

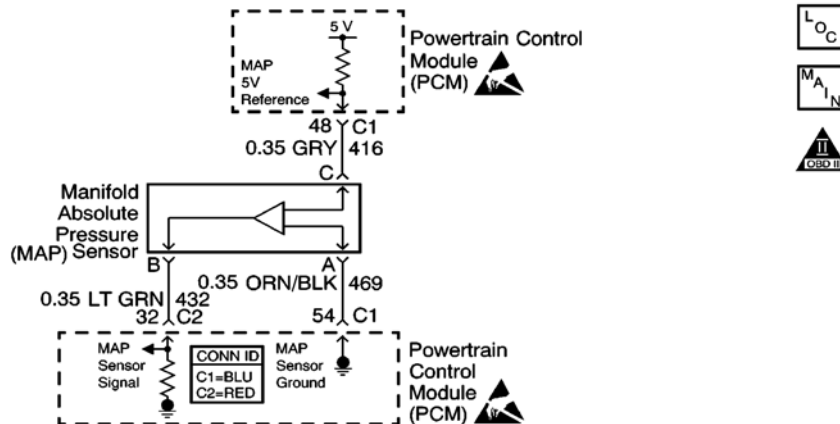
<- Back

Forward ->

Document ID# 554038
2000 Chevrolet/Geo Corvette

Print

DTC P0108 Manifold Absolute Pressure (MAP) Sensor Circuit High Voltage



Circuit Description

The manifold absolute pressure (MAP) sensor is mounted to the rear of the intake manifold. The MAP sensor measures the pressure changes within the intake manifold which is an indication of the engine load. The MAP sensor has a 5.0 volt reference, a ground, and a signal circuit.

The MAP sensor contains a diaphragm which changes the sensors resistance based on pressure. When the manifold pressure is low (high vacuum) the sensor output voltage is low. When the manifold pressure is high (low vacuum), the sensor output voltage is high.

The MAP sensor voltage (depending on altitude) can range from 1.0-1.5 volts at idle (high vacuum) to 4.0 - 4.9 volts at wide open throttle (WOT) (low vacuum).

When the PCM senses a signal voltage higher than the normal operating range of the sensor, this DTC will set.

Conditions for Running the DTC

- No TP sensor DTCs
- The engine is running.
- The TP sensor angle is less than 5 percent when engine speed is less than 1000 RPM. Or The TP sensor angle is less than 18 percent when engine speed is more than 1,000 RPM.

Conditions for Setting the DTC

- The MAP voltage is more than 4.3 volts
- All conditions met for more than 4.0 seconds.

Action Taken When the DTC Sets

- The PCM illuminates the malfunction indicator lamp (MIL) on the second consecutive ignition cycle that the diagnostic runs and fails.
- The PCM records the operating conditions at the time the diagnostic fails. The first time the diagnostic fails, the PCM stores this information in the Failure Records. If the diagnostic reports a failure on the second consecutive ignition cycle, the PCM records the operating conditions at the time of the failure. The PCM writes the conditions to the Freeze Frame and updates the Failure Records.

Conditions for Clearing the MIL/DTC

- The PCM turns OFF the malfunction indicator lamp (MIL) after 3 consecutive ignition cycles that the diagnostic runs and does not fail.
- A last test failed, or current DTC, clears when the diagnostic runs and does not fail.
- A history DTC clears after 40 consecutive warm-up cycles, if no failures are reported by this or any other emission related diagnostic.
- Use a scan tool in order to clear the MIL and the DTC.

Diagnostic Aids

Important

- Remove any debris from the PCM/TAC module connector surfaces before servicing the PCM/TAC module. Inspect the PCM/TAC module connector gaskets when diagnosing/replacing the modules. Ensure that the gaskets are installed correctly. The gaskets prevent contaminate intrusion into the PCM/TAC modules.
- For any test that requires probing the PCM or a component harness connector, use the Connector Test Adapter Kit [J 35616-A](#) . Using this kit prevents damage to the harness/component terminals. Refer to [Using Connector Test Adapters in Wiring Systems](#).
- The PCM 5.0 volt reference circuits are internally connected within the PCM. If all the MAP sensor circuits are OK, inspect the engine oil pressure sensor circuits for malfunctions.
- For an intermittent, refer to [Symptoms](#) .

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2. If DTC P1635 sets at the same time, this indicates that the 5 volt reference circuit is either shorted to a ground or shorted to a voltage. The 5 volt reference circuit is internally connected within the PCM. The Engine Oil Pressure sensor may be causing this DTC to set.
3. This step determines if the malfunction is present.
4. Freeze Frame and/or Failure Records data may aid in locating an intermittent condition. If you cannot duplicate the DTC, the information included in the Freeze Frame and/or Failure Records data can help determine how many miles since the DTC set. The Fail Counter and Pass Counter can also help determine how many ignition cycles the diagnostic reported a pass and/or a fail. Operate the vehicle within the same freeze frame conditions (RPM, load, vehicle speed, temperature , etc.) that you observed. This will isolate when the DTC failed.
5. This step tests whether the signal circuit is shorted to a voltage.
6. This step tests whether a ground circuit is available at the MAP sensor.

9. Remove the MAP sensor and verify if vacuum is available to the sensor. Also, inspect the MAP sensor seal for nicks and cuts.

Step	Action	Values	Yes	No
1	Did you perform the Powertrain On-Board Diagnostic (OBD) System Check?	--	Go to Step 2	Go to Powertrain On Board Diagnostic (OBD) System Check
2	<ol style="list-style-type: none"> 1. Install a scan tool. 2. Start the engine. 3. Monitor the DTC Information option with the scan tool. Did DTC P1635 and P1639 fail this ignition cycle?	--	Go to DTC P1635 5 Volt Reference 1 Circuit	Go to Step 3
3	<p>Important</p> <p>If the engine idle is rough, unstable or incorrect, repair the idle condition before performing this diagnostic. Refer to Symptoms .</p> <p>Monitor the MAP sensor voltage on the Engine 1 Data List on the scan tool.</p> <p>Is the MAP sensor voltage above the specified value?</p>	4.3V	Go to Step 5	Go to Step 4
4	<ol style="list-style-type: none"> 1. Turn ON the ignition with the engine OFF. 2. Review the Freeze Frame and/or Failure Records data for this DTC and observe the parameters. 3. Turn OFF the ignition for 15 seconds. 4. Start the engine. 5. Operate the vehicle within the conditions required for this diagnostic to run, and as close to the conditions recorded in the Freeze Frame/Failure Records as possible. Special operating conditions that you need to meet before the PCM will run this diagnostic, where applicable, are listed in Conditions for Running the DTC. 6. Select the Diagnostic Trouble Code (DTC) option, the Specific DTC option, then enter the DTC number with the scan tool. <p>Does the scan tool indicate that this diagnostic failed this ignition?</p>	--	Go to Step 5	Go to Diagnostic Aids
5	<ol style="list-style-type: none"> 1. Disconnect the MAP sensor electrical connector. 2. Observe the MAP sensor voltage displayed on the scan tool. <p>Is the MAP sensor voltage below the specified value?</p>	1V	Go to Step 6	Go to Step 7
6	<p>Probe the sensor ground circuit with a test lamp J 34142-B to B+.</p> <p>Is the test lamp illuminated?</p>	--	Go to Step 8	Go to Step 10

7	<ol style="list-style-type: none"> 1. Test the MAP sensor signal circuit for a short to voltage or a short to the 5 volt reference circuit. 2. Repair the MAP sensor signal circuit if the circuit is shorted. Refer to Wiring Repairs in Wiring Systems. <p>Is the MAP sensor signal circuit shorted?</p>	--	Go to Step 16	Go to Step 12
8	<p>Measure the voltage at the 5 volt reference circuit to the battery ground with a DMM .</p> <p>Is the voltage near the specified value?</p>	5V	Go to Step 9	Go to Step 15
9	<p>Inspect for a plugged or leaking vacuum supply to the MAP sensor.</p> <p>Is the vacuum supply OK?</p>	--	Go to Step 13	Go to Step 14
10	<ol style="list-style-type: none"> 1. Inspect for a poor connections at the PCM. Refer to Testing for Intermittent and Poor Connections in Wiring Systems. 2. If you find a poor connection repair the condition as necessary. Refer to Repairing Connector Terminals in Wiring Systems. <p>Did you find and correct the condition?</p>	--	Go to Step 16	Go to Step 11
11	<ol style="list-style-type: none"> 1. Test for continuity of the MAP sensor ground circuit. Refer to Testing for Continuity in Wiring Systems. 2. Repair the open or the poor connection if the MAP sensor ground circuit measures over the specified value. Refer to Wiring Repairs in Wiring Systems. <p>Did you find and correct the condition?</p>	2ohms	Go to Step 16	Go to Step 12
12	<p>Important</p> <p>Program the replacement PCM.</p> <p>Replace the PCM. Refer to Powertrain Control Module (PCM) Replacement .</p> <p>Is the action complete?</p>	--	Go to Step 16	--
13	<p>Important</p> <p>Inspect for poor connections at the MAP sensor electrical connector before replacing the sensor.</p> <p>Replace the MAP sensor. Refer to Manifold Absolute Pressure (MAP) Sensor Replacement .</p> <p>Is the action complete?</p>	--	Go to Step 16	--
14	<p>Repair the faulty vacuum supply.</p> <p>Is the action complete?</p>	--	Go to Step 16	--

15	Repair the 5 volt reference circuit for a short to voltage. Refer to Wiring Repairs in Wiring Systems. Is the action complete?	--	Go to Step 16	--
16	<ol style="list-style-type: none"> 1. Select the Diagnostic Trouble Code (DTC) option and the Clear DTC Information option with the scan tool. 2. Start the engine and idle at the normal operating temperature. 3. Select the Diagnostic Trouble Code (DTC) option and the Specific DTC option, then enter the DTC number with the scan tool. 4. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text, if applicable. Does the scan tool indicate that this test ran and passed?	--	Go to Step 17	Go to Step 2
17	Select the Capture Info option and the Review Info option with the scan tool. Does the scan tool display any DTCs that you have not diagnosed?	--	Go to the applicable DTC table	System OK

[<- Back](#)[Forward ->](#)

Document ID# 554038
2000 Chevrolet/Geo Corvette

[Print](#)