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Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: M20A-FXS (ENGINE CONTROL): SFI SYSTEM: P06AB11,P06AB15; Control Module Internal Temperature Sensor "B" Circuit Short to Ground; 2023 - 2024 MY Prius Prius Prime [03/2023 -]		

DTC	**P06AB11**	**Control Module Internal Temperature Sensor "B" Circuit Short to Ground**

DTC	**P06AB15**	**Control Module Internal Temperature Sensor "B" Circuit Short to Battery or Open**

DESCRIPTION

The ECM has a built-in internal temperature sensor which detects the internal temperature of the ECM. The resistance of the thermistor within the ECM internal temperature sensor changes according to the internal temperature of the ECM. The resistance of the thermistor increases as the ECM internal temperature decreases and decreases as the ECM internal temperature increases.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
P06AB11	Control Module Internal Temperature Sensor "B" Circuit Short to Ground	The ECM internal temperature sensor output voltage is less than 0.22 V for 3 seconds or more (1 trip detection logic).	ECM	Comes on	Engine	A	SAE Code: P06AD
P06AB15	Control Module Internal Temperature Sensor "B" Circuit Short to Battery or Open	The ECM internal temperature sensor output voltage is higher than 4.91 V for 3 seconds or more (1 trip detection logic).	ECM	Comes on	Engine	A	SAE Code: P06AE

MONITOR DESCRIPTION

The ECM calculates the internal temperature of the ECM based on the output voltage of the ECM internal temperature sensor. If the output voltage of the ECM internal temperature sensor is not within the normal operating range, the ECM will illuminate the MIL and store a DTC. In this case, the ECM internal temperature sensor may be malfunctioning or there may be an open or short in the sensor circuit.

Example:

When the output voltage of the ECM internal temperature sensor is less than 0.22 V, or higher than 4.91 V for 3 seconds or more, the ECM illuminates the MIL and stores a DTC.

MONITOR STRATEGY

Related DTCs	P06AD: Engine control module internal temperature sensor range check (low voltage)

	P06AE: Engine control module internal temperature sensor range check (high voltage)
Required Sensors/Components (Main)	ECM internal temperature sensor
Required Sensors/Components (Related)	-
Frequency of Operation	Continuous
Duration	3 seconds
MIL Operation	Immediate
Sequence of Operation	None

TYPICAL ENABLING CONDITIONS

Monitor runs whenever the following DTCs are not stored	None
Both of the following conditions are met	-
Auxiliary battery voltage	8 V or higher
Ignition switch	ON

TYPICAL MALFUNCTION THRESHOLDS

P06AD: Range Check (Low Voltage)

Engine control module internal temperature sensor (for ECM) voltage [Engine control module internal temperature]	Less than 0.22 V [Higher than 136°C (277°F)]

P06AE: Range Check (High Voltage)

Engine control module internal temperature sensor (for ECM) voltage [Engine control module internal temperature]	Higher than 4.91 V [Less than -53°C (-63°F)]

CONFIRMATION DRIVING PATTERN

HINT:

- After repair has been completed, clear the DTC and then check that the vehicle has returned to normal by performing the following All Readiness check procedure.

  Click here INFO
- When clearing the permanent DTCs, refer to the "CLEAR PERMANENT DTC" procedure.

  Click here INFO

1. Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).
2. Turn the ignition switch off and wait for at least 30 seconds.
3. Turn the ignition switch to ON [A].
4. Wait 5 seconds [B].
5. Enter the following menus: Powertrain / Engine / Trouble Codes [C].
6. Read the pending DTCs.

HINT:

- If a pending DTC is output, the system is malfunctioning.
- If a pending DTC is not output, perform the following procedure.

7. Enter the following menus: Powertrain / Engine / Utility / All Readiness.
8. Input the DTC: P06AB11 or P06AB15.
9. Check the DTC judgment result.

HINT:

- If the judgment result is NORMAL, the system is normal.
- If the judgment result is ABNORMAL, the system has a malfunction.
- [A] to [C]: Normal judgment procedure.

  The normal judgment procedure is used to complete DTC judgment and also used when clearing permanent DTCs.
- When clearing the permanent DTCs, do not disconnect the cable from the auxiliary battery terminal or attempt to clear the DTCs during this procedure, as doing so will clear the universal trip and normal judgment histories.

CAUTION / NOTICE / HINT

NOTICE:

- Vehicle Control History may be stored in the hybrid vehicle control ECU if the engine is malfunctioning. Certain vehicle condition information is recorded when Vehicle Control History is stored. Reading the vehicle conditions recorded in both the Freeze Frame Data and Vehicle Control History can be useful for troubleshooting.

  for HEV Model: Click here INFO

  for PHEV Model: Click here INFO

  (Select Powertrain in Health Check and then check the time stamp data.)
- If any "Engine Malfunction" Vehicle Control History item has been stored in the hybrid vehicle control ECU, make sure to clear it. However, as all Vehicle Control History items are cleared simultaneously, if any Vehicle Control History items other than "Engine Malfunction" are stored, make sure to perform any troubleshooting for them before clearing Vehicle Control History.

  for HEV Model: Click here INFO

  for PHEV Model: Click here INFO

PROCEDURE

1.	**CLEAR DTC**

Pre-procedure1

(a) None.

Procedure1

(b) Clear the DTCs.

Powertrain > Engine > Clear DTCs

Post-procedure1

(c) Turn the ignition switch off and wait for at least 30 seconds.

NEXT

2.	**READ OUTPUT DTC (DTC P06AB11 OR P06AB15)**

Pre-procedure1

(a) Drive the vehicle in accordance with the driving pattern described in Confirmation Driving Pattern.

Procedure1

(b) Read the DTCs.

Powertrain > Engine > Trouble Codes

RESULT	PROCEED TO
DTCs are not output	A
P06AB11 or P06AB15 is output	B

Post-procedure1

(c) None.

A ▶ **CHECK FOR INTERMITTENT PROBLEMS**

B ▶ **REPLACE ECM**