P0649: SPEED CONTROL LAMP CONTROL CIRCUIT

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Intermediate
Repair Cost	:	**$100-$250**
Can I Still Drive?	:	**Yes** (Short-term only)

What Does The P0649 Code Mean?

A stored code P0649 means that the powertrain control module (PCM) has detected a malfunction in the speed control lamp control circuit.

The speed control lamp is contained in the instrument panel. Its primary function is to alert the driver that the speed control system has been activated (when it is illuminated). The speed control system is also called the cruise control.

The PCM typically monitors the continuity of the speed control lamp control circuit whenever the ignition is turned on. The speed control system uses input signals from the vehicle speed sensor (VSS) and/or wheel speed sensors to regulate vehicle speed automatically (after the system is activated by the driver).

Each time the ignition is turned on and the PCM is energized, multiple controller self-tests are performed. In addition to running internal controller self-tests, the controller area network (CAN) carries serial data from each individual module to ensure that on-board controllers are interfacing properly.

If a problem is detected in monitoring the speed control lamp control circuit, a code P0649 will be stored and a malfunction indicator lamp (MIL) may be illuminated.

What Are The Symptoms Of The P0649 Code?

Symptoms of a P0649 trouble code may include:

- Speed control system inoperative
- Other stored (speed control) codes

What Are The Potential Causes Of The P0649 Code?

Causes for this code may include:

- Faulty PCM
- PCM programming error
- Open or shorted speed control lamp control circuit
- Defective speed control lamp bulb

How Can You Fix The P0649 Code?

A diagnostic scanner, a digital volt/ohmmeter (DVOM), and a source of reliable vehicle information will be required to diagnose a code P0649.

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 information.

Step 1

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 P0649 to be stored, may need to worsen before an accurate diagnosis can be reached. If the code is reset, continue with your diagnosis.

Step 2

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.

Step 3

Check to see if there is battery voltage on the speed control 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 speed control warning lamp, suspect a defective speed control warning lamp bulb.

Step 4

If the speed control warning lamp bulb is functioning properly, and the P0649 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.

Step 5

If all fuses and relays appear to be functioning properly, 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.

Step 6

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

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.

Note:

- If the speed control lamp fails to illuminate during key-on-engine-off (KOEO), suspect a defective speed control 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

All internal control module codes should be taken seriously. A stored code P0649 (with speed control lamp illumination) will likely result in a loss of speed control activation.

Reference Sources

P0649 Speed Control Lamp Control Circuit, OBD-Codes.