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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): Recirculated/Fresh Air Modes Switch without User Input; 2023 - 2024 MY Prius Prime [03/2023 -]		

Recirculated/Fresh Air Modes Switch without User Input

DESCRIPTION

If recirculation/fresh mode changes unintentionally and without permission, the following causes are possible.

SYMPTOM	FACTOR
• Recirculation/fresh mode changes without permission • Recirculation/fresh mode light blinks	• Change in ambient air temperature • Decrease in refrigerant pressure • Air conditioning pressure sensor circuit malfunction • Engine coolant temperature (high)

PROCEDURE

1.	**READ VALUE USING GTS**

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

Body Electrical > Air Conditioner > Data List

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Ambient Temperature Sensor	Ambient temp. sensor (thermistor assembly)	-327.68 to 327.67°C	Actual ambient temperature displayed	Ambient temp. sensor (thermistor assembly) circuit malfunction

Body Electrical > Air Conditioner > Data List

TESTER DISPLAY
Ambient Temperature Sensor

OK:
The value of the display does not change frequently.

NG ▶ **GO TO OTHER DIAGNOSIS PROCEDURE (Ambient Temperature Display System)**

OK

2.	**READ VALUE USING GTS (COOLANT TEMPERATURE)**

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

Powertrain > Engine > Data List

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Coolant Temperature	Engine coolant temperature	Min.: -40°C (-40°F) Max.: 140°C (284°F)	75 to 100°C (167 to 212°F): After warming up	This is the engine coolant temperature. **HINT:** • After warming up the engine, the engine coolant temperature will be 75 to 100°C (167 to 212°F). • After a long soak, the engine coolant temperature, intake air temperature and ambient air temperature will be approximately equal. • If the value is -40°C (-40°F), or higher than 135°C (275°F), the sensor circuit is open or shorted. • Check if the engine overheats if the value indicated is higher than 135°C (275°F).

Powertrain > Engine > Data List

TESTER DISPLAY
Coolant Temperature

OK:
The value of the display does not change frequently.

NG ▶ **GO TO COOLING SYSTEM**

OK

3.	**CHECK REFRIGERANT PRESSURE**

(a) Install a manifold gauge set.

Click here INFO

(b) Prepare the vehicle according to the table below.

Measurement Condition:

ITEM	CONDITION
Doors	Fully open
A/C Switch	On
Recirculation/fresh Control Switch	Recirculation
Set Temperature	MAX COLD
Blower Speed	HI
Air Conditioning Air Inlet Temperature	25 to 35°C (77 to 95°F)

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

Body Electrical > Air Conditioner > Data List

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Regulator Pressure Sensor	Air conditioning pressure sensor	-32768 to 32767 kPa(gauge) (-32.768 to 32.767 MPaG)	Actual refrigerant pressure displayed	• Refrigerant line (gas leak etc.) • Air conditioning pressure sensor circuit malfunction

Body Electrical > Air Conditioner > Data List

TESTER DISPLAY
Regulator Pressure Sensor

OK:

The values displayed in the Data List and on the manifold gauge match.

OK ▶ **INSPECT REFRIGERANT PRESSURE WITH MANIFOLD GAUGE SET**

NG ▶ **REPLACE AIR CONDITIONING PRESSURE SENSOR**