

**DTC P2138:00 [SKYACTIV-G 2.0, SKYACTIV-G 2.5]**

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|--------------------------------------|--|
| <b>DTC<br/>P2138:00</b>              | <b>APP sensor No.1/No.2 voltage correlation problem</b>  |
| <b>DETECTION<br/>CONDITION</b>       | <ul style="list-style-type: none"> <li>The PCM compares the input voltage from APP sensor No.1 with the input voltage from APP sensor No.2. If the difference is more than the specification, the PCM determines that there is an APP sensor No.1/No.2 angle correlation problem.</li> </ul> <b>Diagnostic support note</b> <ul style="list-style-type: none"> <li>This is a continuous monitor (CCM).</li> <li>The check engine light illuminates if the PCM detects the above malfunction condition during the first drive cycle.</li> <li>FREEZE FRAME DATA (Mode 2)/Snapshot data is available.</li> <li>DTC is stored in the PCM memory.</li> </ul> |
| <b>FAIL-SAFE<br/>FUNCTION</b>        | <ul style="list-style-type: none"> <li>Restricts the upper limit of the engine speed.</li> <li>Stops drive-by-wire control (throttle valve is open at <b>approx. 8 °</b> by return spring force)</li> </ul>  |
| <b>POSSIBLE<br/>CAUSE</b>            | <ul style="list-style-type: none"> <li>APP sensor connector or terminals malfunction</li> <li>PCM connector or terminals malfunction</li> <li>APP sensor No.1 malfunction</li> <li>APP sensor No.2 malfunction</li> <li>PCM malfunction</li> </ul>   |
| <b>SYSTEM<br/>WIRING<br/>DIAGRAM</b> | Not applicable   |

**Diagnostic Procedure**

| STEP | INSPECTION  |     | ACTION   |
|------|---|-----|--|
| 1    | <b>VERIFY FREEZE FRAME DATA (MODE 2)/<br/>SNAPSHOT DATA HAS BEEN RECORDED</b> <ul style="list-style-type: none"> <li>Has the FREEZE FRAME DATA (Mode 2)/ snapshot data been recorded?</li> </ul>  | Yes | Go to the next step.   |
|      |   | No  | Record the FREEZE FRAME DATA (Mode 2)/snapshot data on the repair order, then go to the next step.   |
| 2    | <b>VERIFY RELATED SERVICE INFORMATION<br/>AVAILABILITY</b> <ul style="list-style-type: none"> <li>Verify related Service Information availability.</li> <li>Is any related Service Information available?</li> </ul>  | Yes | Perform repair or diagnosis according to the available Service Information.<br>• If the vehicle is not repaired, go to the next step.  |
|      |   | No  | Go to the next step.   |
| 3    | <b>VERIFY RELATED PENDING CODE AND/OR<br/>DTC</b> <ul style="list-style-type: none"> <li>Switch the ignition off, then ON (engine off).</li> <li>Perform the Pending Trouble Code Access Procedure and DTC Reading Procedure.<br/>(See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> <li>Is the PENDING CODE/DTC P2122:00, P2123:00, P2127:00 or P2128:00 also present?</li> </ul> | Yes | Go to the applicable PENDING CODE or DTC inspection.<br>(See DTC P2122:00 [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)<br>(See DTC P2123:00 [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)<br>(See DTC P2127:00 [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)<br>(See DTC P2128:00 [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) |
|      |   | No  | Go to the next step.   |
| 4    | <b>INSPECT APP SENSOR CONNECTOR<br/>CONDITION</b> <ul style="list-style-type: none"> <li>Switch the ignition off.</li> <li>Disconnect the APP sensor connector.</li> <li>Inspect for poor connection (such as damaged/ pulled-out pins, corrosion).</li> <li>Is there any malfunction?</li> </ul>   | Yes | Repair or replace the connector and/or terminals, then go to Step 7.   |
|      |   | No  | Go to the next step.   |
| 5    | <b>INSPECT PCM CONNECTOR CONDITION</b> <ul style="list-style-type: none"> <li>Disconnect the PCM connector.</li> <li>Inspect for poor connection (such as damaged/ pulled-out pins, corrosion).</li> <li>Is there any malfunction?</li> </ul>   | Yes | Repair or replace the connector and/or terminals, then go to Step 7.   |
|      |   | No  | Go to the next step.   |
| 6    | <b>INSPECT APP SENSOR NO.1 AND NO.2</b> <ul style="list-style-type: none"> <li>Reconnect all disconnected connectors.</li> <li>Inspect the APP sensor No.1 and No.2.<br/>(See ACCELERATOR PEDAL POSITION (APP) SENSOR INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> <li>Is there any malfunction?</li> </ul>   | Yes | Replace the accelerator pedal, then go to the next step.<br>(See ACCELERATOR PEDAL REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)   |
|      |   | No  | Intermittent concern exists.<br>• Perform the "INTERMITTENT CONCERN TROUBLESHOOTING" procedure.<br>(See INTERMITTENT CONCERN TROUBLESHOOTING [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)  |

| STEP | INSPECTION   | ACTION   |
|------|--|--|
| 7    | <b>VERIFY DTC TROUBLESHOOTING COMPLETED</b> <ul style="list-style-type: none"> <li>• Always reconnect all disconnected connectors.</li> <li>• Clear the DTC from the PCM memory using the M-MDS.<br/>(See AFTER REPAIR PROCEDURE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> <li>• Start the engine.</li> <li>• Perform the KOEO or KOER self test.<br/>(See KOEO/KOER SELF TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> <li>• Is the same DTC present?</li> </ul> | Yes<br>Repeat the inspection from Step 1.<br>• If the malfunction recurs, replace the PCM.<br>(See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)<br>Go to the next step. |
|      |  | No<br>Go to the next step.   |
| 8    | <b>VERIFY AFTER REPAIR PROCEDURE</b> <ul style="list-style-type: none"> <li>• Perform the “AFTER REPAIR PROCEDURE”.<br/>(See AFTER REPAIR PROCEDURE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> <li>• Are any DTCs present?</li> </ul>   | Yes<br>Go to the applicable DTC inspection.<br>(See DTC TABLE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)   |
|      |  | No<br>DTC troubleshooting completed.   |