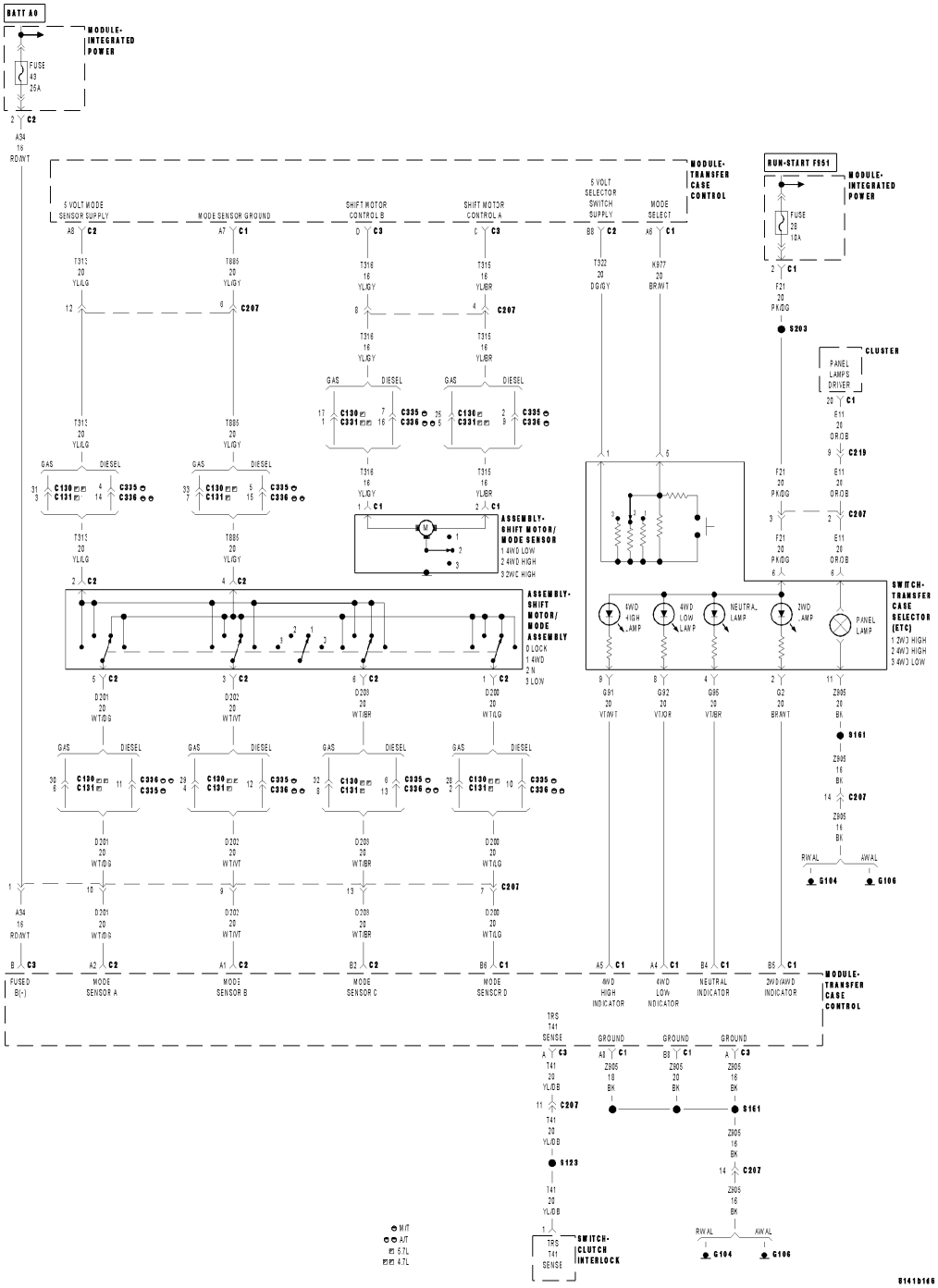
2005 Dodge or Ram Truck RAM 2500 Truck 4WD L6-5.9L DSL Turbo VIN C

Vehicle > Transmission and Drivetrain > Transfer Case > Testing and Inspection > Symptom Related Diagnostic Procedures > Diagnosis By Symptom

TRANSFER CASE MODE SENSOR ERROR

TRANSFER CASE MODE SENSOR ERROR



For a complete wiring diagram refer to diagrams.

^ When Monitored:
Continuously with the ignition on.
^ Set Condition:
Whenever the Transfer Case Control Module detects any of the following errors:
1. An invalid Mode Sensor position.
2. The Mode Sensor has an incorrect transition during a shift, then attempts and fails twice and defaults to a 4WD Hi position.
3. The Mode Sensor has four failed transitions during an ignition cycle.

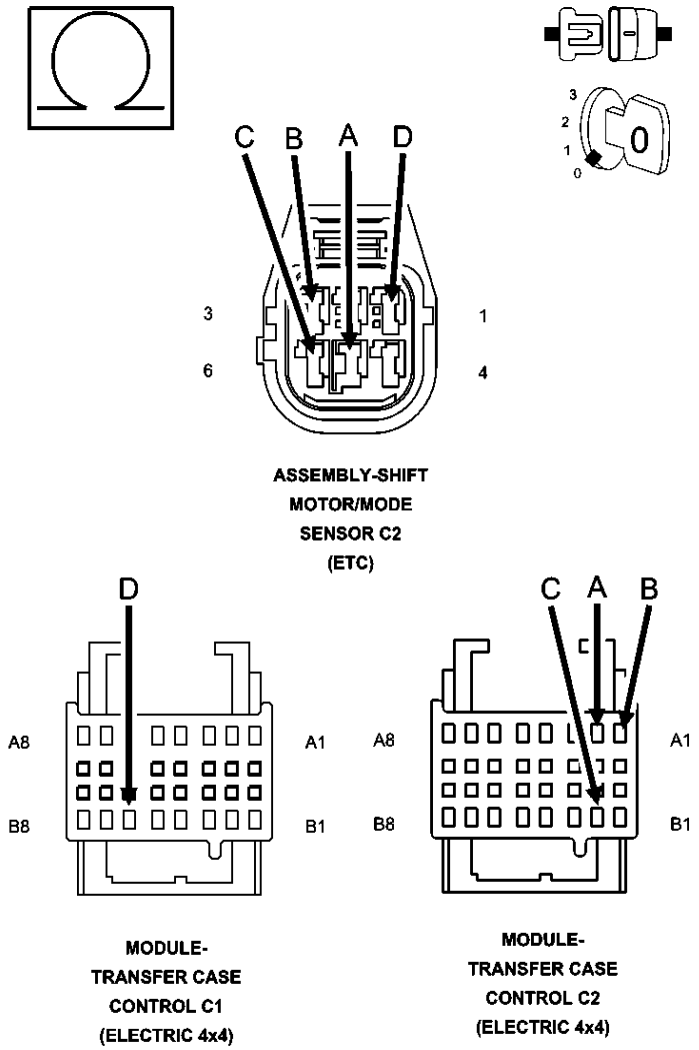
Possible Causes

- INTERMITTENT TRANSFER CASE MODE SENSOR ERROR
- MODE SENSOR CIRCUIT OPEN
- MODE SENSOR CIRCUIT SHORT TO GROUND
- MODE SENSOR CIRCUIT SHORT TO VOLTAGE
- (T885) MODE SENSOR GROUND CIRCUIT OPEN
- (T313) 5 VOLT MODE SENSOR SUPPLY CIRCUIT OPEN
- TRANSFER CASE MODE SENSOR
- TRANSFER CASE CONTROL MODULE

1. TRANSFER CASE MODE SENSOR ERROR DTC IS PRESENT
With the DRBIII read Transfer Case DTCs. Record all DTC information.
With the DRBIII erase Transfer Case DTCs.
Start the engine and move the Transfer Case Selector Switch to each position.
With the DRBIII read Transfer Case DTCs.

Does the DRBIII display TRANSFER CASE MODE SENSOR ERROR?
Yes >>Go To 2
No >>Go To 9

2. MODE SENSOR CIRCUIT OPEN



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Turn the ignition off to the lock position.
Disconnect the Transfer Case Control Module C1 and C2 harness connectors.
Disconnect the Shift Motor/Mode Sensor C2 harness connector.

NOTE: Note: Check connectors - Clean/repair as necessary.

A. Measure the resistance of the (D201) Mode Sensor A circuit from the Transfer Case Control Module C1 harness connector to the Shift Motor/Mode Sensor C2 harness connector.
B. Measure the resistance of the (D202) Mode Sensor B circuit from the Transfer Case Control Module C1 harness connector to the Shift Motor/Mode Sensor C2 harness connector.
C. Measure the resistance of the (D203) Mode Sensor C circuit from the Transfer Case Control Module C1 harness connector to the Shift Motor/Mode Sensor C2 harness connector.
D. Measure the resistance of the (D200) Mode Sensor D circuit from the Transfer Case Control Module C2 harness connector to the Shift Motor/Mode Sensor C2 harness connector.

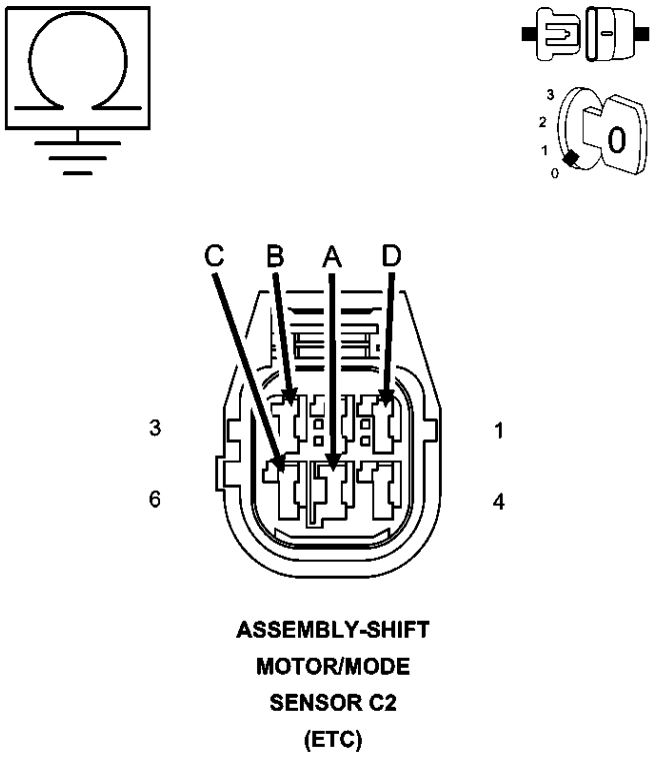
Is the resistance above 5.0 ohms for any of the circuits?

Yes >>Repair the open Mode Sensor circuit.

Perform TRANSFER CASE VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > Transfer Case Verification Test

No >>Go To 3

3. MODE SENSOR CIRCUIT SHORT TO GROUND



ASSEMBLY-SHIFT MOTOR/MODE SENSOR C2 (ETC)

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A. Measure the resistance between ground and the (D201) Mode Sensor A circuit.

B. Measure the resistance between ground and the (D202) Mode Sensor B circuit.

C. Measure the resistance between ground and the (D203) Mode Sensor C circuit.

D. Measure the resistance between ground and the (D200) Mode Sensor D circuit.

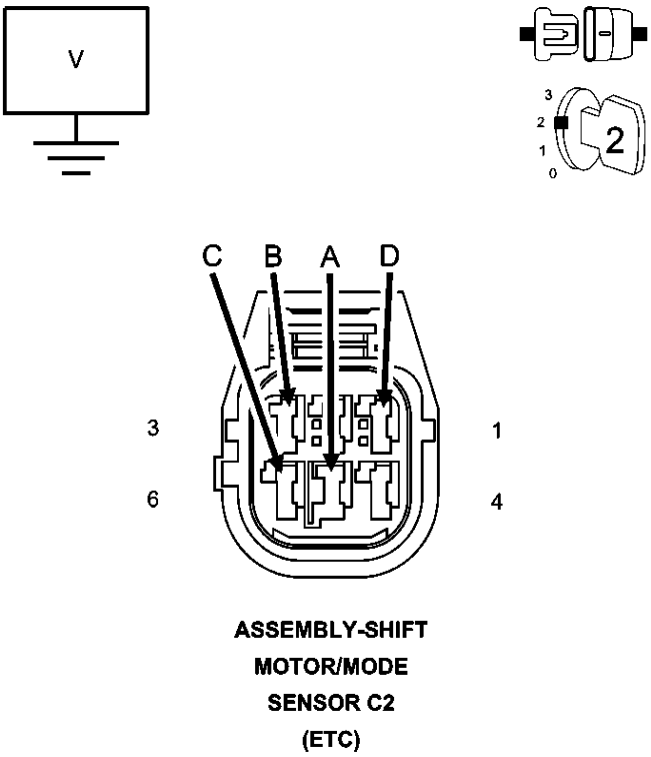
Is the resistance below 5.0 ohms between any of the Mode sensor circuits and ground?

Yes >>Repair the Mode Sensor circuit for a short to ground.

Perform TRANSFER CASE VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > Transfer Case Verification Test

No >>Go To 4

4. MODE SENSOR CIRCUIT SHORT TO VOLTAGE



ASSEMBLY-SHIFT MOTOR/MODE SENSOR C2 (ETC)

Ignition on, engine not running.

A. Measure the voltage of the (D201) Mode Sensor A circuit.

B. Measure the voltage of the (D202) Mode Sensor B circuit.

C. Measure the voltage of the (D203)Mode Sensor C circuit.

D. Measure the voltage of the (D200) Mode Sensor D circuit.

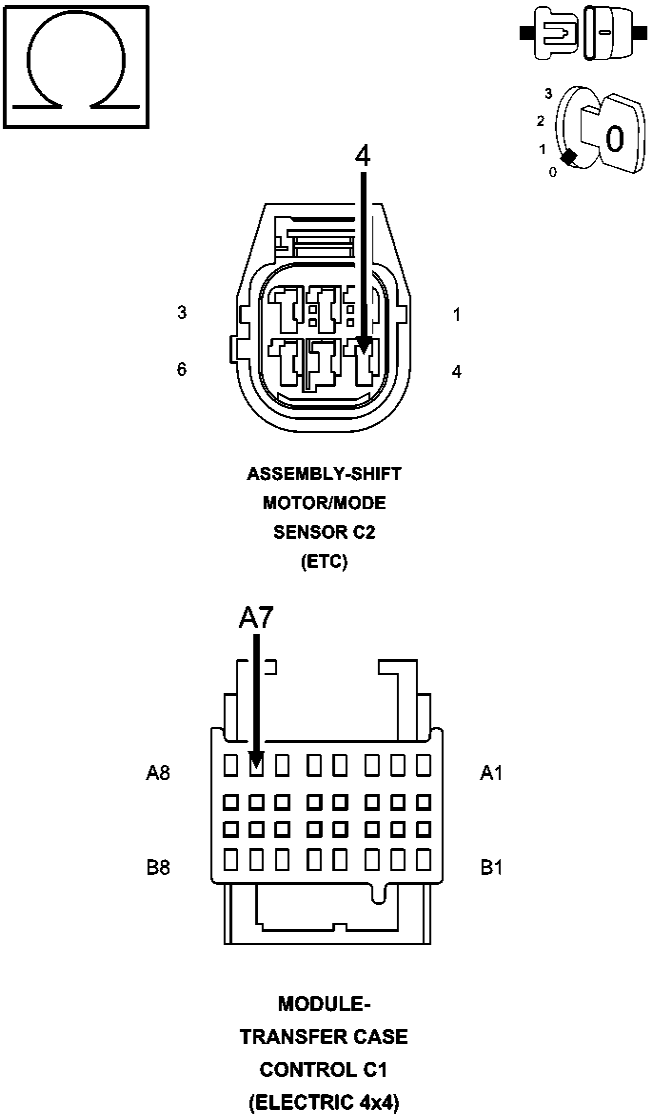
Is there voltage present on any of the Mode Sensor circuits?

Yes >>Repair the Mode Sensor circuit for a short to voltage.

Perform TRANSFER CASE VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > Transfer Case Verification Test

No >>Go To 5

5. (T885) MODE SENSOR GROUND CIRCUIT OPEN



Turn the ignition off to the lock position.

Measure the resistance of the (T885) Mode Sensor Ground circuit from the Transfer Case Control Module C1 harness connector to the Shift Motor/Mode Sensor C2 harness connector.

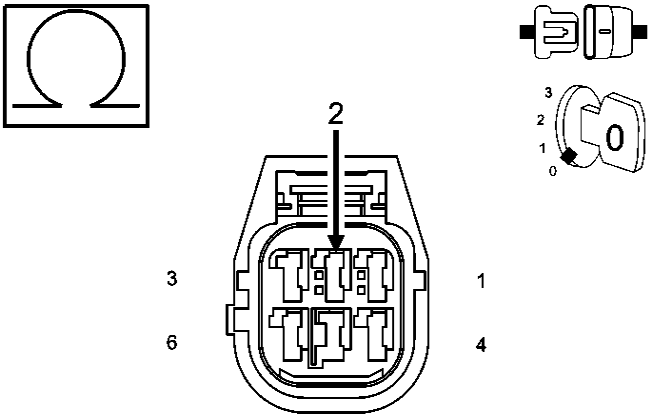
Is the resistance above 5.0 ohms?

Yes >>Repair the (T885) Mode Ground Sensor circuit for an open.

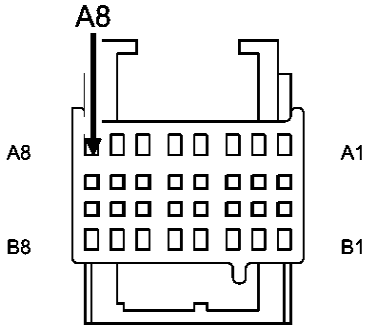
Perform TRANSFER CASE VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > Transfer Case Verification Test

No >>Go To 6

6. (T313) 5 VOLT MODE SENSOR SUPPLY CIRCUIT OPEN



ASSEMBLY-SHIFT MOTOR/MODE SENSOR C2 (ETC)



MODULE-TRANSFER CASE CONTROL C2 (ELECTRIC 4x4)

Measure the resistance of the (T313) 5 Volt Mode Sensor Supply circuit from the Transfer Case Control Module harness C2 connector to the Shift Motor/Mode Sensor C2 harness connector.

Is the resistance above 5.0 ohms?

Yes >>Repair the (T313) 5 Volt Mode Sensor 'Supply circuit for an open.

Perform TRANSFER CASE VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > Transfer Case Verification Test

No >>Go To 7

7. SHIFT MOTOR/MODE SENSOR

Replace the Shift Motor/Mode Sensor in accordance with the Service Information.

With the DRBIII erase Transfer Case DTCs.

Start the engine and move the Transfer Case Selector Switch to each position.

With the DRBIII read Transfer Case DTCs.

Does the DRBIII display TRANSFER CASE MODE SENSOR ERROR?

Yes >>Go To 8

No >>Test Complete.

Perform TRANSFER CASE VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > Transfer Case Verification Test

8. TRANSFER CASE CONTROL MODULE

Using the wiring diagram as a guide, inspect the wiring and connectors relative to this DTC. Inspect all power and ground circuits. Repair as necessary.

If there are no other possible causes remaining, view repair.

Repair

Replace the Transfer Case Control Module in accordance with the Service Information.

Perform TRANSFER CASE VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > Transfer Case Verification Test

9. INTERMITTENT WIRING AND CONNECTORS

The conditions necessary to set this DTC are not present at this time.

Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.

Wiggle test the wiring harness and connectors while checking for shorted and open circuits.

Using the DRBIII monitor the data related to this circuit while performing the wiggle test. Look for the data to change or for the DTC to reset.

Were there any problems found?

Yes >>Repair as necessary.

Perform TRANSFER CASE VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > Transfer Case Verification Test

No >>Test Complete.