4F50N (AX4N)
CODE BOOK

Produced by AAMCO Transmissions, Inc.
Technical Services Department

Every attempt has been made to ensure the accuracy of the information contained in this book. Due to variations in engine and transmission control systems from year to year, it is up to the technician using this book to verify the information is appropriate for the transmission he/she is working on.

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Transmission Range Sensor

4F50N Codes P0705, P0708, P1702, P1704 and P1705
Transmission Range Sensor

Theory of Operation:

The Digital Transmission Range (DTR) sensor is located on the outside of the transmission case at the manual control lever. The sensor sends a digital signal to the Powertrain Control Module (PCM). The PCM uses the DTR sensor signal to determine the gear selector position for the correct gear and EPC strategy. The DTR sensor also contains the Neutral Start and Back-up Lamp circuits.

Circuit Description:

The PCM sends a voltage signal to the DTR sensor on four individual circuits. The DTR opens and closes four switches, which are used to create a set of pull down circuits. The PCM monitors the voltage signal combinations from the four circuits, which corresponds to the position of the manual lever.

Conditions for Setting Trouble Code P0705

- The PCM detected an invalid TR_D pattern caused by a sensor or wiring problem in the TR1, TR2, TR3A and/or TR4 circuits.

Conditions for Setting Trouble Code P0708:

- The PCM detected digital TR circuit TR3A reading open circuit. (PCM Pin 64 reading 2.6-5.0 volts)

Conditions for Setting Trouble Code P1702

- Intermittent P0705 or P0708 is set. See other codes.

Conditions for Setting Trouble Code P1704

- Digital TR sensor circuits reading in between gear positions during Key-ON-Engine OFF (KOEO) or Key-ON-Engine Running (KOER) self test. Sensor or cable misadjusted or sensor circuit failure.

Conditions for Setting Trouble Code P1705

- The selector was not in Park or Neutral during KOEO or KOER self test.

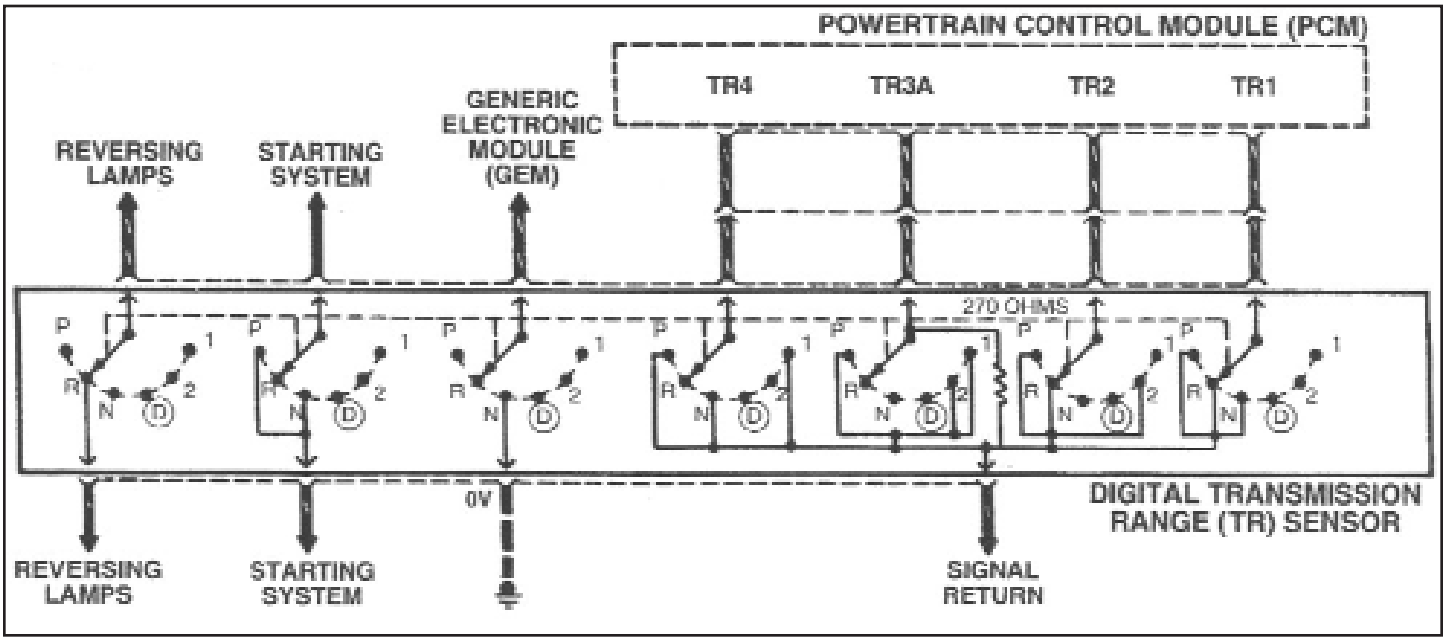
Action Taken When Code Sets:

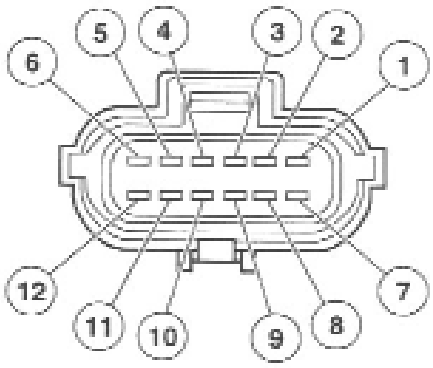
- Increase in electronic control pressure.
- May illuminate the malfunction indicator lamp.
- None if code is a procedural error during KOEO/KOER self-test.

Possible Causes:

- Transmission selector not in PARK during KOEO/KOER Self-Test
- Manual linkage not adjusted properly
- Transmission range sensor not adjusted properly
- Defective transmission range sensor
- Wiring or connector problems in the transmission range sensor electrical circuit.
- Defective PCM

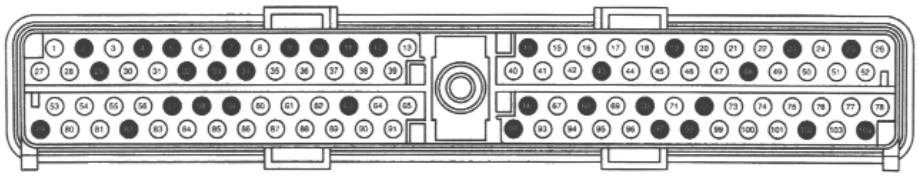
Wiring Diagrams





Pin	Function
1	Not Used
2	Signal Return
3	TR3A
4	TR1
5	TR2
6	TR4
7	Not Used
8	Not Used
9	Fused Power Feed
10	Starter Control
11	Back Up
12	Starter to Starter Interrupt Relay

Figure 1



Pin	Function
91	Signal Return
64	TR3A
*3 or 34	TR1
49	TR2
50	TR4

*2000 Tarus/Sable 3.0L 4V
2001-2002 Continental 4.6L
Pin 34
All Others Pin 3

Figure 2

See Appendix for Wire Colors.

Diagnosis

Step 1

Connect your scan tool to the vehicle, check and record all diagnostic trouble codes, freeze frame data and failure records. Clear codes and road test the vehicle using all selector positions. Recheck codes making sure the selector lever is in the PARK position.
Does the trouble code return?
If yes, go to step 2.
If no, the problem is intermittent. Inspect the DTR sensor and harness connectors for corroded, damaged or pushed out terminals. Try using the scan tool to monitor the TR_D data parameter in all selector positions while shaking the wiring and connectors and tapping the sensor. See if any of the 1 and 0 combinations changes from what is shown in the chart below.

Selector Position	TR	TR__D
Park	P/N	0000
Reverse	REV	1100
Neutral	NTRL	0110
Drive	O/D*	1111
Man 2	Man2	1001
Man 1	Man 1	0011

*Will read DRIVE if the O/D cancel switch is ON.

NOTE **Code 1705 could have been caused by a procedural error during the first test (selector not in PARK or between ranges).**

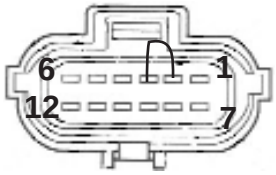
Step 2

Check to see that the DTR sensor harness connector is fully seated. Inspect the sensor and harness connectors for corroded, damaged or pushed out terminals. Check for proper shift linkage adjustment in the DRIVE position. With the engine off and the transmission in NEUTRAL check the TR sensor adjustment.
Do the connectors, linkage and sensor adjustments check OK?
If yes, go to step 3.
If no, make the necessary repairs and rerun diagnostics.

Diagnosis

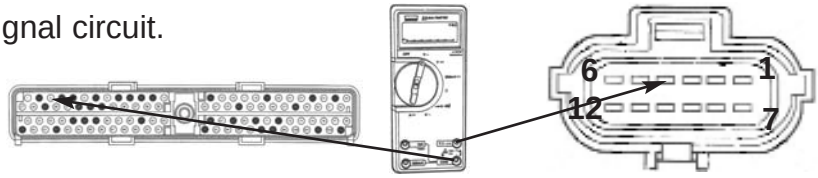
Step 3

With the ignition key off disconnect the DTR sensor harness connector. Inspect the DTR sensor and harness connectors for corroded, damaged or pushed out terminals. Connect a scan tool to the vehicle and monitor the TR_D data parameter. With the ignition key on connect a suitable 3 amp fused jumper wire between the sensor ground circuit (pin 2) and the DTR sensor TR3A, TR1, TR2, TR4 signal circuits (pins 3,4,5 and 6) of the DTR sensor harness connector **(See Figure 1)**. Does the parameter show the TR_D circuits go from 1 to 0 individually while the jumper is applied in each location?
If yes, replace the DTR sensor.
If no, go to step 4.



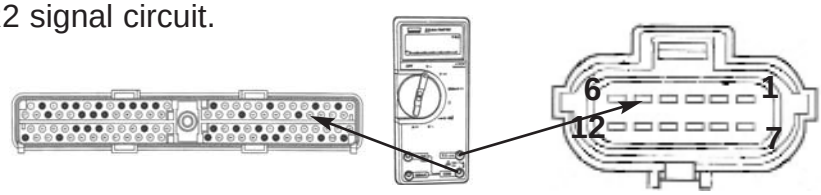
Step 4

With the ignition key off disconnect the DTR sensor and PCM harness connectors. Inspect the DTR sensor, PCM and harness connectors for corroded, damaged or pushed out terminals. Using a DVOM measure the DTR, TR1 signal circuit resistance between the PCM harness connector (pin 3 or 34) **(See Figure 2)** and the DTR sensor harness connector (pin 4).
Is the resistance 5 ohms or less?
If yes, go to step 5.
If no, repair the open in the TR1 signal circuit.



Step 5

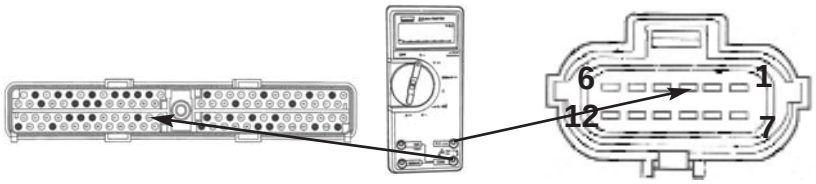
With the ignition key off disconnect the DTR sensor and PCM harness connectors. Inspect the DTR sensor, PCM and harness connectors for corroded, damaged or pushed out terminals. Using a DVOM measure the DTR TR2 signal circuit resistance between the PCM harness connector (pin 49) and the DTR sensor harness connector (pin 5).
Is the resistance 5 ohms or less?
If yes, go to step 6.
If no, repair the open in the TR2 signal circuit.



Diagnosis

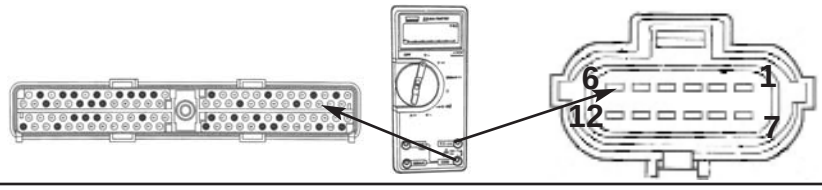
Step 6

With the ignition key off disconnect the DTR sensor and PCM harness connectors. Inspect the DTR sensor, PCM and harness connectors for corroded, damaged or pushed out terminals. Using a DVOM measure the DTR TR3A signal circuit resistance between the PCM harness connector (pin 64) and the DTR sensor harness connector (pin 3).
Is the resistance 5 ohms or less?
If yes, go to step 7.
If no, repair the open in the TR3A signal circuit.



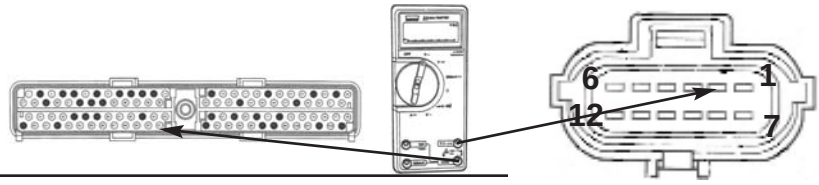
Step 7

With the ignition key off disconnect the DTR sensor and PCM harness connectors. Inspect the DTR sensor, PCM and harness connectors for corroded, damaged or pushed out terminals. Using a DVOM measure the DTR TR4 signal circuit resistance between the PCM harness connector (pin 50) and the DTR sensor harness connector (pin 6).
Is the resistance 5 ohms or less?
If yes, go to step 8.
If no, repair the open in the TR4 signal circuit.



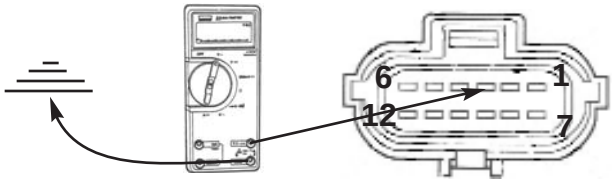
Step 8

With the ignition key off disconnect the DTR sensor and PCM harness connectors. Inspect the DTR sensor, PCM and harness connectors for corroded, damaged or pushed out terminals. Using a DVOM measure the sensor signal return circuit resistance between the PCM harness connector (pin 91) and the DTR sensor harness connector (pin 2).
Is the resistance 5 ohms or less?
If yes, go to step 9.
If no, repair the open in the sensor signal return circuit.



Step 9

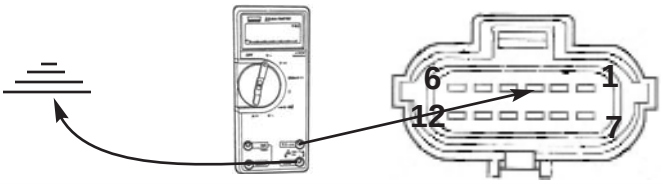
With the ignition key off disconnect the DTR sensor and PCM harness connectors. Inspect the DTR sensor, PCM and harness connectors for corroded, damaged or pushed out terminals. Using a DVOM measure the resistance between the DTR signal circuits (pins 3, 4, 5 and 6) of the DTR sensor harness connector and a good ground.
Is the resistance more than 5 ohms between each of the DTR sensor signal circuits and ground?
If yes, go to step 10.
If no, repair the short to ground in the affected DTR sensor signal circuit.



Diagnosis

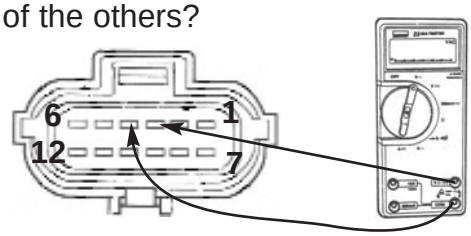
Step 10

With the ignition key off disconnect the DTR sensor and PCM harness connectors. Inspect the DTR sensor, PCM and harness connectors for corroded, damaged or pushed out terminals.
With the ignition key on measure the voltage at each of the DTR sensor signal circuits (pins 3, 4, 5 and 6) of the DTR sensor harness connector. Is there more than 1 volt present on any of the DTR sensor signal circuits?
If yes repair the short to power in the affected DTR sensor signal circuit.
If no, go to step 11.



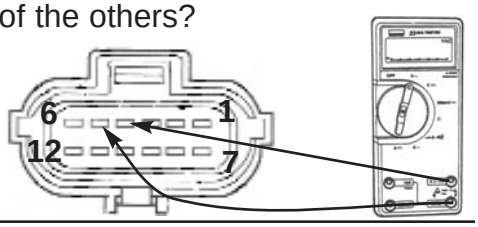
Step 11

With the ignition key off disconnect the DTR sensor and PCM harness connectors. Inspect the DTR sensor, PCM and harness connectors for corroded, damaged or pushed out terminals.
Using a DVOM measure the resistance between the DTR sensor signal circuit TR3A (pin 3) and the remaining DTR signal circuits (pins 4, 5 and 6) of the DTR sensor harness connector.
Is the resistance more than 5 ohms between pin 3 and each of the others?
If yes, go to step 12.
If no, repair the short between the affected DTR sensor signal circuits.



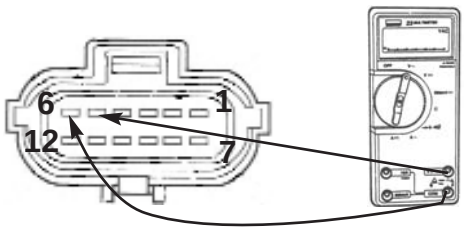
Step 12

With the ignition key off disconnect the DTR sensor and PCM harness connectors. Inspect the DTR sensor, PCM and harness connectors for corroded, damaged or pushed out terminals.
Using a DVOM measure the resistance between the DTR sensor signal circuit TR1 (pin 4) and the remaining DTR signal circuits (pins 5 and 6) of the DTR sensor harness connector.
Is the resistance more than 5 ohms between pin 4 and each of the others?
If yes, go to step 13.
If no, repair the short between the affected DTR sensor signal circuits.



Step 13

With the ignition key off disconnect the DTR sensor and PCM harness connectors. Inspect the DTR sensor, PCM and harness connectors for corroded, damaged or pushed out terminals.
Using a DVOM measure the resistance between the DTR sensor signal circuits TR2 (pin 5) and TR4 (pin 6) of the DTR sensor harness connector.
Is the resistance more than 5 ohms?
If yes, replace the PCM
If no, repair the short between the affected DTR sensor signal circuits.



CODE P0731
1st Gear Failure

4F50N Code P0731 1st Gear Failure

Theory of Operation:

The Powertrain Control Module (PCM) controls various engine and transmission functions. During transmission control the PCM responds to sensor inputs and operates solenoids for the electro-hydraulic control of line pressure, shift scheduling and TCC apply. The PCM monitors engine RPM, turbine shaft RPM, and output shaft RPM and/or vehicle speed. The PCM calculates gear ratio based on these inputs and compares the calculated ratio to the known transmission ratio for the gear commanded.

Conditions for Setting the Trouble Code:

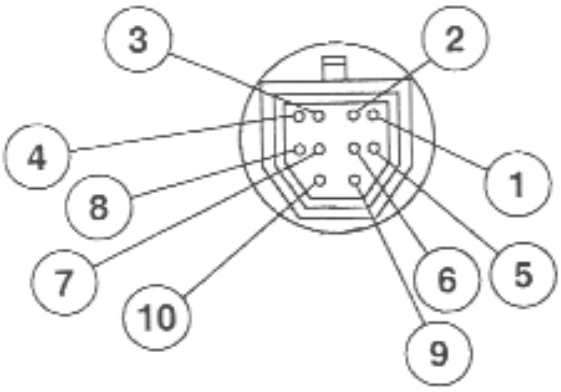
- The PCM does not detect the proper 1st gear ratio when 1st gear is commanded.
- The PCM must see the problem four times in one ignition cycle.

Action Taken When Code Sets:

- Improper gear selection depending on failure mode and transmission range selector lever position.
- May illuminate the malfunction indicator lamp.

Possible Causes:

- Defective shift solenoid A
- Defective shift solenoid B
- Defective shift solenoid C
- Damaged or misadjusted shift linkage
- Sticking valves
- Internal transmission components (clutches/bands/sprags)
- Powertrain control system (wiring/sensors/computer)



Pin Number	Circuit Function, Wire Color
1	Shift Solenoid A (SSA)
2	2000-2003: Shift Solenoid Vehicle Power 2004: Shift Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power
3	Torque Converter Clutch (TCC) Solenoid
4	Not Used
5	Transmission Fluid Temperature (TFT) Sensor
6	Shift Solenoid B (SSB)
7	2000-2003: Electronic Pressure Control (EPC) Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power 2004: Electronic Pressure Control (EPC) Solenoid Vehicle Power
8	Shift Solenoid C (SSC)
9	Transmission Fluid Temperature (TFT) Signal Return
10	Electronic Pressure Control (EPC) Solenoid

Figure 1

Solenoid Operation Chart			
Shifter Position	Solenoid States		
	A	B	C
P or N	OFF	ON	OFF
Rev	OFF	ON	OFF
1st	OFF	ON	OFF
2nd	OFF	OFF	OFF
3rd	ON	OFF	ON
4th	ON	ON	ON

Figure 2

Diagnosis

Generally this code indicates a transmission mechanical or hydraulic problem however malfunctioning external sensors or mechanically bad solenoids can cause it.

Step 1

Connect your scan tool to the vehicle, check and record all DTCs, failure records and freeze frame data. Clear codes and road test the vehicle to see if the codes return. If the codes do not return the problem is intermittent. Try road testing cold and hot. Continue with TranScan/Protect Check including sump examination.
If code P0731 does return go to step 2.

Step 2

If code P0731 returned were any TPS, MLP, MAP, MAF, PIP, OSS, VSS, EPC, SSA, SSB or SSC codes present also?
If yes repair these codes first.
If no, and you have Kwik-Test Plus go to step 3.
If no, and you do not have Kwik-Test Plus go to step 4.

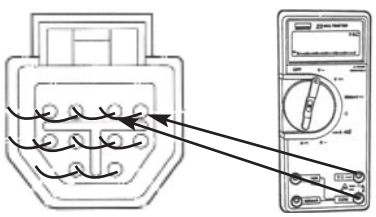
NOTE **Codes must be cleared to perform test 3 or 4. The PCM will not command 1st gear with code P0731 present.**

Step 3

Connect the Kwik-Test Plus box and road test the vehicle. Following the instructions in the Kwik-Test manual, monitor the computer signals to the transmission. In the monitor transmission mode did the PCM send the correct signal for 1st gear?
If yes, go to step 8.
If no, step 5.

Step 4

In this test we are checking the computer signal for 1st gear. You should only be doing this test if you do not have a Kwik-Test plus box. With the front wheels off the ground start the engine and place the manual selector in the OD position. Using your DVOM back probe the transmission harness connector and measure the voltage between the shift solenoid power (pin 2) and shift solenoids A, B and C control circuit wires (pins 1, 6 and 8) to determine the solenoid commanded states **(See Figures 1 and 2)**. Does the PCM send the correct signal for 1st gear?
If yes, go to step 8.
If no, go to step 5.



12 Volts = Solenoid On
0 Volts = Solenoid Off

Diagnosis

Generally this code indicates a transmission mechanical or hydraulic problem however malfunctioning external sensors or mechanically bad solenoids can cause it.

Step 5

Inspect the manual shift linkage for damage and proper adjustment. Check the Manual Lever Position (MLP) sensor for damage and proper adjustment.
Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, go to step 6.

Step 6

Connect your scan tool to the vehicle. With the ignition key on observe the MLP input parameter on scan data while moving the manual selector through each driving range. Does the MLP input match the actual position of the manual lever?
If yes, go to step 7.
If no, make necessary repairs and rerun diagnostics (see MLP code diagnosis in this section).

Step 7

Inspect shift solenoid A, B and C electrical circuit wiring for shorts or opens (see shift solenoid electrical circuit code diagnosis in this section). Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, replace the PCM.

Step 8

Inspect the manual shift linkage for damage and proper adjustment. Check the Manual Lever Position (MLP) sensor for damage and proper adjustment.
Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, go to step 9.

Diagnosis

Generally this code indicates a transmission mechanical or hydraulic problem however malfunctioning external sensors or mechanically bad solenoids can cause it.

Step 9

Remove the transmission bottom pan. Are the contents of the sump and fluid condition normal?
If yes, go to step 10.
If no, an internal problem is indicated (possible sprag, slipping forward clutch, band or direct clutch stuck on).

Step 10

Remove the transmission side pan. Check shift solenoids A, B and C for proper operation (sticking or clogged). Check the valve body for sticking valves, loose bolts or blown out gaskets. Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, an internal problem is indicated (possible sprag, slipping forward clutch, band or direct clutch stuck on).

CODE P0732
2nd Gear Failure

4F50N Code P0732 2nd Gear Failure

Theory of Operation:

The Powertrain Control Module (PCM) controls various engine and transmission functions. During transmission control the PCM responds to sensor inputs and operates solenoids for the electro-hydraulic control of line pressure, shift scheduling and TCC apply. The PCM monitors engine RPM, turbine shaft RPM, and output shaft RPM and/or vehicle speed. The PCM calculates gear ratio based on these inputs and compares the calculated ratio to the known transmission ratio for the gear commanded.

Conditions for Setting the Trouble Code:

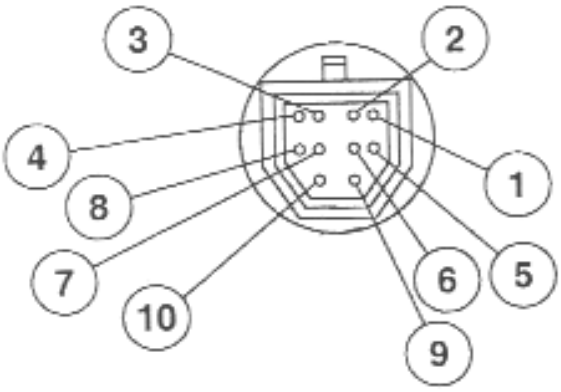
- The PCM does not detect the proper 2nd gear ratio when 2nd gear is commanded.
- The PCM must see the problem four times in one ignition cycle.

Action Taken When Code Sets:

- Improper gear selection depending on failure mode and transmission range selector lever position.
- May illuminate the malfunction indicator lamp.

Possible Causes:

- Defective shift solenoid A
- Defective shift solenoid B
- Defective shift solenoid C
- Damaged or misadjusted shift linkage
- Sticking valves
- Internal transmission components (clutches/bands/sprags)
- Powertrain control system (wiring/sensors/computer)



Pin Number	Circuit Function, Wire Color
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6	Shift Solenoid B (SSB)
7	2000-2003: Electronic Pressure Control (EPC) Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power 2004: Electronic Pressure Control (EPC) Solenoid Vehicle Power
8	Shift Solenoid C (SSC)
9	Transmission Fluid Temperature (TFT) Signal Return
10	Electronic Pressure Control (EPC) Solenoid

Figure 1

Solenoid Operation Chart			
Shifter Position	Solenoid States		
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2nd	OFF	OFF	OFF
3rd	ON	OFF	ON
4th	ON	ON	ON

Figure 2

Diagnosis

Generally this code indicates a transmission mechanical or hydraulic problem however malfunctioning external sensors or mechanically bad solenoids can cause it.

Step 1

Connect your scan tool to the vehicle, check and record all DTCs, failure records and freeze frame data. Clear codes and road test the vehicle to see if the codes return. If the codes do not return the problem is intermittent. Try road testing cold and hot. Continue with TranScan/Protect Check including sump examination.
If code P0732 does return go to step 2.

Step 2

If code P0732 returned were any TPS, MLP, MAP, MAF, CKP, OSS, VSS, EPC, SSA, SSB or SSC codes present also?
If yes repair these codes first.
If no, and you have Kwik-Test Plus go to step 3.
If no, and you do not have Kwik-Test Plus go to step 4.

NOTE **Codes must be cleared to perform test 3 or 4. The PCM will not command 2nd gear with code P0732 present.**

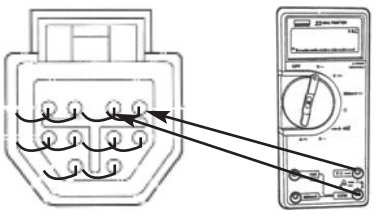
Step 3

Connect the Kwik-Test Plus box and road test the vehicle. Following the instructions in the Kwik-Test manual, monitor the computer signals to the transmission. In the monitor transmission mode did the PCM send the correct signal for 2nd gear?
If yes, go to step 8.
If no, step 5.

Step 4

In this test we are checking the computer signal for 2nd gear. You should only be doing this test if you do not have a Kwik-Test plus box. With the front wheels off the ground start the engine and place the manual selector in the OD position. Allow the front wheels to rotate at a speed high enough to attain 2nd gear. Using your DVOM back probe the transmission harness connector and measure the voltage between the shift solenoid power (pin 2) and shift solenoids A, B and C control circuit wires (pins 1, 6 and 8) to determine the solenoid commanded states **(See Figures 1 and 2)**. Does the PCM send the correct signal for 2nd gear?
If yes, go to step 8.
If no, go to step 5.

12 Volts = Solenoid On
0 Volts = Solenoid Off



Diagnosis

Generally this code indicates a transmission mechanical or hydraulic problem however malfunctioning external sensors or mechanically bad solenoids can cause it.

Step 5

Inspect the manual shift linkage for damage and proper adjustment. Check the Manual Lever Position (MLP) sensor for damage and proper adjustment.
Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, go to step 6.

Step 6

Connect your scan tool to the vehicle. With the ignition key on observe the MLP input parameter on scan data while moving the manual selector through each driving range. Does the MLP input match the actual position of the manual lever?
If yes, go to step 7.
If no, make necessary repairs and rerun diagnostics (see MLP code diagnosis in this section).

Step 7

Inspect shift solenoid A, B and C electrical circuit wiring for shorts or opens (see shift solenoid electrical circuit code diagnosis in this section). Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, replace the PCM.

Step 8

Inspect the manual shift linkage for damage and proper adjustment. Check the Manual Lever Position (MLP) sensor for damage and proper adjustment.
Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, go to step 9.

Diagnosis

Generally this code indicates a transmission mechanical or hydraulic problem however malfunctioning external sensors or mechanically bad solenoids can cause it.

Step 9

Remove the transmission bottom pan. Are the contents of the sump and fluid condition normal?
If yes, go to step 10.
If no, an internal problem is indicated (possible slipping forward clutch, second clutch or 1-2 band).

Step 10

Remove the transmission side pan. Check shift solenoids A, B and C for proper operation (sticking or clogged). Check the valve body for sticking valves, loose bolts or blown out gaskets. Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, an internal problem is indicated (possible slipping forward clutch, second clutch or 1-2 band).

CODE P0733
3rd Gear Failure

4F50N Code P0733 3rd Gear Failure

Theory of Operation:

The Powertrain Control Module (PCM) controls various engine and transmission functions. During transmission control the PCM responds to sensor inputs and operates solenoids for the electro-hydraulic control of line pressure, shift scheduling and TCC apply. The PCM monitors engine RPM, turbine shaft RPM, and output shaft RPM and/or vehicle speed. The PCM calculates gear ratio based on these inputs and compares the calculated ratio to the known transmission ratio for the gear commanded.

Conditions for Setting the Trouble Code:

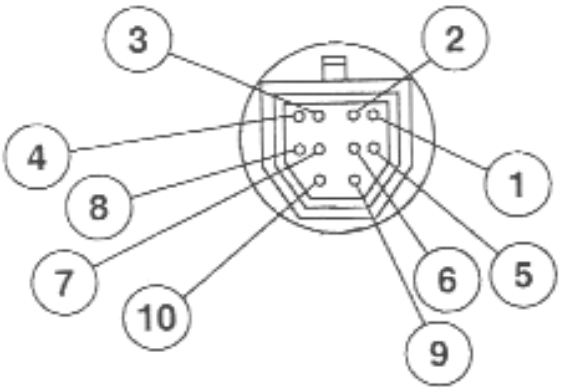
- The PCM does not detect the proper 3rd gear ratio when 3rd gear is commanded.
- The PCM must see the problem four times in one ignition cycle.

Action Taken When Code Sets:

- Improper gear selection depending on failure mode and transmission range selector lever position.
- May illuminate the malfunction indicator lamp.

Possible Causes:

- Defective shift solenoid A
- Defective shift solenoid B
- Defective shift solenoid C
- Damaged or misadjusted shift linkage
- Sticking valves
- Internal transmission components (clutches/bands/sprags)
- Powertrain control system (wiring/sensors/computer)



Pin Number	Circuit Function, Wire Color
1	Shift Solenoid A (SSA)
2	2000-2003: Shift Solenoid Vehicle Power 2004: Shift Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power
3	Torque Converter Clutch (TCC) Solenoid
4	Not Used
5	Transmission Fluid Temperature (TFT) Sensor
6	Shift Solenoid B (SSB)
7	2000-2003: Electronic Pressure Control (EPC) Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power 2004: Electronic Pressure Control (EPC) Solenoid Vehicle Power
8	Shift Solenoid C (SSC)
9	Transmission Fluid Temperature (TFT) Signal Return
10	Electronic Pressure Control (EPC) Solenoid

Figure 1

Solenoid Operation Chart			
Shifter Position	Solenoid States		
	A	B	C
P or N	OFF	ON	OFF
Rev	OFF	ON	OFF
1st	OFF	ON	OFF
2nd	OFF	OFF	OFF
3rd	ON	OFF	ON
4th	ON	ON	ON

Figure 2

Diagnosis

Generally this code indicates a transmission mechanical or hydraulic problem however malfunctioning external sensors or mechanically bad solenoids can cause it.

Step 1

Connect your scan tool to the vehicle, check and record all DTCs, failure records and freeze frame data. Clear codes and road test the vehicle to see if the codes return. If the codes do not return the problem is intermittent. Try road testing cold and hot. Continue with TranScan/Protect Check including sump examination.
If code P0733 does return go to step 2.

Step 2

If code P0733 returned were any TPS, MLP, MAP, MAF, CKP, OSS, VSS, EPC, SSA, SSB or SSC codes present also?
If yes repair these codes first.
If no, and you have Kwik-Test Plus go to step 3.
If no, and you do not have Kwik-Test Plus go to step 4.

NOTE **Codes must be cleared to perform test 3 or 4. The PCM will not command 3rd gear with code P0733 present.**

Step 3

Connect the Kwik-Test Plus box and road test the vehicle. Following the instructions in the Kwik-Test manual, monitor the computer signals to the transmission. In the monitor transmission mode did the PCM send the correct signal for 3rd gear?
If yes, go to step 8.
If no, go to step 5.

Diagnosis

Generally this code indicates a transmission mechanical or hydraulic problem however malfunctioning external sensors or mechanically bad solenoids can cause it.

Step 4

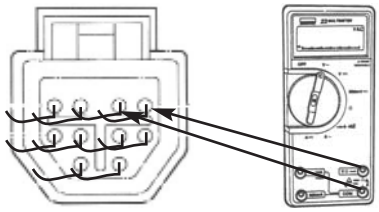
In this test we are checking the computer signal for 3rd gear. You should only be doing this test if you do not have a Kwik-Test plus box. With the front wheels off the ground start the engine and place the manual selector in the OD position. Allow the front wheels to rotate at a speed high enough to attain 3rd gear. Using your DVOM back probe the transmission harness connector and measure the voltage between the shift solenoid power (pin 2) and shift solenoids A, B and C control circuit wires (pins 1, 6, and 8) to determine the solenoid commanded states **(See Figures 1 and 2)**. Does the PCM send the correct signal for 3rd gear?

If yes, go to step 8.

If no, go to step 5.

12 Volts = Solenoid On

0 Volts = Solenoid Off



Step 5

Inspect the manual shift linkage for damage and proper adjustment. Check the Manual Lever Position (MLP) sensor for damage and proper adjustment.

Was any problem found?

If yes, make necessary repairs and rerun diagnostics.

If no, go to step 6.

Step 6

Connect your scan tool to the vehicle. With the ignition key on observe the MLP input parameter on scan data while moving the manual selector through each driving range. Does the MLP input match the actual position of the manual lever?

If yes, go to step 7.

If no, make necessary repairs and rerun diagnostics (see MLP code diagnosis in this section).

Diagnosis

Generally this code indicates a transmission mechanical or hydraulic problem however malfunctioning external sensors or mechanically bad solenoids can cause it.

Step 7

Inspect shift solenoid A, B and C electrical circuit wiring for shorts or opens (see shift solenoid electrical circuit code diagnosis in this section). Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, replace the PCM.

Step 8

Inspect the manual shift linkage for damage and proper adjustment. Check the Manual Lever Position (MLP) sensor for damage and proper adjustment.
Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, go to step 9.

Step 9

Remove the transmission bottom pan. Are the contents of the sump and fluid condition normal?
If yes, go to step 10.
If no, an internal problem is indicated (possible slipping second clutch, 3rd clutch or 3rd sprag).

Step 10

Remove the transmission side pan. Check shift solenoids A, B and C for proper operation (sticking or clogged). Check the valve body for sticking valves, loose bolts or blown out gaskets. Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, an internal problem is indicated (possible slipping second clutch, 3rd clutch or 3rd sprag).

CODE P0734
4th Gear Failure

4F50N Code P0734 4th Gear Failure

Theory of Operation:

The Powertrain Control Module (PCM) controls various engine and transmission functions. During transmission control the PCM responds to sensor inputs and operates solenoids for the electro-hydraulic control of line pressure, shift scheduling and TCC apply. The PCM monitors engine RPM, turbine shaft RPM, and output shaft RPM and/or vehicle speed. The PCM calculates gear ratio based on these inputs and compares the calculated ratio to the known transmission ratio for the gear commanded.

Conditions for Setting the Trouble Code:

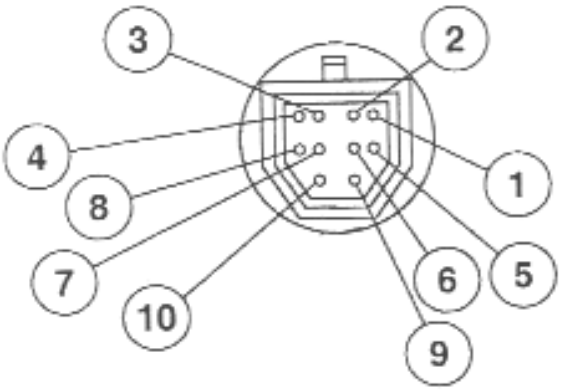
- The PCM does not detect the proper 4th gear ratio when 4th gear is commanded.
- The PCM must see the problem four times in one ignition cycle.

Action Taken When Code Sets:

- Improper gear selection depending on failure mode and transmission range selector lever position.
- May illuminate the malfunction indicator lamp.

Possible Causes:

- Defective shift solenoid A
- Defective shift solenoid B
- Defective shift solenoid C
- Damaged or misadjusted shift linkage
- Sticking valves
- Internal transmission components (clutches/bands/sprags)
- Powertrain control system (wiring/sensors/computer)



Pin Number	Circuit Function, Wire Color
1	Shift Solenoid A (SSA)
2	2000-2003: Shift Solenoid Vehicle Power 2004: Shift Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power
3	Torque Converter Clutch (TCC) Solenoid
4	Not Used
5	Transmission Fluid Temperature (TFT) Sensor
6	Shift Solenoid B (SSB)
7	2000-2003: Electronic Pressure Control (EPC) Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power 2004: Electronic Pressure Control (EPC) Solenoid Vehicle Power
8	Shift Solenoid C (SSC)
9	Transmission Fluid Temperature (TFT) Signal Return
10	Electronic Pressure Control (EPC) Solenoid

Figure 1

Solenoid Operation Chart			
Shifter Position	Solenoid States		
	A	B	C
P or N	OFF	ON	OFF
Rev	OFF	ON	OFF
1st	OFF	ON	OFF
2nd	OFF	OFF	OFF
3rd	ON	OFF	ON
4th	ON	ON	ON

Figure 2

Diagnosis

Generally this code indicates a transmission mechanical or hydraulic problem however malfunctioning external sensors or mechanically bad solenoids can cause it.

Step 1

Connect your scan tool to the vehicle, check and record all DTCs, failure records and freeze frame data. Clear codes and road test the vehicle to see if the codes return. If the codes do not return the problem is intermittent. Try road testing cold and hot. Continue with TranScan/Protect Check including sump examination.
If code P0734 does return go to step 2.

Step 2

If code P0734 returned, were any TPS, MLP, MAP, MAF, CKP, OSS, VSS, EPC, SSA, SSB or SSC codes present also?
If yes repair these codes first.
If no, and you have Kwik-Test Plus go to step 3.
If no, and you do not have Kwik-Test Plus go to step 4.

NOTE **Codes must be cleared to perform test 3 or 4. The PCM will not command 4th gear with code P0734 present.**

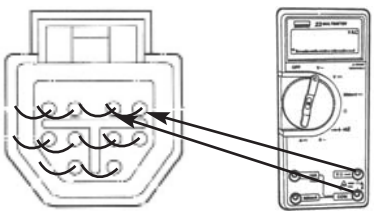
Step 3

Connect the Kwik-Test Plus box and road test the vehicle. Following the instructions in the Kwik-Test manual, monitor the computer signals to the transmission. In the monitor transmission mode did the PCM send the correct signal for 4th gear?
If yes, go to step 8.
If no, step 5.

Step 4

In this test we are checking the computer signal for 4th gear. You should only be doing this test if you do not have a Kwik-Test plus box. With the front wheels off the ground start the engine and place the manual selector in the OD position. Allow the front wheels to rotate at a speed high enough to attain 4th gear. Using your DVOM back probe the transmission harness connector and measure the voltage between the shift solenoid power (pin 2) and shift solenoids A, B and C control circuit wires (pins 1, 6 and 8) to determine the solenoid commanded states **(See Figures 1 and 2)**. Does the PCM send the correct signal for 4th gear?
If yes, go to step 8.
If no, go to step 5.

12 Volts = Solenoid On
0 Volts = Solenoid Off



Diagnosis

Generally this code indicates a transmission mechanical or hydraulic problem however malfunctioning external sensors or mechanically bad solenoids can cause it.

Step 5

Inspect the manual shift linkage for damage and proper adjustment. Check the Manual Lever Position (MLP) sensor for damage and proper adjustment.
Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, go to step 6.

Step 6

Connect your scan tool to the vehicle. With the ignition key on observe the MLP input parameter on scan data while moving the manual selector through each driving range. Does the MLP input match the actual position of the manual lever?
If yes, go to step 7.
If no, make necessary repairs and rerun diagnostics (see MLP code diagnosis in this section).

Step 7

Inspect shift solenoid A, B and C electrical circuit wiring for shorts or opens (see shift solenoid electrical circuit code diagnosis in this section). Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, replace the PCM.

Step 8

Inspect the manual shift linkage for damage and proper adjustment. Check the Manual Lever Position (MLP) sensor for damage and proper adjustment.
Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, go to step 9.

Diagnosis

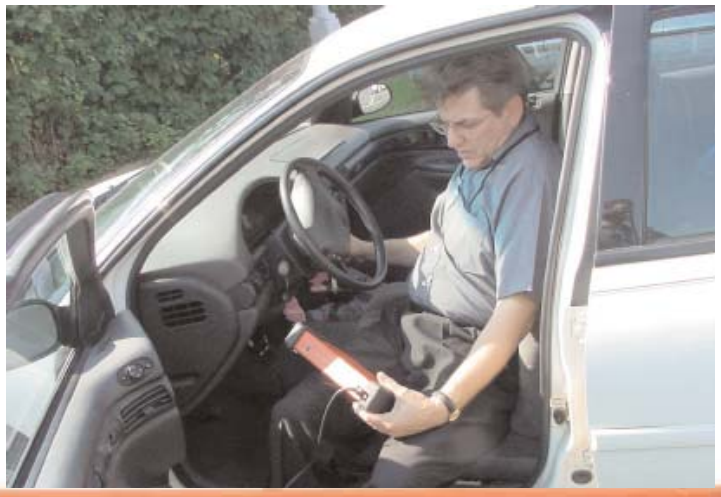
Generally this code indicates a transmission mechanical or hydraulic problem however malfunctioning external sensors or mechanically bad solenoids can cause it.

Step 9

Remove the transmission bottom pan. Are the contents of the sump and fluid condition normal?
If yes, go to step 10.
If no, an internal problem is indicated (possible slipping second clutch, 3rd clutch or OD band).

Step 10

Remove the transmission side pan. Check shift solenoids A, B and C for proper operation (sticking or clogged). Check the valve body for sticking valves, loose bolts or blown out gaskets. Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, an internal problem is indicated (possible slipping second clutch, 3rd clutch or OD band).



CODE P0740, P0743
Torque Converter Clutch
Solenoid Circuit Failure
(EEC-V)

4F50N Code P0740, P0743 Torque Converter Clutch Solenoid Circuit Failure (EEC-V)

Theory of Operation:

The 4F50N transmission uses solenoids to control upshifts, downshifts and main line oil pressure. It also uses a Pulse-Width modulated solenoid to control the application of the Torque Converter Clutch (TCC). The Powertrain Control Module (PCM) monitors voltage on the solenoid ground wire to determine circuit continuity.

Circuit Description:

All of the transmission solenoids receive voltage from the PCM power relay circuit. The PCM controls the torque converter clutch solenoid on the ground side of the circuit by varying the length of time the solenoid is turned on compared to the time it is turned off.

Conditions for Setting the Trouble Code:

This code is generated only by an electrical condition. The PCM failed to see a voltage change on the solenoid control circuit during a Key On Engine Off (KOEO) self test or during continuous on board diagnostics.

Action Taken When Code Sets:

Improper TCC application depending on solenoid circuit failure.

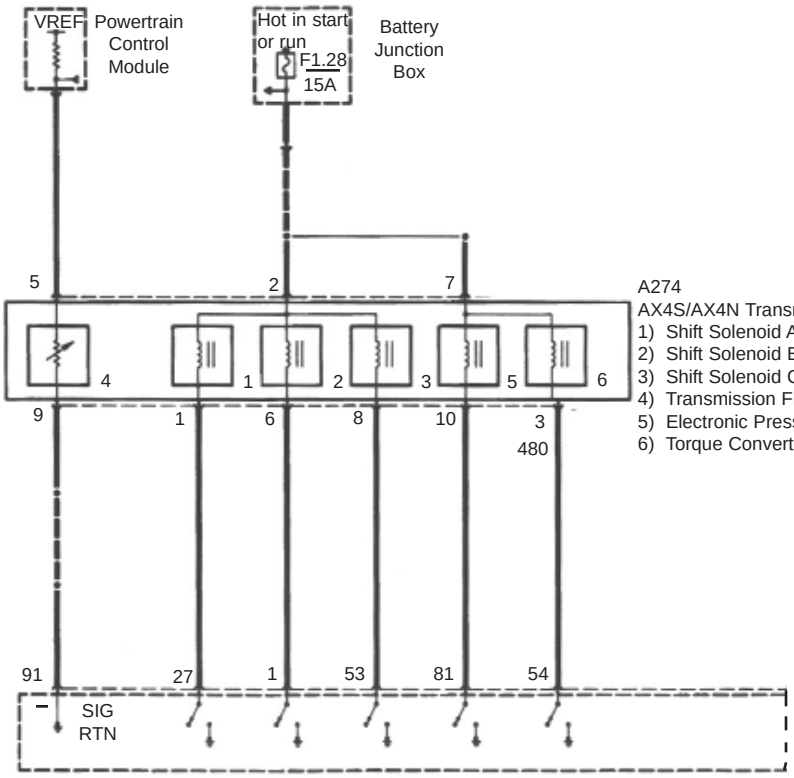
- Solenoid on: engine runs rough, vehicle shudder, engine stalls in drive at low idle speeds.
- Solenoid off: torque converter clutch never engages
- Illuminates the malfunction indicator lamp.

Possible Causes:

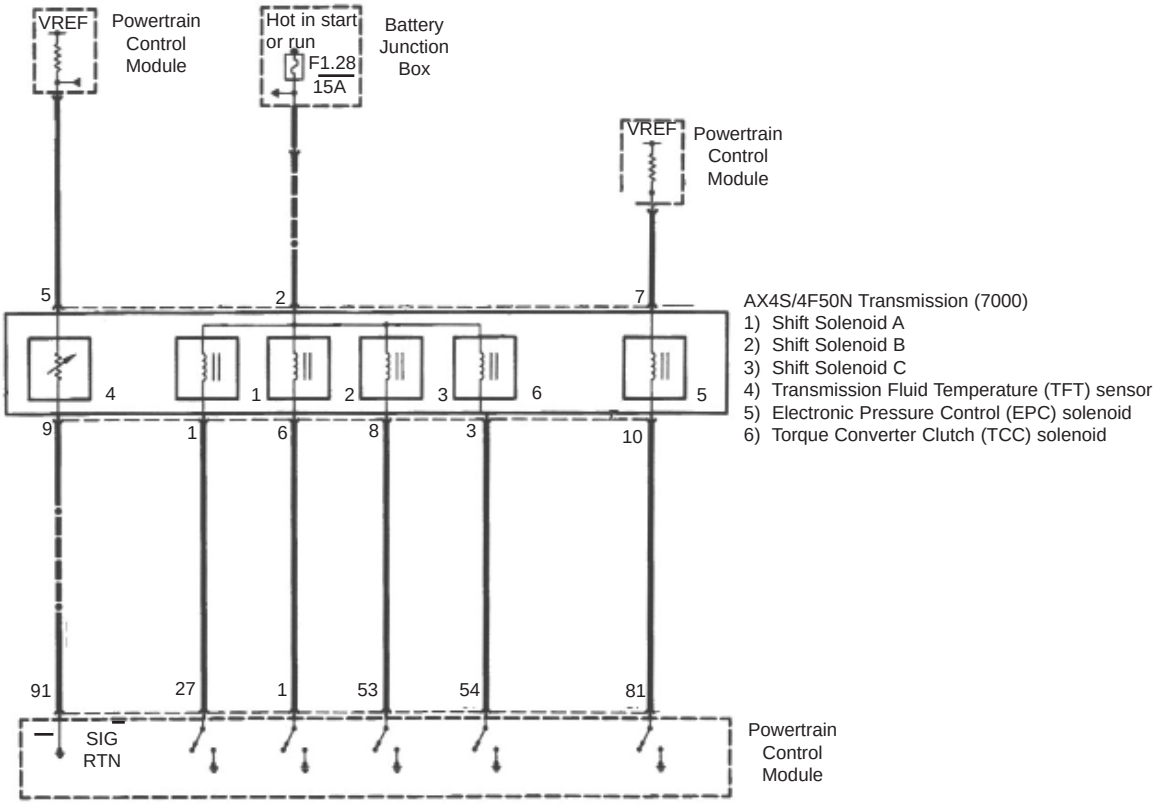
- Wiring or connector problems in the solenoid electrical circuit.
- Defective TCC Solenoid.
- Defective PCM

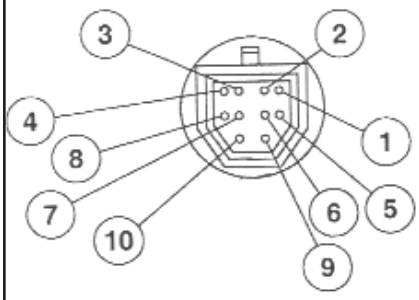
Wiring Diagrams

2000 - 2003



2004 - Up

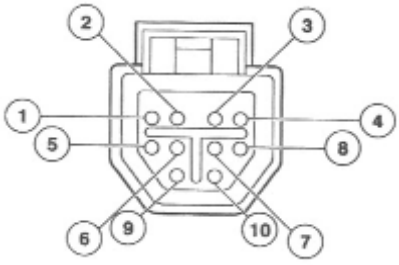




Transmission Case Connector

Pin Number	Circuit Function
1	Shift Solenoid A (SSA)
2	2000-2003: Shift Solenoid Vehicle Power 2004: Shift Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power
3	Torque Converter Clutch (TCC) Solenoid
4	Not Used
5	Transmission Fluid Temperature (TFT) Sensor
6	Shift Solenoid B (SSB)
7	2000-2003: Electronic Pressure Control (EPC) Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power 2004: Electronic Pressure Control (EPC) Solenoid Vehicle Power
8	Shift Solenoid C (SSC)
9	Transmission Fluid Temperature (TFT) Signal Return
10	Electronic Pressure Control (EPC) Solenoid

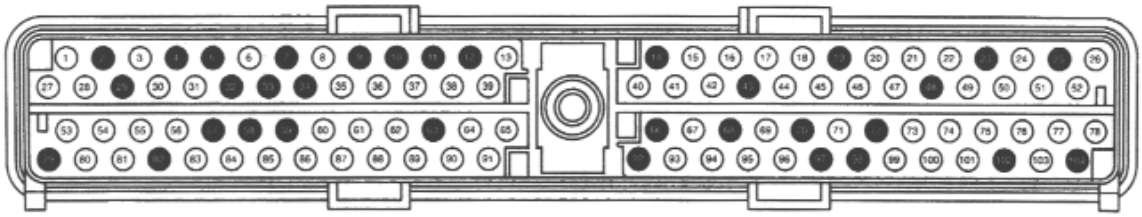
Figure 1



Transmission Harness Connector

Pin Number	Circuit Function
1	Shift Solenoid A (SSA)
2	2000-2003 Shift Solenoid Vehicle Power 2004 Shift Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power
3	Torque Converter Clutch (TCC) Solenoid
4	Not Used
5	Transmission Fluid Temperature (TFT) Sensor
6	Shift Solenoid B (SSB)
7	2000-2003 Electronic Pressure Control (EPC) Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power 2004 Electronic Pressure Control (EPC) Solenoid Vehicle Power
8	Shift Solenoid C (SSC)
9	Transmission Fluid Temperature (TFT) Signal Return
10	Electronic Pressure Control (EPC) Solenoid

Figure 2



PCM Harness Connector

Function	Pin	Color	Application
TCC Control Circuit	54	RD/LB	2001 - 2003 Windstar 2004 - 2007 Freestar/Montery
	54	DB/WT	2001 - 2002 Lincoln Contential
	54	PL/YL	2000 - 2007 Taurus/Sable

Figure 3

Diagnosis

Step 1

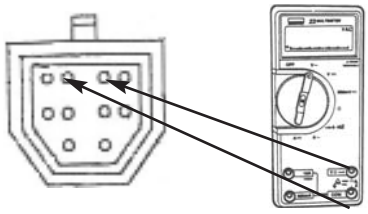
Connect your scan tool to the vehicle, check and record all DTCs, failure records and freeze frame data. Clear codes and road test the vehicle to see if the codes return. If the codes do not return the problem is intermittent. Try shaking the wiring and connectors to duplicate the condition. Inspect connectors for corroded, damaged or pushed out terminals.
If code returns and you have Kwik-Test Plus go to step 2.
If you do not have Kwik-Test Plus go to step 3.

Step 2

With the ignition key off disconnect the transmission case connector.
Inspect the harness and case connector for corroded, damaged or pushed out terminals.
Connect Kwik-Test Plus and test the TCC solenoid resistance, current and voltage. Does the TCC solenoid test OK?
If yes go to step 4.
If no go to step 8.

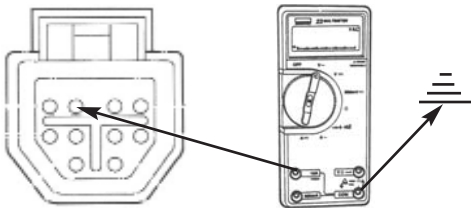
Step 3

With the ignition key off disconnect the transmission case connector. Inspect the harness and case connector for corroded damaged or pushed out terminals. Using a digital volt/ohmmeter measure the resistance between the TCC solenoid power circuit (pin 2 2004 - Up or pin 7 2000 -2003) and the TCC solenoid control circuit (pin 3) of the transmission case connector **(See Figure 1)**. Is the resistance between 13 and 24 Ohms?
If yes, go to step 4.
If no, go to step 8.



Step 4

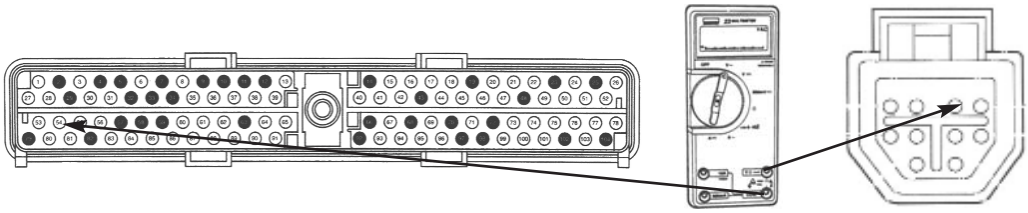
With the ignition key off disconnect the transmission case connector. Inspect the harness and case connector for corroded damaged or pushed out terminals. With the ignition key on measure the voltage at the TCC solenoid power circuit (pin 2 2004 - Up or pin 7 2000 - 2003) of the transmission harness connector **(See Figure 2)**. Is the voltage 10.5 volts or higher?
If yes, go to step 5.
If no, repair the open in the solenoid power circuit.



Diagnosis

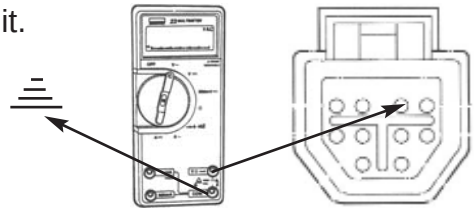
Step 5

With the ignition key off disconnect the PCM 104 pin and transmission case connectors. Inspect the PCM, transmission case and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance of the TCC solenoid control circuit between the PCM harness connector (pin 54) **(See Figure 3)** and the transmission harness connector (pin 3). Is the resistance 5 ohms or less?
If yes, go to step 6.
If no, repair the open in the solenoid control circuit between the PCM and transmission harness connectors.



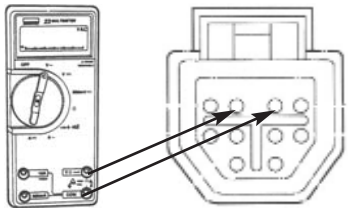
Step 6

With the ignition key off disconnect the PCM 104 pin and transmission case connectors. Inspect the PCM, transmission case and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance between the TCC solenoid control circuit (pin 3) of the transmission harness connector and ground. Is the resistance 5 ohms or less?
If yes, repair the short to ground in the solenoid control circuit.
If no, go to step 7.



Step 7

With the ignition key off disconnect the PCM 104 pin and transmission case connectors. Inspect the PCM, transmission case and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance between the solenoid power circuits (pin 2 2004 -Up or pin 7 2000 - 2003) and the TCC solenoid control circuit (pin 3) of the transmission harness connector. Is the resistance 5 ohms or less?
If yes repair the short to power in the TCC solenoid control circuit.
If no, replace the PCM.



Step 8

Remove the transmission side cover. Disconnect the internal wiring harness from the TCC solenoid. Inspect the solenoid and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance between the two TCC solenoid terminals. Is the resistance 13-24 Ohms?
If no, replace the TCC solenoid.
If yes, replace the transmission internal wiring harness.

CODE P0741, P01740, P01741 and P01744
Torque Converter Clutch Engagement Error (Slipping or Stuck OFF)

4F50N Code P0741, P1740, P1741, P1744 Torque Converter Clutch Engagement Error (Slipping or Stuck OFF)

Theory of Operation:

The Powertrain Control Module (PCM) controls various engine and transmission functions. During transmission control the PCM responds to inputs and operates solenoids for the electro-hydraulic control of line pressure, shift scheduling and Torque Converter Clutch (TCC) apply. The PCM monitors Engine speed, Turbine speed, Vehicle speed, Brake on/off switch and Throttle position to determine when to engage the TCC. It also uses these inputs to tell if the TCC has applied properly.

Conditions for Setting the Trouble Code:

- The PCM detects an excessive amount of TCC slippage or no TCC apply when the clutch is commanded on.
- The PCM must see the problem five times in one ignition cycle.

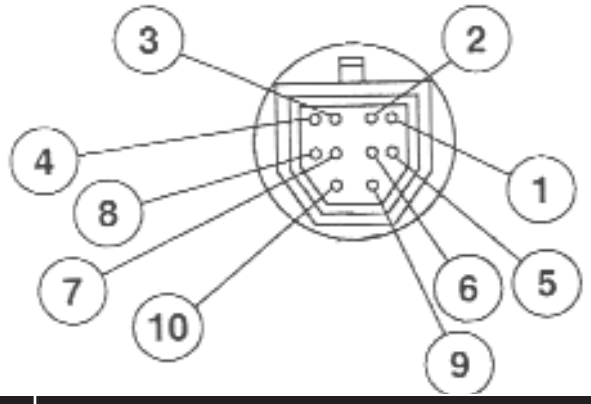
Action Taken When Code Sets:

- Disengages the torque converter clutch.
- May raise transmission main line oil pressure.
- May illuminate the malfunction indicator lamp.

Possible Causes:

- Defective TCC solenoid
- Damaged or misadjusted shift linkage
- Sticking valves or worn valves
- Internal transmission components
- Defective torque converter
- Powertrain control system
- Wrong drive and/or driven sprockets installed during rebuild.
- Wrong TCC solenoid installed during rebuild

NOTE **Generally this code indicates a transmission mechanical or hydraulic problem, however, malfunctioning external sensors or a mechanically bad TCC solenoid can cause it also. If the vehicle is setting this code after rebuild or an exchange transmission has been installed verify that the correct chain sprockets and TCC solenoid have been installed.**



Pin Number	Circuit Function, Wire Color
1	Shift Solenoid A (SSA)
2	2000-2003: Shift Solenoid Vehicle Power 2004: Shift Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power
3	Torque Converter Clutch (TCC) Solenoid
4	Not Used
5	Transmission Fluid Temperature (TFT) Sensor
6	Shift Solenoid B (SSB)
7	2000-2003: Electronic Pressure Control (EPC) Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power 2004: Electronic Pressure Control (EPC) Solenoid Vehicle Power
8	Shift Solenoid C (SSC)
9	Transmission Fluid Temperature (TFT) Signal Return
10	Electronic Pressure Control (EPC) Solenoid

Figure 1

Diagnosis

Step 1

Connect your scan tool to the vehicle, check and record all DTCs, failure records and freeze frame data. Clear codes and road test the vehicle to see if the codes return. Does the code return?
If yes, go to step 2.
If no the problem is intermittent. Try road testing cold and hot. Continue with TranScan/Protect Check including sump examination.

Step 2

If the code returned, were any TPS, TSS, VSS, BOO, CKP or TCC solenoid electrical circuit codes present also?
If yes, repair these codes first and rerun diagnostics.
If no and you have Kwik-Test Plus go to step 3.
If no and you do not have Kwik-Test Plus go to step 4.

NOTE **Codes must be cleared to perform test 3 or 4. The PCM will not command TCC apply with any TCC slip or TCC stuck off codes present.**

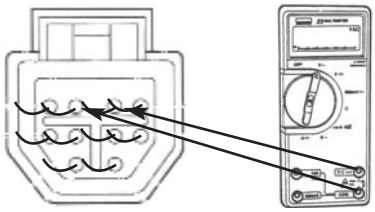
Step 3

Connect the Kwik-Test Plus box and road test the vehicle. Following the instructions in the Kwik-Test manual, monitor the computer signals to the transmission. In the monitor transmission mode did the PCM send the correct signal for TCC apply?
If yes, go to step 8.
If no, step 5.

Diagnosis

Step 4

In this test we are checking the computer signal for TCC apply. You should only be doing this test if you do not have a Kwik-Test plus box. With the front wheels off the ground start the engine and place the manual selector in the OD position. Allow the front wheels to rotate at a speed high enough to attain TCC engagement. Using your DVOM back probe the transmission harness connector between the solenoid power (pin 2) and TCC control circuit (pin 3) wires to determine the solenoid commanded states **(See Figure 1)**. Does the PCM send the correct signal for TCC engagement?
If yes, go to step 8.
If no, go to step 5.



NOTE **You may have to perform this test under actual driving conditions. Sometimes the PCM will not command TCC apply on the lift. If you do get a TCC apply signal while testing on the lift retest on the road before proceeding.**

Step 5

Inspect the manual shift linkage for damage and proper adjustment. Check the Manual Lever Position (MLP) sensor for damage and proper adjustment.
Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, go to step 6.

Step 6

Connect your scan tool to the vehicle. Road test the vehicle and monitor scan data for proper VSS, TSS, TPS, CKP and BOO sensor operation. Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, go to step 7.

Step 7

Inspect The TCC solenoid electrical circuit wiring for shorts or opens (see TCC solenoid electrical circuit code diagnosis in this section). Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, replace the PCM.

Step 8

Remove the transmission bottom pan. Are the contents of the sump and fluid condition normal?
If yes, go to step 9.
If no an internal problem is indicated. (Check the torque converter, pump and valve body)

Step 9

Remove the transmission side cover. Check the TCC solenoid for the proper resistance (13-24 Ohms) and operation (sticking or clogged). Check the valve body for sticking valves, loose bolts or blown out gaskets. Check the bypass clutch control and converter regulator valve for proper operation and wear. Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, an internal problem is indicated (Check the torque converter, pump and sprocket tooth count).

CODE P0750, P0753
Shift Solenoid A Circuit Failure

4F50N Codes P0750, P0753 Shift Solenoid A Circuit Failure

Theory of Operation:

The 4F50N transmission uses three shift solenoids to control upshifts and downshifts in all forward ranges. The solenoids work together in a combination of on and off sequences to control the position of various shift valves. The Powertrain Control Module (PCM) monitors voltage on the solenoid ground wire to determine circuit continuity.

Circuit Description:

All of the transmission solenoids receive voltage from the PCM power relay circuit. The PCM controls the solenoids by opening or closing the ground path on the solenoid control circuit.

Conditions for Setting the Trouble Code:

This code is generated only by an electrical condition. The PCM failed to see a voltage change on the solenoid control circuit during a Key On Engine Off (KOEO) self test or during continuous on board diagnostics.

Action Taken When Code Sets:

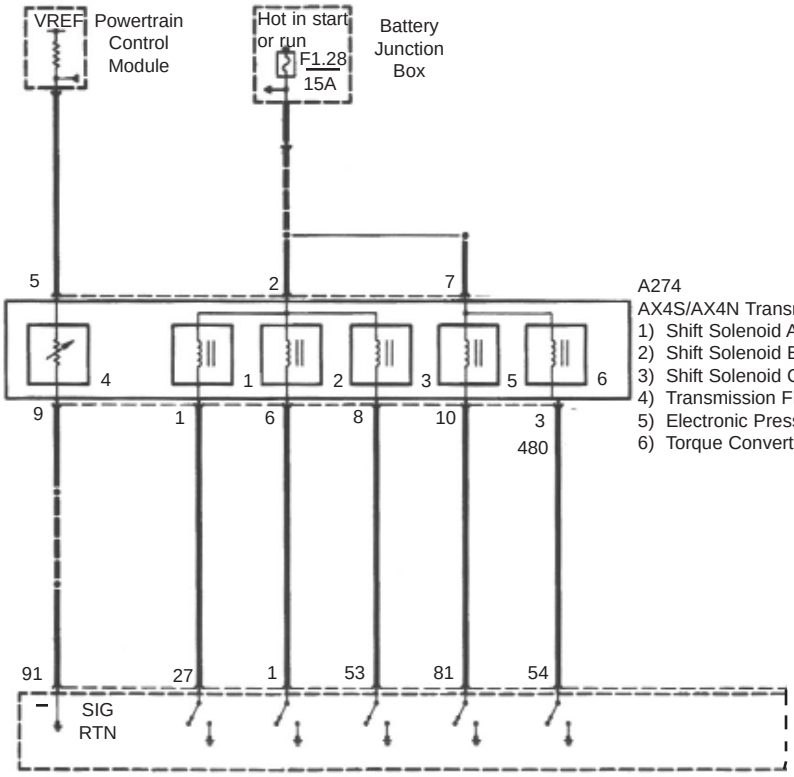
- Improper gear selection depending on solenoid circuit failure.
- Illuminates the malfunction indicator lamp.

Possible Causes:

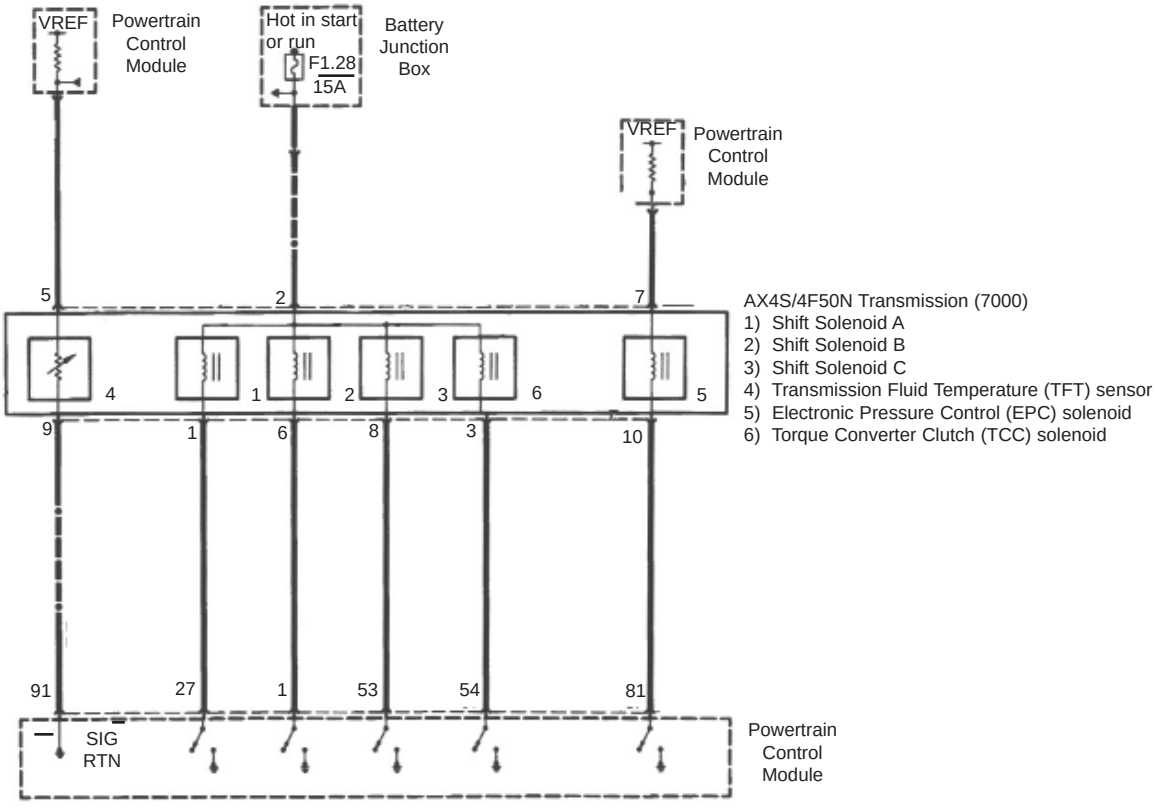
- Wiring or connector problems in the solenoid electrical circuit.
- Defective Shift Solenoid A
- Defective PCM

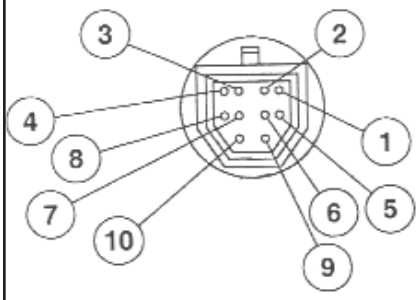
Wiring Diagrams

2000 - 2003



2004 - Up

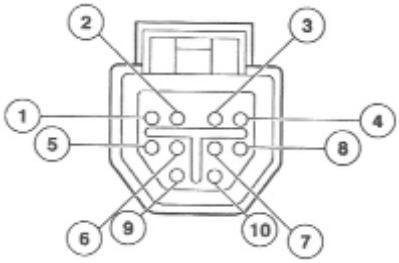




Transmission Case Connector

Pin Number	Circuit Function
1	Shift Solenoid A (SSA)
2	2000-2003: Shift Solenoid Vehicle Power 2004: Shift Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power
3	Torque Converter Clutch (TCC) Solenoid
4	Not Used
5	Transmission Fluid Temperature (TFT) Sensor
6	Shift Solenoid B (SSB)
7	2000-2003: Electronic Pressure Control (EPC) Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power 2004: Electronic Pressure Control (EPC) Solenoid Vehicle Power
8	Shift Solenoid C (SSC)
9	Transmission Fluid Temperature (TFT) Signal Return
10	Electronic Pressure Control (EPC) Solenoid

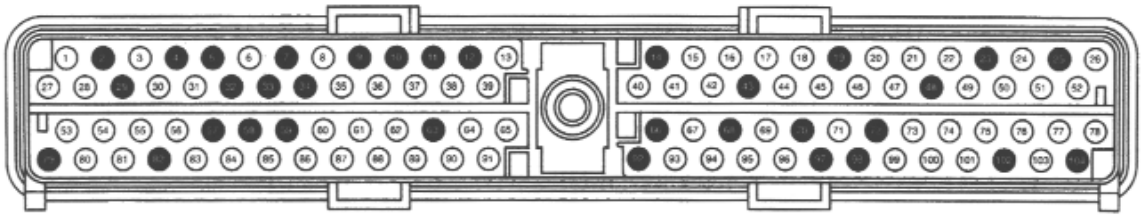
Figure 1



Solenoid Harness Connector

Pin Number	Circuit Function
1	Shift Solenoid A (SSA)
2	2000-2003 Shift Solenoid Vehicle Power 2004 Shift Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power
3	Torque Converter Clutch (TCC) Solenoid
4	Not Used
5	Transmission Fluid Temperature (TFT) Sensor
6	Shift Solenoid B (SSB)
7	2000-2003 Electronic Pressure Control (EPC) Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power 2004 Electronic Pressure Control (EPC) Solenoid Vehicle Power
8	Shift Solenoid C (SSC)
9	Transmission Fluid Temperature (TFT) Signal Return
10	Electronic Pressure Control (EPC) Solenoid

Figure 2



PCM Harness Connector

Function	Pin	Color	Application
Shift Solenoid A Control Circuit	6	OR/YL	2001 - 2002 Lincoln Continental 2000 Taurus/Sable 3.0L 4V
	27	OR/YL	All Others

Figure 3

Diagnosis

Step 1

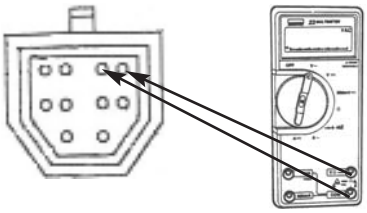
Connect your scan tool to the vehicle, check and record all DTCs, failure records and freeze frame data. Clear codes and road test the vehicle to see if the code returns. If the code does not return the problem is intermittent. Try shaking the wiring and connectors to duplicate the condition. Inspect connectors for corroded, damaged or pushed out terminals.
If the code does return and you have Kwik-Test Plus go to step 2.
If you do not have Kwik-Test Plus go to step 3.

Step 2

With the ignition key off disconnect the transmission case connector.
Inspect the harness and case connectors for corroded, damaged or pushed out terminals.
Connect Kwik-Test Plus and test shift solenoid A resistance, current and voltage. Does shift solenoid A test OK?
If yes go to step 4.
If no go to step 8.

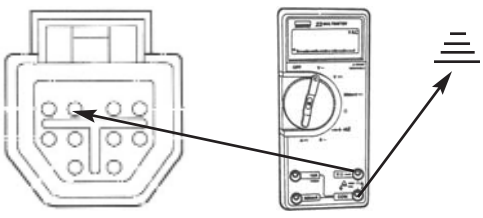
Step 3

With the ignition key off disconnect the transmission case connector. Inspect the harness and case connectors for corroded damaged or pushed out terminals. Using a digital volt/ohmmeter and measure the resistance between the shift solenoid power circuit (pin 2) and the shift solenoid A control circuit (pin 1) of the transmission case connector **(See Figure 1)**. Is the resistance between 15 and 30 ohms?
If yes go to step 4.
If no go to step 8.



Step 4

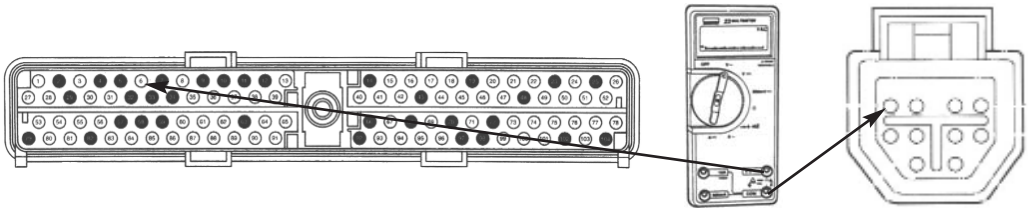
With the ignition key off disconnect the transmission case connector. Inspect the harness and case connectors for corroded damaged or pushed out terminals. Turn the ignition key on and measure the voltage at the shift solenoid power circuit (pin 2) of the transmission harness connector **(See Figure 2)**. Is the voltage 10.5 volts or higher?
If yes, go to step 5.
If no, repair the open in the solenoid power circuit.



Diagnosis

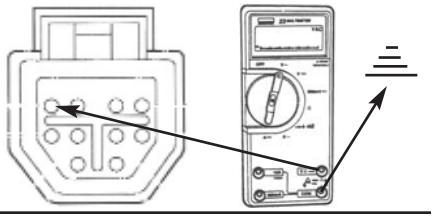
Step 5

With the ignition key off disconnect the PCM 104 pin and transmission case connectors. Inspect the PCM, transmission case and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance of the shift solenoid A control circuit between the PCM harness connector (pin 6 or 27) **(See Figure 3)** and the transmission harness connector (pin 1). Is the resistance 5 ohms or less?
If yes go to step 6.
If no, repair the open in the solenoid control circuit between the PCM and transmission harness connectors.



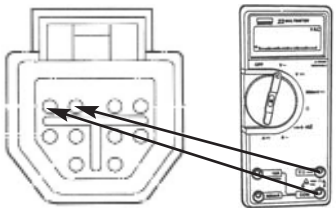
Step 6

With the ignition key off disconnect the PCM 104 pin and transmission case connectors. Inspect the PCM, transmission case and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance between the shift solenoid A control circuit (pin 1) of the transmission harness connector and ground. Is the resistance 5 ohms or less?
If yes, repair the short to ground in the solenoid control circuit.
If no go to step 7.



Step 7

With the ignition key off disconnect the PCM 104 pin and transmission case connectors. Inspect the PCM, transmission case and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance between the solenoid power (pins 2 & 7) and the shift solenoid A control circuit (pin 1) of the transmission harness connector. Is the resistance 5 ohms or less?
If yes, repair the short to power in the solenoid control circuit.
If no replace the PCM.



Step 8

Remove the transmission side cover. Disconnect the internal wiring harness from shift solenoid A. Inspect the solenoid and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance between the two shift solenoid A terminals. Is the resistance 15 to 30 ohms?
If yes, replace the transmission internal wiring harness.
If no, replace the solenoid.

CODE P0755, P0758
Shift Solenoid B Circuit Failure

4F50N Codes P0755, P0758 Shift Solenoid B Circuit Failure

Theory of Operation:

The 4F50N transmission uses three shift solenoids to control upshifts and downshifts in all forward ranges. The solenoids work together in a combination of on and off sequences to control the position of various shift valves. The PCM monitors voltage on the solenoid ground wire to determine circuit continuity.

Circuit Description:

All of the transmission solenoids receive voltage from the PCM power relay circuit. The PCM controls the solenoids by opening or closing the ground path on the solenoid control circuit.

Conditions for Setting the Trouble Code:

This code is generated only by an electrical condition. The PCM failed to see a voltage change on the solenoid control circuit during a Key On Engine Off (KOEO) self test or during continuous on board diagnostics.

Action Taken When Code Sets:

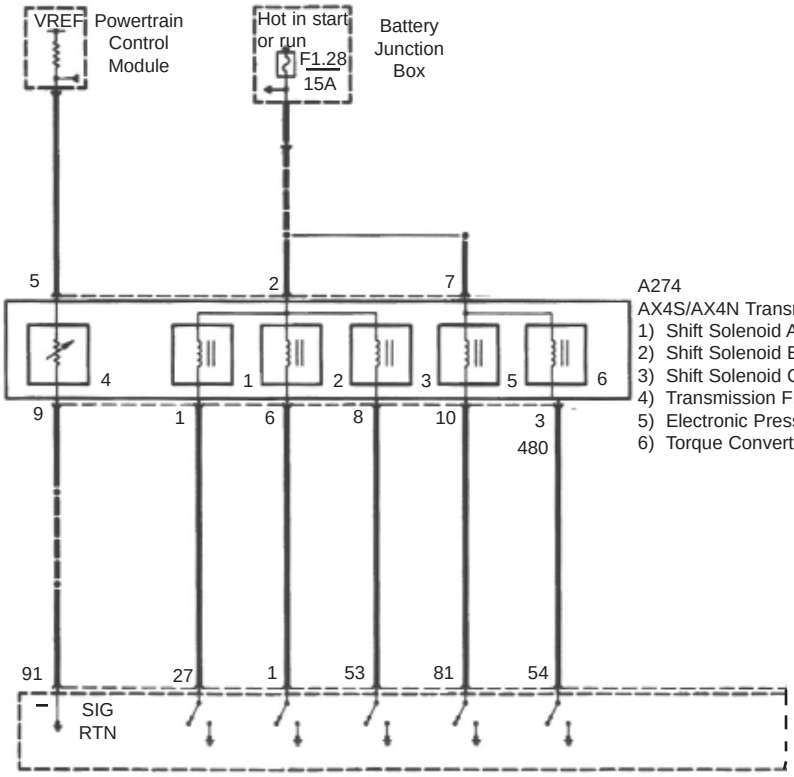
- Improper gear selection depending on solenoid circuit failure.
- Illuminates the malfunction indicator lamp.

Possible Causes:

- Wiring or connector problems in the solenoid electrical circuit.
- Defective Shift Solenoid B
- Defective PCM

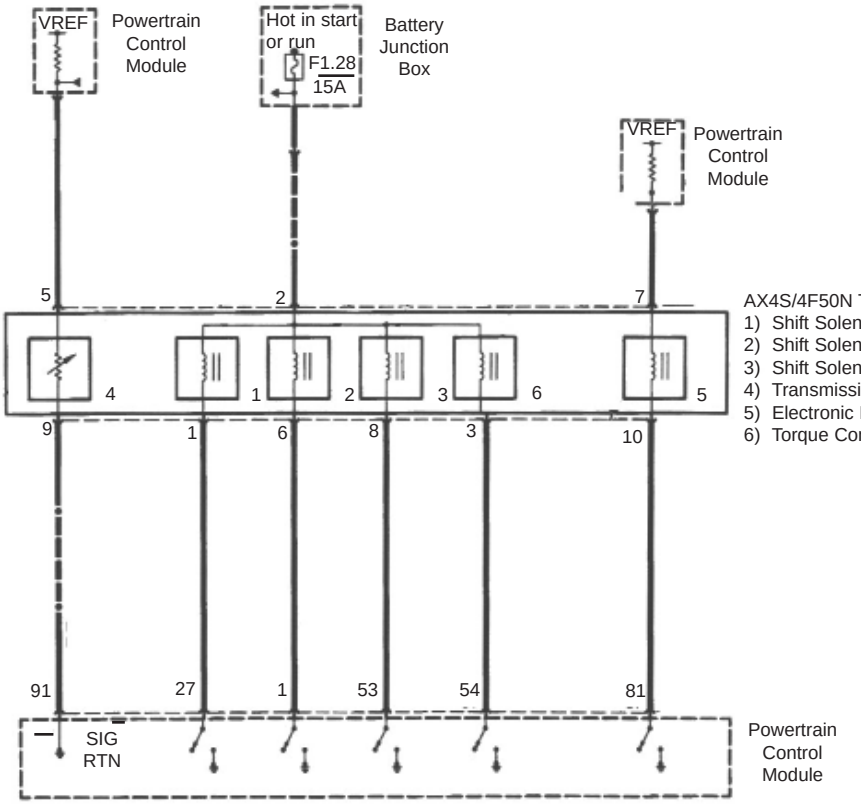
Wiring Diagrams

2000 - 2003

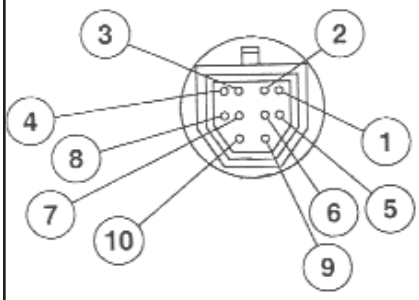


A274
AX4S/AX4N Transmission
1) Shift Solenoid A
2) Shift Solenoid B
3) Shift Solenoid C
4) Transmission Fluid Temperature (TFT) sensor
5) Electronic Pressure Control (EPC) solenoid
6) Torque Converter Clutch (TCC) solenoid

2004 - Up



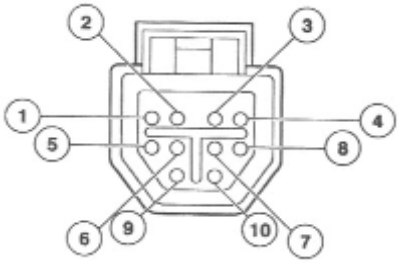
AX4S/4F50N Transmission (7000)
1) Shift Solenoid A
2) Shift Solenoid B
3) Shift Solenoid C
4) Transmission Fluid Temperature (TFT) sensor
5) Electronic Pressure Control (EPC) solenoid
6) Torque Converter Clutch (TCC) solenoid



Transmission Case Connector

Pin Number	Circuit Function
1	Shift Solenoid A (SSA)
2	2000-2003: Shift Solenoid Vehicle Power 2004: Shift Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power
3	Torque Converter Clutch (TCC) Solenoid
4	Not Used
5	Transmission Fluid Temperature (TFT) Sensor
6	Shift Solenoid B (SSB)
7	2000-2003: Electronic Pressure Control (EPC) Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power 2004: Electronic Pressure Control (EPC) Solenoid Vehicle Power
8	Shift Solenoid C (SSC)
9	Transmission Fluid Temperature (TFT) Signal Return
10	Electronic Pressure Control (EPC) Solenoid

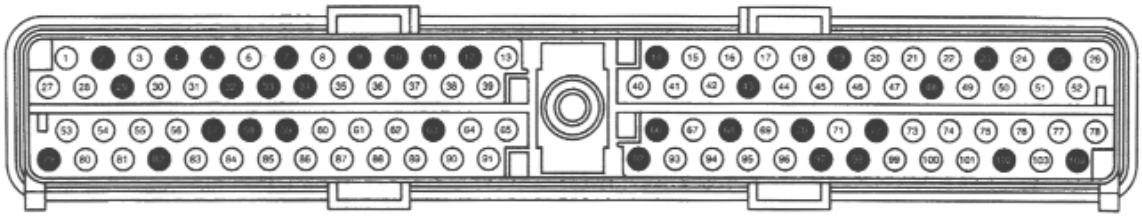
Figure 1



Transmission Harness Connector

Pin Number	Circuit Function
1	Shift Solenoid A (SSA)
2	2000-2003 Shift Solenoid Vehicle Power 2004 Shift Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power
3	Torque Converter Clutch (TCC) Solenoid
4	Not Used
5	Transmission Fluid Temperature (TFT) Sensor
6	Shift Solenoid B (SSB)
7	2000-2003 Electronic Pressure Control (EPC) Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power 2004 Electronic Pressure Control (EPC) Solenoid Vehicle Power
8	Shift Solenoid C (SSC)
9	Transmission Fluid Temperature (TFT) Signal Return
10	Electronic Pressure Control (EPC) Solenoid

Figure 2



PCM Harness Connector

Function	Pin	Color	Application
Shift Solenoid B Control Circuit	11	PL/OR	2001 - 2002 Lincoln Continental 2000 Taurus/Sable 3.0L 4V
	1	PL/OR	All Others

Figure 3

Diagnosis

Step 1

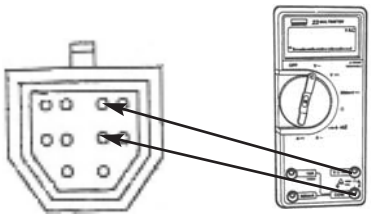
Connect your scan tool to the vehicle, check and record all DTCs, failure records and freeze frame data. Clear codes and road test the vehicle to see if the code returns. If the code does not return the problem is intermittent. Try shaking the wiring and connectors to duplicate the condition. Inspect connectors for corroded, damaged or pushed out terminals.
If the code does return and you have Kwik-Test Plus go to step 2.
If you do not have Kwik-Test Plus go to step 3.

Step 2

With the ignition key off disconnect the transmission case connector.
Inspect the harness and case connectors for corroded, damaged or pushed out terminals.
Connect Kwik-Test Plus and test shift solenoid B resistance, current and voltage. Does shift solenoid B test OK?
If yes go to step 4.
If no go to step 8.

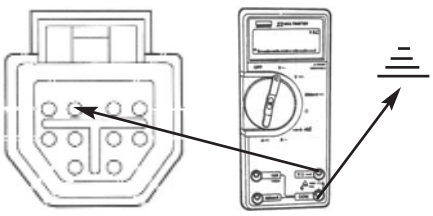
Step 3

With the ignition key off disconnect the transmission case connector. Inspect the harness and case connectors for corroded damaged or pushed out terminals. Using a digital volt/ohmmeter and measure the resistance between the shift solenoid power circuit (pin 2) and the shift solenoid B control circuit (pin 6) of the transmission case connector **(See Figure 1)**. Is the resistance between 15 and 30 ohms?
If yes go to step 4.
If no go to step 8.



Step 4

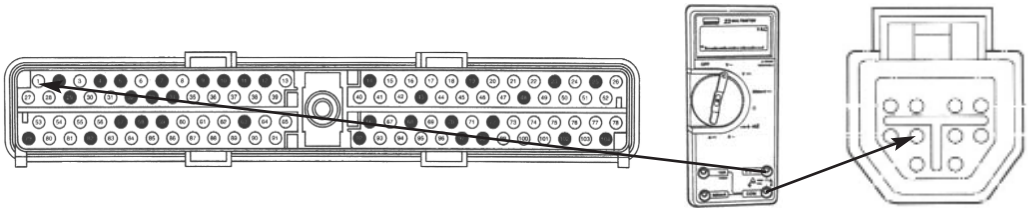
With the ignition key off disconnect the transmission case connector. Inspect the harness and case connectors for corroded damaged or pushed out terminals. Turn the ignition key on and measure the voltage at the solenoid power circuit (pin 2) of the transmission harness connector **(See Figure 2)**. Is the voltage 10.5 volts or higher?
If yes, go to step 5.
If no, repair the open in the solenoid power circuit.



Diagnosis

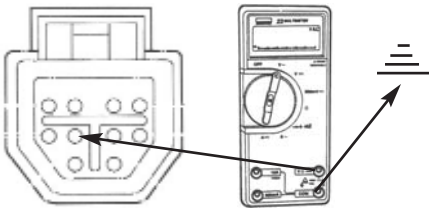
Step 5

With the ignition key off disconnect the PCM 104 pin and transmission case connectors. Inspect the PCM, transmission case and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance of the shift solenoid B control circuit between the PCM harness connector (pin 1 or 11) **(See Figure 3)** and the transmission harness connector (pin 6). Is the resistance 5 ohms or less?
If yes go to step 6.
If no repair the open in the solenoid control circuit between the PCM and transmission harness connectors.



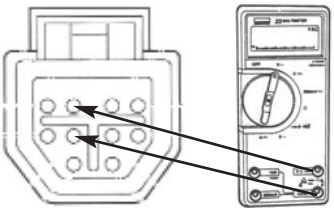
Step 6

With the ignition key off disconnect the PCM 104 pin and transmission case connectors. Inspect the PCM, transmission case and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance between the shift solenoid B control circuit (pin 6) of the transmission harness connector and ground. Is the resistance 5 ohms or less?
If yes, repair the short to ground in the solenoid control circuit.
If no, go to step 7.



Step 7

With the ignition key off disconnect the PCM 104 pin and transmission case connectors. Inspect the PCM, transmission case and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance between the solenoid power circuits (pins 2 & 7) and the shift solenoid B control circuit (pin 6) of the transmission harness connector. Is the resistance 5 ohms or less?
If yes, repair the short to power in the solenoid control circuit.
If no, replace the PCM.



Step 8

Remove the transmission side cover. Disconnect the internal wiring harness from shift solenoid B. Inspect the solenoid and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance between the two shift solenoid B terminals. Is the resistance 15 to 30 ohms?
If yes replace the transmission internal wiring harness.
If no replace the solenoid.

CODE P0760, P0763
Shift Solenoid C Circuit Failure

4F50N Codes P0760, P0763 Shift Solenoid C Circuit Failure

Theory of Operation:

The 4F50N transmission uses three shift solenoids to control upshifts and downshifts in all forward ranges. The solenoids work together in a combination of on and off sequences to control the position of various shift valves. The PCM monitors voltage on the solenoid ground wire to determine circuit continuity.

Circuit Description:

All of the transmission solenoids receive voltage from the PCM power relay circuit. The PCM controls the solenoids by opening or closing the ground path on the solenoid control circuit.

Conditions for Setting the Trouble Code:

This code is generated only by an electrical condition. The PCM failed to see a voltage change on the solenoid control circuit during a Key On Engine Off (KOEO) self test or during continuous on board diagnostics.

Action Taken When Code Sets:

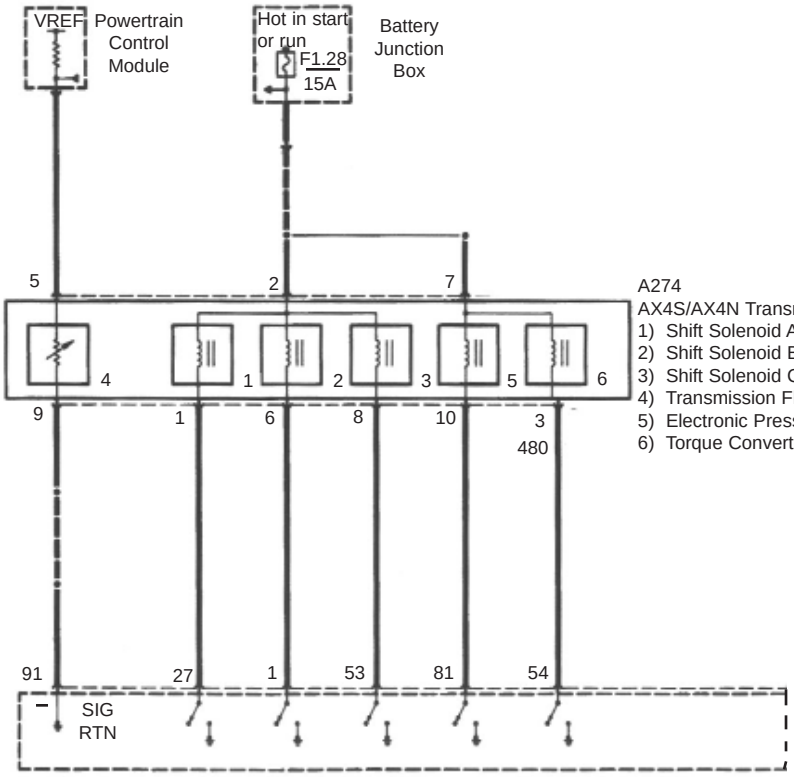
- Improper gear selection depending on solenoid circuit failure.
- Illuminates the malfunction indicator lamp.

Possible Causes:

- Wiring or connector problems in the solenoid electrical circuit.
- Defective Shift Solenoid C
- Defective PCM

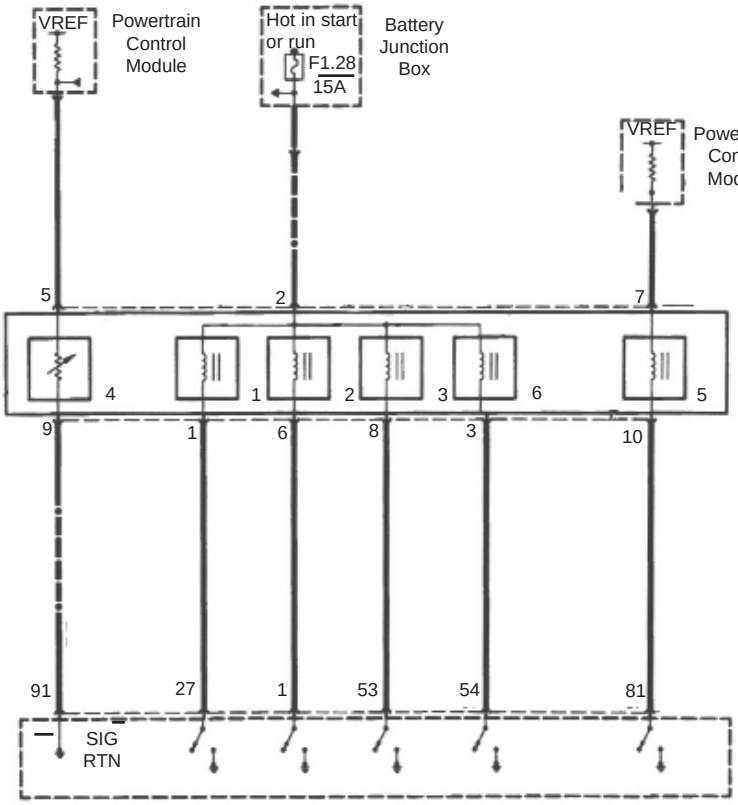
Wiring Diagrams

2000 - 2003

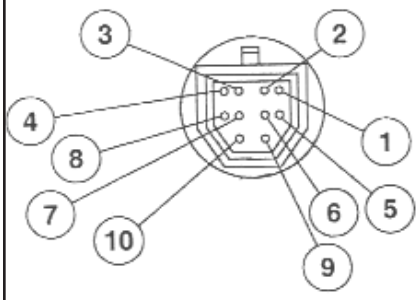


A274
AX4S/AX4N Transmission
1) Shift Solenoid A
2) Shift Solenoid B
3) Shift Solenoid C
4) Transmission Fluid Temperature (TFT) sensor
5) Electronic Pressure Control (EPC) solenoid
6) Torque Converter Clutch (TCC) solenoid

2004 - Up



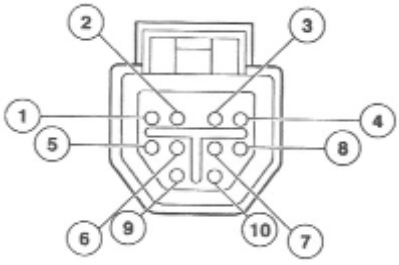
AX4S/4F50N Transmission (7000)
1) Shift Solenoid A
2) Shift Solenoid B
3) Shift Solenoid C
4) Transmission Fluid Temperature (TFT) sensor
5) Electronic Pressure Control (EPC) solenoid
6) Torque Converter Clutch (TCC) solenoid



Transmission Case Connector

Pin Number	Circuit Function
1	Shift Solenoid A (SSA)
2	2000-2003: Shift Solenoid Vehicle Power 2004: Shift Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power
3	Torque Converter Clutch (TCC) Solenoid
4	Not Used
5	Transmission Fluid Temperature (TFT) Sensor
6	Shift Solenoid B (SSB)
7	2000-2003: Electronic Pressure Control (EPC) Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power 2004: Electronic Pressure Control (EPC) Solenoid Vehicle Power
8	Shift Solenoid C (SSC)
9	Transmission Fluid Temperature (TFT) Signal Return
10	Electronic Pressure Control (EPC) Solenoid

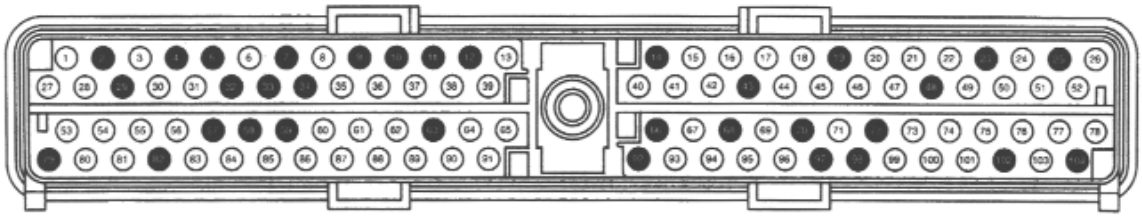
Figure 1



Transmission Harness Connector

Pin Number	Circuit Function
1	Shift Solenoid A (SSA)
2	2000-2003 Shift Solenoid Vehicle Power 2004 Shift Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power
3	Torque Converter Clutch (TCC) Solenoid
4	Not Used
5	Transmission Fluid Temperature (TFT) Sensor
6	Shift Solenoid B (SSB)
7	2000-2003 Electronic Pressure Control (EPC) Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power 2004 Electronic Pressure Control (EPC) Solenoid Vehicle Power
8	Shift Solenoid C (SSC)
9	Transmission Fluid Temperature (TFT) Signal Return
10	Electronic Pressure Control (EPC) Solenoid

Figure 2



PCM Harness Connector

Function	Pin	Color	Application
Shift Solenoid C Control Circuit	20	PK/BK	2001 - 2002 Lincoln Continental 2000 Taurus/Sable 3.0L 4V
	53	PK/BK	All Others

Figure 3

Diagnosis

Step 1

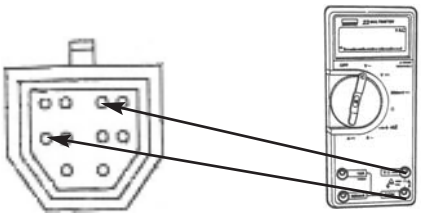
Connect your scan tool to the vehicle, check and record all DTCs, failure records and freeze frame data. Clear codes and road test the vehicle to see if the code returns. If the code does not return the problem is intermittent. Try shaking the wiring and connectors to duplicate the condition. Inspect connectors for corroded, damaged or pushed out terminals.
If the code does return and you have Kwik-Test Plus go to step 2.
If you do not have Kwik-Test Plus go to step 3.

Step 2

With the ignition key off disconnect the transmission case connector.
Inspect the harness and case connectors for corroded, damaged or pushed out terminals.
Connect Kwik-Test Plus and test shift solenoid C resistance, current and voltage. Does shift solenoid C test OK?
If yes go to step 4.
If no go to step 8.

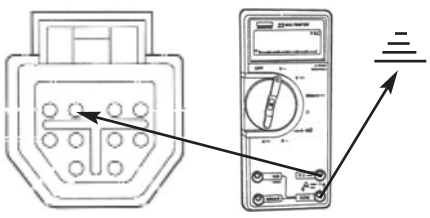
Step 3

With the ignition key off disconnect the transmission case connector. Inspect the harness and case connectors for corroded damaged or pushed out terminals. Using a digital volt/ohmmeter and measure the resistance between the shift solenoid power circuit (pin 2) and the shift solenoid C control circuit (pin 8) of the transmission case connector **(See Figure 1)**. Is the resistance between 15 and 30 ohms?
If yes go to step 4.
If no go to step 8.



Step 4

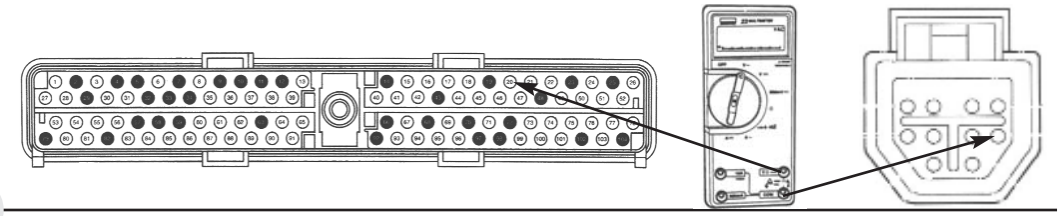
With the ignition key off disconnect the transmission case connector. Inspect the harness and case connectors for corroded damaged or pushed out terminals. Turn the ignition key on and measure the voltage at the solenoid power circuit (pin 2) of the transmission harness connector **(See Figure 2)**. Is the voltage 10.5 volts or higher?
If yes, go to step 5.
If no, repair the open in the solenoid power circuit.



Diagnosis

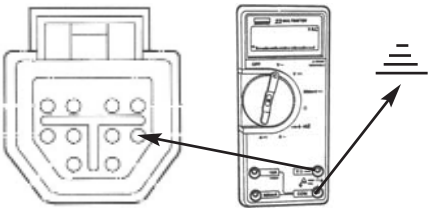
Step 5

With the ignition key off disconnect the PCM 104 pin and transmission case connectors. Inspect the PCM, transmission case and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance of the shift solenoid C control circuit between the PCM harness connector (pin 20 or 53) **(See Figure 3)** and the transmission harness connector (pin 8).
Is the resistance 5 ohms or less?
If yes go to step 6.
If no repair the open in the solenoid control circuit between the PCM and transmission harness connectors.



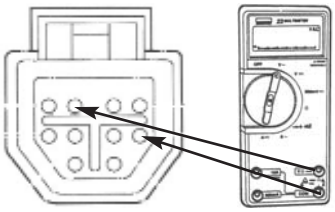
Step 6

With the ignition key off disconnect the PCM 104 pin and transmission case connectors. Inspect the PCM, transmission case and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance between the Shift Solenoid C control circuit (pin 8) of the transmission harness connector and ground. Is the resistance 5 ohms or less?
If yes repair the short to ground in the solenoid control circuit.
If no go to step 7.



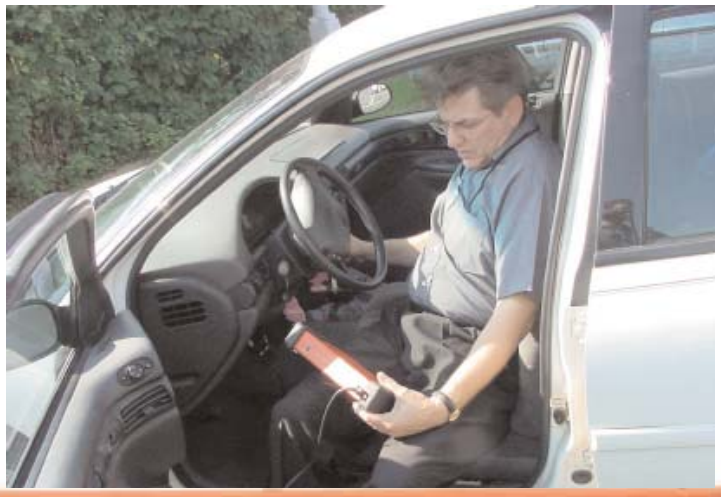
Step 7

With the ignition key off disconnect the PCM 104 pin and transmission case connectors. Inspect the PCM, transmission case and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance between the solenoid power circuits (pins 2&7) and the shift solenoid C control circuit (pin 8) of the transmission harness connector. Is the resistance 5 ohms or less?
If yes repair the short to power in the solenoid control circuit.
If no replace the PCM.



Step 8

Remove the transmission side cover. Disconnect the internal wiring harness from shift solenoid C. Inspect the solenoid and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance between the two shift solenoid C terminals. Is the resistance 15 to 30 ohms?
If yes replace the transmission internal wiring harness.
If no replace the solenoid.



CODE P0960, P0962, P0963,
P1746, P1747, P1760
EPC Solenoid Circuit Failure

4F50N Code P0960, P0962, P0963, P1746, P1747, P1760 EPC Solenoid Circuit Failure

Theory of Operation:

The 4F50N transmission uses solenoids to control upshifts, downshifts and torque converter clutch engagement. It also uses a variable force type solenoid to control transmission main line oil pressure. The Powertrain Control Module (PCM) varies current in the Electronic Pressure Control (EPC) solenoid electrical circuit, which varies pressure in the EPC hydraulic circuit.

Circuit Description:

2001-2003 Windstar, 2001-2002 Continental, 2000-2003 Taurus/Sable and 2004-2005 Freestar.
All of the transmission solenoids receive voltage from the PCM power relay circuit. The PCM controls the EPC solenoid current through the ground side of the circuit.
2004-2007 Taurus/Sable, 2006-2007 Freestar.
The EPC solenoid receives voltage and ground from the PCM. The PCM controls the EPC solenoid current through the ground side of the circuit.

Conditions for Setting the Trouble Code:

This code is generated only by an electrical condition. Current through the EPC electrical circuit is checked and compared after a time delay. An error will be noted if tolerance is exceeded during a Key On /Engine Off self-test or continuous On Board Diagnostics.

Action Taken When Code Sets:

High or low line pressure depending on solenoid circuit failure.

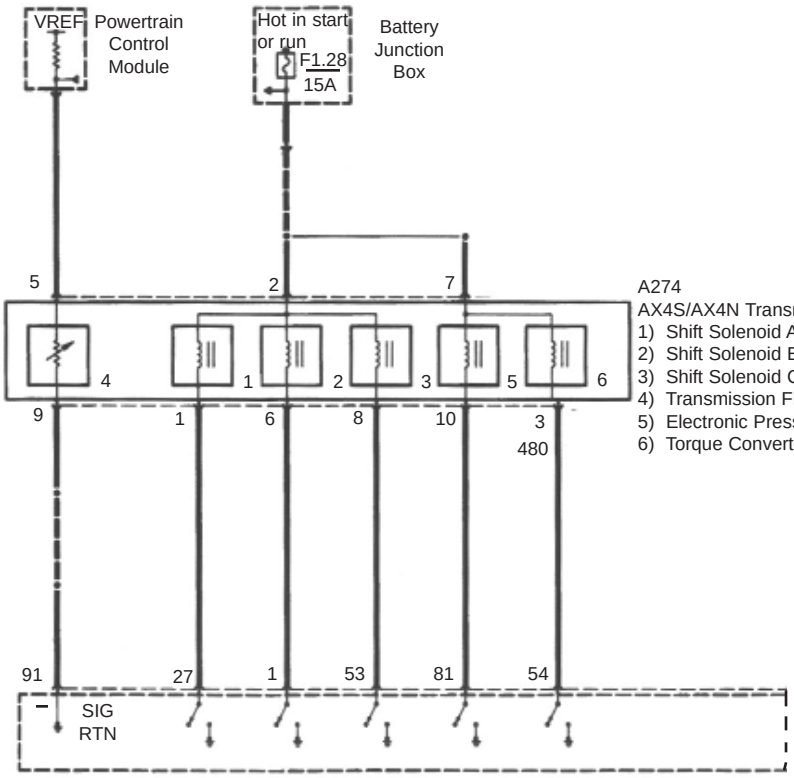
- Short circuit: Minimum line pressure. PCM limits engine torque by partial fuel shut off. Flashes the malfunction indicator lamp.
- Open circuit: High line pressure, harsh engagements and shifts.
- Illuminates the malfunction indicator lamp.

Possible Causes:

- Wiring or connector problems in the EPC solenoid electrical circuit.
- Defective EPC solenoid.
- Defective PCM

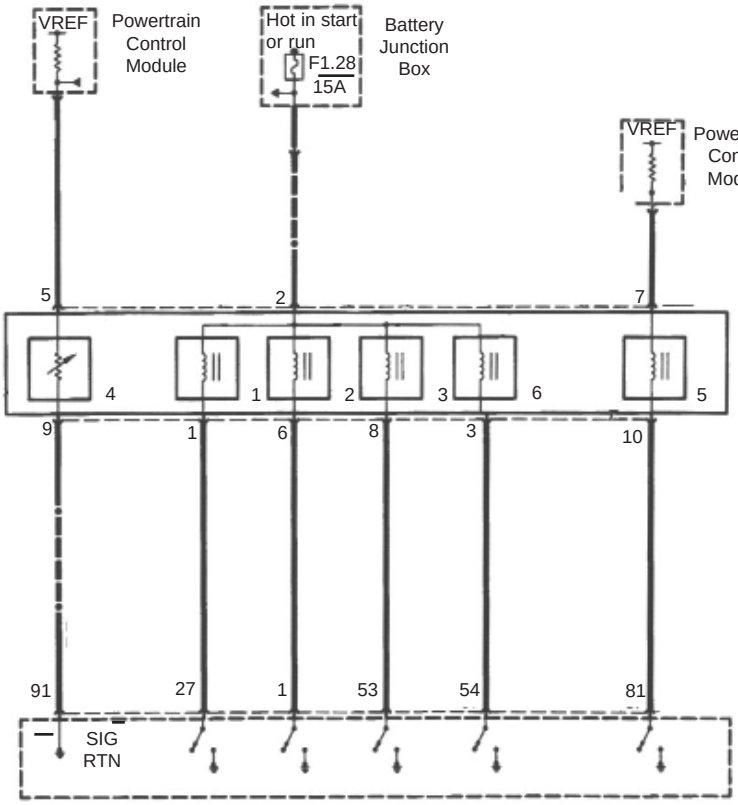
Wiring Diagrams

2000 - 2003

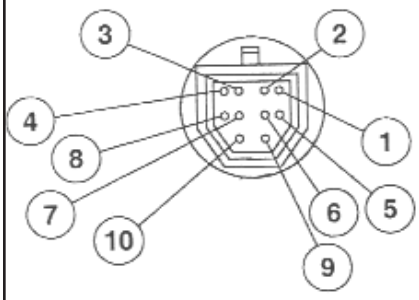


A274
AX4S/AX4N Transmission
1) Shift Solenoid A
2) Shift Solenoid B
3) Shift Solenoid C
4) Transmission Fluid Temperature (TFT) sensor
5) Electronic Pressure Control (EPC) solenoid
6) Torque Converter Clutch (TCC) solenoid

2004 - Up



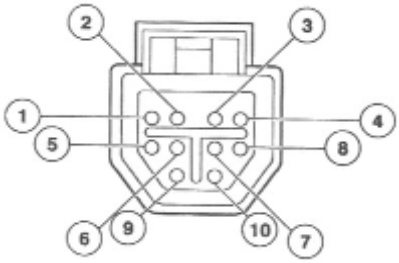
AX4S/4F50N Transmission (7000)
1) Shift Solenoid A
2) Shift Solenoid B
3) Shift Solenoid C
4) Transmission Fluid Temperature (TFT) sensor
5) Electronic Pressure Control (EPC) solenoid
6) Torque Converter Clutch (TCC) solenoid



Transmission Case Connector

Pin Number	Circuit Function
1	Shift Solenoid A (SSA)
2	2000-2003: Shift Solenoid Vehicle Power 2004: Shift Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power
3	Torque Converter Clutch (TCC) Solenoid
4	Not Used
5	Transmission Fluid Temperature (TFT) Sensor
6	Shift Solenoid B (SSB)
7	2000-2003: Electronic Pressure Control (EPC) Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power 2004: Electronic Pressure Control (EPC) Solenoid Vehicle Power
8	Shift Solenoid C (SSC)
9	Transmission Fluid Temperature (TFT) Signal Return
10	Electronic Pressure Control (EPC) Solenoid

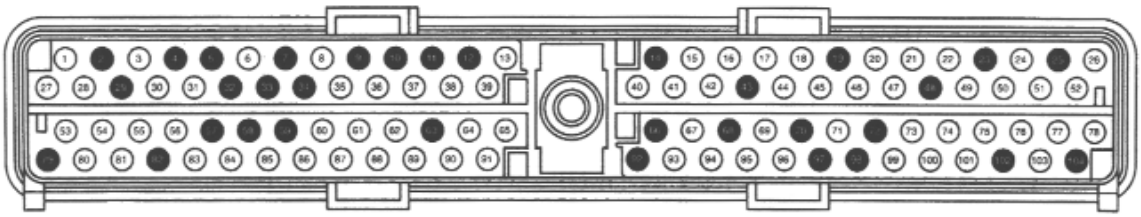
Figure 1



Transmission Harness Connector

Pin Number	Circuit Function
1	Shift Solenoid A (SSA)
2	2000-2003 Shift Solenoid Vehicle Power 2004 Shift Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power
3	Torque Converter Clutch (TCC) Solenoid
4	Not Used
5	Transmission Fluid Temperature (TFT) Sensor
6	Shift Solenoid B (SSB)
7	2000-2003 Electronic Pressure Control (EPC) Solenoid and Torque Converter Clutch (TCC) Solenoid Vehicle Power 2004 Electronic Pressure Control (EPC) Solenoid Vehicle Power
8	Shift Solenoid C (SSC)
9	Transmission Fluid Temperature (TFT) Signal Return
10	Electronic Pressure Control (EPC) Solenoid

Figure 2



PCM Harness Connector

Function	Pin	Color	Application
EPC Solenoid Power	7	LG/WT	2004-2007 Taurus/Sable
	7	RD/YL	2006-2007 Freestar/Monteray
EPC Solenoid Control Circuit	81	WT/YL	2001-2003 Windstar 2001-2002 Lincoln Continental 2004-2007 Freestar Montery
	81	BN/OR	2000-2007 Taurus/Sable

Figure 3

Diagnosis

Step 1

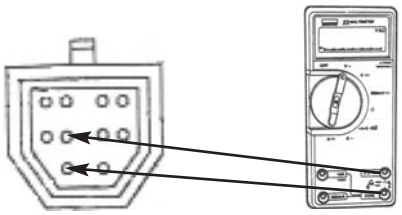
Connect your scan tool to the vehicle, check and record all DTCs, failure records and freeze frame data. Clear codes and road test the vehicle to see if the codes return. If the code does not return the problem is intermittent. Try shaking the wiring and connectors to duplicate the condition. Inspect connectors for corroded, damaged or pushed out terminals.
If code P1747 does return and you have Kwik-Test Plus go to step 2.
If you do not have Kwik-Test Plus go to step 3.

Step 2

With the ignition key off disconnect the transmission case connector.
Inspect the harness and case connectors for corroded, damaged or pushed out terminals.
Connect Kwik-Test Plus and test the EPC solenoid resistance, current and voltage. Does the EPC solenoid test OK?
If yes go to step 4.
If no go to step 8.

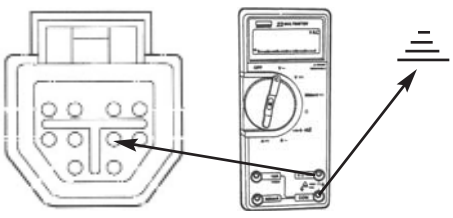
Step 3

With the ignition key off disconnect the transmission case connector. Inspect the harness and case connectors for corroded damaged or pushed out terminals. Using a digital volt/ohmmeter measure the resistance between the EPC solenoid power circuit (pin 7) and the EPC solenoid control circuit (pin 10) of the transmission case connector **(See Figure 1)**.
Is the resistance 3.23-5.5 Ohms?
If yes, go to step 4.
If no, go to step 8.



Step 4

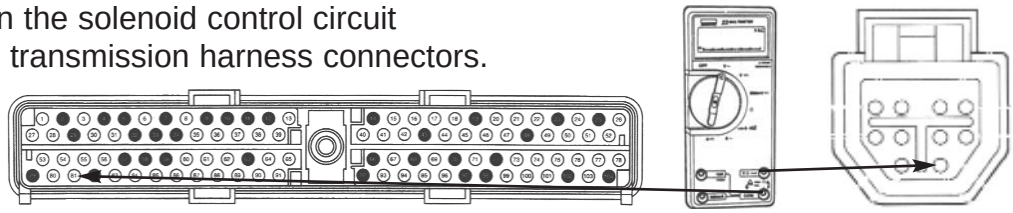
With the ignition key off disconnect the transmission case connector. Inspect the harness and case connectors for corroded damaged or pushed out terminals. Turn the ignition key on and measure the voltage at the EPC solenoid power circuit (pin 7) of the transmission harness connector **(See Figure 2)**. Is the voltage 10.5 volts or higher?
If yes go to step 5.
If no repair the open in the EPC solenoid power circuit.



Diagnosis

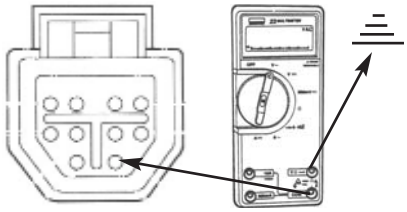
Step 5

With the ignition key off disconnect the PCM 104 pin and transmission case connectors. Inspect the PCM, transmission case and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance of the EPC solenoid control circuit between the PCM harness connector (pin 81) **(See Figure 3)** and the transmission harness connector (pin 10). Is the resistance 5 ohms or less?
If yes, go to step 6.
If no, repair the open in the solenoid control circuit between the PCM and transmission harness connectors.



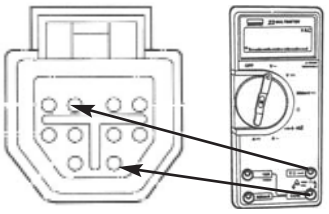
Step 6

With the ignition key off disconnect the PCM 104 pin and transmission case connectors. Inspect the PCM, transmission case and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance between the EPC solenoid control circuit (pin 10) of the transmission harness connector and ground. Is the resistance 5 ohms or less?
If yes, repair the short to ground in the solenoid control circuit.
If no, go to step 6.



Step 7

With the ignition key off disconnect the PCM 104 pin and transmission case connectors. Inspect the PCM, transmission case and harness connectors for corroded, damaged or pushed out terminals. Measure the resistance between the solenoid power circuits (pins 2 & 7) and the EPC solenoid control circuit (pin 10) of the transmission harness connector. Is the resistance 5 ohms or less?
If yes repair the short to power in the solenoid control circuit.
If no replace the PCM.



Step 8

Remove the transmission side cover. Disconnect the internal wiring harness from the EPC solenoid. Inspect the solenoid and connector for corroded, damaged or pushed out terminals. Measure the resistance between the two EPC solenoid terminals. Is the resistance 3 to 6 ohms?
If no, replace the solenoid.
If yes, replace the transmission internal wiring harness.


Snap-on
MODIS
CODE P01742, P01743
Torque Converter Clutch
Solenoid Failed ON

4F50N Code P1742, P1743 Torque Converter Clutch Solenoid Failed ON

Theory of Operation:

The Powertrain Control Module (PCM) controls various engine and transmission functions. During transmission control the PCM responds to inputs and operates solenoids for the electro-hydraulic control of line pressure, shift scheduling and Torque Converter Clutch (TCC) apply. The PCM monitors Engine speed, Turbine speed, Vehicle speed, Brake on/off switch and Throttle position to determine when to engage the TCC. It also uses these inputs to tell if the TCC has applied properly.

Conditions for Setting the Trouble Code:

- The PCM detects that the TCC has failed on by an electrical, mechanical or hydraulic concern.
- The PCM must see the problem five times in one ignition cycle.

Action Taken When Code Sets:

- May stall vehicle at low speeds
- May raise transmission main line oil pressure.
- Illuminates the malfunction indicator lamp.

Possible Causes:

- Defective TCC solenoid
- Sticking valves in valve body.
- Defective torque converter
- Electrical problems in the TCC solenoid control circuit.

Diagnosis

Step 1

Connect your scan tool to the vehicle, check and record all DTCs, failure records and freeze frame data. Clear codes and road test the vehicle to see if the codes return. Does the code return?
If yes, go to step 2.
If no, the problem is intermittent. Try road testing cold and hot. Possible sticking valves in the TCC apply hydraulic circuit. Continue with TranScan/Protect Check including sump examination.

Step 2

If the code returned were there any TCC solenoid electrical circuit codes present also?
If yes, repair these codes first.
If no, go to step 3.

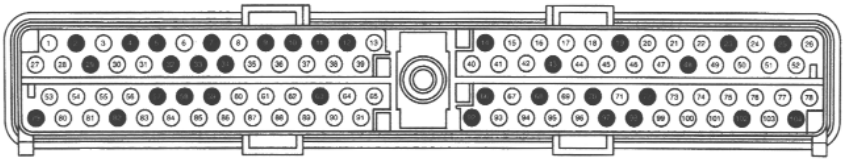
Step 3

With the ignition off disconnect the transmission case connector. Start the engine and place the manual selector in the drive position. Does the torque converter clutch stall the engine?
If yes, the problem is in the transmission. Check for a stuck or clogged TCC solenoid. Inspect the transmission internal wiring harness for shorts between circuits or to ground .Check for a sticking bypass clutch control or converter regulator valve. Check for possible internal torque converter problem.
If no, go to step 4.

Step 4

Check the TCC solenoid control circuit wiring for a short to ground (see code P0743 in this section). Was any problem found?
If yes, make necessary repairs and rerun diagnostics.
If no, replace the PCM.

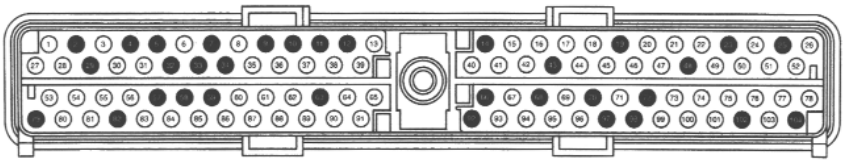
4F50N Codebook



2001 - 2003 Windstar 3.8L

CAV	COLOR	FUNCTION
1	PL/OR	SHIFT SOLENOID B
2	-	-
3	OR/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR1
4	-	-
5	-	-
6	DG/WT	TURBINE SHAFT SPEED SENSOR (TSS)
7	-	-
8	OR/WT	IMRC MONITOR
9	-	-
10	-	-
11	-	-
12	-	-
13	PL	DATA LINK CONNECTOR (DLC) REPROGRAMMING POWER SUPPLY PIN
14	-	-
15	PK/LB	SCP DATA BUS (-)
16	TN/OR	SCP DATA BUS (+)
17	GY/OR	RX SIGNAL
18	WT/LG	TX SIGNAL
19	-	-
20	PL	GENERATOR MONITOR INPUT
21	BK/PK	CRANKSHAFT POSITION SENSOR INPUT (+)
22	GY/YL	CRANKSHAFT POSITION SENSOR INPUT (-)
23	-	-
24	BK/WT	POWER GROUND
25	-	-
26	DB/LG	IGNITION COIL #1 DRIVER
27	OR/YL	SHIFT SOLENOID A
28	DB	LOW SPEED FAN CONTROL
29	-	-
30	DB/LG	ANTI-THEFT INDICATOR INPUT
31	YL/LG	POWER STEERING PRESSURE SWITCH FEED
32	-	-
33	-	-
34	-	-
35	RD/LG	HEATED OXYGEN SENSOR (HO2S) #12 INPUT
36	TN/LB	MASS AIR FLOW (MAF) SENSOR RETURN
37	OR/BK	TRANSMISSION FLUID TEMPERATURE (TFT) SENSOR INPUT
38	LG/RD	ENGINE COOLANT TEMPERATURE (ECT) SENSOR INPUT
39	GY	INTAKE AIR TEMPERATURE
40	DG/YL	FUEL PUMP MONITOR INPUT
41	BK/YL	A/C CLUTCH CYCLING SWITCH AND A/C HIGH PRESSURE CUTOUT SWITCH INPUT
42	BN	IMRC CONTROL
43	-	-
44	LG/YL	STARTER RELAY
45	RD/PK	GENERATOR COMMUNICATION INPUT
46	LG/PL	HIGH SPEED FAN CONTROL
47	BN/PK	EGR VACUUM REGULATOR (EVR) CONTROL
48	-	-
49	LB/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR2
50	WT/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR4
51	BK/WT	POWER GROUND
52	RD/LB	IGNITION COIL #2 DRIVER

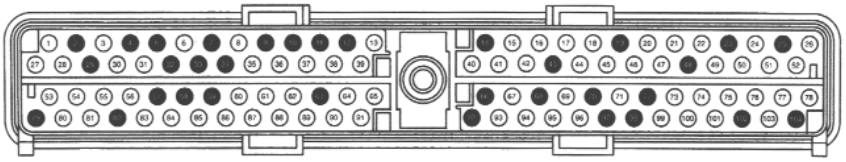
4F50N Codebook



2001 - 2003 Windstar 3.8L

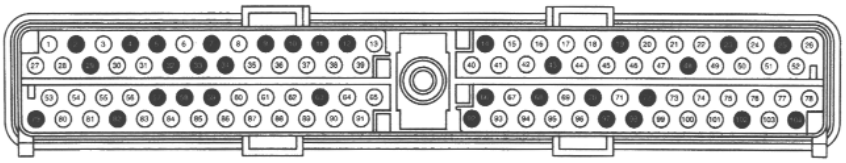
CAV	COLOR	FUNCTION
53	PK/BK	SHIFT SOLENOID C
54	RD/LB	TORQUE CONVERTER CLUTCH (TCC) SOLENOID
55	RD	POWER FEED (HOT AT ALL TIMES)
56	LG/BK	EVAP CANISTER PURGE VALVE
57	-	-
58	-	-
59	-	-
60	GY/LB	HEATED OXYGEN SENSOR (HO2S) #11 INPUT
61	PL/LG	HEATED OXYGEN SENSOR (HO2S) #22 INPUT
62	RD/PK	FUEL TANK PRESSURE SENSOR INPUT
63	-	-
64	LB/YL	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR3A
65	BN/LG	DIFFERENTIAL PRESSURE FEEDBACK EGR (DPFE) SENSOR INPUT
66	-	-
67	PL/WT	CANISTER VENT SOLENOID CONTROL
68	-	-
69	PK/YL	A/C CLUTCH RELAY CONTROL
70	-	-
71	RD	POWER (VPWR)
72	-	-
73	TN/BK	FUEL INJECTOR #5 CONTROL
74	BN/YL	FUEL INJECTOR #3 CONTROL
75	TN	FUEL INJECTOR #1 CONTROL
76	BK/WT	POWER GROUND
77	BK/WT	POWER GROUND
78	PK/WT	IGNITION COIL #3 DRIVER
79	-	-
80	LB/OR	FUEL PUMP RELAY CONTROL
81	WT/YL	ELECTRONIC PRESSURE CONTROL (EPC) SOLENOID
82	-	-
83	WT/LB	IDLE AIR CONTROL (IAC) VALVE CONTROL
84	DB/YL	OUTPUT SHAFT SPEED (OSS) SENSOR INPUT
85	DB/OR	CAMSHAFT POSITION (CMP) SENSOR INPUT
86	TN/LG	A/C HIGH PRESSURE CUTOUT SWITCH INPUT
87	RD/BK	HEATED OXYGEN SENSOR (HO2S) #21 INPUT
88	LB/RD	MASS AIR FLOW (MAF) SENSOR INPUT
89	GY/WT	THROTTLE POSITION (TP) SENSOR INPUT
90	BN/WT	REFERENCE VOLTAGE
91	GY/RD	SIGNAL RETURN
92	-	-
93	RD/WT	HEATED OXYGEN SENSOR (HO2S) #11 HEATER
94	YL/LB	HEATED OXYGEN SENSOR (HO2S) #21 HEATER
95	WT/BK	HEATED OXYGEN SENSOR (HO2S) #12 HEATER
96	TN/YL	HEATED OXYGEN SENSOR (H02S) #22 HEATER
97	-	-
98	-	-
99	LG/OR	FUEL INJECTOR #6 CONTROL
100	BN/LB	FUEL INJECTOR #4 CONTROL
101	WT	FUEL INJECTOR #2 CONTROL
102	-	-
103	BK/WT	POWER GROUND
104	-	-

4F50N Codebook



2001 Lincoln Continental V.8 4.6L DOHC

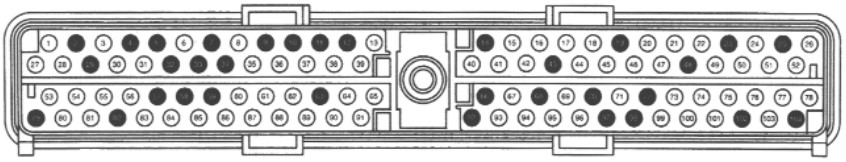
CAV	COLOR	FUNCTION
1	LG/YL	PCM TO IGNITION COIL ON PLUG #6
2	-	-
3	BK/WT	GROUND
4	-	-
5	-	-
6	OR/YL	PCM TO TRANSMISSION SHIFT SOLENOID A
7	-	-
8	-	-
9	YL/WT	FUEL GAUGE TO FUEL GAUGE SENDER
10	-	-
11	PL/OR	PCM TO TRANSMISSION SHIFT SOLENOID B
12	-	-
13	PL	FLASH EPROM POWER SUPPLY
14	-	-
15	PK/LB	BUS-DATA LINK CONNECTOR (DLC)
16	TN/OR	BUS+DATA LINK CONNECTOR (DLC)
17	-	-
18	-	-
19	-	-
20	PK/BK	PCM TO TRANSMISSION SHIFT SOLENOID C
21	BK/PK	CRANKSHAFT POSITION (CKP) SENSOR (+)
22	GY/YL	CRANKSHAFT POSITION (CKP) SENSOR (-)
23	DG/WT	KNOCK SENSOR KS2 (-)
24	-	-
25	BK	CASE GROUND
26	LG/WT	PCM TO IGNITION COIL ON PLUG #1
27	OR/YL	PCM TO IGNITION COIL ON PLUG #5
28	DB	LOW SPEED FAN CONTROL
29	-	-
30	-	-
31	YL/LG	POWER STEERING PRESSURE SWITCH
32	DG/PL	KNOCK SENSOR KS1 (-)
33	-	-
34	OR/BK	PCM TO TRANSMISSION RANGE TR1
35	RD/LG	HEATED OXYGEN SENSOR (HO2S) #12
36	TN/LB	MASS AIR FLOW (MAF) SIGNAL RETURN
37	OR/BK	TRANSMISSION FLUID TEMPERATURE (TFT) SENSOR
38	LG/RD	ENGINE COOLANT TEMPERATURE (ECT) SENSOR
39	GY	INTAKE AIR TEMPERATURE (IAT) SENSOR
40	DG/YL	FUEL PUMP MONITOR
41	PL	A/C CLUTCH SIGNAL
42	-	-
43	-	-
44	-	-
45	-	-
46	LG/PL	HIGH SPEED FAN CONTROL
47	BN/PK	EGR VACUUM REGULATOR (EVR) SOLENOID
48	-	-
49	BK/WT	PCM TO TRANSMISSION RANGE TR2
50	DG/OR	PCM TO TRANSMISSION RANGE TR4
51	BK/WT	GROUND
52	PK/LB	PCM TO IGNITION COIL ON PLUG #3



2001 Lincoln Continental V.8 4.6L DOHC

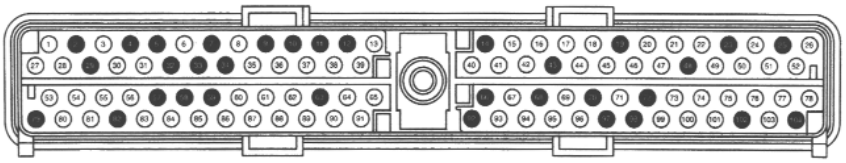
CAV	COLOR	FUNCTION
53	PK/WT	PCM TO IGNITION COIL ON PLUG #4
54	DB/WT	TORQUE CONVERTER CLUTCH (TCC) SOLENOID
55	LG/RD	KEEP ALIVE POWER (HOT AT ALL TIMES)
56	LG/BK	EVAP CANISTER PURGE VALVE OUTPUT
57	YL/RD	KNOCK SENSOR KS1 (-)
58	-	-
59	DG/WT	TURBINE SHAFT SPEED (TSS) SENSOR TO PCM
60	GY/LB	HEATED OXYGEN SENSOR (HO2S) #11
61	PL/LG	HEATED OXYGEN SENSOR (HO2S) #22
62	RD/PK	FUEL TANK PRESSURE (FTP) SENSOR
63	RD/PK	FUEL RAIL PRESSURE SENSOR
64	LB/YL	TRANSMISSION RANGE SENSOR INPUT TR3A
65	BN/LG	DIFFERENTIAL PRESSURE FEEDBACK EGR INPUT
66	-	-
67	PL/WT	CANISTER VENT SOLENOID
68	-	-
69	PK/YL	A/C WOT CUTOUT RELAY OUTPUT
70	-	-
71	RD	POWER (HOT IN START OR RUN)
72	TN/RD	FUEL INJECTOR #7 CONTROL
73	TN/BK	FUEL INJECTOR #5 CONTROL
74	BN/YL	FUEL INJECTOR #3 CONTROL
75	TN	FUEL INJECTOR #1 CONTROL
76	-	-
77	BK/WT	COMMUNICATION NETWORK GROUND
78	DG/PL	PCM TO IGNITION COIL ON PLUG #7
79	WT/RD	PCM TO IGNITION COIL ON PLUG #8
80	LB/OR	ENABLE FUEL PUMP OUTPUT
81	WT/YL	ELECTRONIC PRESSURE CONTROL (EPC) SOLENOID
82	-	-
83	WT/LB	IDLE AIR CONTROL (IAC) VALVE OUTPUT
84	-	-
85	DB/OR	CAMSHAFT POSITION (CMP) SENSOR
86	TN/LG	A/C HEAD PRESSURE SENSOR TO PCM
87	RD/BK	HEATED OXYGEN SENSOR (HO2S) #21
88	LB/RD	MASS AIR FLOW (MAF) INPUT
89	GY/WT	THROTTLE POSITION SENSOR (TP)
90	BN/WT	REFERENCE VOLTAGE OUTPUT
91	GY/RD	SIGNAL RETURN
92	-	-
93	RD/WT	HEATED OXYGEN SENSOR (HO2S) #11 HEATER OUTPUT
94	YL/LB	HEATED OXYGEN SENSOR (HO2S) #21 HEATER OUTPUT
95	WT/BK	HEATED OXYGEN SENSOR (HO2S) #12 HEATER OUTPUT
96	TN/YL	HEATED OXYGEN SENSOR (HO2S) #22 HEATER OUTPUT
97	RD	POWER (HOT IN START OR RUN)
98	LB	FUEL INJECTOR #8 CONTROL
99	LG/OR	FUEL INJECTOR #6 CONTROL
100	BN/LB	FUEL INJECTOR #4 CONTROL
101	WT	FUEL INJECTOR #2 CONTROL
102	YL	KNOCK SENSOR
103	BK/WT	COMMUNICATION NETWORK GROUND
104	WT/PK	PCM TO IGNITION COIL ON PLUG #2

4F50N Codebook



2002 Lincoln Continental V.8 4.6L DOHC

CAV	COLOR	FUNCTION
1	OR/YL	PCM TO IGNITION COIL ON PLUG #6
2	-	-
3	BK/WT	GROUND
4	-	-
5	-	-
6	OR/YL	PCM TO TRANSMISSION SHIFT SOLENOID A
7	-	-
8	-	-
9	YL/WT	FUEL GAUGE TO FUEL GAUGE SENDER
10	-	-
11	PL/OR	PCM TO TRANSMISSION SHIFT SOLENOID B
12	-	-
13	PL	FLASH EPROM POWER SUPPLY
14	-	-
15	PK/LB	BUS-DATA LINK CONNECTOR (DLC)
16	TN/OR	BUS+DATA LINK CONNECTOR (DLC)
17	-	-
18	-	-
19	-	-
20	PK/BK	PCM TO TRANSMISSION SHIFT SOLENOID C
21	BK/PK	CRANKSHAFT POSITION (CKP) SENSOR (+)
22	GY/YL	CRANKSHAFT POSITION (CKP) SENSOR (-)
23	DG/WT	KNOCK SENSOR KS2 (-)
24	-	-
25	BK	CASE GROUND
26	LG/WT	PCM TO IGNITION COIL ON PLUG #1
27	LG/YL	PCM TO IGNITION COIL ON PLUG #5
28	DB	LOW SPEED FAN CONTROL
29	-	-
30	-	-
31	YL/LG	POWER STEERING PRESSURE SWITCH
32	DG/PL	KNOCK SENSOR KS1 (-)
33	-	-
34	OR/BK	PCM TO TRANSMISSION RANGE TR1
35	RD/LG	HEATED OXYGEN SENSOR (HO2S) #12
36	TN/LB	MASS AIR FLOW (MAF) SIGNAL RETURN
37	OR/BK	TRANSMISSION FLUID TEMPERATURE (TFT) SENSOR
38	LG/RD	ENGINE COOLANT TEMPERATURE (TFT) SENSOR
39	GY	INTAKE AIR TEMPERATURE (IAT) SENSOR
40	DG/YL	FUEL PUMP MONITOR
41	PL	A/C CLUTCH SIGNAL
42	-	-
43	-	-
44	-	-
45	-	-
46	LG/PL	HIGH SPEED FAN CONTROL
47	BN/PK	EGR VACUUM REGULATOR (EVR) SOLENOID
48	-	-
49	BK/WT	PCM TO TRANSMISSION RANGE TR2
50	DG/OR	PCM TO TRANSMISSION RANGE TR4
51	BK/WT	GROUND
52	WT/PK	PCM TO IGNITION COIL ON PLUG #3



2002 Lincoln Continental V.8 4.6L DOHC

CAV	COLOR	FUNCTION
53	DG/PL	PCM TO IGNITION COIL ON PLUG #4
54	DB/WT	TORQUE CONVERTER CLUTCH (TCC) SOLENOID
55	LG/RD	KEEP ALIVE POWER (HOT AT ALL TIMES)
56	LG/BK	EVAP CANISTER PURGE VALVE OUTPUT
57	YL/RD	KNOCK SENSOR KS1 (-)
58	-	-
59	DG/WT	TURBINE SHAFT SPEED (TSS) SENSOR TO PCM
60	GY/LB	HEATED OXYGEN SENSOR (HO2S) #11
61	PL/LG	HEATED OXYGEN SENSOR (HO2S) #22
62	RD/PK	FUEL TANK PRESSURE (FTP) SENSOR
63	RD/PK	FUEL RAIL PRESSURE SENSOR
64	LB/YL	TRANSMISSION RANGE SENSOR INPUT TR3A
65	BN/LG	DIFFERENTIAL PRESSURE FEEDBACK EGR INPUT
66	-	-
67	PL/WT	CANISTER VENT SOLENOID
68	-	-
69	PK/YL	A/C WOT CUTOUT RELAY OUTPUT
70	-	-
71	RD	POWER (HOT IN START OR RUN)
72	TN/RD	FUEL INJECTOR #7 CONTROL
73	TN/BK	FUEL INJECTOR #5 CONTROL
74	BN/YL	FUEL INJECTOR #3 CONTROL
75	TN	FUEL INJECTOR #1 CONTROL
76	-	-
77	BK/WT	COMMUNICATION NETWORK GROUND
78	PK/LB	PCM TO IGNITION COIL ON PLUG #7
79	WT/RD	PCM TO IGNITION COIL ON PLUG #8
80	LB/OR	ENABLE FUEL PUMP OUTPUT
81	WT/YL	ELECTRONIC PRESSURE CONTROL (EPC) SOLENOID
82	-	-
83	WT/LB	IDLE AIR CONTROL (IAC) VALVE OUTPUT
84	-	-
85	DB/OR	CAMSHAFT POSITION (CMP) SENSOR
86	TN/LG	A/C HEAD PRESSURE SENSOR TO PCM
87	RD/BK	HEATED OXYGEN SENSOR (HO2S) #21
88	LB/RD	MASS AIR FLOW (MAF) INPUT
89	GY/WT	THROTTLE POSITION SENSOR (TP)
90	BN/WT	REFERENCE VOLTAGE OUTPUT
91	GY/RD	SIGNAL RETURN
92	-	-
93	RD/WT	HEATED OXYGEN SENSOR (HO2S) #11 HEATER OUTPUT
94	YL/LB	HEATED OXYGEN SENSOR (HO2S) #21 HEATER OUTPUT
95	WT/BK	HEATED OXYGEN SENSOR (HO2S) #12 HEATER OUTPUT
96	TN/YL	HEATED OXYGEN SENSOR (HO2S) #22 HEATER OUTPUT
97	-	-
98	LB	FUEL INJECTOR #8 CONTROL
99	LG/OR	FUEL INJECTOR #6 CONTROL
100	BN/LB	FUEL INJECTOR #4 CONTROL
101	WT	FUEL INJECTOR #2 CONTROL
102	YL	KNOCK SENSOR
103	BK/WT	COMMUNICATION NETWORK GROUND
104	PK/WT	PCM TO IGNITION COIL ON PLUG #2

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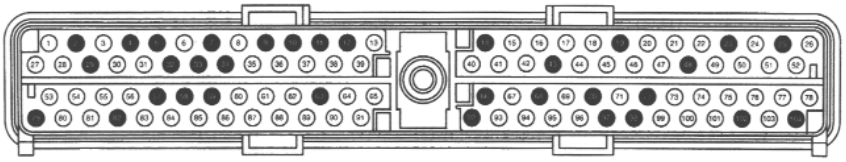

2004 - 2005 Freestar/Monterey 3.9L & 4.2L V6

CAV	COLOR	FUNCTION
1	PL/OR	SHIFT SOLENOID B CONTROL
2	-	-
3	YL/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR, TR1
4	-	-
5	-	-
6	DG/WT	TURBINE SHAFT SPEED (TSS) SENSOR, SIGNAL
7	-	-
8	OR/WT	INLET MANIFOLD RUNNER CONTROL (IMRC) MODULE, MONITOR
9	WT/OR	MASS AIR FLOW (MAF) SENSOR INPUT
10	LB/WT	FUEL RAIL PRESSURE TRANSDUCER SENSOR, TEMP. SIGNAL
11	-	-
12	-	-
13	PL	MODULE PROGRAMMING SIGNAL
14	-	-
15	PK/LB	SCP BUS -
16	TN/OR	SCP BUS +
17	GY/OR	RX SIGNAL
18	WT/LG	TX SIGNAL
19	RD/OR	ENGINE COOLING FAN RELAY CONTROL
20	PL	GENERATOR S CIRCUIT
21	BK/PK	CRANKSHAFT POSITION SENSOR
22	GY/YL	CRANKSHAFT POSITION SENSOR
23	RD/YL	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
24	BK/WT	GROUND
25	-	-
26	DB/LG	COIL DRIVER (CD) - A CONTROL
27	OR/YL	SHIFT SOLENOID A CONTROL
28	LG/PL	ENGINE COOLING FAN RELAY CONTROL
29	-	-
30	DB/LG	ANTI-THEFT INDICATOR CONTROL
31	YL/LG	POWER STEERING PRESSURE SWITCH FEED
32	-	-
33	-	-
34	-	-
35	RD/LG	HEATED OXYGEN SENSOR (HO2S) #12 INPUT
36	TN/LB	MASS AIR FLOW (MAF) SENSOR SIGNAL RETURN
37	OR/BK	TRANS. FLUID TEMPERATURE (TFT) SENSOR SIGNAL
38	-	-
39	GY	INTAKE AIR TEMPERATURE (IAT) SENSOR INPUT
40	LB/OR	FUEL PUMP MONITOR INPUT
41	BK/YL	A/C CLUTCH CYCLING PRESSURE SWITCH INPUT
42	BN	INTAKE MANIFOLD RUNNER CNTRL (IMRC) MODULE CNTRL
43	-	-
44	LG/YL	STARTER RELAY CIRCUIT CONTROL
45	RD/PK	GENERATOR I CIRCUIT
46	OR/LB	ENGINE COOLING FAN RELAY CONTROL
47	BN/PK	EGR VACUUM REGULATOR (EVR) CONTROL
48	-	-
49	LB/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR2
50	WT/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR4
51	BK/WT	GROUND
52	RD/LB	COIL DRIVER (CD) - B CONTROL

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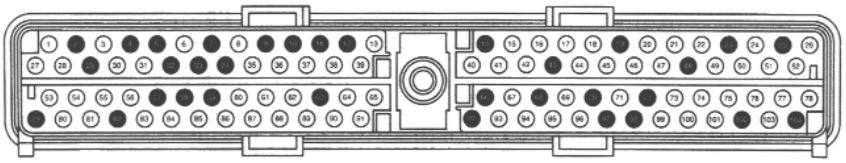
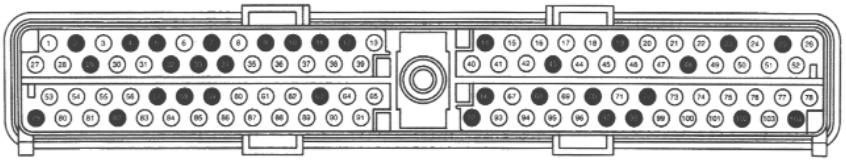


2004 - 2005 Freestar/Monterey 3.9L & 4.2L V6

CAV	COLOR	FUNCTION
53	PK/BK	SHIFT SOLENOID C CONTROL
54	RD/LB	TORQUE CONVERTER CLUTCH (TCC) SOLENOID CONTROL
55	RD	VOLTAGE SUPPLIED AT ALL TIMES (OVERLOAD PROTECTED)
56	LG/BK	EVAP CANISTER PURGE VALVE CONTROL
57	-	-
58	-	-
59	-	-
60	GY/LB	HEATED OXYGEN SENSOR (HO2S) #11 INPUT
61	PL/LG	HEATED OXYGEN SENSOR (HO2S) #22 INPUT
62	RD/PK	FUEL TANK PRESSURE TRANSDUCER SENSOR SIGNAL
63	RD/PK	FUEL RAIL PRESSURE TRANSDUCER SENSOR PRESSURE SIGNAL
64	RD/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR3A
65	BN/LG	DIFFERENTIAL PRESSURE FEEDBACK EGR (DPFE) SENSOR INPUT
66	YL/LG	CYLINDER-HEAD TEMPERATURE SENSOR SIGNAL
67	PL/WT	EVAPORATIVE EMISSION (EVAP) CANISTER VENT VALVE CONTROL
68	-	-
69	PK/YL	A/C CLUTCH RELAY CONTROL
70	-	-
71	RD	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
72	-	-
73	TN/BK	FUEL INJECTOR 5 CONTROL
74	BN/YL	FUEL INJECTOR 3 CONTROL
75	TN	FUEL INJECTOR 1 CONTROL
76	BK/WT	GROUND
77	-	-
78	PK/WT	COIL DRIVER (CD) - C CONTROL
79	-	-
80	WT/RD	FUEL PUMP CONTROL
81	WT/YL	ELECTRONIC PRESSURE CNTRL (EPC) SOLENOID CNTRL
82	-	-
83	WT/LB	IDLE AIR CNTRL (IAC) VALVE CONTROL
84	DB/YL	OUTPUT SHAFT SPEED (OSS) SENSOR SIGNAL
85	DB/OR	CAMSHAFT POSITION SENSOR SIGNAL
86	TN/LG	A/C PRESSURE SWITCH INPUT
87	RD/BK	HEATED OXYGEN SENSOR (HO2S) #21 INPUT
88	LB/RD	MASS AIR FLOW (MAF) SENSOR OUTPUT
89	GY/WT	THROTTLE POSITION SENSOR (TPS) SIGNAL
90	BN/WT	REFERENCE VOLTAGE
91	GY/RD	SIGNAL RETURN
92	-	-
93	RD/WT	HEATED OXYGEN SENSOR (HO2S) #11 HEATER
94	YL/LB	HEATED OXYGEN SENSOR (HO2S) #21 HEATER
95	WT/BK	HEATED OXYGEN SENSOR (HO2S) #12 HEATER
96	TN/YL	HEATED OXYGEN SENSOR (HO2S) #22 HEATER
97	-	-
98	-	-
99	LG/OR	FUEL INJECTOR 6 CONTROL
100	BN/LB	FUEL INJECTOR 4 CONTROL
101	WT	FUEL INJECTOR 2 CONTROL
102	-	-
103	BK/WT	GROUND
104	-	-

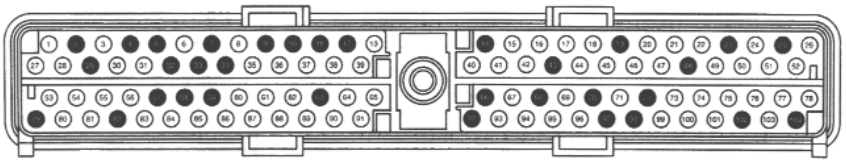
4F50N Codebook



2006-2007 Freestar/Monterey 3.9L 4.2L V6

CAV	COLOR	FUNCTION
1	PL/OR	SHIFT SOLENOID B CONTROL
2	DB/WT	POSITIVE CRANKSHAFT VENTILATION HEATER CONTROL
3	YL/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR, TR1
4	-	-
5	-	-
6	DG/WT	TURBINE SHAFT SPEED (TSS) SENSOR, SIGNAL
7	RD/YL	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
8	OR/WT	INLET MANIFOLD RUNNER CONTROL (IMRC) MODULE, MONITOR
9	WT/OR	MASS AIR FLOW (MAF) SENSOR INPUT
10	-	-
11	-	-
12	-	-
13	PL	MODULE PROGRAMMING SIGNAL
14	-	-
15	WT	HIGH SPEED CAN BUS +
16	BK	HIGH SPEED CAN BUS -
17	GY/OR	RX SIGNAL
18	WT/LG	TX SIGNAL
19	-	-
20	PL	GENERATOR S CIRCUIT
21	BK/PK	CRANKSHAFT POSITION SENSOR +
22	GY/YL	CRANKSHAFT POSITION SENSOR -
23	RD/YL	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
24	BK/WT	GROUND
25	BK/WT	GROUND
26	DB/LG	COIL DRIVER (CD) - A CONTROL
27	OR/YL	SHIFT SOLENOID A CONTROL
28	LG/PL	ENGINE COOLING FAN RELAY CONTROL
29	-	-
30	DB/LG	ANTI-THEFT INDICATOR CONTROL
31	YL/LG	POWER STEERING PRESSURE SWITCH SIGNAL
32	DG/PL	KNOCK SENSOR
33	OR/WT	SHIELD
34	-	-
35	RD/LG	HEATED OXYGEN SENSOR (HO2S) #12 SIGNAL
36	TN/LB	MASS AIR FLOW (MAF) SENSOR SIGNAL RETURN
37	OR/BK	TRANS. FLUID TEMPERATURE (TFT) SENSOR SIGNAL
38	YL/LG	CYLINDER HEAD TEMPERATURE SENSOR OUTPUT
39	GY	INTAKE AIR TEMPERATURE (IAT) SENSOR SIGNAL
40	DG/YL	FUEL PUMP RELAY, SWITCHED OUTPUT
41	BK/YL	A/C CLUTCH CYCLING PRESSURE SWITCH INPUT
42	BN	INTAKE MANIFOLD RUNNER CNTRL (IMRC) MODULE CNTRL
43	RD/OR	ENGINE COOLING FAN RELAY CONTROL
44	LG/YL	STARTER RELAY CIRCUIT CONTROL
45	RD/PK	GENERATOR I CIRCUIT
46	OR/LB	ENGINE COOLING FAN RELAY CONTROL
47	BN/PK	EGR VACUUM REGULATOR (EVR) CONTROL
48	-	-
49	LB/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR2
50	WT/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR4
51	BK/WT	GROUND
52	RD/LB	COIL DRIVER (CD) - B CONTROL

4F50N Codebook



2006-2007 Freestar/Montery 3.9L 4.2L V6

CAV	COLOR	FUNCTION
53	PK/BK	SHIFT SOLENOID C CONTROL
54	RD/LB	TORQUE CONVERTER CLUTCH (TCC) SOLENOID CONTROL
55	RD	VOLTAGE SUPPLIED AT ALL TIMES (OVERLOAD PROTECTED)
56	LG/BK	EVAP CANISTER PURGE VALVE CONTROL
57	YL/RD	KNOCK SENSOR +
58	-	-
59	BN/WT	FUEL TANK PRESSURE TRANSUCER REFERENCE VOLTAGE
60	GY/LB	HEATED OXYGEN SENSOR (HO2S) #11 SIGNAL
61	PL/LG	HEATED OXYGEN SENSOR (HO2S) #22 SIGNAL
62	RD/PK	FUEL TANK PRESSURE TRANSDUCER SENSOR SIGNAL
63	-	-
64	RD/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR3A
65	BN/LG	DIFFERENTIAL PRESSURE FEEDBACK EGR (DPFE) SENSOR SIGNAL
66	-	-
67	PL/WT	EVAPORATIVE EMISSION (EVAP) CANISTER VENT VALVE CONTROL
68	-	-
69	PK/YL	A/C CLUTCH RELAY CONTROL
70	-	-
71	RD	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
72	-	-
73	TN/BK	FUEL INJECTOR 5 CONTROL
74	BN/YL	FUEL INJECTOR 3 CONTROL
75	TN	FUEL INJECTOR 1 CONTROL
76	BK/WT	GROUND
77	BK/WT	GROUND
78	PK/WT	COIL DRIVER (CD) - C CONTROL
79	-	-
80	WT/RD	FUEL PUMP CONTROL
81	WT/YL	ELECTRONIC PRESSURE CNTRL (EPC) SOLENOID CNTRL
82	-	-
83	WT/LB	IDLE AIR CNTRL (IAC) VALVE CONTROL
84	DB/YL	OUTPUT SHAFT SPEED (OSS) SENSOR SIGNAL
85	DB/OR	CAMSHAFT POSITION SENSOR SIGNAL
86	TN/RD	A/C HIGH PRESSURE CUT OUT INPUT
87	RD/BK	HEATED OXYGEN SENSOR (HO2S) #21 SIGNAL
88	LB/RD	MASS AIR FLOW (MAF) SENSOR SIGNAL
89	GY/WT	THROTTLE POSITION SENSOR (TPS) SIGNAL
90	BN/WT	REFERENCE VOLTAGE
91	GY/RD	SIGNAL RETURN
92	-	-
93	RD/WT	HEATED OXYGEN SENSOR (HO2S) #11 HEATER
94	YL/LB	HEATED OXYGEN SENSOR (HO2S) #21 HEATER
95	WT/BK	HEATED OXYGEN SENSOR (HO2S) #12 HEATER
96	TN/YL	HEATED OXYGEN SENSOR (HO2S) #22 HEATER
97	RD	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
98	-	-
99	LG/OR	FUEL INJECTOR 6 CONTROL
100	BN/LB	FUEL INJECTOR 4 CONTROL
101	WT	FUEL INJECTOR 2 CONTROL
102	-	-
103	BK/WT	GROUND
104	-	-

APPENDIX

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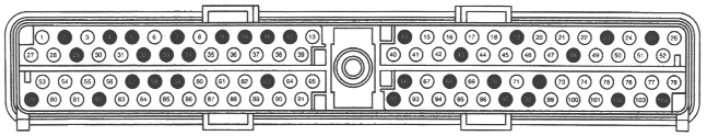

2000 Taurus/Sable 3.0L 2V & 4V

CAV	COLOR	FUNCTION
1	DG/PL PL/OR	COIL ON PLUG 4 CONTROL - 3.0L 4V SHIFT SOLENOID B - 3.0L 2V
2	PK/LG	MALFUNCTION INDICATOR LAMP (MIL) CONTROL
3	BK/WT YL/BK	GROUND - 3.0L 4V DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR1-3.0L 2V
4	-	-
5	WT/OR	SECONDARY AIR INJECTOR RELAY
6	OR/YL DG/WT	SHIFT SOLENOID A - 3.0L 4V TURBINE SHAFT SPEED (TSS) SENSOR - 3.0l 2V
7	-	-
8	-	-
9	YL/WT	FUEL PUMP/FUEL GAUGE SENDER
10	-	-
11	PL/OR	SHIFT SOLENOID B - 3.0L 4V
12	WT/LG YL/WT	CHECK TRANSAXLE LAMP -3.0L 2V FUEL PUMP/FUEL GAUGE SENDER - 3.0L 4V
13	PL	MODULE PROGRAMMING SIGNAL
14	-	-
15	PK/LB	SCP BUS -
16	TN/OR	SCP BUS +
17	BN/YL	RX SIGNAL
18	GY/RD	TX SIGNAL
19	-	-
20	PK/BK	SHIFT SOLENOID C - 3.0L 4V
21	GY	CRANKSHAFT POSITION SENSOR +
22	DB	CRANKSHAFT POSITION SENSOR -
23	-	-
24	BK/WT	GROUND
25	BK	GROUND
26	LG/WT YL/BK	COIL ON PLUG 1 CONTROL - 3.0L 4V IGNITION COIL A - 3.0L 2V
27	LG/YL OR/YL	COIL ON PLUG 5 CONTROL -3.0L 4V SHIFT SOLENOID A - 3.0L 2V
28	LB	LOW SPEED FAN CONTROL RELAY CONTROL
29	-	-
30	DB/LG	ANTI-THEFT INDICATOR INPUT
31	YL/LG	POWER STEERING PRESSURE SWITCH INPUT - 3.0L 4V
32	YL	POWERTRAIN CNTRL MODULE (PCM) TO KNOCK SENSOR
33	-	-
34	YL/BK DK/LG	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR1-3.0L 4V POWERTRAIN CNTRL MODULE (PCM)-FLEXIBLE FUEL SENSOR-3.0L 2v
35	RD/BK	HEATED OXYGEN SENSOR (HO2S) #12 INPUT
36	TN/LB	MASS AIR FLOW (MAF) SENSOR SIGNAL RETURN
37	OR/BK	TRANSMISSION FLUID TEMPERATURE (TFT) SENSOR INPUT
38	LG/RD	ENGINE COOLANT TEMPERATURE (ECT) SENSOR INPUT
39	GY	INTAKE AIR TEMPERATURE (IAT) SENSOR INPUT
40	DG/YL	FUEL PUMP RELAY SWITCHED POWER OUTPUT
41	DG/WT	A/C HIGH PRESSURE SWITCH INPUT
42	-	-
43	-	-
44	PK	STARTER RELAY CONTROL
45	-	-
46	LG/PL	HIGH SPEED COOLING FAN RELAY CONTROL
47	BN/PK	EGR VACUUM REGULATOR (EVR) CONTROL
48	TN/YL	TACHOMETER
49	LB/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR2
50	WT/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR4
51	BK/WT	GROUND
52	PK/WT YL/RD	COIL ON PLUG 6 CONTROL - 3.0L 4V IGNITION COIL B -3.0L 2V

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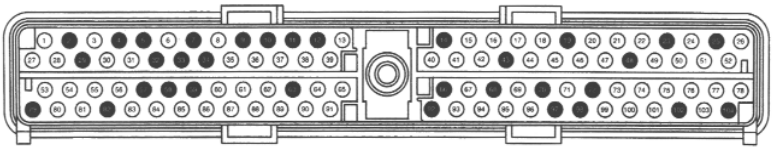
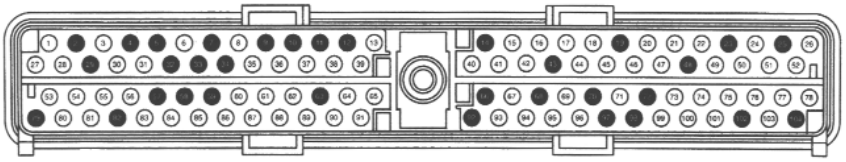


2000 Taurus/Sable 3.0L 2V & 4V

CAV	COLOR	FUNCTION
53	OR/YL PK/BK	COIL ON PLUG 6 CONTROL - 3.0L 4V SHIFT SOLENOID C - 3.0L 2V
54	PL/YL	TORQUE CONVERTER CLUTCH (TCC) SOLENOID
55	PK/LB	VOLTAGE SUPPLIED AT ALL TIMES (OVERLOAD PROTECTED)
56	GY/YL	EVAP CANISTER PURGE VALVE
57	YL/RD	KNOCK SENSOR
58	-	-
59	DG/WT	TURBINE SHAFT SPEED (TSS) SENSOR 3.0L 4V
60	GY/LB	HEATED OXYGEN SENSOR (HO2S) #11 INPUT
61	PL/LG	HEATED OXYGEN SENSOR (HO2S) #22 INPUT
62	RD/PK	FUEL TANK PRESSURE TRANSDUCER SENSOR
63	WT/YL	ELECTRONIC PRESSURE CONTROL (EPC) SOLENOID
64	RD/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR, TR3A
65	BN/LG	DIFFERENTIAL PRESSURE FEEDBACK EGR (DPFE) SENSOR INPUT
66	-	-
67	PL/WT	CANISTER VENT
68	GY/BK	VEHICLE SPEED SENSOR (VSS) +
69	PK/YL	A/C CLUTCH RELAY CONTROL
70	BN	SECONDARY AIR INJECTOR RELAY
71	RD	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
72	-	-
73	TN/BK	FUEL INJECTOR 5 CONTROL
74	BN/YL	FUEL INJECTOR 3 CONTROL
75	TN	FUEL INJECTOR 1 CONTROL
76	BK/WT	GROUND
77	BK/WT	GROUND
78	WT/PK YL/WT	COIL ON PLUG 3 CONTROL -3.0L 4V IGNITION COIL C - 3.0L 2V
79	WT/LG	CHECK TRANSAXLE LAMP -3.0L 4V
80	LB/OR	FUEL PUMP RELAY CONTROL
81	BN/OR	ELECTRONIC PRESSURE CONTROL (EPC) SOLENOID
82	-	-
83	WT/LB	IDLE AIR CONTROL VALVE (IAC) CONTROL
84	DB/YL	OUTPUT SHAFT SPEED SENSOR (OSS)
85	DB/OR	CAMSHAFT POSITION SENSOR INPUT
86	BK/YL	A/C CLUTCH RELAY SWITCHED OUTPUT
87	RD/LG	HEATED OXYGEN SENSOR (HO2S) #21 INPUT
88	LB/RD	MASS AIR FLOW (MAF) SENSOR OUTPUT
89	GY/WT	THROTTLE POSITION SENSOR (TPS) INPUT
90	BN/WT	REFERENCE VOLTAGE
91	GY/RD	SIGNAL RETURN
92	RD/LG	BRAKE PEDAL POSITION SWITCH INPUT
93	RD/WT	HEATED OXYGEN SENSOR (HO2S) #11 HEATER
94	WT/BK	HEATED OXYGEN SENSOR (HO2S) #21 HEATER
95	YL/LB	HEATED OXYGEN SENSOR (HO2S) #12 HEATER
96	TN/YL	HEATED OXYGEN SENSOR (HO2S) #22 HEATER
97	-	-
98	-	-
99	LG/OR	FUEL INJECTOR 6 CONTROL
100	BN/LB	FUEL INJECTOR 4 CONTROL
101	WT	FUEL INJECTOR 2 CONTROL
102	-	-
103	BK/WT	GROUND
104	-	-

4F50N Codebook



2001 Taurus/Sable 3.0L 4V V6 DOHC & 3.0L 2V V6

CAV	COLOR	FUNCTION
1	PL/OR	SHIFT SOLENOID B
2	PK/LG	MALFUNCTION INDICATOR LAMP (MIL) CONTROL
3	YL/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR1
4	-	-
5	-	-
6	DG/WT	TURBINE SHAFT SPEED (TSS) SENSOR
7	-	-
8	-	-
9	-	-
10	-	-
11	-	-
12	YL/WT	FUEL PUMP/FUEL GAUGE SENDER
13	PL	FLASH EEPROM POWER SUPPLY
14	-	-
15	PK/LB	SCP BUS -
16	TN/OR	SCP BUS +
17	BN/YL	RX SIGNAL
18	GY/RD	TX SIGNAL
19	-	-
20	-	-
21	GY	CRANKSHAFT POSITION SENSOR +
22	DB	CRANKSHAFT POSITION SENSOR -
23	-	-
24	BK/WT	GROUND
25	BK	GROUND
26	YL/BK	IGNITION COIL A
27	OR/YL	SHIFT SOLENOID A
28	LB	LOW SPEED FAN CONTROL RELAY CONTROL
29	-	-
30	DB/LG	ANTI-THEFT INDICATOR INPUT
31	YL/LG	POWER STEERING PRESSURE SWITCH INPUT - 3.0L 4V
32	YL	KNOCK SENSOR 3.0L 4V
33	-	-
34	-	-
35	RD/BK	HEATED OXYGEN SENSOR (HO2S) #12 INPUT
36	TN/LB	MASS AIR FLOW (MAF) SENSOR SIGNAL RETURN
37	OR/BK	TRANSMISSION FLUID TEMPERATURE (TFT) SENSOR INPUT
38	LG/RD	ENGINE COOLANT TEMPERATURE (ECT) SENSOR INPUT
39	GY	INTAKE AIR TEMPERATURE (IAT) SENSOR INPUT
40	PK/BK	FUEL PUMP POWER
41	DG/WT	A/C HIGH PRESSURE SWITCH INPUT
42	-	-
43	-	-
44	PK	STARTER RELAY CONTROL
45	-	-
46	LG/PL	HIGH SPEED COOLING FAN RELAY CONTROL
47	BN/PK	EGR VACUUM REGULATOR (EVR) CONTROL
48	TN/YL	TACHOMETER
49	LB/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR2
50	WT/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR4
51	BK/WT	GROUND
52	YL/RD	IGNITION COIL B

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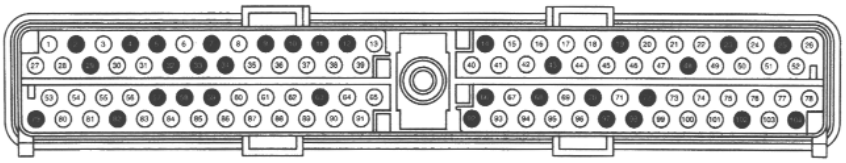

2001 Taurus/Sable 3.0L 4V V6 DOHC & 3.0L 2V V6

CAV	COLOR	FUNCTION
53	PK/BK	SHIFT SOLENOID C
54	PL/YL	TORQUE CONVERTER CLUTCH (TCC) SOLENOID
55	PK/LB	VOLTAGE SUPPLIED AT ALL TIMES (OVERLOAD PROTECTED)
56	GY/YL	EVAP CANISTER PURGE VALVE
57	YL/RD	KNOCK SENSOR - 3.0L 4V
58	-	-
59	-	-
60	GY/LB	HEATED OXYGEN SENSOR (HO2S) #11 INPUT
61	PL/LG	HEATED OXYGEN SENSOR (HO2S) #22 INPUT
62	RD/PK	FUEL TANK PRESSURE TRANSDUCER SENSOR
63	-	-
64	RD/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR3A
65	BN/LG	DIFFERENTIAL PRESSURE FEEDBACK EGR (DPFE) SENSOR INPUT
66	-	-
67	PL/WT	CANISTER VENT
68	GY/BK	VEHICLE SPEED SENSOR (VSS) +
69	PK/YL	A/C CLUTCH RELAY CONTROL
70	-	-
71	RD	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
72	-	-
73	TN/BK	FUEL INJECTOR 5 CONTROL
74	BN/YL	FUEL INJECTOR 3 CONTROL
75	TN	FUEL INJECTOR 1 CONTROL
76	BK/WT	GROUND
77	BK/WT	GROUND
78	YL/WT	IGNITION COIL C
79	WT/LG	CHECK TRANSAXLE LAMP
80	LB/OR	FUEL PUMP RELAY CONTROL
81	BN/OR	ELECTRONIC PRESSURE CONTROL (EPC) SOLENOID
82	BK/WT	CHECK CAP INDICTOR LAMP
83	WT/LB	IDLE AIR CONTROL VALVE (IAC) CONTROL
84	DB/YL	OUTPUT SHAFT SPEED SENSOR (OSS) +
85	DB/OR	CAMSHAFT POSITION SENSOR INPUT
86	BK/YL	A/C CLUTCH RELAY SWITCHED OUTPUT
87	RD/LG	HEATED OXYGEN SENSOR (HO2S) #21 INPUT
88	LB/RD	MASS AIR FLOW (MAF) SENSOR OUTPUT
89	GY/WT	THROTTLE POSITION SENSOR (TPS) INPUT
90	BN/WT	REFERENCE VOLTAGE
91	GY/RD	SIGNAL RETURN
92	RD/LG	BRAKE PEDAL POSITION SWITCH INPUT
93	RD/WT	HEATED OXYGEN SENSOR (HO2S) #11 HEATER
94	WT/BK	HEATED OXYGEN SENSOR (HO2S) #21 HEATER
95	YL/LB	HEATED OXYGEN SENSOR (HO2S) #12 HEATER
96	TN/YL	HEATED OXYGEN SENSOR (HO2S) #22 HEATER
97	-	-
98	-	-
99	LG/OR	FUEL INJECTOR 6 CONTROL
100	BN/LB	FUEL INJECTOR 4 CONTROL
101	WT	FUEL INJECTOR 2 CONTROL
102	-	-
103	BK/WT	GROUND
104	-	-

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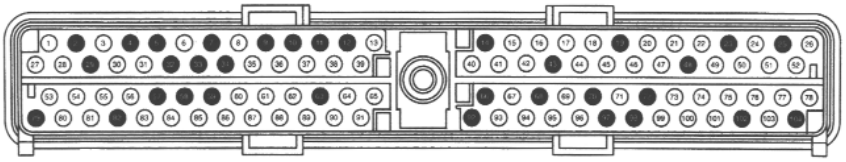

2002 Taurus/Sable 3.0L 2V V6

CAV	COLOR	FUNCTION
1	PL/OR	SHIFT SOLENOID B
2	PK/LG	MALFUNCTION INDICATOR LAMP (MIL) CONTROL
3	YL/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR1
4	BN/PK	VOLTAGE SUPPLIED IN START (OVERLOAD PROTECTED)
5	-	-
6	DG/WT	TURBINE SHAFT SPEED SENSOR +
7	-	-
8	-	-
9	-	-
10	-	-
11	-	-
12	YL/WT	FUEL PUMP/FUEL GAUGE SENDER
13	PL	FLASH/EEPROM POWER SUPPLY
14	-	-
15	PK/LB	SCP BUS -
16	TN/OR	SCP BUS +
17	BN/YL	RX SIGNAL
18	GY/RD	TX SIGNAL
19	-	-
20	GY/YL	GENERATOR SIGNAL 2 MONITOR
21	GY	CRANKSHAFT POSITION SENSOR +
22	DB	CRANKSHAFT POSITION SENSOR -
23	-	-
24	BK/WT	GROUND
25	BK	GROUND
26	YL/BK	IGNITION COIL A CYLINDER 1 AND 5
27	OR/YL	SHIFT SOLENOID A
28	LB	ENGINE COOLING FAN BRAKE RELAY CONTROL
29	-	-
30	DB/LG	ANTI-THEFT INDICATOR INPUT
31	YL/LG	POWER STEERING PRESSURE SENSOR INPUT
32	YL	KNOCK SENSOR SIGNAL RETURN
33	-	-
34	-	-
35	RD/BK	HEATED OXYGEN SENSOR (HO2S) #12 INPUT
36	TN/LB	MASS AIR FLOW (MAF) SENSOR SIGNAL RETURN
37	OR/BK	TRANSMISSION FLUID TEMPERATURE (TFT) SENSOR INPUT
38	LG/RD	ENGINE COOLANT TEMP. (ECT) SENSOR INPUT
39	GY	INTAKE AIR TEMPERATURE (IAT) SENSOR INPUT
40	DG/YL	FUEL PUMP DRIVER MODULE INPUT
41	DG/WT	A/C HIGH PRESSURE SWITCH INPUT
42	LG/YL	ENGINE COOLING FAN RELAY CONTROL
43	-	-
44	PK	STARTER RELAY CONTROL
45	LB/RD	SENSOR SIGNAL GENERATOR OUTPUT
46	LG/PL	HIGH SPEED COOLING FAN RELAY CONTROL
47	BN/PK	EGR VACUUM REGULATOR (EVR) CONTROL
48	TN/YL	TACHOMETER
49	LB/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR2
50	WT/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR4
51	BK/WT	GROUND
52	YL/RD	IGNITION COIL B CYLINDER 3 AND 4

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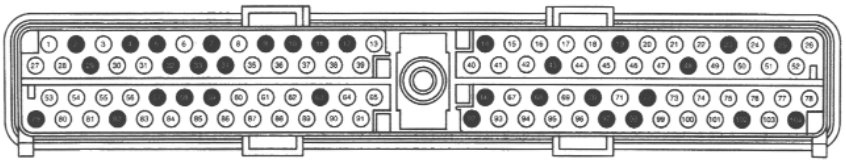
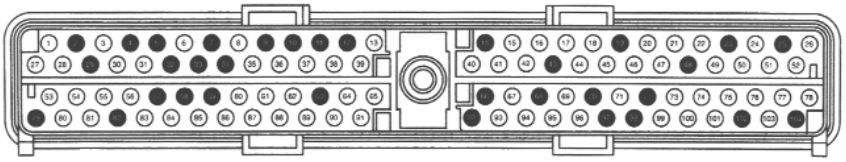


2002 Taurus/Sable 3.0L 2V V6

CAV	COLOR	FUNCTION
53	PK/BK	SHIFT SOLENOID C
54	PL/YL	TORQUE CONVERTER CLUTCH (TCC) SOLENOID
55	PK/LB	KEEP ALIVE MEMORY
56	GY/YL	EVAP CANISTER PURGE VALVE
57	YL/RD	KNOCK SENSOR SIGNAL
58	-	-
59	-	-
60	GY/LB	HEATED OXYGEN SENSOR (HO2S) #11 INPUT
61	PL/LG	HEATED OXYGEN SENSOR (HO2S) #22 INPUT
62	RD/PK	FUEL TANK PRESSURE TRANSDUCER SENSOR
63	WT/YL	INJECTOR PRESSURE SENSOR INPUT
64	RD/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR3A
65	BN/LG	DIFFERENTIAL PRESSURE FEEDBACK EGR (DPFE) SENSOR INPUT
66	TN/OR	EVAPORATOR DISCHARGE AIR TEMPERATURE SENSOR
67	PL/WT	EVAPORATIVE EMISSION (EVAP) CANISTER VENT VALVE
68	GY/BK	VEHICLE SPEED SENSOR (VSS) +
69	PK/YL	A/C CLUTCH RELAY CONTROL
70	-	-
71	RD	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
72	-	-
73	TN/BK	INJECTOR 5 CONTROL
74	BN/YL	INJECTOR 3 CONTROL
75	TN	INJECTOR 1 CONTROL
76	BK/WT	GROUND
77	BK/WT	GROUND
78	YL/WT	IGNITION COIL C CYLINDER 2 AND 6
79	WT/LG	CHECK TRANSAXLE LAMP
80	LB/OR	FUEL PUMP DRIVER MODULE OUTPUT
81	BN/OR	ELECTRONIC PRESSURE CONTROL (EPC) SOLENOID
82	BK/WT	CHECK CAP INDICATOR LAMP
83	WT/LB	IDLE AIR CONTROL VALVE (IAC) CONTROL
84	DB/YL	OUTPUT SHAFT SPEED (OSS) SENSOR +
85	DB/OR	CAMSHAFT POSITION SENSOR INPUT
86	BK/YL	A/C HIGH PRESSURE SWITCH SWITCHED OUTPUT
87	RD/LG	HEATED OXYGEN SENSOR (HO2S) #21 INPUT
88	LB/RD	MASS AIR FLOW (MAF) SENSOR OUTPUT
89	GY/WT	THROTTLE POSITION SENSOR (TPS) INPUT
90	BN/WT	REFERENCE VOLTAGE
91	GY/RD	SIGNAL RETURN
92	RD/LG	BRAKE PEDAL POSITION SWITCH INPUT
93	RD/WT	HEATED OXYGEN SENSOR (HO2S) #11 HEATER
94	WT/BK	HEATED OXYGEN SENSOR (HO2S) #21 HEATER
95	YL/LB	HEATED OXYGEN SENSOR (HO2S) #12 HEATER
96	TN/YL	HEATED OXYGEN SENSOR (HO2S) #22 HEATER
97	-	-
98	LG/RD	GENERATOR/BATTERY INDICATOR CONTROL
99	LG/OR	INJECTOR 6 CONTROL
100	BN/LB	INJECTOR 4 CONTROL
101	WT	INJECTOR 2 CONTROL
102	-	-
103	BK/WT	GROUND
104	-	-

4F50N Codebook



2002 Taurus/Sable 3.0L 4V DOHC V6

CAV	COLOR	FUNCTION
1	PL/OR	SHIFT SOLENOID B
2	PK/LG	MALFUNCTION INDICATOR LAMP (MIL) CONTROL
3	YL/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR1
4	-	-
5	-	-
6	DG/WT	TURBINE SHAFT SPEED SENSOR +
7	-	-
8	-	-
9	-	-
10	-	-
11	-	-
12	YL/WT	FUEL PUMP/FUEL GAUGE SENDER
13	PL	FLASH/EEPROM POWER SUPPLY
14	-	-
15	PK/LB	SCP BUS -
16	TN/OR	SCP BUS +
17	BN/YL	RX SIGNAL
18	GY/RD	TX SIGNAL
19	-	-
20	-	-
21	GY	CRANKSHAFT POSITION SENSOR +
22	DB	CRANKSHAFT POSITION SENSOR -
23	-	-
24	BK/WT	GROUND
25	BK	GROUND
26	YL/BK	IGNITION COIL A CYLINDER 1 AND 5
27	OR/YL	SHIFT SOLENOID A
28	LB	ENGINE COOLING FAN BRAKE RELAY CONTROL
29	-	-
30	DB/LG	ANTI-THEFT INDICATOR INPUT
31	YL/LG	POWER STEERING PRESSURE SENSOR INPUT
32	YL	KNOCK SENSOR SIGNAL RETURN
33	-	-
34	-	-
35	RD/BK	HEATED OXYGEN SENSOR (HO2S) #12 INPUT
36	TN/LB	MASS AIR FLOW (MAF) SENSOR SIGNAL RETURN
37	OR/BK	TRANSMISSION FLUID TEMPERATURE (TFT) SENSOR INPUT
38	LG/RD	ENGINE COOLANT TEMP. (ECT) SENSOR INPUT
39	GY	INTAKE AIR TEMPERATURE (IAT) SENSOR INPUT
40	DG/YL	FUEL PUMP DRIVER MODULE INPUT
41	DG/WT	A/C HIGH PRESSURE SWITCH INPUT
42	LG/YL	ENGINE COOLING FAN RELAY CONTROL
43	-	-
44	PK	STARTER RELAY CONTROL
45	LB/RD	SENSOR SIGNAL GENERATOR OUTPUT
46	LG/PL	HIGH SPEED COOLING FAN RELAY CONTROL
47	BN/PK	EGR VACUUM REGULATOR (EVR) CONTROL
48	TN/YL	TACHOMETER
49	LB/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR2
50	WT/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR4
51	BK/WT	GROUND
52	YL/RD	IGNITION COIL B CYLINDER 3 AND 4

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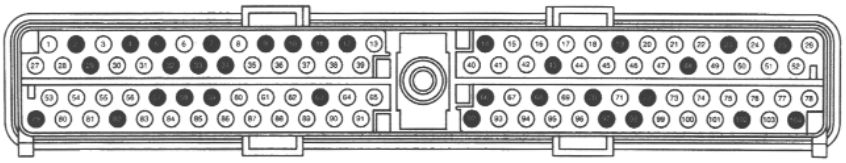
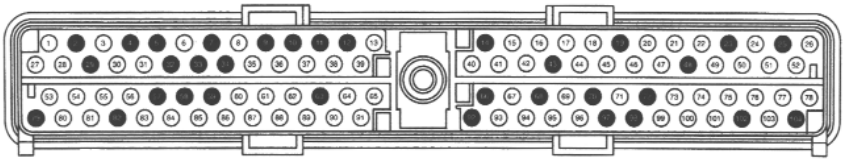


2002 Taurus/Sable 3.0L 4V DOHC V6

CAV	COLOR	FUNCTION
53	PK/BK	SHIFT SOLENOID C
54	PL/YL	TORQUE CONVERTER CLUTCH (TCC) SOLENOID
55	PK/LB	KEEP ALIVE MEMORY
56	GY/YL	EVAP CANISTER PURGE VALVE
57	YL/RD	KNOCK SENSOR SIGNAL
58	-	-
59	-	-
60	GY/LB	HEATED OXYGEN SENSOR (HO2S) #11 INPUT
61	PL/LG	HEATED OXYGEN SENSOR (HO2S) #22 INPUT
62	RD/PK	FUEL TANK PRESSURE TRANSDUCER SENSOR
63	WT/YL	INJECTOR PRESSURE SENSOR INPUT
64	RD/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR3A
65	BN/LG	DIFFERENTIAL PRESSURE FEEDBACK EGR (DPFE) SENSOR INPUT
66	TN/OR	EVAPORATOR DISCHARGE AIR TEMPERATURE SENSOR
67	PL/WT	EVAPORATIVE EMISSION (EVAP) CANISTER VENT VALVE
68	GY/BK	VEHICLE SPEED SENSOR (VSS) +
69	PK/YL	A/C CLUTCH RELAY CONTROL
70	-	-
71	RD	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
72	-	-
73	TN/BK	INJECTOR 5 CONTROL
74	BN/YL	INJECTOR 3 CONTROL
75	TN	INJECTOR 1 CONTROL
76	BK/WT	GROUND
77	BK/WT	GROUND
78	YL/WT	IGNITION COIL C CYLINDER 2 AND 6
79	WT/LG	CHECK TRANSAXLE LAMP
80	LB/OR	FUEL PUMP DRIVER MODULE OUTPUT
81	BN/OR	ELECTRONIC PRESSURE CONTROL (EPC) SOLENOID
82	BK/WT	CHECK CAP INDICATOR LAMP
83	WT/LB	IDLE AIR CONTROL VALVE (IAC) CONTROL
84	DB/YL	OUTPUT SHAFT SPEED (OSS) SENSOR +
85	DB/OR	CAMSHAFT POSITION SENSOR INPUT
86	BK/YL	A/C HIGH PRESSURE SWITCH SWITCHED OUTPUT
87	RD/LG	HEATED OXYGEN SENSOR (HO2S) #21 INPUT
88	LB/RD	MASS AIR FLOW (MAF) SENSOR OUTPUT
89	GY/WT	THROTTLE POSITION SENSOR (TPS) INPUT
90	BN/WT	REFERENCE VOLTAGE
91	GY/RD	SIGNAL RETURN
92	RD/LG	BRAKE PEDAL POSITION SWITCH INPUT
93	RD/WT	HEATED OXYGEN SENSOR (HO2S) #11 HEATER
94	WT/BK	HEATED OXYGEN SENSOR (HO2S) #21 HEATER
95	YL/LB	HEATED OXYGEN SENSOR (HO2S) #12 HEATER
96	TN/YL	HEATED OXYGEN SENSOR (HO2S) #22 HEATER
97	-	-
98	LG/RD	GENERATOR /BATTERY INDICATOR CONTROL
99	LG/OR	INJECTOR 6 CONTROL
100	BN/LB	INJECTOR 4 CONTROL
101	WT	INJECTOR 2 CONTROL
102	-	-
103	BK/WT	GROUND
104	-	-

4F50N Codebook



2003 Taurus/Sable 3.0L 2V V6

CAV	COLOR	FUNCTION
1	PL/OR	SHIFT SOLENOID B
2	PK/LG	MALFUNCTION INDICATOR LAMP (MIL) CONTROL
3	YL/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR1
4	TN/RD	VOLTAGE SUPPLIED IN START (OVERLOAD PROTECTED)
5	-	-
6	DG/WT	TURBINE SHAFT SPEED SENSOR +
7	-	-
8	-	-
9	-	-
10	-	-
11	-	-
12	YL/WT	FUEL PUMP/FUEL GAUGE SENDER
13	PL	FLASH/EEPROM POWER SUPPLY
14	-	-
15	PK/LB	SCP BUS -
16	TN/OR	SCP BUS +
17	BN/YL	RX SIGNAL
18	GY/RD	TX SIGNAL
19	-	-
20	GY/YL	GENERATOR SIGNAL 2 MONITOR
21	GY	CRANKSHAFT POSITION SENSOR +
22	DB	CRANKSHAFT POSITION SENSOR -
23	-	-
24	BK/WT	GROUND
25	BK	GROUND
26	YL/BK	IGNITION COIL A CYLINDER 1 AND 5
27	OR/YL	SHIFT SOLENOID A
28	LB	ENGINE COOLING FAN BRAKE RELAY CONTROL
29	-	-
30	DB/LG	ANTI-THEFT INDICATOR INPUT
31	-	-
32	YL	KNOCK SENSOR SIGNAL RETURN
33	-	-
34	-	-
35	RD/BK	HEATED OXYGEN SENSOR (HO2S) #12 INPUT
36	TN/LB	MASS AIR FLOW (MAF) SENSOR SIGNAL RETURN
37	OR/BK	TRANSMISSION FLUID TEMPERATURE (TFT) SENSOR INPUT
38	LG/RD	ENGINE COOLANT TEMP. (ECT) SENSOR INPUT
39	GY	INTAKE AIR TEMPERATURE (IAT) SENSOR INPUT
40	DG/YL	FUEL PUMP DRIVER MODULE INPUT
41	DG/WT	A/C HIGH PRESSURE SWITCH INPUT
42	LG/YL	ENGINE COOLING FAN RELAY CONTROL
43	-	-
44	PK	STARTER RELAY CONTROL
45	LB/RD	SENSOR SIGNAL GENERATOR OUTPUT
46	LG/PL	HIGH SPEED COOLING FAN RELAY CONTROL
47	BN/PK	EGR VACUUM REGULATOR (EVR) CONTROL
48	TN/YL	TACHOMETER
49	LB/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR2
50	WT/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR4
51	BK/WT	GROUND
52	YL/RD	IGNITION COIL B CYLINDER 3 AND 4

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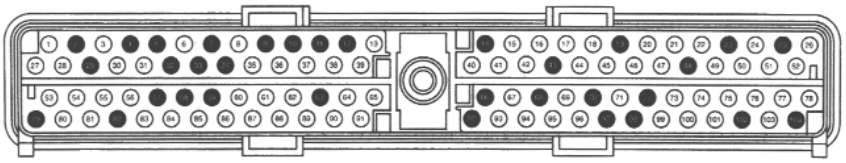

2003 Taurus/Sable 3.0L 2V V6

CAV	COLOR	FUNCTION
53	PK/BK	SHIFT SOLENOID C
54	PL/YL	TORQUE CONVERTER CLUTCH (TCC) SOLENOID
55	PK/LB	KEEP ALIVE MEMORY
56	GY/YL	EVAP CANISTER PURGE VALVE
57	YL/RD	KNOCK SENSOR SIGNAL
58	-	-
59	-	-
60	GY/LB	HEATED OXYGEN SENSOR (HO2S) #11 INPUT
61	PL/LG	HEATED OXYGEN SENSOR (HO2S) #22 INPUT
62	RD/PK	FUEL TANK PRESSURE TRANSDUCER SENSOR
63	WT/YL	INJECTOR PRESSURE SENSOR INPUT
64	RD/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR3A
65	BN/LG	DIFFERENTIAL PRESSURE FEEDBACK EGR (DPFE) SENSOR INPUT
66	TN/OR	EVAPORATOR DISCHARGE AIR TEMPERATURE SENSOR
67	PL/WT	EVAPORATIVE EMISSION (EVAP) CANISTER VENT VALVE
68	GY/BK	VEHICLE SPEED SENSOR (VSS) +
69	PK/YL	A/C CLUTCH RELAY CONTROL
70	-	-
71	RD	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
72	-	-
73	TN/BK	FUEL INJECTOR 5 CONTROL
74	BN/YL	FUEL INJECTOR 3 CONTROL
75	TN	FUEL INJECTOR 1 CONTROL
76	BK/WT	GROUND
77	BK/WT	GROUND
78	YL/WT	IGNITION COIL C CYLINDER 2 AND 6
79	WT/LG	CHECK TRANSAXLE LAMP
80	LB/OR	FUEL PUMP DRIVER MODULE OUTPUT
81	BN/OR	ELECTRONIC PRESSURE CONTROL (EPC) SOLENOID
82	BK/WT	CHECK CAP INDICATOR LAMP
83	WT/LB	IDLE AIR CONTROL (IAC) VALVE CONTROL
84	DB/YL	OUTPUT SHAFT SPEED (OSS) SENSOR +
85	DB/OR	CAMSHAFT POSITION SENSOR INPUT
86	BK/YL	A/C HIGH PRESSURE SWITCH SWITCHED OUTPUT
87	RD/LG	HEATED OXYGEN SENSOR (HO2S) #21 INPUT
88	LB/RD	MASS AIR FLOW (MAF) SENSOR OUTPUT
89	GY/WT	THROTTLE POSITION SENSOR (TPS) INPUT
90	BN/WT	REFERENCE VOLTAGE
91	GY/RD	SIGNAL RETURN
92	RD/LG	BRAKE PEDAL POSITION SWITCH INPUT
93	RD/WT	HEATED OXYGEN SENSOR (HO2S) #11 HEATER
94	WT/BK	HEATED OXYGEN SENSOR (H02S) #21 HEATER
95	YL/LB	HEATED OXYGEN SENSOR (H02S) #12 HEATER
96	TN/YL	HEATED OXYGEN SENSOR (HO2S) #22 HEATER
97	-	-
98	LG/RD	GENERATOR/BATTERY INDICATOR, CONTROL
99	LG/OR	FUEL INJECTOR 6 CONTROL
100	BN/LB	FUEL INJECTOR 4 CONTROL
101	WT	FUEL INJECTOR 2 CONTROL
102	-	-
103	BK/WT	GROUND
104	-	-

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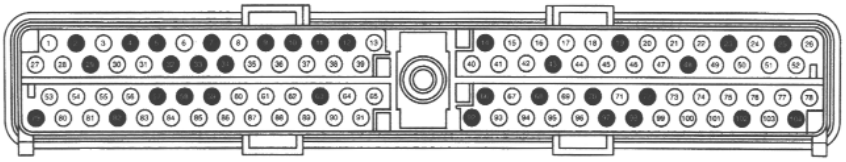

2003 Taurus/Sable 3.0L 4V DOHC V6

CAV	COLOR	FUNCTION
1	PL/OR	SHIFT SOLENOID B
2	PK/LG	MALFUNCTION INDICATOR LAMP (MIL) CONTROL
3	YL/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR1
4	TN/RD	VOLTAGE SUPPLIED IN START (OVERLOAD PROTECTED)
5	-	-
6	DG/WT	TURBINE SHAFT SPEED SENSOR +
7	-	-
8	-	-
9	-	-
10	-	-
11	-	-
12	YL/WT	FUEL PUMP/FUEL GAUGE SENDER
13	PL	FLASH/EEPROM POWER SUPPLY
14	-	-
15	PK/LB	SCP BUS -
16	TN/OR	SCP BUS +
17	BN/YL	RX SIGNAL
18	GY/RD	TX SIGNAL
19	-	-
20	GY/YL	GENERATOR SIGNAL 2 MONITOR
21	GY	CRANKSHAFT POSITION SENSOR +
22	DB	CRANKSHAFT POSITION SENSOR -
23	-	-
24	BK/WT	GROUND
25	BK	GROUND
26	YL/BK	IGNITION COIL A CYLINDER 1 AND 5
27	OG/YL	SHIFT SOLENOID A
28	LB	ENGINE COOLING FAN BRAKE RELAY CONTROL
29	-	-
30	DB/LG	ANTI-THEFT INDICATOR INPUT
31	YL/LG	POWER STEERING PRESSURE SENSOR INPUT
32	YL	KNOCK SENSOR SIGNAL RETURN
33	-	-
34	-	-
35	RD/BK	HEATED OXYGEN SENSOR (HO2S) #12 INPUT
36	TN/LB	MASS AIR FLOW (MAF) SENSOR SIGNAL RETURN
37	OR/BK	TRANSMISSION FLUID TEMPERATURE (TFT) SENSOR, INPUT
38	LG/RD	ENGINE COOLANT TEMP. (ECT) SENSOR INPUT
39	GY	INTAKE AIR TEMPERATURE (IAT) SENSOR INPUT
40	DG/YL	FUEL PUMP DRIVER MODULE INPUT
41	DG/WT	A/C HIGH PRESSURE SWITCH INPUT
42	LG/YL	ENGINE COOLING FAN RELAY CONTROL
43	-	-
44	PK	STARTER RELAY CONTROL
45	LB/RD	SENSOR SIGNAL GENERATOR OUTPUT
46	LG/PL	HIGH SPEED COOLING FAN RELAY CONTROL
47	BN/PK	EGR VACUUM REGULATOR (EVR) CONTROL
48	TN/YL	TACHOMETER
49	LB/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR2
50	WT/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR4
51	BK/WT	GROUND
52	YL/RD	IGNITION COIL B CYLINDER 3 AND 4

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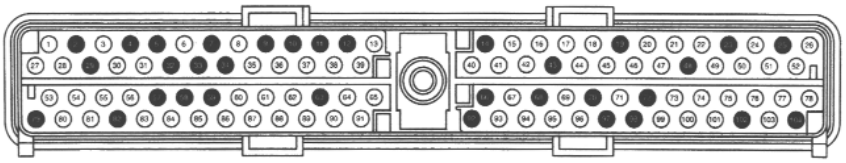
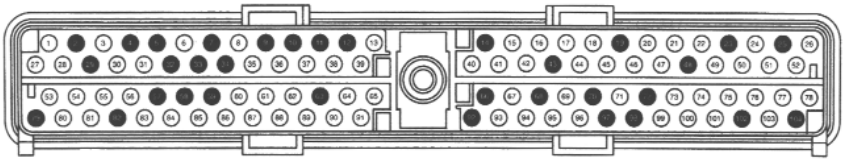


2003 Taurus/Sable 3.0L 4V DOHC V6

CAV	COLOR	FUNCTION
53	PK/BK	SHIFT SOLENOID C
54	PL/YL	TORQUE CONVERTER CLUTCH (TCC) SOLENOID
55	PK/LB	KEEP ALIVE MEMORY
56	GY/YL	EVAP CANISTER PURGE VALVE
57	YL/RD	KNOCK SENSOR SIGNAL
58	-	-
59	-	-
60	GY/LB	HEATED OXYGEN SENSOR (HO2S) #11 INPUT
61	PL/LG	HEATED OXYGEN SENSOR (HO2S) #22 INPUT
62	RD/PK	FUEL TANK PRESSURE TRANSDUCER SENSOR
63	WT/YL	INJECTOR PRESSURE SENSOR INPUT
64	RD/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR3A
65	BN/LG	DIFFERENTIAL PRESSURE FEEDBACK EGR (DPFE) SENSOR INPUT
66	TN/OR	EVAPORATOR DISCHARGE AIR TEMP. SENSOR
67	PL/WT	EVAPORATIVE EMISSION (EVAP) CANISTER VENT VALVE
68	GY/BK	VEHICLE SPEED SENSOR (VSS) +
69	PK/YL	A/C CLUTCH RELAY CONTROL
70	-	-
71	RD	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
72	-	-
73	TN/BK	FUEL INJECTOR 5 CONTROL
74	BN/YL	FUEL INJECTOR 3 CONTROL
75	TN	FUEL INJECTOR 1 CONTROL
76	BK/WT	GROUND
77	BK/WT	GROUND
78	YL/WT	IGNITION COIL C CYLINDER 2 AND 6
79	WT/LG	CHECK TRANSAXLE LAMP
80	LG/OR	FUEL PUMP DRIVER MODULE OUTPUT
81	BN/OR	ELECTRONIC PRESSURE CONTROL (EPC) SOLENOID
82	BK/WT	CHECK CAP INDICATOR LAMP
83	WT/LB	IDLE AIR CONTROL (IAC) VALVE CONTROL
84	DB/YL	OUTPUT SHAFT SPEED (OSS) SENSOR +
85	DB/OR	CAMSHAFT POSITION SENSOR (6B288) INPUT
86	BK/YL	A/C HIGH PRESSURE SWITCH SWITCHED OUTPUT
87	RD/LG	HEATED OXYGEN SENSOR (HO2S) #21 INPUT
88	LB/RD	MASS AIR FLOW (MAF) SENSOR OUTPUT
89	GY/WT	THROTTLE POSITION SENSOR (TPS) INPUT
90	BN/WT	REFERENCE VOLTAGE
91	GY/RD	SIGNAL RETURN
92	RD/LG	BRAKE PEDAL POSITION SWITCH INPUT
93	RD/WT	HEATED OXYGEN SENSOR (HO2S) #11 HEATER
94	WT/BK	HEATED OXYGEN SENSOR (HO2S) #21 HEATER
95	YL/LB	HEATED OXYGEN SENSOR (HO2S) #12 HEATER
96	TN/YL	HEATED OXYGEN SENSOR (HO2S) #22 HEATER
97	-	-
98	LG/RD	GENERATOR/BATTERY INDICATOR CONTROL
99	LG/OR	FUEL INJECTOR 6 CONTROL
100	BN/LB	FUEL INJECTOR 4 CONTROL
101	WT	FUEL INJECTOR 2 CONTROL
102	-	-
103	BK/WT	GROUND
104	-	-

4F50N Codebook



2004-2005 Taurus/Sable 3.0L 4V & 2V

CAV	COLOR	FUNCTION
1	PL/OR	SHIFT SOLENOID B CONTROL
2	LG/YL	COIL ON PLUG 5 CONTROL 3.0L 4V
3	YL/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR1
4	TN/RD	POWER HOT IN START WITH PARK OR NEUTRAL
5	-	-
6	DG/WT	TURBINE SHAFT SPEED (TSS) SENSOR SIGNAL
7	LG/WT	ELECTRONIC PRESSURE CONTROL (EPC) MODULE INPUT
8	-	-
9	-	-
10	LB/WT	INJECTOR PRESSURE SENSOR SIGNAL FRT 3.0L 4V
11	BK	PCV HEATER CONTROL (LATE 2005)
12	-	-
13	PL	FLASH/EEPROM POWER SUPPLY
14	-	-
15	WT/OR	HIGH SPEED CAN +
16	PK/OR	HIGH SPEED CAN -
17	GY/OR	RX SIGNAL
18	WT/LG	TX SIGNAL
19	-	-
20	GY/YL	GENERATOR SIGNAL 2 MONITOR
21	GY	CRANKSHAFT POSITION SENSOR +
22	DB	CRANKSHAFT POSITION SENSOR -
23	-	-
24	BK/WT	GROUND
25	BK	GROUND
26	YL/BK LG/WT	IGNITION COIL A CYLINDER 1 AND 5 3.0L 2V COIL ON PLUG 1 CONTROL 3.0L 4V
27	OR/YL	SHIFT SOLENOID A CONTROL
28	LB	ENGINE COOLING FAN BRAKE RELAY CONTROL
29	DB/YL	INTAKE MANIFOLD RUNNER CNTRL (IMRC) MODULE CNTRL
30	DB/LG	ANTI-THEFT INDICATOR CONTROL
31	YL/LG	POWER STEERING PRESSURE SENSOR SIGNAL 3.0L 4V
32	YL	KNOCK SENSOR
33	-	-
34	-	-
35	RD/BK	HEATED OXYGEN SENSOR (HO2S) #12 INPUT
36	TN/LB	MASS AIR FLOW (MAF) SENSOR SIGNAL RETURN
37	OR/BK	TRANSMISSION FLUID TEMPERATURE (TFT) SENSOR INPUT
38	LG/RD	ENGINE COOLANT TEMPERATURE (ECT) SENSOR INPUT
39	GY	INTAKE AIR TEMPERATURE (IAT) SENSOR INPUT
40	DG/YL	FUEL PUMP DRIVER MODULE INPUT
41	DG/WT	A/C HIGH PRESSURE SWITCH INPUT
42	LG/YL	ENGINE COOLING FAN RELAY CONTROL
43	-	-
44	PK	STARTER RELAY CONTROL
45	LB/RD	SENSOR SIGNAL GENERATOR COMMON
46	LG/PL	HIGH SPEED COOLING FAN RELAY CONTROL
47	BN/PK	EGR VACUUM REGULATOR SOLENOID CONTROL
48	-	-
49	LB/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR2
50	WT/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR4
51	BK/WT	GROUND
52	YL/RD DG/PL	IGNITION COIL B CYLINDER 3 AND 4 3.0L 2V COIL ON PLUG 4 CONTROL 3.0L 4V

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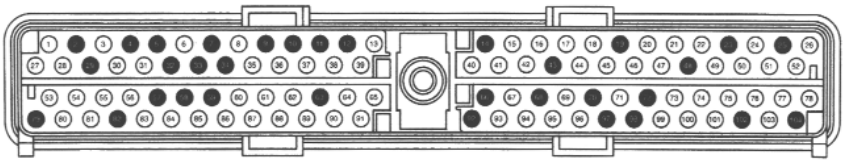

2004-2005 Taurus/Sable 3.0L 4V & 2V

CAV	COLOR	FUNCTION
53	PK/BK	SHIFT SOLENOID C CONTROL
54	PL/YL	TORQUE CONVERTER CLUTCH (TCC) SOLENOID CONTROL
55	PK/LB	KEEP ALIVE MEMORY
56	GY/YL	EVAP CANISTER PURGE VALVE CONTROL
57	YL/RD	KNOCK SENSOR +
58	PK/LB	VOLTAGE SUPPLIED AT ALL TIMES (OVERLOAD PROTECTED)
59	-	-
60	GY/LB	HEATED OXYGEN SENSOR (HO2S) #11 INPUT
61	PL/LG	HEATED OXYGEN SENSOR (HO2S) #22 INPUT
62	RD/PK	FUEL TANK PRESSURE TRANSDUCER SENSOR SIGNAL
63	WT/YL	INJECTOR PRESSURE SENSOR INPUT FRP
64	RD/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR3A
65	BN/LG	DIFFERENTIAL PRESSURE FEEDBACK EGR (DPFE) SENSOR INPUT SIGNAL
66	TN/OR	EVAPORATOR DISCHARGE AIR TEMP. SENSOR CONTROL
67	PL/WT	EVAPORATIVE EMISSION (EVAP) CANISTER VENT VALVE SIGNAL
68	GY/BK	VEHICLE SPEED SENSOR (VSS) +
69	PK/YL	A/C CLUTCH RELAY CONTROL
70	-	-
71	RD	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
72	-	-
73	TN/BK	FUEL INJECTOR 5 CONTROL
74	BN/YL	FUEL INJECTOR 3 CONTROL
75	TN	FUEL INJECTOR 1 CONTROL
76	BK/WT	GROUND
77	BK/WT	GROUND
78	YL/WT PK/WT	IGNITION COIL C CYLINDER 2 AND 6 3.0L 2V COIL ON PLUG 2 CONTROL 3.0L 4V
79	WT/PK	COIL ON PLUG 3 CONTROL
80	LB/OR	FUEL PUMP DRIVER MODULE OUTPUT
81	BN/OR	ELECTRONIC PRESSURE CONTROL (EPC) SOLENOID
82	OR/YL	COIL ON PLUG 6 CONTROL 3.0L 4V
83	WT/LB	IDLE AIR CONTROL (IAC) VALVE CONTROL
84	DB/YL	OUTPUT SHAFT SPEED (OSS) SENSOR SIGNAL
85	DB/OR	CAMSHAFT POSITION SENSOR INPUT
86	BK/YL	A/C HIGH PRESSURE SWITCH SWITCHED OUTPUT
87	RD/LG	HEATED OXYGEN SENSOR (HO2S) #21 INPUT
88	LB/RD	MASS AIR FLOW (MAF) SENSOR SIGNAL
89	GY/WT	THROTTLE POSITION SENSOR (TPS) INPUT
90	BN/WT	REFERENCE VOLTAGE
91	GY/RD	SIGNAL RETURN
92	RD/LG	BRAKE PEDAL POSITION SWITCH INPUT
93	RD/WT	HEATED OXYGEN SENSOR (HO2S) #11 HEATER
94	WT/BK	HEATED OXYGEN SENSOR (HO2S) #21 HEATER
95	YL/LB	HEATED OXYGEN SENSOR (HO2S) #12 HEATER
96	TN/YL	HEATEC OXYGEN SENSOR (HO2S) #22 HEATER
97	RD	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
98	-	-
99	LG/OR	FUEL INJECTOR 6 CONTROL
100	BN/LB	FUEL INJECTOR 4 CONTROL
101	WT	FUEL INJECTOR 2 CONTROL
102	-	-
103	BK/WT	GROUND
104	-	-

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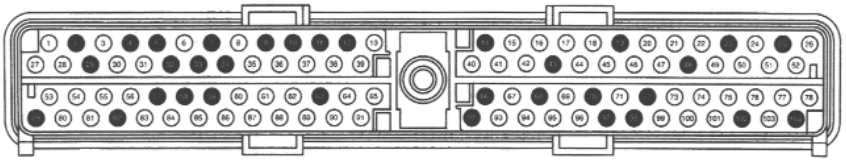

2006-2007 Taurus/Sable 3.0L 2V

CAV	COLOR	FUNCTION
1	PL/OR	SHIFT SOLENOID B CONTROL
2	-	-
3	YL/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR1
4	TN/RD	POWER HOT IN START WITH PARK OR NEUTRAL
5	-	-
6	DG/WT	TURBINE SHAFT SPEED (TSS) SENSOR SIGNAL
7	LG/WT	ELECTRONIC PRESSURE CONTROL (EPC) MODULE INPUT
8	-	-
9	-	-
10	-	-
11	BK	PCV HEATER CONTROL
12	-	-
13	PL	FLASH/EEPROM POWER SUPPLY
14	-	-
15	WT/OR	HIGH SPEED CAN +
16	PK/OR	HIGH SPEED CAN -
17	GY/OR	RX SIGNAL
18	WT/LG	TX SIGNAL
19	-	-
20	GY/YL	GENERATOR SIGNAL 2 MONITOR
21	GY	CRANKSHAFT POSITION SENSOR +
22	DB	CRANKSHAFT POSITION SENSOR -
23	-	-
24	BK/WT	GROUND
25	BK	GROUND
26	YL/BK	IGNITION COIL A CYLINDER 1 AND 5
27	OR/YL	SHIFT SOLENOID A CONTROL
28	LB	ENGINE COOLING FAN BRAKE RELAY CONTROL
29	DB/YL	INTAKE MANIFOLD RUNNER CNTRL (IMRC) MODULE CNTRL
30	DB/LG	ANTI-THEFT INDICATOR CONTROL
31	-	-
32	YL	KNOCK SENSOR
33	-	-
34	-	-
35	RD/BK	HEATED OXYGEN SENSOR (HO2S) #12 INPUT
36	TN/LB	MASS AIR FLOW (MAF) SENSOR SIGNAL RETURN
37	OR/BK	TRANSMISSION FLUID TEMPERATURE (TFT) SENSOR INPUT
38	LG/RD	ENGINE COOLANT TEMPERATURE (ECT) SENSOR INPUT
39	GY	INTAKE AIR TEMPERATURE (IAT) SENSOR INPUT
40	DG/YL	FUEL PUMP DRIVER MODULE INPUT
41	DG/WT	A/C HIGH PRESSURE SWITCH INPUT
42	LG/YL	ENGINE COOLING FAN RELAY CONTROL
43	-	-
44	PK	STARTER RELAY CONTROL
45	LB/RD	SENSOR SIGNAL GENERATOR COMMON
46	LG/PL	HIGH SPEED COOLING FAN RELAY CONTROL
47	BN/PK	EGR VACUUM REGULATOR SOLENOID CONTROL
48	-	-
49	LB/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR2
50	WT/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR4
51	BK/WT	GROUND
52	YL/RD	IGNITION COIL B CYLINDER 3 AND 4

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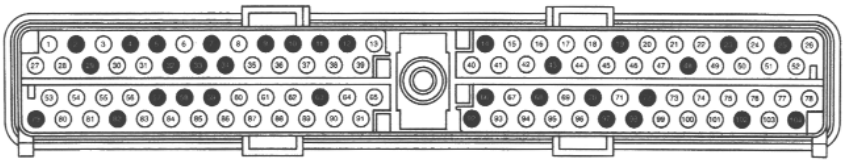

2006-2007 Taurus/Sable 3.0L 2V

CAV	COLOR	FUNCTION
53	PK/BK	SHIFT SOLENOID C CONTROL
54	PL/YL	TORQUE CONVERTER CLUTCH (TCC) SOLENOID CONTROL
55	PK/LB	KEEP ALIVE MEMORY
56	GY/YL	EVAP CANISTER PURGE VALVE CONTROL
57	YL/RD	KNOCK SENSOR +
58	PK/LB	VOLTAGE SUPPLIED AT ALL TIMES (OVERLOAD PROTECTED)
59	-	-
60	GY/LB	HEATED OXYGEN SENSOR (HO2S) #11 INPUT
61	PL/LG	HEATED OXYGEN SENSOR (HO2S) #22 INPUT
62	RD/PK	FUEL TANK PRESSURE TRANSDUCER SENSOR SIGNAL
63	WT/YL	INJECTOR PRESSURE SENSOR INPUT FRP
64	RD/BK	DIGITAL TRANSMISSION RANGE (DTR) SENSOR TR3A
65	BN/LG	DIFFERENTIAL PRESSURE FEEDBACK EGR (DPFE) SENSOR INPUT SIGNAL
66	-	-
67	PL/WT	EVAPORATIVE EMISSION (EVAP) CANISTER VENT VALVE SIGNAL
68	GY/BK	VEHICLE SPEED SENSOR (VSS) +
69	PK/YL	A/C CLUTCH RELAY CONTROL
70	-	-
71	RD	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
72	-	-
73	TN/BK	FUEL INJECTOR 5 CONTROL
74	BN/YL	FUEL INJECTOR 3 CONTROL
75	TN	FUEL INJECTOR 1 CONTROL
76	BK/WT	GROUND
77	BK/WT	GROUND
78	YL/WT	IGNITION COIL C CYLINDER 2 AND 6
79	WT/PK	COIL ON PLUG 3 CONTROL
80	LB/OR	FUEL PUMP DRIVER MODULE OUTPUT
81	BN/OR	ELECTRONIC PRESSURE CONTROL (EPC) SOLENOID
82	-	-
83	WT/LB	IDLE AIR CONTROL (IAC) VALVE CONTROL
84	DB/YL	OUTPUT SHAFT SPEED (OSS) SENSOR SIGNAL
85	DB/OR	CAMSHAFT POSITION SENSOR INPUT
86	BK/YL	A/C HIGH PRESSURE SWITCH SWITCHED OUTPUT
87	RD/LG	HEATED OXYGEN SENSOR (HO2S) #21 INPUT
88	LB/RD	MASS AIR FLOW (MAF) SENSOR SIGNAL
89	GY/WT	THROTTLE POSITION SENSOR (TPS) INPUT
90	BN/WT	REFERENCE VOLTAGE
91	GY/RD	SIGNAL RETURN
92	RD/LG	BRAKE PEDAL POSITION SWITCH INPUT
93	RD/WT	HEATED OXYGEN SENSOR (HO2S) #11 HEATER
94	WT/BK	HEATED OXYGEN SENSOR (HO2S) #21 HEATER
95	YL/LB	HEATED OXYGEN SENSOR (HO2S) #12 HEATER
96	TN/YL	HEATEC OXYGEN SENSOR (HO2S) #22 HEATER
97	RD	VOLTAGE SUPPLIED IN START AND RUN (OVERLOAD PROTECTED)
98	-	-
99	LG/OR	FUEL INJECTOR 6 CONTROL
100	BN/LB	FUEL INJECTOR 4 CONTROL
101	WT	FUEL INJECTOR 2 CONTROL
102	-	-
103	BK/WT	GROUND
104	-	-