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Model Year Start: 2023	Model: Prius	Prod Date Range: [12/2022 -]
Title: HEATING / AIR CONDITIONING: AIR CONDITIONING SYSTEM (for HEV Model): B14711C; A/C Inverter High Voltage Power Resource Circuit Voltage Out of Range; 2023 - 2024 MY Prius [12/2022 -]		

DTC	B14711C	A/C Inverter High Voltage Power Resource Circuit Voltage Out of Range
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DESCRIPTION

The hybrid vehicle control ECU monitors the voltage of the HV battery. The hybrid vehicle control ECU stops compressor control and stores this DTC when the monitored voltage is outside the specified range.

This DTC will be stored as a history DTC. Compressor control may not resume unless the ignition switch is turned off.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MEMORY	DTC OUTPUT FROM	PRIORITY
B14711C	A/C Inverter High Voltage Power Resource Circuit Voltage Out of Range	Diagnosis Condition: Ignition switch ON Malfunction: <ul style="list-style-type: none"> Open or short in A/C inverter high voltage power resource system Damage or malfunction in voltage booster system Detection Time: -	<ul style="list-style-type: none"> Hybrid control system HV air conditioning wire Compressor with motor assembly 	Memorized	Air Conditioner	B

DTC Detection Condition Combination Table

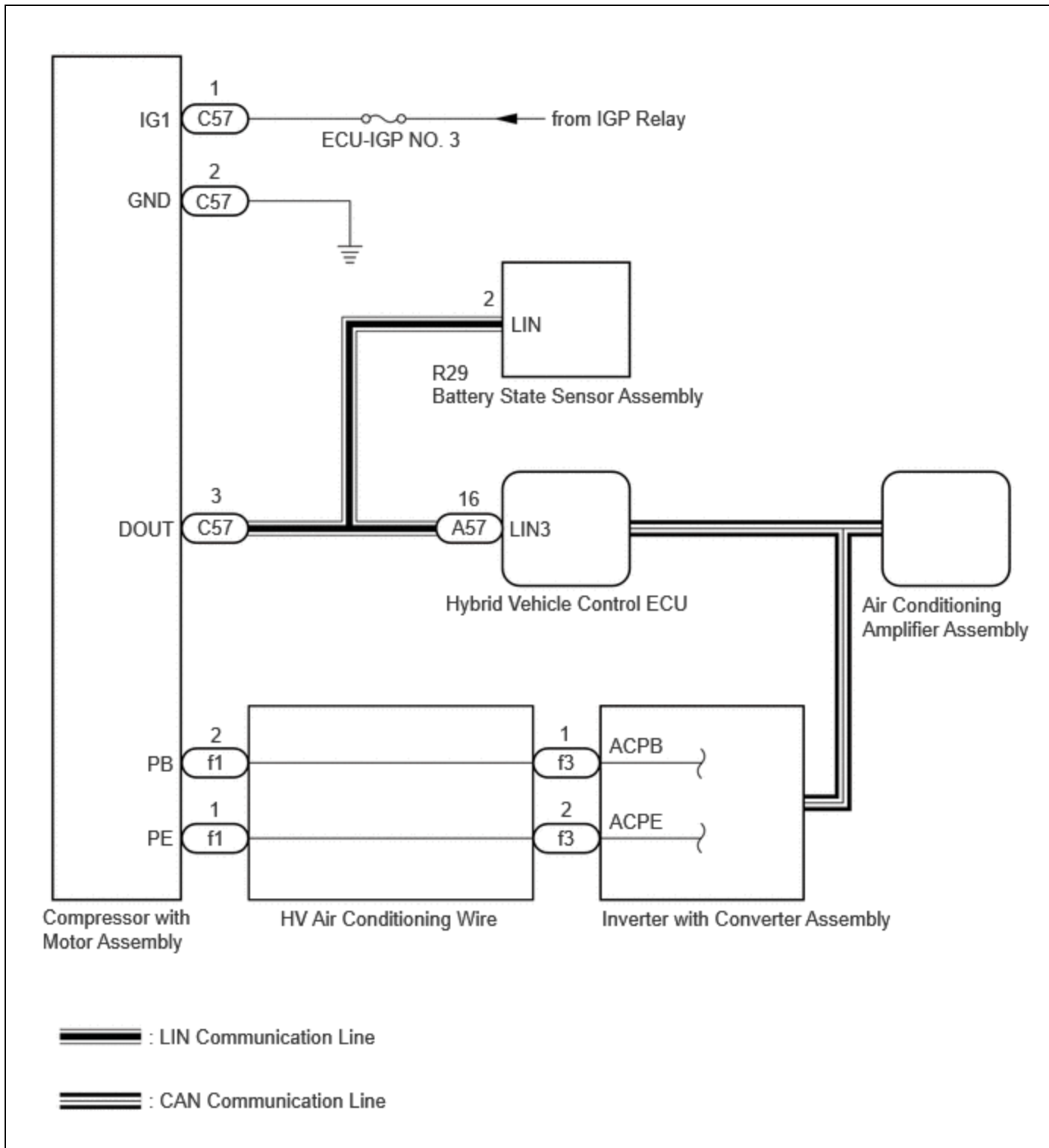
		VEHICLE CONDITION		
		PATTERN 1	PATTERN 2	PATTERN 3
Diagnosis Condition	Ignition switch ON	○	○	○
Malfunction	Open in A/C inverter high voltage power resource system	○	-	-
	Short in A/C inverter high voltage power resource system	-	○	-
	Voltage booster system damage or malfunction	-	-	○
Detection Time		-	-	-
Trip Count		1 trip	1 trip	1 trip

HINT:

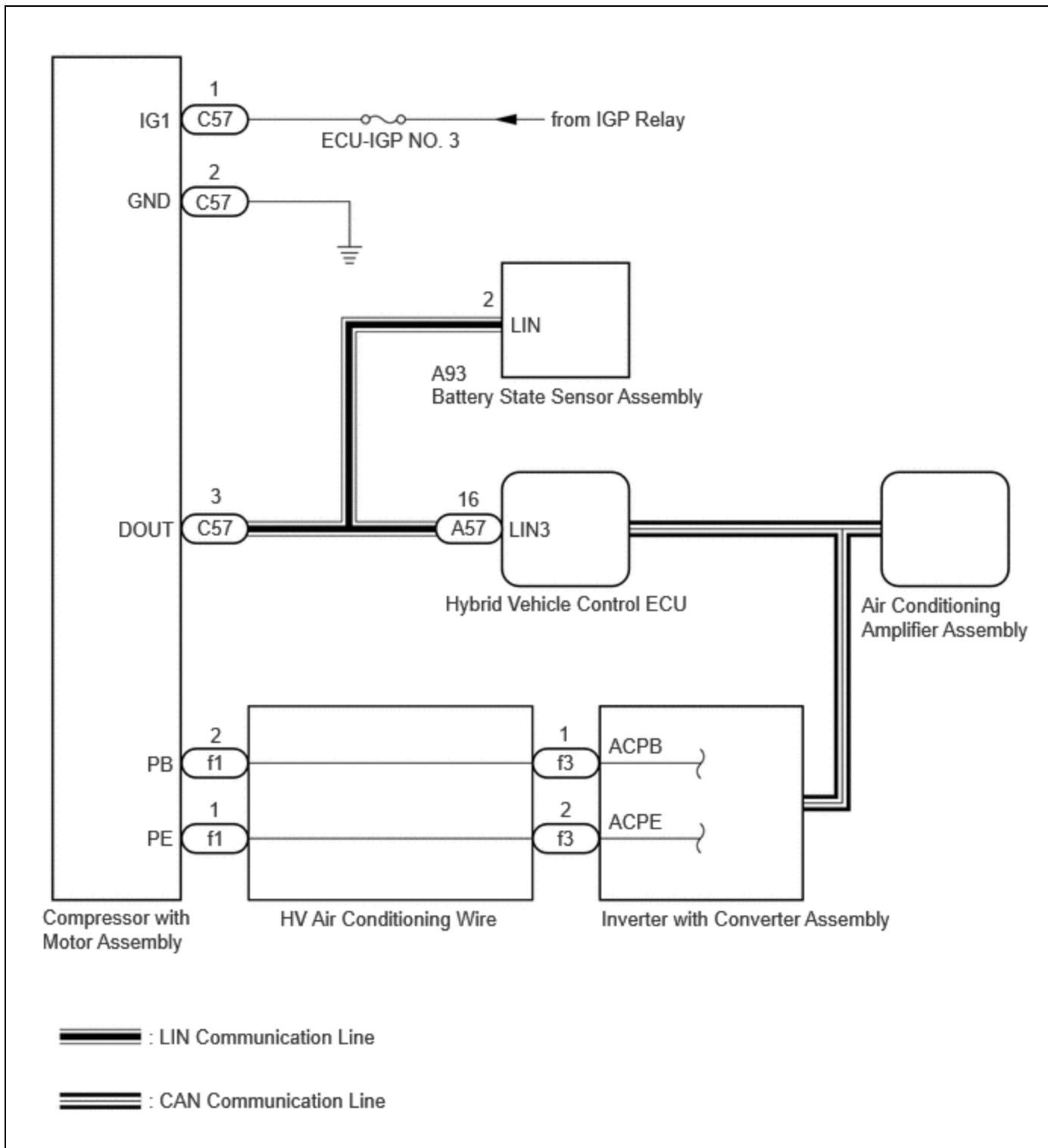
If the conditions of either of these patterns are detected, a DTC will be stored.

WIRING DIAGRAM

for **M20A-FXS:**



for **2ZR-FXE:**



CAUTION / NOTICE / HINT

CAUTION:

- Before inspecting the high-voltage system, take safety precautions such as wearing insulated gloves and removing the service plug grip to prevent electrical shocks. After removing the service plug grip, put it in your pocket to prevent other technicians from accidentally reconnecting it while you are working on the high-voltage system.

Click here [INFO](#)

- Do not touch the high-voltage connectors or terminals for 10 minutes after the service plug grip is removed.

for 2ZR-FXE: [Click here](#) [INFO](#)

for M20A-FXS: [Click here](#) [INFO](#)

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](#)
- Inspect the fuses for circuits related to this system before performing the following procedure.
- The hybrid control system and air conditioning system output DTCs separately. Perform troubleshooting for the hybrid control system first if DTCs for both systems are output simultaneously.
 - for 2ZR-FXE: [Click here](#) [INFO](#)
 - for M20A-FXS: [Click here](#) [INFO](#)
- The air conditioning system uses the CAN communication system. Inspect the communication functions by following How to Proceed with Troubleshooting. Troubleshoot the air conditioning system after confirming that the communication systems are functioning properly.

[Click here](#) [INFO](#)

PROCEDURE

1.	CHECK FOR DTC (HYBRID CONTROL SYSTEM)
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(a) Check for DTCs.

Powertrain > Hybrid Control > Trouble Codes

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

B ▶ GO TO HYBRID CONTROL SYSTEM

for 2ZR-FXE: [Click here](#) [INFO](#)

for M20A-FXS: [Click here](#) [INFO](#)



2. INSPECT HV AIR CONDITIONING WIRE

CAUTION:

Be sure to wear insulated gloves.

Pre-procedure1

(a) Disconnect the f1 compressor with motor assembly connector.

NOTICE:

Do not allow any foreign matter or water to enter the compressor with motor assembly.

(b) Remove the HV air conditioning wire from the inverter with converter assembly.

NOTICE:

Make sure that no foreign matter, water, etc., enters the inverter with converter assembly.

HINT:

Click here INFO

Procedure1

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

Standard Resistance:



[Click Location & Routing\(f1,f3\)](#)

[Click Connector\(f1\)](#)

[Click Connector\(f3\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
f1-2 (PB) - f3-1 (ACPB)	Always	Below 1 Ω	Ω

Post-procedure1

(d) None

NG ▶ GO TO STEP 4

OK



3. INSPECT HV AIR CONDITIONING WIRE

CAUTION:

Be sure to wear insulated gloves.

Pre-procedure1

(a) Disconnect the f1 compressor with motor assembly connector.

NOTICE:

Do not allow any foreign matter or water to enter the compressor with motor assembly.

(b) Remove the HV air conditioning wire from the inverter with converter assembly.

NOTICE:

Make sure that no foreign matter, water, etc., enters the inverter with converter assembly.

HINT:

Click here [INFO](#)

Procedure1

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

Standard Resistance:



[Click Location & Routing\(f1,f3\)](#)

[Click Connector\(f1\)](#)

[Click Connector\(f3\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
f1-1 (PE) - f3-2 (ACPE)	Always	Below 1 Ω	Ω

Post-procedure1

(d) None

OK **REPLACE COMPRESSOR WITH MOTOR ASSEMBLY**

for 2ZR-FXE: Click here [INFO](#)

for M20A-FXS: Click here [INFO](#)

NG **REPLACE HV AIR CONDITIONING WIRE**

4.	INSPECT HV AIR CONDITIONING WIRE
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CAUTION:

Be sure to wear insulated gloves.

Pre-procedure1

(a) Disconnect the f1 compressor with motor assembly connector.

NOTICE:

Do not allow any foreign matter or water to enter the compressor with motor assembly.

(b) Remove the HV air conditioning wire from the inverter with converter assembly.

NOTICE:

Make sure that no foreign matter, water, etc., enters the inverter with converter assembly.

HINT:

[Click here](#) 

Procedure1

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

Standard Resistance:



[Click Location & Routing\(f1\)](#)

[Click Connector\(f1\)](#)



TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
f1-2 (PB) - Other terminals and body ground	Always	10 kΩ or higher	kΩ

Post-procedure1


(d) None

OK  **REPLACE COMPRESSOR WITH MOTOR ASSEMBLY AND HV AIR CONDITIONING WIRE**

Compressor with motor assembly:

- for 2ZR-FXE: [Click here](#) 
- for M20A-FXS: [Click here](#) 

HV air conditioning wire:

- [Click here](#) 

NG  **REPLACE HV AIR CONDITIONING WIRE**

