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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): P1C1E00; Charging Power High; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	**P1C1E00**	**Charging Power High**

DTC SUMMARY

MALFUNCTION DESCRIPTION

The plugin charge control ECU assembly monitors electric vehicle charger assembly internal operation. If plugin charge control ECU assembly detects a power output high malfunction in the electric vehicle charger assembly, it stores a DTC.

When these DTCs are stored, plug-in charging stops.

The cause of this malfunction may be one of the following:

Malfunction in the vehicle side

- Charging local bus communication malfunction (Plugin charge control ECU assembly - Electric vehicle charger assembly)
- Plugin charge control ECU assembly malfunction
- Electric vehicle charger assembly

Malfunction except vehicle side

- External AC power source malfunction
- Charging cable malfunction

DESCRIPTION

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P1C1E00	Charging Power High	With constant charging power request value for electric vehicle charger assembly, the charging power exceeds the requested amount of charging power. (1 trip detection logic)	• Plugin charge control ECU assembly • Electric vehicle charger assembly • Charging cable (Electric vehicle charger cable assembly) • CAN communication (charging local bus)	Comes on	Master Warning: Comes on	Plug-in Control	B	SAE Code: P0D5C

MONITOR DESCRIPTION

The plugin charge control ECU assembly monitors the operation status of the electric vehicle charger assembly, and stores a DTC and illuminates the MIL when it detects an electric vehicle charger assembly charging power overcurrent malfunction.

MONITOR STRATEGY

Related DTCs	P0D5C: Battery Charger Hybrid/EV Battery Output Power Performance
Required sensors/components	Electric vehicle charger assembly Plugin charge control ECU assembly
Frequency of operation	-
Duration	TMC's intellectual property
MIL operation	1 driving cycle
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

Plug-in charge control ECU	DTC P1C1E00 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. Connect the electric vehicle charger cable assembly, and plug-in charge the vehicle for 30 seconds or more. [*1]
4. 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.

5. Enter the following menus: Powertrain / Plug-in Control / Utility / All Readiness.
6. 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 DTC OUTPUT (PLUG-IN CONTROL)**

Pre-procedure1

(a) Enter the following menus.

Powertrain > Plug-in Control > Trouble Codes

Procedure1

(b) Check for DTCs.

RESULT	PROCEED TO
P1C1E00 only is output, or DTCs except the ones in the table below are also output	A
DTCs of plug-in charge control system in the tables below are output	B

MALFUNCTION CONTENT	RELEVANT DTC	
Microcomputer malfunction	P060B49	Plug-in Control Module A/D Processing Internal Electronic Failure
	P06881F	DC Quick Charging Control Module Power Relay Sense Circuit Intermittent
	P1C1F49	Hybrid/EV Battery Charger Control Module A/D Processing Internal Electronic Failure
Communication system malfunction	P0E5E87	Plug-in Control Module Processor from Hybrid/EV Battery Charger Control Module Processor Missing Message
	U01BB87	Lost Communication with Battery Charger Control Module "B" Missing Message
Sensor and actuator circuit malfunction	P0D3812	Hybrid/EV Battery Charger Input Current Sensor Circuit Circuit Short to Auxiliary Battery
	P0D3814	Hybrid/EV Battery Charger Input Current Sensor Circuit Circuit Short to Ground or Open
	P0D3828	Hybrid/EV Battery Charger Input Current Sensor Circuit Signal Bias Level Out of Range / Zero Adjustment Failure
	P0EF716	Hybrid/EV Battery Charger Input Voltage Sensor "B" Circuit Low Circuit Voltage Below Threshold
	P0EF717	Hybrid/EV Battery Charger Input Voltage Sensor "B" Circuit High Circuit Voltage Above Threshold

MALFUNCTION CONTENT	RELEVANT DTC	
	P0EF728	Hybrid/EV Battery Charger Input Voltage Sensor "B" Circuit Range/Performance Signal Bias Level Out of Range / Zero Adjustment Failure
	P1BD812	Hybrid/EV Battery Charger Input Current Sensor "B" Circuit Short to Auxiliary Battery
	P1BD814	Hybrid/EV Battery Charger Input Current Sensor "B" Circuit Short to Ground or Open
	P1C0016	Voltage Sensor after Boosting by PFC Boosting Circuit Circuit Voltage Below Threshold

HINT:

- P1C1E00 may be output as a result of the malfunction indicated by the DTCs above.

  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.)

Post-procedure1

(c) None

B ▶ **GO TO DTC CHART (PLUG-IN CHARGE CONTROL SYSTEM)**

A ▼

2.	**CHECK PLUG-IN AC CHARGE STATE**

HINT:

- Ask the customer if the electricity used for plug-in charging was supplied by a power company.
- If the electric vehicle charger cable assembly that was used to perform plug-in charging is available, perform a reproduction test using it and a known good external AC power source. This allows the electric vehicle charger cable assembly to be determined as ok or not when the vehicle is not malfunctioning.
- This DTC may be output due to rapid fluctuation of the AC input voltage.
- If the voltage fluctuates quickly, it is difficult to check the plug-in charge state by reading the freeze frame data or Data List item "AC Input Voltage for Monitoring" and "AC Input Voltage for Control".

(a) Perform plug-in charging using a known good external AC power source.

(1) Clear the DTCs.

Powertrain > Plug-in Control > Clear DTCs

(2) Connect the charging cable (electric vehicle charger cable assembly) and fully charge the traction battery assembly, then check if the DTC is output again.

NOTICE:

Perform plug-in charging using a known good external AC power source.

RESULT	PROCEED TO
DTC P1C1E00 is not output, and plug-in charge has been completed	A
DTC P1C1E00 is not output, but plug-in charge cannot be completed	B
DTC P1C1E00 is output again, and plug-in charge cannot be completed	C

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

B ▶ **GO TO CHARGING STOPS DURING AC CHARGING**

C ▶ **REPLACE ELECTRIC VEHICLE CHARGER ASSEMBLY**