

TROUBLESHOOTING FOR AIRTRONIC 2/4/5 HEATERS

(“No start” and “Heater Stops” conditions)

Use these recommendations in conjunction with Fault Code List and heater’s manual

#	Description of the problem	Possible reason and method of repair*
1	Absolutely nothing happens when the heater is turned on	<p>1. Check voltage on heater’s harness on the heater’s side (pin # 1 and 10 on Airtronic connector). Turn the heater ON and make sure that the voltage is still OK. Repair harness and connections if necessary.</p> <p>2. If the voltage is OK, than try to start the heater by connecting together red and yellow wires on control branch of the heater’s harness. Make sure that you have +12 or +24 volts on the red wire on the control branch.</p> <p>3. If the voltage is OK but the heater still does not start even if red and yellow wires are connected to each other, then the most likely ECU is locked, bad, or one of the startup self tests fails.</p> <p>Use Diagnostic tool to retrieve fault codes from heater’s memory and unlock ECU is it is locked. Follow heater’s manual for the fault codes description and repair methods;</p>
2	Being turned on, heater turns blower a few times, FMP and ECU’s relay may click one time but heater would not make an attempt to start.	<p>1. Bad electrical connections. Check voltage like described in case #1</p> <p>2. Start-up self test failed. Retrieve fault codes from heater’s memory using Diagnostic tool or EDiTH, refer to the heater’s manual for the description and repair methods.</p>
3	Heater switches into shut-down phase 20-25 seconds after being turned on (the most likely, fault code 11 found in memory)	Check voltage on heater’s harness on the heater’s side (pins 1 and 10 on Airtronic connector). Turn the heater ON and make sure that the voltage is still OK. Repair harness and connections if necessary.
4	Being turned on, heater just blows cold air, never stops and never performs a start attempt. No fault code recorded.	<p>1. Was “Ventilation” button pressed instead of “Heat”?</p> <p>2. Replace combo Sensor</p> <p>3. Replace ECU if necessary</p>
5	Heater makes two attempts to start with no success and then	1. Check if exhaust pipe is not plugged with ice. Reroute it if this is the case for not having it to be

	stops completely. No smoke comes from the exhaust pipe, some smoke can be seen between the exhaust pipe and heat exchanger.	U-shaped 2. Check combustion air intake pipe. If the exhaust and combustion air intake pipes are OK, see case #6 below
6	Heater makes two attempts to start, may smoke for a while and then it stops	1. Do the fuel quantity check, if the amount of fuel is insufficient, than check the fuel pick-up pipe, fuel lines and connections, fuel filter on the pump, replace the filter or pump if necessary. 2. Check the glow pin, clean ventilation hole and replace atomizing screen. 3. If necessary, take the heater apart, clean combustion tube (including it's all air ways) and the heat exchanger.
7	Heater makes two attempts to start, then stops. Both times it sounds like the ignition takes place and then combustion process stops together with the fuel metering pump. Usually no smoke comes from the exhaust pipe just like when the heater starts normally	1. The heater ignited but the flame was not detected. Check and replace combo sensor. 2. Replace ECU if combo sensor was good.
8	Heater ignites normally, goes into boost mode, then switches to stand-by mode, blower is slowly spinning but the heater never restarts. No fault code recorded.	1. Using EDiTH, check setpoint for temperature and current air temperature. Replace part which works improperly. Swap minicontroller if do not have EDiTH; 2. If minicontroller OK, install external temperature sensor or replace ECU
9	Heater ignites normally, but often stops (codes 52-56 found in memory)	1. Check fuel lines for gaps in connections inside connection pieces 2. If the heater stops only when the vehicle is in motion, reroute combustion air intake and exhaust pipes, or bend their ends toward to the rear of the vehicle.

*To avoid inefficient expenses, it is strongly recommended to have the heater diagnosed by specialist before replacing expensive parts

TROUBLESHOOTING FOR HYDRONIC 4/5 HEATERS

(“No start” and “Heater Stops” conditions)

Use these recommendations in conjunction with Fault Code List and heater’s manual

#	Description of the problem	Possible reason and method of repair*
1	Absolutely nothing happens when the heater is turned on. Coolant pump is not pumping.	<p>1. Check voltage on heater’s harness on the heater’s side (pins 1 and 2 on heater’s connector). Turn the heater ON and make sure that the voltage is still OK. Repair harness and connections if necessary.</p> <p>2. If the voltage is OK, then try to start the heater by connecting red and yellow wires together by a wire jumper (chambers 2 and 11 on 7 day timer connector – make sure that you have +12 or +24 volts on the red wire). If the above helps, replace switch or timer.</p> <p>3. If the heater still does not start, then the most likely ECU is locked or the start-up self test fails.</p> <p>Use 7-Day Timer, EDiTH or Diagnostic tool to retrieve fault codes from heater’s memory and unlock ECU if it is locked. Follow heater’s manual for the fault codes description and repair methods;</p>
2	Being turned on, heater just pumps coolant, never stops and never performs a start attempt. No fault codes found in memory	<p>1. Check and replace temperature sensor.</p> <p>2. If the sensor is good, replace ECU</p>
3	Heater switches into shut-down phase 20 seconds after being turned on (the most likely, fault code 11 found in memory)	Check voltage on heater’s harness on the heater’s side (pins 1 and 2 on Hydronic 4/5 connector). Turn the heater ON and make sure that the voltage is still OK. Repair harness and connections if necessary.
4	Heater makes two attempts to start with no success and then stops completely. No smoke comes from the exhaust pipe, some smoke can be seen between the exhaust pipe and heater	<p>1. Check if exhaust pipe is not plugged with ice. Reroute it if this is the case for not having it to be U-shaped</p> <p>2. Check combustion air intake pipe. If the exhaust and combustion air intake pipes are OK, see case # 5 below</p>
5	Heater makes two attempts to start, may smoke for a while and then it stops	1. Do the fuel quantity check, if the amount of fuel is insufficient than check the fuel pick-up pipe, fuel lines and connections, fuel filter on the pump, replace the filter or pump if necessary.

		2. Check the glow pin and replace atomizing screen. Clean combustion tube (including it's all air ways) and the heat exchanger.
6	Heater makes two attempts to start, then stops. Both times it sounds like the ignition takes place and then combustion process stops together with the fuel metering pump. Usually no smoke comes from the exhaust pipe just like when the heater starts normally	1. The heater ignited but the flame was not detected. Check and replace the flame sensor. 2. Replace ECU if flame sensor was good.
7	Heater ignites normally, but often stops (codes 52-56 found in memory)	1. Check fuel lines for gaps in connections inside connection pieces 2. If the heater stops only when the vehicle is in motion, reroute combustion air intake and exhaust pipes, or bend their ends toward to the rear of the vehicle.
8	Heater overheats and stops soon after being turned on. Temperature of the heat exchanger raises quickly after start.	1. Bleed air from the coolant lines and heat exchanger. Check plumbing for no restrictions for coolant flow. 2. Check if the coolant pump spins. Unblock and clean it if necessary.
9	Heater does not provide enough power mostly working on low power level which can be detected by measuring electrical current draw.	1. On old installations - check coolant pump 2. On new installations - Too big resistance for coolant flow. Possible too many units like heat exchangers are connected to the heater serially. Check plumbing. Reconnect system's heat exchangers in parallel which reduces resistance for coolant flow.
10	Ground wire burned out	Vehicle's starter was turned on or short circuit happened in vehicle's power circuits while vehicle's power switch in the ground battery wire was turned off. Fix the wire or replace ECU.

*To avoid inefficient expenses, it is strongly recommended to have the heater diagnosed by specialist before replacing expensive parts