

P0597: THERMOSTAT HEATER CONTROL CIRCUIT OPEN

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Intermediate
Repair Cost	:	\$100-\$300
Can I Still Drive?	:	No

What Does The P0597 Code Mean?

The codes P0597, [P0598](#) and [P0599](#) all refer to an electronically controlled engine thermostat. They are generic codes, meaning they pertain to all vehicles using this type of thermostatic control, however, only a small number of manufacturers employ this type of system. Therefore, this trouble code article is basically identical for all three codes.

The P0597 engine code indicate a fault has occurred with this system where the control voltage is nonexistent.

The electronically controlled thermostat consists of various temperature and load sensors, a computer program and the control housing with a built-in thermostat.

By controlling the coolant flow or engine temperature electronically, part throttle increases fuel economy and reduces emissions, whereas reducing the temperature under load increases power.

What Are The Symptoms Of The P0597 Code?

Symptoms will vary depending on the position of the thermostat at the time of failure, however, it is unlikely that there will be any noticeable difference in the operation of the vehicle.

- The check engine light will illuminate and one of the above codes will be set

- The temperature gauge may read abnormally high if the thermostat failed in the partially closed position, conversely, it will read lower than normal if the thermostat failed in the full open position

What Are The Potential Causes Of The P0597 Code?

Experience dictates that the problem usually lies in a loose or corroded electrical connector or the electrically operated thermostat itself is at fault. Occasionally, the Motronic (engine management) computer fails, but is the least likely cause.

- A loose or corroded connector on the thermostat
- A coolant leak will cause the code to set
- The thermostat itself has failed
- A short or open has occurred in the wiring harness between the computer and thermostat
- The Motronic computer has failed

How Can You Fix The P0597 Code?

- Remove and inspect the electrical connector. Remove any corrosion using baking soda or by scraping. Apply electro grease and confirm a tight connection.
- Inspect the coolant level in the radiator. Low levels of coolant will set a code by causing the electronic thermostat to overheat.
- Remove the electrical connector and check the resistance values on the thermostat. For this procedure you will need a service manual or the necessary information found online.

This information needs to include the identification of the pins and their location, color of the wires, pin values in volts at specific temperatures and resistances. These values and flow of diagnosis varies from manufacturer to manufacturer and with engine size.

You will also need an infrared temperature probe and volt/ohmmeter.

- Determine the temperature of the engine with the temperature probe
- Start the engine and test the voltage on the Motronic side of the harness as per the instructions. If it is within limits continue testing. If there was no voltage or it was out of range, replace the Motronic unit
- Compare the resistance on the thermostat side of the harness at the thermostat. If the resistance is out of range replace the thermostatic unit
- If the tools are not readily available, take the vehicle to a good shop that has access to the necessary information. It is a simple diagnosis with the correct tools

Reference Sources

[P0597 Thermostat Heater Control Circuit Open](#), OBD-Codes.