SPN 597

Suspect Parameter Number (SPN) and Failure Mode Indicator (FMI) Description

<table>
<thead>
<tr>
<th>SPN</th>
<th>FMI</th>
<th>Description</th>
<th>Possible Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>597</td>
<td>2</td>
<td>Brake Switch Conflict</td>
<td>• Brake switch malfunction</td>
</tr>
</tbody>
</table>

Circuit Description

The engine control module (ECM) monitors the brake ON/OFF Switch (BOO) and compares it with the SAE J1939 CAN data link message brake pedal position switch (BPS) status from the transmission control module (TCM). The BOO signal is low when the BPS signal is high with the brake pedal released. The BOO signal is high when the BPS signal is low with the brake pedal depressed.

Conditions to Run SPN

The SPN runs continuously when the ignition is ON.

Conditions to Set SPN

**SPN 597–2 Brake Switch Conflict**

The ECM detects a fault if the BOO and BPS signals are not inversed.

Action Taken When SPN Sets

**SPN 597–2 Brake Switch Conflict**

- The ECM will turn ON the check engine light (CEL).
- 597 is a Type A SPN.
Diagnostic Reference

- Review Strategy Based Diagnosis for an overview of the diagnostic approach.
- Diagnostic Procedure Instructions provides an overview of each diagnostic category.
- Perform the Diagnostic System Check prior to using this diagnostic.
- Test for intermittent or poor connections.
- Review Schematics and Connector End Views to locate test points.
- Review the SPN Type, Indicator Lamp Definitions, and Conditions to Clear the SPN/Indicator Lamp.

Diagnostic Tips

- Test for intermittent or poor connections.
- Sticking brake on/off switch or brake pedal position switch may cause this SPN to set.

Required Tools

- Terminal Test Probe Kit
- Fused Jumper
- Digital Multi-meter
- High Impedance Test Lamp
- Electronic Service Tool

Circuit Diagnostics

WARNING! To prevent bodily injury or death, stay away from hot engine surfaces and rotating engine components.

1. Verify the Electronic Service Tool Brake Switch parameter changes states when depresssing and releasing the brake pedal several times.

   ➢ If the Brake Switch parameter changes state with each pedal movement, Refer to the Vehicle Transmission Repair Section for Brake Pedal Position Switch Diagnosis.
If the Brake Pedal parameter does not change states or is slow to react, go to step 2

2. Ignition OFF, disconnect the harness connector at the Brake Service Power Relay, ignition ON, verify the Electronic Service Tool Brake Pedal parameter displays OFF.

   ➢ If the Electronic Service Tool Brake Pedal parameter does not display OFF, ignition OFF, disconnect the ECM harness connector J1-C, ignition ON, verify less than 1 V between the brake service hydro power relay terminal 30 and ground.

      ✓ If 1 V or greater, repair the short to voltage in the circuit.
      ✓ If less than 1 V, replace the ECM.

If Electronic Service Tool Brake Pedal parameter displays OFF, go to step 3

3. Ignition OFF, connect a 3 A fused jumper between the brake service hydro power relay terminal 30 and B+, ignition ON, verify the Electronic Service Tool Brake Pedal parameter displays ON.

   ➢ If the 3 A Fused Jumper Opens, ignition OFF, remove the fused jumper, disconnect the ECM harness connector J1-C, test for infinite resistance between the brake service hydro power relay terminal 30 and ground.

      ✓ If not infinite resistance, repair the short to ground in the circuit.
      ✓ If infinite resistance, replace the ECM.

   ➢ If the Brake Pedal parameter does not display ON and the 3A Fused Jumper is good, ignition OFF, disconnect the ECM harness connector J1-C, test for less than 5 Ω between the brake service hydro power relay terminal 30 and the ECM connector J1-C terminal D4.

      ✓ If 5 Ω or greater, repair the open/high resistance in the circuit.
      ✓ If less than 5 Ω, replace the ECM.

   ➢ If the Brake Pedal parameter displays ON, refer to the Brake Repair Section in the Vehicle Service Manual.