

DATA LIST / ACTIVE TEST

1. READ DATA LIST

HINT:

Using the intelligent tester's DATA LIST allows switch, sensor, actuator, and other item values to be read without removing any parts. Reading the DATA LIST early in troubleshooting is one way to save 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 to the CAN VIM. Then connect the CAN VIM to the DLC3.
- (d) Turn the ignition switch ON and turn the tester ON.
- (e) Enter the following menus: DIAGNOSIS / ENHANCED OBD II / DATA LIST.
- (f) Follow the instructions on the tester and read the DATA LIST.

ECM:

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
SPD (NC)	Counter gear speed/ Min.: 0 rpm Max.: 12,750 rpm	3rd gear when shift lever is on D (after warming up the engine); Intermediate shaft speed (NC) becomes close to the engine speed	Data is displayed in increments of 50 rpm
SPD (NT)	Input turbine speed/ Min.: 0 rpm Max.: 12,750 rpm	<ul style="list-style-type: none"> • Lock-up ON (after warming up engine): Input turbine speed (NT) is equal to engine speed. • Lock-up OFF (idling with shift lever on N): Input turbine speed (NT) is nearly equal to engine speed. 	Data is displayed in increments of 50 rpm
PNP SW [NSW]	PNP switch status/ ON or OFF	Shift lever is: On P or N: ON Not on P or N: OFF	When shift lever position displayed on intelligent tester differs from actual position, adjustment of PNP switch or shift cable may be incorrect HINT: When failure still occurs even after adjusting these parts, refer to DTC P0705 (see page AX-44)
STOP LIGHT SW	Stop light switch status/ ON or OFF	<ul style="list-style-type: none"> • Brake pedal is depressed: ON • Brake pedal is released: OFF 	-
SHIFT	ECM gear shift command/ 1st, 2nd, 3rd, 4th and 5th	Shift lever position is: <ul style="list-style-type: none"> • On L: 1st • On 2: 1st or 2nd • On 3: 1st, 2nd or 3rd • On 4: 1st, 2nd, 3rd or 4th • On D: 1st, 2nd, 3rd, 4th or 5th 	-

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
REVERSE	PNP switch status/ ON or OFF	Shift lever is: On R: ON Not on R: OFF	When shift lever position displayed on intelligent tester differs from actual position, adjustment of PNP switch or shift cable may be incorrect HINT: When failure still occurs even after adjusting these parts, refer to DTC P0705 (see page AX-44)
PARKING	PNP switch status/ ON or OFF	Shift lever is: On P: ON Not on P: OFF	When shift lever position displayed on intelligent tester differs from actual position, adjustment of PNP switch or shift cable may be incorrect HINT: When failure still occurs even after adjusting these parts, refer to DTC P0705 (see page AX-44)
NEUTRAL	PNP switch status/ ON or OFF	Shift lever is: On N: ON Not on N: OFF	When shift lever position displayed on intelligent tester differs from actual position, adjustment of PNP switch or shift cable may be incorrect HINT: When failure still occurs even after adjusting these parts, refer to DTC P0705 (see page AX-44)
DRIVE	PNP switch status/ ON or OFF	Shift lever is: On 4 or D: ON Not on 4 or D: OFF	When shift lever position displayed on intelligent tester differs from actual position, adjustment of PNP switch or shift cable may be incorrect HINT: When failure still occurs even after adjusting these parts, refer to DTC P0705 (see page AX-44)
4TH/DRIVE	PNP switch status/ ON or OFF	Shift lever is: On 4: ON Not on 4: OFF	When shift lever position displayed on intelligent tester differs from actual position, adjustment of PNP switch or shift cable may be incorrect HINT: When failure still occurs even after adjusting these parts, refer to DTC P0705 (see page AX-44)
3RD	PNP switch status/ ON or OFF	Shift lever is: On 3: ON Not on 3: OFF	When shift lever position displayed on intelligent tester differs from actual position, adjustment of PNP switch or shift cable may be incorrect HINT: When failure still occurs even after adjusting these parts, refer to DTC P0705 (see page AX-44)
2ND	PNP switch status/ ON or OFF	Shift lever is: On 2 or L: ON Not on 2 or L: OFF	When shift lever position displayed on intelligent tester differs from actual position, adjustment of PNP switch or shift cable may be incorrect HINT: When failure still occurs even after adjusting these parts, refer to DTC P0705 (see page AX-44)

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
LOW	PNP switch status/ ON or OFF	Shift lever is: On L: ON Not on L: OFF	When shift lever position displayed on intelligent tester differs from actual position, adjustment of PNP switch or shift cable may be incorrect HINT: When failure still occurs even after adjusting these parts, refer to DTC P0705 (see page AX-44)
A/T OIL TEMP1	ATF temperature sensor value/ Min.: -40°C (-40°F) Max.: 215°C (419°F)	<ul style="list-style-type: none"> After stall test: Approximately 80°C (176°F) Equal to ambient temperature while engine is cold 	If value is -40°C (-40°F) or "150°C (302°F) or more", ATF temperature sensor circuit is open or short circuited
LOCK UP SOL	Lock-up solenoid status/ ON or OFF	<ul style="list-style-type: none"> Lock-up: ON Not on lock-up: OFF 	-
SOLENOID (SLT)	Shift solenoid SLT status/ ON or OFF	<ul style="list-style-type: none"> Accelerator pedal is depressed: OFF Accelerator pedal is released: ON 	-

2. PERFORM ACTIVE TEST

HINT:

Performing the intelligent tester's ACTIVE TEST allows relay, VSV, actuator and other items to be operated without removing any parts. Performing the ACTIVE TEST early in troubleshooting is one way to save time. The DATA LIST can be displayed during the ACTIVE TEST.

- Warm up the engine.
- Turn the ignition switch OFF.
- Connect the intelligent tester to the CAN VIM. Then connect the CAN VIM to the DLC3.
- Turn the ignition switch ON and turn the tester ON.
- Enter the following menus: DIAGNOSIS / ENHANCED OBD II / ACTIVE TEST.
- Perform the ACTIVE TEST.

ECM:

Tester Display	Test Part	Control Range	Diagnostic Note
SHIFT	[Test Details] Operate shift solenoid valve and set each shift lever position by yourself [Vehicle Condition] <ul style="list-style-type: none"> IDL: ON 50 km/h (31 mph) or less [Other information] <ul style="list-style-type: none"> Press "→" button: Shift up Press "←" button: Shift down 	-	Possible to check operation of shift solenoid valves
SOLENOID (S4)	[Test Details] Operate the shift solenoid S4 [Vehicle Condition] <ul style="list-style-type: none"> Vehicle stopped Shift lever P or N position 	-	-
SOLENOID (SL1)	[Test Details] Operate the shift solenoid SL1 [Vehicle Condition] <ul style="list-style-type: none"> Vehicle stopped Shift lever P or N position 	-	-

Tester Display	Test Part	Control Range	Diagnostic Note
SOLENOID (SL2)	[Test Details] Operate the shift solenoid SL2 [Vehicle Condition] • Vehicle stopped • Shift lever P or N position	-	-
SOLENOID (SL3)	[Test Details] Operate the shift solenoid SL3 [Vehicle Condition] • Vehicle stopped • Shift lever P or N position	-	-
LOCK UP	[Test Details] Control shift solenoid DSL to set automatic transaxle to the lock-up condition [Vehicle Condition] • Throttle valve opening angle: Less than 35% • Vehicle speed: 60 km/h (36 mph) or more	-	Possible to check shift solenoid valve DSL operation
SOLENOID (DSL)	[Test Details] Operate the shift solenoid DSL [Vehicle Condition] • Vehicle stopped • Shift lever P or N position	-	-
SOLENOID (SR)	[Test Details] Operate the shift solenoid SR [Vehicle Condition] • Vehicle stopped • Shift lever P or N position	-	-
SOLENOID (SLT)*	[Test Details] Operate shift solenoid SLT and raise line pressure [Vehicle Condition] • Vehicle stopped • IDL: ON HINT: OFF: Line pressure up (when Active Test "SOLENOID (SLT)" is performed, ECM commands SLT solenoid to turn OFF) ON: No action (normal operation)	-	-

HINT:

*: "SOLENOID (SLT)" in the ACTIVE TEST is performed to check the line pressure changes by connecting SST to the automatic transaxle, which is used in the HYDRAULIC TEST (see page AX-18) as well. Please note that the pressure values in the ACTIVE TEST and HYDRAULIC TEST are different.

DIAGNOSTIC TROUBLE CODE CHART

HINT:

- If a DTC is displayed during the DTC check, check the circuit listed in the table below and proceed to the page given.
- *1: "Comes on" means the Malfunction Indicator Lamp (MIL) illuminates.
- *2: "DTC stored" means the ECM memorizes the malfunction code if the ECM detects the DTC detection condition.
- These DTCs may be output when the clutch, brake, gear components, etc., inside the automatic transaxle are damaged.

Automatic transaxle system:

DTC No.	Detection Item	Trouble Area	MIL *1	Memory*2	See page
P0705	Transmission Range Sensor Circuit Malfunction (PRNDL Input)	- Open or short in park/neutral position switch circuit - Park/Neutral position switch - ECM	Comes on	DTC stored	AX-44
P0710	Transmission Fluid Temperature Sensor "A" Circuit	- Open or short in ATF temperature sensor circuit - ATF temperature sensor - ECM	Comes on	DTC stored	AX-51
P0711	Transmission Fluid Temperature Sensor "A" Performance	- Open or short in ATF temperature sensor circuit - ATF temperature sensor - ECM	Comes on	DTC stored	AX-55
P0712	Transmission Fluid Temperature Sensor "A" Circuit Low Input	- Short in ATF temperature sensor circuit - ATF temperature sensor - ECM	Comes on	DTC stored	AX-51
P0713	Transmission Fluid Temperature Sensor "A" Circuit High Input	- Open in ATF temperature sensor circuit - ATF temperature sensor - ECM	Comes on	DTC stored	AX-51
P0717	Input Speed Sensor Circuit No Signal	- Open or short in speed sensor NT circuit - Speed sensor NT - ECM	Comes on	DTC stored	AX-58
P0724	Brake Switch "B" Circuit High	- Short in stop light switch circuit - Stop light switch - ECM	Comes on	DTC stored	AX-62

DTC No.	Detection Item	Trouble Area	MIL*1	Memory*2	See page
P0741	Torque Converter Clutch Solenoid Performance (Shift Solenoid Valve DSL)	<ul style="list-style-type: none"> - Shift solenoid valve DSL remains open or closed - Valve body is blocked - Shift solenoid valve DSL - Torque converter clutch - Automatic transaxle (clutch, brake, gear, etc.) - Line pressure is too low - ECM 	Comes on	DTC stored	AX-65
P0746	Pressure Control Solenoid "A" Performance (Shift Solenoid Valve SL1)	<ul style="list-style-type: none"> - Shift solenoid valve SL1 remains open or closed - Valve body is blocked - Shift solenoid valve SL1 - Automatic transaxle (clutch, brake, gear, etc.) - ECM 	Comes on	DTC stored	AX-72
P0748	Pressure Control Solenoid "A" Electrical (Shift Solenoid Valve SL1)	<ul style="list-style-type: none"> - Open or short in shift solenoid valve SL1 circuit - Shift solenoid valve SL1 - ECM 	Comes on	DTC stored	AX-76
P0766	Shift Solenoid "D" Performance (Shift Solenoid Valve S4)	<ul style="list-style-type: none"> - Shift solenoid valve S4 remains open or closed - Valve body is blocked - Shift solenoid valve S4 - Automatic transaxle (clutch, brake, gear, etc.) - ECM 	Comes on	DTC stored	AX-79
P0771	Shift Solenoid "E" Performance (Shift Solenoid Valve SR)	<ul style="list-style-type: none"> - Shift solenoid valve SR remains open or closed - Valve body is blocked - Shift solenoid valve SR - Automatic transaxle (clutch, brake, gear, etc.) 	Comes on	DTC stored	AX-83
P0776	Pressure Control Solenoid "B" Performance (Shift Solenoid Valve SL2)	<ul style="list-style-type: none"> - Shift solenoid valve SL2 remains open or closed - Valve body is blocked - Shift solenoid valve SL2 - Automatic transaxle (clutch, brake, gear, etc.) - ECM 	Comes on	DTC stored	AX-87

DTC No.	Detection Item	Trouble Area	MIL*1	Memory*2	See page
P0778	Pressure Control Solenoid "B" Electrical (Shift Solenoid Valve SL2)	- Open or short in shift solenoid valve SL2 circuit - Shift solenoid valve SL2 - ECM	Comes on	DTC stored	AX-92
P0793	Intermediate Shaft Speed Sensor "A"	- Open or short in speed sensor NC circuit - Speed sensor NC - ECM	Comes on	DTC stored	AX-95
P0796	Pressure Control Solenoid "C" Performance (Shift Solenoid Valve SL3)	- Shift solenoid valve SL3 remains open or closed - Valve body is blocked Automatic transaxle (clutch, brake, gear, etc.)	Comes on	DTC stored	AX-99
P0798	Pressure Control Solenoid "C" Electrical (Shift Solenoid Valve SL3)	- Open or short in shift solenoid valve SL3 circuit - Shift solenoid valve SL3 - ECM	Comes on	DTC stored	AX-103
P0982	Shift Solenoid "D" Control Circuit Low (Shift Solenoid Valve S4)	- Short in shift solenoid valve S4 circuit - Shift solenoid valve S4 - ECM	Comes on	DTC stored	AX-106
P0983	Shift Solenoid "D" Control Circuit High (Shift Solenoid Valve S4)	- Open in shift solenoid valve S4 circuit - Shift solenoid valve S4 - ECM	Comes on	DTC stored	AX-106
P0985	Shift Solenoid "E" Control Circuit Low (Shift Solenoid Valve SR)	- Short in shift solenoid valve SR circuit - Shift solenoid valve SR - ECM	Comes on	DTC stored	AX-110
P0986	Shift Solenoid "E" Control Circuit High (Shift Solenoid Valve SR)	- Open in shift solenoid valve SR circuit - Shift solenoid valve SR - ECM	Comes on	DTC stored	AX-110
P2714	Pressure Control Solenoid "D" Performance (Shift Solenoid Valve SLT)	- Shift solenoid valve SLT remains closed - Valve body is blocked - Torque converter clutch - Automatic transaxle (clutch, brake, gear, etc.) - ECM	Comes on	DTC stored	AX-114
P2716	Pressure Control Solenoid "D" Electrical (Shift Solenoid Valve SLT)	- Open or short in shift solenoid valve SLT circuit - Shift solenoid valve SLT - ECM	Comes on	DTC stored	AX-120

DTC No.	Detection Item	Trouble Area	MIL*1	Memory*2	See page
P2769	Torque Converter Clutch Solenoid Circuit Low (Shift Solenoid Valve DSL)	<ul style="list-style-type: none"> - Short in shift solenoid valve DSL circuit - Shift solenoid valve DSL - ECM 	Comes on	DTC stored	AX-123
P2770	Torque Converter Clutch Solenoid Circuit High (Shift Solenoid Valve DSL)	<ul style="list-style-type: none"> - Open in shift solenoid valve DSL circuit - Shift solenoid valve DSL - ECM 	Comes on	DTC stored	AX-123