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Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HYBRID / BATTERY CONTROL: HYBRID CONTROL SYSTEM (for PHEV Model): P0A1F94; Hybrid/EV Battery Energy Control Module Unexpected Operation; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	**P0A1F94**	**Hybrid/EV Battery Energy Control Module Unexpected Operation**

DTC SUMMARY

MALFUNCTION DESCRIPTION

The hybrid vehicle control ECU (main CPU) monitors the battery ECU assembly.

The cause of this malfunction may be the following:

Battery ECU assembly internal malfunction

- Battery ECU assembly malfunction

DESCRIPTION

The hybrid vehicle control ECU (main CPU) monitors the battery ECU assembly and stores this DTC when it detects a malfunction.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P0A1F94	Hybrid/EV Battery Energy Control Module Unexpected Operation	The battery ECU assembly value received by the hybrid vehicle control ECU (main CPU) exceeds the threshold for a certain period of time. (1 trip detection logic)	Battery ECU assembly	Comes on	Master Warning: Comes on	Hybrid Control	A	SAE Code: P0A1F

MONITOR DESCRIPTION

The battery ECU assembly monitors the hybrid vehicle control ECU via CAN communication. If the battery ECU assembly detects a malfunction in the hybrid vehicle control ECU, it will illuminate the MIL and store a DTC.

MONITOR STRATEGY

Related DTCs	P0A1F (INF P0A1F94): Battery Energy Control Module
Required sensors/components	Battery ECU assembly
Frequency of operation	Continuous
Duration	TMC's intellectual property
MIL operation	1 driving cycle

Sequence of operation	None

TYPICAL ENABLING CONDITIONS

The monitor will run whenever the following DTCs are not stored	TMC's intellectual property
Other conditions belong to TMC's intellectual property	-

TYPICAL MALFUNCTION THRESHOLDS

TMC's intellectual property	-

COMPONENT OPERATING RANGE

Hybrid vehicle control ECU	P0A1F (INF P0A1F94) is not detected

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 2 minutes or more.
3. Turn the ignition switch to ON (READY) and wait for 10 seconds or more. [*1]

   HINT:

   [*1] : Normal judgment procedure.

   The normal judgment procedure is used to complete DTC judgment and also used when clearing permanent DTCs.
4. Enter the following menus: Powertrain / Hybrid Control / Utility / All Readiness.
5. Check the DTC judgment result.

   HINT:

   - If the judgment result shows NORMAL, the system is normal.
   - If the judgment result shows ABNORMAL, the system has a malfunction.
   - If the judgment result shows INCOMPLETE, perform the normal judgment procedure again.

PROCEDURE

1.	**CHECK DTC OUTPUT (HYBRID CONTROL, HYBRID BATTERY CONTROL)**

Pre-procedure1

(a) None.

Procedure1

(b) Check for DTCs.

Powertrain > Hybrid Control > Trouble Codes
Powertrain > HV Battery > Trouble Codes

RESULT	PROCEED TO
P0A1F94 only is output.	A
DTCs of hybrid control system except P0A1F94 are output. (Includes the situation when any hybrid battery system DTCs not listed in the table below are also output)	B
DTCs of hybrid battery control system in the tables below are output.	C
Hybrid control system DTCs other than DTC P0A1F94 are not output, and hybrid battery system DTCs not listed in the table below are also output	D

SYSTEM	RELEVANT DTC	
Hybrid battery system	P301A1C	Hybrid Battery Stack 1 Cell Voltage Detection Voltage Out of Range
	P1A001C	Hybrid Battery Stack 2 Cell Voltage Detection Voltage Out of Range
	P1A051C	Hybrid Battery Stack 3 Cell Voltage Detection Voltage Out of Range

HINT:

- P0A1F94 may be output as a result of the malfunction indicated by the DTCs above.

  a. The chart above is listed in inspection order of priority.
  b. Check DTCs that are output at the same time by following the listed order. (The main cause of the malfunction can be determined without performing unnecessary inspections.)

Post-procedure1

(c) Turn the ignition switch off.

A ▶ **REPLACE BATTERY ECU ASSEMBLY**

B ▶ **GO TO DTC CHART (HYBRID CONTROL SYSTEM)**

C ▶ **GO TO DTC CHART (HYBRID BATTERY SYSTEM)**

D ▶ **REPLACE BATTERY ECU ASSEMBLY**