

# GS AUDIO ALTERNATOR

The GS Audio offers in combination with its AGM - LifePo4 and LTO batteries different alternators, equipped with different control units with fixed or adjustable end-of-charge voltage.

## Generic alternators connections:

- The control unit for generic alternators (300A 14.3 V fixed / 14.8.8 V fixed / 15.1 V fixed / from 14.8 to 16 V - adjustable) provides:



- connector to the 4pin alternator;
- a positive yellow/green key cable: it is mandatory that this cable is connected to an electrical circuit that works only when the engine is started;
- a blue cable for positive: battery-connected or main battery package. In the event that the car has only one battery located in the engine compartment, the blue wire should be connected to its positive terminal; however, if the battery is installed in the front and the battery pack is in the rear (or if only the pack is present in the rear), it is necessary to create a new line in the trunk using a 2.5/4mm<sup>2</sup> cable approximately 4/5 meters long that connects the positive terminal of the battery pack to the blue wire of the control unit;
- a brown color cable for negative: the cable must be connected to the battery or battery pack;
- The potentiometer is present for control unit with adjustable voltage.

## Specific auto Alternators Connections (see the models available on our site):

The new control unit created for specific auto alternators is larger in size and provides:

- a key cable (blue color): it is mandatory that this cable is connected to an electrical circuit;
- a positive cable: that must be connected directly to the battery or main battery package. In the event that the car has only one battery located in the engine compartment, the blue wire should be connected to its positive terminal. However, if the battery is installed in the front and the battery pack is in the rear (or if only the pack is present in the rear), it is necessary to create a new line in the trunk using a 2.5/4mm<sup>2</sup> cable

approximately 4/5 meters long that connects the positive terminal of the battery pack to the blue wire of the control unit.;

- A connector to the 4pin alternator;
- The potentiometer is present for control unit with adjustable voltage.



**Since the control units are made of plastic/ABS material, it is mandatory to install them away from the engine, radiator, and other heat sources. It is recommended to install them inside the vehicle's cabin to ensure a more consistent temperature. The 4-pin cable that connects the control unit to the alternator can be cut and extended with 2.5mmq cables.**

Each control unit is supplied with a voltmeter installed always active and, with the connected positive key cable, everything will be "automatic", the alternator will work immediately after the engine ignition.

Specific cars alternators are MECHANICALLY COMPATIBLE with most cars, this means that it will not be necessary to add brackets, but it may be inevitable to replace the motor belt and/or pulley with the original one of the vehicle. Instead, the generic alternators have universal brackets with double loop, therefore for the installation brackets will be made to measure that they connect with your engine, eventually replacing the motor belt.

Each alternator is tested before shipping. GS Audio declines all responsibility for any assembly and wiring errors by the buyer.

## 4 FUNDAMENTAL STEPS FOR INSTALLATION - OPERATION

- 1- It is mandatory that the positive key cable is connected to an electrical circuit, and that it only works when the engine is started. It is absolutely forbidden to keep the alternator on with the cable under tension when the vehicle is stopped;
- 2- It is necessary to replace the original charging cable of the positive with a cable that must be at least 1 mt and 35mmq section in pure copper or 80mm in CCAW. DO NOT USE CABLES WITH A LARGER CROSS-SECTION, AS EXCESSIVELY LARGE CABLES WOULD ONLY INCREASE THE TEMPERATURE OF THE ALTERNATOR WITHOUT INCREASING THE OUTPUT CURRENT;
- 3- If the GS Audio alternator is added, for example in front of the engine (with the previous cable and control unit mode), leaving the original behind the engine, it will be necessary to detach the positive battery charging from the original car alternator, leaving the control spinet inserted in it. This will make the battery light turn off on the dashboard. However, for no reason it will be necessary to leave connected the large positive charging of the original alternator because 2 different alternators would cause the quick break of one of them;
- 4- In the case of LTO batteries, you can use the adjustable alternator of up to 16.5 volts for charging and SPL tests or 30sec demo. To avoid damage from overheating of the alternator in the musical phase, it is necessary to reduce the voltage to 14.8 volts. The prolonged use of the alternator at a voltage greater than 15 volts with LTO 6S battery pack reduces the life of the product.

### IMPORTANT

- 1- Since many modern cars are equipped with control units that disable the alternator for energy saving, **the increased GS Audio alternators are not connected to the original car control unit.** Therefore, it should be noted that the installation of the new alternator could cause the red light on the dashboard; **WE CANNOT GUARANTEE A COMPLETE RESOLUTION OF THIS, AS EACH VEHICLE HAS DIFFERENCES IN CONTROL SYSTEMS AND ELECTRONIC MANAGEMENT;**
- 2- In addition, we inform you that on modern cars, in the event that the vehicle control unit does not detect the presence of a connected alternator, **some vehicle functions could be disabled** (for example: electric windows, electric power steering and others). Therefore, **it is STRONGLY RECOMMENDED to entrust the installation to competent staff at installation centers or directly at our office,** in order to avoid this potential operating problem;
- 3- GS Audio alternators are competition products and a non-original part of the car. GS Audio declines all responsibility for malfunctions of other parts of the car;

### DISCLAIMER

- **TO AVOID DAMAGE:** to the electrical systems of modern cars, we recommend the voltage regulator of the alternator to 14.8 volts (higher than the classic 14/14.2 volts of many cars but less than 15.3 volts) to protect the original electrical system. This alternator can safely replace the original without having to separate audio and electrical systems. Once the voltage of 14.8 volts has been reached, the current will automatically lower with the aim of maintaining the voltage to this value;
- **PULLEY SUPPLIED:** to increase the turns of the alternator and then speed up the loading of the batteries, GS Audio usually uses pulleys of reduced diameter. The pulleys are replaceable with the original ones of your car if you want to keep the original belt (to remember: the exit amps will be lower);
- **FOR CORRECT WORKING:** the generic increased alternator requires the positive and negative battery of the battery (no difference if connected in the engine compartment or in the trunk), plus a positive key cable. On each car it is possible to connect two alternating batteries to the same package but must be compulsorily of the same model (equal in all characteristics), **SIMILARLY, THE OUTPUT CABLES MUST BOTH BE OF THE SAME LENGTH.**

The current actually disbursed depends on the number of turns of the engine tree and, consequently, on the size of the original pulley. For example, if your pulley has a diameter of about 14-15 cm (typical for a 1200cc Fiat petrol engine), the alternator will be likely to supply a charging current between 120/160A at low rotation speeds (about 800 turns/min) and up to 250A with a slight acceleration of around 1500 rpm. For vehicles with diesel engines, which usually present pulleys of greater diameter, the laps ratio is higher, bringing the charging current to about 150-170A at minimum regimes and up to 350A in the music phase at 4000/5000 rpm 'Alternatore tree → **Taking as a reference to alternate GS Audio 350A.**