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Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HYBRID / BATTERY CONTROL: MOTOR GENERATOR CONTROL SYSTEM (for PHEV Model): P0A6012,...,P0A631F; Drive Motor "A" Phase V Current(High Resolution) Circuit Short to Battery; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	**P0A6012**	**Drive Motor "A" Phase V Current(High Resolution) Circuit Short to Battery**

DTC	**P0A6014**	**Drive Motor "A" Phase V Current(High Resolution) Circuit Short to Ground or Open**

DTC	**P0A601C**	**Drive Motor "A" Phase V Current(High Resolution) Circuit Voltage Out of Range**

DTC	**P0A601F**	**Drive Motor "A" Phase V Current(High Resolution) Circuit Intermittent**

DTC	**P0A6312**	**Drive Motor "A" Phase W Current(High Resolution) Circuit Short to Battery**

DTC	**P0A6314**	**Drive Motor "A" Phase W Current(High Resolution) Circuit Short to Ground or Open**

DTC	**P0A631C**	**Drive Motor "A" Phase W Current(High Resolution) Circuit Voltage Out of Range**

DTC	**P0A631F**	**Drive Motor "A" Phase W Current(High Resolution) Circuit Intermittent**

DESCRIPTION

The motor generator control ECU (MG ECU), which is built into the inverter with converter assembly, monitors its internal operation and will store DTCs if it detects a malfunction.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P0A6012	Drive Motor "A" Phase V Current(High Resolution) Circuit Short to Battery	Motor phase V current sensor high resolution signal circuit (short to +B) (MIV)	• Inverter with converter assembly • Wire harness or connector	Does not come on	Master Warning: Comes on	Motor Generator	A	SAE Code: P0A62

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
		(1 trip detection logic)						
P0A6014	Drive Motor "A" Phase V Current(High Resolution) Circuit Short to Ground or Open	Motor phase V current sensor high resolution signal circuit (short to ground or open) (MIV) (1 trip detection logic)	• Inverter with converter assembly • Wire harness or connector	Does not come on	Master Warning: Comes on	Motor Generator	A	SAE Code: P0A61
P0A601C	Drive Motor "A" Phase V Current(High Resolution) Circuit Voltage Out of Range	Motor phase V current sensor high resolution signal circuit (out of range) (MIV) (1 trip detection logic)	• Inverter with converter assembly • Wire harness or connector	Does not come on	Master Warning: Comes on	Motor Generator	A	SAE Code: P1C32
P0A601F	Drive Motor "A" Phase V Current(High Resolution) Circuit Intermittent	Out of range detected in motor current sensor when DTC P0C7917, P0E5717, P0D3319, P1C5D19, P1C5F19 or P1C5E19 is stored. (1 trip detection logic)	• Inverter with converter assembly • Wire harness or connector	Does not come on	Master Warning: Does not come on	Motor Generator	A	SAE Code: P1C33
P0A6312	Drive Motor "A" Phase W Current(High Resolution) Circuit Short to Battery	Motor phase W current sensor high resolution signal circuit (short to +B) (MIW) (1 trip detection logic)	• Inverter with converter assembly • Wire harness or connector	Does not come on	Master Warning: Comes on	Motor Generator	A	SAE Code: P0A65

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P0A6314	Drive Motor "A" Phase W Current(High Resolution) Circuit Short to Ground or Open	Motor phase W current sensor high resolution signal circuit (short to ground or open) (MIW) (1 trip detection logic)	• Inverter with converter assembly • Wire harness or connector	Does not come on	Master Warning: Comes on	Motor Generator	A	SAE Code: P0A64
P0A631C	Drive Motor "A" Phase W Current(High Resolution) Circuit Voltage Out of Range	Motor phase W current sensor high resolution signal circuit (out of range) (MIW) (1 trip detection logic)	• Inverter with converter assembly • Wire harness or connector	Does not come on	Master Warning: Comes on	Motor Generator	A	SAE Code: P1C34
P0A631F	Drive Motor "A" Phase W Current(High Resolution) Circuit Intermittent	Out of range detected in motor current sensor when DTC P0C7917, P0E5717, P0D3319, P1C5D19, P1C5F19 or P1C5E19 is stored. (1 trip detection logic)	• Inverter with converter assembly • Wire harness or connector	Does not come on	Master Warning: Does not come on	Motor Generator	A	SAE Code: P1C35

CONFIRMATION DRIVING PATTERN

HINT:

After repair has been completed, clear the DTC and then check that the vehicle has returned to normal by performing the following All Readiness check procedure.

Click here INFO

1. Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).
2. Turn the ignition switch off and wait for 2 minutes or more.
3. Turn the ignition switch to ON and wait for 5 seconds or more.
4. Enter the following menus: Powertrain / Motor Generator / Utility / All Readiness.
5. Check the DTC judgment result.

HINT:

- If the judgment result shows NORMAL, the system is normal.
- If the judgment result shows ABNORMAL, the system has a malfunction.
- If the judgment result shows INCOMPLETE, perform driving pattern again.

CAUTION / NOTICE / HINT

CAUTION:

Refer to the precautions before inspecting high voltage circuit.

Click here INFO

NOTICE:

- After the ignition switch is turned off, there may be a waiting time before disconnecting the negative (-) auxiliary battery terminal.

  Click here INFO
- When disconnecting and reconnecting the auxiliary battery.

HINT:

When disconnecting and reconnecting the auxiliary battery, there is an automatic learning function that completes learning when the respective system is used.

Click here INFO

HINT:

P0A6012, P0A6014, P0A601C, P0A601F, P0A6312, P0A6314, P0A631C or P0A631F may be output as a result of the malfunctions indicated by the DTCs in table below.

a. The chart above is listed in inspection order of priority.
b. Check DTCs that are output at the same time by following the listed order. (The main cause of the malfunction can be determined without performing unnecessary inspections.)

MALFUNCTION CONTENT	RELEVANT DTC	
Power source circuit malfunction	P06B01C	Generator Control Module Position Sensor REF Power Source Circuit Voltage Out of Range
	P06D61C	Generator Control Module Offset Power Circuit Voltage Out of Range
System malfunction	P0A7873	Drive Motor "A" Inverter Actuator Stuck Closed

PROCEDURE

1.	**CHECK CONNECTOR CONNECTION CONDITION (INVERTER WITH CONVERTER ASSEMBLY CONNECTOR)**

Click here INFO

RESULT	PROCEED TO
OK	A
NG (The connector is not connected securely.)	B

RESULT	PROCEED TO
NG (The terminals are not making secure contact or are deformed, or water or foreign matter exists in the connector.)	C

A ▶ **REPLACE INVERTER WITH CONVERTER ASSEMBLY**

B ▶ **CONNECT SECURELY**

C ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**