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Model Year Start: 2023	Model: Prius Prime	Prod Date Range: [03/2023 -]
Title: M20A-FXS (ENGINE CONTROL): SFI SYSTEM: P222611,P222615; Barometric Pressure Sensor "A" Circuit Short to Ground; 2023 - 2024 MY Prius Prius Prime [03/2023 -]		

DTC	P222611	Barometric Pressure Sensor "A" Circuit Short to Ground
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DTC	P222615	Barometric Pressure Sensor "A" Circuit Short to Battery or Open
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DESCRIPTION

The atmospheric pressure sensor is built into the ECM. The ECM provides optimal control in response to atmospheric pressure fluctuations.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
P222611	Barometric Pressure Sensor "A" Circuit Short to Ground	Short in atmospheric pressure sensor circuit (ECM internal malfunction) (1 trip detection logic).	ECM	Comes on	Engine	A	SAE Code: P2228
P222615	Barometric Pressure Sensor "A" Circuit Short to Battery or Open	Open or short in atmospheric pressure sensor circuit (ECM internal malfunction) (1 trip detection logic).	ECM	Comes on	Engine	A	SAE Code: P2229

MONITOR DESCRIPTION

The ECM calculates the atmospheric pressure from the atmospheric pressure sensor output voltage. When the atmospheric sensor assembly output voltage is outside of the normal range, there may be an open or short in the atmospheric pressure sensor circuit or the atmospheric pressure sensor may be malfunctioning. In this case, the ECM will illuminate the MIL and store a DTC.

MONITOR STRATEGY

Related DTCs	P2228: Barometric pressure sensor range check (low voltage) P2229: Barometric pressure sensor range check (high voltage)
Required Sensors/Components (Main)	Atmospheric pressure sensor (ECM)
Required Sensors/Components (Related)	-
Frequency of Operation	Continuous
Duration	3 seconds
MIL Operation	Immediate

Sequence of Operation	None
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TYPICAL ENABLING CONDITIONS

Monitor runs whenever the following DTCs are not stored	None
Both of the following conditions are met	-
Auxiliary battery voltage	8 V or higher
Ignition switch	ON

TYPICAL MALFUNCTION THRESHOLDS

P2228

Atmospheric pressure sensor voltage [Barometric pressure]	Less than 1.16 V [Less than 37 kPa(abs) [5.4 psi(abs)]]
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P2229

Atmospheric pressure sensor voltage [Barometric pressure]	Higher than 4.48 V [Higher than 121 kPa(abs) [18 psi(abs)]]
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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

- Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).
- Turn the ignition switch off and wait for at least 30 seconds.
- Turn the ignition switch to ON.
- Wait 5 seconds or more [A].
- Enter the following menus: Powertrain / Engine / Trouble Codes [B].
- Read the pending DTCs.

HINT:

- If a pending DTC is output, the system is malfunctioning.
- If a pending DTC is not output, perform the following procedure.

- Enter the following menus: Powertrain / Engine / Utility / All Readiness.
- Input the DTC: P222611 or P222615.
- Check the DTC judgment result.

HINT:

- If the judgment result is NORMAL, the system is normal.
- If the judgment result is ABNORMAL, the system is malfunctioning.
- [A] to [B]: Normal judgment procedure.

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

- When clearing the permanent DTCs, do not disconnect the cable from the auxiliary battery terminal or attempt to clear the DTCs during this procedure, as doing so will clear the universal trip and normal judgment histories.

CAUTION / NOTICE / HINT

NOTICE:

- Vehicle Control History may be stored in the hybrid vehicle control ECU if the engine is malfunctioning. Certain vehicle condition information is recorded when Vehicle Control History is stored. Reading the vehicle conditions recorded in both the freeze frame data and Vehicle Control History can be useful for troubleshooting.

for HEV Model: [Click here](#) 

for PHEV Model: [Click here](#) 

(Select Powertrain in Health Check and then check the time stamp data.)

- If any "Engine Malfunction" Vehicle Control History item has been stored in the hybrid vehicle control ECU, make sure to clear it. However, as all Vehicle Control History items are cleared simultaneously, if any Vehicle Control History items other than "Engine Malfunction" are stored, make sure to perform any troubleshooting for them before clearing Vehicle Control History.

for HEV Model: [Click here](#) 

for PHEV Model: [Click here](#) 

PROCEDURE

1. CHECK DTC OUTPUT

(a) Read the DTCs.

Powertrain > Engine > Trouble Codes

NEXT  **REPLACE ECM**

