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Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: HYBRID / BATTERY CONTROL: MOTOR GENERATOR CONTROL SYSTEM (for M20A-FXS): P0AF211,P0AF215; Drive Motor Inverter Temperature Sensor "B" Circuit Short to Ground; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	**P0AF211**	**Drive Motor Inverter Temperature Sensor "B" Circuit Short to Ground**

DTC	**P0AF215**	**Drive Motor Inverter Temperature Sensor "B" Circuit Short to Battery or Open**

DESCRIPTION

The motor generator control ECU (MG ECU), which is built into the inverter with converter assembly, detects the temperature of the rear motor inverter using the rear motor inverter temperature sensor. The inverter cooling system operates independently of the engine cooling system. The motor generator control ECU (MG ECU) uses signals from the rear motor inverter temperature sensor to check the effectiveness of the inverter cooling system. If necessary, the motor generator control ECU (MG ECU) will limit inverter output to help prevent inverter overheating. The motor generator control ECU (MG ECU) also detects malfunctions in the rear motor inverter temperature sensor and its wiring.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P0AF211	Drive Motor Inverter Temperature Sensor "B" Circuit Short to Ground	Short to ground detected in rear motor inverter temperature sensor signal circuit (1 trip detection logic)	Inverter with converter assembly	Comes on	Master Warning: Comes on	Motor Generator	A	SAE Code: P0AF4
P0AF215	Drive Motor Inverter Temperature Sensor "B" Circuit Short to Battery or Open	Open or short to +B detected in rear motor inverter temperature sensor signal circuit (1 trip detection logic)	Inverter with converter assembly	Comes on	Master Warning: Comes on	Motor Generator	A	SAE Code: P0AF5

MONITOR DESCRIPTION

If the motor generator control ECU detects a malfunction of the rear motor inverter temperature sensor, it will illuminate the MIL and store a DTC.

MONITOR STRATEGY

Related DTCs	P0AF4 (INF P0AF211): Drive Motor Inverter Temperature Sensor "B" P0AF5 (INF P0AF215): Drive Motor Inverter Temperature Sensor "B"
Required sensors/components	Rear motor inverter temperature sensor
Frequency of operation	Continuous
Duration	TMC's intellectual property
MIL operation	Immediately
Sequence of operation	None

TYPICAL ENABLING CONDITIONS

The monitor will run whenever the following DTCs are not stored	TMC's intellectual property
Other conditions belong to TMC's intellectual property	-

TYPICAL MALFUNCTION THRESHOLDS

TMC's intellectual property	-

COMPONENT OPERATING RANGE

Motor generator control ECU	DTC P0AF4 (INF P0AF211) is not detected DTC P0AF5 (INF P0AF215) is not detected

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
- When clearing the permanent DTCs, refer to the "CLEAR PERMANENT DTC" 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. [*1]

HINT:

[*1]: Normal judgment procedure.

The normal judgment procedure is used to complete DTC judgment and also used when clearing permanent DTCs.

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 the normal judgment procedure again.

PROCEDURE

1.	**REPLACE INVERTER WITH CONVERTER ASSEMBLY**

Click here INFO

NEXT **COMPLETED**