P0609: CONTROL MODULE VSS OUTPUT B MALFUNCTION

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Advanced
Repair Cost	:	**$300-$900**
Can I Still Drive?	:	No

What Does The P0609 Code Mean?

The powertrain control module (PCM) has detected a malfunction in a particular vehicle speed sensor (VSS) output voltage signal when a code P0609 is stored.

In this case, a VSS output signal was expected to come from either the PCM itself or one of the many (other) on-board controllers. This particular VSS output circuit has been given the designation “B”. Consult a source of reliable vehicle information for the specific function of this circuit as it pertains to the vehicle in question.

Vehicles which are equipped with OBD-II diagnostic systems may utilize as many as seventy on-board controllers. These controllers communicate via the controller area network (CAN).

The VSS is an electromagnetic sensor that is used to complete a circuit which provides one or more controllers with an accurate signal reflecting vehicle speed. The VSS is typically positioned near the output shaft of the transmission (or 4WD transfer case) or in the rear differential. A toothed, steel reluctor (permanently affixed to the output shaft or ring gear) passes within close proximity to the electromagnetic sensor and completes the circuit.

The gaps between the teeth provide circuit interruptions. The PCM and other controllers receive these circuit completions and interruptions as a wave form pattern of voltage. The frequency of this wave form pattern is interpreted as vehicle speed.

The VSS signal is usually input to a primary controller, such as the PCM or transmission control module (TCM). Once the primary controller receives the VSS input, it is shared with other controllers via the CAN. If any of these secondary controllers fails to receive the VSS signal, or receives an inconsistent VSS signal, a code P0609 will be stored and a malfunction indicator lamp (MIL) may be illuminated.

What Are The Symptoms Of The P0609 Code?

Symptoms of a P0609 trouble code may include:

- Erratic or incorrect speedometer/odometer
- Abnormal (automatic) transmission shifting
- Output shaft speed sensor codes
- Input speed sensor codes
- ABS or Traction Control System (TCS) codes

What Are The Potential Causes Of The P0609 Code?

Causes for this code may include:

- Defective PCM, TCM, or other controller
- Open or shorted circuits in the CAN
- Corroded, broken, or loose electrical connectors
- Controller programming error

How Can You Fix The P0609 Code?

If other VSS related codes are stored, they will need to be diagnosed and repaired before attempting to diagnose the P0609.

A diagnostic scanner, a digital volt/ohmmeter, and a source of reliable vehicle information will be required to diagnose this code.

Use the vehicle information source to search technical service bulletins (TSB) that parallel the vehicle in question, as well as the code stored and the symptoms exhibited. If you find an applicable TSB, the likelihood that it will provide helpful diagnostic information is very great.

Utilize the vehicle information source for diagnostic flow charts, wiring diagrams, connector pin-out charts, connector face views, and component testing procedures/specifications. All this information will be required for a successful diagnosis.

After a visual inspection of controller connectors and visible CAN harnesses, connect the scanner to the vehicle diagnostic port and retrieve all stored codes. If freeze frame data is available, grab that too. Make a note of all this information. It may prove helpful later in your diagnosis. Now, clear the

codes and test drive the vehicle until the PCM either enters readiness mode or the code is reset.

If the PCM enters readiness mode without any codes being stored, you are dealing with an intermittent code and the problem which contributed to it may need to worsen before an accurate diagnosis can be reached.

If the code is reset, continue with your diagnosis.

Warning: Before using the DVOM to test circuit resistance and continuity, disconnect all related controllers. Failure to do so may result in controller damage.

With the key on and the engine off, use the DVOM to test individual VSS output circuits at the appropriate controller. Compare your findings with VSS signal data. If no acceptable output signal is detected, suspect controller failure.

If an acceptable VSS output signal is discovered at the controller, use the DVOM to test individual circuits between each of the related controllers. Repair or replace system circuits or components as required and retest the VSS signal.

- A code P0609 (with no other codes stored) will not be caused by a defective VSS
- In most cases, controller failure is not likely. In the case of the P0609, it is more likely that a controller problem or a programing error may be the culprit

Severity Description

VSS related codes may affect transmission shift strategy and engine drivability. A stored code P0609 should be classified as severe and diagnosed/repaired as quickly as possible.

Reference Sources

P0609 Control Module VSS Output B Malfunction, OBD-Codes.