

Last Modified: 12-04-2024	6.11:8.1.0	Doc ID: RM10000002BI2F
Model Year Start: 2023	Model: Prius Prime	Prod Date Range: [03/2023 -]
Title: HYBRID / BATTERY CONTROL: HYBRID CONTROL SYSTEM (for PHEV Model): P0AD915; Hybrid/EV Battery Positive Contactor Circuit Short to Auxiliary Battery or Open; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	P0AD915	Hybrid/EV Battery Positive Contactor Circuit Short to Auxiliary Battery or Open
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DESCRIPTION

Refer to the description for DTC P0AD911.

Click here [INFO](#)

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P0AD915	Hybrid/EV Battery Positive Contactor Circuit Short to Auxiliary Battery or Open	Open or short to +B in the SMRB circuit: Primary circuit of SMR (+) is malfunctioning. (2 trip detection logic)	<ul style="list-style-type: none"> Wire harness or connector No. 1 traction battery device box assembly Hybrid vehicle control ECU 	Does not come on	Master Warning: Comes on	Hybrid Control	A	SAE Code: POADC

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](#)

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. Turn the ignition switch to ON (READY) and wait for 30 seconds or more.
4. Turn the ignition switch off and wait for 2 minutes or more.
5. Enter the following menus: Powertrain / Hybrid Control / Utility / All Readiness.
6. 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, perform driving pattern again.

WIRING DIAGRAM

Refer to the wiring diagram for the HV Battery High-voltage Line Circuit.

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.
- When disconnecting and reconnecting the auxiliary battery

Click here [INFO](#)

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](#)

HINT:

If DTC P0AD915 is output, the ignition switch cannot be turned to ON (READY).

PROCEDURE

1.	READ VALUE USING GTS (SMRB STATUS)
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Pre-procedure1

(a) None.

Procedure1

(b) Read the Data List.

Powertrain > Hybrid Control > Data List

TESTER DISPLAY
SMRB Status

Standard:

TESTER DISPLAY	CONDITION	SPECIFIED CONDITION
SMRB Status	Ignition switch ON	OFF

RESULT	PROCEED TO
The value of SMRB Status is OFF	A

RESULT	PROCEED TO
The value of SMRB Status is ON	B

Post-procedure1

(c) Turn the ignition switch off.

B  **GO TO STEP 6**

A



2.	CHECK CONNECTOR CONNECTION CONDITION (HYBRID VEHICLE CONTROL ECU CONNECTOR)
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Click here [INFO](#)

NG  **CONNECT SECURELY**

OK



3.	CHECK CONNECTOR CONNECTION CONDITION (FLOOR WIRE CONNECTOR)
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Click here [INFO](#)

RESULT	PROCEED TO
OK	A
NG (The connector is not connected securely.)	B
NG (The terminals are not making secure contact or are deformed, or water or foreign matter exists in the connector.)	C

B  **CONNECT SECURELY**

C  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

A

**4. CHECK CONNECTOR CONNECTION CONDITION (FLOOR UNDER WIRE CONNECTOR)**Click here [INFO](#)

RESULT	PROCEED TO
OK	A
NG (The connector is not connected securely.)	B
NG (The terminals are not making secure contact or are deformed, or water or foreign matter exists in the connector.)	C

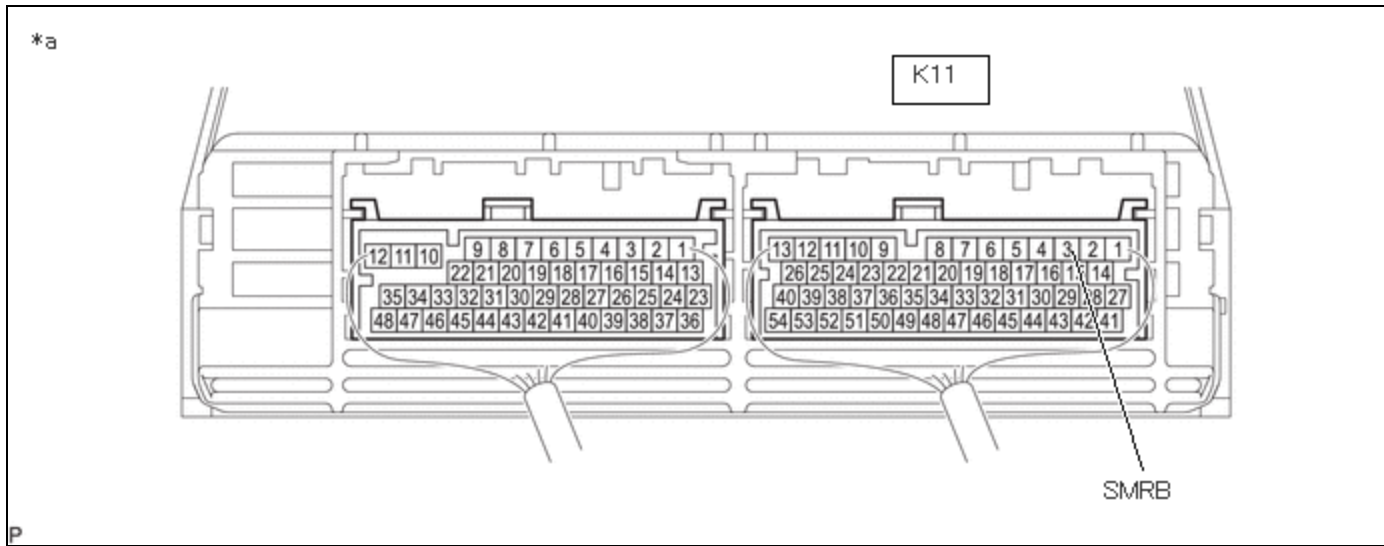
B ► **CONNECT SECURELY****C** ► **REPAIR OR REPLACE HARNESS OR CONNECTOR****A****5. CHECK CONNECTOR CONNECTION CONDITION (NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY CONNECTOR)**Click here [INFO](#)**OK** ► **CHECK FOR INTERMITTENT PROBLEMS****NG** ► **CONNECT SECURELY****6. CHECK HARNESS AND CONNECTOR (SMRB VOLTAGE)**

Pre-procedure1

(a) Turn the ignition switch to ON.

Procedure1

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



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



[Click Location & Routing\(K11\)](#)

[Click Connector\(K11\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K11-3 (SMRB) - Body ground	Ignition switch ON	Below 1 V	V

Post-procedure1

(c) Turn the ignition switch off.

NG ► **GO TO STEP 8**

OK



7.	CHECK CONNECTOR CONNECTION CONDITION (HYBRID VEHICLE CONTROL ECU CONNECTOR)
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Click here [INFO](#)

OK ► **REPLACE HYBRID VEHICLE CONTROL ECU**

NG ► **CONNECT SECURELY**

8. CHECK HARNESS AND CONNECTOR (HYBRID VEHICLE CONTROL ECU - BODY GROUND)

Pre-procedure1

(a) Disconnect the hybrid vehicle control ECU connector.

Procedure1

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

Standard Resistance:



[Click Location & Routing\(K11\)](#)

[Click Connector\(K11\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K11-3 (SMRB) - Body ground	Ignition switch off	20.6 to 40.8 Ω	Ω

Post-procedure1

(c) Reconnect the hybrid vehicle control ECU connector.

NG **GO TO STEP 10**

OK



9. CHECK HARNESS AND CONNECTOR (SHORT TO POWER SUPPLY WIRES)

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) Connect the SST.

HINT:

Click here

(c) Disconnect the No. 1 traction battery device box assembly connector.



(d) Disconnect the hybrid vehicle control ECU connector.

(e) Turn the ignition switch to ON.

Procedure1

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

Standard Voltage:



[Click Location & Routing\(K11,x12\)](#)

[Click Connector\(K11\)](#)

[Click Connector\(x12\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K11-3 (SMRB) or x12-1 (SMRB) - Body ground	Ignition switch ON	Below 1 V	V

NOTICE:

Turning the ignition switch to ON with the hybrid vehicle control ECU connector and the No. 1 traction battery device box assembly connector disconnected causes other DTCs to be stored. Clear the DTCs after performing this inspection.

Post-procedure1

(g) Turn the ignition switch off.

(h) Disconnect the SST.

(i) Reconnect the hybrid vehicle control ECU connector.

(j) Reconnect the No. 1 traction battery device box assembly connector.

OK ► REPLACE HYBRID VEHICLE CONTROL ECU

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

10. CHECK CONNECTOR CONNECTION CONDITION (FLOOR WIRE CONNECTOR)

Click here [INFO](#)

RESULT	PROCEED TO
OK	A
NG (The connector is not connected securely.)	B
NG (The terminals are not making secure contact or are deformed, or water or foreign matter exists in the connector.)	C

B  **CONNECT SECURELY****C**  **REPAIR OR REPLACE HARNESS OR CONNECTOR****A**

11.	CHECK CONNECTOR CONNECTION CONDITION (FLOOR UNDER WIRE CONNECTOR)
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Click here [INFO](#)

RESULT	PROCEED TO
OK	A
NG (The connector is not connected securely.)	B
NG (The terminals are not making secure contact or are deformed, or water or foreign matter exists in the connector.)	C

B  **CONNECT SECURELY****C**  **REPAIR OR REPLACE HARNESS OR CONNECTOR****A**

12. CHECK HARNESS AND CONNECTOR (HYBRID VEHICLE CONTROL ECU - NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY)

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) Connect the SST.

HINT:

[Click here](#) INFO

(c) Disconnect the No. 1 traction battery device box assembly connector.



(d) Disconnect the hybrid vehicle control ECU connector.

Procedure1

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

Standard Resistance (Check for Open):



[Click Location & Routing\(K11,x12\).](#)

[Click Connector\(K11\).](#)

[Click Connector\(x12\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K11-3 (SMRB) - x12-1 (SMRB)	Ignition switch off	Below 1 Ω

Standard Resistance (Check for Short):



[Click Location & Routing\(K11,x12\)](#)

[Click Connector\(K11\)](#)

[Click Connector\(x12\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K11-3 (SMRB) or x12-1 (SMRB) - Body ground and other terminals	Ignition switch off	10 kΩ or higher

Post-procedure1

(f) Disconnect the SST.

(g) Reconnect the hybrid vehicle control ECU connector.

(h) Reconnect the No. 1 traction battery device box assembly connector.

NG ► **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



13.	CHECK HARNESS AND CONNECTOR (NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY - BODY GROUND)
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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) Connect the SST.

HINT:

Click here [INFO](#)

(c) Disconnect the No. 1 traction battery device box assembly connector.



Procedure1

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

Standard Resistance:



[Click Location & Routing\(x12\).](#)

[Click Connector\(x12\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
x12-2 (GND) - Body ground	Ignition switch off	Below 1 Ω	Ω

Post-procedure1

(e) Reconnect the No. 1 traction battery device box assembly connector.

(f) Disconnect the SST.

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



14.	INSPECT NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY (SMRB)
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CAUTION:

Be sure to wear insulated gloves.

Pre-procedure1

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

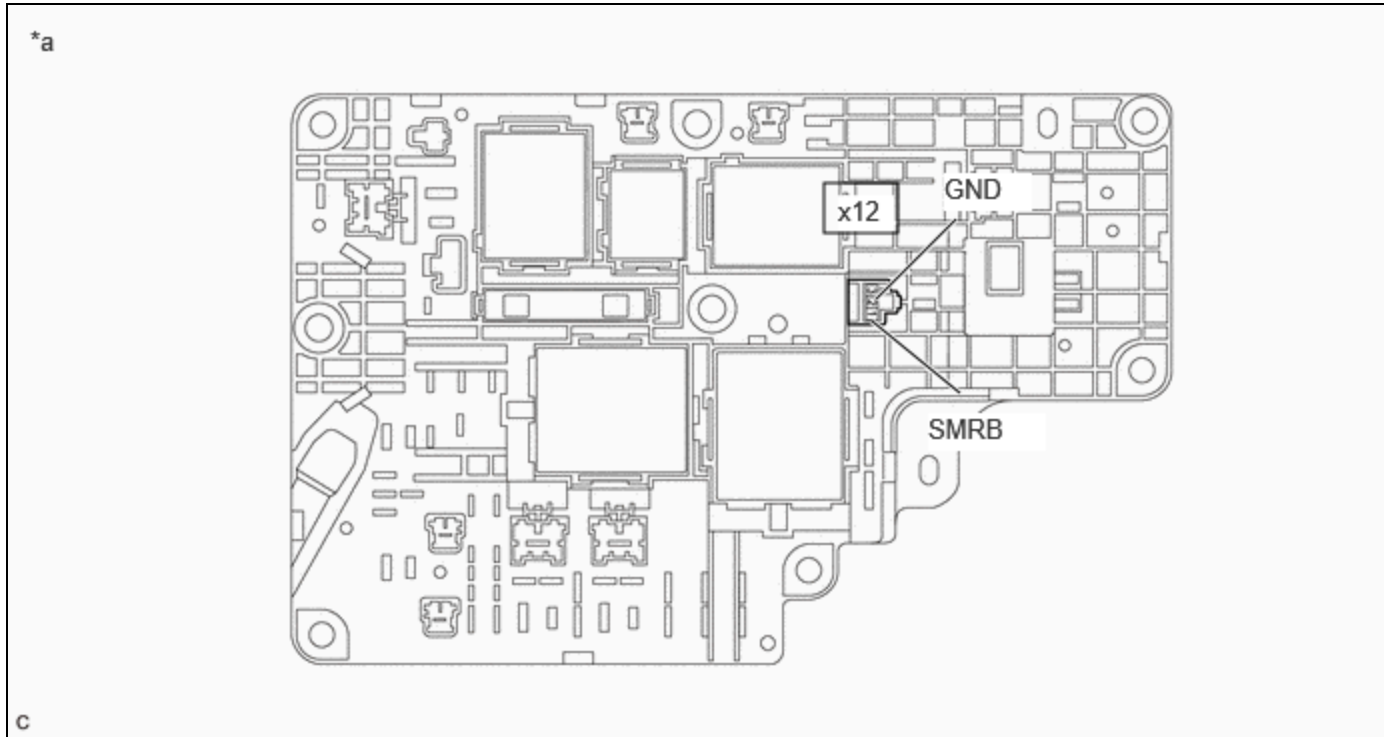
NOTICE:

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 No. 1 traction battery device box assembly 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 Assembly)	-	-
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Standard Resistance:



[Click Location & Routing\(x12\)](#)

[Click Connector\(x12\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
x12-1 (SMRB) - x12-2 (GND)	-40 to 80°C (-40 to 176°F)	20.6 to 40.8 Ω	Ω

Post-procedure1

(d) Reconnect the No. 1 traction battery device box assembly connector.

OK ► CHECK FOR INTERMITTENT PROBLEMS

NG ► REPLACE NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY

