Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002BEMB
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HEATING / AIR CONDITIONING: AIR CONDITIONING SYSTEM (for PHEV Model): B142A88; Servo Motor LIN Communication Bus off; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	**B142A88**	**Servo Motor LIN Communication Bus off**

DESCRIPTION

The air conditioning harness assembly connects the air conditioning amplifier assembly and the servo motors.

The air conditioning amplifier assembly supplies power and sends operation instructions to each servo motor through the air conditioning harness assembly.

Each servo motor sends damper position information to the air conditioning amplifier assembly.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	MEMORY	DTC OUTPUT FROM	PRIORITY	NOTE
B142A88	Servo Motor LIN Communication Bus off	Diagnosis Condition: Ignition switch ON Malfunction: Error or open in communication line between air conditioning amplifier assembly and each servo motor Detection Time: Continuously for 10 seconds or more	• Air conditioning harness assembly • No. 1 air conditioning radiator damper servo sub-assembly • Air conditioning amplifier assembly	Does not come on	Memorized	Air Conditioner	A	-

DTC Detection Condition Combination Table

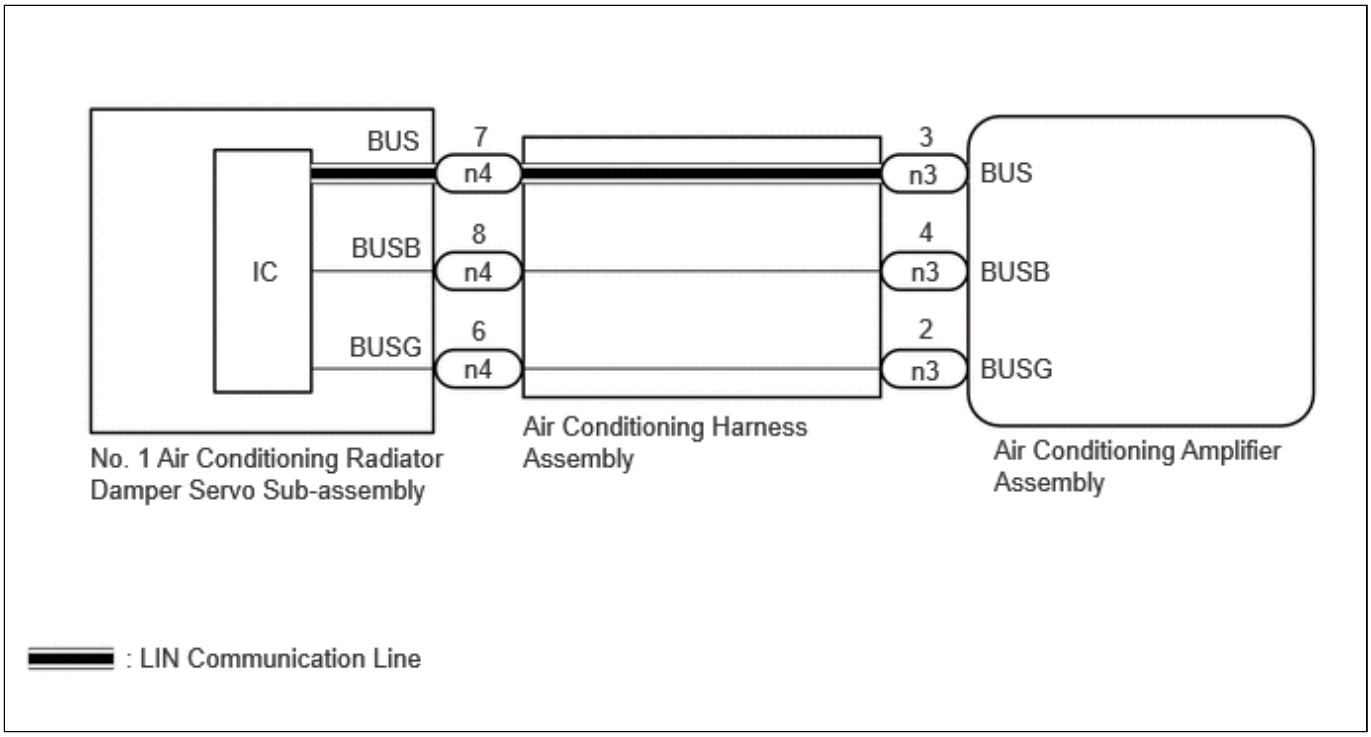
		VEHICLE CONDITION	
		PATTERN 1	PATTERN 2
Diagnosis Condition	Ignition switch ON	○	○

		VEHICLE CONDITION	
		PATTERN 1	PATTERN 2
Malfunction	Error in communication line between air conditioning amplifier assembly and each servo motor	○	-
	Open in communication line between air conditioning amplifier assembly and each servo motor	-	○
Detection Time		Continuously for 10 seconds or more	Continuously for 10 seconds or more
Trip Count		1 trip	1 trip

HINT:

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

WIRING DIAGRAM



PROCEDURE

1.	**PERFORM ACTIVE TEST USING GTS**

(a) Perform the Active Test according to the display on the GTS.

Body Electrical > Air Conditioner > Active Test

TESTER DISPLAY	MEASUREMENT ITEM	CONTROL RANGE	DIAGNOSTIC NOTE
Air Inlet Damper Control Servo Motor	This test activates the air inlet damper control servo motor. (No. 1 blower damper servo sub-assembly)	128: Min 384: Max	Operate with the ignition switch ON.
Front Air Mix Damper Control Servo Motor	This test activates the front air mix damper control servo motor. (No. 1 air conditioning radiator damper servo sub-assembly (air mix))	128: Min 384: Max	Operate with the ignition switch ON.
Front Air Outlet Damper Control Servo Motor	This test activates the front air outlet damper control servo motor. (No. 1 air conditioning radiator damper servo sub-assembly (mode))	128: Min 384: Max	Operate with the ignition switch ON.

Body Electrical > Air Conditioner > Active Test

TESTER DISPLAY
Air Inlet Damper Control Servo Motor

Body Electrical > Air Conditioner > Active Test

TESTER DISPLAY
Front Air Mix Damper Control Servo Motor

Body Electrical > Air Conditioner > Active Test

TESTER DISPLAY
Front Air Outlet Damper Control Servo Motor

RESULT	PROCEED TO
All of the damper servo motors do not operate	A
Any of the damper servo motors does not operate	B
All of the damper servo motors operate	C

B ▶ **REPLACE AIR CONDITIONING HARNESS ASSEMBLY**

C ▶ **REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY**

A

2.	CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY

NOTICE:

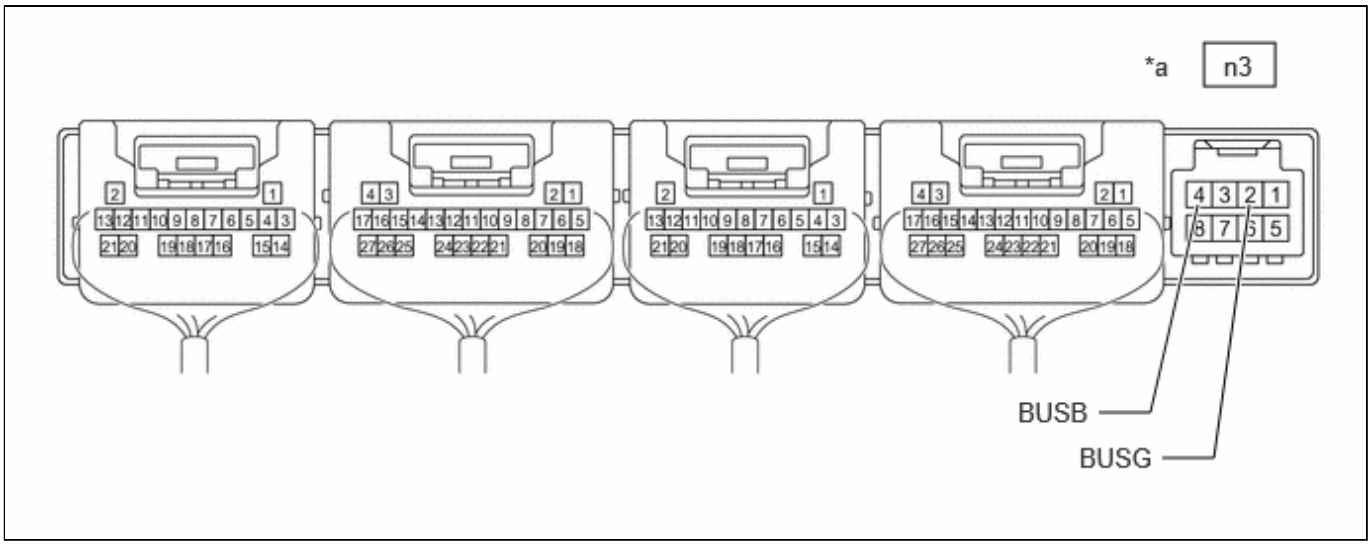
When inspecting the air conditioning amplifier assembly, be careful not to cause a short.

Pre-procedure1

(a) Disconnect the n3 air conditioning amplifier assembly connector.

Procedure1

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



*a	Component without harness connected (Air Conditioning Amplifier Assembly)	-	-

Standard Resistance:

EWD INFO

Click Location & Routing(n3)
Click Connector(n3)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
n3-2 (BUSG) - Body ground	Always	Below 1 Ω	Ω

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

Standard Voltage:

EWD INFO

Click Location & Routing(n3)

Click Connector(n3)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
n3-4 (BUSB) - n3-2 (BUSG)	Ignition switch off	11 to 14 V	V

Post-procedure1

(d) None

NG ▶ **REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY**

OK ▼

3.	CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY

NOTICE:

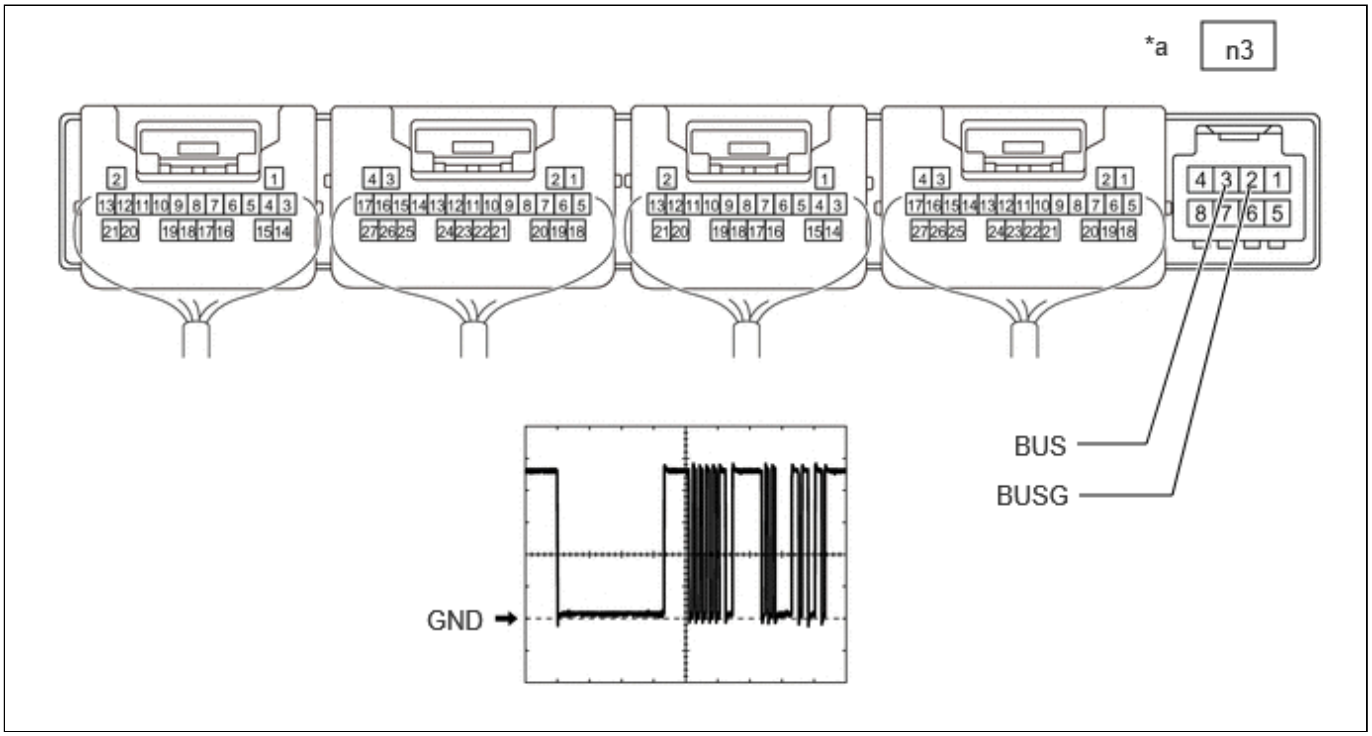
When inspecting the air conditioning amplifier assembly, be careful not to cause a short.

Pre-procedure1

(a) Disconnect the n3 air conditioning amplifier assembly connector.

Procedure1

(b) Using an oscilloscope, check the waveform.



*a	Component without harness connected (Air Conditioning Amplifier Assembly)	-	-

ITEM	CONTENT
Tester Connection	n3-3 (BUS) - n3-2 (BUSG)
Tool Setting	2 V/DIV., 20 µs/DIV.
Condition	Ignition switch ON

OK:

The waveform displays properly.

Post-procedure1

(c) None

OK ▶ **REPLACE AIR CONDITIONING HARNESS ASSEMBLY**

NG ▶ **REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY**