Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM1000000029A4S
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: HYBRID / BATTERY CONTROL: HYBRID BATTERY SYSTEM (for M20A-FXS): P0C3000; Hybrid/EV Battery State of Charge High; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	**P0C3000**	**Hybrid/EV Battery State of Charge High**

DESCRIPTION

The battery ECU assembly monitors the operation of the hybrid battery system and will store this DTC if it detects a malfunction.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P0C3000	Hybrid/EV Battery State of Charge High	Even though charging of the HV battery is prohibited due to the SOC reaching the upper limit, charging continues to be performed due to a hybrid control system malfunction. (1 trip detection logic)	• Hybrid vehicle control ECU • No. 1 traction battery device box	Does not come on	Master Warning: Comes on	HV Battery	A	SAE Code: P0C30

CONFIRMATION DRIVING PATTERN

HINT:

After repairs have been completed, clear the DTCs and then check that the vehicle has returned to normal by performing the following All Readiness check 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. Apply the parking brake and secure the wheels using chocks.
4. Turn the ignition switch to ON (READY), move the shift lever to D and the vehicle stopped, firmly depress the brake pedal and accelerator pedal. The engine rpm will increase as well as the value of Data List item "Hybrid/EV Battery SOC". If the value drops, release the accelerator pedal and then depress it again to continue charging.
5. Check that charging stops when the Data List item "Hybrid/EV Battery SOC" reaches the upper limit.
6. Enter the following menus: Powertrain / HV battery / Utility / All Readiness.
7. 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 driving pattern again.

WIRING DIAGRAM

Refer to the wiring diagram for DTC P0AA649.

Click here INFO

CAUTION / NOTICE / HINT

CAUTION:

Refer to the precautions before inspecting high voltage circuit.

Click here INFO

NOTICE:

- After the ignition switch is turned off, there may be a waiting time before disconnecting the negative (-) auxiliary battery terminal.

  Click here INFO
- When disconnecting and reconnecting the auxiliary battery

HINT:

When disconnecting and reconnecting the auxiliary battery, there is an automatic learning function that completes learning when the respective system is used.

Click here INFO

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
"P0C3000" only is output.	A
DTCs except "P0C3000" of hybrid battery system are output.	B
DTCs except "P0C3000" of hybrid control system are output.	C

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 FREEZE FRAME DATA (READY SIGNAL, SMR CONTROL STATUS, HYBRID/EV BATTERY CURRENT)**

Pre-procedure1

(a) None

Procedure1

(b) Read the freeze frame data of DTC P0C3000.

Powertrain > HV Battery > Trouble Codes

RESULT	PROCEED TO
OFF is displayed for "Ready Signal", "SMRB Control Status" and "SMRG Control Status" and -0.5 A or less is displayed for "Hybrid/EV Battery Current".	A
Other than above	B

HINT:

As the ignition switch ON state may cause the DTC to be stored, freeze frame data is used to judge the cause of the DTC output.

Post-procedure1

(c) Turn the ignition switch off.

B REPLACE HYBRID VEHICLE CONTROL ECU INFO

A

3.	**INSPECT NO.1 TRACTION BATTERY DEVICE BOX (SMRB, SMRG)**

CAUTION:

Be sure to wear insulated gloves.

Pre-procedure1

(a) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

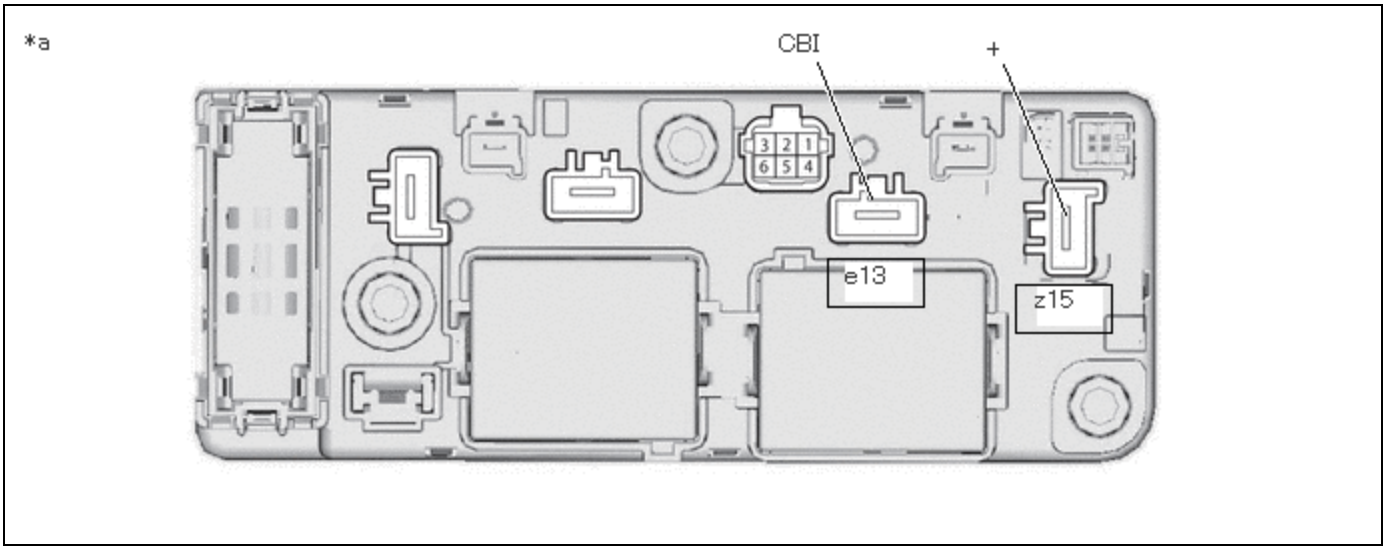
(b) Disconnect the high voltage cable connectors from the No. 1 traction battery device box.

NOTICE:

Insulate each disconnected high-voltage connector with insulating tape. Wrap the connector from the wire harness side to the end of the connector.

Procedure1

(c) Measure the resistance according to the value(s) in the table below.



*a	Component without harness connected (No. 1 Traction Battery Device Box)	-	-

Standard Resistance (SMRB):

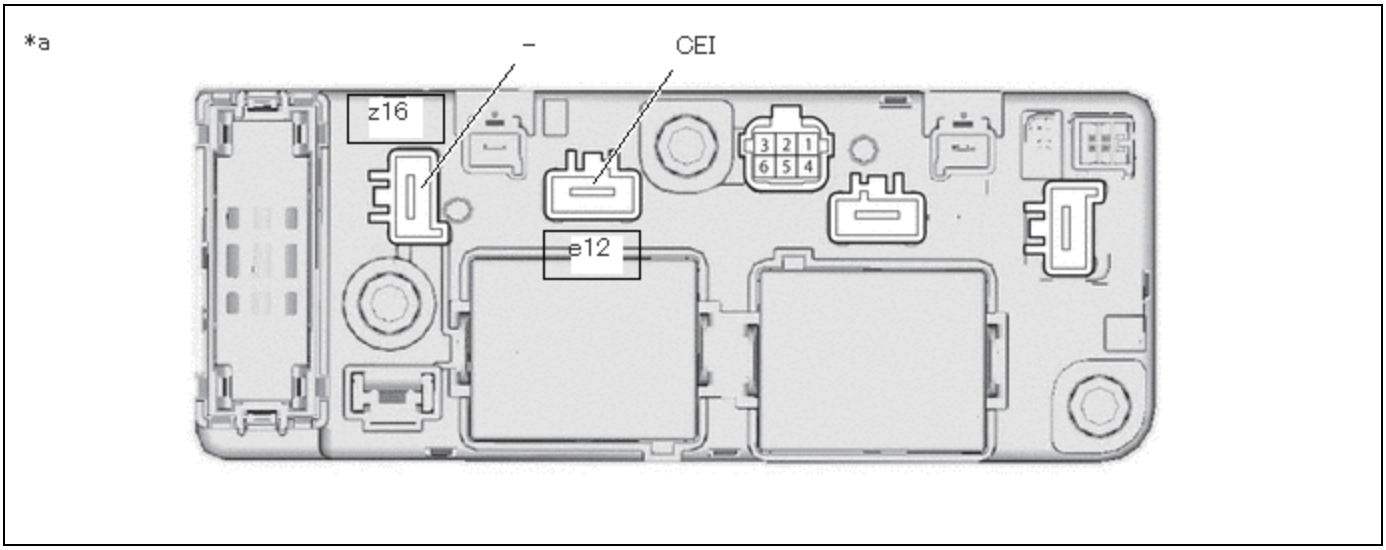
EWD INFO

Click Location & Routing(e13,z15)
Click Connector(e13)
Click Connector(z15)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
e13-1 (CBI) - z15-1 (+)	Ignition switch off	10 kΩ or higher	kΩ

Procedure2

(d) Measure the resistance according to the value(s) in the table below.



*a	Component without harness connected (No. 1 Traction Battery Device Box)	-	-

Standard Resistance (SMRG):

EWD INFO

Click Location & Routing(e12,z16)
Click Connector(e12)
Click Connector(z16)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
e12-1 (CEI) - z16-1 (-)	Ignition switch off	10 kΩ or higher	kΩ

Post-procedure1

(e) Reconnect the high voltage cable connectors to the No. 1 traction battery device box.

NG ▶ **REPLACE NO.1 TRACTION BATTERY DEVICE BOX**

OK ▼

4.	**PERFORM INITIALIZATION (CURRENT SENSOR OFFSET LEARNING)**

Pre-procedure1

(a) Turn the ignition switch to ON (READY).

(b) Perform a road test.

NOTICE:

Accelerate/decelerate gently. Avoid rapid acceleration/deceleration.

(1) Drive the vehicle with the value of Data List item "Hybrid/EV Battery Current" between -50 A to 50 A.

Powertrain > HV Battery > Data List

TESTER DISPLAY
Hybrid/EV Battery Current

HINT:

Distance and driving time are not specified.

(c) Turn the ignition switch off and leave the vehicle for 30 seconds or more.

(d) Turn the ignition switch to ON.

Procedure1

(e) Check that the value of "Hybrid/EV Battery Current" is between - 0.5 A and 0.5 A with the ignition switch ON.

Powertrain > HV Battery > Data List

TESTER DISPLAY
Hybrid/EV Battery Current

NOTICE:

- If the value is outside the specified range, perform the road test again.
- This DTC may be output if Current Sensor Offset Learning has not been completed.

HINT:

- If the ignition switch is ON and value of "Hybrid/EV Battery Current" is between - 0.5 A and 0.5 A, current sensor offset learning has been completed.
- Even if the current sensor offset learning is not complete, the current sensor value will be corrected by repeating the road test a maximum of 7 times.

Post-procedure1

(f) Turn the ignition switch off.

NEXT END