C0615, C0620, C0625 or C0630 The sensor is also grounded through the ESC module

Circuit Description

The electronic suspension control (ESC) module supplies a 5.0 volt reference signal to the suspension position sensor. The suspension position sensor supplies an analog voltage (0.35–4.75 volts) back to the ESC module which represents the position between the body and the wheel. The sensor is also grounded through the ESC module.

Conditions for Running the DTC

The ignition is ON.

Conditions for Setting the DTC

• The DTC is set when the ESC module measures the position sensor signal voltage below 0.35 volts or above 4.75 volts for more than 1.0 second.
• The fault is detected during three consecutive ignition cycles, or during the same ignition cycle after clearing the DTC with a scan tool.

Action Taken When the DTC Sets

• The ESC module will enter the Speed Dependent damping mode.
• Both Left and Right Normal Force outputs will be set to the default output states.
• The SERVICE SUSPENSION SYS message will be displayed.

Conditions for Clearing the MIL/DTC

• The scan tool can be used to clear the DTC.
• The DTC is saved as history when the ESC module no longer sees voltage outside the normal range. The DTC will clear if the fault does not return during 50 consecutive ignition cycles.

Diagnostic Aids

• If this fault condition is set along with DTC C0696, diagnose DTC C0696 first.
• If the DTC is a history DTC, the fault may be intermittent. Refer to Testing for Intermittent and Poor Connections on page 8-1187 in Wiring Systems.

Test Description

The numbers below refer to the step numbers on the diagnostic table.
3. Tests for the proper operation of the circuit in the low voltage range.
4. Tests for the proper operation of the circuit in the high voltage range. If the fuse in the jumper opens when you perform this test, the signal circuit is shorted to ground.
5. Tests for a short to voltage in the 5-volt reference circuit.
6. Tests for a high resistance or an open in the ground circuit.

DTC C0615, C0620, C0625 or C0630

Step	Action	Value(s)	Yes	No
Schematic Reference:Suspension Controls Schematics on page 3-133				
1	Did you perform the Electronic Suspension Control (ESC) Diagnostic System Check?	—	Go to Step 2	Go to Diagnostic System Check -Electronic Suspension Control
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With the scan tool, observe the position sensor data parameter in the ESC module data list. Does the scan tool indicate that the position sensor data parameter is within the specified range?	0.35–4.75 V	Go to Diagnostic Aids	Go to Step 3
3	1. Turn OFF the ignition. 2. Disconnect the position sensor. 3. Turn ON the ignition, with the engine OFF. 4. With a scan tool, observe the position sensor data parameter. Does the scan tool indicate that the position sensor data parameter is less than the specified value?	0.35 V	Go to Step 4	Go to Step 10

Step	Action	Value(s)	Yes	No
4	1. Turn OFF the ignition. 2. Connect a 3-amp fused jumper wire between the 5-volt reference circuit of the position sensor and the signal circuit of the position sensor. 3. Turn ON the ignition, with the engine OFF. 4. With a scan tool, observe the position sensor data parameter. Does the scan tool indicate that the position sensor data parameter is greater than the specified value?	4.75 V	Go to Step 5	Go to Step 8
5	1. Disconnect the fused jumper wire. 2. Measure the voltage between the 5-volt reference circuit of the position sensor and the low reference circuit of the position sensor. Does the voltage measure less than the specified value?	5V	Go to Step 6	Go to Step 7
6	1. Turn OFF the ignition. 2. Measure the resistance from the low reference circuit of the position sensor to a good ground. Does the resistance measure less than the specified value?	5 W	Go to Step 12	Go to Step 11
7	Test the 5-volt reference circuit of the position sensor for a short to voltage. Refer to Circuit Testing on page 8-1184 and Wiring Repairs on page 8-1189 in Wiring Systems. Did you find and correct the condition?	—	Go to Step 16	Go to Step 13
8	Test the 5-volt reference circuit of the position sensor for a short to ground, a high resistance, or an open. Refer to Circuit Testing on page 8-1184 and Wiring Repairs on page 8-1189 in Wiring Systems. Did you find and correct the condition?	—	Go to Step 16	Go to Step 9
9	Test the signal circuit of the position sensor for a short to ground, a high resistance, or an open. Did you find and correct the condition?	—	Go to Step 16	Go to Step 13

Step	Action	Value(s)	Yes	No
10	Test the signal circuit of the position sensor for a short to voltage. Refer to Circuit Testing on page 8-1184 and Wiring Repairs on page 8-1189 in Wiring Systems. Did you find and correct the condition?	—	Go to Step 16	Go to Step 13
11	1. Disconnect the ESC module. 2. Test the low reference circuit of the position sensor for a high resistance or an open. Refer to Circuit Testing on page 8-1184 and Wiring Repairs on page 8-1189 in Wiring Systems. Did you find and correct the condition?	—	Go to Step 16	Go to Step 13
12	Inspect for poor connections at the harness connector of the position sensor. Refer to Testing for Intermittent and Poor Connections on page 8-1187 and Connector Repairs on page 8-1198 in Wiring Systems. Did you find and correct the condition?	—	Go to Step 16	Go to Step 14
13	Inspect for poor connections at the harness connector of the ESC module. Refer to Testing for Intermittent and Poor Connections on page 8-1187 and Connector Repairs on page 8-1198 in Wiring Systems. Did you find and correct the condition?	—	Go to Step 16	Go to Step 15
14	Replace the position sensor. Refer to Front Position Sensor Replacement -Electronic Suspension on page 3-168 or Rear Position Sensor Replacement -Electronic Suspension on page 3-169. Did you complete the replacement?	—	Go to Step 16	—

Step	Action	Value(s)	Yes	No
15	Replace the ESC module. Refer to Electronic Suspension Control Module Replacement on page 3-167. Did you complete the replacement?	—	Go to Step 16	—
16	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	—	Go to Step 2	System OK