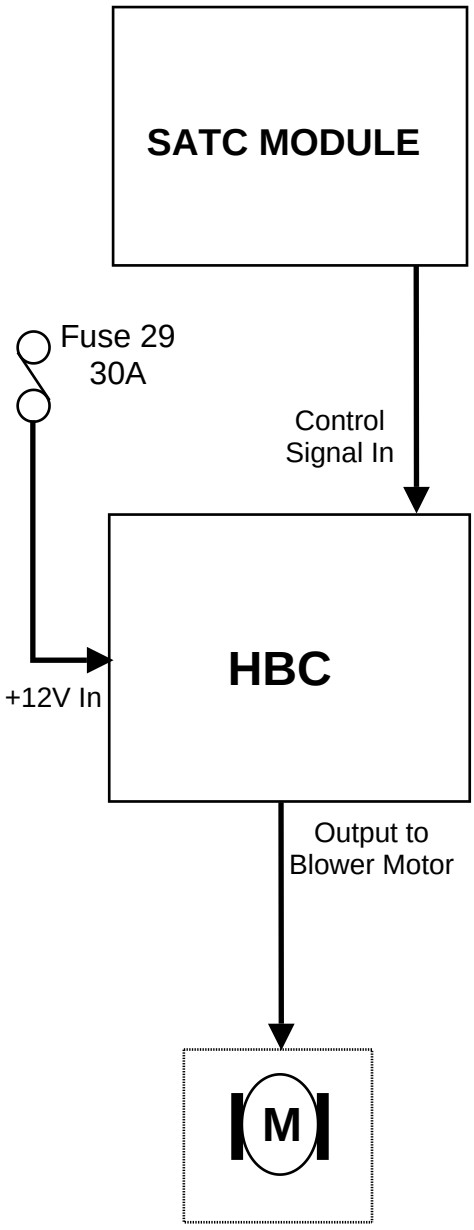
Testing The Ford Scorpio 95+ Heater Blower Control HBC

System Description

The models of Scorpio equipped with Climate Control, named as Semi Automatic Temperature Control System (SATC) by Ford, utilise an electronic variable speed control, or Heater Blower Control (HBC). This speed control causes the speed of the Blower Motor to be variable. (The HBC is a linear voltage control device and not a PWM design).

The SATC module provides a control voltage to the HBC, this controls the speed of the motor. The HBC has a +12V supply.



Wire	Description
WHITE/BLUE	Control Signal T1
BROWN/BLUE	Control Signal T2
VIOLET	+12V In
BLACK	Ground (0V, Earth)
VIOLET/ORANGE	+ve To Motor
BLACK/RED	-ve To Motor

Testing

Turn the Fan Control switch on the SATC panel to maximum and switch the ignition to On. The engine does not need to run.

The fan should run at maximum speed. Turn off the ignition and remove connector to the BLACK/RED & VIOLET/ORANGE wires. Turn back on the ignition and a nominal 10V should be measurable across the connector (HBC Side, not Loom side).

Turn the Fan Control Switch to mid way, the output should be around 5V.

Lastly turn the position to Minimum, the output should be around 3V.

These voltages will vary from component to component and accuracy is not important, however a reduction in output voltage for a reduction in speed setting should be shown.

If the fan is on all the time, even with the SATC off, remove the connector to the WHITE/ BLUE & BROWN/BLUE wires, if the fan remains on the HBC is faulty.

If the fan refuses to run and no voltage is measured at the output, check Fuse F29 Main Fuse Box, the HBC may be faulty or the SATC module, check the fault codes at **www.fordscorpio.co.uk/aircon.htm**.

To prove the SATC panel a nominal 5V should be measured on the control input to the HBC (WHITE/BLUE & BROWN/BLUE: not HBC side but Loom Side) for Maximum and around 1.7V for Minimum.

Note the fault codes generated by SATC, may not always be an accurate representation of the fault. A faulty HBC that fails on all time may not be shown as HBC fault, rather it may show SATC module fault.

A known problem with early models is a thermal run away effect. In high ambient conditions the HBC overheats and shuts down. This is usually noticeable as the Blower will go on and off as it heats up and cools down, to prove this set the fan to maximum position.