Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002BI1N
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HYBRID / BATTERY CONTROL: HYBRID CONTROL SYSTEM (for PHEV Model): Shut Down Signal Circuit; 2023 - 2024 MY Prius Prime [03/2023 -]		

Shut Down Signal Circuit

DESCRIPTION

The cause of the malfunction may be a shutdown signal.

Check whether there is a shutdown signal +B short circuit.

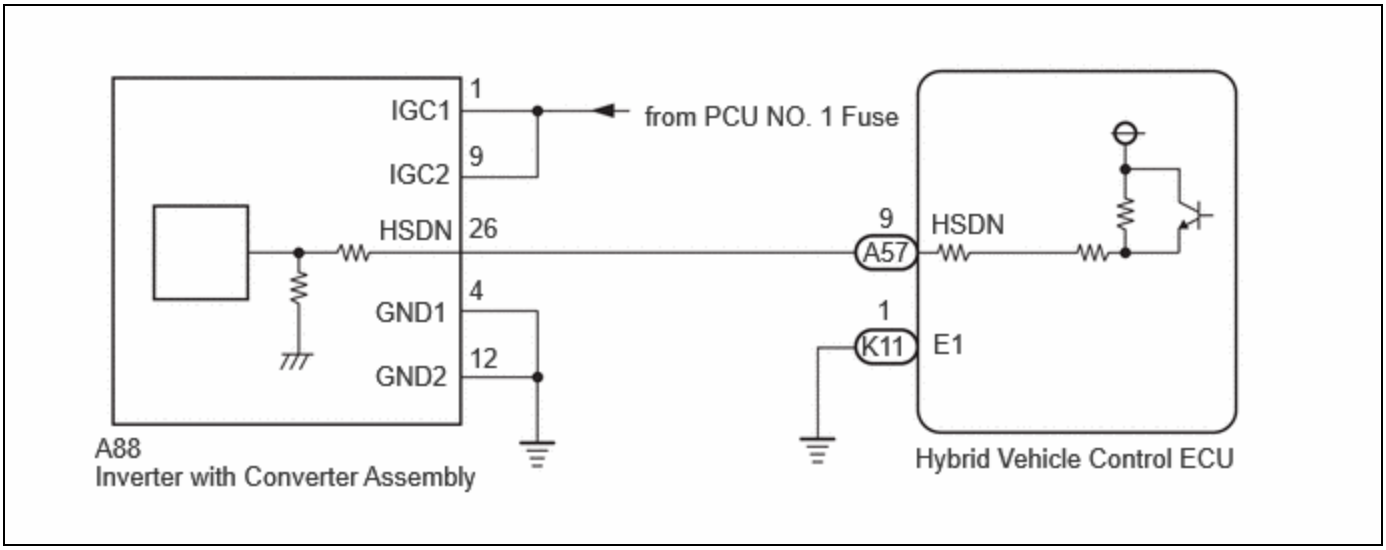
Related Parts Check

AREA	INSPECTION
HSDN terminal	Check that the HSDN terminal voltage decreases to check for an open or short circuit while READY off (IG ON).
Hybrid vehicle control ECU, inverter, wire harness	Check for open or short circuit in hybrid vehicle control ECU, inverter and wire harness.

SYSTEM DESCRIPTION

Power supply to the motor is cut off due to a shutdown signal sent from the hybrid vehicle control ECU to the motor generator control ECU (MG ECU).

WIRING DIAGRAM



Refer to the wiring diagram for the ECU Power Source Circuit.

Click here INFO

CAUTION / NOTICE / HINT

This diagnostic procedure is referenced to in the diagnostic procedure of several DTCs.

If the result of this diagnostic procedure is normal, proceed as directed in the procedure for the DTC.

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

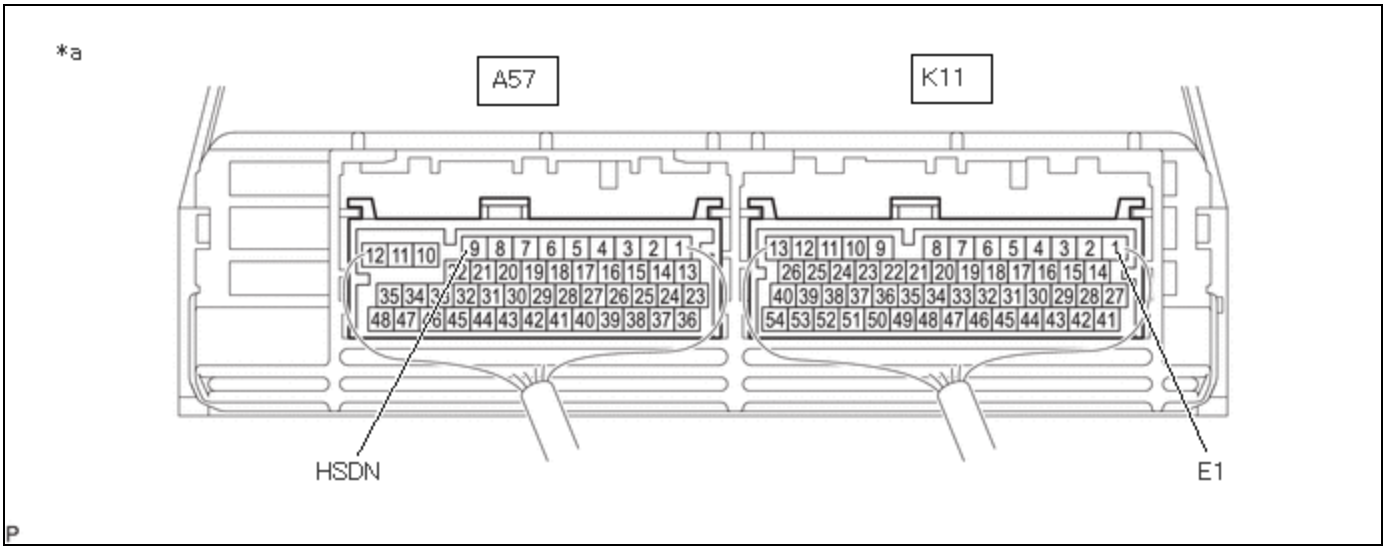
1.	**CHECK HYBRID VEHICLE CONTROL ECU**

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)	-	-

Standard Voltage:

EWD INFO

Click Location & Routing(A57,K11)
Click Connector(A57)
Click Connector(K11)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A57-9 (HSDN) - K11-1 (E1)	Ignition switch ON	Below 4.5 V	V

Post-procedure1

(c) Turn the ignition switch off.

OK ▶ **SHUTDOWN SIGNAL CIRCUIT NORMAL (PERFORM NEXT STEP FOR REFERENCED DTC)**

NG ▼

2.	**CHECK HARNESS AND CONNECTOR (HYBRID VEHICLE CONTROL ECU - INVERTER WITH CONVERTER 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) Disconnect the inverter with converter assembly connector.

(c) Disconnect the hybrid vehicle control ECU connectors.

(d) Connect the cable to the negative (-) auxiliary battery terminal.

(e) Turn the ignition switch to ON.

Procedure1

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

Standard Voltage:

EWD INFO

Click Location & Routing(A88,A57)
Click Connector(A88)
Click Connector(A57)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A88-26 (HSDN) or A57-9 (HSDN) - Body ground	Ignition switch ON	Below 1 V	V

NOTICE:

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

(g) Turn the ignition switch off.

(h) Disconnect the cable from the negative (-) auxiliary battery terminal.

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

Standard Resistance:

EWD INFO

Click Location & Routing(A88,A57,K11)
Click Connector(A88)
Click Connector(A57)
Click Connector(K11)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A88-26 (HSDN) - A88-1 (IGC1)	Ignition switch off	10 kΩ or higher	kΩ
A88-26 (HSDN) - A88-9 (IGC2)	Ignition switch off	10 kΩ or higher	kΩ
A57-9 (HSDN) - K11-8 (+B1)	Ignition switch off	10 kΩ or higher	kΩ
A57-9 (HSDN) - K11-10 (MREL)	Ignition switch off	10 kΩ or higher	kΩ

Post-procedure1

(j) Reconnect the hybrid vehicle control ECU connectors.

(k) Reconnect the inverter with converter assembly connector.

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

OK ▼

3.	**CHECK INVERTER WITH CONVERTER 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) Disconnect the inverter with converter assembly connector.

Procedure1

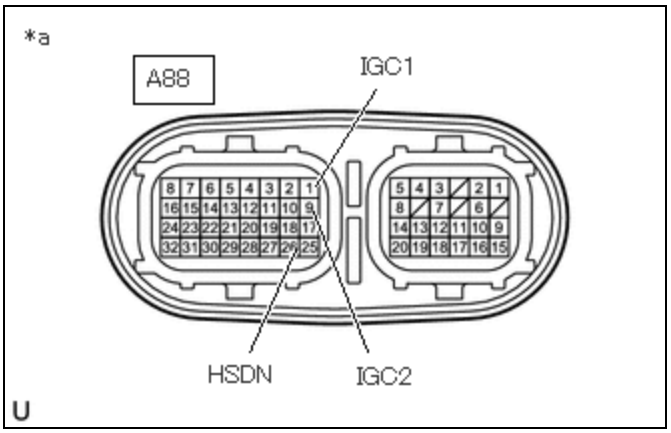
(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

EWD INFO

Click Location & Routing(A88)
Click Connector(A88)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A88-26 (HSDN) - A88-1 (IGC1)	Ignition switch off	10 kΩ or higher	kΩ
A88-26 (HSDN) - A88-9 (IGC2)	Ignition switch off	10 kΩ or higher	kΩ



*a	Component without harness connected (Inverter with Converter Assembly)

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) Reconnect the inverter with converter assembly connector.

OK ▶ **REPLACE HYBRID VEHICLE CONTROL ECU**

NG ▶ **REPLACE INVERTER WITH CONVERTER ASSEMBLY**