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Model Year Start: 2023	Model: Prius Prime	Prod Date Range: [03/2023 -]
Title: M20A-FXS (ENGINE CONTROL): SFI SYSTEM: P056014; System Voltage Circuit Short to Ground or Open; 2023 - 2024 MY Prius Prius Prime [03/2023 -]		

DTC	P056014	System Voltage Circuit Short to Ground or Open
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MONITOR DESCRIPTION

The auxiliary battery supplies electricity to the ECM even when the ignition switch is off. This power allows the ECM to store data such as DTC history, Freeze Frame Data and fuel trim values. If the auxiliary battery voltage falls below a minimum level, the memory is cleared and the ECM determines that there is a malfunction in the power supply circuit. The ECM will illuminate the MIL and store this DTC.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
P056014	System Voltage Circuit Short to Ground or Open	An open or short in the ECM backup power source circuit (1 trip detection logic).	<ul style="list-style-type: none"> Open or short in back up power source circuit Auxiliary battery Auxiliary battery terminals ECM 	Comes on	Engine	A	SAE Code: P0562

MONITOR STRATEGY

Related DTCs	P0562: ECM system voltage range check (low voltage)
Required Sensors/Components (Main)	ECM
Required Sensors/Components (Related)	-
Frequency of Operation	Continuous
Duration	3 seconds
MIL Operation	Immediate
Sequence of Operation	None

TYPICAL ENABLING CONDITIONS

Monitor runs whenever the following DTCs are not stored	None
Both of the following conditions are met	-
Auxiliary battery voltage	8 V or higher
Ignition switch	ON

TYPICAL MALFUNCTION THRESHOLDS

Continuous auxiliary battery voltage	Less than 3.5 V
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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

- When clearing the permanent DTCs, refer to the "CLEAR PERMANENT DTC" 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. Wait 5 seconds or more [A].
4. Enter the following menus: Powertrain / Engine / Trouble Codes [B].
5. 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.

6. Enter the following menus: Powertrain / Engine / Utility / All Readiness.
7. Input the DTC: P056014.
8. Check the DTC judgment result.

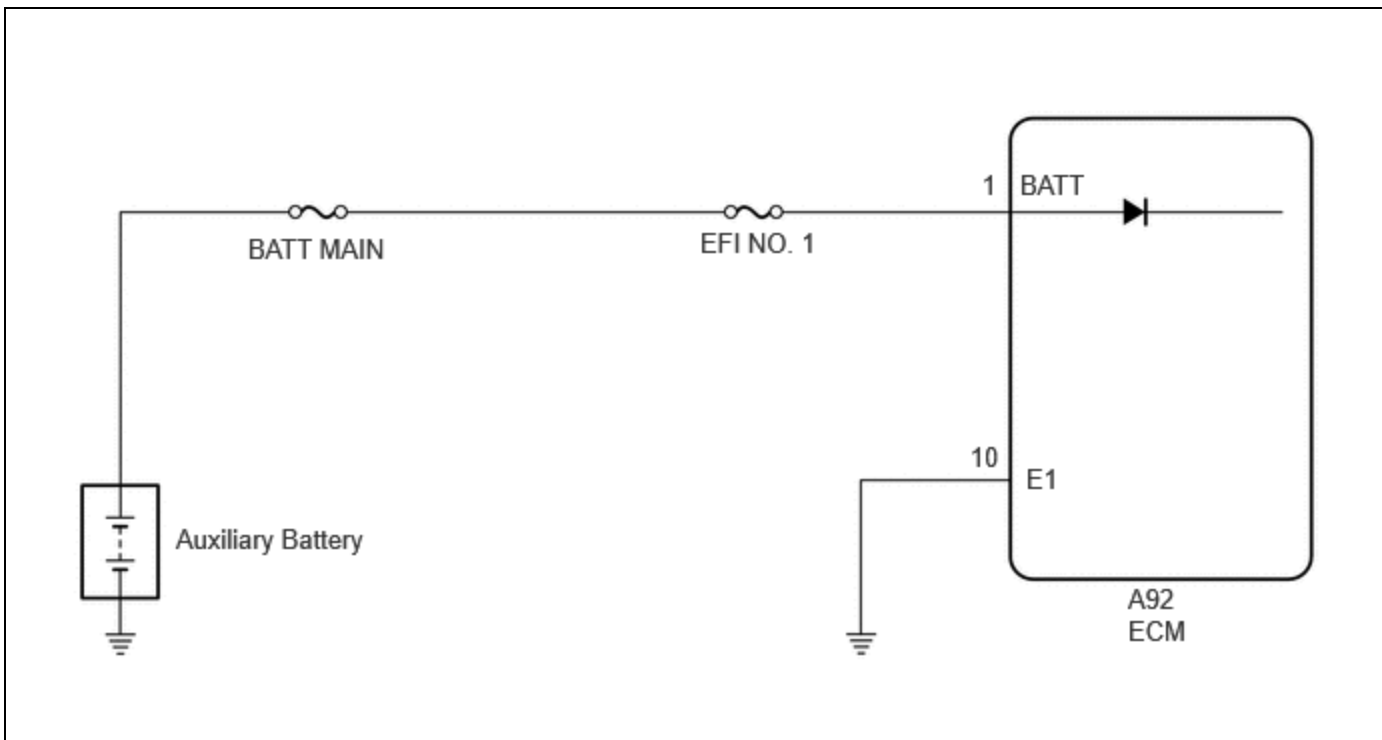
HINT:

- If the judgment result is NORMAL, the system is normal.
- If the judgment result is ABNORMAL, the system is malfunctioning.
- [A] to [B]: Normal judgment procedure.

The normal judgment procedure is used to complete DTC judgment and also used when clearing permanent DTCs.

- When clearing the permanent DTCs, do not disconnect the cable from the auxiliary battery terminal or attempt to clear the DTCs during this procedure, as doing so will clear the universal trip and normal judgment histories.

WIRING DIAGRAM



CAUTION / NOTICE / HINT

NOTICE:

- Inspect the fuses for circuits related to this system before performing the following procedure.
- After the ignition switch is turned off, there may be a waiting time before disconnecting the negative (-) battery terminal.

Click here [INFO](#)

- When disconnecting and reconnecting the battery.

HINT:

When disconnecting and reconnecting the battery, there is an automatic learning function that completes learning when the respective system is used.

Click here [INFO](#)

- 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. INSPECT AUXILIARY BATTERY

Click here 

OK:
Auxiliary battery voltage is between 11 and 14 V.

NG  **CHARGE OR REPLACE AUXILIARY BATTERY**

OK


2. CHECK AUXILIARY BATTERY TERMINAL

OK:
Auxiliary battery terminals are not loose or corroded.

NG  **REPAIR OR REPLACE AUXILIARY BATTERY TERMINAL**

OK


3. CHECK TERMINAL VOLTAGE (POWER SOURCE OF ECM)

Pre-procedure1

(a) Disconnect the ECM connector.

Procedure1

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

Standard Voltage:



[Click Location & Routing\(A92\).](#)

[Click Connector\(A92\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A92-1 (BATT) - Body ground	Always	11 to 16 V	V

Post-procedure1

(c) None.

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR
(AUXILIARY BATTERY - ECM)**

OK


4.	CLEAR DTC
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Pre-procedure1

(a) None.

Procedure1

(b) Clear the DTCs.

Powertrain > Engine > Clear DTCs

Post-procedure1

(c) Turn the ignition switch off and wait for at least 30 seconds.

NEXT


5.	CHECK WHETHER DTC OUTPUT RECURS (DTC P056014)
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Pre-procedure1

(a) Drive the vehicle in accordance with the driving pattern described in Confirmation Driving Pattern.

Procedure1

(b) Read the DTCs.

Powertrain > Engine > Trouble Codes

RESULT	PROCEED TO
DTCs are not output	A
P056014 is output	B

Post-procedure1

(c) None.

A  **CHECK FOR INTERMITTENT PROBLEMS**

B  **REPLACE ECM**

