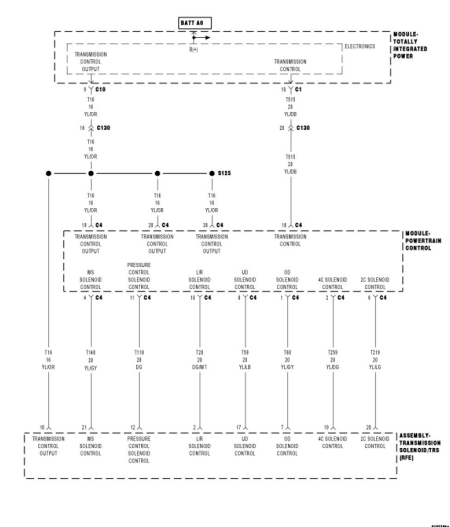


2008 Dodge or Ram Truck RAM 2500 Truck 2WD L6-6.7L DSL Turbo
Vehicle > ALL Diagnostic Trouble Codes (DTC) > Testing and Inspection > P Code Charts > P0770
68RFE AUTOMATIC TRANSMISSION

P0770-4C SOLENOID CIRCUIT



For a complete wiring diagram Refer to Diagrams/Electrical

Theory of Operation

The Transmission Control System uses six electronically controlled solenoids that allow hydraulic fluid to be applied to various friction elements (clutches), which enables the gear requested. The continuity of each solenoid circuit is periodically tested. Each inactive solenoid is turned on for a few milliseconds, then off. Each active solenoid is turned off for a few milliseconds, then on. This pulsing of voltage to the solenoid causes an inductive spike which can be sensed by the Transmission Control System. If an inductive spike is not sensed by the Transmission Control System during the continuity check, it is tested again. If the test fails three consecutive times, the appropriate Diagnostic Trouble Code (DTC) is set. If the solenoid test is run in response to a gear ratio or pressure switch error, one failure will result in setting the appropriate DTC.

- **When Monitored:**
Initially at power-up, then every 10 seconds thereafter. The solenoid circuits will also be tested immediately after a gear ratio or pressure switch error is detected.
- **Set Condition:**
After three consecutive solenoid continuity test failures, or one failure if test is run in response to a gear ratio or pressure switch error.

NOTE: This DTC is strictly an electrical fault and cannot be caused by any internal transmission failure other than an open in the Transmission Solenoid/TRS Assembly. If the Transmission Solenoid/TRS Assembly is in need of replacement - do not replace the Valve Body.

Possible Causes
RELATED DTCS PRESENT
(T259) 4C SOLENOID CONTROL CIRCUIT SHORT TO OTHER CIRCUITS
(T259) 4C SOLENOID CONTROL CIRCUIT OPEN
(T259) 4C SOLENOID CONTROL CIRCUIT SHORT TO GROUND
TRANSMISSION SOLENOID/TRS ASSEMBLY
POWERTRAIN CONTROL MODULE

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See: Automatic Transmission/Transaxle > Initial Inspection and Diagnostic Overview > 68RFE Pre-Diagnostic Troubleshooting Procedure

Diagnostic Test

1. **CHECK FOR RELATED DTCS**
With the scan tool, read DTCS.
Are there any TIPM TCM Power Control Circuit or TCM Power Input DTCS present?

Yes

- Repair the DTC(s).

No

- Go to 2

2. CHECK THE 4C SOLENOID USING THE TRANSMISSION SIMULATOR

Turn the ignition off to the lock position.

Remove the Ignition Switch Feed fuse from the TIPM.

CAUTION: Removal of the Ignition Switch Feed fuse from the TIPM will prevent the vehicle from being started in gear.

WARNING: The Ignition Switch Feed fuse must be removed from the TIPM. Failure to do so can result in personal injury or death.

Install Transmission Simulator, Miller tool #8333.

Ignition on, engine not running.

With the scan tool, clear Transmission DTCs.

With the scan tool, actuate the 4C Solenoid.

Monitor the 4C Solenoid LED on the Transmission Simulator.

Did the 4C Solenoid LED on the Transmission Simulator blink on and off?

Yes

- Go to 3

No

- Go to 5

3. CHECK THE TRANSMISSION SOLENOID/TRS ASSEMBLY

With the Transmission simulator still connected, continue to actuate the 4C solenoid for 2 minutes.

After 2 minutes of actuation, with the scan tool, stop the actuation and check for transmission DTCs.

Did the DTC P0770 reset during the actuation test?

Yes

- Go to 5

No

- Go to 4

4. WIGGLE TEST WITH TRANSMISSION SIMULATOR

With the Transmission simulator still connected, continue to actuate the 4C solenoid for another 2 minutes while wiggling the related wiring harness and connectors.

With the scan tool, stop the actuation and check for transmission DTCs.

Did the DTC P0770 reset during the actuation test?

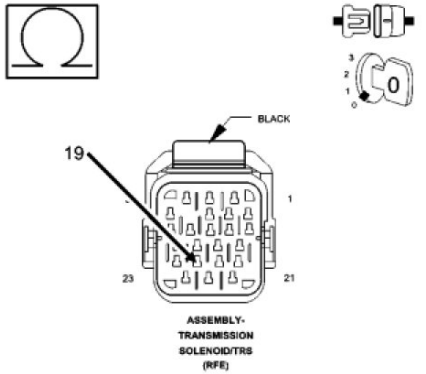
Yes

- Repair wiring harness or connectors as necessary.
- Perform 68RFE TRANSMISSION VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > 68RFE Transmission Verification Test

No

- Replace the Transmission Solenoid/TRS Assembly. **Note: Do NOT replace the entire Valve Body.**
- Perform 68RFE TRANSMISSION VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > 68RFE Transmission Verification Test

5. CHECK THE (T259) 4C SOLENOID CONTROL CIRCUIT FOR A SHORT TO ANOTHER CIRCUIT



81b2f3f4

Turn the ignition off to the lock position.
Disconnect the Transmission Simulator, Miller tool #8333.
Disconnect the PCM harness connectors.
Measure the resistance between the (T259) 4C Solenoid Control circuit and all other circuits in the Transmission Solenoid/TRS Assembly harness connector.
Is the resistance below 5.0 ohms between the (T259) 4C Solenoid Control circuit and any other circuit(s) in the Transmission Solenoid/TRS Assembly harness connector?

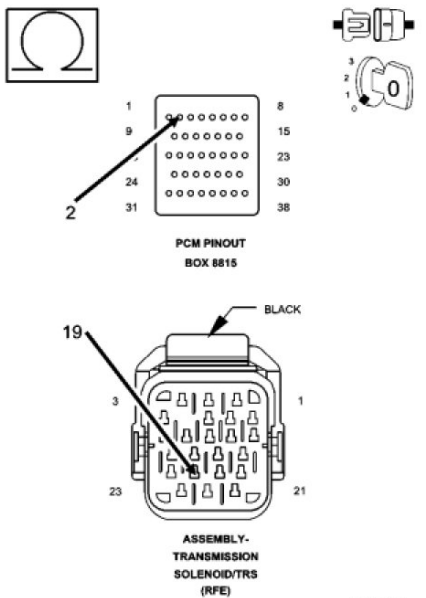
Yes

- Repair the (T259) 4C Solenoid Control circuit for a short to another circuit(s).
- Perform 68RFE TRANSMISSION VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > 68RFE Transmission Verification Test

No

- Go to 6

6. CHECK THE (T259) 4C SOLENOID CONTROL CIRCUIT FOR AN OPEN



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Connect Miller tool #8815 to the PCM C4 harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install Miller special tool #8815 to perform diagnosis.

Measure the resistance of the (T259) 4C Solenoid Control circuit between the Transmission Solenoid/TRS Assembly harness connector and the appropriate terminal of Miller tool #8815.
Is the resistance above 5.0 ohms?

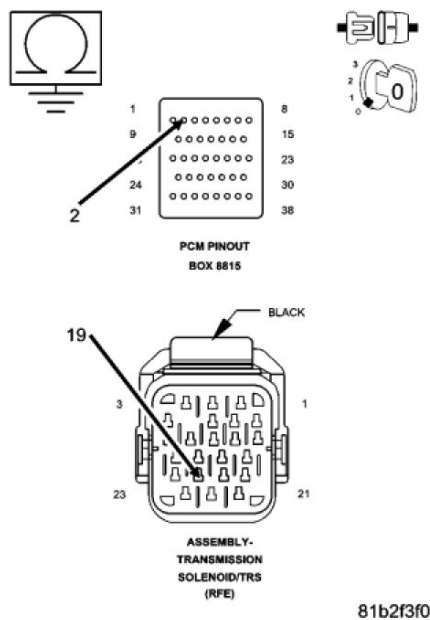
Yes

- Repair the (T259) 4C Solenoid Control circuit for an open.
- Perform 68RFE TRANSMISSION VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > 68RFE Transmission Verification Test

No

- Go to 7

7. CHECK THE (T259) 4C SOLENOID CONTROL CIRCUIT FOR A SHORT TO GROUND



Measure the resistance between ground and the (T259) 4C Solenoid Control circuit.
Is the resistance below 5.0 ohms?

Yes

- Repair the (T259) 4C Solenoid Control circuit for a short to ground.
- Perform 68RFE TRANSMISSION VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > 68RFE Transmission Verification Test

No

- Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. If no problems are found, replace and program the PCM. With the scan tool, perform Quick Learn.
- Perform 68RFE TRANSMISSION VERIFICATION TEST. See: A L L Diagnostic Trouble Codes (DTC) > Verification Tests > 68RFE Transmission Verification Test