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|---|---|---|
| **Last Modified:** 12-04-2024 | 6.11:8.1.0 | **Doc ID:** RM100000002BI81 |
| **Model Year Start:** 2023 | **Model:** Prius Prime | **Prod Date Range:** [03/2023 - ] |
| **Title:** HYBRID / BATTERY CONTROL: MOTOR GENERATOR CONTROL SYSTEM (for PHEV Model): P2C8C11,P2C8C15,P2CA511,P2CA515; DC/DC Converter Temperature Sensor "D" Circuit Low Circuit Short to Ground; 2023 - 2024 MY Prius Prime [03/2023 - ] | | |

| | | |
|---|---|---|
| **DTC** | **P2C8C11** | **DC/DC Converter Temperature Sensor "D" Circuit Low Circuit Short to Ground** |

| | | |
|---|---|---|
| **DTC** | **P2C8C15** | **DC/DC Converter Temperature Sensor "D" Circuit High Circuit Short to Battery or Open** |

| | | |
|---|---|---|
| **DTC** | **P2CA511** | **DC/DC Converter Temperature Sensor "E" Circuit Low Circuit Short to Ground** |

| | | |
|---|---|---|
| **DTC** | **P2CA515** | **DC/DC Converter Temperature Sensor "E" Circuit High Circuit Short to Battery or Open** |

# DESCRIPTION

The motor generator control ECU (MG ECU) located in the inverter with converter assembly detects the temperature of the boost converter using the temperature sensor built into the boost converter. The motor generator control ECU (MG ECU) detects malfunctions in the boost converter temperature sensor and its wiring.

| DTC NO. | DETECTION ITEM | DTC DETECTION CONDITION | TROUBLE AREA | MIL | WARNING INDICATE | DTC OUTPUT FROM | PRIORITY | NOTE |
|---|---|---|---|---|---|---|---|---|
| P2C8C11 | DC/DC Converter Temperature Sensor "D" Circuit Low Circuit Short to Ground | Short to ground detected in boost converter temperature sensor (upper) signal circuit<br>(1 trip detection logic) | Inverter with converter assembly | Comes on | Master Warning:<br>Comes on | Motor Generator | A | SAE Code: P2C8E |
| P2C8C15 | DC/DC Converter Temperature Sensor "D" Circuit High Circuit Short to Battery or Open | Open or short to +B detected in boost converter temperature sensor (upper) signal circuit<br>(1 trip detection logic) | Inverter with converter assembly | Comes on | Master Warning:<br>Comes on | Motor Generator | A | SAE Code: P2C8F |

| DTC NO. | DETECTION ITEM | DTC DETECTION CONDITION | TROUBLE AREA | MIL | WARNING INDICATE | DTC OUTPUT FROM | PRIORITY | NOTE |
|---|---|---|---|---|---|---|---|---|
| P2CA511 | DC/DC Converter Temperature Sensor "E" Circuit Low Circuit Short to Ground | Short to ground detected in boost converter temperature sensor (lower) signal circuit<br>(1 trip detection logic) | Inverter with converter assembly | Comes on | Master Warning:<br>Comes on | Motor Generator | A | SAE Code: P2CA6 |
| P2CA515 | DC/DC Converter Temperature Sensor "E" Circuit High Circuit Short to Battery or Open | Open or short to +B detected in boost converter temperature sensor (lower) signal circuit<br>(1 trip detection logic) | Inverter with converter assembly | Comes on | Master Warning:<br>Comes on | Motor Generator | A | SAE Code: P2CA7 |

## MONITOR DESCRIPTION

If the motor generator control ECU detects a malfunction in the boost converter temperature sensor circuit, the motor generator control ECU will illuminate the MIL and store a DTC.

## MONITOR STRATEGY

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|---|---|
| Related DTCs | P2C8E (INF P2C8C11): DC/DC Converter Temperature Sensor "D" Range check<br>P2C8F (INF P2C8C15): DC/DC Converter Temperature Sensor "D" Range check<br>P2CA6 (INF P2CA511): DC/DC Converter Temperature Sensor "E" Range check<br>P2CA7 (INF P2CA515): DC/DC Converter Temperature Sensor "E" Range check |
| Required sensors/components | DC/DC converter temperature sensor |
| Frequency of operation | Continuous |
| Duration | TMC's intellectual property |
| MIL operation | Immediately |
| Sequence of operation | None |

## TYPICAL ENABLING CONDITIONS

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|---|---|
| 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

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|---|---|
| Motor generator control ECU | DTC P2C8E (INF P2C8C11) is not detected<br>DTC P2C8F (INF P2C8C15) is not detected<br>DTC P2CA6 (INF P2CA511) is not detected<br>DTC P2CA7 (INF P2CA515) 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