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Service Category: Drivetrain	Section: Automatic Transmission/Transaxle	
Model Year: 2007	Model: 4Runner	Doc ID: RM000000W7Z03OX
Title: A750E AUTOMATIC TRANSMISSION: AUTOMATIC TRANSMISSION SYSTEM (for 2UZ-FE): P0711: Transmission Fluid Temperature Sensor "A" Performance (2007 4Runner)		

DTC	P0711	Transmission Fluid Temperature Sensor "A" Performance
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DESCRIPTION



DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
P0711	Both (a) and (b) are detected: (2-trip detection logic) (a) Intake air and engine coolant temps. are more than -10°C (14°F) at engine start (b) After normal driving for over 22 min. and 9 km (6 mile) or more, ATF temp. is less than 10°C (50°F)	Transmission wire (ATF temperature sensor No. 1)

MONITOR DESCRIPTION

This DTC indicates that there is a problem with output from the automatic transmission fluid (ATF) temperature sensor and that the sensor itself is defective. The ATF temperature sensor converts the ATF temperature to an electrical resistance value. Based on the resistance, the ECM determines the ATF temperature and detects an open or short in the ATF temperature circuit or a fault in the ATF temperature sensor.

After running the vehicle for a certain period, the ATF temperature should increase. If the ATF temperature is below 10°C (50°F) after running the vehicle for a certain period, the ECM interprets this as a fault, and turns on the MIL.

MONITOR STRATEGY

Related DTCs	P0711: ATF temperature sensor/Rationality check
Required sensors/Components	ATF temperature sensor (TFT sensor)
Frequency of operation	Continuous
Duration	3 sec.
MIL operation	2 driving cycles
Sequence of operation	None

TYPICAL ENABLING CONDITIONS

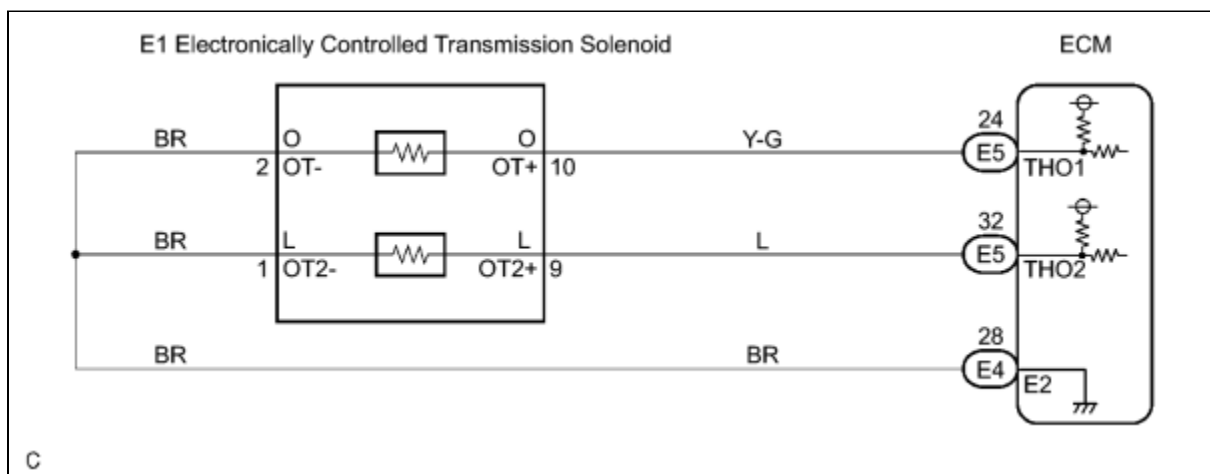
The following items are common to all conditions below.

The monitor will run whenever this DTC is not present.	None
TFT sensor circuit	Not circuit malfunction
ECT (Engine coolant temperature) sensor circuit	Not circuit malfunction
IAT (Intake air temperature) sensor circuit	Not circuit malfunction
Time after engine start	21 min. and 40 sec.
Driving distance after engine start	5.6 mile (9 km) or more
IAT (12 sec. after engine start)	-10°C (14°F) or more
ECT (12 sec. after engine start)	-10°C (14°F) or more

TYPICAL MALFUNCTION THRESHOLDS

TFT (Transmission fluid temperature)	Less than 10°C (50°F) (ATF temperature = -10°C (14°F) at engine start) (Conditions vary with ATF temperature at engine start)
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WIRING DIAGRAM



INSPECTION PROCEDURE

1. DATA LIST

HINT:

According to the DATA LIST displayed by the intelligent tester, you can read the value of the switch, sensor, actuator and so on without parts removal. Reading the DATA LIST as the first step of troubleshooting is one method to shorten labor time.

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

- (a) Warm up the engine.
- (b) Turn the ignition switch off.
- (c) Connect the intelligent tester together with the CAN VIM (controller area network vehicle interface module) to the DLC3.
- (d) Turn the ignition switch to the ON position.
- (e) Turn on the tester.
- (f) Select the item "DIAGNOSIS / OBD/MOBD / ECT / DATA LIST".
- (g) According to the display on the tester, read the "DATA LIST".

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
A/T OIL TEMP1	ATF temperature sensor No. 1 value/ Min.: -40°C (-40°F) Max.: 215°C (419°F)	- After stall test: Approximately 80°C (176°F) - Equal to ambient temperature while engine is cold	If value is -40°C (-40°F) or 215°C (419°F), ATF temperature sensor No. 1 circuit is opened or short circuited

HINT:

When DTC P0712 is output and OBD II scan tool or intelligent tester output is 150°C (302°F) or more, there is a short circuit.

When DTC P0713 is output and OBD II scan tool or intelligent tester output is -40°C (-40°F), there is an open circuit.

Measure the resistance between terminal THO1 (OT) and body ground.

TEMPERATURE DISPLAYED	MALFUNCTION
-40°C (-40°F)	Open circuit
150°C (302°F) or more	Short circuit

HINT:

If a circuit related to the ATF temperature sensor becomes open, P0713 is immediately set (in 0.5 second). When P0713 is set, P0711 cannot be detected.

It is not necessary to inspect the circuit when P0711 is set.

PROCEDURE

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1.	CHECK OTHER DTCS OUTPUT (IN ADDITION TO DTC P0711)
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- (a) Connect the OBD II scan tool or the intelligent tester to the DLC3.
- (b) Turn the ignition switch to the ON position and push the OBD II scan tool or the intelligent tester main switch ON.
- (c) When you use intelligent tester:

Select the item "DIAGNOSIS / ENHANCED OBD II / DTC INFO / CURRENT CODES".

- (d) Read the DTCs using the OBD II scan tool or the intelligent tester.

Result:

DISPLAY (DTC OUTPUT)	PROCEED TO
Only "P0711" is output	A
"P0711" and other DTCs	B

HINT:

If any other codes besides "P0711" are output, perform troubleshooting for those DTCs first.

B  **GO TO DTC CHART**

A



2.	CHECK TRANSMISSION FLUID LEVEL
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OK:

Automatic transmission fluid level is correct.

NG  **ADD FLUID**

OK  **REPLACE TRANSMISSION WIRE**

