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Model Year Start: 2023	Model: Prius Prime	Prod Date Range: [12/2022 -]
Title: HYBRID / BATTERY CONTROL: HYBRID CONTROL SYSTEM (for M20A-FXS): P310711; Lost Communication with Airbag System Control Module Circuit Short to Ground; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	P310711	Lost Communication with Airbag System Control Module Circuit Short to Ground
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DESCRIPTION

The hybrid vehicle control ECU detects a problem in the collision signal line from the airbag ECU assembly and alerts the driver.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P310711	Lost Communication with Airbag System Control Module Circuit Short to Ground	Short to ground in the communication circuit: Communication from the airbag ECU assembly stopped and Circuit Low has been detected for a certain period. (1 trip detection logic)	<ul style="list-style-type: none"> 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.

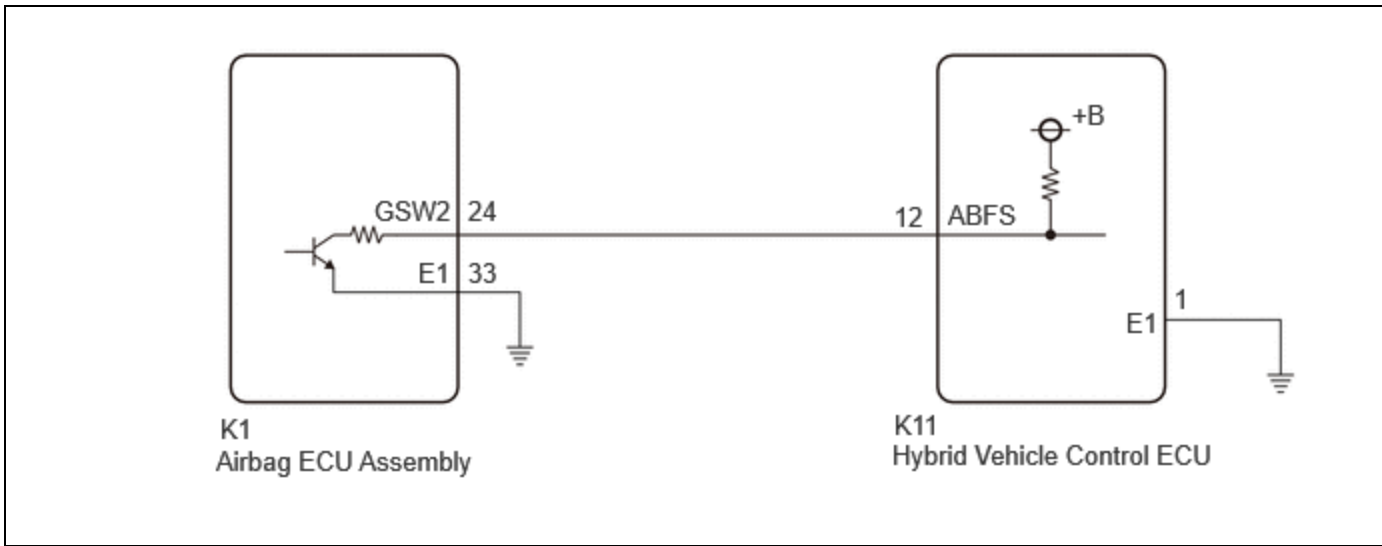
Click here [INFO](#)

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 ignition switch to ON and wait for 2 minutes or more.
4. Enter the following menus: Powertrain / Hybrid Control / Utility / All Readiness.
5. Check the DTC judgment result.

HINT:

- o If the judgment result shows NORMAL, the system is normal.
- o If the judgment result shows ABNORMAL, the system has a malfunction.
- o If the judgment result shows INCOMPLETE or N/A, perform driving pattern again.

WIRING DIAGRAM



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)**

Click here [INFO](#)

A



2. CHECK AIRBAG ECU ASSEMBLY (CHECK WAVEFORM)

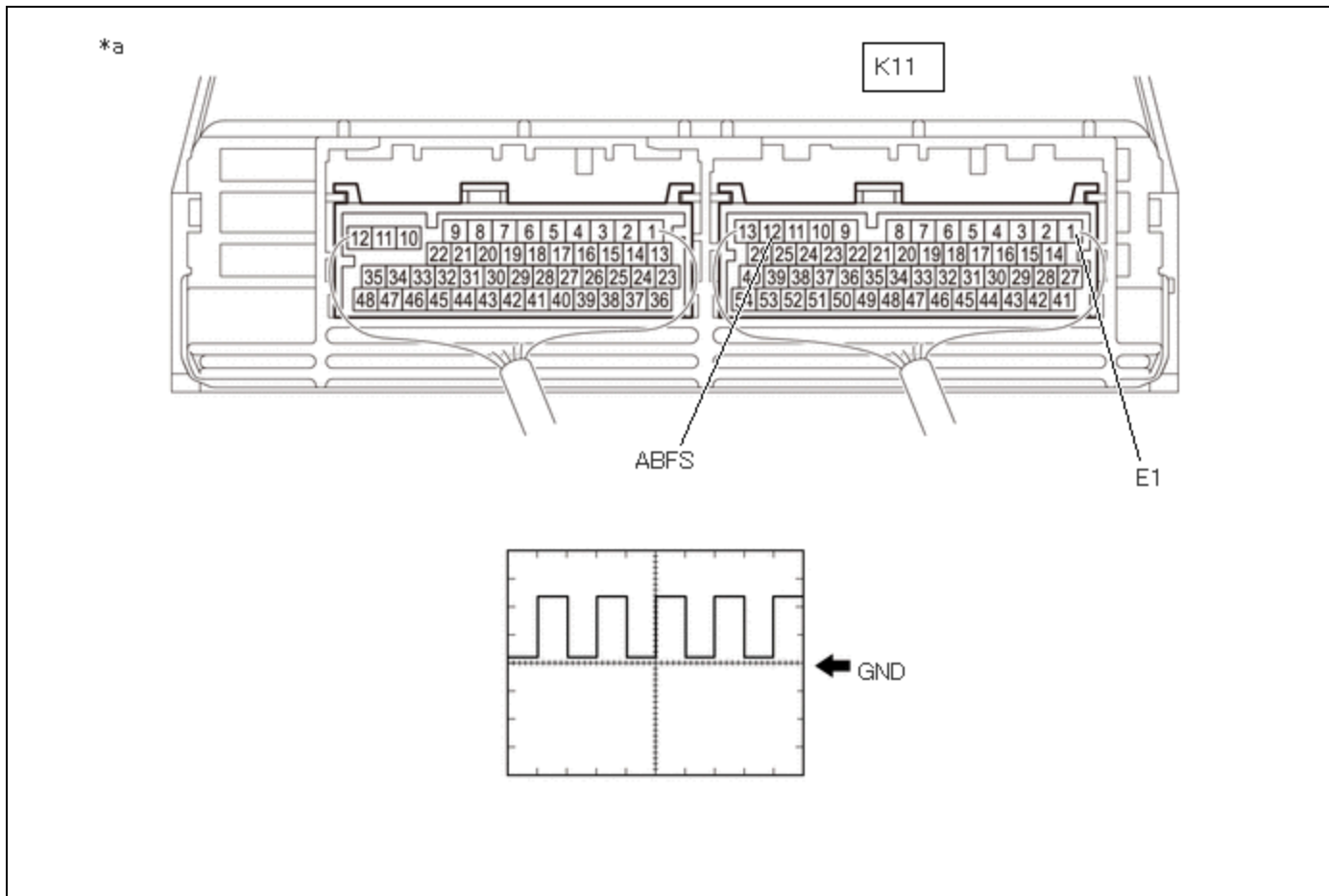
Pre-procedure1

(a) Connect an oscilloscope between the hybrid vehicle control ECU terminals specified in the table below.

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

Procedure1

(c) Measure the waveform.



*a	Component with harness connected (Hybrid Vehicle Control ECU)	-	-
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ITEM	CONTENTS
Terminal	K11-12 (ABFS) - K11-1 (E1)
Equipment Setting	5 V/DIV., 500 ms./DIV.
Condition	Ignition switch ON (READY)

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

Post-procedure1

(d) Turn the ignition switch off.

B **GO TO STEP 6**

A
▼

3.	CLEAR DTC
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Click here [INFO](#)

NEXT
▼

4.	CHECK DTC OUTPUT (HYBRID CONTROL)
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(a) Check for DTCs.

Powertrain > Hybrid Control > Trouble Codes

Result	PROCEED TO
P310711 is not output	A
P310711 is output	B

B ▶ **REPLACE HYBRID VEHICLE CONTROL ECU**

Click here [INFO](#)

A
▼

5.	CHECK FOR INTERMITTENT PROBLEMS
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HINT:

Click here [INFO](#)

OK ▶ **REPLACE HYBRID VEHICLE CONTROL ECU**

Click here [INFO](#)

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

6. CHECK AIRBAG ECU ASSEMBLY

Pre-procedure1

(a) Disconnect the airbag ECU assembly connector.

Procedure1

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

Standard Resistance:



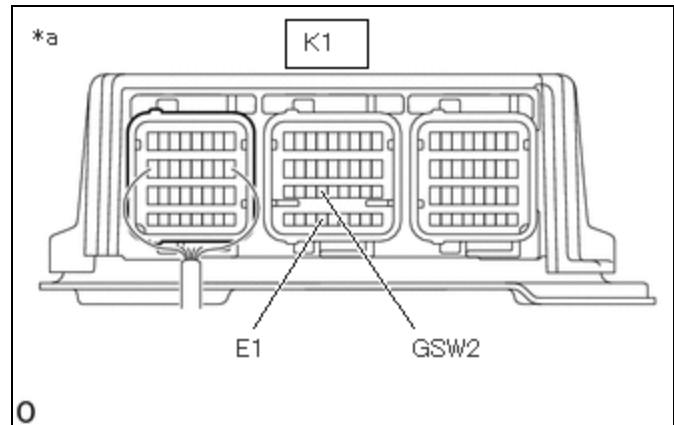
[Click Location & Routing\(K1\)](#)

[Click Connector\(K1\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K1-24 (GSW2) - K1-33 (E1)	Ignition switch off	10 kΩ or higher	kΩ

Result:

PROCEED TO
OK
NG



*a Component without harness connected (Airbag ECU Assembly)

Post-procedure1

(c) Reconnect the airbag ECU assembly connector.

NG ▶ **REPLACE AIRBAG ECU ASSEMBLY**

Click here [INFO](#)



7. 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.

Procedure1

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

Standard Resistance:



- [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

Post-procedure1

- (d) Reconnect the airbag ECU assembly connector.
- (e) Reconnect the hybrid vehicle control ECU connector.

OK ► REPLACE HYBRID VEHICLE CONTROL ECU

Click here [INFO](#)

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

