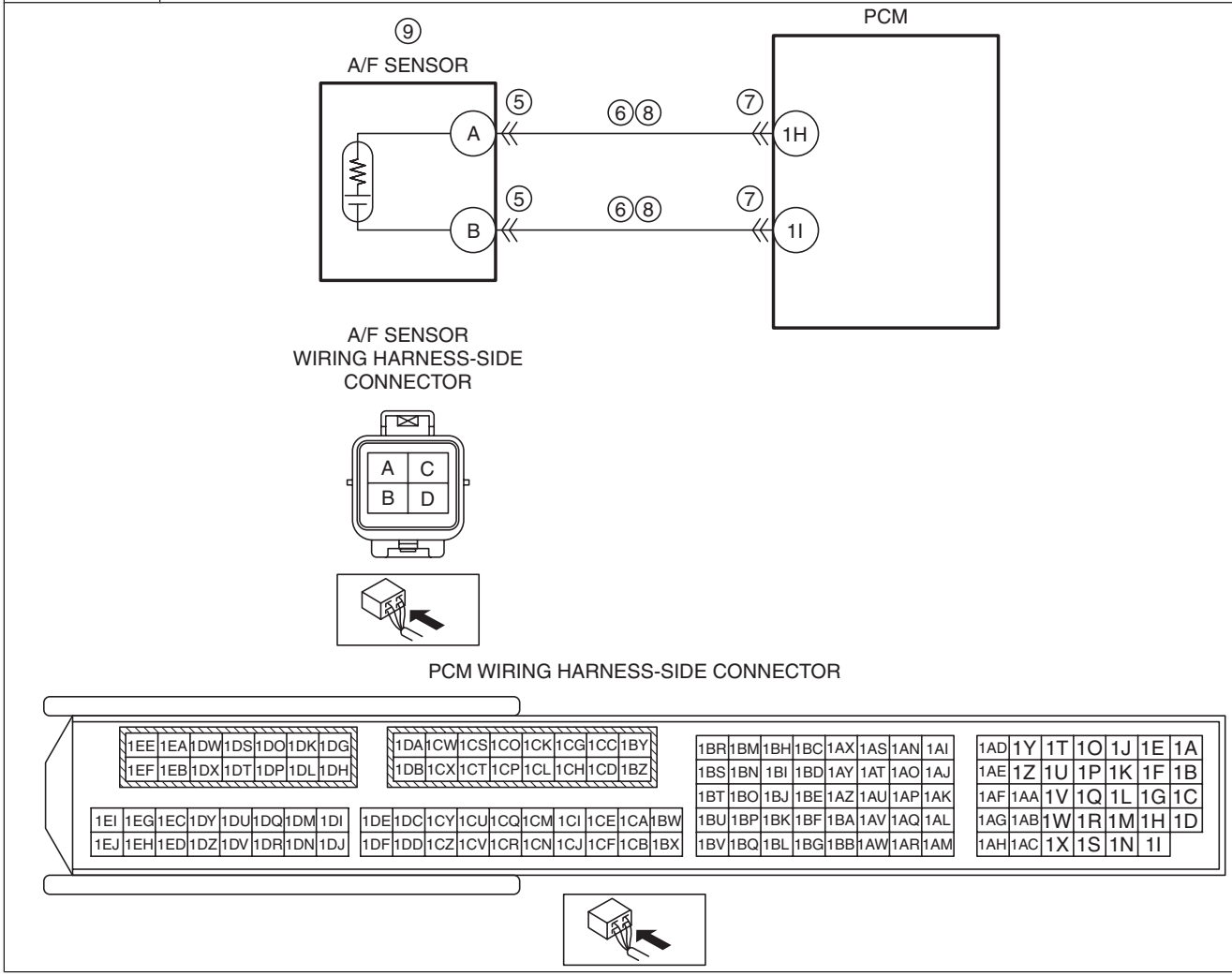
DTC P0131:00 [SKYACTIV-D 2.2]

id0102s4702200

DTC P0131:00	A/F sensor circuit low input
DETECTION CONDITION	• The PCM monitors the input voltage from the A/F sensor when the engine is running. If the following PCM terminal voltage is below specified for **3 s**, the PCM determines that the A/F sensor circuit voltage is low. — PCM terminal 1H: **0.40 V** — PCM terminal 1I: **0.40 V** **MONITORING CONDITIONS** — Battery voltage: **11—16 V** **Diagnostic support note** • This is an intermittent monitor (A/F sensor). • The check engine light illuminates 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	• PCM restricts engine torque. • Inhibits the EGR control. • Inhibits the diesel particulate filter regeneration control. • Inhibits engine-stop by operating the i-stop function.
POSSIBLE CAUSE	• A/F sensor connector or terminals malfunction • Short to ground in wiring harness between the following terminals: — A/F sensor terminal A—PCM terminal 1H — A/F sensor terminal B—PCM terminal 1I • PCM connector or terminals malfunction • A/F sensor signal circuit and ground circuit are shorted to each other • A/F sensor malfunction • PCM malfunction



Diagnostic Procedure

STEP	INSPECTION		ACTION
1	**IDENTIFY TRIGGER DTC FOR FREEZE FRAME DATA (MODE 2)** • Perform the Freeze Frame PID Data Access Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) • Is the DTC P0131:00 on FREEZE FRAME DATA (Mode 2)?	Yes	Go to the next step.
		No	Go to the troubleshooting procedure for DTC on FREEZE FRAME DATA (Mode 2). (See DTC TABLE [SKYACTIV-D 2.2].)
2	**VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA AND DIAGNOSTIC MONITORING TEST RESULTS HAVE BEEN RECORDED** • Have the FREEZE FRAME DATA (Mode 2)/ snapshot data and DIAGNOSTIC MONITORING TEST RESULTS (A/F sensor related) been recorded?	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS on the repair order, then go to the next step.
3	**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.
4	**VERIFY RELATED PENDING CODE AND/OR DTC** • Switch the ignition off, then ON (engine off). • Perform the Pending Trouble Code Access Procedure and DTC Reading Procedure. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) • Are any other PENDING CODEs and/or DTCs present?	Yes	Go to the applicable PENDING CODE or DTC inspection. (See DTC TABLE [SKYACTIV-D 2.2].)
		No	Go to the next step.
5	**INSPECT A/F SENSOR CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the A/F sensor 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 10.
		No	Go to the next step.
6	**INSPECT A/F SENSOR CIRCUIT FOR SHORT TO GROUND** • Verify that the A/F sensor connector is disconnected. • Inspect for continuity between the following terminals (wiring harness-side) and body ground: — A/F sensor terminal A — A/F sensor terminal B • Is there continuity?	Yes	If the short to ground circuit could be detected in the wiring harness: • Repair or replace the wiring harness for a possible short to ground. If the short to ground circuit could not be detected in the wiring harness: • Replace the PCM (short to ground in the PCM internal circuit). (See PCM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) Go to Step 10.
		No	Go to the next step.
7	**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 10.
		No	Go to the next step.
8	**INSPECT A/F SENSOR SIGNAL CIRCUIT AND GROUND CIRCUIT FOR SHORT TO EACH OTHER** • Verify that the A/F sensor and PCM connectors are disconnected. • Inspect for continuity between A/F sensor terminals A and B (wiring harness-side). • Is there continuity?	Yes	Repair or replace the wiring harness for a possible short to each other, then go to Step 10.
		No	Go to the next step.

STEP	INSPECTION		ACTION
9	**INSPECT A/F SENSOR** • Reconnect all disconnected connectors. • Inspect the A/F sensor. (See AIR FUEL RATIO (A/F) SENSOR INSPECTION [SKYACTIV-D 2.2].) • Is there any malfunction?	Yes	Replace the A/F sensor, then go to the next step. (See AIR FUEL RATIO (A/F) SENSOR REMOVAL/ INSTALLATION [SKYACTIV-D 2.2].)
		No	Intermittent concern exists. • Perform the “INTERMITTENT CONCERN TROUBLESHOOTING” procedure. (See INTERMITTENT CONCERN TROUBLESHOOTING [SKYACTIV-D 2.2].)
10	**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-D 2.2].) • Perform the KOEO or KOER self test. (See KOEO/KOER SELF TEST [SKYACTIV-D 2.2].) • Is the same DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) Go to the next step.
		No	Go to the next step.
11	**VERIFY AFTER REPAIR PROCEDURE** • Perform the “AFTER REPAIR PROCEDURE”. (See AFTER REPAIR PROCEDURE [SKYACTIV-D 2.2].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-D 2.2].)
		No	DTC troubleshooting completed.