DTC P0480:00 [SKYACTIV-G 2.0, SKYACTIV-G 2.5]

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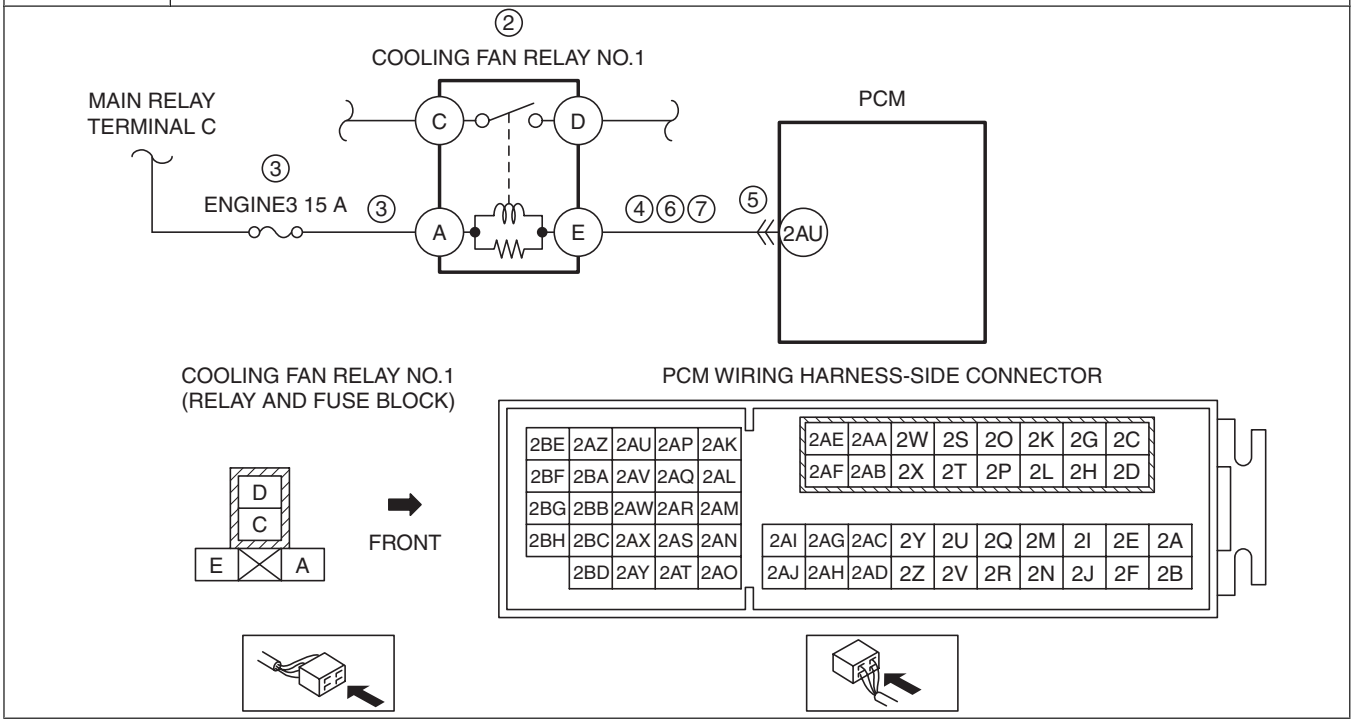
Caution

- **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 P0480:00	Cooling fan relay No.1 control circuit malfunction
DETECTION CONDITION	**Type A VIN** • The PCM monitors the cooling fan relay No.1 control signal voltage and current. If the following conditions are met, the PCM determines that there is the cooling fan relay No.1 control circuit problem. — The PCM turns the cooling fan relay No.1 off, but the voltage of the cooling fan relay No.1 control signal remains low for **5 s**. — The PCM turns the cooling fan relay No.1 on, but the current of the cooling fan relay No.1 control signal remains high for **5 s**. **Type B VIN** • The cooling fan relay No.1 control voltage is less than the specification or cooling fan relay No.1 control current is the specification or more for a continuous **5 s** relative to the PCM control signal. **Diagnostic support note** • This is a continuous monitor (other). • The check engine light does not illuminate. • FREEZE FRAME DATA (Mode 2)/Snapshot data is not available. • DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	Not applicable
POSSIBLE CAUSE	• Cooling fan relay No.1 malfunction • Short to ground or open circuit in cooling fan relay No.1 power supply circuit — Short to ground in wiring harness between ENGINE3 15 A fuse and cooling fan relay No.1 terminal A — ENGINE3 15 A fuse malfunction — Open circuit in wiring harness between main relay terminal C and cooling fan relay No.1 terminal A • Short to ground in wiring harness between cooling fan relay No.1 terminal E and PCM terminal 2AU • PCM connector or terminals malfunction • Short to power supply in wiring harness between cooling fan relay No.1 terminal E and PCM terminal 2AU • Open circuit in wiring harness between cooling fan relay No.1 terminal E and PCM terminal 2AU • PCM malfunction

DTC P0480:00	Cooling fan relay No.1 control circuit malfunction



Diagnostic Procedure

STEP	INSPECTION		ACTION
1	**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.
2	**INSPECT COOLING FAN RELAY NO.1** • Switch the ignition off. • Remove the cooling fan relay No.1. • Inspect the cooling fan relay No.1. (See RELAY INSPECTION.) • Is there any malfunction?	Yes	Replace the cooling fan relay No.1, then go to Step 8.
		No	Go to the next step.
3	**INSPECT COOLING FAN RELAY NO.1 POWER SUPPLY CIRCUIT FOR SHORT TO GROUND OR OPEN CIRCUIT** • Cooling fan relay No.1 is removed. • Switch the ignition ON (engine off). • Measure the voltage at the cooling fan relay No.1 terminal A (wiring harness-side). • Is the voltage **B+**?	Yes	Go to the next step.
		No	Inspect the ENGINE3 15 A fuse. • If the fuse is blown: — Repair or replace the wiring harness for a possible short to ground. — Replace the fuse. • If the fuse is deteriorated: — Replace the fuse. • If the fuse is normal: — Repair or replace the wiring harness for a possible open circuit. Go to Step 8.
4	**INSPECT COOLING FAN RELAY NO.1 SIGNAL CIRCUIT FOR SHORT TO GROUND** • Cooling fan relay No.1 is removed. • Switch the ignition off. • Inspect for continuity between cooling fan relay No.1 terminal E (wiring harness-side) and body ground. • 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-G 2.0, SKYACTIV-G 2.5].) Go to Step 8.
		No	Go to the next step.

STEP	INSPECTION		ACTION
5	**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 8.
		No	Go to the next step.
6	**INSPECT COOLING FAN RELAY NO.1 SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • Cooling fan relay No.1 is removed. • Verify that the PCM connector is disconnected. • Switch the ignition ON (engine off). • Measure the voltage at the cooling fan relay No.1 terminal E (wiring harness-side). • Is the voltage **0 V**?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible short to power supply, then go to Step 8.
7	**INSPECT COOLING FAN RELAY NO.1 SIGNAL CIRCUIT FOR OPEN CIRCUIT** • Cooling fan relay No.1 is removed. • Verify that the PCM connector is disconnected. • Switch the ignition off. • Inspect for continuity between cooling fan relay No.1 terminal E (wiring harness-side) and PCM terminal 2AU (wiring harness-side). • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness for a possible open circuit, then go to the next step.
8	**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].) • Perform the KOEO or KOER self test. (See KOEO/KOER SELF TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Is the same 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.
9	**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.