

<b>Last Modified:</b> 12-04-2024	6.11:8.1.0	<b>Doc ID:</b> RM100000028ZVS
<b>Model Year Start:</b> 2023	<b>Model:</b> Prius Prime	<b>Prod Date Range:</b> [12/2022 - ]
<b>Title:</b> HYBRID / BATTERY CONTROL: HYBRID CONTROL SYSTEM (for M20A-FXS): P253314; Ignition Switch On/Start Position Circuit Low Circuit Short to Ground or Open; 2023 - 2024 MY Prius Prius Prime [12/2022 - ]		

<b>DTC</b>	<b>P253314</b>	<b>Ignition Switch On/Start Position Circuit Low Circuit Short to Ground or Open</b>
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## DTC SUMMARY

The hybrid vehicle control ECU stores a DTC when there is no auxiliary battery voltage to the IGR terminal even though there is auxiliary battery voltage to the IGP terminal.

## DESCRIPTION

When the ignition switch is turned to ON, the auxiliary battery power source is supplied to the IGP and IGR terminals of the hybrid vehicle control ECU. When the ignition switch is off, the auxiliary battery power source is cut off.

When the ignition switch is turned off during driving, the auxiliary battery power source supplied to the IGP terminal is cut off. However, the auxiliary battery power source supplied to the IGR terminal is supplied until the vehicle is stopped and the ignition switch is turned off.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P253314	Ignition Switch On/Start Position Circuit Low Circuit Short to Ground or Open	Short to ground or open in IGR terminal circuit. (2 trip detection logic)	<ul style="list-style-type: none"> <li>Power distribution box assembly</li> <li>Wire harness or connector</li> <li>Hybrid vehicle control ECU</li> </ul>	Does not come on	Master Warning: Does not come on	Hybrid Control	A	SAE Code: P2534

## CONFIRMATION DRIVING PATTERN

### HINT:

After repair has 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](#)

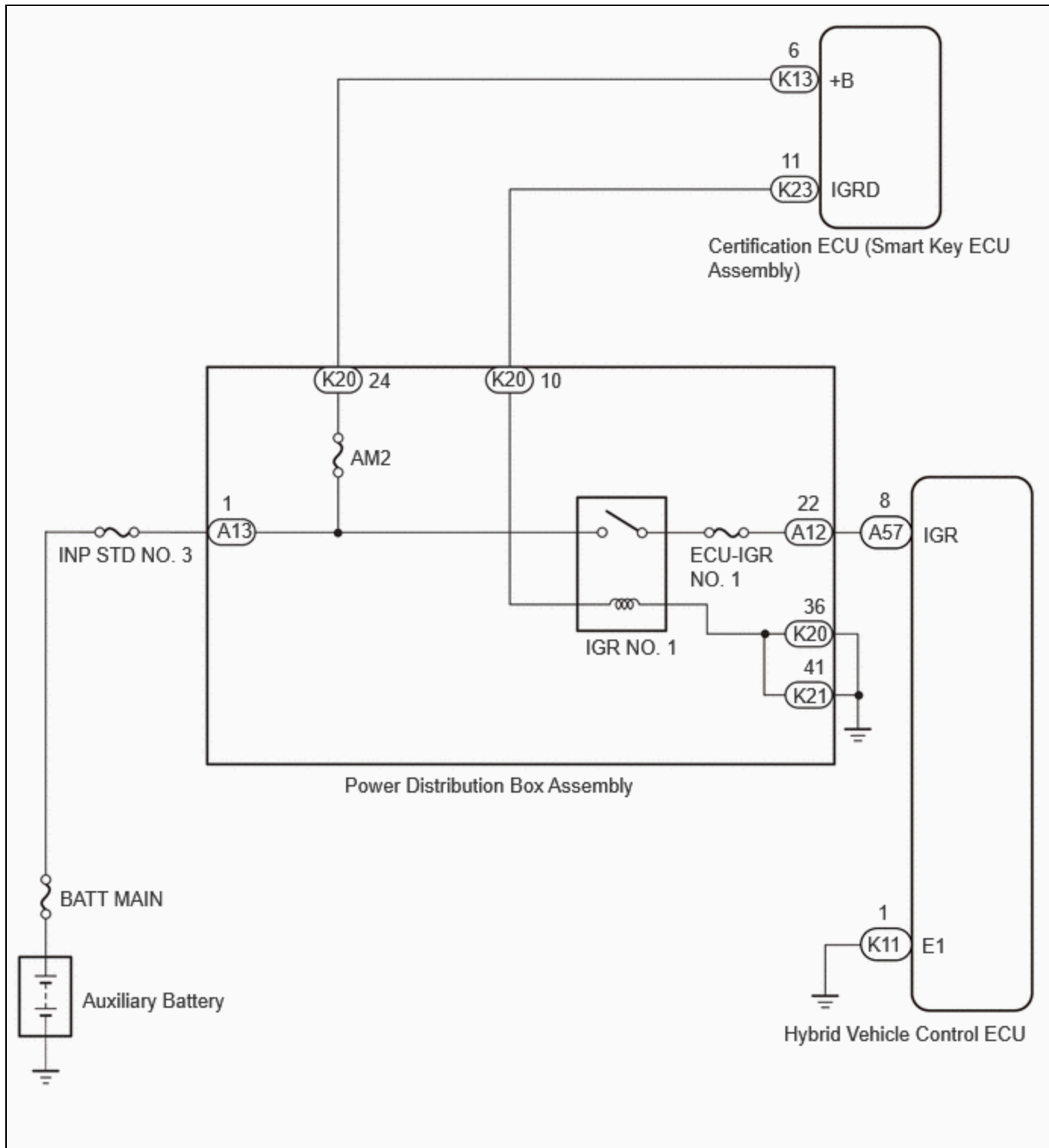
1. Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).
2. Turn the ignition switch off and wait for at least 30 seconds.
3. Turn the ignition switch to ON (READY) and wait for 1 minute or more.
4. Enter the following menus: Powertrain / Engine / Utility / All Readiness.
5. Check 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, perform driving pattern again.

## WIRING DIAGRAM



## CAUTION / NOTICE / HINT

### NOTICE:

Before replacing the certification ECU (smart key ECU assembly), refer to Registration.

Click here [INFO](#)

## PROCEDURE

### 1. READ VALUE USING GTS (IGR)

(a) Read the Data List.

**Powertrain > Hybrid Control > Data List**

TESTER DISPLAY
IGR

Standard:

GTS DISPLAY	SWITCH CONDITION	SPECIFIED CONDITION
IGR	Ignition switch ON	ON

RESULT	PROCEED TO
The value of IGR is ON	A
None of the above conditions are met	B

**A**  **CHECK FOR INTERMITTENT PROBLEMS**

**B**



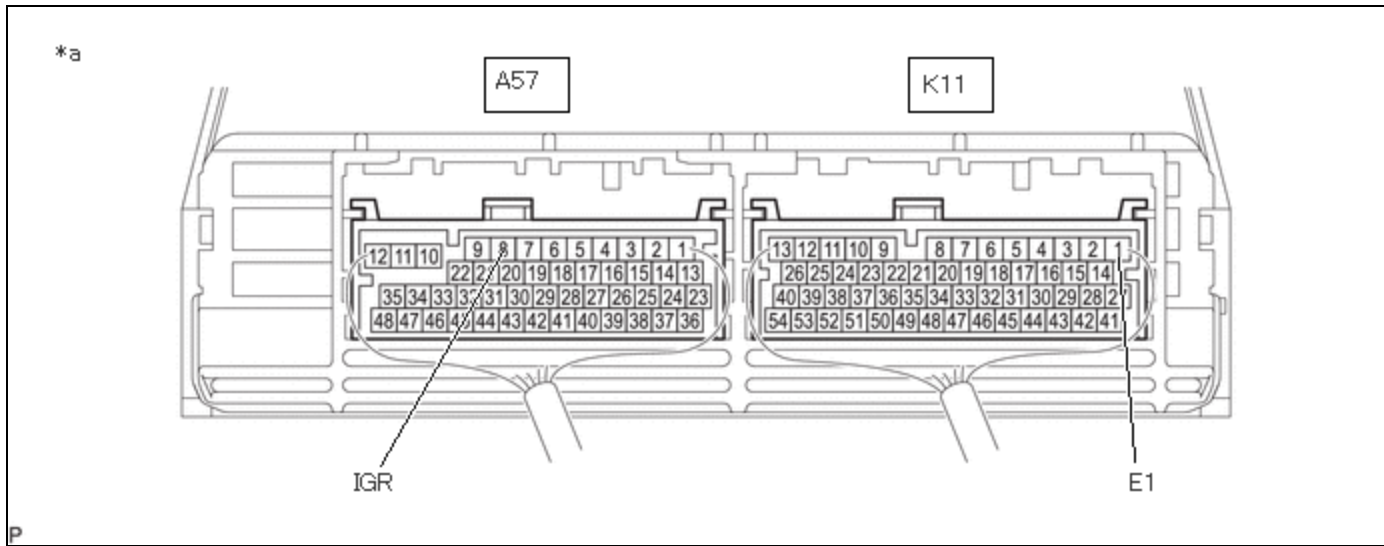
### 2. CHECK TERMINAL VOLTAGE (IGR VOLTAGE)

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\(A57,K11\).](#)
- [Click Connector\(A57\).](#)
- [Click Connector\(K11\).](#)

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION	RESULT
A57-8 (IGR) - K11-1 (E1)	Ignition switch ON	11 to 14 V	V

Post-procedure1

(c) Turn the ignition switch off.

**OK** ▶ REPLACE HYBRID VEHICLE CONTROL ECU

Click here [INFO](#)

**NG**



<b>3.</b>	<b>CHECK HARNESS AND CONNECTOR (POWER DISTRIBUTION BOX ASSEMBLY - HYBRID VEHICLE CONTROL ECU)</b>
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Pre-procedure1

- (a) Disconnect the hybrid vehicle control ECU connector.
- (b) Disconnect the power distribution box assembly connector.

Procedure1

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

Standard Resistance (Check for Open):



[Click Location & Routing\(A12,A57\).](#)

[Click Connector\(A12\).](#)

[Click Connector\(A57\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A12-22 - A57-8 (IGR)	Always	Below 1 $\Omega$	$\Omega$

Standard Resistance (Check for Short):



[Click Location & Routing\(A12,A57\).](#)

[Click Connector\(A12\).](#)

[Click Connector\(A57\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A12-22 or A57-8 (IGR) - Other terminals and body ground	Always	10 k $\Omega$ or higher	k $\Omega$

Post-procedure1

(d) Reconnect the power distribution box assembly connector.

(e) Reconnect the hybrid vehicle control ECU connector.

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

**OK**



<b>4.</b>	<b>CHECK HARNESS AND CONNECTOR (POWER DISTRIBUTION BOX ASSEMBLY - BODY GROUND)</b>
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Pre-procedure1

(a) Disconnect the power distribution box assembly connectors.

Procedure1

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

Standard Resistance:



[Click Location & Routing\(K20,K21\).](#)

[Click Connector\(K20\)](#)[Click Connector\(K21\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K20-36 - Body ground	Always	Below 1 $\Omega$	$\Omega$
K21-41 - Body ground	Always	Below 1 $\Omega$	$\Omega$

Post-procedure1

(c) Reconnect the power distribution box assembly connectors.

**OK** ▶ **REPLACE POWER DISTRIBUTION BOX ASSEMBLY**

Click here

[INFO](#)**NG** ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**