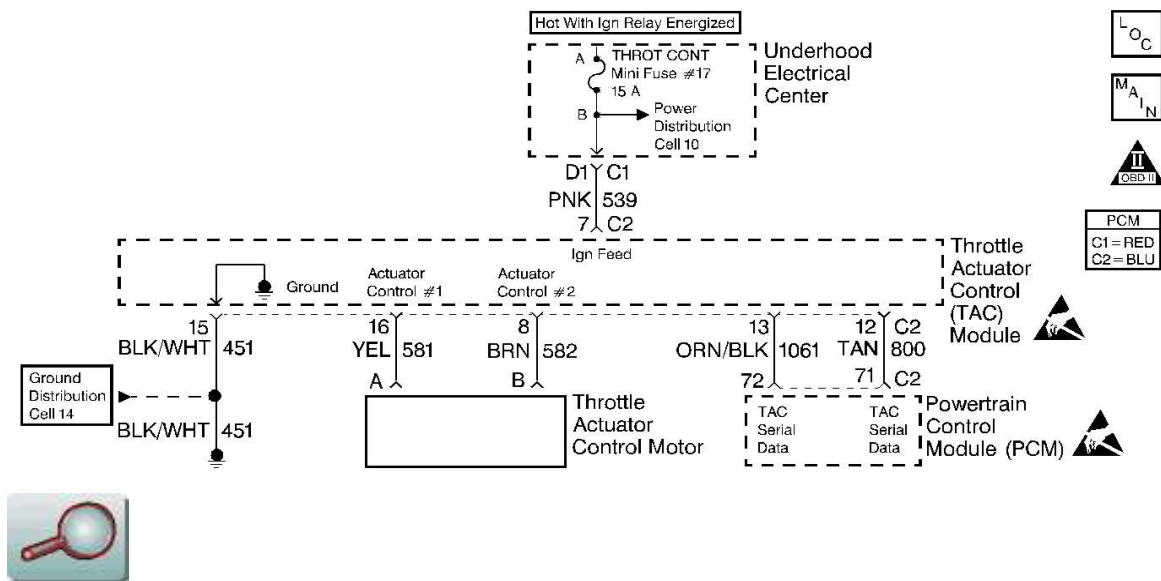


# DTC P1518 Throttle Actuator Control (TAC) Module Serial Data Circuit



## [Circuit Description](#)

The TAC Module and the PCM communicate via a dedicated serial data circuit. This serial data circuit is separate from any other serial data circuit on the vehicle. Accurate transmitting and receiving of serial data requires not only good circuit integrity but also adequate system voltage. This diagnostic monitors the accuracy of the serial data transmitted between the TAC Module and the PCM. If the PCM detects a loss of data or invalid data, this DTC sets.

## [Conditions for Running the DTC](#)

- The ignition switch is in the crank or run position.
- The ignition voltage is greater than 5.23 volts.

## [Conditions for Setting the DTC](#)

- Invalid or missing serial data messages are detected for a predetermined amount of time.
- All above conditions met for less than 1 second.

## [Action Taken When the DTC Sets](#)

- The PCM will illuminate the Malfunction Indicator Light (MIL) when this diagnostic runs and fails.
- The Reduced Engine Power message displays on the drivers information center.
- The PCM records the operating conditions at the time the diagnostic fails. The PCM stores this information in the Freeze Frame and/or Failure Records.

- If no other TAC System DTCs are set, the TAC System will operate in Reduced Engine Power mode. If certain TAC System DTCs are set at the same time, the TAC System either defaults to a more tightly restricted mode of operation if the TAC determines that limited safe operation is possible, or the TAC commands the engine to shut down.
- If DTC P0606 is set with DTC P1518, the TAC commands an engine shut down.

**Conditions for Clearing the MIL/DTC**

- The PCM turns the MIL OFF after three consecutive drive trips that the diagnostic runs and does not fail.
- A last test failed (Current DTC) will clear when the diagnostic runs and does not fail.
- A History DTC clears after forty consecutive warm-up cycles, if this or any other emission related diagnostic does not report any failures.
- The PCM battery voltage is interrupted.

• **Important**

The clear DTC info function may have to be performed twice in order to clear a Throttle Actuator Control System DTC.

Clear the MIL/DTC information using a scan tool.

**Diagnostic Aids**

**Important**

- DTC P1518 sets if the battery voltage is low. If the customers concern is slow cranking or no crank because battery voltage is low, ignore DTC P1518. Clear any DTCs from memory that may have set from the low battery voltage condition.
- DTC P1518 sets when there is a short to B+ on the TAC module ground circuit. Inspect the fuses for the circuits that are in the TAC module harness (i.e. cruise, brake). An inspection of the fuses may lead you to the circuit that is shorted to the TAC module ground circuit.
- 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.

<b>THROT CONT Fuse Underhood Electrical Center Terminal Identification</b>			
<b>Front of Vehicle</b>			
Left Side of Vehicle	Ignition Voltage	TAC Module	Right Side of Vehicle

Check the TAC Module power and ground circuits and the TAC Module/PCM serial data circuits for intermittent connections.

The following may cause an intermittent:

- Poor connections. Check for adequate terminal tension. Refer to *Body and Accessories/Wiring Systems* for proper procedure.
- Corrosion
- Mis-routed harness
- Rubbed through wire insulation
- Broken wire inside the insulation
- Inspect the TAC module connectors for signs of water intrusion. When this occurs, multiple DTCs should

be set and no circuit or component problems can be located.

- For an intermittent condition refer to [Symptoms](#) .
- If a repair is completed and the DTC was cleared using a scan tool on the same ignition cycle, the default action will not clear until an ignition cycle has occurred.
- When the TAC module detects a problem within the TAC System, more than one TAC System related DTC may set. This is due to the many redundant tests run continuously on this system. Locating and repairing one individual problem may correct more than one DTC. Keep this in mind when reviewing captured DTC info.

### Test Description

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

2. This step determines if the IGN relay is supplying a voltage to the THROT CONT fuse. If only one side of the fuse is powered, the fuse is open. Replace the fuse after you perform the diagnostic table.
3. This step determines if an internal PCM Processor is failing.

If this DTC does not Fail This Ignition, continue to monitor this DTC status while moving related harnesses and connectors. Refer to *Diagnostic Aids* if the harness movement causes this DTC to set.

4. Increasing the engine speed to 3000 RPM aids in locating a shorted Throttle Actuator Motor control circuit. Depending on the polarity of the Throttle Actuator Motor transistors, this DTC may not set. The Throttle Actuator Motor is a bi-directional DC motor. Raising the engine speed changes the polarity of the transistors in the Throttle Actuator Motor and this DTC sets. This occurs because one set of the transistors are low (0 volts) and the other set are high (B+). Therefore, if one set of transistors are at a low voltage and the corresponding circuit is shorted low, DTC P1518 will not set. When the polarity of the transistors change this DTC sets. If this DTC does not Fail This Ignition, continue to monitor this DTC status while moving related harnesses and connectors. Refer to *Diagnostic Aids* if the harness movement causes this DTC to set.
8. This step determines if the ignition feed circuit to the TAC is shorted to ground. If the circuit is shorted to a ground, repair the grounded circuit and replace the THORT CONT fuse.
30. When a problem is detected within the TAC System, more than one TAC System related DTC may set. This is due to the many redundant tests run continuously on this system. It is possible that locating and repairing one individual problem may correct more than one DTC. Keep this in mind when reviewing captured DTC info.

### DTC P1518 - PCM to TAC Module Serial Data Circuit

Step	Action	Value(s)	Yes	No
1	Did you perform the Powertrain On-Board Diagnostic (OBD) System Check?	--	<a href="#">Go to Step 2</a>	Go to <a href="#">Powertrain On Board Diagnostic (OBD) System Check</a>
2	<ol style="list-style-type: none"> <li>1. Turn ON the ignition leaving the engine OFF.</li> <li>2. Remove the cover from the underhood electrical center.</li> <li>3. Probe both sides of the THROT CONT fuse using a test lamp <a href="#">J34142-B</a> connected to ground.</li> </ol>	--		Go to <i>Ignition Relay Diagnosis</i>

	Does the test lamp illuminate on at least one side of the fuse?		<a href="#">Go to Step 3</a>	for further diagnosis
3	Install a scan tool. Is DTC P0606 is also set?	--	Go to <a href="#">DTC P0606 Control Module Internal Performance</a>	<a href="#">Go to Step 4</a>
4	<b>Important</b>  If the Driver Information Center is displaying Reduced Engine Power, go to step 5.  1. Idle the engine. 2. Increase the engine speed to 3000 RPM, if possible. 3. Monitor the Fail This Ignition option under the Diagnostic Trouble Code (DTC) option using the scan tool.  Did this DTC fail this ignition?	--	<a href="#">Go to Step 5</a>	Go to <i>Diagnostic Aids</i>
5	1. Turn OFF the ignition.  <b>Important</b>  Disconnecting the Throttle Actuator Motor harness connector causes additional DTCs to set.  2. Disconnect the Throttle Actuator Motor harness connector. 3. Turn ON the ignition leaving the engine OFF. 4. Measure the voltage at both circuits of the Throttle Actuator Motor harness connector using the DMM <a href="#">J 39200</a> .  Are both circuits above the specified value?	8.0V	<a href="#">Go to Step 11</a>	<a href="#">Go to Step 6</a>
6	1. Turn OFF the ignition. 2. Check the resistance of both circuits of the Throttle Actuator Motor harness connector to the battery ground using the DMM <a href="#">J 39200</a> .  Is the resistance within the specified range?	0.0-5.0ohms	<a href="#">Go to Step 9</a>	<a href="#">Go to Step 7</a>
7	1. Turn OFF the ignition. 2. Remove the THROT CONT fuse. 3. Check continuity from the TAC side of the fuse terminal using the DMM <a href="#">J 39200</a> to the battery ground. Refer to Diagnostic Aids for terminal identification table.  Is continuity indicated?	--	<a href="#">Go to Step 8</a>	<a href="#">Go to Step 10</a>
8	1. Disconnect the TAC module 16-way connector. Refer to <a href="#">PCM/TAC Module Replacement</a> . 2. Check continuity from the TAC side of the fuse terminal using the DMM <a href="#">J 39200</a> to battery ground.	--		

	Is continuity indicated?		<a href="#">Go to Step 19</a>	<a href="#">Go to Step 27</a>
9	<ol style="list-style-type: none"> <li>1. Disconnect the TAC module 16-way connector. Refer to <a href="#">PCM/TAC Module Replacement</a> .</li> <li>2. Check continuity from the Throttle Actuator Motor harness connector to battery ground using the DMM <a href="#">J 39200</a> .</li> </ol> <p>Is continuity indicated?</p>	--	<a href="#">Go to Step 20</a>	<a href="#">Go to Step 27</a>
10	<ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect the TAC module 16-way connector. Refer to <a href="#">PCM/TAC Module Replacement</a> .</li> <li>3. Check continuity between the TAC side of the fuse terminal to the ignition feed circuit of the TAC module 16-way harness connector using the DMM <a href="#">J 39200</a> .</li> </ol> <p>Is continuity indicated?</p>	--	<a href="#">Go to Step 27</a>	<a href="#">Go to Step 21</a>
11	<ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect the TAC module 16-way connector. Refer to <a href="#">PCM/TAC Module Replacement</a> .</li> <li>3. Turn ON the ignition leaving the engine OFF.</li> <li>4. Measure the voltage at both the circuits of the Throttle Actuator Motor harness connector using the DMM <a href="#">J 39200</a> .</li> </ol> <p>Are both circuits near the specified value?</p>	0V	<a href="#">Go to Step 12</a>	<a href="#">Go to Step 22</a>
12	<p>Check for continuity from the TAC module ground circuit to battery ground using the DMM <a href="#">J 39200</a> .</p> <p>Is continuity indicated?</p>	--	<a href="#">Go to Step 13</a>	<a href="#">Go to Step 23</a>
13	<p>Measure the voltage at the serial data circuits at the TAC module 16-way harness connector using the DMM <a href="#">J 39200</a> .</p> <p>Are both serial data circuits within the specified voltage range?</p>	0-4.5V	<a href="#">Go to Step 14</a>	<a href="#">Go to Step 16</a>
14	<ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Check the resistance from the serial data circuits at the TAC module 16-way connector to battery ground using the DMM <a href="#">J 39200</a> .</li> </ol> <p>Does the DMM display OL for both circuits?</p>	--	<a href="#">Go to Step 17</a>	<a href="#">Go to Step 15</a>
15	<ol style="list-style-type: none"> <li>1. Disconnect the PCM connector located on the same side as the manufacturer's logo. Refer to <a href="#">PCM/TAC Module Replacement</a> .</li> <li>2. Check the resistance from the serial data circuits at the TAC module 16-way connector to battery ground using the DMM <a href="#">J 39200</a> .</li> </ol> <p>Is the continuity within the specified range for either circuit?</p>	0-5ohms	<a href="#">Go to Step 24</a>	<a href="#">Go to Step 28</a>

16	<ol style="list-style-type: none"> <li>1. Disconnect the PCM connector located on the same side as the manufacturer's logo. Refer to <a href="#">PCM/TAC Module Replacement</a> .</li> <li>2. Measure the voltage at both serial data circuits at the TAC module 16-way connector using the DMM <a href="#">J 39200</a> .</li> </ol> <p>Is voltage indicated on either circuit?</p>	--	<a href="#">Go to Step 25</a>	<a href="#">Go to Step 28</a>
17	<ol style="list-style-type: none"> <li>1. Disconnect the PCM connector located on the same side as the manufacturer's logo. Refer to <a href="#">PCM/TAC Module Replacement</a> .</li> <li>2. Check the continuity of each serial data circuit between the TAC module 16-way connector to the PCM harness connector using the DMM <a href="#">J 39200</a> .</li> </ol> <p>Is continuity indicated for both serial data circuits?</p>	--	<a href="#">Go to Step 18</a>	<a href="#">Go to Step 26</a>
18	<ol style="list-style-type: none"> <li>1. Reconnect the PCM. Refer to <a href="#">PCM/TAC Module Replacement</a> .</li> <li>2. Turn On the ignition leaving the engine OFF.</li> <li>3. Measure the voltage at the serial data circuit at the TAC module 16-way harness connector.</li> </ol> <p>Is the voltage at the specified value?</p>	0V	<a href="#">Go to Step 28</a>	<a href="#">Go to Step 27</a>
19	<p>Repair the TAC module ignition feed circuit for a short to ground. Refer to <i>Body and Accessories/Wiring Systems</i>.</p> <p>Is the action complete?</p>	--	<a href="#">Go to Step 29</a>	--
20	<p>Repair the Throttle Actuator Motor circuit for a short to ground on the affected circuit. Refer to <i>Body and Accessories/Wiring Systems</i>.</p> <p>Is the action complete?</p>	--	<a href="#">Go to Step 29</a>	--
21	<p>Repair the TAC module ignition feed circuit for an open. Refer to <i>Body and Accessories/Wiring Systems</i>.</p> <p>Is the action complete?</p>	--	<a href="#">Go to Step 29</a>	--
22	<p>Repair the Throttle Actuator Motor circuits for a short to voltage on the affected circuit. Refer to <i>Body and Accessories/Wiring Systems</i>.</p> <p>Is the action complete?</p>	--	<a href="#">Go to Step 29</a>	--
23	<p>Repair the TAC module ground circuit for an open. Refer to <i>Body and Accessories/Wiring Systems</i>.</p> <p>Is the action complete?</p>	--	<a href="#">Go to Step 29</a>	--
24	<p>Repair the serial data circuit for a short to ground on the affected circuit. Refer to <i>Body and Accessories/Wiring Systems</i>.</p> <p>Is the action complete?</p>	--	<a href="#">Go to Step 29</a>	--
	<p>Repair the serial data circuit for a short to voltage on the</p>			

25	affected circuit. Refer to <i>Body and Accessories/Wiring Systems</i> . Is the action complete?	--	<a href="#">Go to Step 29</a>	--
26	Repair the serial data circuit for an open on the affected circuit. Refer to <i>Body and Accessories/Wiring Systems</i> . Is the action complete?	--	<a href="#">Go to Step 29</a>	--
27	Replace the TAC Module. Refer to <a href="#">PCM/TAC Module Replacement</a> . Is the action complete?	--	<a href="#">Go to Step 29</a>	--
28	<b>Important</b> Program the replacement PCM. Refer to <a href="#">PCM/TAC Module Replacement</a> . Replace the PCM. Is the action complete?	--	<a href="#">Go to Step 29</a>	--
29	1. Select the Diagnostic Trouble Codes (DTC) option and the Clear DTC Information option using the scan tool. 2. Idle the engine at the normal operating temperature. 3. Select the Diagnostic Trouble Codes (DTC) option and the Specific DTC option, then enter the DTC number using 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 diagnostic ran and passed?	--	<a href="#">Go to Step 30</a>	<a href="#">Go to Step 2</a>
30	Select the Capture Info option and the Review Info option using the scan tool. Does the scan tool display any DTCs that you have not diagnosed?	--	Go to the applicable DTC table	System OK