Last Modified: 7-13-2007		1.6 C
Service Category: Drivetrain	Section: Automatic Transmission/Transaxle	
Model Year: 2008	Model: ES350	Doc ID: RM0000026VP00CX
Title: U660E AUTOMATIC TRANSAXLE: AUTOMATIC TRANSAXLE SYSTEM: P0989: Transmission Fluid Pressure Sensor / Switch "E" Circuit Low (2008 ES350)		

DTC	P0989	Transmission Fluid Pressure Sensor / Switch "E" Circuit Low

DTC	P0990	Transmission Fluid Pressure Sensor / Switch "E" Circuit High

DESCRIPTION

ATF pressure switch No. 3 is installed in the lock-up solenoid ATF output passage and is used to detect a malfunction in the lock-up solenoid.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
P0989	Transmission fluid pressure switch No. 3 is OFF when lock-up occurs in response to a lock-up request (2 trip detection logic).	• ATF temperature sensor assembly (ATF pressure switch No. 3) • Transmission wire • TCM
P0990	When both of the following are detected (2 trip detection logic): • Transmission fluid pressure switch No. 3 is ON when lock-up does not occur. • Lock-up does not occur when shift solenoid valve (SLU) is requested to turn off in the lock-up range.	

MONITOR DESCRIPTION

The TCM illuminates the MIL and stores the DTC when the TCM detects that the ATF pressure switch is OFF with the lock-up solenoid ON or when the TCM detects that the ATF pressure switch is ON with the lock-up solenoid OFF.

MONITOR STRATEGY

Related DTCs	P0989: Transmission fluid pressure switch No. 3 OFF malfunction P0990: Transmission fluid pressure switch No. 3 ON malfunction
Required sensors/Components	Transmission fluid pressure switch No. 3
Frequency of operation	Continuous
Duration	P0989: 1.8 sec., P0990: 1.2 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
Turbine speed sensor circuit	Circuit is not malfunctioning

Intermediate shaft speed sensor circuit	Circuit is not malfunctioning
Shift solenoid valve SL1 circuit	Circuit is not malfunctioning
Shift solenoid valve SL2 circuit	Circuit is not malfunctioning
Shift solenoid valve SL3 circuit	Circuit is not malfunctioning
Shift solenoid valve SL4 circuit	Circuit is not malfunctioning
Shift solenoid valve SLU circuit	Circuit is not malfunctioning
Knock sensor circuit	Circuit is not malfunctioning
ETCS (Electric throttle control system)	System is not down
Transmission shift position	"D"
ECT (Engine coolant temperature)	40°C (104°F) or more
Spark advance from Max. retard timing by KCS control	0°CA or more
TFT (Transmission fluid temperature)	-10°C (14°F) or more
TCM selected gear	Not 1st
Vehicle speed	15.5 mph (25 km/h) or more
Torque converter clutch circuit	Circuit is not malfunctioning
ECT circuit	Circuit is not malfunctioning
CAN communication system	Circuit is not malfunctioning
Turbine speed/Output speed (NT/NO) with 1st	3.304 to 7.724
Turbine speed/Output speed (NT/NO) with 2nd	1.901 to 2.340
Turbine speed/Output speed (NT/NO) with 3rd	1.399 to 1.649
Turbine speed/Output speed (NT/NO) with 4th	0.998 to 1.138
Turbine speed/Output speed (NT/NO) with 5th	0.705 to 0.836
Turbine speed/Output speed (NT/NO) with 6th	0.568 to 0.695

P0989:

TCM lock-up command	ON
Engine speed - Turbine speed	Less than 35 rpm
Throttle valve opening angle	7% or more
Vehicle speed	Less than 62 mph (100 km/h)
Shift solenoid valve SLU	Not ON malfunction

P0990:

TCM indicated pressure valve of SLU	Less than 4 kPa
TCM lock-up command	OFF
Shift solenoid valve SLU	Not malfunction
Shift solenoid valve SL	Not OFF malfunction

TYPICAL MALFUNCTION THRESHOLDS

P0989:

Transmission fluid pressure switch No. 3	OFF

P0990:

Following conditions are met	(a) and (b)
(a) Engine speed - Turbine speed	35 rpm or more
(b) Transmission fluid pressure switch No. 3	ON

WIRING DIAGRAM
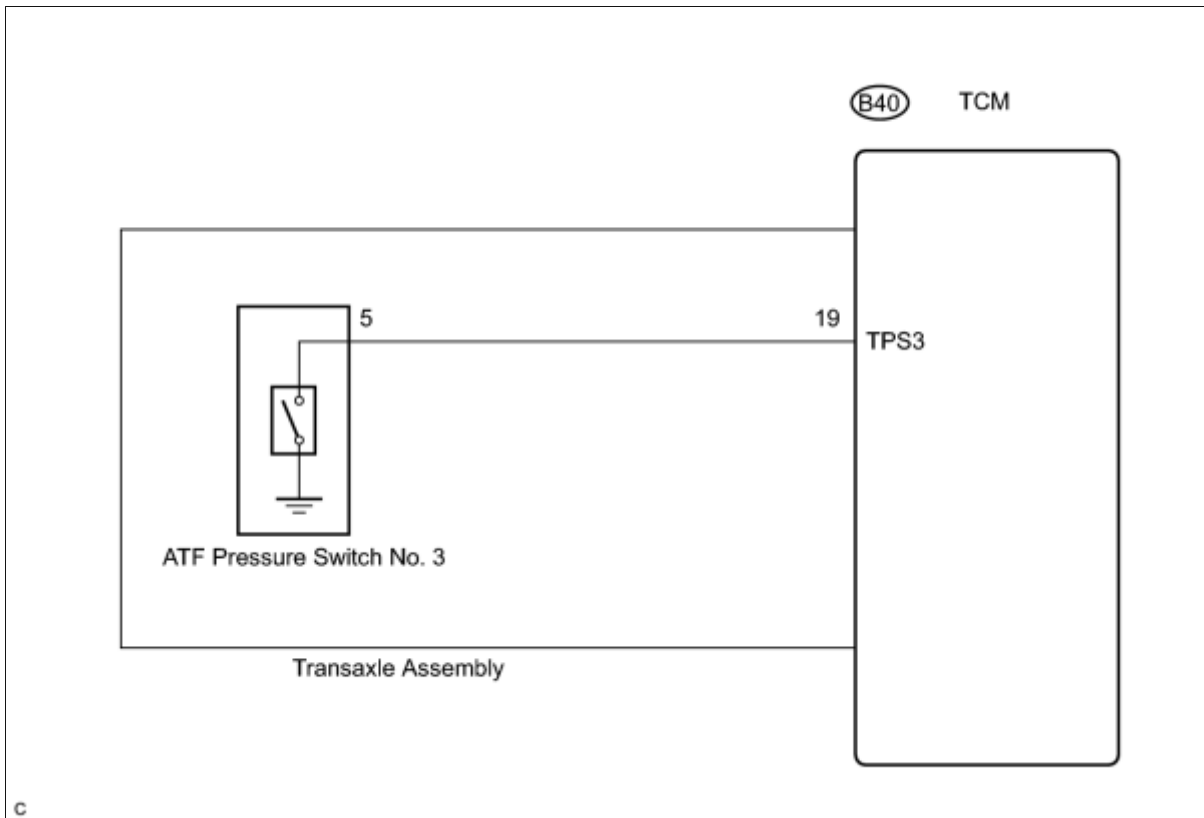
INSPECTION PROCEDURE

PROCEDURE

1.	CHECK OTHER DTC OUTPUT (IN ADDITION TO DTC P0989 OR P0990)

(a) Connect Techstream to the DLC3.

(b) Turn the engine switch on (IG) and turn Techstream on.

(c) Enter the following items: "Powertrain / ECT / Trouble Codes".

(d) Read the DTCs using Techstream.

    Result:

RESULT		PROCEED TO
P0990		A
P0989		B
P0989 or P0990 and other DTCs		C

HINT:

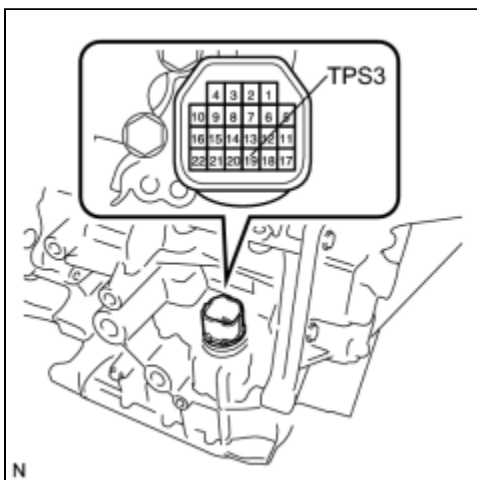**If a solenoid is stuck OFF, DTCs for several solenoids including the malfunctioning solenoid will be detected.**

B ▶ **CHECK TRANSMISSION WIRE**

C ▶ **GO TO DTC CHART**

A
▼

2.	CHECK TRANSMISSION WIRE (SHORT TO GROUND)

(a) Remove the TCM.

(b) Measure the resistance according to the value(s) in the table below.
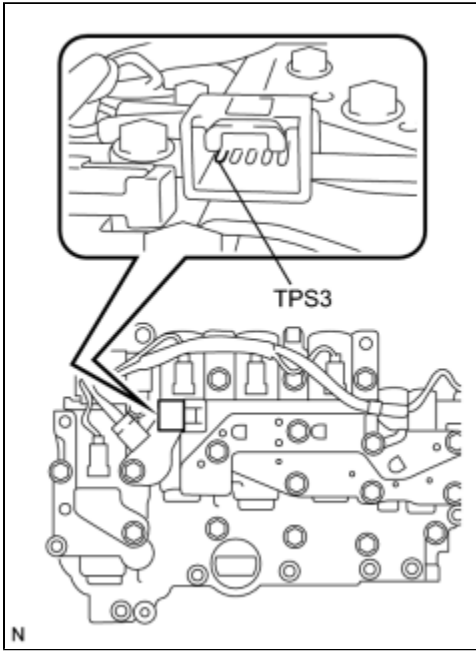
Standard resistance:

TESTER CONDITION	CONDITION	SPECIFIED CONDITION
19 (TPS3) - Body ground (Valve body assembly)	Always	10 kΩ or higher

OK ▶ **REPLACE TCM**

NG
▼

3.	CHECK ATF TEMPERATURE SENSOR ASSEMBLY (ATF PRESSURE SWITCH NO. 3)

(a) Disconnect the connector from the ATF temperature sensor assembly.

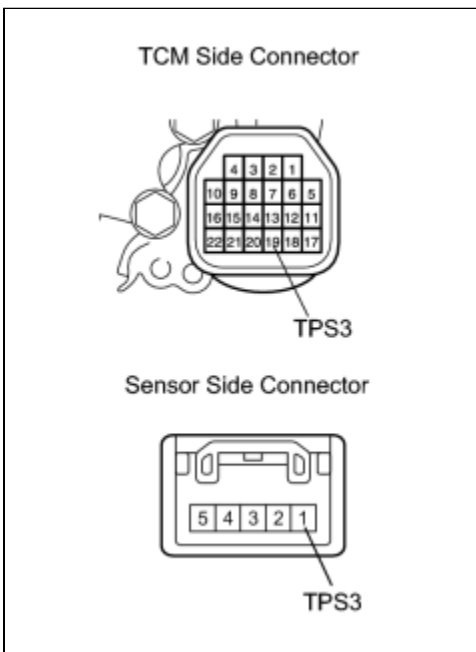(b) Measure the resistance according to the value(s) in the table below.

Standard resistance:

TESTER CONDITION	CONDITION	SPECIFIED CONDITION
5 (TPS3) - Body ground (Valve body assembly)	Always	10 kΩ or higher

NG ▶ REPLACE ATF TEMPERATURE SENSOR ASSEMBLY

OK ▶ REPLACE TRANSMISSION WIRE

4.	CHECK TRANSMISSION WIRE

(a) Remove the TCM.

(b) Disconnect the connector from the ATF temperature sensor assembly.

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

Standard resistance:

TESTER CONDITION	CONDITION	SPECIFIED CONDITION
19 (TPS3) - 1 (TPS3)	Always	Below 1 Ω
19 (TPS3) or 1 (TPS3) - Body ground (Valve body assembly)	Always	10 kΩ or higher

NG ▶ **REPLACE TRANSMISSION WIRE**

OK ▶ **REPLACE ATF TEMPERATURE SENSOR ASSEMBLY**