DTC P0101:00 [SKYACTIV-G 2.0, SKYACTIV-G 2.5]

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Caution

- **Vehicle specifications differ depending on the vehicle identification number (VIN).**
  - **— Type A VIN:**
    JM0 KE**** 100001—**
    JM6 KE**** 100001—**
    JM7 KE**** 100001—**
    JM8 KE**** 100001—**
    JMZ KE**** 100001—**
    KE10 100001—**
  - **— Type B VIN:**
    JM0 KE**** 200001—**
    JM6 KE**** 200001—**
    JM8 KE**** 200001—**
    JMZ KE**** 200001—**
    KE10 200001—**

DTC P0101:00	MAF sensor circuit range/performance problem
DETECTION CONDITION	**Type A VIN** • When the conditions are as follows, the PCM compares the intake airflow amount with the estimated intake airflow amount (calculated from the barometric pressure, MAP sensor and throttle opening angle). **MONITORING CONDITIONS** — Engine speed: **above 500 rpm** — Intake manifold absolute pressure divided by barometric pressure: **below 0.93** — Throttle position (before **0.02 s**): **below 10 %** — Amount of fluctuation in intake camshaft position for **0.04 s**: **below 10 °CA** — Battery voltage: **above 8 V** • The difference between the intake air amount measured by the MAF sensor and the estimated intake air amount estimated by the MAP sensor is outside of the specified value. **Type B VIN** • The difference between the intake air amount measured by the MAF sensor and the estimated intake air amount estimated by the MAP sensor is outside of the specified value. **Diagnostic support note** • This is a continuous monitor (CCM). • The check engine light illuminates if the PCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the PCM. • PENDING CODE is available if the PCM detects the above malfunction condition during the first drive cycle. • FREEZE FRAME DATA (Mode 2)/Snapshot data is available. • DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	Not applicable
POSSIBLE CAUSE	• MAP sensor/IAT sensor No.2 connector or terminals malfunction • MAF sensor/IAT sensor No.1 connector or terminals malfunction • MAP sensor/IAT sensor No.2 loose • MAF sensor/IAT sensor No.1 loose • PCM connector or terminals malfunction • MAP sensor malfunction • MAF sensor malfunction • Air leakage from intake-air system • Purge solenoid valve malfunction • PCV valve malfunction • PCM malfunction
SYSTEM WIRING DIAGRAM	Not applicable

Diagnostic Procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA HAS BEEN RECORDED** • Has the FREEZE FRAME DATA (Mode 2)/ snapshot data been recorded?	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	**VERIFY RELATED SERVICE INFORMATION AVAILABILITY** • Verify related Service Information availability. • Is any related Service Information available?	Yes	Perform repair or diagnosis according to the available Service Information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**VERIFY CURRENT INPUT SIGNAL STATUS IS CONCERN INTERMITTENT OR CONSTANT** • Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Start the engine. • Access the following PIDs using the M-MDS: (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) — ECT — TP_REL — RPM • Warm up the engine until the ECT PID is **above 70 °C {158 °F}**. • Perform the following: 1. Start the engine and warm it up completely. 2. Depress the accelerator pedal to increase the engine speed to **approx. 4,000 rpm**. 3. Release the accelerator pedal to decrease the engine speed to idle speed. 4. Repeat Step 1 and Step 2 operations above **3 times** in succession. • Perform the Pending Trouble Code Access Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Is the PENDING CODE for this DTC present?	Yes	Go to the next step.
		No	Intermittent concern exists. • Perform the “INTERMITTENT CONCERN TROUBLESHOOTING” procedure. (See INTERMITTENT CONCERN TROUBLESHOOTING [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
4	**INSPECT MAP SENSOR/IAT SENSOR NO.2 CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the MAP sensor/IAT sensor No.2 connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 14.
		No	Go to the next step.
5	**INSPECT MAF SENSOR/IAT SENSOR NO.1 CONNECTOR CONDITION** • Disconnect the MAF sensor/IAT sensor No.1 connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 14.
		No	Go to the next step.
6	**INSPECT INSTALLATION OF MAP SENSOR/IAT SENSOR NO.2** • Inspect installation of MAP sensor/IAT sensor No. 2. • Is the MAP sensor/IAT sensor No.2 installed securely?	Yes	Go to the next step.
		No	Retighten the MAP sensor/IAT sensor No.2, then go to Step 14. (See MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR/INTAKE AIR TEMPERATURE (IAT) SENSOR NO.2 REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)

STEP	INSPECTION		ACTION
7	**INSPECT INSTALLATION OF MAF SENSOR/IAT SENSOR NO.1** • Inspect installation of MAF sensor/IAT sensor No. 1. • Is the MAF sensor/IAT sensor No.1 installed securely?	Yes	Go to the next step.
		No	Retighten the MAF sensor/IAT sensor No.1, then go to Step 14. (See MASS AIR FLOW (MAF) SENSOR/INTAKE AIR TEMPERATURE (IAT) SENSOR NO.1 REMOVAL/ INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
8	**INSPECT PCM CONNECTOR CONDITION** • Disconnect the PCM connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 14.
		No	Go to the next step.
9	**INSPECT MAP SENSOR** • Reconnect all disconnected connectors. • Inspect the MAP sensor. (See MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Is there any malfunction?	Yes	Replace the MAP sensor/IAT sensor No.2, then go to Step 14. (See MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR/INTAKE AIR TEMPERATURE (IAT) SENSOR NO.2 REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Go to the next step.
10	**INSPECT MAF SENSOR** • Inspect the MAF sensor. (See MASS AIR FLOW (MAF) SENSOR INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Is there any malfunction?	Yes	Replace the MAF sensor/IAT sensor No.1, then go to Step 14. (See MASS AIR FLOW (MAF) SENSOR/INTAKE AIR TEMPERATURE (IAT) SENSOR NO.1 REMOVAL/ INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Go to the next step.
11	**INSPECT INTAKE-AIR SYSTEM FOR AIR LEAKAGE** • Inspect for leakage in intake-air system. • Is there any leakage?	Yes	Repair or replace the malfunctioning part according to the inspection results, then go to Step 14.
		No	Go to the next step.
12	**INSPECT PURGE SOLENOID VALVE** • Inspect the purge solenoid valve. (See PURGE SOLENOID VALVE INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Is there any malfunction?	Yes	Replace the purge solenoid valve, then go to Step 14. (See PURGE SOLENOID VALVE REMOVAL/ INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Go to the next step.
13	**INSPECT PCV VALVE OPERATION** • Inspect the PCV valve operation. (See POSITIVE CRANKCASE VENTILATION (PCV) VALVE INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Is there any malfunction?	Yes	Replace the PCV valve, then go to the next step. (See POSITIVE CRANKCASE VENTILATION (PCV) VALVE REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	Go to the next step.

STEP	INSPECTION		ACTION
14	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Always reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Start the engine. • Access the following PIDs using the M-MDS: (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) — ECT — TP_REL — RPM • Warm up the engine until the ECT PID is **above 70 °C {158 °F}**. • Perform the following: 1. Start the engine and warm it up completely. 2. Depress the accelerator pedal to increase the engine speed to **approx. 4,000 rpm**. 3. Release the accelerator pedal to decrease the engine speed to idle speed. 4. Repeat Step 1 and Step 2 operations above **3 times** in succession. • Perform the Pending Trouble Code Access Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Is the PENDING CODE for this DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) Go to the next step.
		No	Go to the next step.
15	**VERIFY AFTER REPAIR PROCEDURE** • Perform the “AFTER REPAIR PROCEDURE”. (See AFTER REPAIR PROCEDURE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No	DTC troubleshooting completed.