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Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: BRAKE CONTROL / DYNAMIC CONTROL SYSTEMS: ELECTRONICALLY CONTROLLED BRAKE SYSTEM: U010087,...,U115987; Lost Communication With ECM/PCM "A" Missing Message; 2023 - 2024 MY Prius Prius Prime [03/2023 -]		

DTC	**U010087**	**Lost Communication With ECM/PCM "A" Missing Message**

DTC	**U010387**	**Lost Communication with Gear Shift Control Module "A" Missing Message**

DTC	**U011087**	**Lost Communication with Drive Motor Control Module "A" Missing Message**

DTC	**U012587**	**Lost Communication with Multi-axis Acceleration Sensor Module Missing Message**

DTC	**U012687**	**Lost Communication with Steering Angle Sensor Module Missing Message**

DTC	**U013187**	**Lost Communication with Power Steering Control Module Missing Message**

DTC	**U014087**	**Lost Communication with Body Control Module Missing Message**

DTC	**U015187**	**Lost Communication with Restraints Control Module Missing Message**

DTC	**U025E87**	**Lost Communication with Electronic Brake Booster Control Module "A" Missing Message**

DTC	**U029387**	**Lost Communication with Hybrid/EV Powertrain Control Module Missing Message**

DTC	**U110787**	**Lost Communication with Power Management Module Missing Message**

DTC	**U111A87**	**Lost Communication with ECM/PCM "A" (ch2) Missing Message**

DTC	**U115087**	**Lost Communication with Hybrid Powertrain Control Module (ch2) Missing Message**

DTC	**U115987**	**Lost Communication with Electronic Brake Booster Control Module "A" (ch3) Missing Message**

DESCRIPTION

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

The No. 2 skid control ECU (brake actuator assembly) communicates with the following ECUs and sensors via CAN communication.

- Steering angle sensor
- Power steering ECU assembly
- Yaw rate and acceleration sensor (airbag ECU assembly)
- Certification ECU (smart key ECU assembly)
- Inverter with converter assembly
- No. 1 skid control ECU (brake booster with master cylinder assembly)
- Main body ECU (multiplex network body ECU)
- Shift control ECU (transmission floor shift assembly)
- Hybrid vehicle control ECU
- ECM

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
U010087	Lost Communication With ECM/PCM "A" Missing Message	When terminal IG2 voltage is 10 V or more, data cannot be received from the ECM for 2 seconds or more.	• CAN communication line • ECM • No. 2 skid control ECU (brake actuator assembly)	Comes on	Brake/EPB	B	• SAE Code: U0100 • Output ECU: No. 2 skid control ECU (brake actuator assembly)
U010387	Lost Communication with Gear Shift Control Module "A" Missing Message	When the voltage at terminal IG1 is 10 V or more, data from the shift control ECU (transmission floor shift assembly) cannot be received for 5 seconds or more.	• CAN communication line • Shift control ECU (transmission floor shift assembly) • No. 2 skid control ECU (brake actuator assembly)	Does not come on	Brake/EPB	B	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
U011087	Lost Communication with Drive Motor Control Module "A" Missing Message	When terminal IG1 voltage is 10 V or more, data cannot be received from the inverter with converter assembly for 2 seconds or more.	• CAN communication line • Inverter with converter assembly • No. 2 skid control ECU (brake actuator assembly)	Comes on	Brake/EPB	B	• SAE Code: U0110 • Output ECU: No. 2 skid control ECU (brake actuator assembly)
U012587	Lost Communication with Multi-axis Acceleration Sensor Module Missing Message	When the +BS terminal voltage is between 9.5 and 17.4 V, data from the acceleration sensor cannot be received for 1 second or more.	• CAN communication line • Yaw rate and acceleration sensor (airbag ECU assembly) • No. 2 skid control ECU (brake actuator assembly)	Comes on	Brake/EPB	B	• SAE Code: U0125 • Output ECU: No. 2 skid control ECU (brake actuator assembly)
U012687	Lost Communication with Steering Angle Sensor Module Missing Message	When the +BS terminal voltage is between 9.5 and 17.4 V, data from the steering angle sensor cannot be received for 1 second or more.	• CAN communication line • Steering angle sensor • No. 2 skid control ECU (brake actuator assembly)	Does not come on	Brake/EPB	B	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
U013187	Lost Communication with Power Steering Control Module Missing Message	When the voltage at terminal +BS is 9.5 to 17.4 V, data from the power steering ECU assembly cannot be received for 1 second or more.	• CAN communication line • Power steering ECU assembly • No. 2 skid control ECU (brake actuator assembly)	Does not come on	Brake/EPB	B	Output ECU: No. 2 skid control ECU (brake actuator assembly)
U014087	Lost Communication with Body Control Module Missing Message	When the voltage at terminal IG1 is 10 V or more, data from the main body ECU (multiplex network body ECU) cannot be received for 2 seconds or more.	• CAN communication line • Main body ECU (multiplex network body ECU) • No. 2 skid control ECU (brake actuator assembly)	Does not come on	Brake/EPB	B	Output ECU: No. 2 skid control ECU (brake actuator assembly)
U015187	Lost Communication with Restraints Control Module Missing Message	When the +BS terminal voltage is between 9.5 and 17.4 V and the vehicle speed exceeds 7 km/h (4 mph), data cannot be received from the airbag ECU assembly for 5 seconds or more.	• CAN communication line • Airbag ECU assembly • No. 2 skid control ECU (brake actuator assembly)	Does not come on	Brake/EPB	B	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
U025E87	Lost Communication with Electronic Brake Booster Control Module "A" Missing Message	When the voltage at terminal IG1 is 10 V or more, communication between the No. 1 skid control ECU (brake booster with master cylinder assembly) and No. 2 skid control ECU (brake actuator assembly) is not possible for 2 seconds or more.	• CAN communication line • No. 1 skid control ECU (brake booster with master cylinder assembly) • No. 2 skid control ECU (brake actuator assembly)	Comes on	Brake/EPB	B	• SAE Code: U025E • Output ECU: No. 2 skid control ECU (brake actuator assembly)
U029387	Lost Communication with Hybrid/EV Powertrain Control Module Missing Message	When the voltage at terminal IG2 is 10 V or more, data from the hybrid vehicle control ECU cannot be received for 2 seconds or more.	• CAN communication line • Hybrid vehicle control ECU • No. 2 skid control ECU (brake actuator assembly)	Comes on	Brake/EPB	B	• SAE Code: U0293 • Output ECU: No. 2 skid control ECU (brake actuator assembly)
U110787	Lost Communication with Power Management Module Missing Message	When the voltage at terminal IG1 is 10 V or more, the certification ECU (smart key ECU assembly) cannot communicate for 3 seconds or more.	• CAN communication line • Certification ECU (smart key ECU assembly) • No. 2 skid control ECU (brake actuator assembly)	Comes on	Brake/EPB	B	• SAE Code: U1107 • 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
U111A87	Lost Communication with ECM/PCM "A" (ch2) Missing Message	When terminal IG2 voltage is 10 V or more, data cannot be received from the ECM for 2 seconds or more.	• CAN communication line • ECM • No. 2 skid control ECU (brake actuator assembly)	Comes on	Brake/EPB	B	• SAE Code: U111A • Output ECU: No. 2 skid control ECU (brake actuator assembly)
U115087	Lost Communication with Hybrid Powertrain Control Module (ch2) Missing Message	When the voltage at terminal IG2 is 10 V or more, data from the hybrid vehicle control ECU cannot be received for 2 seconds or more.	• CAN communication line • Hybrid vehicle control ECU • No. 2 skid control ECU (brake actuator assembly)	Comes on	Brake/EPB	B	• SAE Code: U1150 • Output ECU: No. 2 skid control ECU (brake actuator assembly)
U115987	Lost Communication with Electronic Brake Booster Control Module "A" (ch3) Missing Message	When the voltage at terminal IG1 is 10 V or more, communication between the No. 1 skid control ECU (brake booster with master cylinder assembly) and No. 2 skid control ECU (brake actuator assembly) is not possible for 2 seconds or more.	• CAN communication line • No. 1 skid control ECU (brake booster with master cylinder assembly) • No. 2 skid control ECU (brake actuator assembly)	Does not come on	Brake/EPB	B	Output ECU: No. 2 skid control ECU (brake actuator assembly)

MONITOR DESCRIPTION

U0100, U0110, U0125, U025E, U0293, U1107, U111A and U1150:

When a communication error with any ECU or sensor continues for a certain amount of time or communication is unstable (communication is invalid for a certain amount of time a certain amount of times), the No. 2 skid control ECU (brake actuator assembly) judges that communication with the respective ECU is abnormal and illuminates the MIL and stores a DTC.

MONITOR STRATEGY

Related DTCs	U0100: Lost communication with ECM/PCM (CH1) U0110: Lost communication with DMCM "A" (CH2) U0125: Lost communication with multi-axis acceleration sensor module U025E: Lost communication with BSCM2 (CH1) U0293: Lost communication with HPCM (CH1) U1107: Lost communication with collation control module U111A: Lost communication with ECM/PCM (CH2) U1150: Lost communication with HPCM (CH2)
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	1second: U0125 2seconds: U0100, U0110, U025E, U0293, U111A and U1150 3 seconds: U1107
MIL Operation	Immediately
Sequence of Operation	None

TYPICAL ENABLING CONDITIONS

U0100 and U1150

Monitor runs whenever the following DTCs are not stored	C137D: Brake system voltage circuit high U0293: Lost communication with HPCM (CH1)
All of the following conditions are met	A, B, C, D, E and F
A. Following condition is met	More than 1 second
Following condition is met	More than 0.22 seconds
+BS voltage	9.5 V or higher
B. Following condition is met	More than 1 second
Following condition is met	More than 0.012 seconds
+BS voltage	Below 17.4 V
C. CAN communication status	Enable
D. Both of the following conditions are met	More than 3 seconds
IGR voltage	Higher than 10 V
IGP_PT2 voltage	Higher than 10 V
E. Both of the following conditions are met	More than 3 seconds
IGR	On
IGP_PT2	On

F. IGP voltage	Higher than 10 V

U0110 and U111A

Monitor runs whenever the following DTCs are not stored	C137D: Brake system voltage circuit high U0293: Lost communication with HPCM (CH1)
All of the following conditions are met	A, B, C, D, E, F and G
A. Following condition is met	More than 1 second
Following condition is met	More than 0.22 seconds
+BS voltage	9.5 V or higher
B. Following condition is met	More than 1 second
Following condition is met	More than 0.012 seconds
+BS voltage	Below 17.4 V
C. CAN communication status	Enable
D. Following condition is met	More than 3 seconds
IGP_PT2 voltage	Higher than 10 V
E. Following condition is met	More than 3 seconds
IGR voltage	Higher than 10 V
F. Following condition is met	More than 3 seconds
IGP_PT2	On
G. IGP voltage	Higher than 10 V

U0125, U025E and U1107

Monitor runs whenever the following DTCs are not stored	C137D: Brake system voltage circuit high
All of the following conditions are met	A, B, C, D, E and F
A. Following condition is met	More than 1 second
Following condition is met	More than 0.22 seconds
+BS voltage	9.5 V or higher
B. Following condition is met	More than 1 second
Following condition is met	More than 0.012 seconds
+BS voltage	Below 17.4 V
C. CAN communication status	Enable
D. Following condition is met	More than 3 seconds
IGR voltage	Higher than 10 V
E. Following condition is met	More than 3 seconds
IGR	On
F. IGP voltage	Higher than 10 V

U0293

Monitor runs whenever the following DTCs are not stored	C137D: Brake system voltage circuit high
All of the following conditions are met	A, B, C, D, E and F
A. Following condition is met	More than 1 second
Following condition is met	More than 0.22 seconds
+BS voltage	9.5 V or higher
B. Following condition is met	More than 1 second
Following condition is met	More than 0.012 seconds
+BS voltage	Below 17.4 V
C. CAN communication status	Enable
D. Both of the following conditions are met	More than 3 seconds
IGR voltage	Higher than 10 V
IGP_PT2 voltage	Higher than 10 V
E. Both of the following conditions are met	More than 3 seconds
IGR	On
IGP_PT2	On
F. IGP voltage	Higher than 10 V

TYPICAL MALFUNCTION THRESHOLDS

U0100

Either of the following conditions is met	A or B
A. Following condition is met	More than 3 times
Communication reception with ECM (CH1)	Delayed
B. Checksum error exist with ECM (CH1)	-

U0110

Either of the following conditions is met	A or B
A. Following condition is met	More than 3 times
Communication reception with inverter with converter assembly "A" (CH2)	Delayed
B. Checksum error exist with inverter with converter assembly "A" (CH2)	-

U0125

Either of the following conditions is met	A or B
A. Following condition is met	More than 3 times
Communication reception with yaw rate and acceleration sensor (airbag ECU assembly)	Delayed
B. Checksum error exist with yaw rate and acceleration sensor (airbag ECU assembly)	-

U025E

Either of the following conditions is met	A or B
A. Following condition is met	More than 3 times
Communication reception with No. 1 skid control ECU (brake booster with master cylinder assembly) (CH1)	Delayed
B. Checksum error exist with No. 1 skid control ECU (brake booster with master cylinder assembly) (CH1)	-

U0293

Either of the following conditions is met	A or B
A. Following condition is met	More than 3 times
Communication reception with hybrid vehicle control ECU (CH1)	Delayed
B. Checksum error exist with hybrid vehicle control ECU (CH1)	-

U1107

Either of the following conditions is met	A or B
A. Following condition is met	More than 3 times
Communication reception with certification ECU (smart key ECU assembly)	Delayed
B. Checksum error exist with certification ECU (smart key ECU assembly)	-

U111A

Either of the following conditions is met	A or B
A. Following condition is met	More than 3 times
Communication reception with ECM (CH2)	Delayed
B. Checksum error exist with ECM (CH2)	-

U1150

Either of the following conditions is met	A or B
A. Following condition is met	More than 3 times
Communication reception with hybrid vehicle control ECU (CH2)	Delayed
B. Checksum error exist with hybrid vehicle control ECU (CH2)	-

COMPONENT OPERATING RANGE

U0100

Both of the following conditions are met	-
Communication reception with ECM (CH1)	Not delayed
No checksum error with ECM (CH1)	-

U0110

Both of the following conditions are met	-
Communication reception with inverter with converter assembly "A" (CH2)	Not delayed
No checksum error with inverter with converter assembly "A" (CH2)	-

U0125

Both of the following conditions are met	-
Communication reception with yaw rate and acceleration sensor (airbag ECU assembly)	Not delayed
No checksum error with yaw rate and acceleration sensor (airbag ECU assembly)	-

U025E

Both of the following conditions are met	-
Communication reception with No. 1 skid control ECU (brake booster with master cylinder assembly) (CH1)	Not delayed
No checksum error with No. 1 skid control ECU (brake booster with master cylinder assembly) (CH1)	-

U0293

Both of the following conditions are met	-
Communication reception with hybrid vehicle control ECU (CH1)	Not delayed
No checksum error with hybrid vehicle control ECU (CH1)	-

U1107

Both of the following conditions are met	-
Communication reception with certification ECU (smart key ECU assembly)	Not delayed
No checksum error with certification ECU (smart key ECU assembly)	-

U111A

Both of the following conditions are met	-
Communication reception with ECM (CH2)	Not delayed
No checksum error with ECM (CH2)	-

U1150

Both of the following conditions are met	-
Communication reception with hybrid vehicle control ECU (CH2)	Not delayed
No checksum error with hybrid vehicle control ECU (CH2)	-

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 60 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.	**CHECK DTC (HEALTH CHECK)**

(a) Perform the Health Check using the GTS.

RESULT	PROCEED TO
DTCs for related systems are output together with U010087, U010387, U011087, U012587, U012687, U013187, U014087, U015187, U025E87, U029387, U110787, U111A87, U115087 or U115987.	A
DTC U010087, U010387, U011087, U012587, U012687, U013187, U014087, U015187, U025E87, U029387, U110787, U111A87, U115087 or U115987 is output.	B
DTCs are not output.	C

A ▶ **GO TO DIAGNOSTIC TROUBLE CODE CHART (RELATED SYSTEM)**

B ▶ **INSPECT CAN COMMUNICATION SYSTEM**

for HEV Model: Click here INFO

for PHEV Model: Click here INFO

C ▶ **USE SIMULATION METHOD TO CHECK**


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