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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: C00631F,C05201F; Yaw Rate Sensor Circuit Intermittent; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	**C00631F**	**Yaw Rate Sensor Circuit Intermittent**

DTC	**C05201F**	**Multi-axis Acceleration Sensor Module "A" Circuit Intermittent**

DESCRIPTION

The airbag ECU assembly has a built-in yaw rate and acceleration sensor.

The No. 2 skid control ECU (brake actuator assembly) receives signals from the yaw rate and acceleration sensor (airbag ECU assembly) via CAN communication.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
C00631F	Yaw Rate Sensor Circuit Intermittent	When voltage at terminal +BS is 9.5 to 17.4 V, sensor invalid information received from yaw rate sensor is ON continuously for 10 seconds or more.	Yaw rate sensor (airbag ECU assembly)	Does not come on	Brake/EPB	A	Output ECU: No. 2 skid control ECU (brake actuator assembly)
C05201F	Multi-axis Acceleration Sensor Module "A" Circuit Intermittent	When voltage at terminal +BS is 9.5 to 17.4 V, sensor invalid information received from acceleration sensor is ON continuously for 10 seconds or more.	Acceleration sensor (airbag ECU assembly)	Comes on	Brake/EPB	A	• SAE Code: C051E • Output ECU: No. 2 skid control ECU (brake actuator assembly)

MONITOR DESCRIPTION

When an invalid GL1 or GL2 signal from the yaw rate and acceleration sensor (airbag ECU assembly) is received, the No. 2 skid control ECU (brake actuator assembly) judges that the yaw rate and acceleration sensor (airbag ECU assembly) is malfunctioning, the MIL is illuminated and a DTC is stored.

MONITOR STRATEGY

Related DTCs	C051E: Acceleration sensor intermittent/erratic
Required Sensors/Components(Main)	Yaw rate and acceleration sensor (airbag ECU assembly)
Required Sensors/Components(Related)	-
Frequency of Operation	Continuous
Duration	10 seconds
MIL Operation	Immediately
Sequence of Operation	None

TYPICAL ENABLING CONDITIONS

Monitor runs whenever the following DTCs are not stored	C051C (Case 1): Acceleration sensor range/Performance (acceleration sensor lock) C051C (Case 2): Acceleration sensor range/Performance (GL1, GL2 lock) C051C (Case 3): Acceleration sensor range/Performance (acceleration sensor output) C0520 (Case 1): Acceleration sensor (GL1, GL2) out of range C0520 (Case 2): Acceleration sensor GL2 out of range C0520 (Case 3): Acceleration sensor internal check C137D: Brake system voltage circuit high C14D7: Acceleration sensor voltage circuit open U0125: Lost communication with multi-axis acceleration sensor module
All of the following conditions are met	A, B, C, D, E, F and G
A. Communication status with yaw rate and acceleration sensor (airbag ECU assembly)	Valid
B. Following condition is met	More than 0.012 seconds
IGR voltage	3.5 V or higher
C. Following condition is met	More than 0.22 seconds
+BS voltage	17.4 V or less
D. Following condition is met	More than 0.22 seconds
+BS voltage	9.5 V or higher
E. YGS1 (CAN Data)	Off
F. IGR voltage	Higher than 10 V
G. IGP voltage	Higher than 10 V

TYPICAL MALFUNCTION THRESHOLDS

Either of the following conditions is met	-
GS4S (CAN Data)	On
GS5S (CAN Data)	On

COMPONENT OPERATING RANGE

All of the following conditions are met	-
Communication status with yaw rate and acceleration sensor (airbag ECU assembly)	Valid
GS4S (CAN Data)	Off
GS5S (CAN Data)	Off

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 10 seconds 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.

PROCEDURE

1.	**CLEAR DTC**

Pre-procedure1

(a) None

Procedure1

(b) Clear the DTCs.

Chassis > Brake/EPB > Clear DTCs

Post-procedure1

(c) Turn the ignition switch off.

NEXT

2.	**RECONFIRM DTC**

Pre-procedure1

(a) Based on the Freeze Frame Data and interview with the customer, attempt to reproduce the conditions when the malfunction occurred.

Procedure1

(b) Check if the same DTC is output.

Chassis > Brake/EPB > Trouble Codes

RESULT	PROCEED TO
C00631F and C05201F are not output	A
C00631F or C05201F is output	B

Post-procedure1

(c) None

A **USE SIMULATION METHOD TO CHECK**

B **REPLACE AIRBAG ECU ASSEMBLY** INFO