Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM1000000029A3R
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: HYBRID / BATTERY CONTROL: HYBRID BATTERY SYSTEM (for M20A-FXS): P056014; System Voltage (BATT) Circuit Short to Ground or Open; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	**P056014**	**System Voltage (BATT) Circuit Short to Ground or Open**

DESCRIPTION

Auxiliary battery power is supplied to the AM terminal of the battery ECU assembly in order to store DTCs and freeze frame data. Even if the ignition switch is turned off, back-up power is supplied.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P056014	System Voltage (BATT) Circuit Short to Ground or Open	Malfunction in the battery ECU assembly back-up power source circuit (1 trip detection logic)	• Wire harness or connector • Battery ECU assembly • Fuse	Comes on	Master Warning: Comes on	HV Battery	A	SAE Code: P0562

MONITOR DESCRIPTION

If a period of time has elapsed with a low voltage at the AM terminal of the battery ECU assembly, the battery ECU assembly will determine that a malfunction has occurred in the back-up power supply system, and it will set a DTC. The MIL will illuminate the next time the engine is started.

MONITOR STRATEGY

Related DTCs	P0562 (INF P056014): System voltage (battery energy control module)
Required sensors/components	Battery ECU assembly
Frequency of operation	Continuous
Duration	TMC's intellectual property
MIL operation	Immediately
Sequence of operation	None

TYPICAL ENABLING CONDITIONS

The monitor will run whenever the following DTCs are not stored	TMC's intellectual property
Other conditions belong to TMC's intellectual property	-

TYPICAL MALFUNCTION THRESHOLDS

TMC's intellectual property	-

COMPONENT OPERATING RANGE

Battery ECU assembly	DTC P0562 (INF P056014) is not detected

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 2 minutes or more.
3. With ignition switch ON and wait for 5 seconds or more.[*1]

   HINT:

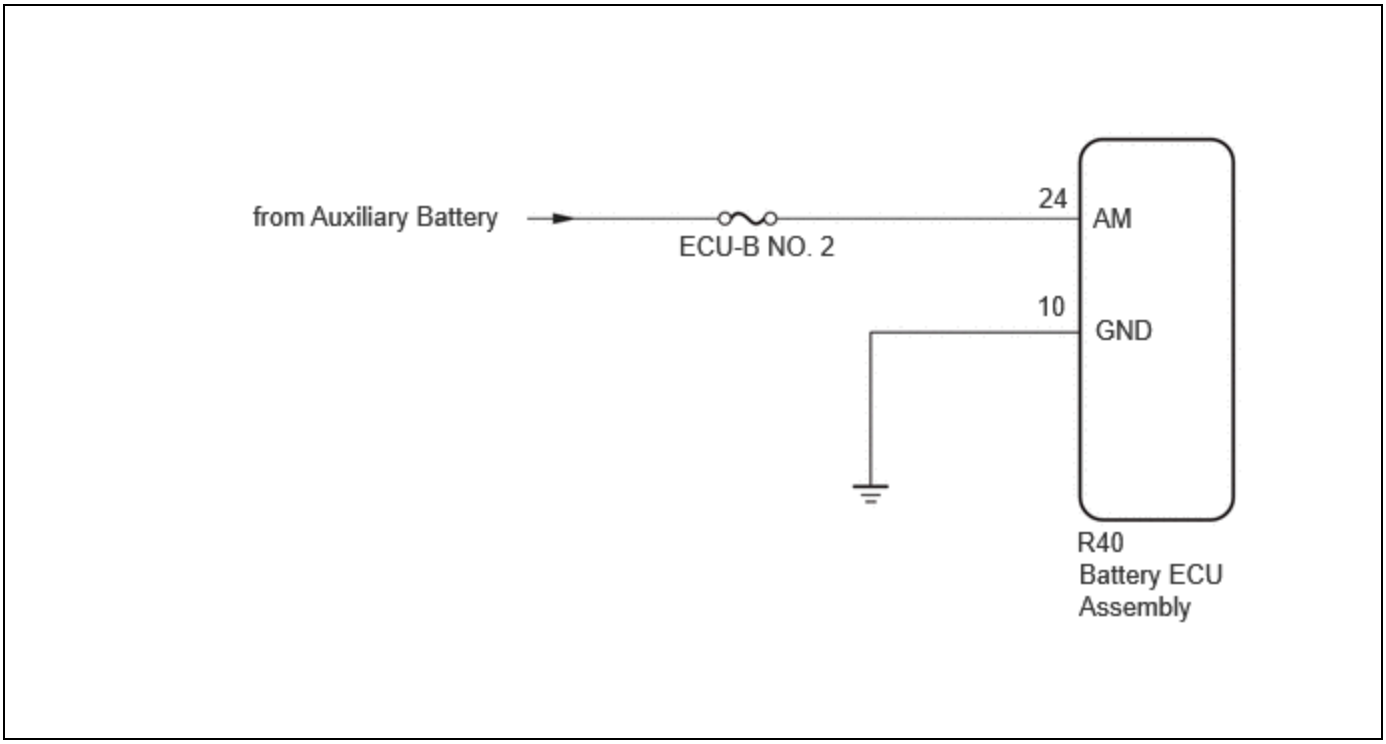
   [*1]: Normal judgment procedure.

   The normal judgment procedure is used to complete DTC judgment and also used when clearing permanent DTCs.
4. Enter the following menus: Powertrain / HV Battery / 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 the normal judgment procedure again.

WIRING DIAGRAM



CAUTION / NOTICE / HINT

CAUTION:

Refer to the precautions before inspecting high voltage circuit.

Click here INFO

NOTICE:

- Be sure to check that the applicable DTC is output from the hybrid battery system.
- 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 FUSE (ECU-B NO. 2)**

Pre-procedure1

(a) Remove the ECU-B NO. 2 fuse from the power distribution box assembly.

Procedure1

(b) Check if there is an open circuit in the ECU-B NO. 2 fuse in the power distribution box assembly.

OK:

There is no open circuit in the ECU-B NO. 2 fuse.

Post-procedure1

(c) Install the ECU-B NO. 2 fuse.

NG ▶ **REPLACE FUSE (ECU-B NO. 2)**

OK ▼

2.	CHECK CONNECTOR CONNECTION CONDITION (BATTERY ECU ASSEMBLY)

CAUTION:

Be sure to wear insulated gloves and protective goggles.

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.

Procedure1

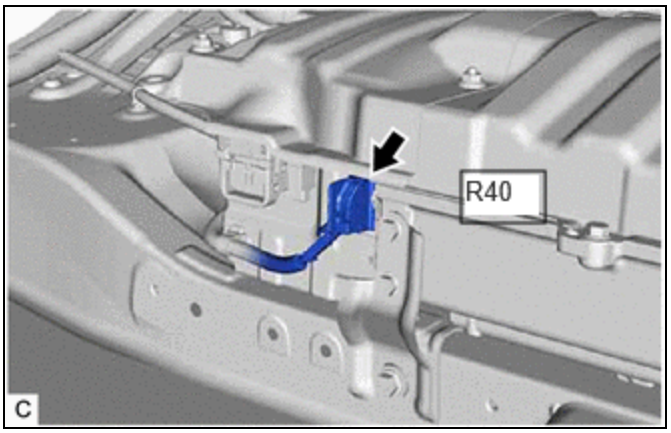
(b) Check the connector connections and contact pressure of the relevant terminals for the battery ECU assembly.

HINT:

Click here INFO

OK:

The connector is connected securely and there are no contact pressure problems.



Post-procedure1

(c) None

NG ▶ **CONNECT SECURELY**

OK ▼

3.	CHECK HARNESS AND CONNECTOR (AM VOLTAGE)

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

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

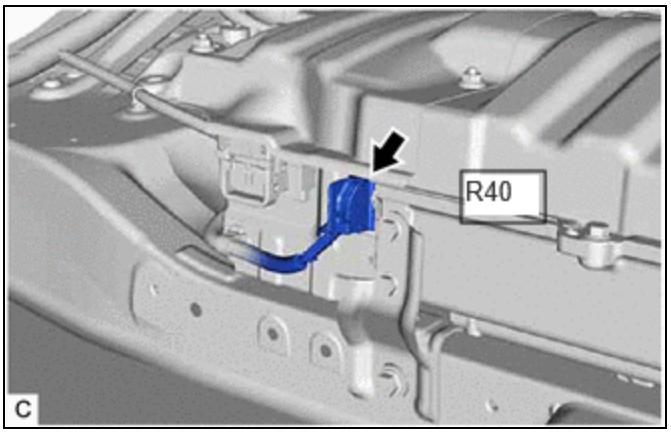
NOTICE:

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 battery ECU assembly connector.

NOTICE:

Before disconnecting the connector, check that it is not loose or disconnected.



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

Procedure1

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

Standard Voltage:

EWD INFO

Click Location & Routing(R40)
Click Connector(R40)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
R40-24 (AM) - R40-10 (GND)	Ignition switch off	11 to 14 V	V

Post-procedure1

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

(f) Reconnect the battery ECU assembly connector.

HINT:

As there might be an intermittent malfunction, inspect the following items even if the measured voltage is as specified.

- Installation condition of fuse(s) (before removing fuse(s)) (power source circuit)

- Fuse condition (before and after removing fuse(s)) (power source circuit)
- Connection condition of connectors (power source circuit)
- Wire harness condition (power source circuit)
- Wire harness condition (GND circuit)

OK ▶ **REPLACE BATTERY ECU ASSEMBLY**

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR (BATTERY ECU ASSEMBLY POWER SOURCE CIRCUIT)**