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Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HYBRID / BATTERY CONTROL: HYBRID BATTERY SYSTEM (for PHEV Model): P1AFD1C; Flying Capacitor/Internal Control Module Hybrid/EV Battery Monitor Voltage Out of Range; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	**P1AFD1C**	**Flying Capacitor/Internal Control Module Hybrid/EV Battery Monitor Voltage Out of Range**

DESCRIPTION

The battery ECU assembly monitors the HV battery voltage. If the battery ECU assembly detects a malfunction of its internal voltage detection circuits, it will store this DTC.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P1AFD1C	Flying Capacitor/Internal Control Module Hybrid/EV Battery Monitor Voltage Out of Range	Both of the following conditions are met: The battery ECU assembly detects a malfunction of its internal voltage detection circuits. The difference between the total voltage of all battery cells and the stack voltage is large. (1 trip detection logic)	• Battery ECU assembly • Battery voltage sensor • Wire harness or connector	Comes on	Master Warning: Comes on	HV Battery	A	SAE Code: P1AFD

MONITOR DESCRIPTION

If the battery ECU assembly detects a malfunction in its internal voltage detection circuits, it will illuminate the MIL and store a DTC.

MONITOR STRATEGY

Related DTCs	P1AFD (INF P1AFD1C): Hybrid/EV Battery Voltage Sensor Circuit Range/Performance
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

Battery ECU assembly	DTC P1AFD (INF P1AFD1C) 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 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 / HV Battery / 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 or N/A, perform the normal judgment procedure again.

PROCEDURE

1.	**CHECK DTC OUTPUT (HV BATTERY)**

Pre-procedure1

(a) None

Procedure1

(b) Check for DTCs.

Powertrain > HV Battery > Trouble Codes

RESULT	PROCEED TO
Only P1AFD1C is output	A
P1AFD1C and other DTCs are output	B

Post-procedure1

(c) Turn the ignition switch off.

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

A ▼

2.	**CHECK HARNESS AND CONNECTOR (BATTERY ECU ASSEMBLY - BATTERY VOLTAGE SENSOR)**

Click here INFO

OK ▶ **REPLACE BATTERY ECU ASSEMBLY AND BATTERY VOLTAGE SENSOR**

Battery ECU assembly: Click here INFO

Battery voltage sensor: Click here INFO

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**