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Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HEATING / AIR CONDITIONING: AIR CONDITIONING SYSTEM (for PHEV Model): B14B087; Lost Communication with Heat Pump ECU (Local-CAN) Missing Message; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	**B14B087**	**Lost Communication with Heat Pump ECU (Local-CAN) Missing Message**

DESCRIPTION

The heat pump cycle operation condition is sent from the heat pump ECU assembly to the air conditioning amplifier assembly and the vehicle condition is sent from the air conditioning amplifier assembly to the heat pump ECU assembly via CAN communication and control is performed to achieve the optimal operation condition.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	MEMORY	DTC OUTPUT FROM	PRIORITY	NOTE
B14B087	Lost Communication with Heat Pump ECU (Local-CAN) Missing Message	Diagnosis condition: Ignition switch ON Malfunction status: No communication with heat pump ECU assembly Detection time: Continuously for 10 seconds or more Trip: 1 trip detection logic	• Harness or connector • Heat pump ECU assembly • Air conditioning amplifier assembly	Come on	Memorized	Air Conditioner	B	SAE Code: B14B0

MONITOR DESCRIPTION

When there is a communication malfunction or communication stop from the air conditioning amplifier assembly to the heat pump ECU assembly, the air conditioning amplifier assembly illuminates the MIL and stores this DTC.

MONITOR STRATEGY

Related DTCs	B14B0: Lost Communication with Heat Pump ECU (Local-CAN) Missing Message
Required Sensors/Components (Main)	Heat pump ECU assembly
Required Sensors/Components (Related)	-
Frequency of Operation	Continuous
Duration	10 seconds

MIL Operation	Immediate
Sequence of Operation	None

TYPICAL ENABLING CONDITIONS

Battery voltage	10 V or higher
Time after Ignition switch OFF to ON	10 seconds

TYPICAL MALFUNCTION THRESHOLDS

Communication signal	Lost communication with Heat Pump Control Module

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. Connect the GTS to the DLC3.
2. Turn the ignition switch to ON.
3. Turn the GTS on.
4. Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).
5. Turn the ignition switch off and wait for at least 30 seconds.
6. Turn the ignition switch to ON. [A].
7. Turn the GTS on.
8. Wait 10 seconds or more.[B]
9. Enter the following menus: Body Electrical / Air Conditioner / Trouble Codes [C].
10. 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.
11. Enter the following menus: Body Electrical / Air Conditioner / Utility / All Readiness.
12. Input the DTC: B14B087.
13. Check the DTC judgment result.

GTS DISPLAY	DESCRIPTION
NORMAL	◦ DTC judgment completed ◦ System normal
ABNORMAL	◦ DTC judgment completed ◦ System abnormal
INCOMPLETE	◦ DTC judgment not completed ◦ Perform driving pattern after confirming DTC enabling conditions

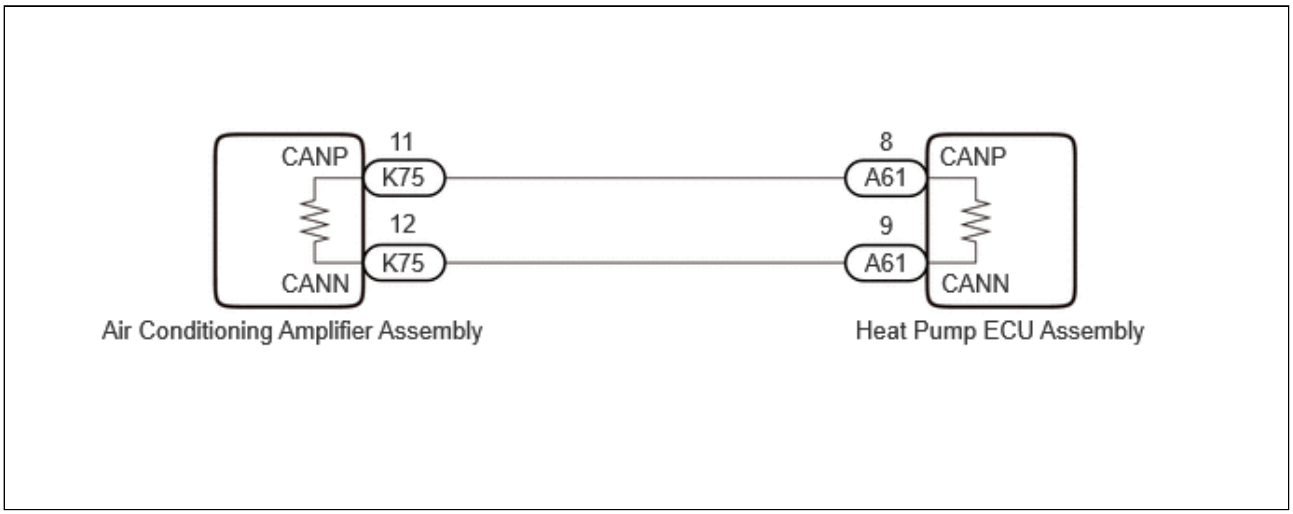
HINT:

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

- If the judgment result is INCOMPLETE, perform steps [A] through [C] again.
- [A] to [C]: 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:

After turning the ignition switch off, waiting time may be required before disconnecting the cable from the negative (-) auxiliary battery terminal. Therefore, make sure to read the disconnecting the cable from the negative (-) auxiliary battery terminal notices before proceeding with work.

- Before disconnecting battery:

  Click here INFO
- Automatic learning chart:

  Click here INFO

PROCEDURE

1.	**CHECK DTC (AIR CONDITIONING SYSTEM)**

(a) Check if air conditioning system DTCs are output.

Body Electrical > Air Conditioner > Trouble Codes

HINT:

Check even when the DTCs detected for temporary failures.

RESULT	PROCEED TO
B149887 is not output	A
B149887 is output	B

RELEVANT DTC	
B149887	A/C Inverter Local Missing Message

B GO TO DIAGNOSTIC TROUBLE CODE CHART (B149887)

A

2.	CHECK CAN BUS WIRE (AIR CONDITIONING AMPLIFIER ASSEMBLY)

Pre-procedure1

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

(b) Disconnect the A61 heat pump ECU assembly connector.

Procedure1

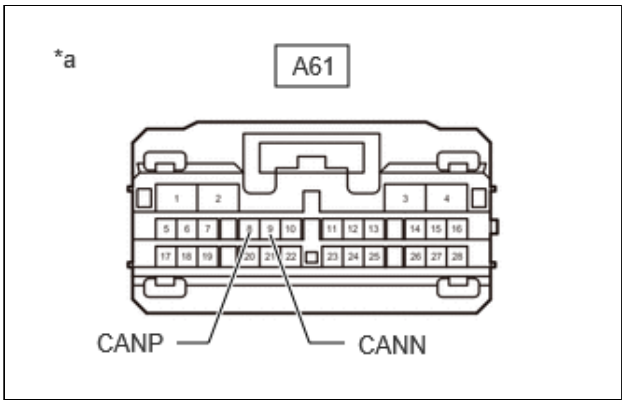
(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

EWD INFO

Click Location & Routing(A61)
Click Connector(A61)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A61-8 (CANP) - A61-9 (CANN)	Cable disconnected from negative (-) auxiliary battery terminal	108 to 132 Ω	Ω
A61-8 (CANP) - Body ground	Cable disconnected from negative (-) auxiliary battery terminal	200 Ω or higher	Ω
A61-9 (CANN) - Body ground	Cable disconnected from negative (-) auxiliary battery terminal	200 Ω or higher	Ω
A61-8 (CANP) - Battery	Cable disconnected from negative (-) auxiliary battery terminal	6 kΩ or higher	kΩ
A61-9 (CANN) - Battery	Cable disconnected from negative (-) auxiliary battery terminal	6 kΩ or higher	kΩ



*a	Front view of wire harness connector (to Heat Pump ECU Assembly)

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) None

NG ▶ **GO TO STEP 5**

OK ▼

3.	CHECK CAN BUS WIRE (HEAT PUMP ECU ASSEMBLY)

Pre-procedure1

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

(b) Disconnect the K75 air conditioning amplifier assembly connector.

Procedure1

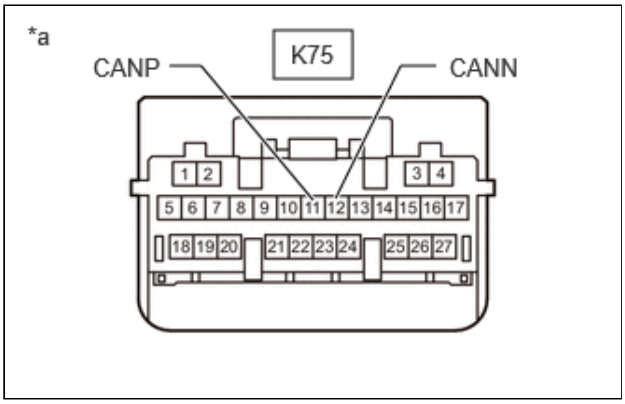
(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

EWD INFO

Click Location & Routing(K75)
Click Connector(K75)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K75-11 (CANP) - K75-12 (CANN)	Cable disconnected from negative (-) auxiliary battery terminal	108 to 132 Ω	Ω
K75-11 (CANP) - Body ground	Cable disconnected from negative (-) auxiliary battery terminal	200 Ω or higher	Ω
K75-12 (CANN) - Body ground	Cable disconnected from negative (-) auxiliary battery terminal	200 Ω or higher	Ω
K75-11 (CANP) - Battery	Cable disconnected from negative (-) auxiliary battery terminal	6 kΩ or higher	kΩ



*a	Front view of wire harness connector (to Air Conditioning Amplifier Assembly)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K75-12 (CANN) - Battery	Cable disconnected from negative (-) auxiliary battery terminal	6 kΩ or higher	kΩ

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) None

NG ▶ **REPLACE HEAT PUMP ECU ASSEMBLY**

OK ▼

4.	**CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY**

Pre-procedure1

(a) Disconnect the A61 heat pump ECU assembly connector.

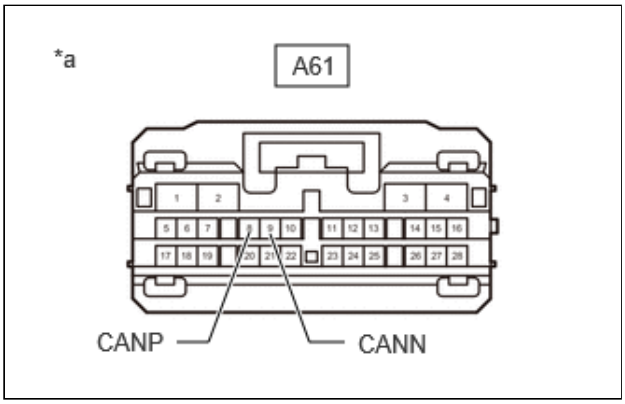
Procedure1

(b) Check for pulses according to the value(s) in the table below.

EWD INFO

Click Location & Routing(A61)
Click Connector(A61)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A61-8 (CANP) - A61-9 (CANN)	Ignition switch ON	Pulse generation



*a	Front view of wire harness connector (to Heat Pump ECU Assembly)

Result:

PROCEED TO
OK

PROCEED TO
NG

Post-procedure1

(c) None

OK ▶ **REPLACE HEAT PUMP ECU ASSEMBLY**

NG ▶ **REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY**

5.	**CHECK CAN BUS WIRE (HEAT PUMP ECU ASSEMBLY)**

Pre-procedure1

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

(b) Disconnect the K75 air conditioning amplifier assembly connector.

Procedure1

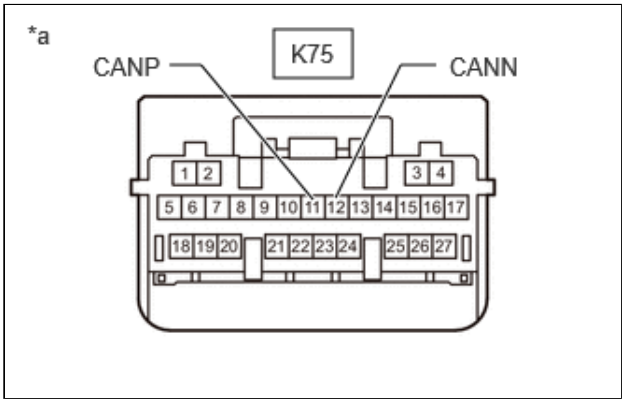
(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

EWD INFO

Click Location & Routing(K75)
Click Connector(K75)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K75-11 (CANP) - K75-12 (CANN)	Cable disconnected from negative (-) auxiliary battery terminal	108 to 132 Ω	Ω
K75-11 (CANP) - Body ground	Cable disconnected from negative (-) auxiliary battery terminal	200 Ω or higher	Ω
K75-12 (CANN) - Body ground	Cable disconnected from negative (-) auxiliary battery terminal	200 Ω or higher	Ω
K75-11 (CANP) - Battery	Cable disconnected from negative (-) auxiliary battery terminal	6 kΩ or higher	kΩ
K75-12 (CANN) - Battery	Cable disconnected from negative (-) auxiliary battery terminal	6 kΩ or higher	kΩ



*a	Front view of wire harness connector (to Air Conditioning Amplifier Assembly)

Result:

PROCEED TO
OK
NG

Post-procedure1

(d) None

OK ▶ **REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY**

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