Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002BHWM
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HYBRID / BATTERY CONTROL: HYBRID BATTERY SYSTEM (for PHEV Model): P1B8312,P1B8314; Hybrid/EV Battery Pack Refrigerant Pressure Sensor "A" Circuit High Circuit Short to Auxiliary Battery; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	**P1B8312**	**Hybrid/EV Battery Pack Refrigerant Pressure Sensor "A" Circuit High Circuit Short to Auxiliary Battery**

DTC	**P1B8314**	**Hybrid/EV Battery Pack Refrigerant Pressure Sensor "A" Circuit Low Circuit Short to Ground or Open**

DESCRIPTION

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P1B8312	Hybrid/EV Battery Pack Refrigerant Pressure Sensor "A" Circuit High Circuit Short to Auxiliary Battery	The air conditioning pressure sensor output voltage is excessively high. (1 trip detection logic)	• Air conditioning pressure sensor (No. 2 traction battery cooler tube) • Battery ECU assembly • Wire harness or connector	Comes on	Master Warning: Comes on	HV Battery	A	SAE Code: P1B86
P1B8314	Hybrid/EV Battery Pack Refrigerant Pressure Sensor "A" Circuit Low Circuit Short to Ground or Open	The air conditioning pressure sensor output voltage is excessively low. (1 trip detection logic)	• Air conditioning pressure sensor (No. 2 traction battery cooler tube) • Battery ECU assembly • Wire harness or connector	Comes on	Master Warning: Comes on	HV Battery	A	SAE Code: P1B85

MONITOR DESCRIPTION

If the battery ECU assembly detects a malfunction in a air conditioning pressure sensor, the battery ECU assembly will illuminate the MIL and store a DTC.

MONITOR STRATEGY

Related DTCs	P1B86 (INF P1B8312): Hybrid Battery Pack Coolant Pressure Sensor (Battery Refrigerant) Range check (High voltage) P1B85 (INF P1B8314): Hybrid Battery Pack Coolant Pressure Sensor (Battery Refrigerant) Range check (Low voltage)
Required sensors/components	Air conditioning pressure sensor
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 P1B86 (INF P1B8312) is not detected DTC P1B85 (INF P1B8314) 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. Drive the vehicle on urban roads for approximately 10 minutes.[*1]

   HINT:

   [*1]: Normal judgment procedure.

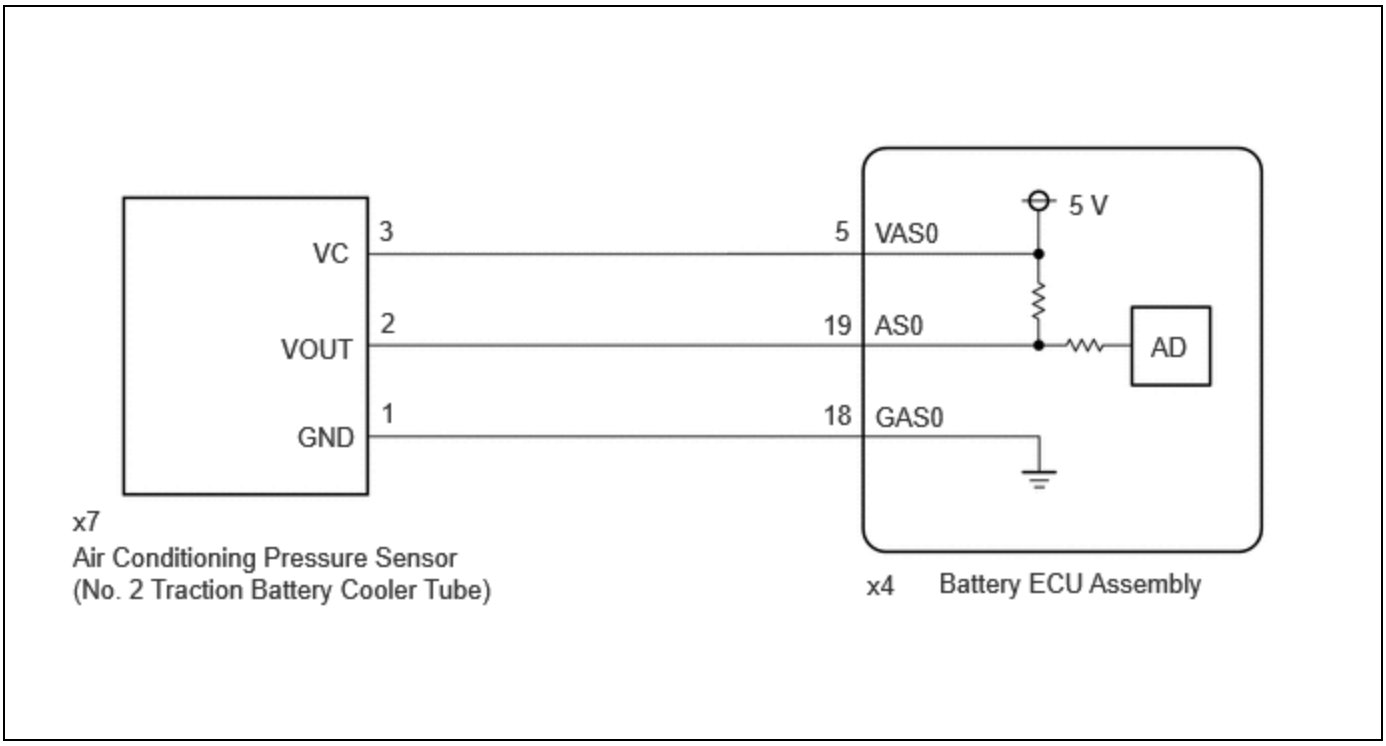
   The normal judgment procedure is used to complete DTC judgment and also used when clearing permanent DTCs.
4. Enter the following menus: Powertrain / HV Battery / Utility / All Readiness.
5. Check the DTC judgment result.

   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 or N/A, 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:

- After the ignition switch is turned off, there may be a waiting time before disconnecting the auxiliary negative (-) 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.	**COMPARE REFRIGERANT GAS PRESSURE VALUES SHOWN ON GTS AND MANIFOLD GAUGE SET**

HINT:

This check is meant to compare the refrigerant gas pressures on the GTS and on the air conditioning tool when the air conditioning is stopped, so do not operate the compressor.

Pre-procedure1

(a) Turn the blower switch off.

(b) Turn the ignition switch off and wait for 1 hour or more.

(c) Install a manifold gauge set.

Procedure1

(d) Read the Data List according to the display on the GTS.

Powertrain > HV Battery > Data List

TESTER DISPLAY
Hybrid/EV Battery Refrigerant Pressure 1

RESULT	PROCEED TO
The Data List value matches the value on the manifold gauge set	A
The Data List value does not match the value on the manifold gauge set	B

Post-procedure1

(e) Compare the values displayed in the Data List and on the manifold gauge set.

B ▶ **GO TO STEP 5**

A ▼

2.	**REFRIGERANT SHORTAGE CHECK USING GTS**

HINT:

Click here INFO

OK ▶ **GO TO STEP 5**

NG ▼

3.	**CHARGE REFRIGERANT GAS OR REPAIR REFRIGERANT GAS LEAK**

HINT:

Click here INFO

NEXT

4.	**CHECK DTC OUTPUT (HV BATTERY)**

Pre-procedure1

(a) None

Procedure1

(b) Check for DTCs.

Powertrain > HV Battery > Trouble Codes

RESULT	PROCEED TO
P1B8312 or P1B8314 is output	A
P1B8312 or P1B8314 is not output	B

Post-procedure1

(c) Turn the ignition switch off.

A ▶ **GO TO STEP 5**

B ▶ **END**

5.	**CHECK HARNESS AND CONNECTOR (AIR CONDITIONING PRESSURE SENSOR POWER SOURCE CIRCUIT)**

NOTICE:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

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

NOTICE:

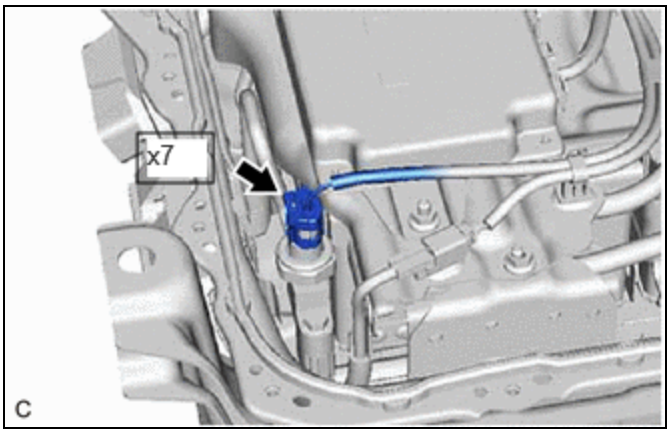
After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Connect the SST.

HINT:

Click here INFO

(c) Disconnect the air conditioning pressure sensor (No. 2 traction battery cooler tube) connector.



NOTICE:

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

(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(x7)
Click Connector(x7)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
x7-3 (VC) - x7-1 (GND)	Ignition switch ON	4.75 to 5.25 V	V
x7-2 (VOUT) - x7-1 (GND)	Ignition switch ON	4.75 to 5.25 V	V
x7-3 (VC) - body ground	Ignition switch ON	4.75 to 5.25 V	V
x7-2 (VOUT) - body ground	Ignition switch ON	4.75 to 5.25 V	V

NOTICE:

- Turning the ignition switch to ON with the service plug grip removed causes other DTCs to be stored. Clear the DTCs after performing this inspection.
- If the ignition switch is turned to ON with the connectors disconnected, other DTCs will be stored. Be sure to clear the DTCs after the inspection.

Post-procedure1

(g) Turn the ignition switch off.

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

(i) Reconnect the air conditioning pressure sensor (No. 2 traction battery cooler tube) connector.

(j) Disconnect the SST.

OK ▶ **REPLACE AIR CONDITIONING PRESSURE SENSOR (NO. 2 TRACTION BATTERY COOLER TUBE)**

NG ▼

6.	**CHECK HARNESS AND CONNECTOR (AIR CONDITIONING PRESSURE SENSOR (NO. 2 TRACTION BATTERY COOLER TUBE) - BATTERY ECU ASSEMBLY)**

NOTICE:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

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

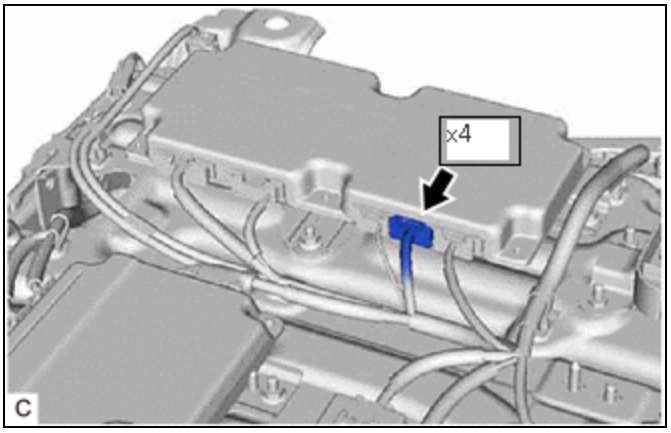
NOTICE:

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:

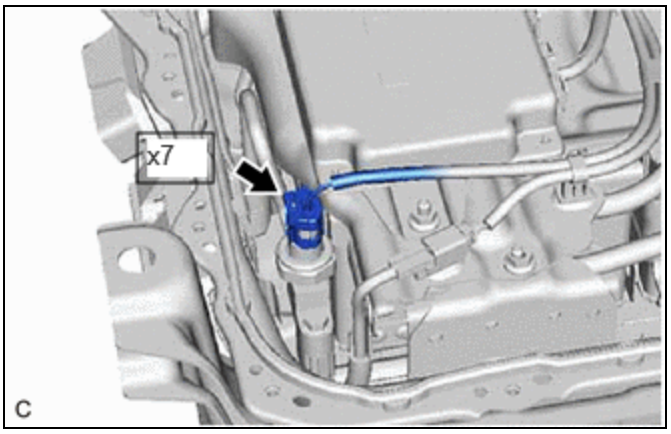
Before disconnecting the connector, check that it is not loose or disconnected.



(c) Disconnect the air conditioning pressure sensor connector.

NOTICE:

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



Procedure1

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

Standard Resistance:

EWD INFO

Click Location & Routing(x7,x4)
Click Connector(x7)
Click Connector(x4)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
x7-3 (VC) - x4-5 (VAS0)	Ignition switch off	Below 1 Ω	Ω
x7-2 (VOUT) - x4-19 (AS0)	Ignition switch off	Below 1 Ω	Ω
x7-1 (GND) - x4-18 (GAS0)	Ignition switch off	Below 1 Ω	Ω
x7-3 (VC) or x4-5 (VAS0) - Other terminals and body ground	Ignition switch off	10 kΩ or higher	kΩ
x7-2 (VOUT) or x4-19 (AS0) - Other terminals and body ground	Ignition switch off	10 kΩ or higher	kΩ
x7-1 (GND) or x4-18 (GAS0) - Other terminals and body ground	Ignition switch off	10 kΩ or higher	kΩ

Post-procedure1

(e) Reconnect the battery ECU assembly connector.

(f) Reconnect the air conditioning pressure sensor connector.

OK ▶ **REPLACE BATTERY ECU ASSEMBLY**

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