Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002BHUQ
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HYBRID / BATTERY CONTROL: HYBRID BATTERY SYSTEM (for PHEV Model): P0ABF2A; Hybrid/EV Battery Current Sensor "A" Signal Stuck In Range; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	**P0ABF2A**	**Hybrid/EV Battery Current Sensor "A" Signal Stuck In Range**

DESCRIPTION

Refer to the description for DTC P0ABF11.

Click here INFO

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P0ABF2A	Hybrid/EV Battery Current Sensor "A" Signal Stuck In Range	The hybrid battery voltage is changing but the hybrid battery current sensor output does not change. (1 trip detection logic)	• No. 1 traction battery device box assembly • Battery ECU assembly	Comes on	Master Warning: Comes on	HV Battery	A	SAE Code: P0AC0

MONITOR DESCRIPTION

If the battery ECU assembly detects a malfunction in a battery current sensor, the battery ECU assembly will illuminate the MIL and store a DTC.

MONITOR STRATEGY

Related DTCs	P0AC0 (INF P0ABF2A): Current sensor malfunction
Required sensors/components	Battery current sensor
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 P0AC0 (INF P0ABF2A) 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. Drive the vehicle on urban roads for approximately 10 minutes.[*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, HYBRID CONTROL)**

Pre-procedure1

(a) None

Procedure1

(b) Check for DTCs.

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

RESULT	PROCEED TO
"P0ABF2A" only is output, or DTCs except the ones in the table below are also output.	A

RESULT	PROCEED TO
DTCs of hybrid battery system in the table below are output.	B
DTCs of hybrid control system in the table below are output.	C

SYSTEM	RELEVANT DTC	
Hybrid battery system	P060A47	Hybrid/EV Battery Energy Control Module Monitoring Processor Watchdog / Safety MCU Failure
	P060B49	Hybrid/EV Battery Energy Control Module A/D Processing Internal Electronic Failure
	P060687	Hybrid/EV Battery Energy Control Module Processor to Monitoring Processor Missing Message
	P0ABF11	Hybrid/EV Battery Current Sensor "A" Circuit Short to Ground
	P0ABF15	Hybrid/EV Battery Current Sensor "A" Circuit Short to Auxiliary Battery or Open
	P0B0E11	Hybrid/EV Battery Current Sensor "B" Circuit Short to Ground
	P0B0E15	Hybrid/EV Battery Current Sensor "B" Circuit Short to Auxiliary Battery or Open
	P1CBB12	Hybrid/EV Battery Current Sensor Power Supply Circuit Short to Auxiliary Battery
	P1CBB14	Hybrid/EV Battery Current Sensor Power Supply Circuit Short to Ground or Open
	P2BE411	Hybrid/EV Battery Pack Current Sensor "C" Low Circuit Short to Ground
	P2BE415	Hybrid/EV Battery Pack Current Sensor "C" High Circuit Short to Auxiliary Battery or Open
Hybrid control system	P0A1F94	Hybrid/EV Battery Energy Control Module Unexpected Operation

Post-procedure1

(c) Turn the ignition switch off.

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

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

A

▼

2.	CHECK DTC OUTPUT (HV BATTERY)

Pre-procedure1

(a) None

Procedure1

(b) Check for DTCs.

Powertrain > HV Battery > Trouble Codes

RESULT	PROCEED TO
"P1A001C, P1A051C, P1A0A1C or P301A1C" is not output.	A
"P1A001C, P1A051C, P1A0A1C or P301A1C" is also output.	B

Post-procedure1

(c) Turn the ignition switch off.

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

A ▼

3.	**READ VALUE USING GTS**

Pre-procedure1

(a) Turn the ignition switch to ON.

NOTICE:

Do not turn the ignition switch to ON (READY).

Procedure1

(b) Check the voltage of each "Hybrid/EV Battery Cell Voltage" of "Hybrid/EV Battery Cell 1 to 72 Voltage" in the Data List with the ignition switch ON.

NOTICE:

Select "Hybrid/EV Battery Cell 1 to 72 Voltage" only. (Do not select any other Data List items.)

Powertrain > HV Battery > Data List

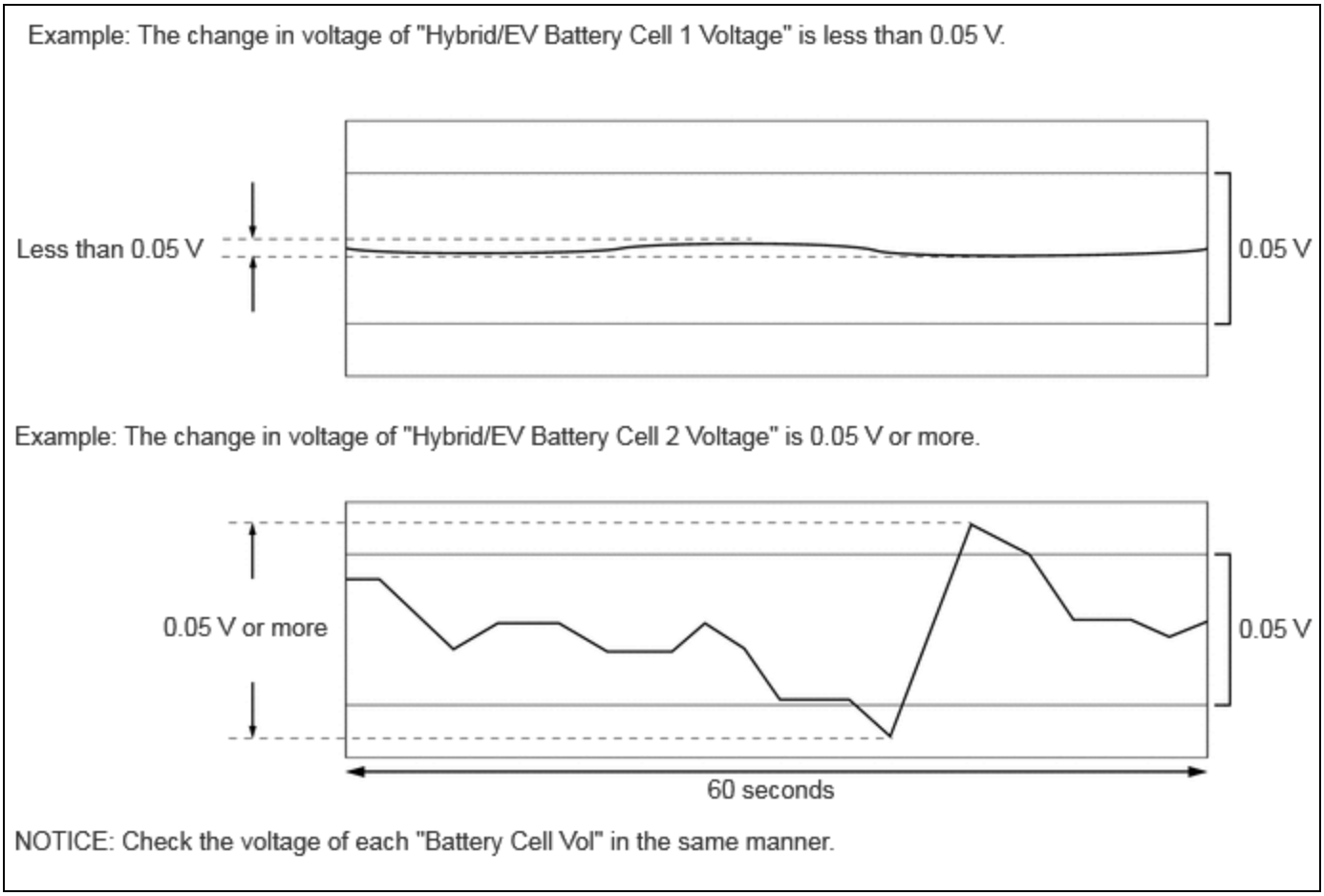
TESTER DISPLAY
Hybrid/EV Battery Cell 1 Voltage
Hybrid/EV Battery Cell 2 Voltage
Hybrid/EV Battery Cell 3 Voltage
Hybrid/EV Battery Cell 4 Voltage

TESTER DISPLAY
Hybrid/EV Battery Cell 5 Voltage
Hybrid/EV Battery Cell 6 Voltage
Hybrid/EV Battery Cell 7 Voltage
Hybrid/EV Battery Cell 8 Voltage
Hybrid/EV Battery Cell 9 Voltage
Hybrid/EV Battery Cell 10 Voltage
Hybrid/EV Battery Cell 11 Voltage
Hybrid/EV Battery Cell 12 Voltage
Hybrid/EV Battery Cell 13 Voltage
Hybrid/EV Battery Cell 14 Voltage
Hybrid/EV Battery Cell 15 Voltage
Hybrid/EV Battery Cell 16 Voltage
Hybrid/EV Battery Cell 17 Voltage
Hybrid/EV Battery Cell 18 Voltage
Hybrid/EV Battery Cell 19 Voltage
Hybrid/EV Battery Cell 20 Voltage
Hybrid/EV Battery Cell 21 Voltage
Hybrid/EV Battery Cell 22 Voltage
Hybrid/EV Battery Cell 23 Voltage

TESTER DISPLAY
Hybrid/EV Battery Cell 24 Voltage
Hybrid/EV Battery Cell 25 Voltage
Hybrid/EV Battery Cell 26 Voltage
Hybrid/EV Battery Cell 27 Voltage
Hybrid/EV Battery Cell 28 Voltage
Hybrid/EV Battery Cell 29 Voltage
Hybrid/EV Battery Cell 30 Voltage
Hybrid/EV Battery Cell 31 Voltage
Hybrid/EV Battery Cell 32 Voltage
Hybrid/EV Battery Cell 33 Voltage
Hybrid/EV Battery Cell 34 Voltage
Hybrid/EV Battery Cell 35 Voltage
Hybrid/EV Battery Cell 36 Voltage
Hybrid/EV Battery Cell 37 Voltage
Hybrid/EV Battery Cell 38 Voltage
Hybrid/EV Battery Cell 39 Voltage
Hybrid/EV Battery Cell 40 Voltage
Hybrid/EV Battery Cell 41 Voltage
Hybrid/EV Battery Cell 42 Voltage

TESTER DISPLAY
Hybrid/EV Battery Cell 43 Voltage
Hybrid/EV Battery Cell 44 Voltage
Hybrid/EV Battery Cell 45 Voltage
Hybrid/EV Battery Cell 46 Voltage
Hybrid/EV Battery Cell 47 Voltage
Hybrid/EV Battery Cell 48 Voltage
Hybrid/EV Battery Cell 49 Voltage
Hybrid/EV Battery Cell 50 Voltage
Hybrid/EV Battery Cell 51 Voltage
Hybrid/EV Battery Cell 52 Voltage
Hybrid/EV Battery Cell 53 Voltage
Hybrid/EV Battery Cell 54 Voltage
Hybrid/EV Battery Cell 55 Voltage
Hybrid/EV Battery Cell 56 Voltage
Hybrid/EV Battery Cell 57 Voltage
Hybrid/EV Battery Cell 58 Voltage
Hybrid/EV Battery Cell 59 Voltage
Hybrid/EV Battery Cell 60 Voltage
Hybrid/EV Battery Cell 61 Voltage

TESTER DISPLAY
Hybrid/EV Battery Cell 62 Voltage
Hybrid/EV Battery Cell 63 Voltage
Hybrid/EV Battery Cell 64 Voltage
Hybrid/EV Battery Cell 65 Voltage
Hybrid/EV Battery Cell 66 Voltage
Hybrid/EV Battery Cell 67 Voltage
Hybrid/EV Battery Cell 68 Voltage
Hybrid/EV Battery Cell 69 Voltage
Hybrid/EV Battery Cell 70 Voltage
Hybrid/EV Battery Cell 71 Voltage
Hybrid/EV Battery Cell 72 Voltage



Specified Condition:

Any "Hybrid/EV Battery Cell Voltage" changes by 0.05 V or more, 60 seconds after the ignition switch is turned to ON. (The difference between the maximum and minimum voltage is 0.05 V or more.)

RESULT	PROCEED TO
The change in voltage of any "Hybrid/EV Battery Cell Voltage" is 0.05 V or more.	A
Other than above	B

Post-procedure1

(c) Turn the ignition switch off.

A ▶ **REPLACE BATTERY ECU ASSEMBLY**

B ▶ **REPLACE NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY**