Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM1000000029A4F
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: HYBRID / BATTERY CONTROL: HYBRID BATTERY SYSTEM (for M20A-FXS): P1C9F11,P1C9F15; Hybrid/EV Battery Current Sensor for Driving Control Circuit Short to Ground; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	**P1C9F11**	**Hybrid/EV Battery Current Sensor for Driving Control Circuit Short to Ground**

DTC	**P1C9F15**	**Hybrid/EV Battery Current Sensor for Driving Control Circuit Short to Auxiliary Battery or Open**

DESCRIPTION

Refer to the description for DTC P0ABF11.

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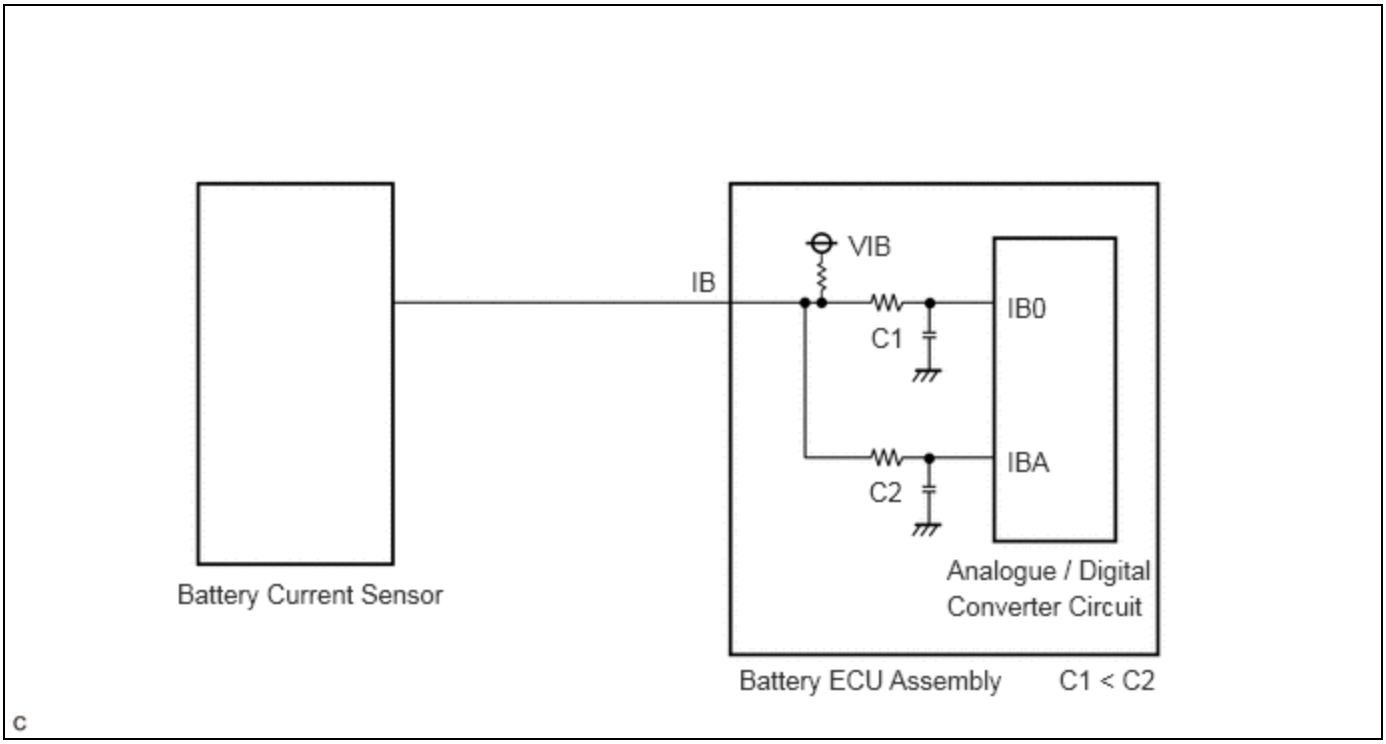
DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P1C9F11	Hybrid/EV Battery Current Sensor for Driving Control Circuit Short to Ground	"Hybrid/EV Battery Current for Driving Control" is excessively low (terminal IBA voltage stuck at 5 V). (1 trip detection logic)	Battery ECU assembly	Comes on	Master Warning: Comes on	HV Battery	A	SAE Code: P1CA1
P1C9F15	Hybrid/EV Battery Current Sensor for Driving Control Circuit Short to Auxiliary Battery or Open	"Hybrid/EV Battery Current for Driving Control" is excessively high (terminal IBA voltage stuck at 0 V). (1 trip detection logic)	Battery ECU assembly	Comes on	Master Warning: Comes on	HV Battery	A	SAE Code: P1CA2



MONITOR DESCRIPTION

The battery ECU assembly monitors its internal circuit connected to the battery current sensor. If the battery ECU assembly detects a malfunction in this internal circuit, it will illuminate the MIL and store a DTC.

MONITOR STRATEGY

Related DTCs	P1CA1 (INF P1C9F11): Hybrid/EV battery pack current sensor circuit malfunction (+B short) P1CA2 (INF P1C9F15): Hybrid/EV battery pack current sensor circuit malfunction (GND short)
Required sensors/components	Battery current sensor
Frequency of operation	Continuous
Duration	TMC's intellectual property
MIL operation	Immediately
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 P1CA1 (INF P1C9F11) is not detected DTC P1CA2 (INF P1C9F15) 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. With ignition switch 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, 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
"P1C9F11 or P1C9F15" only is output, or DTCs except the ones in the table below are also output.	A
DTCs of hybrid battery system in the table below are output.	B

RESULT	PROCEED TO
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
	P0ABF28	Hybrid/EV Battery Current Sensor "A" Signal Bias Level Out of Range / Zero Adjustment Failure
	P0ABF2A	Hybrid/EV Battery Current Sensor "A" Signal Stuck In Range
Hybrid control system	P0A1F94	Hybrid/EV Battery Energy Control Module Unexpected Operation

Post-procedure1

(c) Turn the ignition switch off.

A ▶ **REPLACE BATTERY ECU ASSEMBLY**

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

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