P2500: GENERATOR LAMP/L TERMINAL CIRCUIT LOW

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Beginner
Repair Cost	:	**$100-$400**
Can I Still Drive?	:	**Yes**

What Does The P2500 Code Mean?

A stored code P2500 means that the powertrain control module (PCM) has detected a lower than expected voltage signal from the generator lamp control circuit. The L simply reiterates the lamp control circuit.

The generator lamp is contained in the instrument panel. Its primary purpose is to warn the driver of potential charging system problems, when it is illuminated.

The PCM typically monitors the continuity of the generator lamp control circuit whenever the engine is running. The generator lamp control circuit is integral to generator operation and maintaining battery charge levels.

If a problem is detected in monitoring the generator field circuit, a code P2500 will be stored and a malfunction indicator lamp (MIL) may be illuminated. Depending upon the perceived severity of the malfunction, multiple failure cycles may be necessary for MIL illumination.

What Are The Symptoms Of The P2500 Code?

Symptoms of a P2500 trouble code may include:

- Charging system lamp illumination
- Engine drivability issues
- Inadvertent engine shutoff

- Delayed engine cranking
- Other stored codes

What Are The Potential Causes Of The P2500 Code?

Causes for this code may include:

- Open or shorted generator field control circuit
- Blown fuse or burnt fusible link
- Defective alternator/generator
- Faulty PCM
- PCM programming error

How Can You Fix The P2500 Code?

A diagnostic scanner, a battery/alternator tester, a digital volt/ohmmeter (DVOM), and a source of reliable vehicle information will be required to diagnose a code P2500.

Locate a technical service bulletin (TSB)

Consult your vehicle information source for technical service bulletins (TSB) that replicate the code stored, vehicle (year, make, model, and engine), and symptoms exhibited. If you find the appropriate TSB, it may yield helpful diagnostic.

Retrieve all stored codes

Begin by connecting the scanner to the vehicle diagnostic port and retrieving all stored codes and freeze frame data. You will want to write this information down, just in case the code proves to be an intermittent one.

After recording all pertinent information, clear the codes and test drive the vehicle until the code is reset or the PCM enters readiness mode. If the PCM enters readiness mode, the code is intermittent and will be more difficult to diagnose. The condition, which caused the P2500 to be stored, may even need to worsen before a diagnosis can be made. If the code is reset, continue with your diagnosis.

Test the battery

Use the battery/alternator tester to test the battery and make sure that it is sufficiently charged. If it is not, charge the battery as recommended and test the alternator/generator. Follow manufacturer's recommended specifications for minimum and maximum voltage output requirements for the battery and alternator. If the alternator/generator is not charging, proceed to the next step in your diagnosis.

Use your source of vehicle information to obtain connector face views, connector pin-out charts, component locators, wiring diagrams, and diagnostic flow charts related to the code and vehicle in question.

Check to see if there is battery voltage on the alternator/generator warning lamp circuit by using the appropriate wiring diagram and your DVOM. If not check system fuses and relays and replace defective parts as required. If voltage is discovered at the generator warning lamp, suspect a defective alternator/generator warning lamp bulb.

If the alternator is charging, the alternator/generator warning lamp bulb is functioning properly, and the P2500 continues to reset, use the DVOM to test controller power supply fuses and relays. Replace blown fuses as required. Fuses should be tested with the circuit loaded.

Visually inspect of controller related wiring and harnesses

If all fuses and relays appear to be functioning as intended, a visual inspection of controller related wiring and harnesses is in order. You will also want to check chassis and engine ground junctions. Use your vehicle information source to obtain ground locations for related circuits. Use the DVOM to test ground integrity.

Visually inspect system controllers for signs of water, heat, or collision damage. Any controller that is damaged, especially by water, should be considered defective.

Suspect a defective controller

If controller power and ground circuits are intact, suspect a defective controller or a controller programming error. Controller replacement will require reprogramming. In some cases, you may purchase reprogrammed controllers through aftermarket sources. Other vehicles/controllers will require on-board reprogramming that may only be done through a dealership or other qualified source.

- If the charging lamp fails to illuminate during key-on-engine-off (KOEO) conditions, suspect a defective generator warning lamp bulb
- Test controller ground integrity by connecting the negative test lead of the DVOM to ground and the positive test lead to battery voltage

Severity Description

A stored code P2500 could result in a variety of drivability concerns, including a no-start and/or dead battery condition. It should be classified as severe.

Reference Sources

P2500 Generator Lamp/L Terminal Circuit Low, OBD-Codes.