Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM10000000290A2
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: THEFT DETERRENT / KEYLESS ENTRY: SMART KEY SYSTEM (for Start Function): P057162; Brake Switch "A" Signal Compare Failure; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	**P057162**	**Brake Switch "A" Signal Compare Failure**

DESCRIPTION

This DTC is stored when the brake signal sent via direct line and the brake signal sent via CAN communication do not match.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	DTC OUTPUT FROM	PRIORITY	NOTE
P057162	Brake Switch "A" Signal Compare Failure	The brake signal sent via direct line and the brake signal sent via CAN communication do not match. (1-trip detection logic*)	• Electronically controlled brake system • Stop light switch assembly • Certification ECU (smart key ECU assembly) • Wire harness or connector	Power Source Control	A	**DTC Output Confirmation Operation:** Connect the cable to the negative (-) auxiliary battery terminal, release the brake pedal and wait at least 20 seconds. Then depress the brake pedal for 20 seconds or more.

*: Only detected while a malfunction is present and the ignition switch is ON.

Vehicle Condition and Fail-safe Function when Malfunction Detected

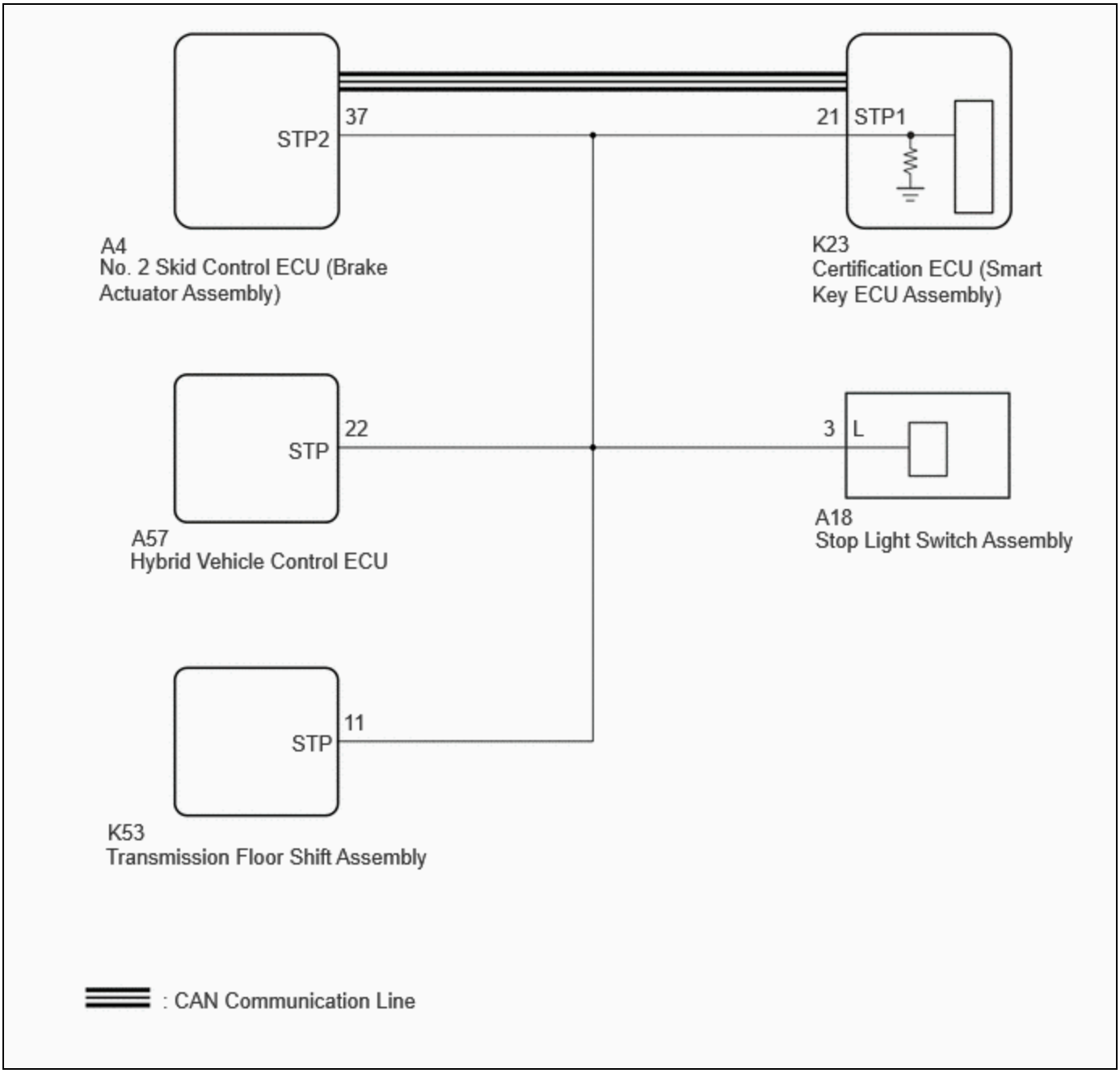
VEHICLE CONDITION WHEN MALFUNCTION DETECTED	FAIL-SAFE FUNCTION WHEN MALFUNCTION DETECTED
• If there is a malfunction when the brake signal sent via direct line is on, the hybrid control system can be started by pressing the power switch with the brake pedal released. • If there is a malfunction when the brake signal sent via direct line is off, the hybrid control system cannot be started by pressing the power switch with the brake pedal depressed. ◦ With the electrical key transmitter sub-assembly in the cabin, even if a hybrid control system start operation is performed, the hybrid control	-

VEHICLE CONDITION WHEN MALFUNCTION DETECTED	FAIL-SAFE FUNCTION WHEN MALFUNCTION DETECTED
system does not start (the key indicator display is not displayed on the multi-information display). However, the hybrid control system can be started by turning the ignition switch to ACC and then pressing and holding it.	

Related Data List and Active Test Items

DTC NO.	DATA LIST AND ACTIVE TEST
P057162	**Power Source Control** • Stop Light Switch

WIRING DIAGRAM



CAUTION / NOTICE / HINT

NOTICE:

- When using the GTS with the ignition switch off, perform lock and unlock operations using the door control switch of the multiplex network master switch assembly at intervals of 1.5 seconds or less until communication between the GTS and the vehicle begins, and then select the vehicle model manually.

  Then select Model Code "KEY REGIST" under manual mode and enter the following menus: Body Electrical / Smart Key(CAN). While using the GTS, periodically perform lock and unlock operations using the door control switch of the multiplex network master switch assembly at intervals of 1.5 seconds or less to maintain communication between the GTS and the vehicle.
- The smart key system (for Start Function) uses the LIN communication system and CAN communication system. Inspect the communication function by following How to Proceed with Troubleshooting. Troubleshoot the smart key system (for Start Function) after confirming that the communication systems are functioning properly.

  Click here INFO

- When disconnecting the cable from the negative (-) auxiliary battery terminal, some systems need to be initialized after the cable is reconnected.
- Before replacing the certification ECU (smart key ECU assembly), refer to Registration.

Click here INFO

- After repair, confirm that no DTCs are output by performing "DTC Output Confirmation Operation".

PROCEDURE

1.	**READ VALUE USING GTS (STOP LIGHT SWITCH)**

(a) Read the Data List according to the display on the GTS.

Body Electrical > Power Source Control > Data List

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Stop Light Switch	State of brake pedal	OFF or ON	OFF: Brake pedal released	• Use this item to determine if the stop light switch assembly is malfunctioning. • The hybrid control system cannot be started when this item is OFF. • If the stop light switch assembly is malfunctioning, the hybrid control system can be started by pressing and holding the power switch for a certain period of time.

Body Electrical > Power Source Control > Data List

TESTER DISPLAY
Stop Light Switch

OK:

The GTS display changes correctly in response to the brake pedal operation.

RESULT	PROCEED TO
The value of Stop Light Switch is OFF	A
The value of Stop Light Switch is not OFF	B

B ▶ **GO TO STEP 3**

A ▼

2.	**READ VALUE USING GTS (STOP LIGHT SWITCH)**

(a) Read the Data List according to the display on the GTS.

Body Electrical > Power Source Control > Data List

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Stop Light Switch	State of brake pedal	OFF or ON	ON: Brake pedal depressed	• Use this item to determine if the stop light switch assembly is malfunctioning. • The hybrid control system cannot be started when this item is OFF. • If the stop light switch assembly is malfunctioning, the hybrid control system can be started by pressing and holding the power switch for a certain period of time.

Body Electrical > Power Source Control > Data List

TESTER DISPLAY
Stop Light Switch

OK:
The GTS display changes correctly in response to the brake pedal operation.

RESULT	PROCEED TO
The value of Stop Light Switch is ON	A
The value of Stop Light Switch is not ON	B

A ▶ **GO TO ELECTRONICALLY CONTROLLED BRAKE SYSTEM (HOW TO PROCEED WITH TROUBLESHOOTING)** INFO

B ▼

3.	**CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) - STOP LIGHT SWITCH ASSEMBLY)**

Pre-procedure1

(a) Disconnect the K23 certification ECU (smart key ECU assembly) connector.

(b) Disconnect the A18 stop light switch assembly connector.

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

(d) Disconnect the A57 hybrid vehicle control ECU connector.

(e) Disconnect the K53 transmission floor shift assembly connector.

Procedure1

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

Standard Resistance:

EWD INFO

Click Location & Routing(K23,A18)
Click Connector(K23)
Click Connector(A18)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K23-21 (STP1) - A18-3 (L)	Always	Below 1 Ω	Ω

Post-procedure1

(g) Connect the K23 certification ECU (smart key ECU assembly) connector.

(h) Connect the A18 stop light switch assembly connector.

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

OK ▼

4.	**CHECK CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)**

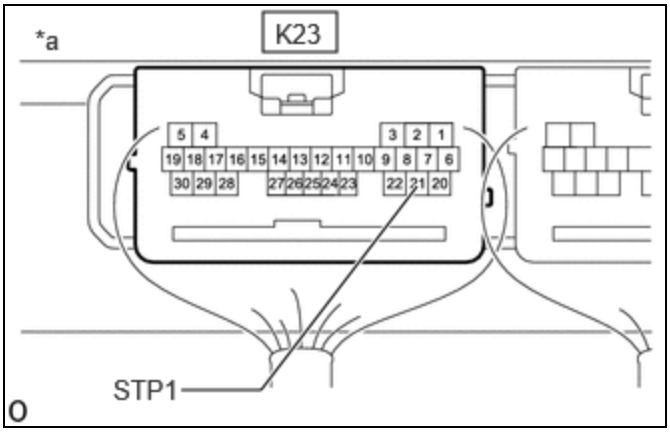
(a) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

EWD INFO

Click Location & Routing(K23)
Click Connector(K23)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K23-21 (STP1) - Body ground	Brake pedal released	1 V or less	V



*a	Component with harness connected

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K23-21 (STP1) - Body ground	Brake pedal depressed	9 V or higher	V

	(Certification ECU (Smart Key ECU Assembly))

Result:

PROCEED TO
OK
NG

OK ▶ **REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)** INFO

NG ▶ **REPLACE STOP LIGHT SWITCH ASSEMBLY**