Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002BI30
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HYBRID / BATTERY CONTROL: HYBRID CONTROL SYSTEM (for PHEV Model): P310715; Lost Communication with Airbag System Control Module Circuit Short to Auxiliary Battery or Open; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	**P310715**	**Lost Communication with Airbag System Control Module Circuit Short to Auxiliary Battery or Open**

DESCRIPTION

Refer to the description for DTC P310711.

Click here INFO

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P310715	Lost Communication with Airbag System Control Module Circuit Short to Auxiliary Battery or Open	Open or short to +B in the communication circuit Communication from the airbag ECU assembly stopped and Circuit High has been detected for a certain period. (1 trip detection logic)	• Wire harness or connector • Airbag ECU assembly • Hybrid vehicle control ECU	Does not come on	Master Warning: Comes on	Hybrid Control	B	SAE Code: P3107

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. With the ignition switch ON, wait for 15 seconds or more.
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 or N/A, perform driving pattern again.

WIRING DIAGRAM

Refer to the wiring diagram for DTC P310711.

Click here INFO

PROCEDURE

1.	**CHECK DTC OUTPUT (SRS AIRBAG)**

(a) Check for DTCs.

Body Electrical > SRS Airbag > Trouble Codes

Result	PROCEED TO
DTCs are not output	A
DTCs are output	B

B ▶ **GO TO DTC CHART (AIRBAG SYSTEM)**

A ▼

2.	**CHECK AIRBAG ECU ASSEMBLY (CHECK WAVEFORM)**

Click here INFO

Result	PROCEED TO
The waveform appears as shown in the illustration	A
The waveform differs from the one shown in the illustration	B

B ▶ **GO TO STEP 6**

A ▼

3.	**CLEAR DTC**

Click here INFO

NEXT

4.	**CHECK DTC OUTPUT (HYBRID CONTROL)**

(a) Check for DTCs.

Powertrain > Hybrid Control > Trouble Codes

Result	PROCEED TO
P310715 is not output	A
P310715 is output	B

B ▶ **REPLACE HYBRID VEHICLE CONTROL ECU**

A

5.	**CHECK FOR INTERMITTENT PROBLEMS**

HINT:

Click here INFO

OK ▶ **REPLACE HYBRID VEHICLE CONTROL ECU**

NG ▶ **REPAIR OR REPLACE MALFUNCTIONING PARTS, COMPONENT AND AREA**

6.	**CHECK CONNECTOR CONNECTION CONDITION (HYBRID VEHICLE CONTROL ECU CONNECTOR)**

Click here INFO

NG ▶ **CONNECT SECURELY**

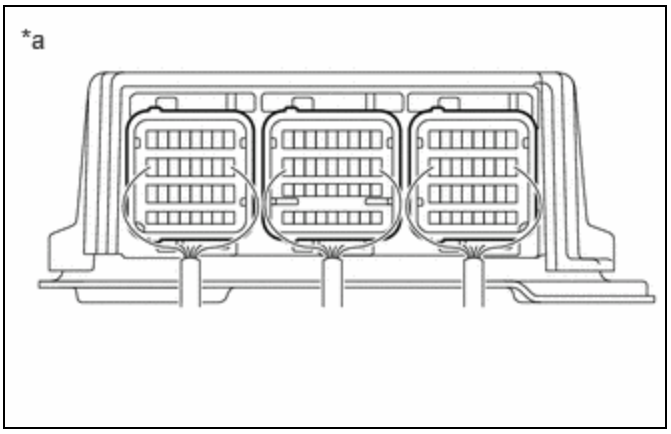
OK ▼

7.	**CHECK CONNECTOR CONNECTION CONDITION (AIRBAG ECU ASSEMBLY CONNECTOR)**

(a) Check the connector connections and contact pressure of the relevant terminals for the airbag ECU assembly connector.

OK:

The connectors are connected securely and there are no contact pressure problems.



*a	Component with harness connected (Airbag ECU Assembly)

NG ▶ **CONNECT SECURELY**

OK ▼

8.	**CHECK HARNESS AND CONNECTOR (HYBRID VEHICLE CONTROL ECU - AIRBAG ECU ASSEMBLY)**

Pre-procedure1

(a) Disconnect the hybrid vehicle control ECU connector.

(b) Disconnect the airbag ECU assembly connector.

(c) Turn the ignition switch to ON.

Procedure1

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

Standard Voltage:

EWD INFO

Click Location & Routing(K11)
Click Connector(K11)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K11-12 (ABFS) - Body ground	Ignition switch ON	Below 1 V	V

NOTICE:

Turning the ignition switch to ON with the airbag ECU assembly connector and the hybrid vehicle control ECU connector disconnected causes other DTCs to be stored. Clear the DTCs after performing this inspection.

(e) Turn the ignition switch off.

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

Standard Resistance (Check for Open):

EWD INFO

Click Location & Routing(K11,K1)
Click Connector(K11)
Click Connector(K1)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K11-12 (ABFS) - K1-24 (GSW2)	Ignition switch off	Below 1 Ω	Ω

Standard Resistance (Check for Short):

EWD INFO

Click Location & Routing(K11,K1)
Click Connector(K11)
Click Connector(K1)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K11-12 (ABFS) or K1-24 (GSW2) - Body ground and other terminals	Ignition switch off	10 kΩ or higher	kΩ

HINT:

As necessary, check that there are no wires shorted to power supply when performing the above wire harness inspection.

Post-procedure1

(g) Reconnect the airbag ECU assembly connector.

(h) Reconnect the hybrid vehicle control ECU connector.

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

OK

9.	CHECK HYBRID VEHICLE CONTROL ECU

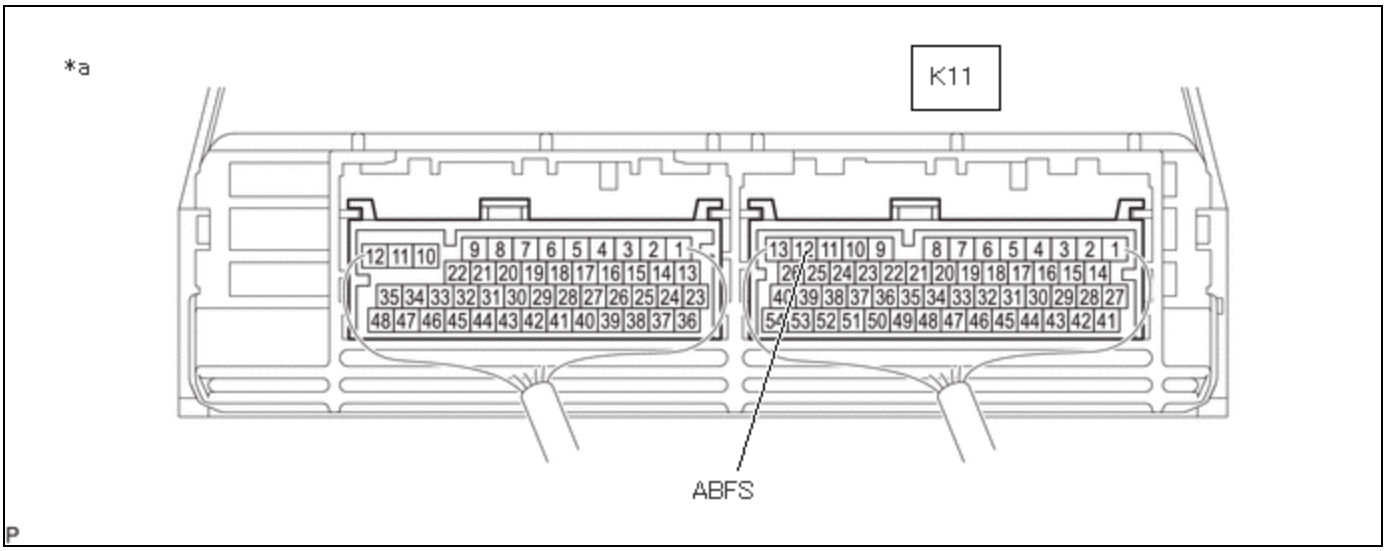
Pre-procedure1

(a) Disconnect the airbag ECU assembly connector.

(b) Turn the ignition switch to ON.

Procedure1

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



*a	Component with harness connected (Hybrid Vehicle Control ECU)	-	-

NOTICE:

Turning the ignition switch to ON with the airbag ECU assembly connector disconnected causes other DTCs to be stored. Clear the DTCs after performing this inspection.

Standard Voltage:

EWD INFO

Click Location & Routing(K11)
Click Connector(K11)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K11-12 (ABFS) - Body ground	Ignition switch ON	11 to 14 V	V

Post-procedure1

(d) Turn the ignition switch off.

(e) Reconnect the airbag ECU assembly connector.

NG ▶ **REPLACE HYBRID VEHICLE CONTROL ECU**

OK ▼

10.	**CHECK HARNESS AND CONNECTOR (AIRBAG ECU ASSEMBLY - BODY GROUND)**

Pre-procedure1

(a) Disconnect the airbag ECU assembly connector.

Procedure1

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

EWD INFO

Click Location & Routing(K1)
Click Connector(K1)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K1-33 (E1) - Body ground	Ignition switch off	Below 1 Ω	Ω

Post-procedure1

(c) Reconnect the airbag ECU assembly connector.

OK ▶ **REPLACE AIRBAG ECU ASSEMBLY**

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