Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002AQOJ
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HEATING / AIR CONDITIONING: AIR CONDITIONING SYSTEM (for PHEV Model): B3A0114; A/C Evaporator Front Magnetic Valve Circuit Short to Ground or Open; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	**B3A0114**	**A/C Evaporator Front Magnetic Valve Circuit Short to Ground or Open**

DESCRIPTION

The evaporator front magnetic valve (No. 1 magnet valve assembly) is installed to the accumulator assembly.

The evaporator front magnetic valve (No. 1 magnet valve assembly) is open when the ignition switch is turned off.

When the ignition switch is turned to ON, the evaporator front magnetic valve (No. 1 magnet valve assembly) opens and closes according to heat pump air conditioning control.

When heat pump air conditioning control is performing heating/single battery cooling/gas injection heating, the evaporator front magnetic valve (No. 1 magnet valve assembly) is closed according to signals from the heat pump ECU assembly.

When heat pump air conditioning control is performing parallel dehumidification heating, the evaporator front magnetic valve (No. 1 magnet valve assembly) is open.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	MEMORY	DTC OUTPUT FROM	PRIORITY	NOTE
B3A0114	A/C Evaporator Front Magnetic Valve Circuit Short to Ground or Open	Diagnosis condition: Ignition switch ON Malfunction status: Open or short in evaporator front magnetic valve (No. 1 magnet valve assembly) circuit Detection time: Continuously for 4 seconds or more	• Evaporator front magnetic valve (No. 1 magnet valve assembly) • Magnet-clutch relay (A/C MG/V) • Heat pump ECU assembly • Harness or connector	Does not come on	Memorized	Air Conditioner	A	-

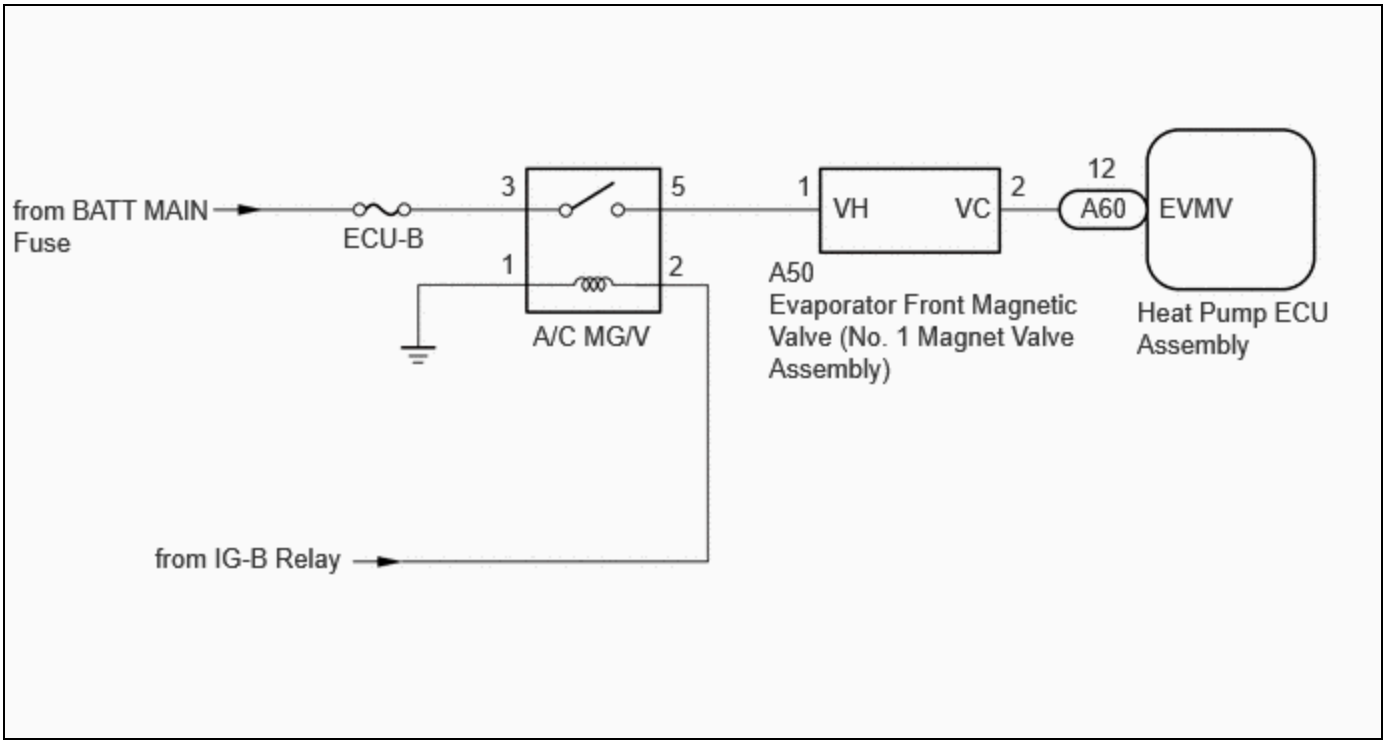
DTC Detection Condition Combination Table

		VEHICLE CONDITION	
		PATTERN 1	PATTERN 2
Diagnosis Condition	Ignition switch ON	○	○
Malfunction	Open in evaporator front magnetic valve (No. 1 magnet valve assembly) circuit	○	-
	Short in evaporator front magnetic valve (No. 1 magnet valve assembly) circuit	-	○
Detection Time		Continuously for 4 seconds or more	Continuously for 4 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



CAUTION / NOTICE / HINT

NOTICE:

Inspect the fuses for circuits related to this system before performing the following procedure.

PROCEDURE

1.	**INSPECT MAGNET-CLUTCH RELAY (A/C MG/V)**

Click here INFO

NG ▶ **REPLACE MAGNET-CLUTCH RELAY (A/C MG/V)**

OK ▼

2.	**CHECK HARNESS AND CONNECTOR (MAGNET-CLUTCH RELAY (A/C MG/V) - POWER SOURCE AND BODY GUROUND)**

Pre-procedure1

(a) Remove the magnet-clutch relay (A/C MG/V).

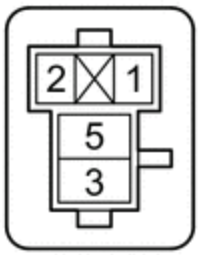
Procedure1

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

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
Relay terminal 3 - Body ground	Always	11 to 14 V	V
Relay terminal 2 - Body ground	Ignition switch ON	11 to 14 V	V

*a



*a	Front view of wire harness connector (to Magnet-clutch Relay (A/C MG/V))

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
Relay terminal 1 - Body ground	Always	Below 1 Ω	Ω

Post-procedure1

(d) None

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

OK ▼

3.	**INSPECT EVAPORATOR FRONT MAGNETIC VALVE (NO. 1 MAGNET VALVE ASSEMBLY)**

Click here INFO

NG ▶ **REPLACE EVAPORATOR FRONT MAGNETIC VALVE (NO. 1 MAGNET VALVE ASSEMBLY)**

OK ▼

4.	**CHECK HARNESS AND CONNECTOR (EVAPORATOR FRONT MAGNETIC VALVE (NO. 1 MAGNET VALVE ASSEMBLY) - HEAT PUMP ECU ASSEMBLY)**

Pre-procedure1

(a) Disconnect the A50 evaporator front magnetic valve (No. 1 magnet valve assembly) connector.

(b) Disconnect the A60 heat pump ECU assembly connector.

(c) Remove the magnet-clutch relay (A/C MG/V).

Procedure1

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

Standard Resistance:

EWD INFO

Click Location & Routing(A50,A60)
Click Connector(A50)
Click Connector(A60)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A50-2 (VC) - A60-12 (EVMV)	Always	Below 1 Ω	Ω
Relay terminal 5 - A50-1 (VH)	Always	Below 1 Ω	Ω
A50-2 (VC) or A60-12 (EVMV) - Body ground	Always	10 kΩ or higher	kΩ
Relay terminal 5 or A50-1 (VH) - Other terminals and body ground	Always	10 kΩ or higher	kΩ

Post-procedure1

(e) None

OK ▶ **REPLACE HEAT PUMP ECU ASSEMBLY**

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