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| Model Year Start: 2023 | Model: Prius Prime | Prod Date Range: [03/2023 -] |
| Title: HYBRID / BATTERY CONTROL: PLUG-IN CHARGE CONTROL SYSTEM (for PHEV Model): P0EF716,P0EF717; Hybrid/EV Battery Charger Input Voltage Sensor "B" Circuit Low Circuit Voltage Below Threshold; 2023 - 2024 MY Prius Prime [03/2023 -] | | |

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|------------|----------------|---|
| DTC | P0EF716 | Hybrid/EV Battery Charger Input Voltage Sensor "B" Circuit Low Circuit Voltage Below Threshold |
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| DTC | P0EF717 | Hybrid/EV Battery Charger Input Voltage Sensor "B" Circuit High Circuit Voltage Above Threshold |
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DESCRIPTION

The charge control ECU built into the electric vehicle charger assembly monitors the input AC voltage via the VIN sensor. When a VIN sensor malfunction is detected, a DTC is stored. When this DTC is output, perform normal charging using an AC power source that is confirmed to be operating normally, and replace the electric vehicle charger assembly if the malfunction occurs again.

| DTC NO. | DETECTION ITEM | DTC DETECTION CONDITION | TROUBLE AREA | MIL | WARNING INDICATE | DTC OUTPUT FROM | PRIORITY | NOTE |
|---------|---|---|-----------------------------------|----------|-----------------------------|-----------------|----------|--------------------|
| P0EF716 | Hybrid/EV Battery Charger Input Voltage Sensor "B" Circuit Low Circuit Voltage Below Threshold | VIN sensor output voltage is below the threshold. (1 trip detection logic) | Electric vehicle charger assembly | Comes on | Master Warning: Comes on | Plug-in Control | A | SAE Code: P0EF9 |
| P0EF717 | Hybrid/EV Battery Charger Input Voltage Sensor "B" Circuit High Circuit Voltage Above Threshold | VIN sensor output voltage is above the threshold. (1 trip detection logic) | Electric vehicle charger assembly | Comes on | Master Warning: Comes on | Plug-in Control | A | SAE Code: P0EFA |

MONITOR DESCRIPTION

The charge control ECU built into the electric vehicle charger assembly monitors the input AC voltage by the VIN sensor. If it detects a VIN sensor malfunction, it illuminates the MIL and stores a DTC.

MONITOR STRATEGY

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| Related DTCs | P0EF9: On-Board Charger Input Voltage Sensor 2 P0EFA: On-Board Charger Input Voltage Sensor 2 |
|--------------|--|

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|-----------------------------|---|
| Required sensors/components | Electric vehicle charger assembly |
| Frequency of operation | Continuous |
| Duration | TMC's intellectual property |
| MIL operation | 1 charging cycle 1 discharging cycle |
| 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

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|-----------------------------|---|
| TMC's intellectual property | - |
|-----------------------------|---|

COMPONENT OPERATING RANGE

| | |
|-----------------------------------|--|
| Electric vehicle charger assembly | DTC P0EF716 is not detected DTC P0EF717 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

- Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).
- Enter the following menus: Powertrain / Hybrid Control / Data List.
- Check that "Hybrid/EV Battery SOC" shows 70% or less.
- Turn the ignition switch off and wait for 2 minutes or more.
- Connect the electric vehicle charger cable assembly, and plug-in charge the vehicle for 30 seconds or more. [*1]
- Disconnect the electric vehicle charger cable assembly and wait for 10 seconds or more. [*2]

HINT:

[*1] to [*2]: Normal judgment procedure.

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

- Enter the following menus: Powertrain / Plug-in Control / Utility / All Readiness.
- 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 or N/A, perform the normal judgment procedure again.

PROCEDURE

1. CHECK PLUG-IN CHARGE STATE

HINT:

Click here 

| RESULT | PROCEED TO |
|---|------------|
| DTCs are not output and plug-in charge has been completed | A |
| DTCs are output or plug-in charge cannot be completed | B |

A ► **END (NO MALFUNCTION IN VEHICLE)**

B ► **REPLACE ELECTRIC VEHICLE CHARGER ASSEMBLY**

