Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002BM1I
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: M20A-FXS (ENGINE CONTROL): SFI SYSTEM: P253314; Ignition Switch On/Start Position Circuit Low Circuit Short to Ground or Open; 2023 - 2024 MY Prius Prius Prime [03/2023 -]		

DTC	**P253314**	**Ignition Switch On/Start Position Circuit Low Circuit Short to Ground or Open**

DESCRIPTION

When the ignition switch is turned to ON, the auxiliary battery power source is supplied to the IGP and IGR terminals of the ECM. 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	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).	• Power Distribution Box Assembly • Wire harness or connector • ECM	Does not come on	Engine	A	SAE Code: P22B4

MONITOR DESCRIPTION

The ECM 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.

CONFIRMATION DRIVING PATTERN

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. Put the engine in Inspection Mode (Maintenance Mode).

   Click here INFO
4. Start the engine and wait 1 minute.
5. Enter the following menus: Powertrain / Engine / Trouble Codes.
6. Read the pending DTCs.

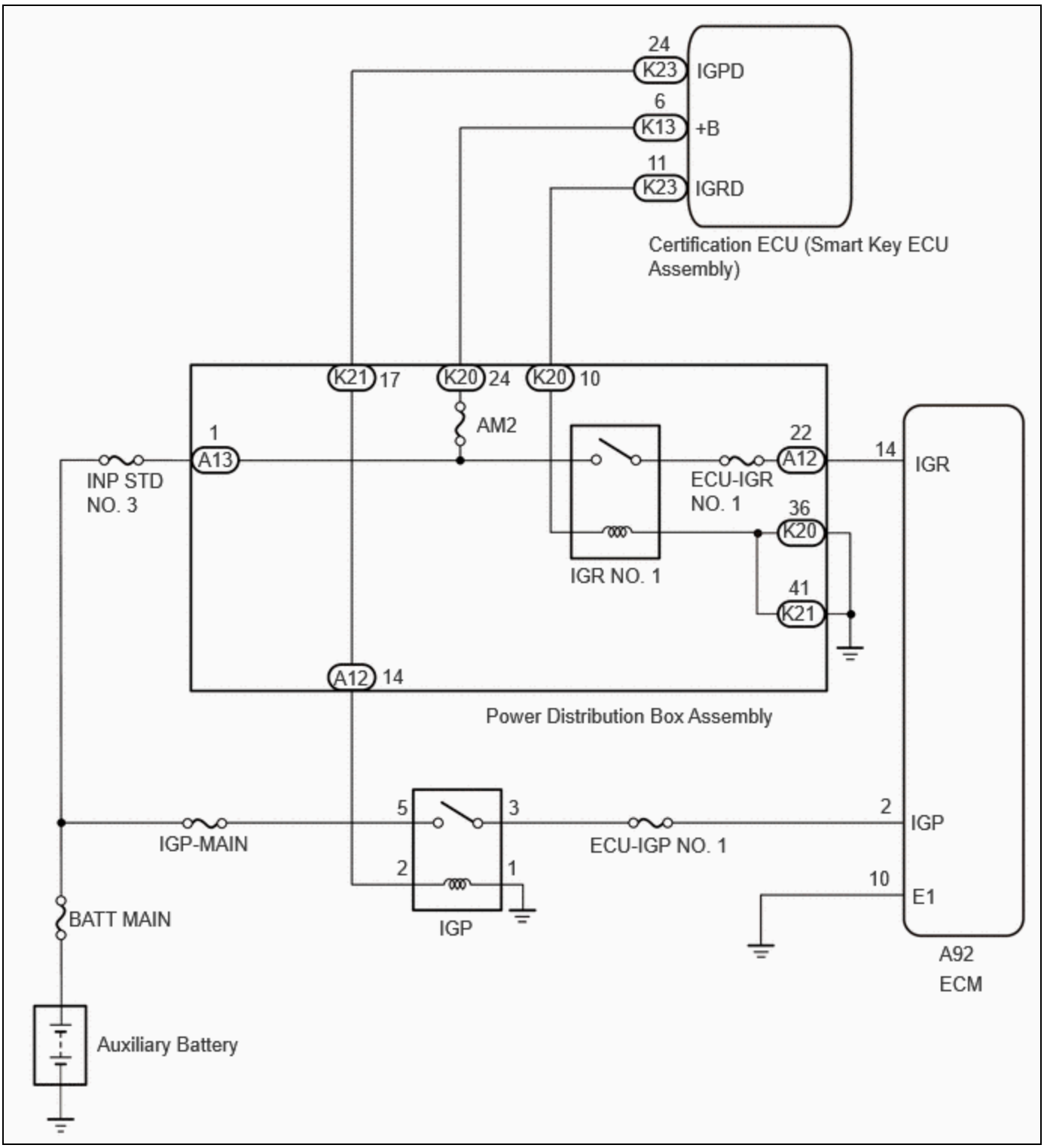
   HINT:

   - If a pending DTC is output, the system is malfunctioning.
   - If a pending DTC is not output, perform the following procedure.
7. Enter the following menus: Powertrain / Engine / Utility / All Readiness.
8. Input the DTC: P253314
9. Check the DTC judgment result.

   HINT:

- If the judgment result shows NORMAL, the system is normal.
- If the judgment result shows ABNORMAL, the system is malfunctioning.

WIRING DIAGRAM



CAUTION / NOTICE / HINT

NOTICE:

- Vehicle Control History may be stored in the hybrid vehicle control ECU if the engine is malfunctioning. Certain vehicle condition information is recorded when Vehicle Control History is stored. Reading the vehicle conditions recorded in both the freeze frame data and Vehicle Control History can be useful for troubleshooting.

for HEV Model: Click here INFO

for PHEV Model: Click here INFO

(Select Powertrain in Health Check and then check the time stamp data.)

- If any "Engine Malfunction" Vehicle Control History item has been stored in the hybrid vehicle control ECU, make sure to clear it. However, as all Vehicle Control History items are cleared simultaneously, if any Vehicle Control History items other than "Engine Malfunction" are stored, make sure to perform any troubleshooting for them before clearing Vehicle Control History.

for HEV Model: Click here INFO

for PHEV Model: Click here INFO

PROCEDURE

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

(a) Read the Data List.

Powertrain > Engine > Data List

TESTER DISPLAY
IGR

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) Disconnect the ECM connector.

(b) Turn the ignition switch to ON.

Procedure1

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

Standard Voltage:

EWD INFO

Click Location & Routing(A92)
Click Connector(A92)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A92-14 (IGR) - Body ground	Ignition switch ON	11 to 14 V	V

Post-procedure1

(d) None.

OK ▶ **REPLACE ECM**

NG ▼

3.	CHECK HARNESS AND CONNECTOR (POWER DISTRIBUTION BOX ASSEMBLY - ECM)

Pre-procedure1

(a) Disconnect the power distribution box assembly connector.

(b) Disconnect the ECM connector.

Procedure1

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

Standard Resistance:

EWD INFO

Click Location & Routing(A12,A92)
Click Connector(A12)
Click Connector(A92)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A12-22 - A92-14 (IGR)	Always	Below 1 Ω	Ω
A12-22 or A92-14 (IGR) - Body ground and other terminals	Always	10 kΩ or higher	kΩ

Post-procedure1

(d) None.

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

OK

4.	**CHECK HARNESS AND CONNECTOR (POWER DISTRIBUTION BOX ASSEMBLY - BODY GROUND)**

Pre-procedure1

(a) Disconnect the power distribution box assembly connector.

Procedure1

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

Standard Resistance:

EWD INFO

Click Location & Routing(K20,K21)
Click Connector(K20)
Click Connector(K21)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K20-36 - Body ground	Always	Below 1 Ω	Ω
K21-41 - Body ground	Always	Below 1 Ω	Ω

Post-procedure1

(c) None.

OK ▶ **REPLACE POWER DISTRIBUTION BOX ASSEMBLY**

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