Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM10000000290ZW
Model Year Start: 2023	**Model:** Prius	**Prod Date Range:** [12/2022 -]
Title: HEATING / AIR CONDITIONING: AIR CONDITIONING SYSTEM (for HEV Model): P05347A; Refrigerant Gas Fluid Leak or Seal Failure; 2023 - 2024 MY Prius [12/2022 -]		

DTC	**P05347A**	**Refrigerant Gas Fluid Leak or Seal Failure**

DESCRIPTION

This DTC is stored if the amount of refrigerant in the air conditioning system is insufficient.

The air conditioning amplifier assembly receives the ambient temperature signal, refrigerant pressure signal, etc. from various sensors.

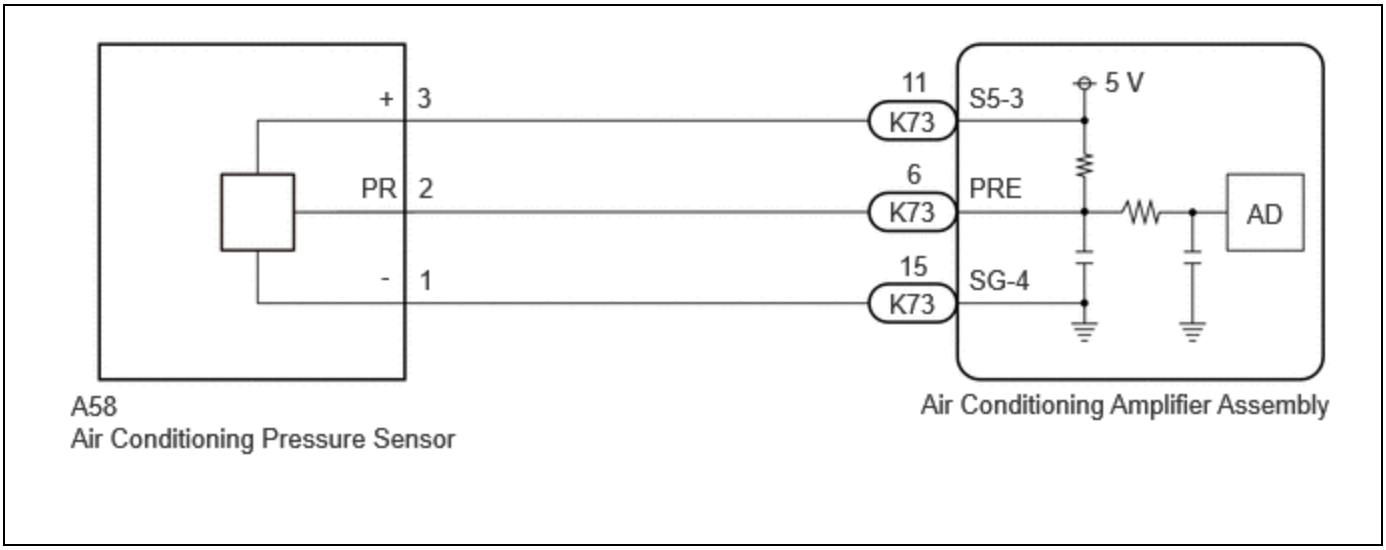
Based on these signals, the air conditioning amplifier assembly detects the amount of refrigerant.

The A/C switch indicator is turned off and the air conditioning system is stopped if the amount of refrigerant is insufficient.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MEMORY	DTC OUTPUT FROM	PRIORITY
P05347A	Refrigerant Gas Fluid Leak or Seal Failure	Diagnosis Condition: Normal operation refrigerant amount check conditions are met. The following condition is detected in the normal operation refrigerant shortage check Malfunction: Amount of refrigerant is judged to be insufficient by normal operation refrigerant amount check. Amount of refrigerant is insufficient Detection Time: Air conditioning system operating	• Refrigerant volume • Air conditioning pressure sensor • Harness or connector • Air conditioning amplifier assembly	Memorized	Air Conditioner	A

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MEMORY	DTC OUTPUT FROM	PRIORITY
		time: 15 minutes or more				

WIRING DIAGRAM



PROCEDURE

1.	**CHECK REFRIGERANT PRESSURE**

Pre-procedure1

(a) Install a manifold gauge set.

HINT:

for HFC-134a(R134a): Click here INFO

for HFO-1234yf(R1234yf): 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)

Procedure1

(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	-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

RESULT	PROCEED TO
Data List value and manifold gauge set value do not match	A
Data List value matches manifold gauge set value	B

Post-procedure1

(d) None

B **INSPECT REFRIGERANT PRESSURE WITH MANIFOLD GAUGE SET**

for HFC-134a(R134a): Click here INFO

for HFO-1234yf(R1234yf): Click here INFO

A

2.	**CHECK HARNESS AND CONNECTOR (AIR CONDITIONING PRESSURE SENSOR - POWER SOURCE)**

Pre-procedure1

(a) Disconnect the A58 air conditioning pressure sensor connector.

Procedure1

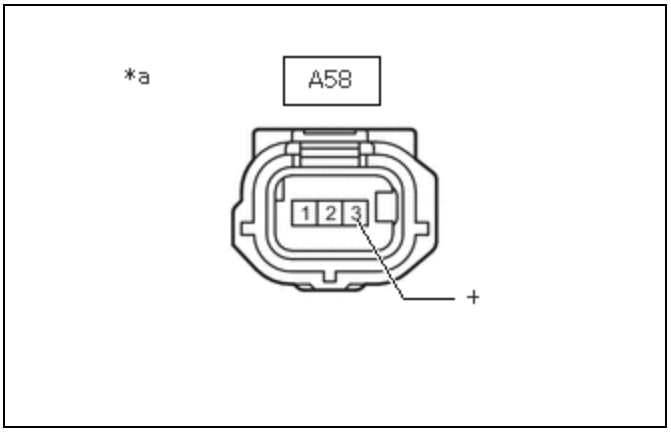
(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

EWD INFO

Click Location & Routing(A58)
Click Connector(A58)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A58-3 (+) - Body ground	Ignition switch ON	4.75 to 5.25 V	V



*a	Front view of wire harness connector (to Air Conditioner Pressure Sensor)

Result:

PROCEED TO
OK
NG

Post-procedure1

(c) None

NG ▶ **GO TO STEP 7**

OK ▼

3.	**CHECK HARNESS AND CONNECTOR (AIR CONDITIONING PRESSURE SENSOR - BODY GROUND)**

Pre-procedure1

(a) Disconnect the A58 air conditioning pressure sensor connector.

Procedure1

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

Standard Resistance:

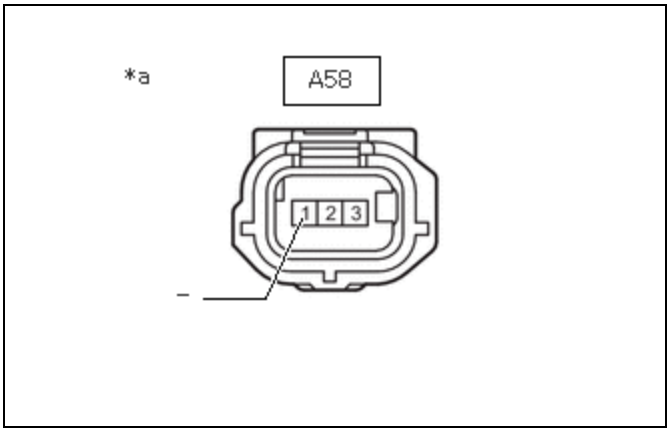
EWD INFO

Click Location & Routing(A58)
Click Connector(A58)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A58-1 (-) - Body ground	Always	Below 1 Ω	Ω

Result:

PROCEED TO
OK
NG



*a	Front view of wire harness connector (to Air Conditioner Pressure Sensor)

Post-procedure1

(c) None

NG ▶ **GO TO STEP 6**

OK ▼

4.	**CHECK HARNESS AND CONNECTOR (AIR CONDITIONING PRESSURE SENSOR - AIR CONDITIONING AMPLIFIER ASSEMBLY)**

Pre-procedure1

(a) Disconnect the A58 air conditioning pressure sensor connector.

(b) Disconnect the K73 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(A58,K73)
Click Connector(A58)
Click Connector(K73)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A58-2 (PR) - K73-6 (PRE)	Always	Below 1 Ω	Ω
A58-2 (PR) or K73-6 (PRE) - Other terminals and body ground	Always	10 kΩ or higher	kΩ

Post-procedure1

(d) None

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

OK ▼

5.	INSPECT AIR CONDITIONING AMPLIFIER ASSEMBLY (SENSOR SIGNAL CIRCUIT)

NOTICE:

- If refrigerant pressure on the high pressure side becomes extremely high, the fail-safe function stops compressor operation.
- It is necessary to measure the voltage for a certain amount of time (approximately 10 minutes) because the malfunction may recur after a while.

HINT:

When the outside air temperature is low (below -1.5°C (29.3°F)), the compressor stops due to operation of the ambient temp. sensor (thermistor assembly) and the evaporator temp. sensor (No. 1 cooler thermistor) to prevent the evaporator from freezing. In this case, perform the inspection in a warm indoor environment.

Pre-procedure1

(a) Connect the K73 air conditioning amplifier assembly connector.

(b) Connect the A58 air conditioning pressure sensor connector.

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

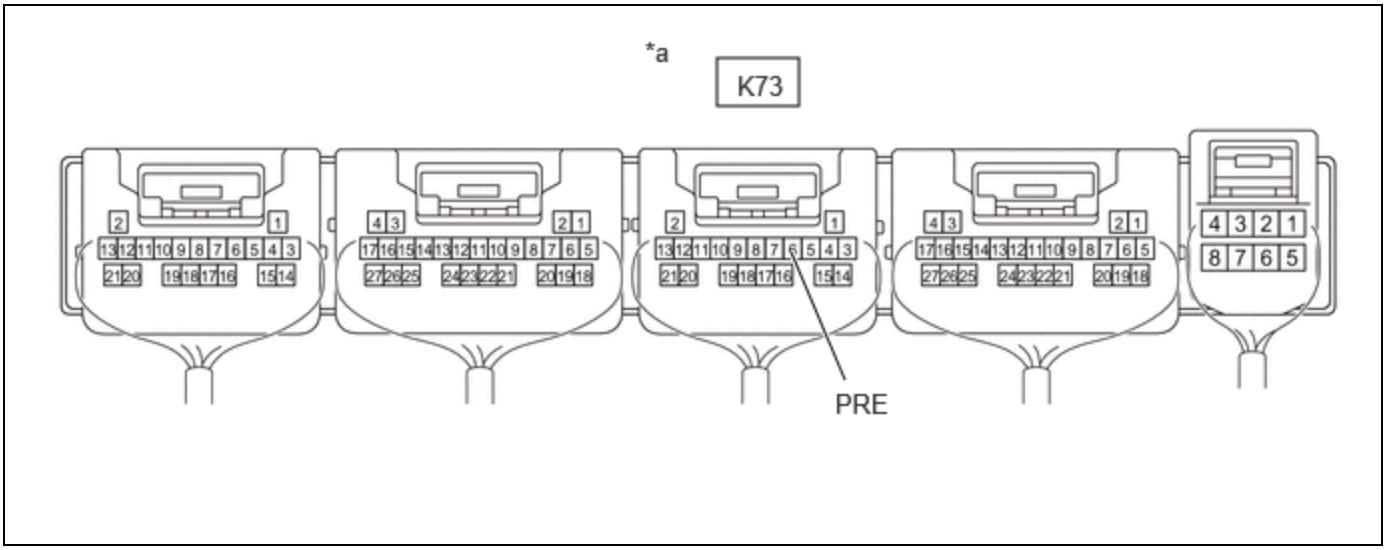
Measurement Condition:

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)

Procedure1

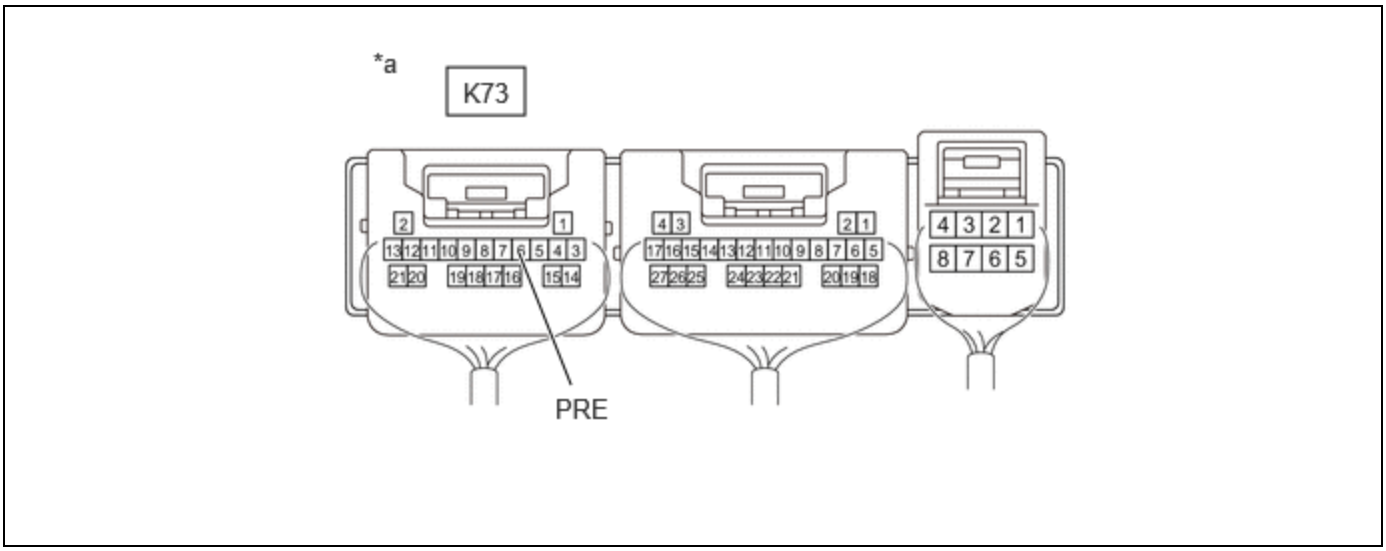
(d) Measure the voltage according to the value(s) in the table below.

for Type A:



*a	Component with harness connected (Air Conditioning Amplifier Assembly)	-	-

for Type B:



*a	Component with harness connected (Air Conditioning Amplifier Assembly)	-	-

Standard Voltage:

EWD INFO

Click Location & Routing(K73)
Click Connector(K73)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K73-6 (PRE) - Body ground	A/C Switch ON (When compressor with motor assembly running)	0.74 to 4.61 V

(e) 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
Regulator Pressure Sensor	Air conditioning pressure sensor	-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 voltage and value displayed in the Data List change.

RESULT	PROCEED TO
OK	A
NG (The voltage changes but the value displayed in the Data List does not change.)	B
NG (The voltage does not change.)	C

Post-procedure1

(f) None

A ▶ **REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY** INFO

B ▶ **REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY** INFO

C ▶ **REPLACE AIR CONDITIONING PRESSURE SENSOR** INFO

6.	**CHECK HARNESS AND CONNECTOR (AIR CONDITIONING PRESSURE SENSOR - AIR CONDITIONING AMPLIFIER ASSEMBLY)**

Pre-procedure1

(a) Disconnect the A58 air conditioning pressure sensor connector.

(b) Disconnect the K73 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(A58,K73)
Click Connector(A58)
Click Connector(K73)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A58-1 (-) - K73-15 (SG-4)	Always	Below 1 Ω	Ω
A58-1 (-) or K73-15 (SG-4) - Other terminals and body ground	Always	10 kΩ or higher	kΩ

Post-procedure1

(d) None

OK ▶ **REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY**
INFO

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

7.	**CHECK HARNESS AND CONNECTOR (AIR CONDITIONING PRESSURE SENSOR - AIR CONDITIONING AMPLIFIER ASSEMBLY)**

Pre-procedure1

(a) Disconnect the A58 air conditioning pressure sensor connector.

(b) Disconnect the K73 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(A58,K73)
Click Connector(A58)
Click Connector(K73)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A58-3 (+) - K73-11 (S5 -3)	Always	Below 1 Ω	Ω
A58-3 (+) or K73-11 (S5 -3) - Other terminals and body ground	Always	10 kΩ or higher	kΩ

Post-procedure1

(d) None

OK ▶ **REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY**

INFO

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