P2601: COOLANT PUMP "A" CONTROL CIRCUIT RANGE PERFORMANCE

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Advanced
Repair Cost	:	**$100-$1500**
Can I Still Drive?	:	**Yes**

What Does The P2601 Code Mean?

This generic powertrain/engine diagnostic trouble code typically applies to all OBDII equipped engines with electric coolant pumps, but shows up more often in certain hybrids vehicles by Ford, Honda, Nissan and Toyota.

The Coolant Pump A (CP-A) is can usually be found mounted to the front of the engine, on top of the engine, inside the wheel wells or against the bulkhead. The CP-A is operated by an electrical signal from the Powertrain Control Module (PCM).

The PCM receives inputs to determine when and how long it needs to operate the CP-A. These inputs are voltage signals received from coolant temp, intake air temp, engine rpm and air conditioning system pressure sensors. Once the PCM has received these inputs it can modify the signal to the CP-A.

P2601 is typically set because of electrical (CP-A circuit) issues but can be caused by mechanical issues, such as a mechanically stuck impeller on the electrically driven coolant pump. Both electrical and mechanical issues cannot be overlooked in the troubleshooting stage, especially when dealing with an intermittent problem.

Troubleshooting steps may vary depending upon manufacturer, type of CP-A and wire colors.

Related coolant pump “A” circuit trouble codes:

- P2600 Coolant Pump “A” Control Circuit Open
- P2602 Coolant Pump “A” Control Circuit Low
- P2603 Coolant Pump “A” Control Circuit High

What Are The Symptoms Of The P2601 Code?

Symptoms of a P2601 code may include:

- Malfunction Indicator Light On
- Overheating
- A/C system not functioning properly

What Are The Potential Causes Of The P2601 Code?

Potential causes for this code to set are:

- Open in the circuit to the Coolant Pump – likely
- Failed Coolant Pump – inoperative (mechanically or electrically) – likely
- Failed PCM – unlikely

How Can You Fix The P2601 Code?

Step 1

A good starting point is always to check for technical service bulletins (TSB) for your particular vehicle. Your issue may be a known issue with a known fix put out by the manufacturer and can save you time and money during diagnosis.

Step 2

Next, locate the TBCPS sensor on your particular vehicle. This sensor is usually found directly screwed / bolted into the turbocharger housing.

Once located, visually inspect the connector and wiring. Look for scraping, rubbing, bare wires, burn spots or melted plastic. Pull the connector apart and carefully inspect the terminals (the metal parts) inside the connector. See if they look burned or have a green tint indicating corrosion. Use electrical contact cleaner and a plastic bristle brush if cleaning of the terminals is needed. Let dry and apply electrical grease where the terminals contact.

Step 3

If you have a scan tool, clear the diagnostic trouble codes from memory, and see if P2601 code

returns. If it does not, then the connections were most likely your problem.

Step 4

If the P2601 code does return, we will need to test the TBCPS sensor and its associated circuits. With the Key Off, disconnect the electrical connector at the TBCPS sensor. Connect a Digital Voltmeter black lead to the ground terminal at the TBCPS sensor wiring harness connector.

Connect the red lead of the Digital Voltmeter to the power terminal at the TBCPS sensor wiring harness connector. Turn Key On Engine Off. Check manufacturer's specifications; voltmeter should read either 12 volts or 5 volts. If not, repair open in wiring on the power or ground wire, or replace the PCM.

Step 5

If the prior test passed, we will need to test the signal wire. With the connector still disconnected, move the red lead of the voltmeter from the power wire terminal to the signal wire terminal. The voltmeter should now read 5 volts. If not, repair the open on the signal wire, or replace the PCM.

Step 7

If all prior tests have passed and you continue to get a P2601, this would most likely indicate a failed TBCPS sensor, although a failed PCM could not be ruled out until the TBCPS sensor had been replaced. If unsure, seek assistance from a trained automotive diagnostician. PCMs must be programmed, or calibrated to the vehicle in order to be installed correctly.

Severity Description

Severity is usually severe due to its impact on the cooling system. Because this can be either an electrical or mechanical failure, the PCM cannot fully compensate for it. Partial compensation usually means that the cooling fans operate all the time (100 % duty cycle).

Reference Sources

P2601 Coolant Pump A Control Circuit Performance, OBD-Codes.