DTC P2128

Circuit Description

The accelerator pedal assembly contains 2 accelerator pedal position (APP) sensors. The APP sensors are mounted in the pedal assembly and are not serviceable. The APP sensors provide a signal voltage that changes relative to the position of the accelerator pedal. The engine control module (ECM) supplies a separate 5-volt reference and low reference circuit for each of the APP sensors.

The APP sensor 1 signal voltage increases as the pedal is depressed, from approximately 1 volt at rest to above 2.5 volts when fully depressed. The APP sensor 2 signal voltage decreases as the pedal is depressed, from approximately 4 volts at rest to less than 1 volt with the accelerator pedal fully depressed.

If the ECM detects that the APP sensor 2 signal voltage is too high, this DTC sets.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC P2128 Accelerator Pedal Position (APP) Sensor 2 Circuit High Voltage

Conditions for Running the DTC

- DTCs P0601, P0602, P0603, P0604, P0606, P0607, P0641, P0651 are not set.
- The ignition is ON.
- The ignition 1 voltage is more than 5.23 volts.
- DTC P2128 runs continuously when the above conditions are met.

Conditions for Setting the DTC

The ECM detects that the APP sensor 2 voltage is more than 4.2 volts for more than one second.

Action Taken When the DTC Sets

- The control module illuminates the malfunction indicator lamp (MIL) when the diagnostic runs and fails.
- The control module records the operating conditions at the time the diagnostic fails. The control module stores this information in the Freeze Frame/Failure Records.

Conditions for Clearing the MIL/DTC

- The control module turns OFF the malfunction indicator lamp (MIL) after 4 consecutive ignition cycles that the diagnostic runs and does not fail.

- A current DTC, Last Test Failed, clears when the diagnostic runs and passes.
- A history DTC clears after 40 consecutive warm-up cycles, if no failures are reported by this or any other emission related diagnostic.
- Clear the MIL and the DTC with a scan tool.

Diagnostic Aids

- Use the J 35616 Connector Test Adapter Kit for any test that requires probing the ECM harness connector or a component harness connector.
- If DTCs P0700, P2122, P2128, and P2138 are set together in various combinations, inspect the APP sensor 1 and 2 signal circuits for being shorted together.
- For an intermittent condition, refer to Testing for Intermittent Conditions and Poor Connections .

Step	Action	Values	Yes	No
Schematic Reference: Engine Controls Schematics *Connector End View Reference:* Engine Control Module Connector End Views or Engine Controls Connector End Views				
1	Did you perform the Diagnostic System Check - Vehicle?	--	Go to Step 2	Go to Diagnostic System Check - Vehicle
2	1. Turn ON the ignition, with the engine OFF. 2. Observe the accelerator pedal position (APP) sensor 2 voltage with the accelerator pedal in the rest position, with a scan tool. Is the APP sensor 2 voltage parameter more than the specified value?	4.2 V	Go to Step 4	Go to Step 3
3	1. Observe the Freeze Frame/Failure Records for this DTC. 2. Turn OFF the ignition for 30 seconds. 3. Start the engine. 4. Operate the vehicle within the Conditions for Running the DTC. You may also operate the vehicle within the Conditions that you observed from the Freeze Frame/Failure Records. Did the DTC fail this ignition?	--	Go to Step 4	Go to Testing for Intermittent Conditions and Poor Connections
4	1. Turn OFF the ignition. 2. Disconnect the accelerator pedal connector. 3. Turn ON the ignition, with the engine OFF. 4. Measure the voltage of the APP sensor 2 5-volt reference circuit,	4.8-5.2 V		

	with a DMM. Does the DMM indicate voltage within the specified range?		Go to Step 5	Go to Step 10
5	Probe the APP sensor 2 signal circuit with a test lamp connected to ground. Does the test lamp illuminate?	--	Go to Step 8	Go to Step 6
6	Observe the APP Sensor 2 parameter, with the test lamp still connected to the APP sensor 2 signal circuit. Does the scan tool indicate voltage at the specified value?	0 V	Go to Step 9	Go to Step 7
7	Test the APP sensor 2 signal circuit for an open or high resistance. Refer to Circuit Testing and Wiring Repairs . Did you find and correct the condition?	--	Go to Step 16	Go to Step 13
8	Test the APP sensor 2 signal circuit for a short to voltage. Refer to Circuit Testing and Wiring Repairs . Did you find and correct the condition?	--	Go to Step 16	Go to Step 11
9	Test the APP sensor 2 low reference circuit for an open or high resistance. Refer to Circuit Testing and Wiring Repairs . Did you find and correct the condition?	--	Go to Step 16	Go to Step 12
10	Test the APP sensor 2 5-volt reference circuit for a short to voltage. Refer to Circuit Testing and Wiring Repairs . Did you find and correct the condition?	--	Go to Step 16	Go to Step 11
11	Test for shorted terminals and for a poor connection at the engine control module (ECM) harness connector. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs . Did you find and correct the condition?	-	Go to Step 16	Go to Step 15
12	Test for an intermittent and for a poor connection at the accelerator pedal harness connector. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs . Did you find and correct the condition?	--	Go to Step 16	Go to Step 14
	Test for an intermittent and for a poor connection at the ECM harness connector.			

13	Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs . Did you find and correct the condition?		Go to Step 16	Go to Step 15
14	Replace the accelerator pedal assembly. Refer to Accelerator Pedal Position Sensor Replacement . Did you complete the replacement?	--	Go to Step 16	--
15	Replace the ECM. Refer to Control Module References for replacement, setup, and programming. Did you complete the replacement?	--	Go to Step 16	--
16	1. Clear the DTCs with a scan tool. 2. Turn OFF the ignition for 30 seconds. 3. Start the engine. 4. Operate the vehicle within the Conditions for Running the DTC. You may also operate the vehicle within the conditions that you observed from the Freeze Frame/Failure Records. Did the DTC fail this ignition?	--	Go to Step 2	Go to Step 17
17	Observe the Capture Info with a scan tool. Are there any DTCs that have not been diagnosed?	--	Go to Diagnostic Trouble Code (DTC) List - Vehicle	System OK