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Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: BRAKE CONTROL / DYNAMIC CONTROL SYSTEMS: ELECTRONICALLY CONTROLLED BRAKE SYSTEM: P05DB12,P05DB14,P05DB1F; Brake Pedal Position Sensor "B" Circuit Short to Battery; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	**P05DB12**	**Brake Pedal Position Sensor "B" Circuit Short to Battery**

DTC	**P05DB14**	**Brake Pedal Position Sensor "B" Circuit Short to Ground or Open**

DTC	**P05DB1F**	**Brake Pedal Position Sensor "B" Circuit Intermittent**

DESCRIPTION

Refer to DTC C110000.

Click here INFO

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
P05DB12	Brake Pedal Position Sensor "B" Circuit Short to Battery	The sensor output voltage 2 (SKS2) is 4.7 V or more for 0.2 seconds or more.	• Wire harness and connector • Brake pedal stroke sensor assembly	Comes on	Brake/EPB	A	• SAE Code: P05DE • Output ECU: No. 2 skid control ECU (brake actuator assembly)
P05DB14	Brake Pedal Position Sensor "B" Circuit Short to Ground or Open	The sensor output voltage 2 (SKS2) is less than 0.3 V for 0.2 seconds or more.	• Wire harness and connector • Brake pedal stroke sensor assembly	Comes on	Brake/EPB	A	• SAE Code: P05DD • Output ECU: No. 2 skid control ECU (brake actuator assembly)

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
P05DB1F	Brake Pedal Position Sensor "B" Circuit Intermittent	The difference between the current value and previous value of the sensor output voltage 2 (SKS2) is 8.5% or more for 0.2 seconds or more.	• Wire harness and connector • Brake pedal stroke sensor assembly	Comes on	Brake/EPB	A	• SAE Code: P05DF • Output ECU: No. 2 skid control ECU (brake actuator assembly)

MONITOR DESCRIPTION

The No. 2 skid control ECU (brake actuator assembly) monitors the output value of the brake pedal stroke sensor assembly, and if the following conditions are detected, the No. 2 skid control ECU (brake actuator assembly) judges that the brake pedal stroke sensor assembly has a malfunction and illuminates the MIL and stores a DTC.

- The power supply voltage ratio of the brake pedal stroke sensor 2 is outside the normal range.

  HINT:

  The power supply voltage ratio is the ratio of the voltage of SKS2 and VSK2.

- The difference between the current power supply voltage ratio and the previous power supply voltage ratio of the brake pedal stroke sensor 2 exceeds a specific value (improbable sudden change repeats).

  HINT:

  The power supply voltage ratio is the ratio of the voltage of SKS2 and VSK2.

MONITOR STRATEGY

Related DTCs	P05DD: Brake pedal position sensor circuit open P05DE: Brake pedal position sensor circuit high P05DF: Brake pedal position sensor intermittent/erratic
Required Sensors/Components(Main)	No. 2 skid control ECU (brake actuator assembly)
Required Sensors/Components(Related)	No. 2 skid control ECU (brake actuator assembly)
Frequency of Operation	Continuous
Duration	0.198 seconds
MIL Operation	Immediately
Sequence of Operation	None

TYPICAL ENABLING CONDITIONS

All

Monitor runs whenever the following DTCs are not stored	C1103 (Case 1): Brake pedal position sensor voltage circuit open
Brake pedal position sensor 2 power supply	4.8 V or higher, and 5.2 V or less

TYPICAL MALFUNCTION THRESHOLDS

P05DD

Following condition is met	More than 0.018 seconds
Brake pedal position sensor2 power supply voltage ratio (SKS2/VSK2)	Less than 0.06

P05DE

Following condition is met	More than 0.018 seconds
Brake pedal position sensor2 power supply voltage ratio (SKS2/VSK2)	More than 0.94

P05DF

Absolute value of the change in (SKS2/VSK2) during 6millisec	More than 0.0848

COMPONENT OPERATING RANGE

P05DD and P05DE

All of the following conditions are met	A and B
A. Brake pedal position sensor2 power supply	4.8 V or higher, and 5.2 V or less
B. Following condition is met	More than 0.018 seconds
Brake pedal position sensor2 power supply voltage ratio (SKS2/VSK2)	0.06 or higher, and 0.94 or less

P05DF

Both of the following conditions are met	-
Brake pedal position sensor2 power supply	4.8 V or higher, and 5.2 V or less
Absolute value of the change in (SKS2/VSK2) during 6millisec	0.0848 or less

CONFIRMATION DRIVING PATTERN

NOTICE:

When performing the normal judgment procedure, make sure that the driver door is closed and is not opened at any time during the procedure.

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.
- When clearing the permanent DTCs, refer to the "CLEAR PERMANENT DTC" procedure.

1. Connect the GTS to the DLC3.
2. Turn the ignition switch to ON and turn the GTS on.
3. Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).

4. Turn the ignition switch off.
5. Turn the ignition switch to ON (READY) and turn the GTS on.
6. Wait for 1 second or more. [*]

HINT:

[*]: Normal judgment procedure.

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

7. Enter the following menus: Chassis / Brake/EPB* / Utility / All Readiness.

*: Electric Parking Brake System

8. 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.

WIRING DIAGRAM

Refer to DTC C110000.

Click here INFO

PROCEDURE

1.	**CHECK BRAKE PEDAL**

(a) Check that the brake pedal and the brake pedal stroke sensor assembly are properly installed and that the pedal can be depressed normally.

(b) Check and adjust the brake pedal height.

HINT:

Click here INFO

(c) Adjust the brake pedal stroke sensor assembly.

HINT:

Click here INFO

NEXT

2.	**CHECK HARNESS AND CONNECTOR (BRAKE ACTUATOR ASSEMBLY - BRAKE PEDAL STROKE SENSOR ASSEMBLY)**

Pre-procedure1

(a) Turn the ignition switch off.

Procedure1

(b) Make sure that there is no looseness at the locking part and the connecting part of the connectors.

OK:
The connector is securely connected.

Pre-procedure2

(c) Disconnect the A4 No. 2 skid control ECU (brake actuator assembly) connector.

(d) Disconnect the A5 brake pedal stroke sensor assembly connector.

Procedure2

(e) Check both the connector case and the terminals for deformation and corrosion.

OK:
No deformation or corrosion.

Procedure3

(f) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

EWD INFO

Click Location & Routing(A4,A5)
Click Connector(A4)
Click Connector(A5)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A4-10 (SKS2) - A5-1 (SKS2)	Always	Below 1 Ω	Ω
A4-10 (SKS2) or A5-1 (SKS2) - Body ground	Always	10 kΩ or higher	kΩ

Post-procedure1

(g) None

OK ▶ **REPLACE BRAKE PEDAL STROKE SENSOR ASSEMBLY**
INFO

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**