

DTC	P0125	Insufficient Coolant Temp. for Closed Loop Fuel Control
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CIRCUIT DESCRIPTION

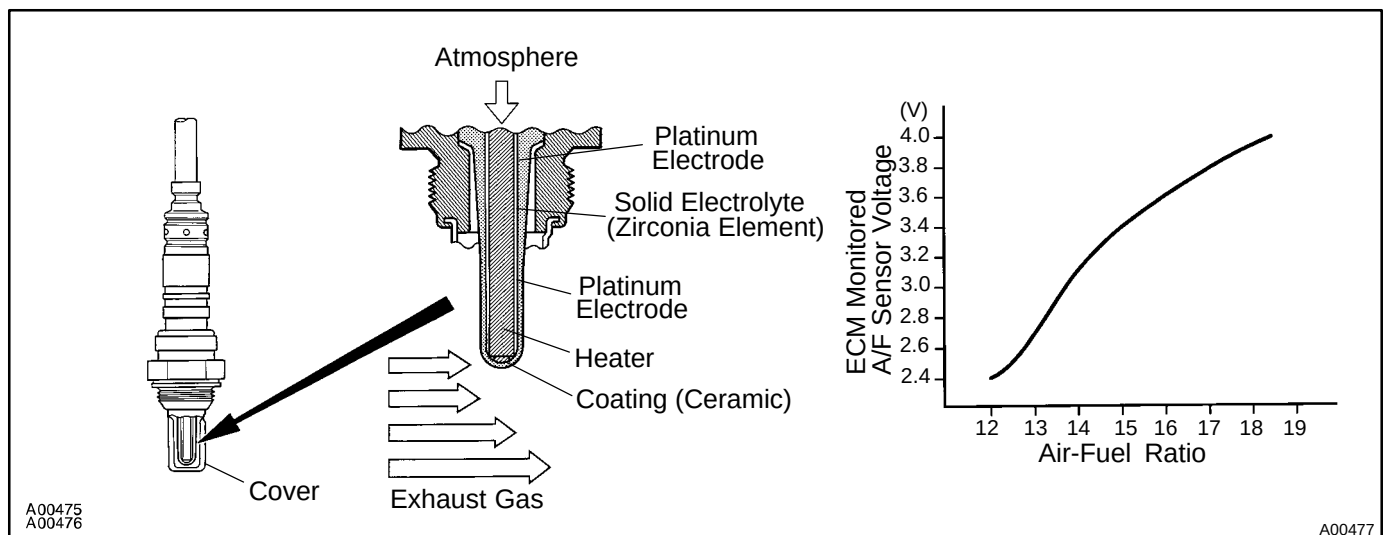
To obtain a high purification rate for the CO, HC and NO_x components of the exhaust gas, a three-way catalytic converter is used, but for the most efficient use of the three-way catalytic converter, the air-fuel ratio must be precisely controlled so that it is always close to the stoichiometric air-fuel ratio.

The A/F sensor has the characteristic that provides output voltage* approximately proportional to the existing air-fuel ratio. The A/F sensor output voltage* is used to provide feedback for the ECM to control the air-fuel ratio.

By the A/F sensor output, the ECM can determine the deviation amount from the stoichiometric air-fuel ratio and control the proper injection time immediately. If the A/F sensor is malfunctioning, ECM is unable to perform accurate air-fuel ratio control.

The A/F sensor is equipped with a heater which heats the zirconia element. The heater is controlled by the ECM. When the intake air volume is low (the temp. of the exhaust gas is low), current flows to the heater to heat the sensor for accurate oxygen concentration detection.

*: The voltage value changes at the inside of the ECM only.



DTC No.	DTC Detecting Condition	Trouble Area
P0125	After engine is warmed up, A/F sensor output* does not change when conditions (a), (b) and (c) continue for at least 1.5 min. *: Output value changes at inside of ECM only. (a) Engine speed: 1,500 rpm or more (b) Vehicle speed: 40 - 100 km/h (25 - 62 mph) (c) Throttle valve does not fully closed (d) After starting engine $\geq$ 140 sec	• Fuel system • Injector • Ignition system • Gas leakage on exhaust system • Open or short in A/F sensor circuit (bank 1, 2 sensor 1) • A/F sensors (bank 1, 2 sensor 1) • ECM

HINT:

- After confirming DTC P0125, use the OBD II scan tool or TOYOTA hand-held tester to confirm voltage output of heated oxygen sensors (bank 1, 2 sensor 1) from CURRENT DATA.
- The ECM controls the voltage of AF $\oplus$ and AF $\ominus$ terminals of ECM to the fixed voltage. Therefore, it is impossible to confirm the A/F sensor output voltage without OBD II scan tool or TOYOTA hand-held tester.

- ## WIRING DIAGRAM



2001 SIENNA (RM787U)

1	Are there any other codes (besides DTC P0125) being output ?
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YES

Go to relevant DTC chart.

NO

2	Connect the OBD II scan tool or TOYOTA hand-held tester and read value for voltage output of A/F sensors (bank 1, 2 sensor 1).
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PREPARATION:

- (a) Connect the OBD II scan tool or TOYOTA hand-held tester to the DLC3.
 (b) Warm up the A/F sensors (bank 1, 2 sensor 1) with the engine at 2,500 rpm for approx. 90 sec.

CHECK:

Read voltage value of A/F sensors (bank 1, 2 sensor 1) on the screen of OBD II scan tool or TOYOTA hand-held tester when you perform all the following conditions.

HINT:

The voltage of AFR $\oplus$, AFL $\oplus$ terminal of ECM is 3.3 fixed and the AFR $\ominus$, AFL $\ominus$ terminal is 3.0 V fixed. Therefore, it is impossible to check the A/F sensor output voltage at the terminals (AFR $\oplus$, AFL $\oplus$ /AFR $\ominus$, AFL $\ominus$) of ECM.

OK:

Condition	A/F Sensor Voltage value
Engine idling	• Not remains at 3.3 V (*0.660 V) • Not remains at 3.8 V (*0.76 V) or more • Not remains at 2.8 V (*0.56 V) or less *: When you use the OBD II scan tool (excluding TOYOTA hand-held tester)
Engine idling	
Driving at engine speed 1,500 rpm or more and vehicle speed 40 km/h (25 mph) or more, and operate throttle valve open and close	

HINT:

- During fuel enrichment, there is a case that the output voltage of A/F sensors (bank 1, 2 sensor 1) is below 2.8 V (*0.56 V), it is normal.
- During fuel cut, there is a case that the output voltage of A/F sensors (bank 1, 2 sensor 1) is above 3.8 V (*0.76 V), it is normal.
- If output voltage of A/F sensors (bank 1, 2 sensor 1) remains at 3.30 V (*0.660 V) even after performing all the above conditions, A/F sensors (bank 1, 2 sensor 1) circuit may be open.
- If output voltage of A/F sensor remains at 3.8 V (*0.76 V) or more, or 2.8 V (*0.56 V) or less even after performing all the above conditions, A/F sensors (bank 1, 2 sensor 1) circuit may be short.

*: When you use the OBD II scan tool (excluding TOYOTA hand-held tester).

OK

Go to step 10.

NG

3 Check for open and short in harness and connector between ECM and A/F sensors (bank1, 2 sensor1) (See page [IN-31](#)).

NG

Repair or replace harness or connector.

OK

4 Check resistance of A/F sensor heaters (bank1, 2 sensor1) (See page [SF-81](#)).

NG

Replace A/F sensor.

OK

5 Check air induction system (See page [SF-1](#)).

NG

Repair or replace.

OK

6 Check fuel pressure (See page [SF-6](#)).

NG

Check and repair fuel pump, fuel pipe line and filter (See page [SF-1](#)).

OK

7 Check injector injection (See page [SF-26](#)).

NG

Replace injector.

OK

8	Check gas leakage on exhaust system.
OK	
NG	Repair or replace
Replace A/F sensors (bank1, 2 sensor1).	
9	Perform confirmation driving pattern (See page DI-104).
Go	
10	Is there DTC P0125 being output again ?
YES	Check and replace ECM (See page IN-31).
NO	
11	Did vehicle runs out of fuel in the past ?
NO	Check for intermittent problems (See page DI-3).
YES	
DTC P0125 is caused by running out of fuel.	