



## Hyundai compatible ATS controller (2<sup>nd</sup> gen.)

### PREFACE

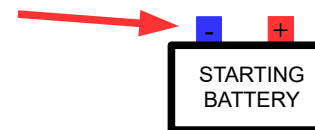
This ATS controller is designed to upgrade the Hyundai diesel generators with wired auto start function. Some Hyundai generators have 3 pin ATS socket fitted however the ATS controller may be missing so the auto start mode doesn't work. Our ATS controller could be a solution in this case. The ATS controller has 6 automatic starting attempts for reliable engine start and the "engine running" monitor which is automatically checking the state of the engine between each starting attempt and constantly after the successful start. The ATS controller may also work as an automatic pre-heater (for the engines with pre-heater button). Besides that this ATS controller can monitor an external or internal battery bank (12V or 24V) automatically starting the engine after detecting the low battery voltage threshold level. When the battery voltage becomes equal or higher than the high voltage threshold it will automatically stop the engine. This function is particularly useful for the generators left unattended for a long period of time. The ATS controller can be also used as a load controller (this function replaces the pre-heater function and cannot be ordered together). Having the load controller on-board the generator starts automatically without the load connected, then, when the engine warm-up time has expired the ATS controller will put the running engine on load. When the stop command received the load will be disconnected immediately leaving the engine running for some time for a cool-down period following the full stop. This function prolongs the engine life and comply with the manufacturer requirements. Should the ATS controller run out of all automatic starting attempts and the engine didn't start, the ATS controller will indicate this failure by the slow intermittent sound. The pre-heating cycle happens in accompaniment with the fast intermittent sound. The engine run failure (low fuel shutdown or emergency stop) will trigger the continuous sound. This way the user will understand what happens to the generator not even looking at it. As an extra option the ATS controller may be supplied with the wireless key fob.



To reset the ATS controller after the engine failure was identified and fixed: press button "B" on your key fob or, if the engine was initially started from the ATS panel connected to the 3 pin ATS socket – disconnect the 3 pin plug and/or switch off the "generator start" request from ATS panel connected to it. If the engine run was initially triggered by the BVS (battery voltage sensor) – please disconnect at least 1 wire connected to the BVS terminal.

### IMPORTANT !

**BEFORE FITMENT: DISCONNECT YOUR GENERATOR STARTING BATTERY NEGATIVE TERMINAL (FOR SAFETY REASONS)**



### FITMENT

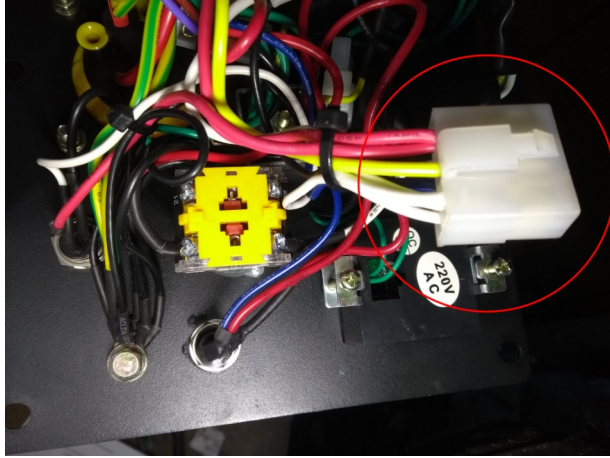
#### STEP 1

Undo 6 bolts and pull down the front panel



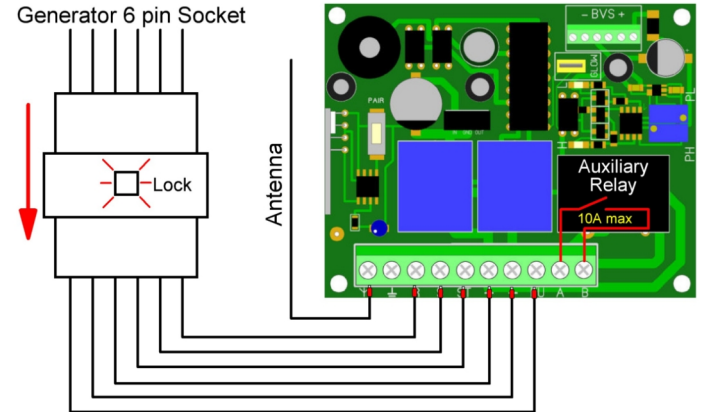
## STEP 2

Find free hanging 6 pin plug as on the picture below:



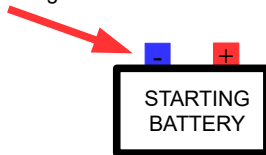
## STEP 3

Plug in the ATS controller connector to the generator socket as shown and fit the PCB where possible with 4 sticky pads provided. Avoid any electrical contact with generator bare metal parts and the ATS controller components. Then fit the generator front panel back on and tighten bolts.



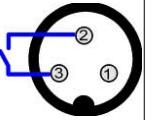
## STEP 4

Connect the negative lead back to the starting battery terminal.

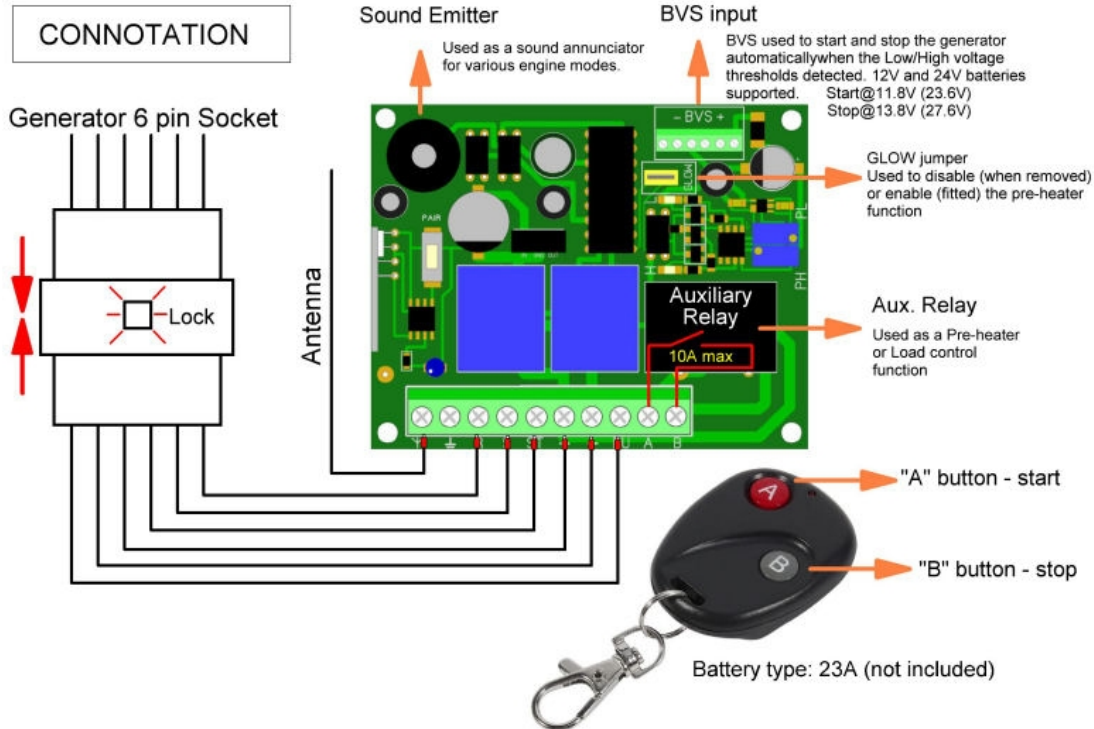


## STEP 5

Test the generator ATS socket. Make sure the ignition key switch is in "OFF" position. link pin 2 and 3 with a piece of wire. The generator should try to start and run while pin 2 and 3 linked.



Test wireless control (optional): press button "A" on the key fob, generator should start and run. Press button "B" to stop. Job done!



### Default settings:

Number of starting attempts (max.): 6  
 Starting attempt duration: 2-3-4-5-6-7sec  
 Pause between each attempt: 10sec  
 Pre-heat time: 10sec  
 Load control: warm-up time: 15sec  
 Load control: cool-down time: 15sec  
 BVS (battery voltage sensor) set for: start@11.8V, stop@13.8V  
 Key fob working distance (max.distance in ideal conditions): up to 100m  
 PCB dimensions: 77(L) x 61(W) x 20(H)

All settings are user-configurable prior to order.

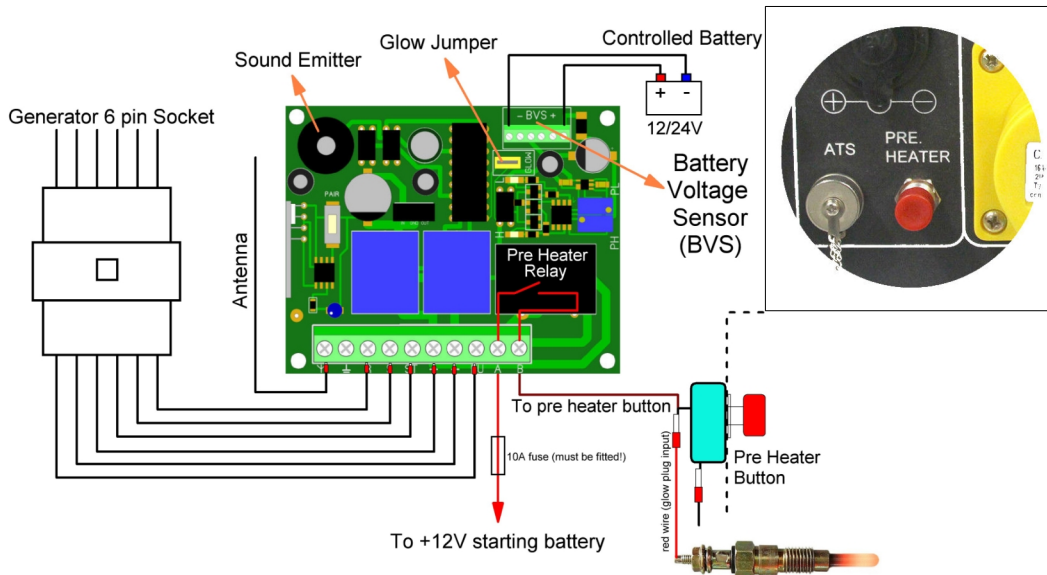
Please contact us: [sales@gencontrol.co.uk](mailto:sales@gencontrol.co.uk)

Tel:+44(0)7749782278

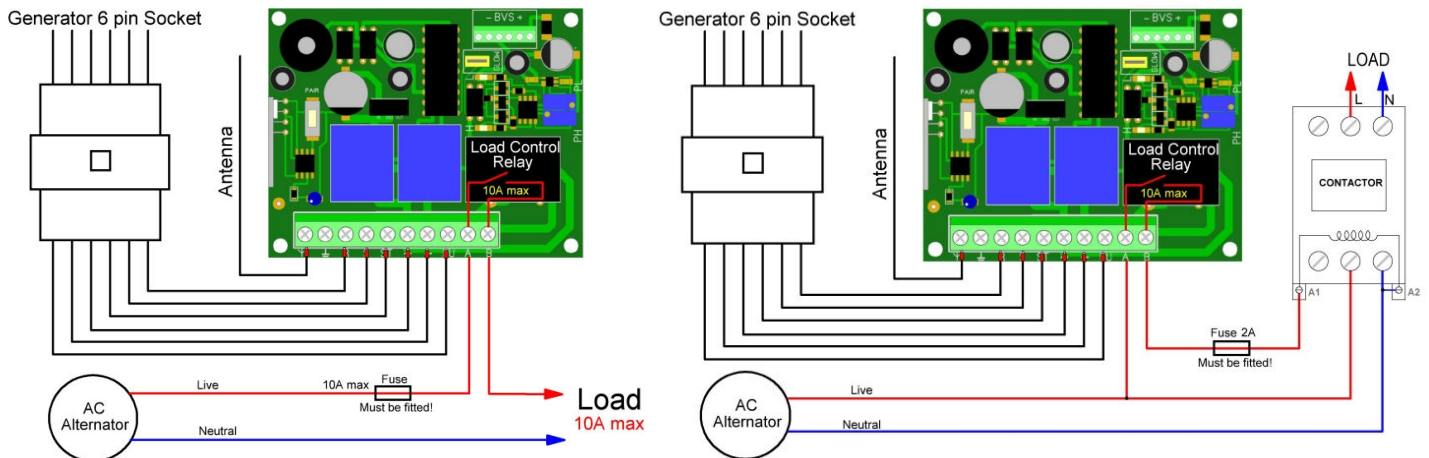
[www.gencontrol.co.uk](http://www.gencontrol.co.uk)

## Pre-heater control (optional)

Connect the "A" and "B" terminals on the ATS controller to the **red wire** pre-heater button and +12V battery as shown below. The original generator wires have to be left connected in parallel to the ATS pre-heater relay and button. When the ATS controller received the start command, the pre-heater relay will energise first (the sound emitter will accompany this function with quick intermitting sound), then the fuel and starter relays energised in order to provide the 1<sup>st</sup> starting attempt. If the 1<sup>st</sup> starting attempt was unsuccessful, the starter relay will be de-energised for a resting time, then the pre-heater relay will energise again. This pre-heat and start cycle will be repeating again until the engine starts. After 6 unsuccessful attempts the ATS controller will de-energise all relays and switch on the slow intermitting sound.



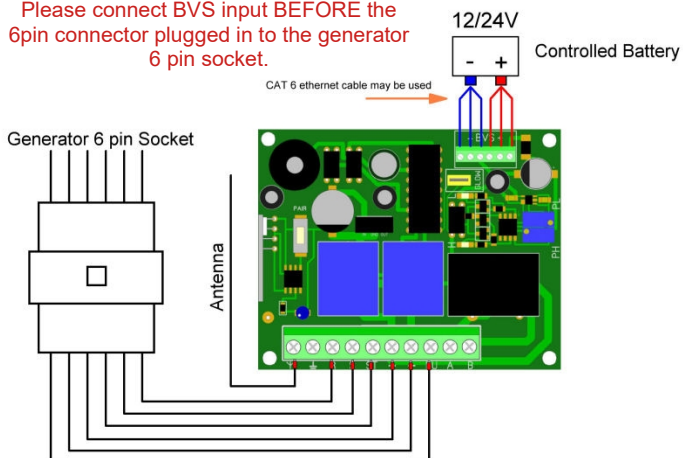
## Load Control (optional)



For the load current 10A or less it is possible to use the Load Control Relay fitted on the ATS controller. If the load is greater than 10A please use an appropriately rated contactor.

## BVS (optional)

Please connect BVS input **BEFORE** the 6pin connector plugged in to the generator 6 pin socket.



Battery Voltage Sensor — this internally fitted device intended to automatically control your battery voltage. Should the controlled battery voltage drops below the set threshold, the BVS will then initiate a start command sending a signal to the ATS controller. The generator will run until the BVS senses the battery high voltage threshold. The low and high voltage thresholds are:

**12V battery (typical settings): start @ 11.8V and stop @13.8V (set as default)**

24V battery (typical settings): start @ 23.6V and stop @ 27.6V

These settings can be adjusted prior to the order shipment. The customer needs to contact the manufacturer with new settings prior to order.