHMS	1.5 OHMS	
	2 x 4 OHMS	2 OHMS	

Power supply connector



1 - SMART COOLER: This amplifier has two internal ventilation fans. For perfect functioning, the amplifier must be installed in a cool and aired place with at least 1" (25mm) space around the heatsink for proper heat spreading. The usually working temperature of amplifier is 65°C.

CAUTION The fan and ventilation openings are responsible for cooling the amplifier when it is in use, so it cannot be obstructed.

2 - POSITIVE POWER SUPPLY: Use 2/0 AWG cables direct from the positive battery terminal, with fuse or circuit breaker (230A), as close to it as possible.

3 - NEGATIVE POWER SUPPLY: Use 2/0 AWG cables as short as possible, connected to the negative battery pole.

In order for your amplifier to have the best performance, it is necessary to use all the power inputs. See example on the next page. We recommend that all cables have tinned ends for better electrical contact.

In case of power bus bar using, avoid tightening with extenders on the allen wrench, as excessive torque may break the the terminal.

CAUTION Before making any connections to the power terminals, make sure that the negative (-) of the vehicle battery is disconnected.

LEDs indicators & protection system

Smart LEDs	Led of Monitor	Conditions
 On - Displays audio level.	 Blue LED on	Working amplifier
 LEDs flashing 2x	 Red LED flashes 2x	Battery with voltage below 9.5V
 LEDs flashing 3x	 Red led flashes 3x	Battery with voltage above 17V
 LEDs flashing 6x per second Continuously	 Red LED flashing 6x per second continuously	Short circuit on output or between output terminal to GND
 LEDs flashing 1 second on 1 second off	 Yellow LED flashing 1 sec. on 1 sec. off	Temperature above operating limit (> 85 ° C)

The thermal protection waits for cooling before restarting. If it goes into protection, the amplifier will automatically restart.

Example:
Low Battery Protection: Working amplifier → Red LED (LED Monitor) or Smart LEDs, flashes 2x → Red LED (LED monitor) or Smart LEDs, flashes 2x → Amplifier restarts.

Installation



CAUTION

CAUTION: All connections to power supply, input and output connectors must be carried out only with amplifier off.

Recommended wire gauge & fuse

Positive / negative power supply cable _____ **2 x 2/0 AWG**
 Output cables wire gauge _____ **7 AWG**
 Remote cable _____ **18 AWG**
 Protection fuse or circuit breaker _____ **230A**

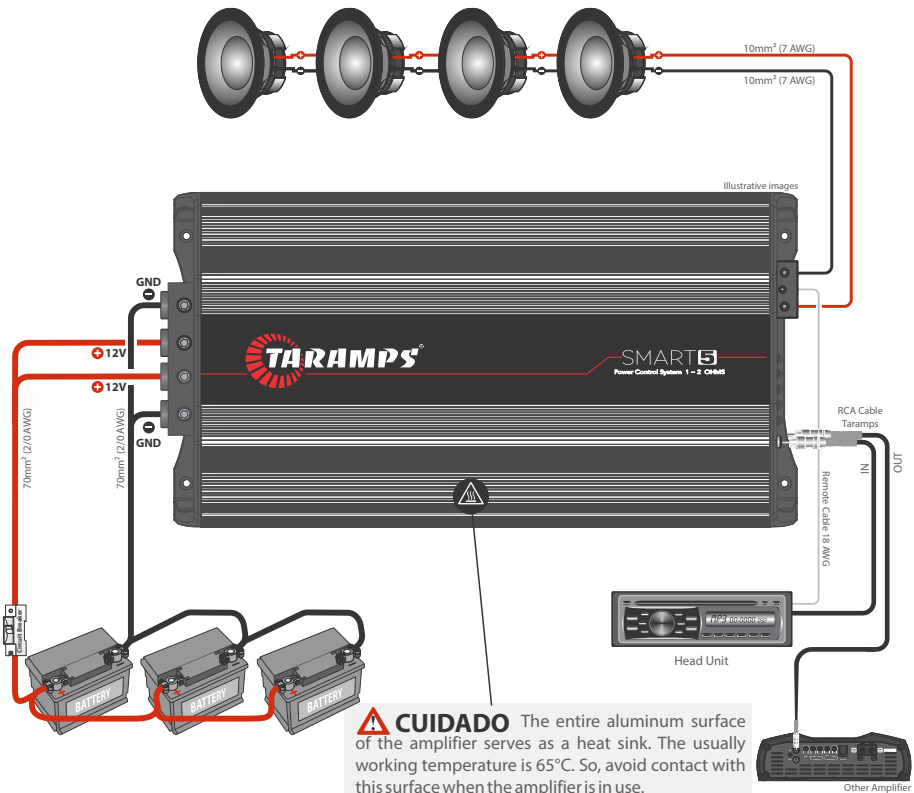
Calculated considering a maximum length of 4m. Distance greater than this, you will need to increase the cable gauges.



CAUTION

Using wire gauges below the recommendation will result in power loss and overheating of wiring.

Check polarity and never reverse power supply cables due to the risk of damage to the amplifier. It is compulsory to install a protection fuses or circuit breakers as close as possible from batteries.



Examples of connections in the power supply input.
 Note: Required battery bank capacity: At least 230A



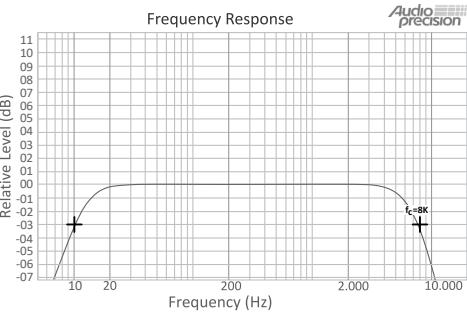
CAUTION

This equipment is not suitable for use in places where children may be present.

Technical features

Output Impedance Range:	1 Ohm ~ 2 Ohms
Number of Channels:	01
Output Power / @14.4VDC* 1 OHM ~ 2 OHMS:	5000W RMS
4 OHMS:	2900W RMS
Input Sensitivity:	0.22V ~ 4V
Signal- to-noise Ratio:	>90dB
Frequency Response:	10Hz ~ 10KHz (-3dB)
Crossover HPF (High Pass Filter):	10Hz ~ 90Hz (-12dB/8°) Variable
LPF (Low Pass Filter):	90Hz ~ 10KHz (-12dB/8°) Variable
Bass Boost: Freq.: Boost:	35Hz ~ 55Hz 0 ~ +10dB
Efficiency:	84% @ 1 Ohm 86% @ 2 Ohms
Input Impedance:	10K Ohms
Protection System:	Output short-circuit, low/high supply voltage and Thermal protection
Minimum Supply Voltage:	9.5VDC
Maximum Supply Voltage:	17VDC
Idle Consumption:	3.60A
Musical Consumption @14.4VDC:	236A 230A
Rated Power Consumption:	472A 460A
Dimensions (W x H x L):	8.98" x 2.76" x 16.85"
Weigth:	11.22lb

*Rated power with 40Hz sinusoidal signal, THD <= 1%, with resistive loads, measured with SMD/AD-1 audio power analyzer or equivalent and the product at lower than 50°C case temperature and 14.4V supply voltage.
The values as above are typical and may vary, due to electronic components tolerance or manufacturing process.
For further informations or questions, visit our website or contact TARAMPS ELECTRONICS support.





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