GenControl
Development and manufacture of engine control modules
DESIGNING TO LAST

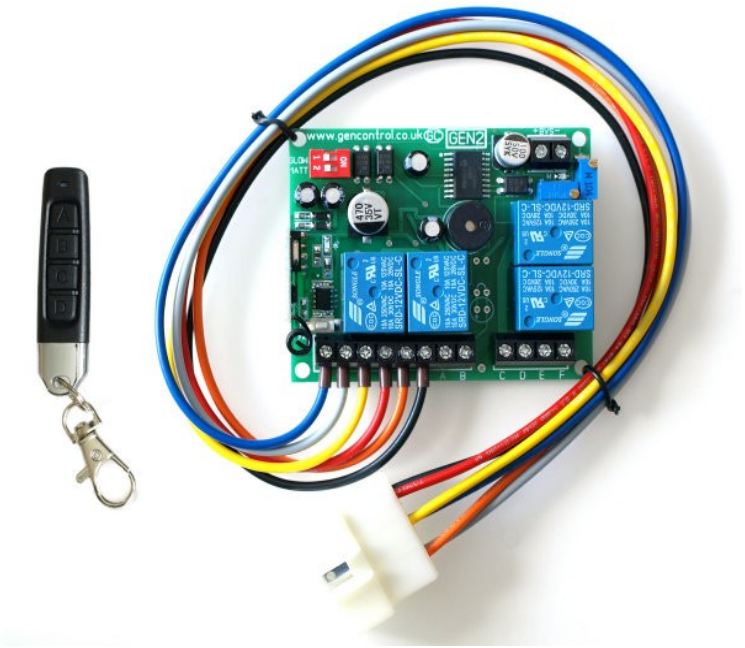
UK Sales & Suport: 07749782278
International: +44(0)7749782278
Email: sales@gencontrol.co.uk
Web: www.gencontrol.co.uk

Hyundai compatible ATS controller (2nd gen.)

Compatible models: DHY6000SE / DHY6000SELR / DHY8000SE / DHY8000SELR / DHY8000SELR-T (Three-phase) /DHY8500/DHY8600

PREFACE

This ATS controller is designed to upgrade some Hyundai diesel generators with wired auto start function (so-called 2 wire start-stop). Additionally it may expand the generator functionality providing useful services such as wireless control, automatic battery control and charge, pre-heat before start (for engines with a glow plug fitted) and automatic load control. Most Hyundai generators have 3 pin ATS socket fitted however the ATS controller may be missing or doesn't have the required functionalities, so our ATS controller could be a solution in this case. The ATS controller has 6 automatic starting attempts (2-3-4-5-6-7sec) 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. 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 particularity useful for the generators left unattended for a long period of time. The ATS controller can be also used as a load controller. 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 (paired).



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.

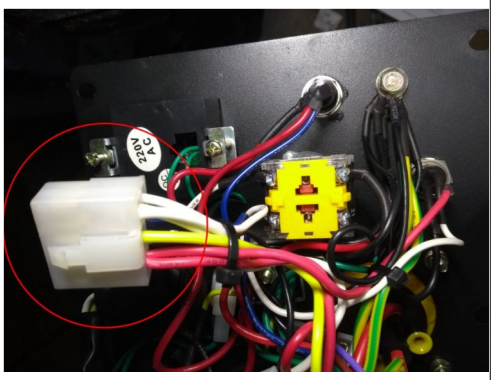
FITMENT

STEP 1

Undo 6 bolts and pull down the front panel

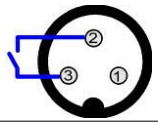
STEP 2

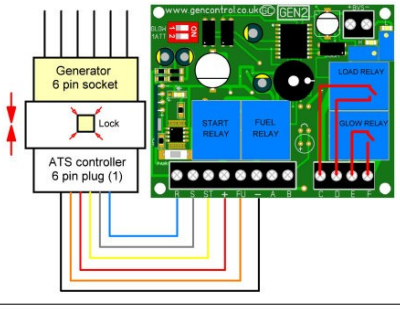
Find free hanging 6 pin plug as shown on the picture



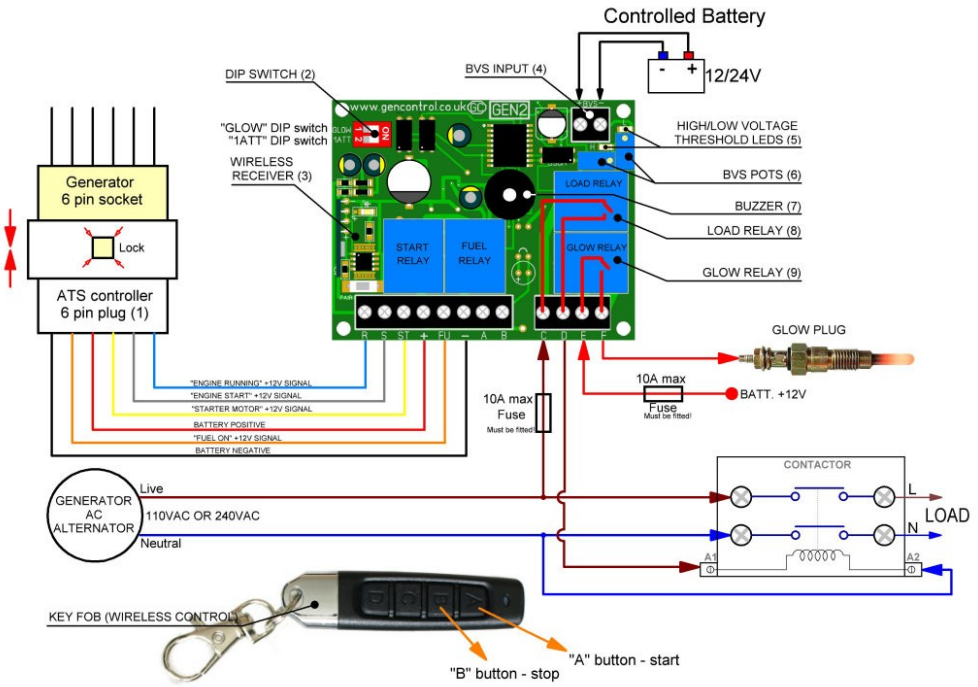
STEP 3

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.
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!





Wiring diagram and connotations



(1) ATS controller 6 pin plug

Used to connect the ATS controller to the engine wiring.

(2) Configurable 2 position DIP switch

Used to enable the glow function (DIP switch #1) and activate 1 starting attempt only (DIP switch #2) in case if the generator has an issue with the “engine running” signal (blue wire).

(3) Wireless receiver (optional part)

Comes together with a key fob if ordered.

(4) BVS input (optional part)

Used to connect the battery which could be the engine starting battery or any other battery connected with the generator charger. The BVS part will start the generator automatically when the low voltage threshold is detected **(11.9Vdc set by default)**. It will run the engine until the high voltage threshold detected **(13.0Vdc set by default).** These voltage thresholds are adjustable and can be set up by us precisely before shipment. Please let us know if you require any different BVS values.

(5) High (H) and Low (L) BVS LED indicators

LED (H)	LED (L)	Meaning
ON	ON	Voltage ≤ Low Voltage Threshold
OFF	OFF	Voltage ≥ High Voltage Threshold
ON	OFF	Voltage >LVT and <HVT

(6) BVS potentiometers (optional part)

Used to set up the High and Low Voltage Thresholds.

(7) Buzzer

Buzzer Sound	Meaning
Slow Intermittent	6 starting attempts were unsuccessful. Engine start failure.
Fast Intermittent	Pre-heat in progress. Glow plug is powered for 10 sec before start.
Continuous	Unexpected engine shutdown. Run out of fuel, low oil shutdown or anything else.

(8) Load Relay (optional part)

After a successful start, when engine's parameters are settled, the Load Control Relay will energise and connect terminals “C” and “D” together. This energises a customer’s contactor which will connect the AC alternator output to the load. The run time before accepting load and the run time after relieving load (while generator is still running and is ready to accept the load again if the remote/local start signal is switched back on) are reprogrammable with a limit of 255 sec [4.25 min] max. (for each timer).
The default warm-up and cool-down time is set for **15 sec**.
For the load current 10A or less it is possible to use the Load Control Relay only, fitted on the ATS controller. If the load is greater than 10A please use an appropriately rated contactor.

(9) Glow relay (optional part)

When the ATS controller receives the start command, the glow relay will energise first connecting terminals “E” and “F” together (the buzzer will accompaniment this function with quick intermitting sound), then the fuel and starter relays energised in order to provide the 1st starting attempt. If the 1st starting attempt was unsuccessful, the starter relay will be de-energised for a resting time (**10sec**), then the glow relay will energise again. This pre-heat and start cycle will repeat again until the engine starts. After 6 unsuccessful attempts the ATS controller will de-energise all relays and switch on the slow intermitting sound indicating the “engine start failure”.