

2009 ACCESSORIES AND EQUIPMENT

Totally Integrated Power Module (TIPM) - Electrical Diagnostics - Journey

P0462-FUEL LEVEL SENSOR 1 LOW CIRCUIT - GPEC

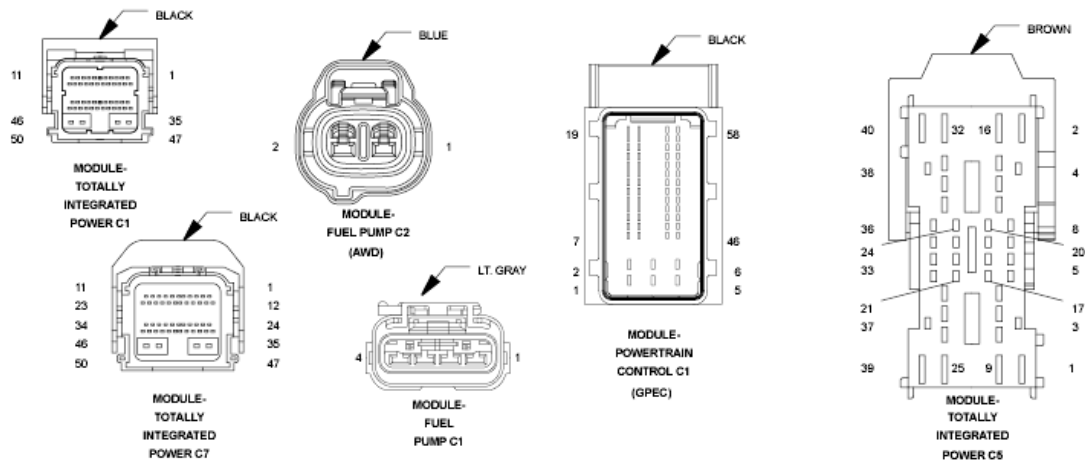
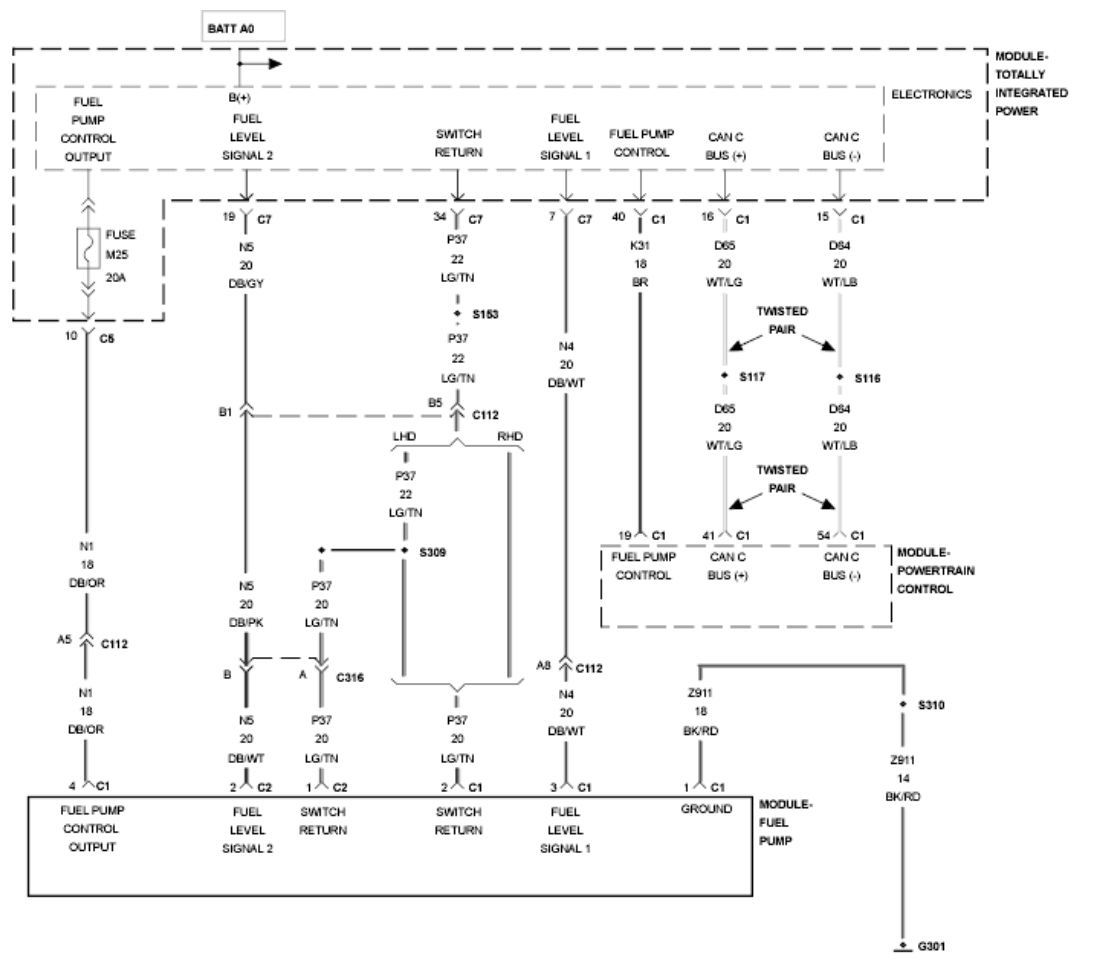


Fig. 1: Fuel Pump Module Circuit Schematic

Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** .

- **When Monitored:**

With the ignition on and the battery voltage greater than 10.4 volts.

- **Set Condition:**

The Powertrain Control Module (PCM) detects that the Fuel Level Sensor input voltage is below the minimum acceptable value.

Possible Causes
(N4) FUEL LEVEL SIGNAL 1 CIRCUIT SHORTED TO GROUND
(N4) FUEL LEVEL SIGNAL 1 CIRCUIT SHORTED TO THE (P37) SWITCH RETURN CIRCUIT
EXCESSIVE RESISTANCE IN THE (N4) FUEL LEVEL SIGNAL 1 CIRCUIT
FUEL LEVEL SENSOR
TOTALLY INTEGRATED POWER MODULE (TIPM)
POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC .

DIAGNOSTIC TEST

1. ACTIVE DTC

1. Start the engine and allow it to reach normal operating temperature.

WARNING: When the engine is operating, do not stand in direct line with the fan. Do not put your hands near the pulleys, belts or fan. Do not wear loose clothing. Failure to follow these instructions may result in possible serious or fatal injury.

2. With the scan tool, select View DTCs.

NOTE: Diagnose any CAN - C Communication DTCs before continuing.

Is the status Active for this DTC?

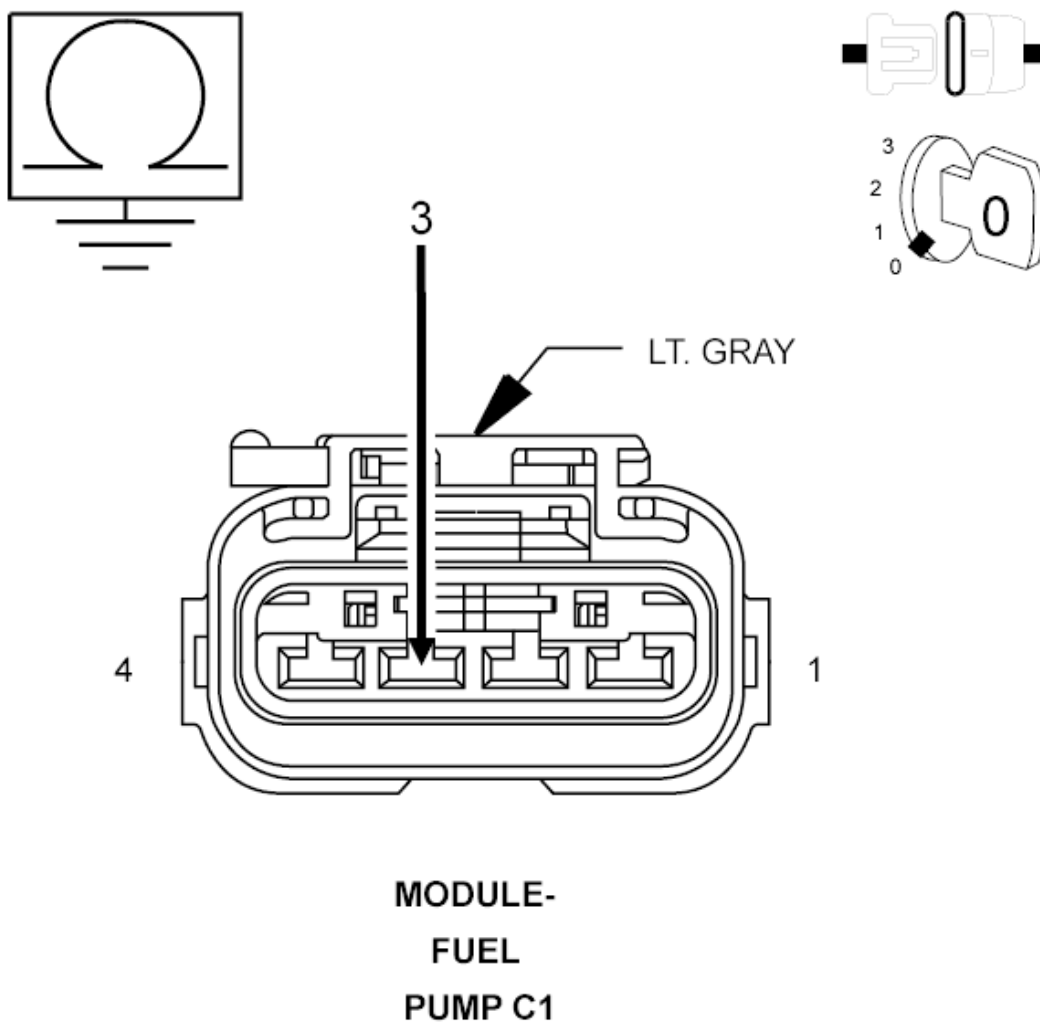
Yes

- Go to Step 2.

No

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC**.

2. (N4) FUEL LEVEL SIGNAL 1 CIRCUIT SHORTED TO GROUND



104534

Fig. 2: Measuring Resistance Between Ground & Fuel Level Signal 1 Circuit In Fuel Level Sensor Harness Connector

Courtesy of CHRYSLER LLC

- Turn the ignition off.
- Disconnect the C1 Fuel Pump Module harness connector.
- Disconnect the C7 Totally Integrated Power Module (TIPM) harness connector.

4. Measure the resistance between ground and the (N4) Fuel Level Signal 1 circuit in the Fuel Level Sensor harness connector.

Is the resistance above 100 Ohms?

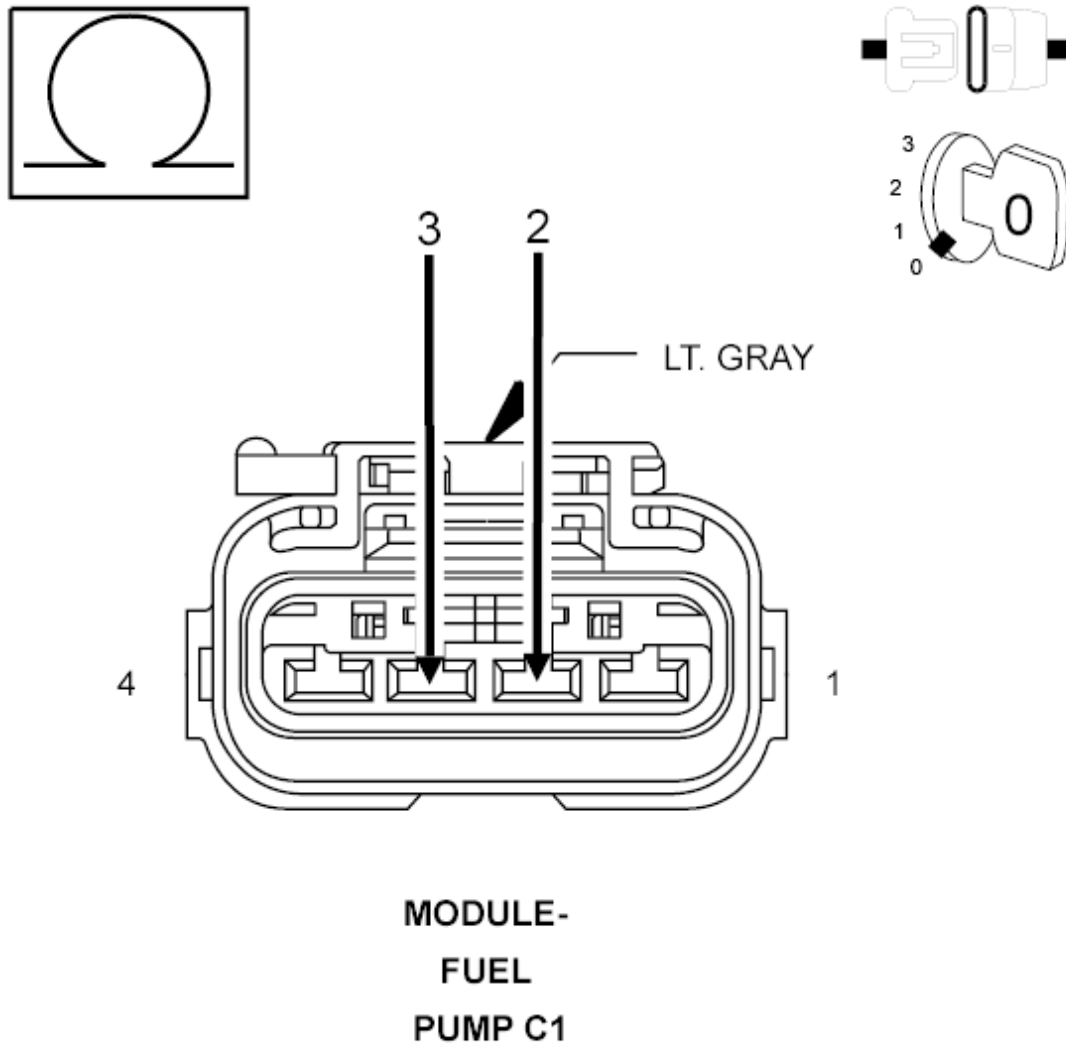
Yes

- Go to Step 3.

No

- Repair the short to ground in the (N4) Fuel Level Signal 1 circuit.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

3. **(N4) FUEL LEVEL SIGNAL 1 CIRCUIT SHORTED TO THE (P37) SWITCH RETURN CIRCUIT**



104550

Fig. 3: Measuring Resistance Between Switch Return Circuit & Fuel Level Signal 1 Circuit At C1 Fuel Pump Module Harness Connector

Courtesy of CHRYSLER LLC

1. Measure the resistance between the (P37) Switch Return circuit and the (N4) Fuel Level Signal 1 circuit at the C1 Fuel Pump Module harness connector.

Is the resistance below 5.0 Ohms?

Yes

- Go to Step 4.

No

- Repair the short between the (P37) Switch Return circuit and the (N4) Fuel Level Signal 1 circuit.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC**.

4. EXCESSIVE RESISTANCE IN THE (N4) FUEL LEVEL SIGNAL 1 CIRCUIT

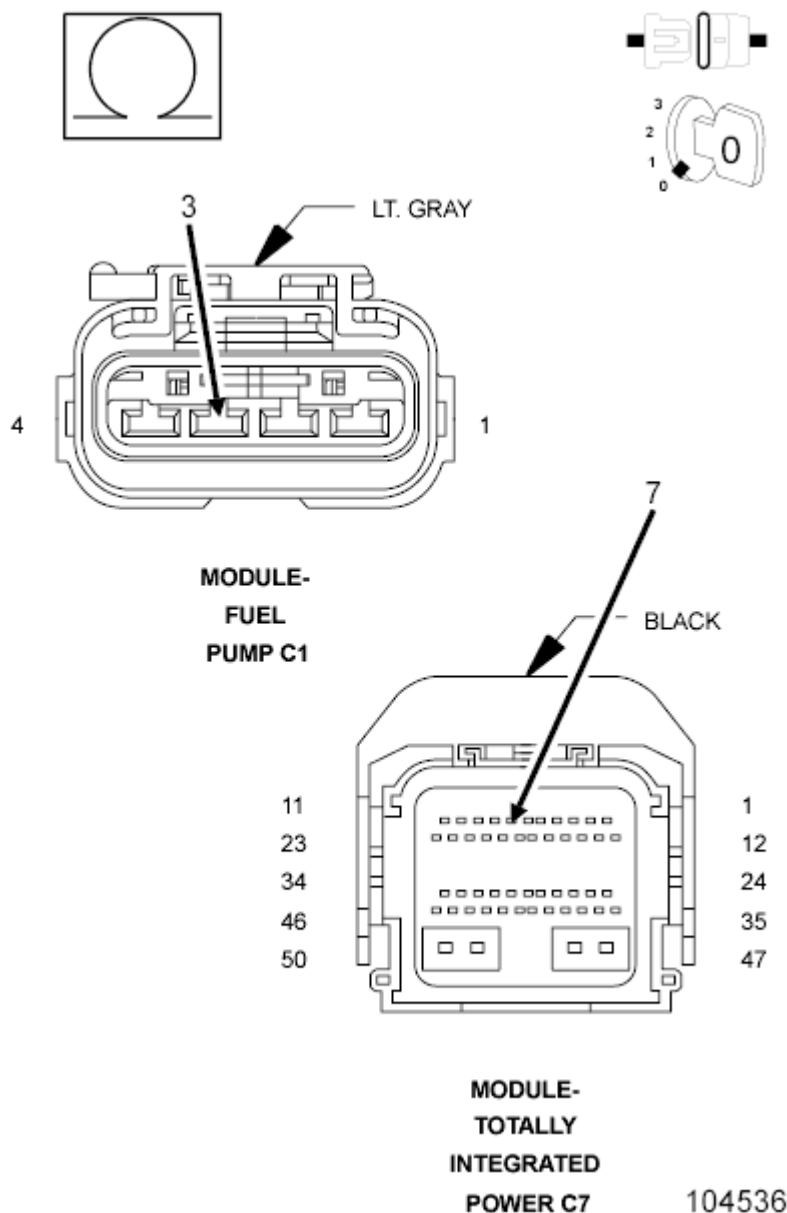


Fig. 4: Measuring Resistance Of Fuel Level Signal 1 Circuit Between Fuel Level Sensor Harness Conn & Instrument Cluster Harness Conn
 Courtesy of CHRYSLER LLC

1. Measure the resistance of the (N4) Fuel Level Signal 1 circuit between the Fuel Level Sensor

harness connector and the Instrument Cluster (CCN) harness connector.

Is the resistance below 5.0 Ohms?

Yes

- Go to Step 5.

No

- Repair the excessive resistance in the (N4) Fuel Level Signal 1 circuit.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

5. FUEL LEVEL SENSOR

1. Connect the C7 TIPM harness connector.
2. Turn the ignition on.
3. With the scan tool, read the Fuel Level Sensor 1 signal voltage.

Is the voltage above 4.5 volts with the Fuel Level Sensor harness disconnected?

Yes

- Replace the Fuel Level Sensor/Fuel Pump Module in accordance with the service information.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

No

- Go to Step 6.

6. TOTALLY INTEGRATED POWER MODULE (TIPM)

1. Using **Fig. 1** as a guide, inspect the wiring and connectors between the Fuel Pump Module and the Totally Integrated Power Module (TIPM).
2. Look for any chafed, pierced, pinched or partially broken wires.
3. Look for broken, bent, pushed out or corroded terminals. Verify that there is good pin to terminal contact in the C1 Fuel Pump Module and the C7 TIPM harness connectors.
4. Refer to any Technical Service Bulletins (TSBs) that may apply.

Were any problems found?

Yes

- Repair as necessary.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

No

- Replace the Totally Integrated Power Module (TIPM) in accordance with the Service Information.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

P0463-FUEL LEVEL SENSOR 1 HIGH CIRCUIT - NGC

2009 Dodge Journey R/T

2009 ACCESSORIES AND EQUIPMENT Totally Integrated Power Module (TIPM) - Electrical Diagnostics - Journey

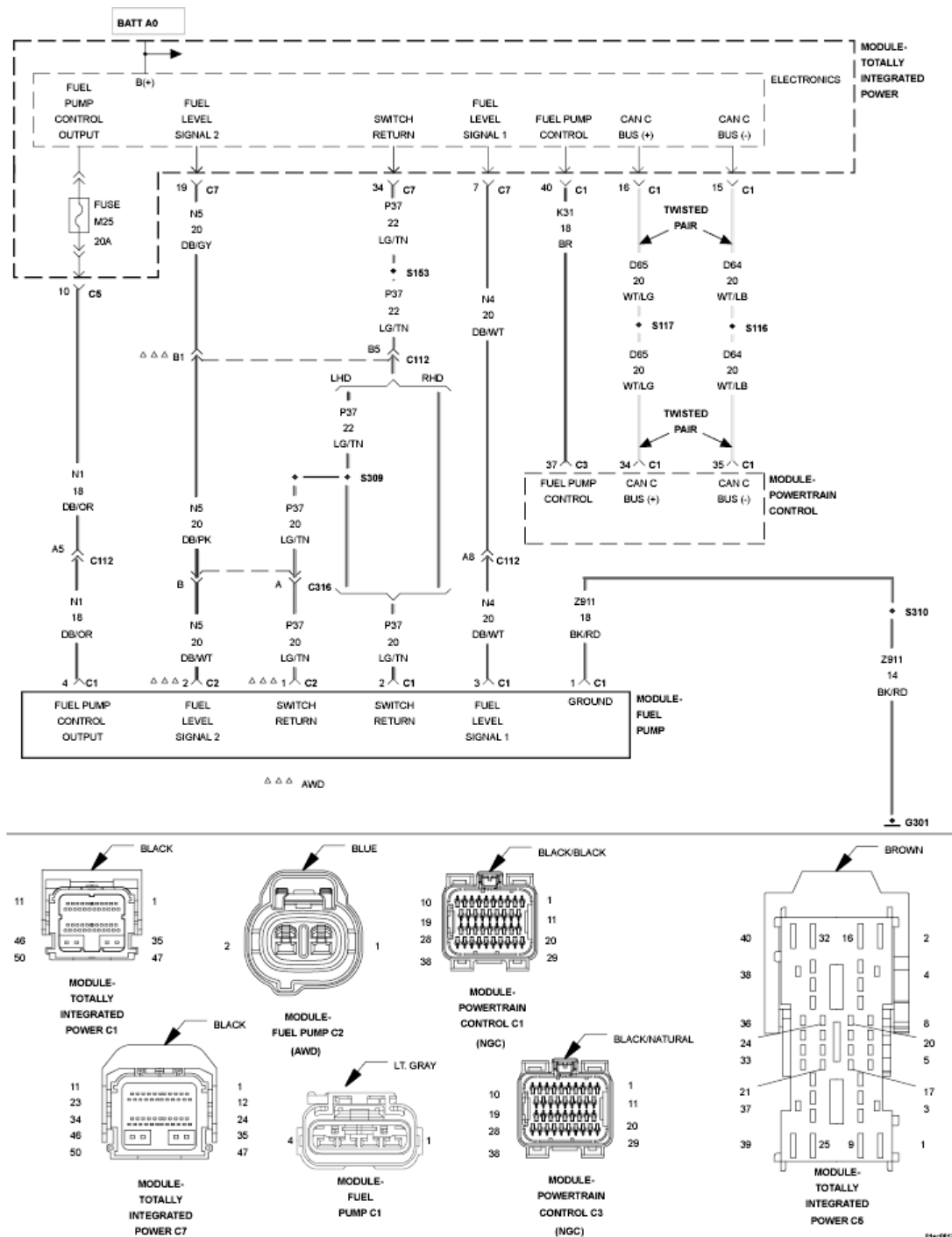


Fig. 5: Fuel Pump Module & TIPM - Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

• When Monitored:

With the ignition on and battery voltage greater than 10.4 volts.

• **Set Condition:**

The PCM detects that the Fuel Level Sensor input voltage is above the maximum acceptable value.

Possible Causes
(N4) FUEL LEVEL SIGNAL 1 CIRCUIT SHORTED TO VOLTAGE
(N4) FUEL LEVEL SIGNAL 1 CIRCUIT OPEN
(P37) SWITCH RETURN CIRCUIT OPEN
FUEL LEVEL SENSOR
TOTALLY INTEGRATED POWER MODULE (TIPM)
POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

DIAGNOSTIC TEST

1. ACTIVE DTC

1. Start the engine and allow it to reach normal operating temperature.

WARNING: When the engine is operating, do not stand in direct line with the fan. Do not put your hands near the pulleys, belts or fan. Do not wear loose clothing. Failure to follow these instructions may result in possible serious or fatal injury.

2. With the scan tool, select View DTCs.

NOTE: Diagnose any CAN - C Communication DTCs before continuing.

Is the status Active for this DTC?

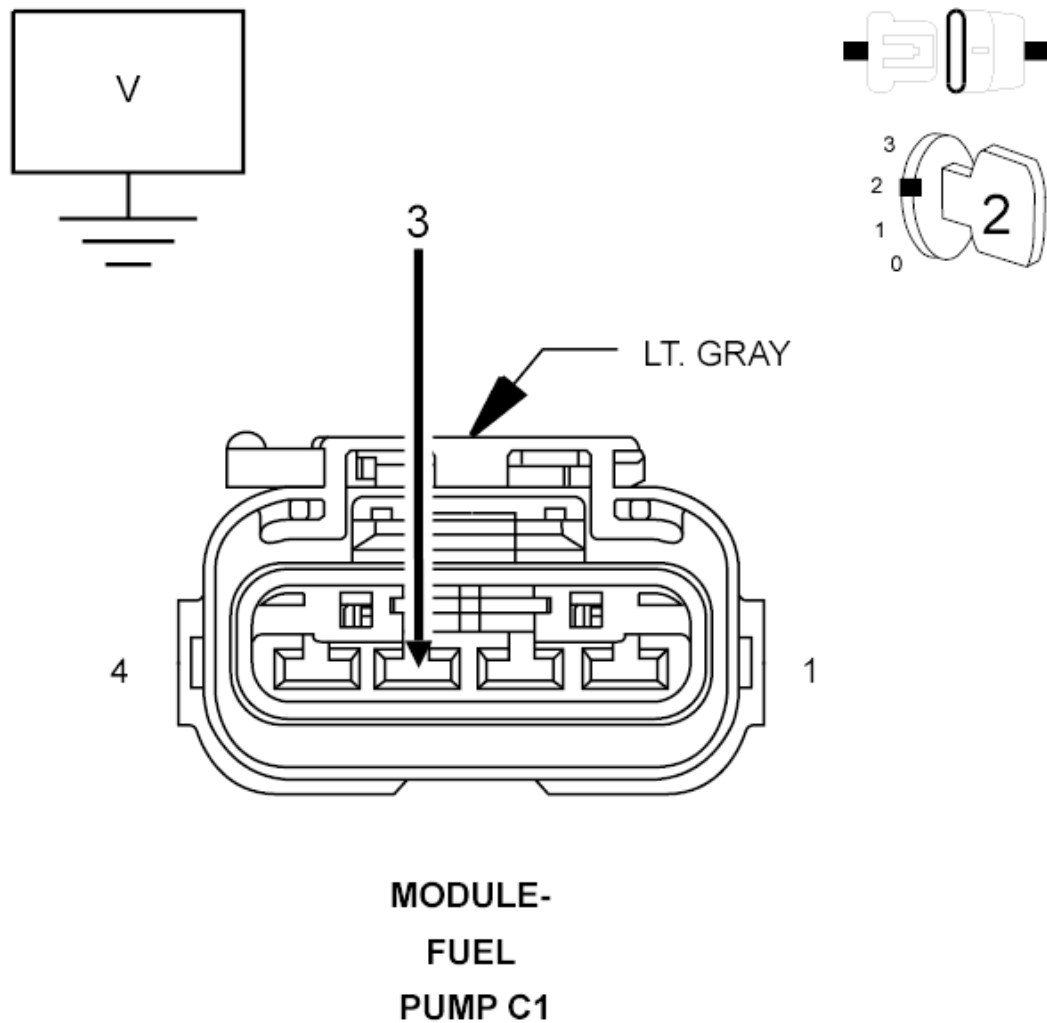
Yes

- Go to Step 2.

No

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

2. (N4) FUEL LEVEL SIGNAL 1 CIRCUIT SHORTED TO VOLTAGE



104532

Fig. 6: Measuring Voltage Of Fuel Level Signal 1 Circuit In C1 Fuel Pump Module Harness Connector

Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the C1 Fuel Pump Module harness connector.
3. Disconnect the C7 TIPM harness connector.
4. Turn the ignition on.
5. Measure the voltage of the (N4) Fuel Level Signal 1 circuit in the C1 Fuel Pump Module harness connector.

Is there any voltage present?

Yes

- Repair the short to voltage in the (N4) Fuel Level Signal 1 circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC**.

No

- Go to Step 3.

3. (N4) FUEL LEVEL SIGNAL 1 OPEN

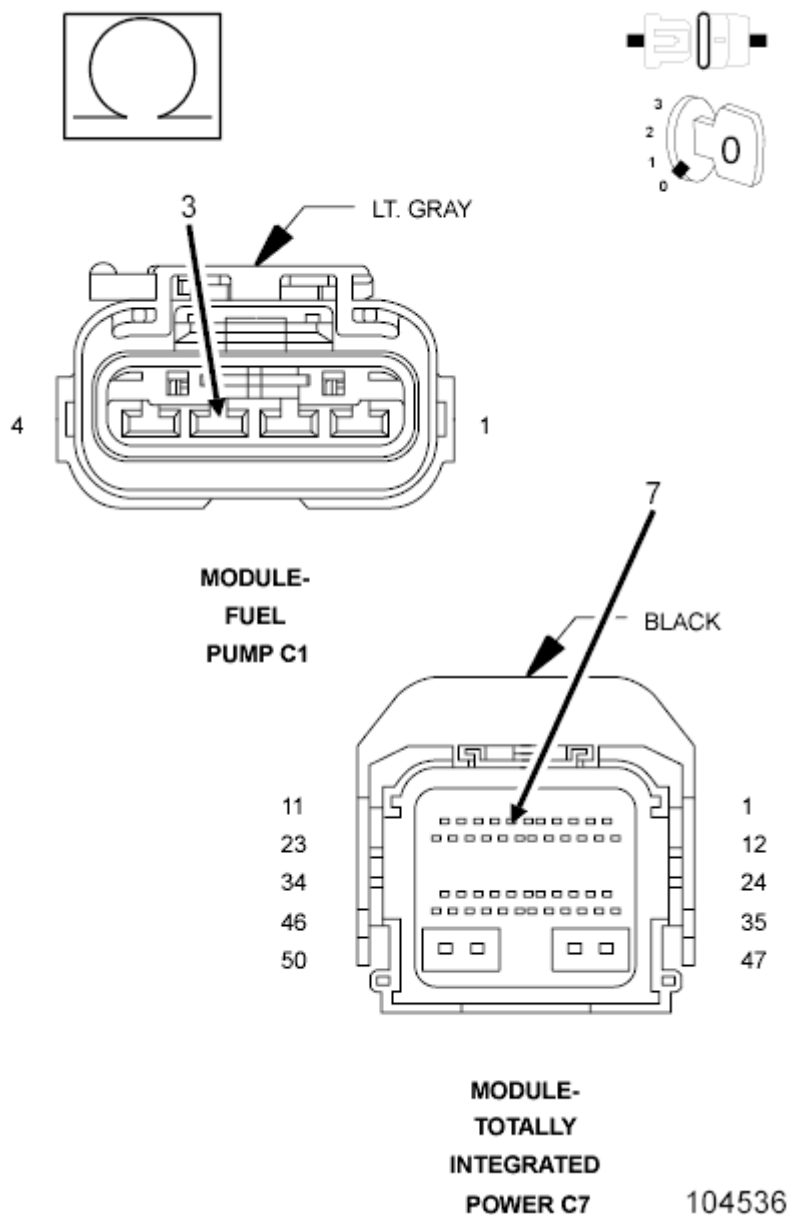


Fig. 7: Measuring Resistance Of Fuel Level Signal 1 Circuit Between Fuel Level Sensor Harness Conn & Instrument Cluster Harness Conn

Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Measure the resistance of the (N4) Fuel Level Signal 1 circuit between the C1 Fuel Pump Module harness connector and the C7 TIPM harness connector.

Is the resistance below 5.0 Ohms?

Yes

- Go to Step 4.

No

- Repair the open in the (N4) Fuel Level Signal 1 circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

4. (P37) SWITCH RETURN CIRCUIT OPEN

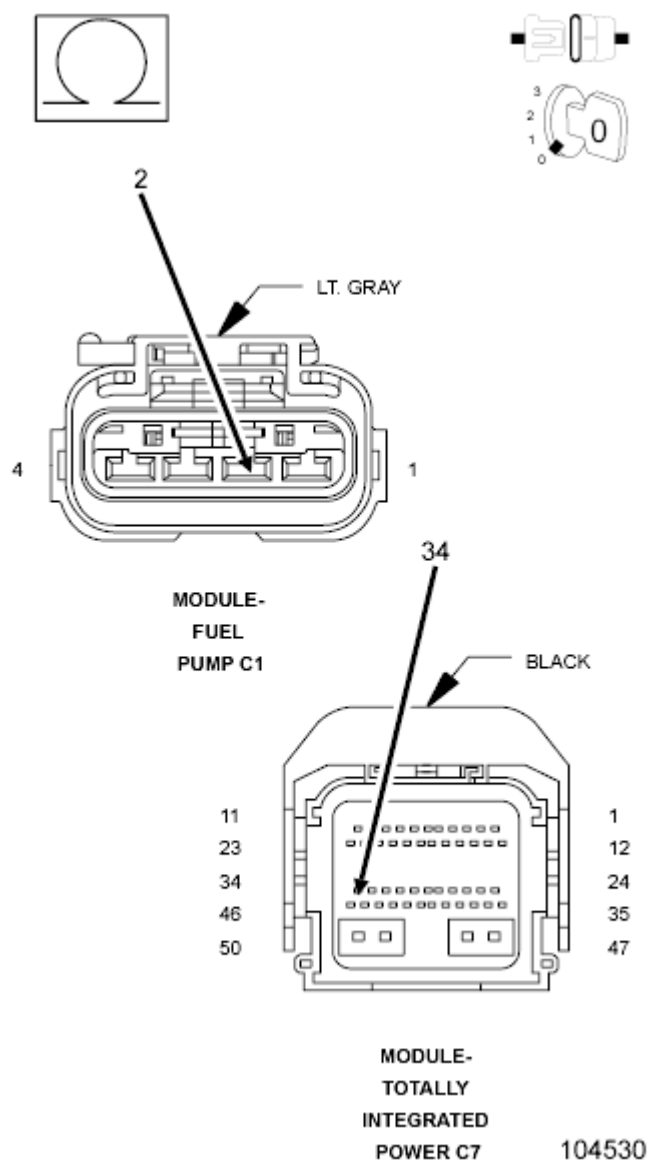


Fig. 8: Measuring Resistance Of Switch Return Circuit From Fuel Pump Module Harness Connector To C7 TIPM Harness Connector
 Courtesy of CHRYSLER LLC

1. Measure the resistance of the (P37) Switch Return circuit from the Fuel Pump Module harness connector to the C7 TIPM harness connector.

Is the resistance below 5.0 Ohms?

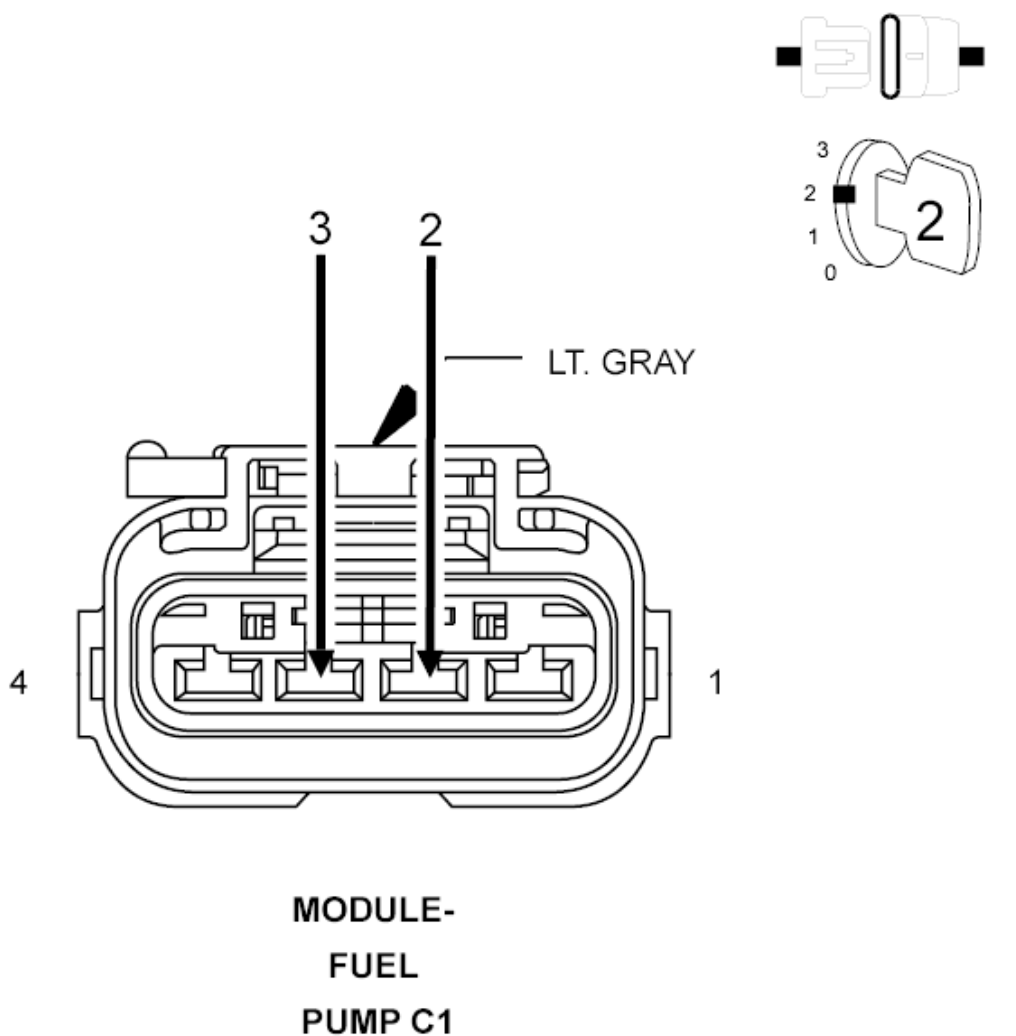
Yes

- Go to Step 5.

No

- Repair the open in the (P37) Switch Return circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC**.

5. FUEL LEVEL SENSOR



104528

Fig. 9: Identifying C1 Fuel Pump Module Harness Connector
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Connect the C7 TIPM harness connector.
3. Connect a jumper wire between the (N4) Fuel Level Signal 1 circuit and the (P37) Switch Return circuit at the C1 Fuel Pump Module harness connector.
4. Turn the ignition on.

5. With the scan tool, read the Fuel Level Sensor 1 signal voltage.

Is the voltage below 1.0 volt with the jumper wire in place?

Yes

- Replace the Fuel Level Sensor/Fuel Pump Module in accordance with the Service Information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC**.

No

- Go to Step 6.

6. TOTALLY INTEGRATED POWER MODULE (TIPM)

1. Using **Fig. 5** as a guide, inspect the wiring and connectors between the Fuel Pump Module and the Totally Integrated Power Module (TIPM).
2. Look for any chafed, pierced, pinched, or partially broken wires.
3. Look for broken, bent, pushed out or corroded terminals. Verify that there is good pin to terminal contact in the C1 Fuel Pump Module and the C7 TIPM harness connectors.
4. Refer to any Technical Service Bulletins that may apply.

Were any problems found?

Yes

- Repair as necessary.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC**.

No

- Replace the Totally Integrated Power Module in accordance with the Service Information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC**.

P0463-FUEL LEVEL SENSOR 1 HIGH CIRCUIT - GPEC

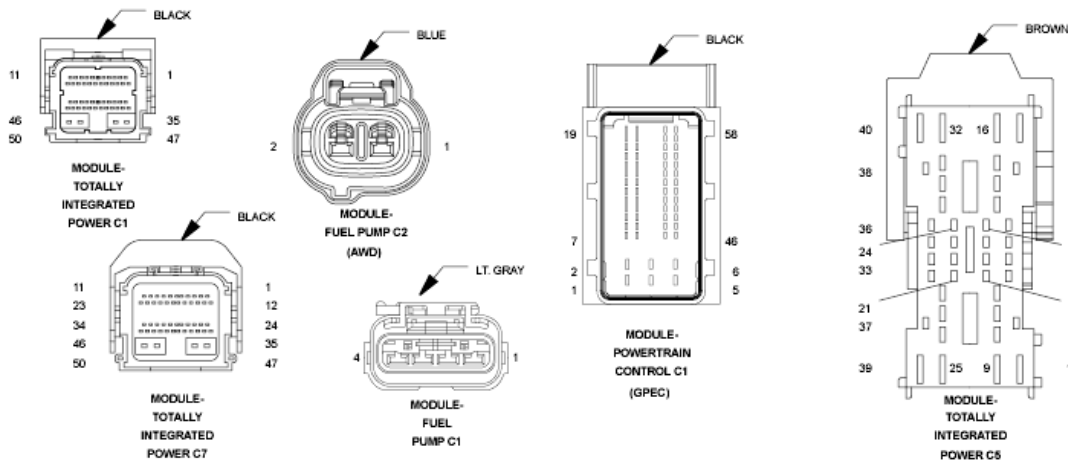
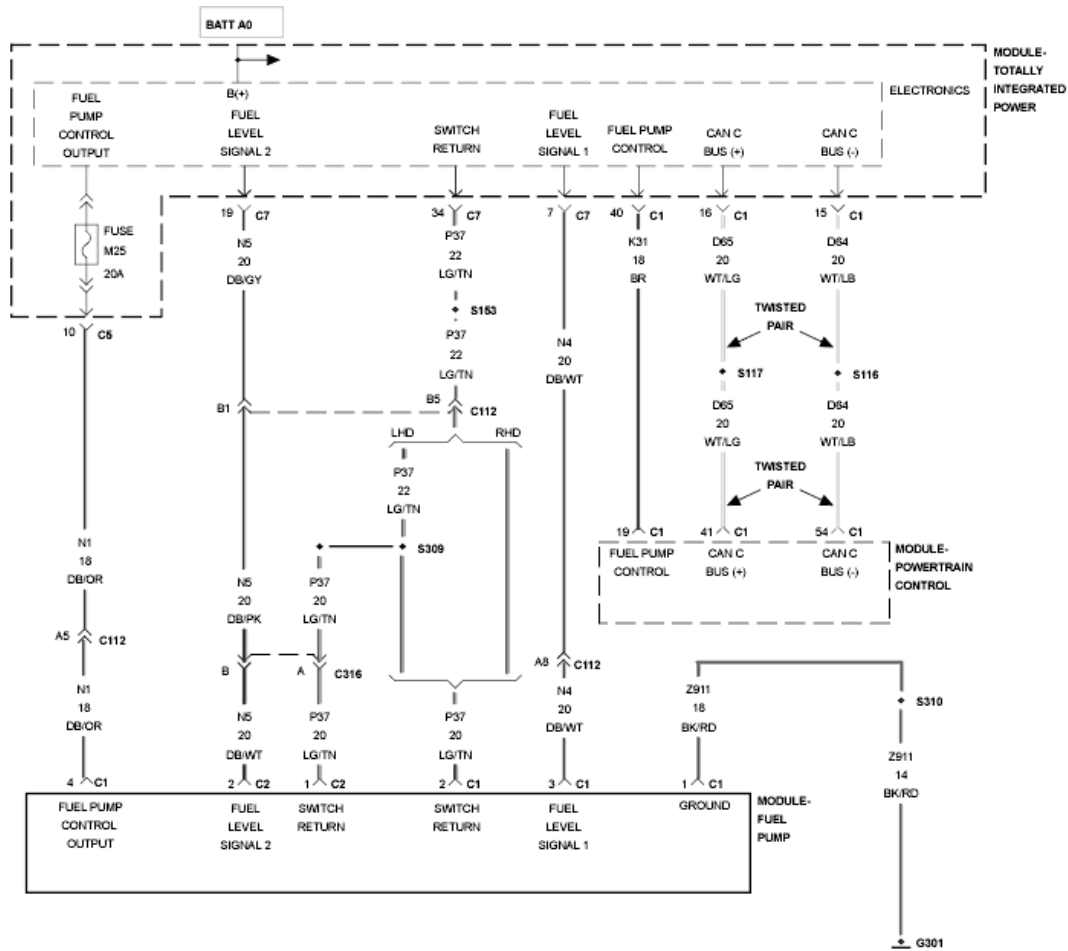


Fig. 10: Fuel Pump Module Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

- **When Monitored:**

With the ignition on and the battery voltage greater than 10.4 volts.

• **Set Condition:**

The Powertrain Control Module (PCM) detects that the Fuel Level Sensor input voltage is above the maximum acceptable value.

Possible Causes
(N4) FUEL LEVEL SIGNAL 1 CIRCUIT SHORTED TO VOLTAGE
(N4) FUEL LEVEL SIGNAL 1 CIRCUIT OPEN
(P37) SWITCH RETURN CIRCUIT OPEN
FUEL LEVEL SENSOR
TOTALLY INTEGRATED POWER MODULE (TIPM)
POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC .

DIAGNOSTIC TEST

1. ACTIVE DTC

1. Start the engine and allow it to reach normal operating temperature.

WARNING: When the engine is operating, do not stand in direct line with the fan. Do not put your hands near the pulleys, belts or fan. Do not wear loose clothing. Failure to follow these instructions may result in possible serious or fatal injury.

2. With the scan tool, select View DTCs.

NOTE: Diagnose any CAN - C Communication DTCs before continuing.

Is the status Active for this DTC?

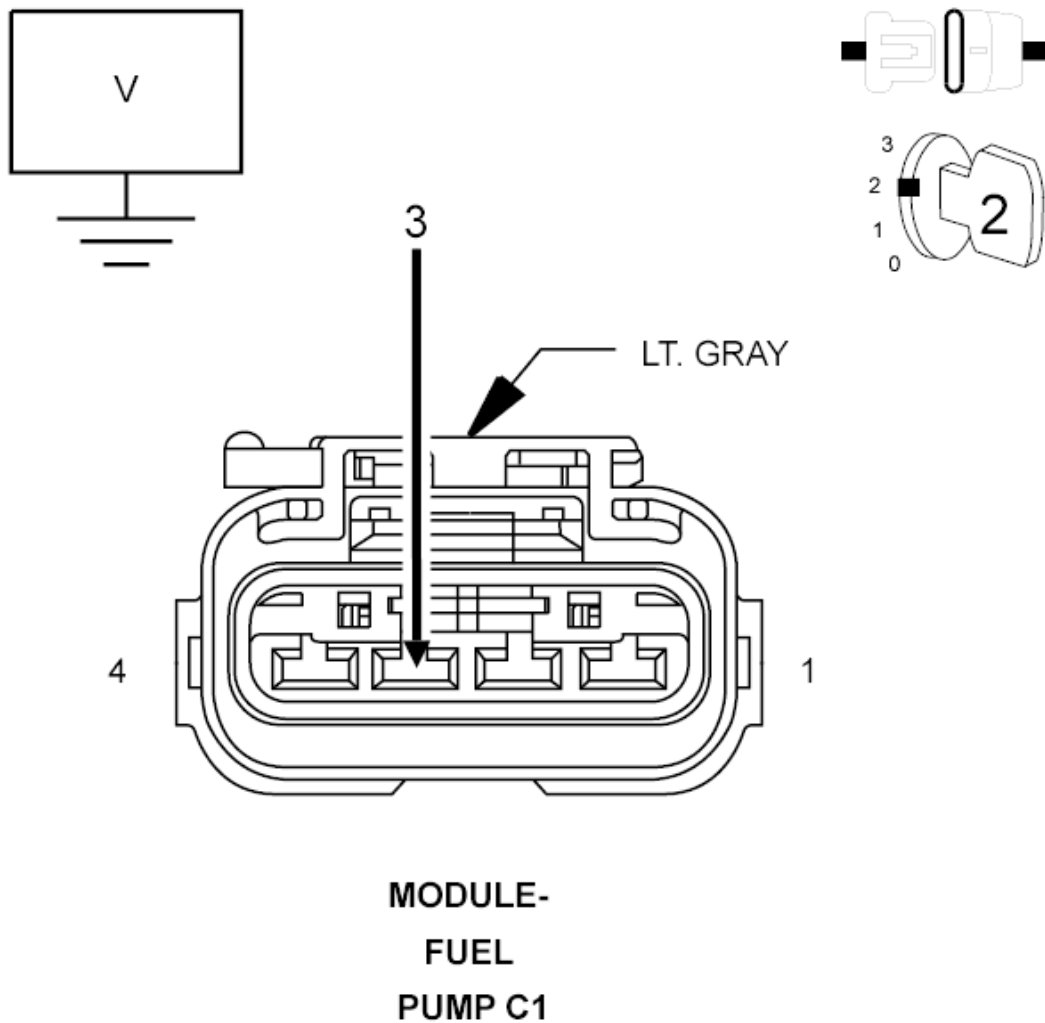
Yes

- Go to Step 2.

No

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC .**

2. (N4) FUEL LEVEL SIGNAL 1 CIRCUIT SHORTED TO VOLTAGE



104532

Fig. 11: Measuring Voltage Of Fuel Level Signal 1 Circuit In C1 Fuel Pump Module Harness Connector

Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the C1 Fuel Pump Module harness connector.
3. Disconnect the C7 Totally Integrated Power Module (TIPM) harness connector.
4. Turn the ignition on.
5. Measure the voltage of the (N4) Fuel Level Signal 1 circuit in the C1 Fuel Pump Module harness connector.

Is there any voltage present?

Yes

- Repair the short to voltage in the (N4) Fuel Level Signal 1 circuit.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

No

- Go to Step 3.

3. (N4) FUEL LEVEL SIGNAL 1 OPEN

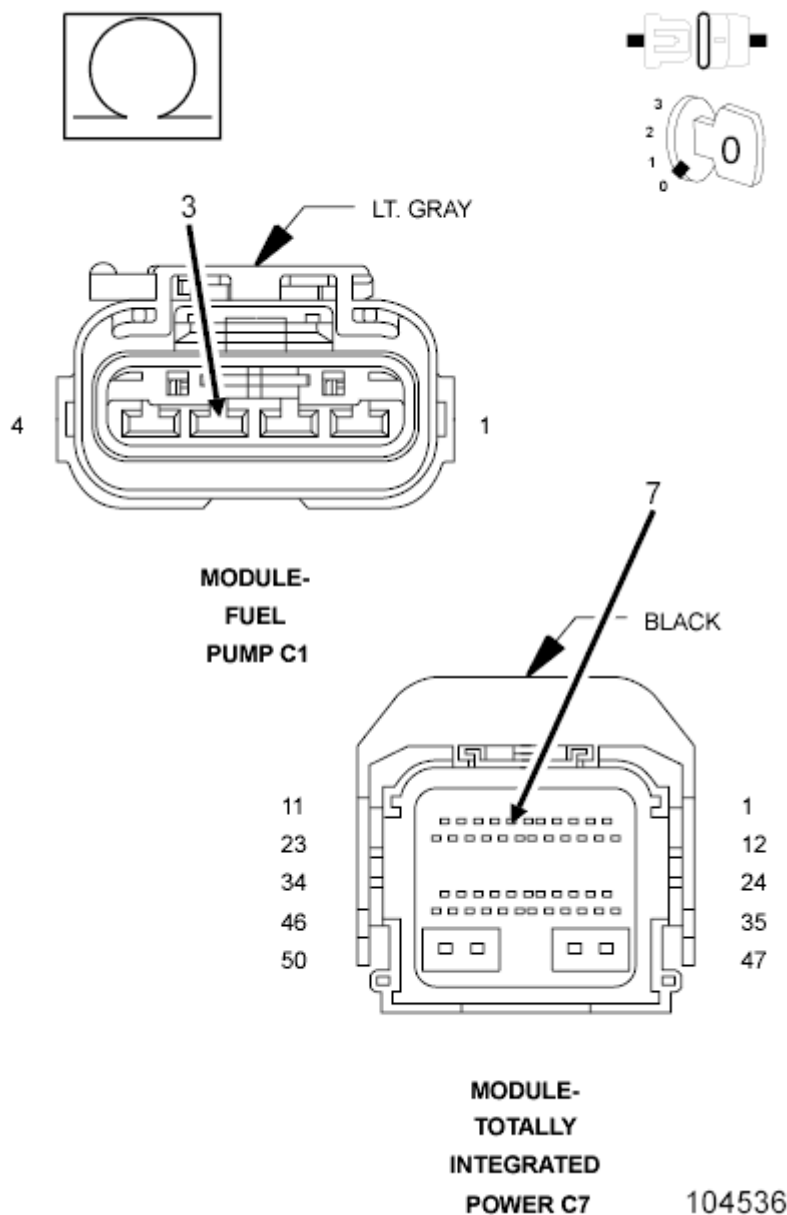


Fig. 12: Measuring Resistance Of Fuel Level Signal 1 Circuit Between Fuel Level Sensor Harness Conn & Instrument Cluster Harness Conn

Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Measure the resistance of the (N4) Fuel Level Signal 1 circuit between the C1 Fuel Pump Module harness connector and the C7 TIPM harness connector.

Is the resistance below 5.0 Ohms?

Yes

- Go to Step 4.

No

- Repair the open in the (N4) Fuel Level Signal 1 circuit.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

4. (P37) SWITCH RETURN CIRCUIT OPEN

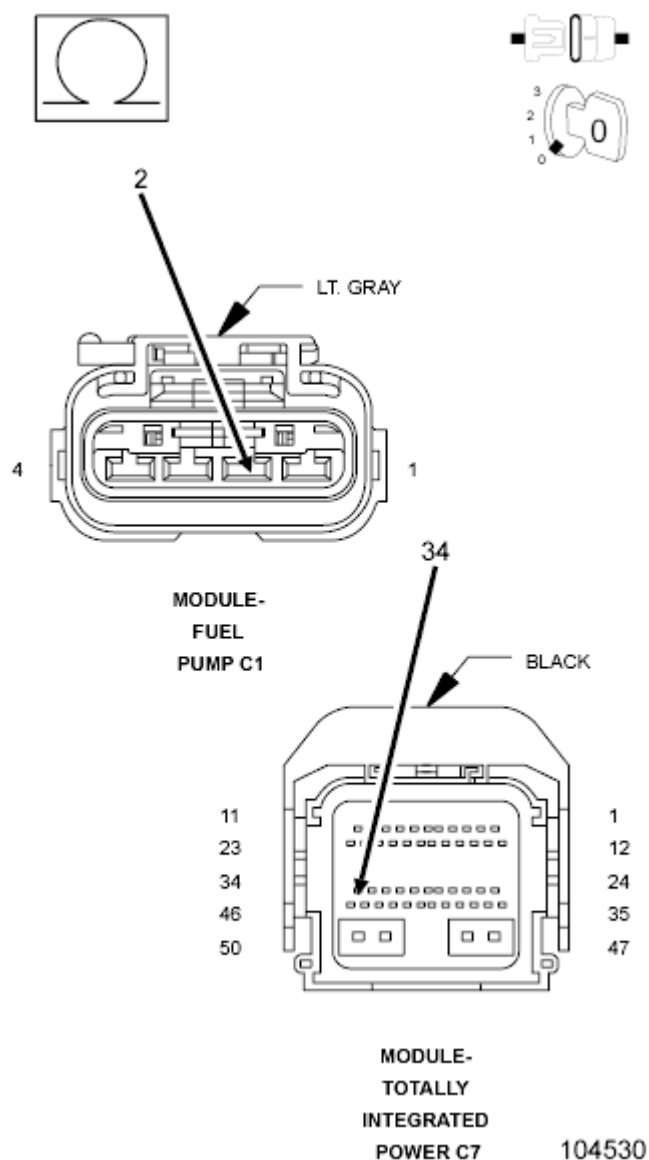


Fig. 13: Measuring Resistance Of Switch Return Circuit From Fuel Pump Module Harness Connector To C7 TIPM Harness Connector
 Courtesy of CHRYSLER LLC

1. Measure the resistance of the (P37) Switch Return circuit from the Fuel Pump Module harness connector to the C7 TIPM harness connector.

Is the resistance below 5.0 Ohms?

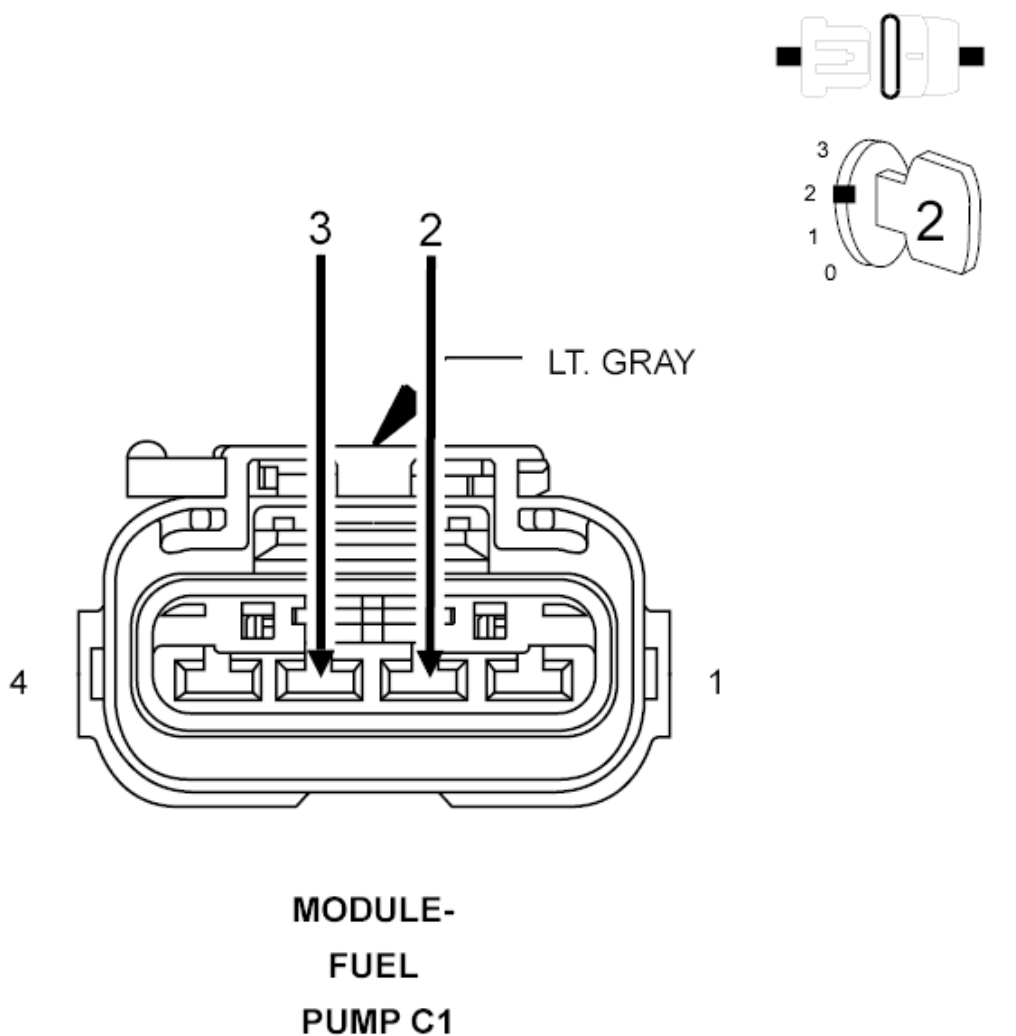
Yes

- Go to Step 5.

No

- Repair the open in the (P37) Switch Return circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC**.

5. FUEL LEVEL SENSOR



104528

Fig. 14: Identifying C1 Fuel Pump Module Harness Connector
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Connect the C7 TIPM harness connector.
3. Connect a jumper wire between the (N4) Fuel Level Signal 1 circuit and the (P37) Switch Return circuit at the C1 Fuel Pump Module harness connector.
4. Turn the ignition on.

5. With the scan tool, read the Fuel Level Sensor 1 signal voltage.

Is with the jumper wire in place?

Yes

- Replace the Fuel Level Sensor/Fuel Pump Module in accordance with the Service Information.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

No

- Go to Step 6.

6. TOTALLY INTEGRATED POWER MODULE (TIPM)

1. Using **Fig. 10** as a guide, inspect the wiring and connectors between the Fuel Pump Module and the Totally Integrated Power Module (TIPM).
2. Look for any chafed, pierced, pinched or partially broken wires.
3. Look for broken, bent, pushed out or corroded terminals. Verify that there is good pin to terminal contact in the C1 Fuel Pump Module and the C7 TIPM harness connectors.
4. Refer to any Technical Service Bulletins that may apply.

Were any problems found?

Yes

- Repair as necessary.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

No

- Replace the Totally Integrated Power Module (TIPM) in accordance with the Service Information.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

P0691-COOLING FAN 1 CONTROL CIRCUIT LOW

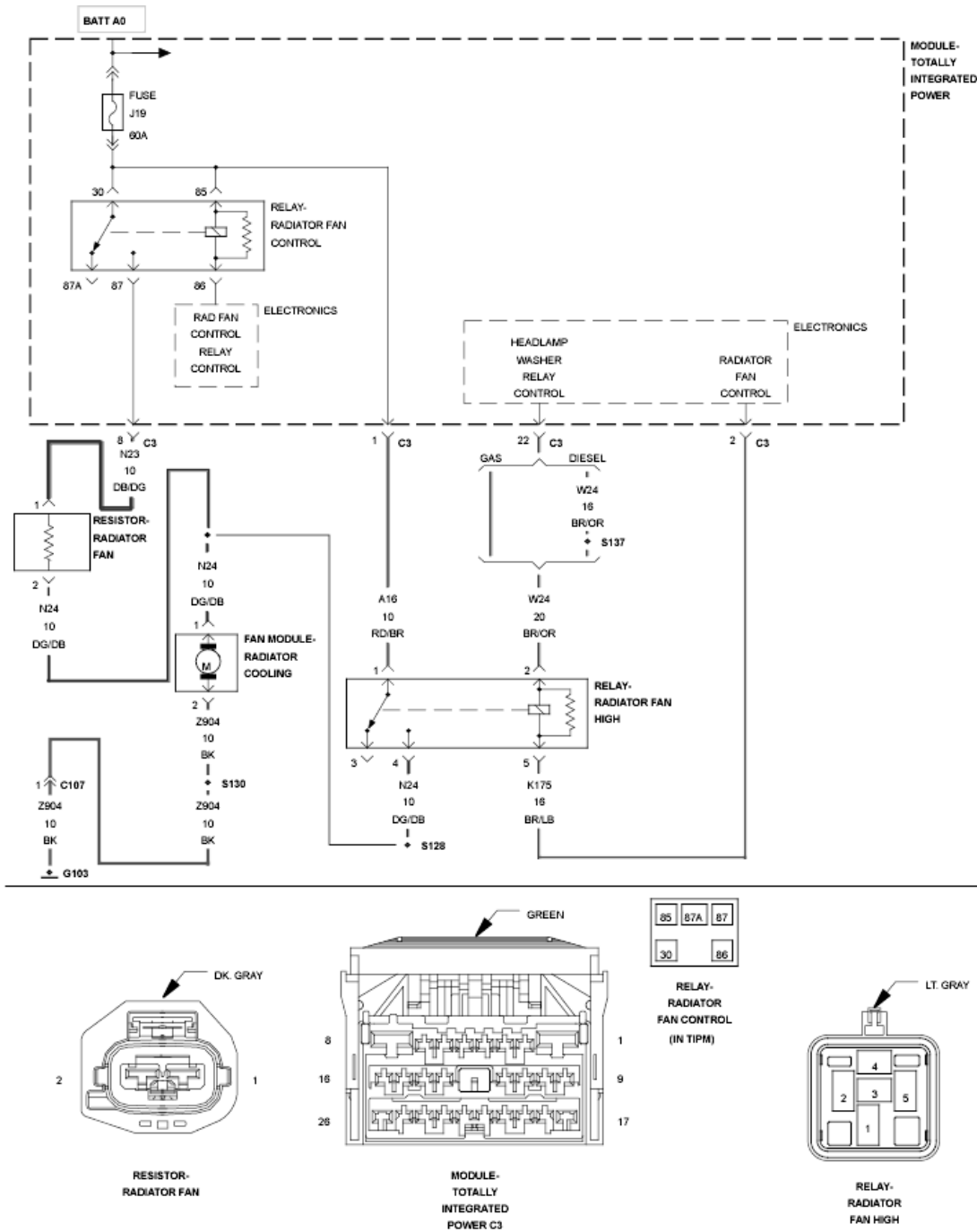


Fig. 15: Cooling Fan Operation Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

• **When Monitored:**

With the ignition on. Battery voltage greater than 10 volts.

• **Set Condition:**

The Powertrain Control Module (PCM) is requesting the Totally Integrated Power Module (TIPM) to turn on the Cooling Fan On low speed and it is not operating. The TIPM detects an open in the Radiator Fan Control Relay Control circuit. One Trip Fault. Three good trips to turn off the MIL.

Possible Causes
(N23) LOW SPEED RAD FAN CONTROL OUTPUT CIRCUIT SHORT TO GROUND
(N24) RAD FAN RELAY OUTPUT CIRCUIT SHORT TO GROUND
(A16) FUSED B+ CIRCUIT SHORT TO GROUND
RADIATOR FAN CONTROL RELAY
TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

DIAGNOSTIC TEST

1. ACTIVE DTC

1. Start the engine and allow it to reach normal operating temperature.

WARNING: When the engine is operating, do not stand in direct line with the fan. Do not put your hands near the pulleys, belts or fan. Do not wear loose clothing. Failure to follow these instructions may result in possible serious or fatal injury.

NOTE: It may be necessary to test drive the vehicle in order for this DTC to set.

2. With a scan tool, select View DTCs.

Is the DTC Active at this time?

Yes

- Go to Step 2.

No

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

2. CIRCUIT SHORT TO GROUND

1. Turn the ignition off.
2. Inspect the related Fused B+ circuit fuse.

Is the fuse open?

Yes

- Test the (A16) Fused B+ circuit, the (N23) Low Speed Fan Control Output circuit, and the (N24) Rad Fan Relay Output circuit for a short to ground. Repair as necessary. If a short to ground is not found, go to Step 4.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

No

- Go to Step 3.

3. RADIATOR FAN CONTROL RELAY

1. Turn the ignition off.
2. Verify the Radiator Fan Control Relay is installed properly and that the terminals are making a tight fit.
3. Remove the Radiator Fan Control Relay and substitute it with a known good Relay.
4. Ignition on, engine not running.
5. With a scan tool, actuate the Radiator Fan Control Relay.

Is the Cooling Fan operating?

Yes

- Replace the Radiator Fan Control Relay.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

No

- Go to Step 4.

4. TOTALLY INTEGRATED POWER MODULE (TIPM)

1. Using **Fig. 15** as a guide, inspect the wiring and connectors between the Cooling Fan Module, TIPM, and the Powertrain Control Module (PCM).
2. Look for any chafed, pierced, pinched, or partially broken wires.
3. Look for broken, bent, pushed out or corroded terminals. Verify that there is good pin to terminal contact in the Cooling Fan Module, TIPM, and Powertrain Control Module connectors.
4. Refer to any Technical Service Bulletins that may apply.

Were there any problems found?

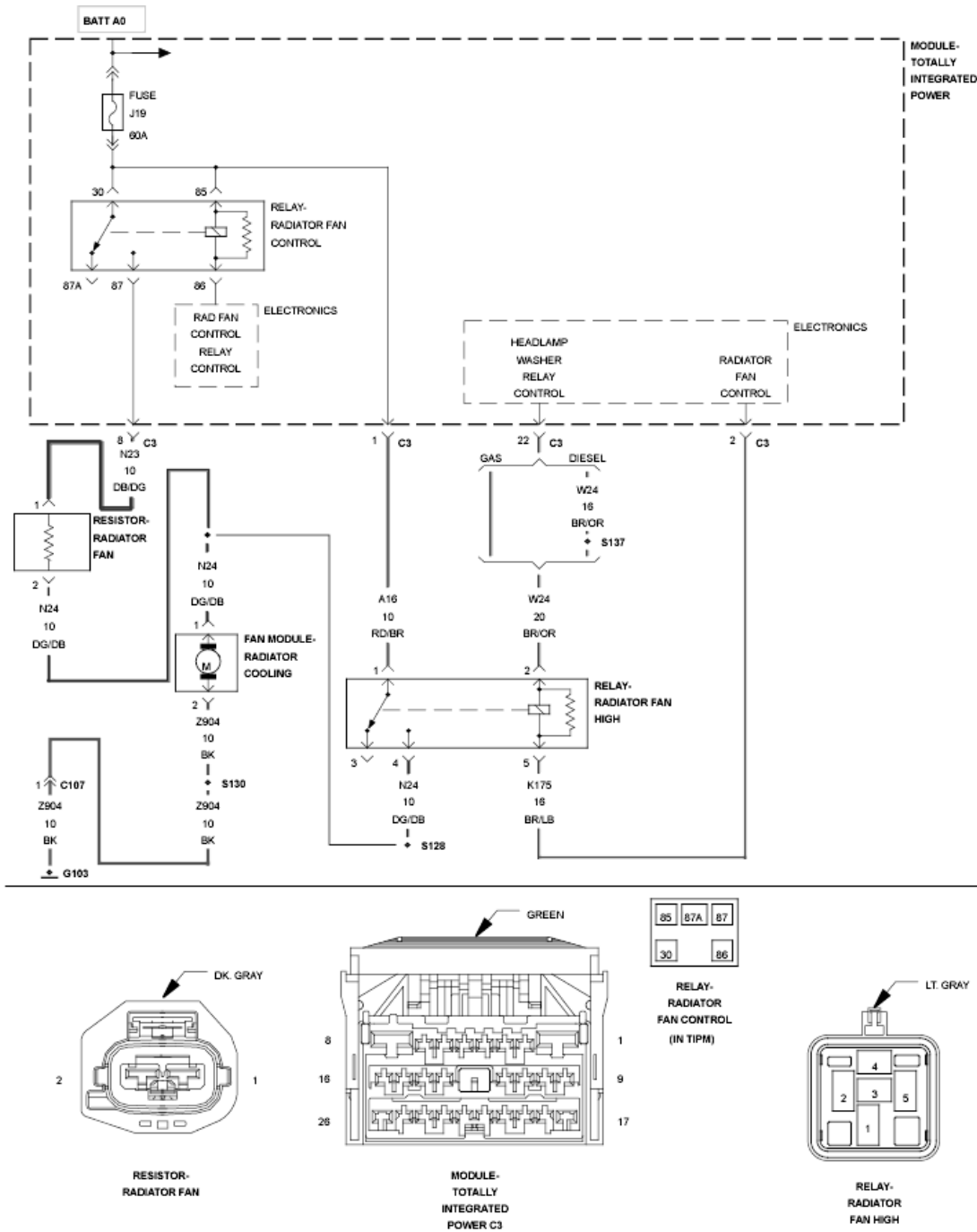
Yes

- Repair as necessary.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

No

- Replace the Totally Integrated Power Module per Service Information.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

P0692-COOLING FAN 1 CONTROL CIRCUIT HIGH



For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** .

• **When Monitored:**

With the ignition on. Battery voltage greater than 10 volts.

• **Set Condition:**

The Powertrain Control Module (PCM) is requesting the Totally Integrated Power Module (TIPM) to turn on the Cooling Fan On low speed and it is not operating. The TIPM detects a shorted condition in the Radiator Fan Control Relay Control circuit. One Trip Fault. Three good trips to turn off the MIL.

Possible Causes
RADIATOR FAN CONTROL RELAY
TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

DIAGNOSTIC TEST

1. ACTIVE DTC

1. Start the engine and allow it to reach normal operating temperature.

WARNING: When the engine is operating, do not stand in direct line with the fan. Do not put your hands near the pulleys, belts or fan. Do not wear loose clothing. Failure to follow these instructions may result in possible serious or fatal injury.

NOTE: It may be necessary to test drive the vehicle in order for this DTC to set.

2. With a scan tool, select View DTCs.

Is the DTC Active at this time?

Yes

- Go to Step 2.

No

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .**

2. RADIATOR FAN CONTROL RELAY

1. Turn the ignition off.
2. Verify the Radiator Fan Control Relay is installed properly and that the terminals are making a tight

fit.

3. Remove the Radiator Fan Control Relay and substitute it with a known good Relay.
4. Ignition on, engine not running.
5. With a scan tool, actuate the Radiator Fan Control Relay.

Is the Cooling Fan operating?

Yes

- Replace the Radiator Fan Control Relay.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

No

- Go to Step 3.

3. **TOTALLY INTEGRATED POWER MODULE (TIPM)**

1. Using **Fig. 16** as a guide, inspect the wiring and connectors between the Cooling Fan Module, TIPM, and the Powertrain Control Module (PCM).
2. Look for any chafed, pierced, pinched, or partially broken wires.
3. Look for broken, bent, pushed out or corroded terminals. Verify that there is good pin to terminal contact in the Cooling Fan Module, TIPM, and Powertrain Control Module connectors.
4. Refer to any Technical Service Bulletins that may apply.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

No

- Replace the Totally Integrated Power Module per Service Information.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

P0693-COOLING FAN 2 CONTROL CIRCUIT LOW

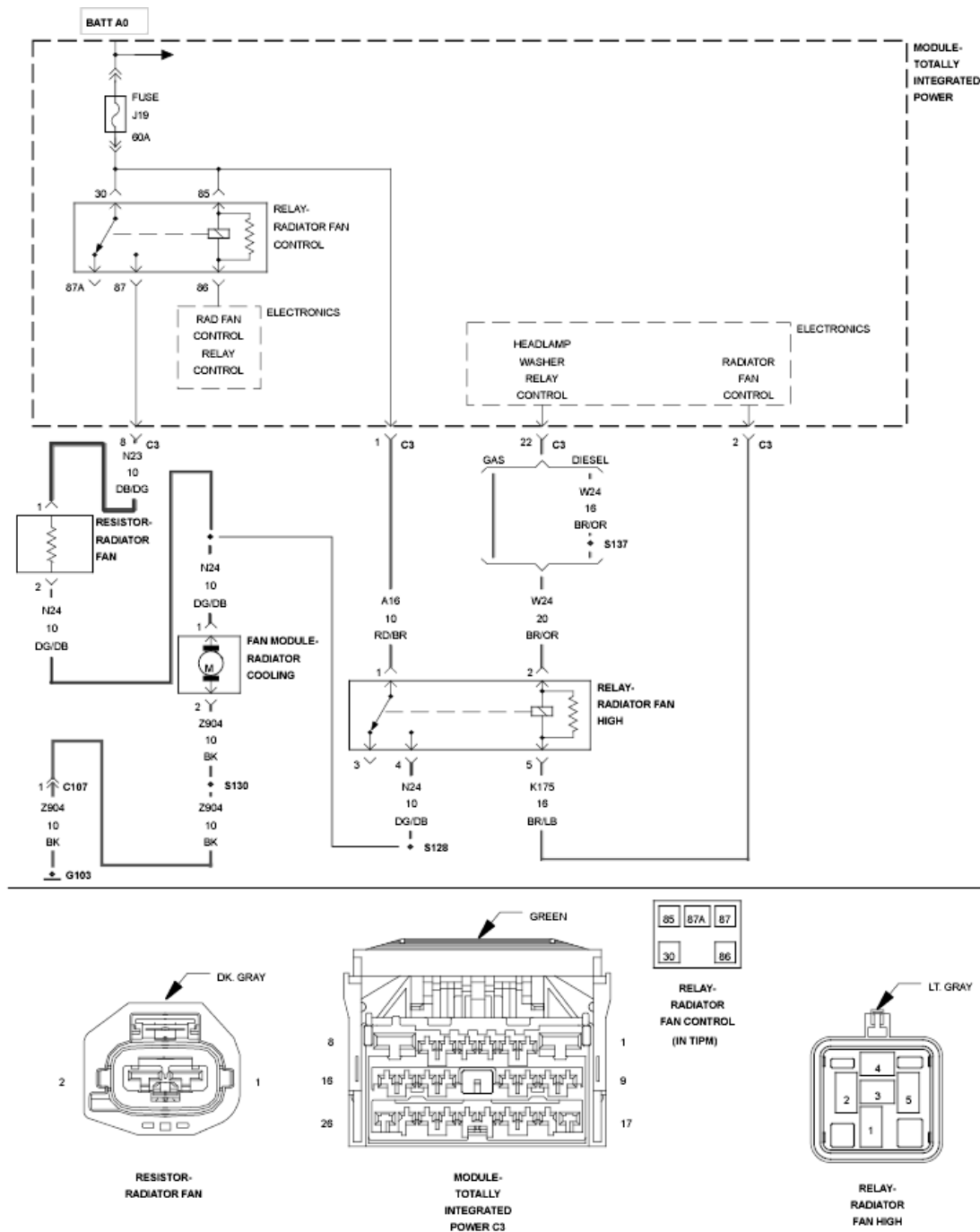


Fig. 17: Cooling Fan Operation Circuit Schematic
 Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

• **When Monitored:**

With the ignition on. Battery voltage greater than 10 volts.

• **Set Condition:**

The Powertrain Control Module (PCM) is requesting the Totally Integrated Power Module (TIPM) to turn on the Cooling Fan On high speed and it is not operating. The TIPM detects an open or short to ground in the Radiator Fan Control circuit. One Trip Fault. Three good trips to turn off the MIL.

Possible Causes
(W24) HEADLAMP WASHER RELAY CONTROL CIRCUIT OPEN
(K175) RADIATOR FAN CONTROL CIRCUIT SHORTED TO GROUND
(K175) RADIATOR FAN CONTROL CIRCUIT OPEN OR HIGH RESISTANCE
RADIATOR FAN HIGH RELAY
TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

DIAGNOSTIC TEST

1. ACTIVE DTC

1. Start the engine and allow it to reach normal operating temperature.

WARNING: When the engine is operating, do not stand in direct line with the fan. Do not put your hands near the pulleys, belts or fan. Do not wear loose clothing. Failure to follow these instructions may result in possible serious or fatal injury.

NOTE: It may be necessary to test drive the vehicle in order for this DTC to set.

2. With a scan tool, select View DTCs.

Is the DTC Active at this time?

Yes

- Go to Step 2.

No

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

2. RADIATOR FAN HIGH RELAY

1. Turn the ignition off.
2. Verify the High Speed Cooling Fan Relay is installed properly and that the terminals are making a tight fit.
3. Remove the High Speed Cooling Fan Relay and substitute it with a known good Relay.
4. Ignition on, engine not running.
5. With a scan tool, actuate the High Speed Cooling Fan Relay.

Is the Cooling Fan operating?

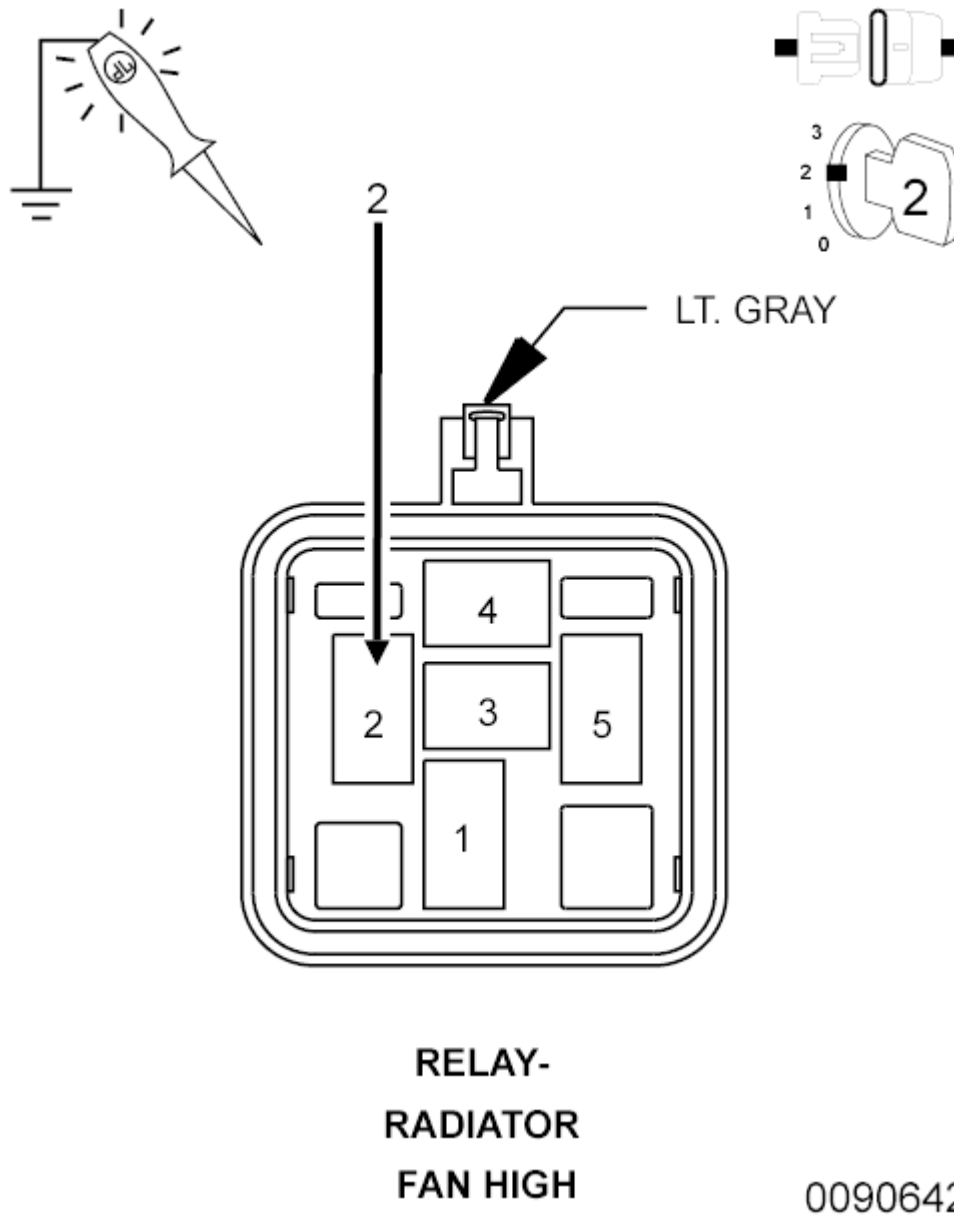
Yes

- Replace the High Speed Cooling Fan Relay.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

No

- Go to Step 3.

3. (W24) HEADLAMP WASHER RELAY CONTROL CIRCUIT OPEN



00906423

Fig. 18: Checking Headlamp Washer Relay Control Circuit In High Speed Cooling Fan Relay Harness Connector
 Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Remove the High Speed Cooling Fan Relay.
3. Turn the ignition on.
4. Using a 12 volt test light connected to ground, check the (W24) Headlamp Washer Relay Control circuit in the High Speed Cooling Fan Relay harness connector.

NOTE: The test light should be illuminated and bright. Compare the

brightness to that of a direct connection to the battery.

Is the test light illuminated and bright?

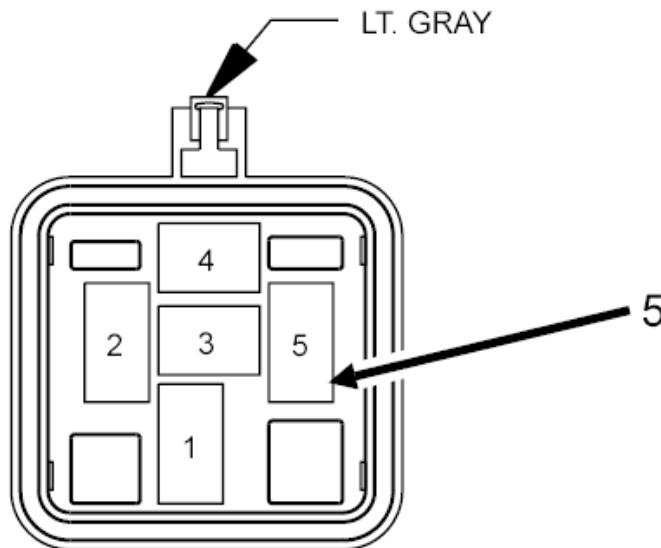
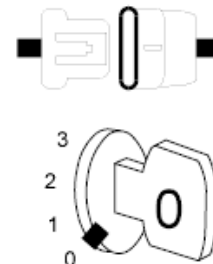
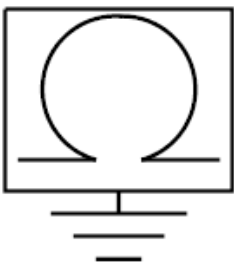
Yes

- Repair the open in the (W24) Headlamp Washer Relay Control circuit.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

No

- Go to Step 4.

4. (K175) RADIATOR FAN CONTROL CIRCUIT SHORTED TO GROUND



**RELAY-
RADIATOR
FAN HIGH**

Fig. 19: Measuring Resistance Between Ground & Radiator Fan Control Circuit At High Speed Cooling Fan Relay Harness Connector
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the C3 TIPM harness connector.
3. Measure the resistance between ground and the (K175) Radiator Fan Control circuit at the High Speed Cooling Fan Relay harness connector.

Is the resistance below 100 Ohms?

Yes

- Repair the short to ground in the (K175) Radiator Fan Control circuit.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

No

- Go to Step 5.

5. (K175) RADIATOR FAN CONTROL CIRCUIT OPEN OR HIGH RESISTANCE

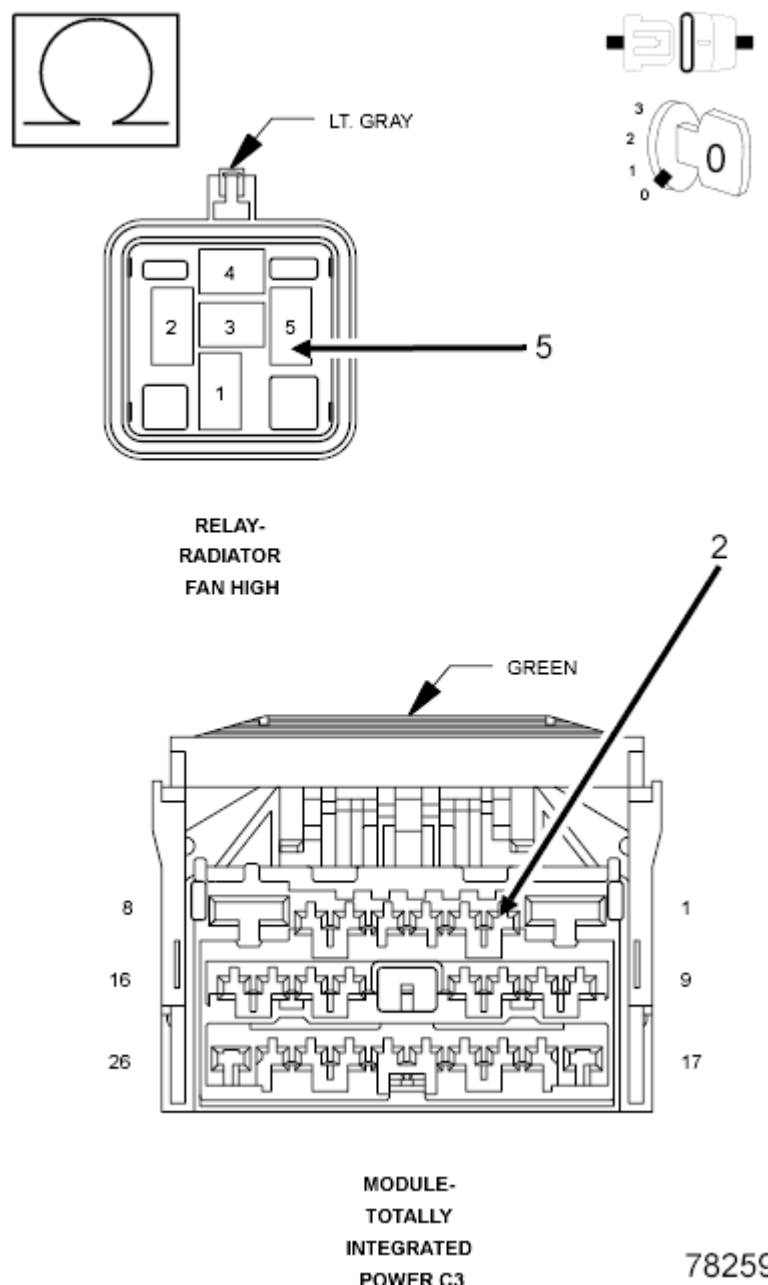


Fig. 20: Measuring Resistance Of High Speed Cooling Fan Relay Control Circuit From C3 TIPM Harness Connector To Relay Connection

Courtesy of CHRYSLER LLC

1. Measure the resistance of the (K175) Radiator Fan Control circuit from the C3 TIPM harness connector to the High Speed Cooling Fan Relay harness connector.

Is the resistance above 5.0 Ohms?

Yes

- Repair the open or high resistance in the (K175) Radiator Fan Control circuit.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

No

- Go to Step 6.

6. TOTALLY INTEGRATED POWER MODULE (TIPM)

1. Using **Fig. 17** as a guide, inspect the wiring and connectors between the Cooling Fan Module, TIPM, and the Powertrain Control Module (PCM).
2. Look for any chafed, pierced, pinched, or partially broken wires.
3. Look for broken, bent, pushed out or corroded terminals. Verify that there is good pin to terminal contact in the Cooling Fan Module, TIPM, and PCM connectors.
4. Refer to any Technical Service Bulletins that may apply.

Were there any problems found?

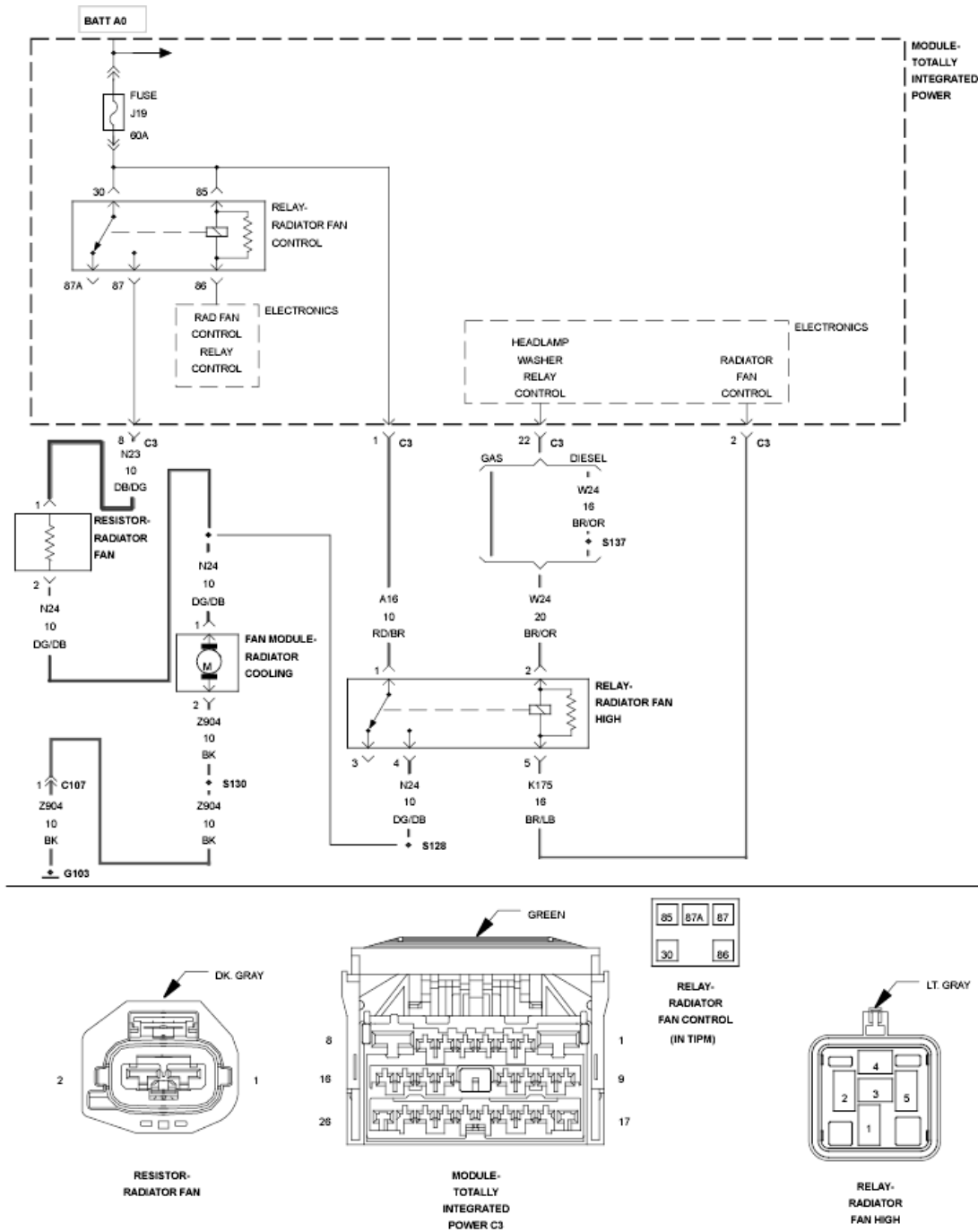
Yes

- Repair as necessary.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

No

- Replace the Totally Integrated Power Module per Service Information.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

P0694-COOLING FAN 2 CONTROL CIRCUIT HIGH



For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** .

• **When Monitored:**

With the ignition on. Battery voltage greater than 10 volts.

• **Set Condition:**

The Powertrain Control Module (PCM) is requesting the Totally Integrated Power Module (TIPM) to turn on the Cooling Fan On high speed and it is not operating. The TIPM detects a short to voltage in the Radiator Fan Control circuit. One Trip Fault. Three good trips to turn off the MIL.

Possible Causes
(K175) RADIATOR FAN CONTROL CIRCUIT SHORTED TO VOLTAGE
RADIATOR FAN HIGH RELAY
TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

DIAGNOSTIC TEST

1. ACTIVE DTC

1. Start the engine and allow it to reach normal operating temperature.

WARNING: When the engine is operating, do not stand in direct line with the fan. Do not put your hands near the pulleys, belts or fan. Do not wear loose clothing. Failure to follow these instructions may result in possible serious or fatal injury.

NOTE: It may be necessary to test drive the vehicle in order for this DTC to set.

2. With a scan tool, select View DTCs.

Is the DTC Active at this time?

Yes

- Go to Step 2.

No

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

2. RADIATOR FAN HIGH RELAY

1. Turn the ignition off.

2. Verify the Radiator Fan High Relay is installed properly and that the terminals are making a tight fit.
3. Remove the Radiator Fan High Relay and substitute it with a known good Relay.
4. Ignition on, engine not running.
5. With a scan tool, actuate the Radiator Fan High Relay.

Is the Cooling Fan operating?

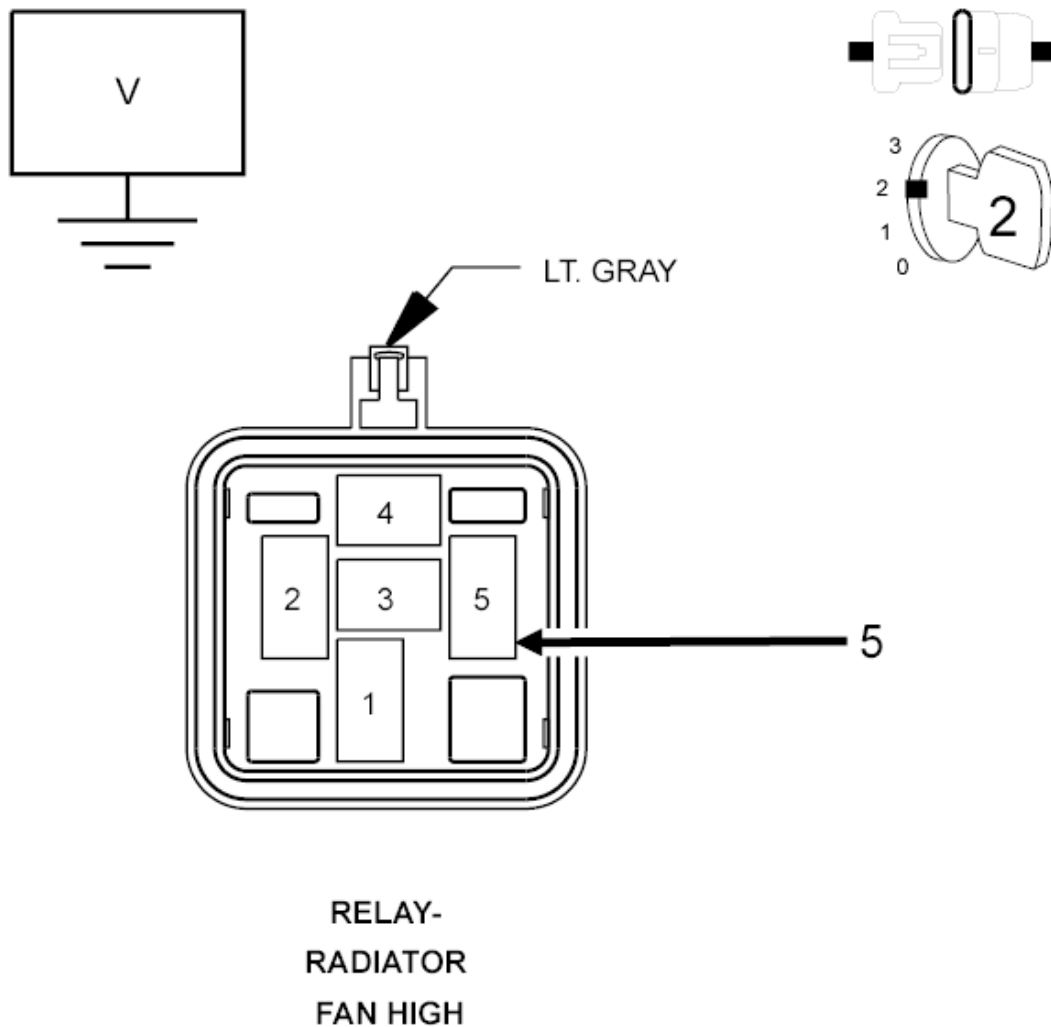
Yes

- Replace the Radiator Fan High Relay.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

No

- Go to Step 3.

3. (K175) RADIATOR FAN CONTROL CIRCUIT SHORTED TO VOLTAGE



78263

Fig. 22: Measuring Voltage On High Speed Cooling Fan Relay Control Circuit At Relay Connection

Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the C3 TIPM harness connector.
3. Remove the Radiator Fan High Relay.
4. Turn the ignition on.
5. Measure the voltage on the (K175) Radiator Fan Control circuit at the relay connection.

Is there any voltage present?

Yes

- Repair the short to voltage in the (K175) Radiator Fan Control circuit.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

No

- Go to Step 4.

4. TOTALLY INTEGRATED POWER MODULE (TIPM)

1. Using **Fig. 21** as a guide, inspect the wiring and connectors between the Cooling Fan Module, TIPM, and the Powertrain Control Module (PCM).
2. Look for any chafed, pierced, pinched, or partially broken wires.
3. Look for broken, bent, pushed out or corroded terminals. Verify that there is good pin to terminal contact in the Cooling Fan Module, TIPM, and Powertrain Control Module connectors.
4. Refer to any Technical Service Bulletins that may apply.

Were there any problems found?

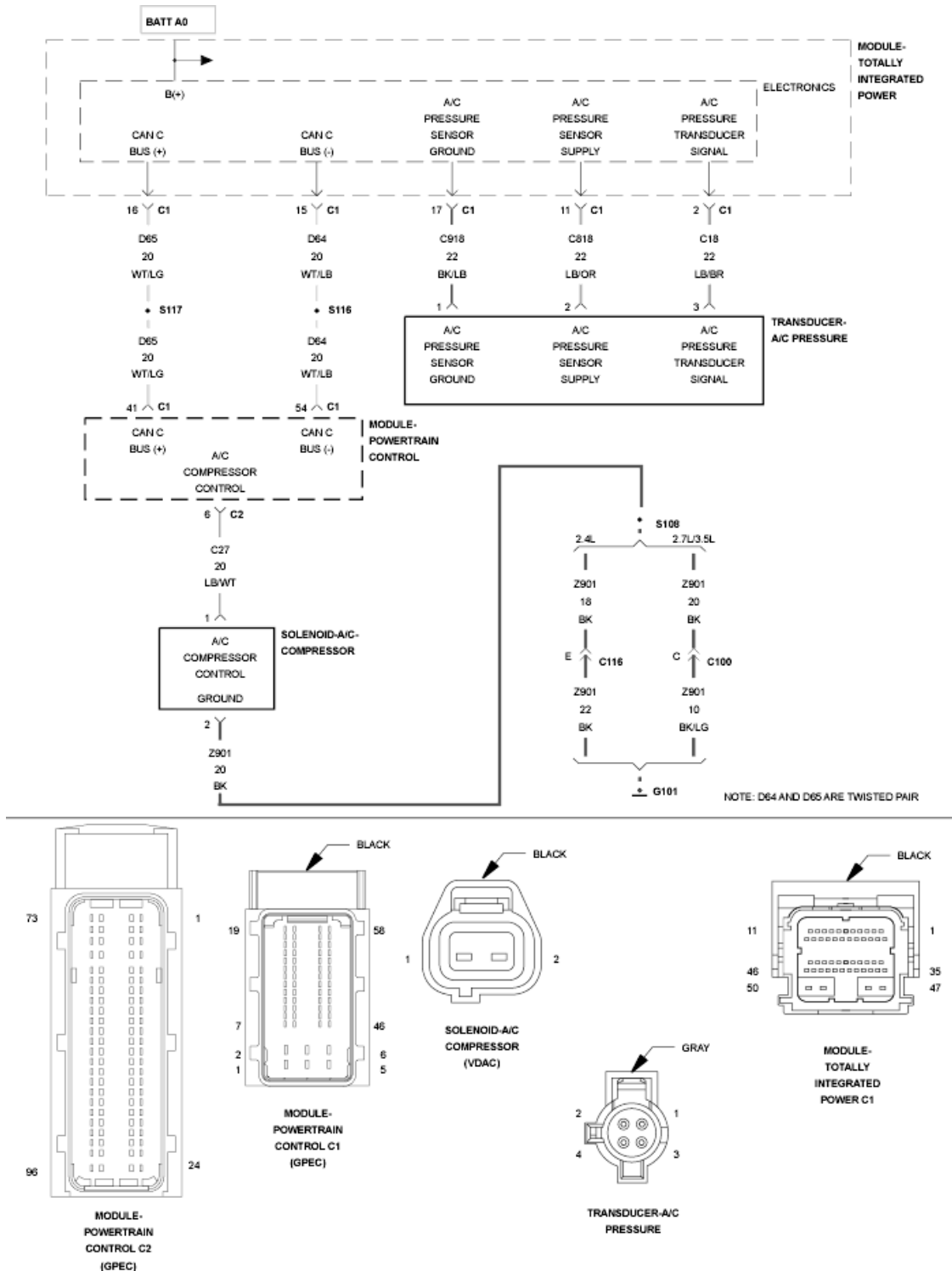
Yes

- Repair as necessary.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

No

- Replace the Totally Integrated Power Module per Service Information.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

P1273-A/C CLUTCH CONTROL CIRCUIT 2 HIGH - GPEC



- **When Monitored:**

With the ignition on. Battery voltage greater than 10 volts. A/C Switch on.

- **Set Condition:**

A shorted high condition has been detected in the A/C Clutch Control output circuit by the Totally Integrated Power Module (TIPM). One Trip Fault. Three good trips to turn off the MIL.

Possible Causes
(C3) A/C CLUTCH CONTROL OUTPUT CIRCUIT SHORTED TO VOLTAGE EXCESSIVE RESISTANCE IN THE (Z901) A/C CLUTCH GROUND CIRCUIT A/C COMPRESSOR CLUTCH TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC .

DIAGNOSTIC TEST

1. A/C CLUTCH OPERATION

1. Ignition on, engine not running.
2. With a scan tool under the PCM Actuators, actuate the A/C Clutch.

Is the A/C Clutch actuating?

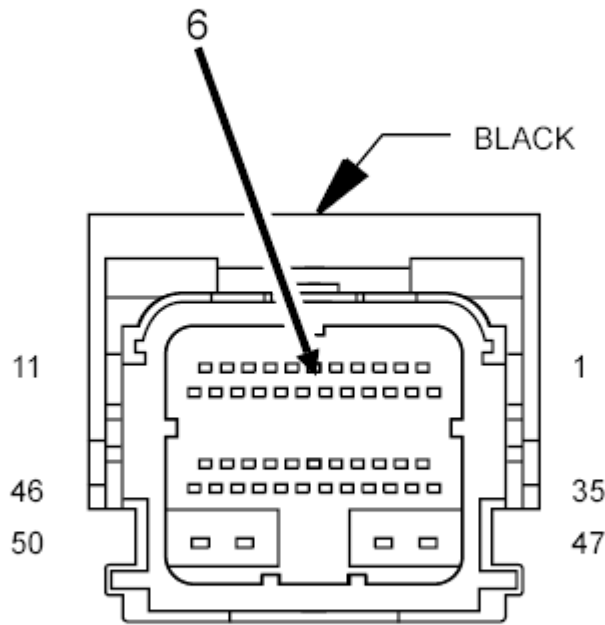
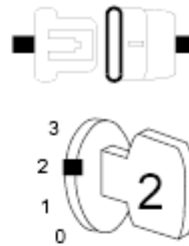
Yes

- Perform the CHECKING FOR AN INTERMITTENT DTC diagnostic procedure. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC .**

No

- Go to Step 2.

2. A/C CLUTCH CONTROL OPERATION FROM THE PCM



MODULE-
TOTALLY
INTEGRATED
POWER C1

105685

Fig. 24: Checking A/C Clutch Control Circuit
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the C1 TIPM harness connector.
3. Ignition on, engine not running.
4. Using the scan tool under the PCM Actuators, actuate the A/C Clutch.
5. With a 12-volt test light connected to ground, probe the (C13) A/C Clutch Control circuit in the C1 TIPM harness connector.

Does the test light illuminate brightly and flash on and off?

Yes

- Go to Step 3.

No

- Perform the diagnostic procedure for P0645-A/C CLUTCH CONTROL CIRCUIT. Refer to **DIAGNOSTIC CODE INDEX - GPEC**.

3. (C3) A/C CLUTCH CONTROL OUTPUT CIRCUIT SHORTED TO VOLTAGE

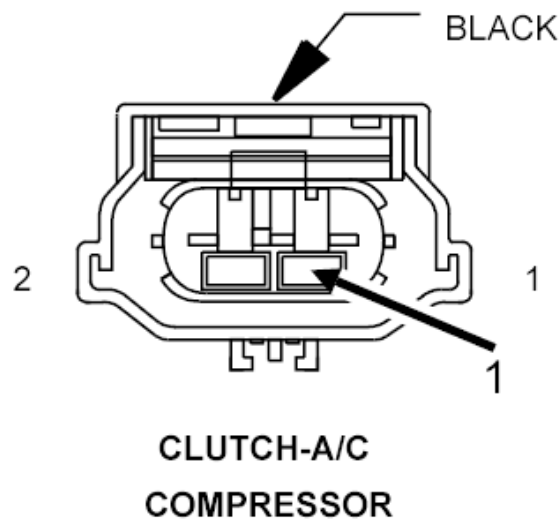
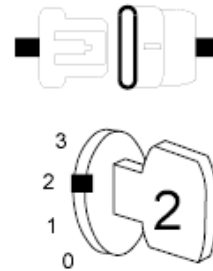
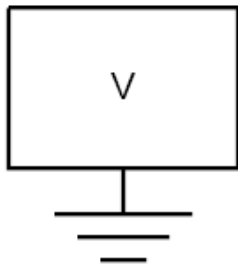


Fig. 25: A/C Clutch Control Output Circuit
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the A/C Compressor Clutch harness connector.
3. Ignition on, engine not running.

4. Measure the voltage on the (C3) A/C Clutch Control Output circuit at the A/C Compressor Clutch harness connector.

Is there any voltage present?

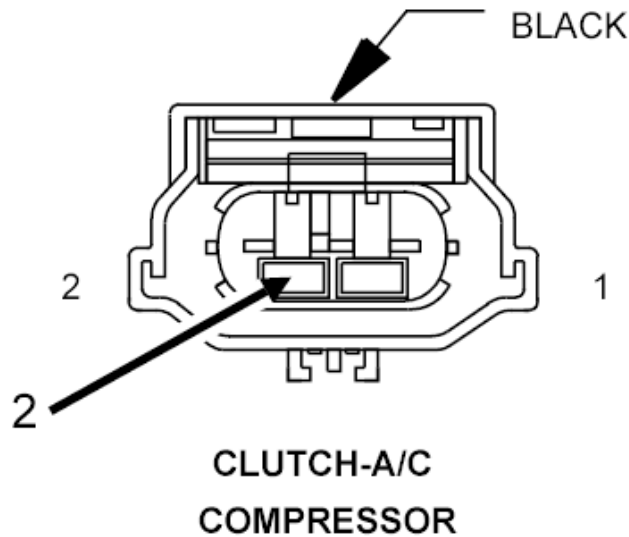
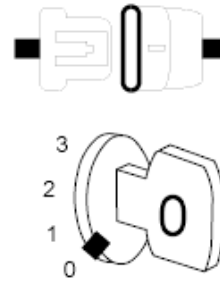
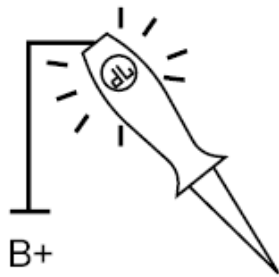
Yes

- Repair the short to voltage in the (C3) A/C Clutch Control Output circuit.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

No

- Go to Step 4.

4. A/C CLUTCH GROUND CIRCUIT OPEN



106601

Fig. 26: Checking A/C Clutch Ground Circuit
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Connect the C1 TIPM harness connector.
3. Using a 12-volt test light connected to 12-volts, probe the (Z901) A/C Clutch ground circuit at the A/C Compressor Clutch harness connector.

Does the test light illuminate brightly?

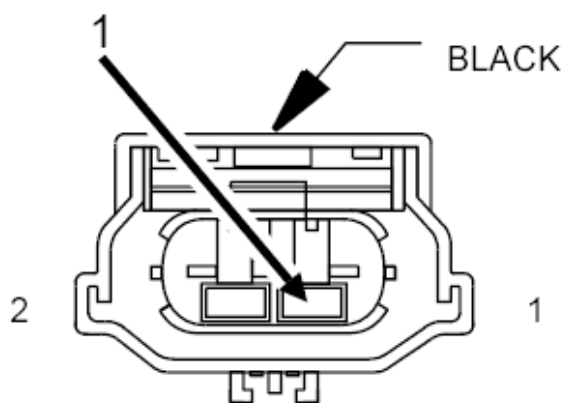
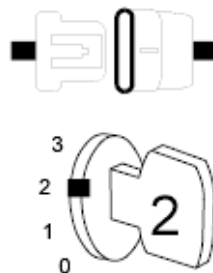
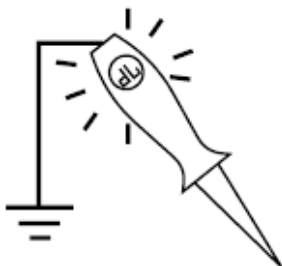
Yes

- Go to Step 5.

No

- Repair the excessive resistance in the (Z901) A/C Clutch ground circuit.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

5. A/C COMPRESSOR CLUTCH



CLUTCH-A/C
COMPRESSOR

106603

Fig. 27: Checking A/C Clutch Control Output Circuit
Courtesy of CHRYSLER LLC

1. Ignition on, engine not running.
2. Using the scan tool under the TIPM Actuators, actuate the A/C Clutch.
3. With a 12-volt test light connected to ground, probe the (C3) A/C Clutch Control Output circuit at

the A/C Compressor Clutch harness connector.

Does the test light illuminate accordingly during the actuation?

Yes

- Verify that there is good pin to terminal contact in the A/C Clutch, TIPM, and Powertrain Control Module connectors. If OK, replace the A/C Compressor Clutch per Service Information.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

No

- Go to Step 6.

6. TOTALLY INTEGRATED POWER MODULE (TIPM)

1. Using **Fig. 23** as a guide, inspect the wiring and connectors between the A/C Clutch, TIPM, and the Powertrain Control Module (PCM).
2. Look for any chafed, pierced, pinched, or partially broken wires.
3. Look for broken, bent, pushed out or corroded terminals. Verify that there is good pin to terminal contact in the A/C Clutch, TIPM, and Powertrain Control Module connectors.
4. Perform any Technical Service Bulletins that may apply.

Were any problems found?

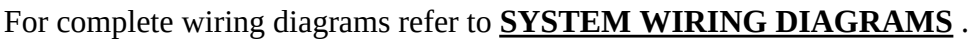
Yes

- Repair as necessary.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

No

- Replace the Totally Integrated Power Module per Service Information.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

P1273-A/C CLUTCH CONTROL CIRCUIT 2 HIGH - NGC



- **When Monitored:**

With the ignition on. Battery voltage greater than 10 volts. A/C Switch on.

- **Set Condition:**

A shorted high condition has been detected in the A/C Clutch Control output circuit by the TIPM. One Trip Fault. Three good trips to turn off the MIL.

Possible Causes
(C3) A/C CLUTCH CONTROL OUTPUT CIRCUIT SHORTED TO VOLTAGE EXCESSIVE RESISTANCE IN THE (Z901) A/C CLUTCH GROUND CIRCUIT A/C COMPRESSOR CLUTCH TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC .

DIAGNOSTIC TEST

1. A/C CLUTCH OPERATION

1. Ignition on, engine not running.
2. With a scan tool under the PCM Actuators, actuate the A/C Clutch.

Is the A/C Clutch actuating?

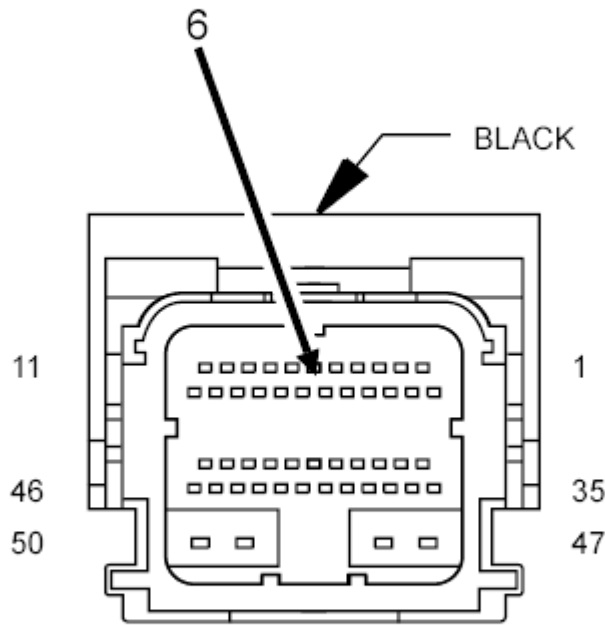
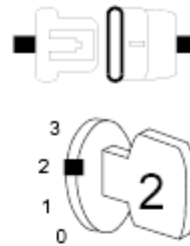
Yes

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .**

No

- Go to Step 2.

2. A/C CLUTCH CONTROL OPERATION FROM THE PCM



MODULE-
TOTALLY
INTEGRATED
POWER C1

105685

Fig. 29: Checking A/C Clutch Control Circuit
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the C1 TIPM harness connector.
3. Ignition on, engine not running.
4. Using the scan tool under the PCM Actuators, actuate the A/C Clutch.
5. With a 12-volt test light connected to ground, probe the (C13) A/C Clutch Control circuit in the C1 TIPM harness connector.

Does the test light illuminate brightly and flash on and off?

Yes

- Go to Step 3.

No

- Perform the Diagnostic Procedure for P0645-A/C CLUTCH CONTROL CIRCUIT. Refer to **DIAGNOSTIC CODE INDEX - NGC**.

3. (C3) A/C CLUTCH CONTROL OUTPUT CIRCUIT SHORTED TO VOLTAGE

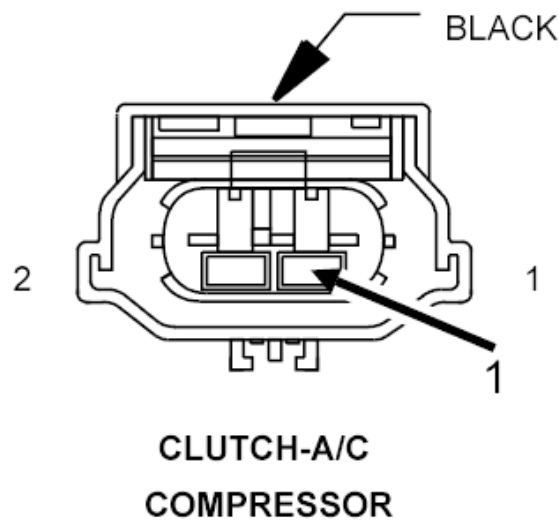
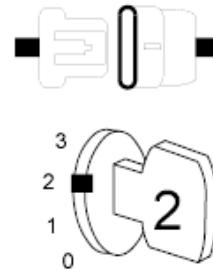
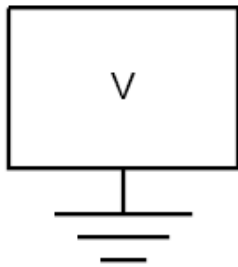


Fig. 30: A/C Clutch Control Output Circuit
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the A/C Compressor Clutch harness connector.
3. Ignition on, engine not running.

4. Measure the voltage on the (C3) A/C Clutch Control Output circuit at the A/C Compressor Clutch harness connector.

Is there any voltage present?

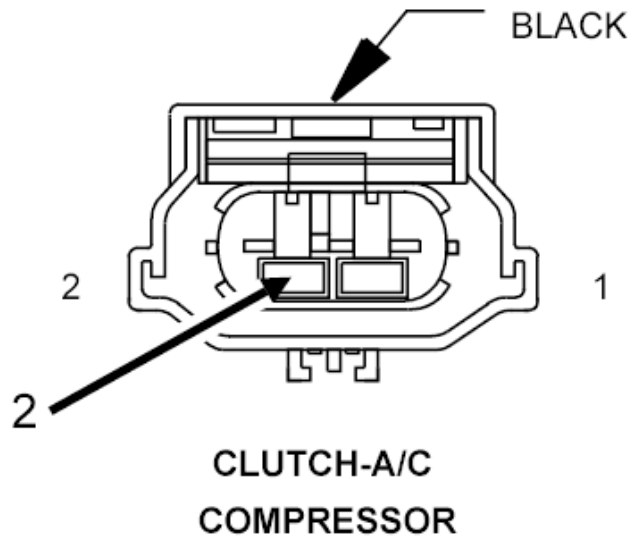
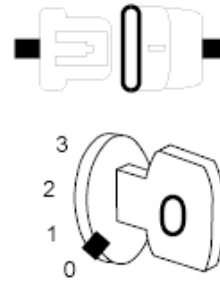
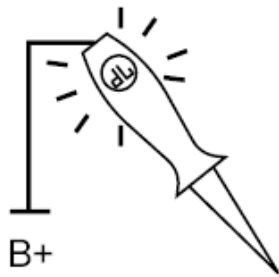
Yes

- Repair the short to voltage in the (C3) A/C Clutch Control Output circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Go to Step 4.

4. A/C CLUTCH GROUND CIRCUIT OPEN



106601

Fig. 31: Checking A/C Clutch Ground Circuit
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Connect the C1 TIPM harness connector.
3. Using a 12-volt test light connected to 12-volts, probe the (Z901) A/C Clutch ground circuit at the A/C Compressor Clutch harness connector.

Does the test light illuminate brightly?

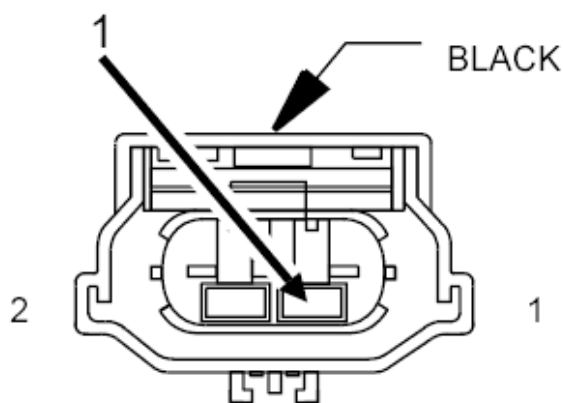
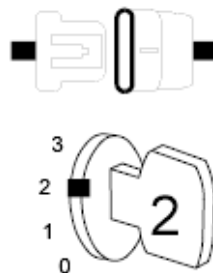
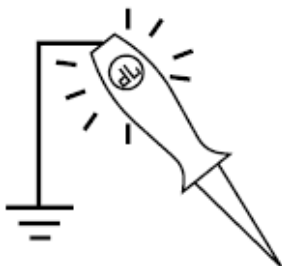
Yes

- Go to Step 5.

No

- Repair the excessive resistance in the (Z901) A/C Clutch ground circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC**.

5. A/C COMPRESSOR CLUTCH



CLUTCH-A/C
COMPRESSOR

106603

Fig. 32: Checking A/C Clutch Control Output Circuit
Courtesy of CHRYSLER LLC

1. Ignition on, engine not running.
2. Using the scan tool under the TIPM Actuators, actuate the A/C Clutch.
3. With a 12-volt test light connected to ground, probe the (C3) A/C Clutch Control Output circuit at

the A/C Compressor Clutch harness connector.

Does the test light illuminate accordingly during the actuation?

Yes

- Verify that there is good pin to terminal contact in the A/C Clutch, TIPM, and Powertrain Control Module connectors. If OK, replace the A/C Compressor Clutch per Service Information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Go to Step 6.

6. TOTALLY INTEGRATED POWER MODULE (TIPM)

1. Using **Fig. 28** as a guide, inspect the wiring and connectors between the A/C Clutch, TIPM, and the Powertrain Control Module (PCM).
2. Look for any chafed, pierced, pinched, or partially broken wires.
3. Look for broken, bent, pushed out or corroded terminals. Verify that there is good pin to terminal contact in the A/C Clutch, TIPM, and Powertrain Control Module connectors.
4. Refer to any Technical Service Bulletins that may apply.

Were any problems found?

Yes

- Repair as necessary.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Replace the Totally Integrated Power Module per Service Information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

P1275-A/C CLUTCH CONTROL CIRCUIT 2 OVERCURRENT - GPEC

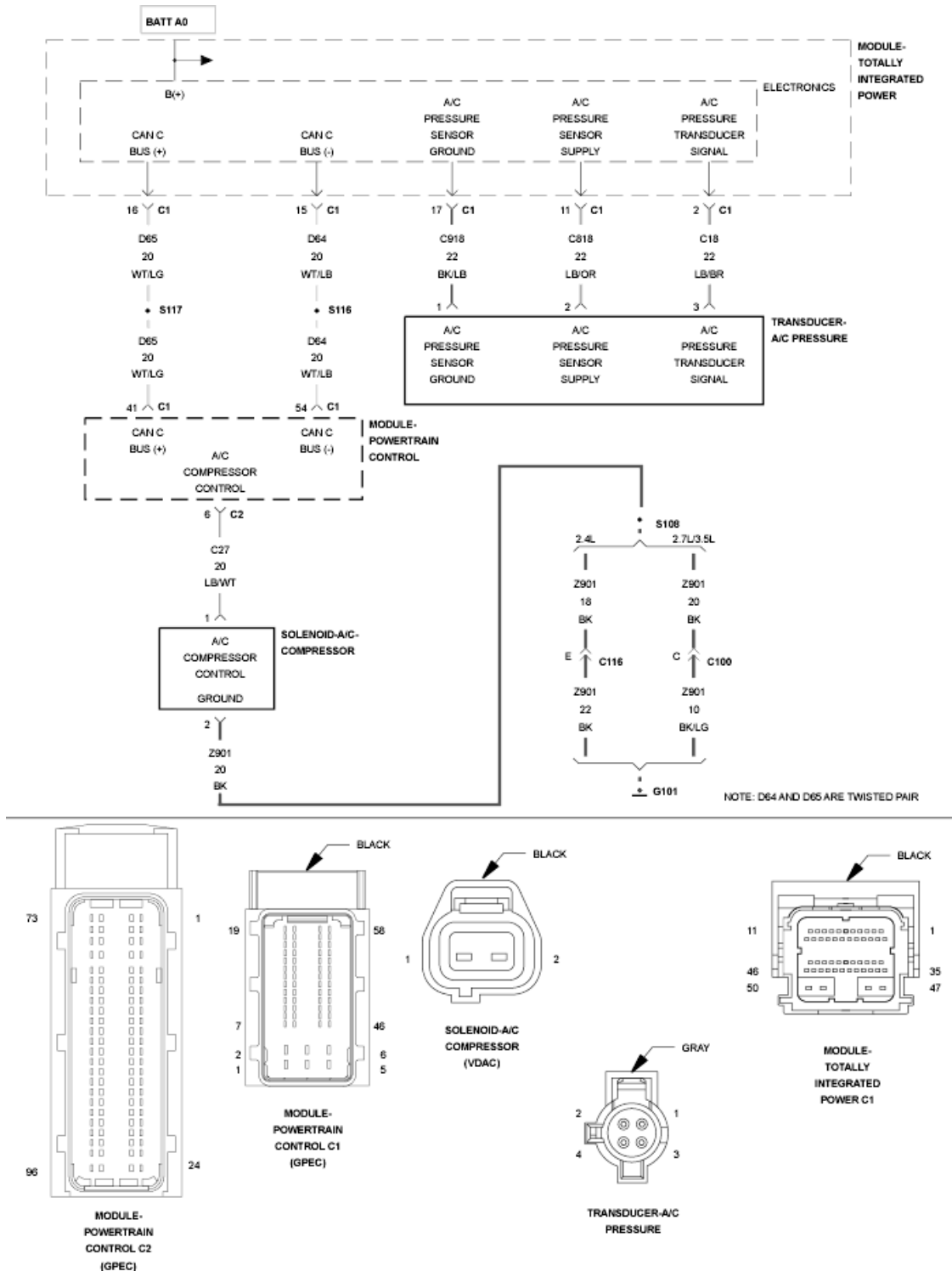


Fig. 33: A/C Clutch Control - Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

- **When Monitored:**

With the ignition on. Battery voltage greater than 10.4 volts. Totally Integrated Power Module (TIPM) requesting A/C Clutch operation.

- **Set Condition:**

An overcurrent condition is detected in the A/C Clutch control output circuit. One Trip Fault. Three good trips to turn off the MIL.

Possible Causes
TERMINAL DAMAGE OR CORROSION (Z901) A/C CLUTCH GROUND HIGH RESISTANCE EXCESSIVE RESISTANCE IN THE (C3) A/C CLUTCH CONTROL OUTPUT CIRCUIT (C3) A/C CLUTCH CONTROL OUTPUT CIRCUIT SHORTED TO GROUND A/C COMPRESSOR CLUTCH TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC .

DIAGNOSTIC TEST

1. A/C CLUTCH OPERATION

1. Ignition on, engine not running.
2. With a scan tool in the TIPM Actuators, actuate the A/C Clutch.

Is the A/C Clutch actuating?

Yes

- Perform the CHECKING FOR AN INTERMITTENT DTC diagnostic procedure. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC .**

No

- Go to Step 2.

2. VISUAL AND PHYSICAL CONNECTOR AND TERMINAL INSPECTION

1. Turn the ignition off.
2. Disconnect the C1 TIPM harness connector.
3. Disconnect the A/C Compressor Clutch harness connector.
4. Inspect the terminal and connector condition. Check for signs of corrosion build up or damage the

would compromise the terminal to controller pin connector.

NOTE: **Make sure that all in-line connectors are inspected for corrosion and/or damage.**

5. Visually inspect the wiring harness. Look for any chafed, pierced, pinched or partially broken wires hidden in the wire insulation.

Were any of the above conditions found?

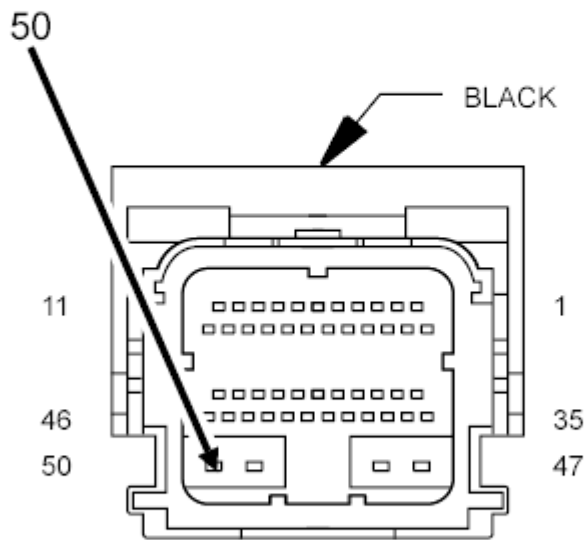
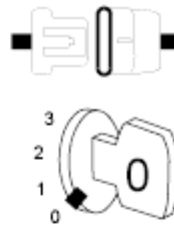
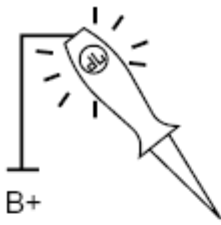
Yes

- Repair or replace as necessary.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

No

- Go to Step 3.

3. EXCESSIVE RESISTANCE IN THE (C3) A/C CLUTCH CONTROL OUTPUT CIRCUIT



MODULE-
TOTALLY
INTEGRATED
POWER C1

106607

Fig. 34: Checking A/C Clutch Control Output Circuit

Courtesy of CHRYSLER LLC

1. With a jumper wire, connect one end to the (C3) A/C Clutch Control Output circuit in the A/C Clutch harness connector and the other to a clean chassis ground.
2. Using a 12-volt test light connected to battery voltage, probe the (C3) A/C Clutch Control Output circuit in the C1 TIPM harness connector.

NOTE: The test light should be illuminated and bright. Compared the

brightness to that of a direct connection to the battery.

Does the test light illuminate brightly?

Yes

- Go to Step 4.

No

- Repair the excessive resistance in the (C3) A/C Clutch Control Output circuit.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

4. (C3) A/C CLUTCH CONTROL OUTPUT CIRCUIT SHORTED TO GROUND

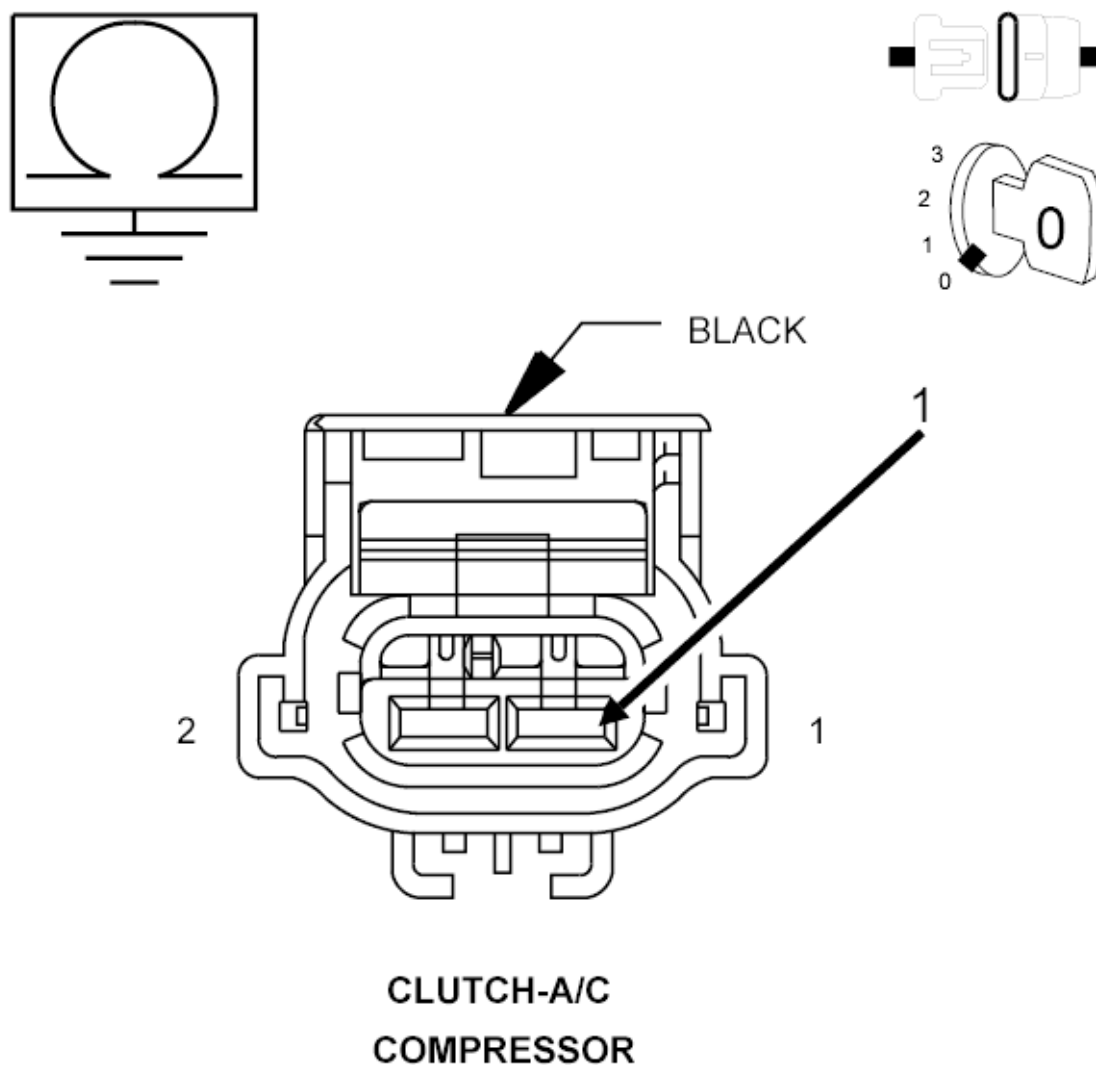


Fig. 35: Measuring Resistance Between Ground & A/C Clutch Control Output Circuit At A/C Compressor Clutch Harness Connector

Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (C3) A/C Clutch Control Output circuit at the A/C Compressor Clutch harness connector.

Is the resistance below 100 Ohms?

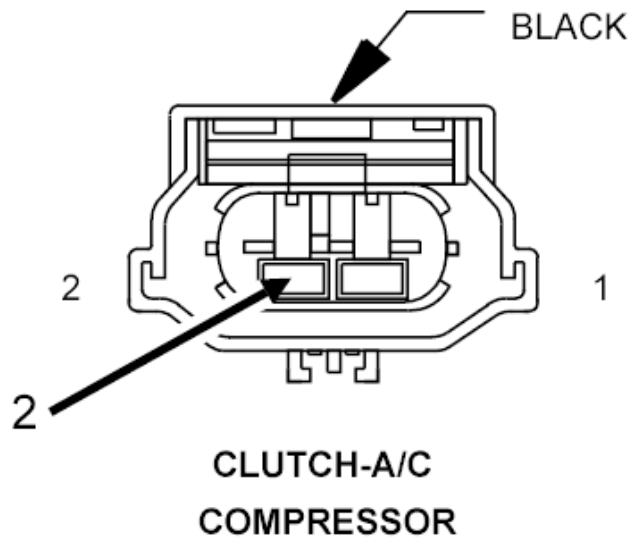
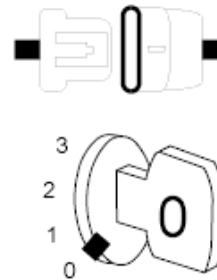
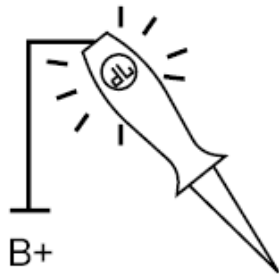
Yes

- Repair the short to ground in the (C3) A/C Clutch Control Output circuit.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

No

- Go to Step 5.

5. (Z901) A/C COMPRESSOR CLUTCH GROUND CIRCUIT



106601

Fig. 36: Checking A/C Clutch Ground Circuit
Courtesy of CHRYSLER LLC

1. Using a 12-volt test light connected to battery voltage, probe the (Z901) A/C Clutch Ground circuit in the A/C Compressor Clutch harness connector.

NOTE: The test light should be illuminated and bright. Compared the brightness to that of a direct connection to the battery.

Does the test light illuminate brightly?

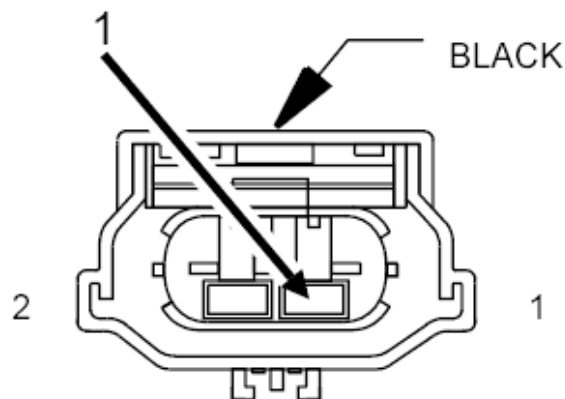
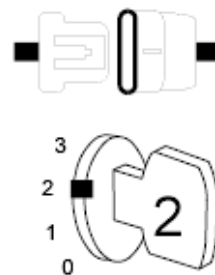
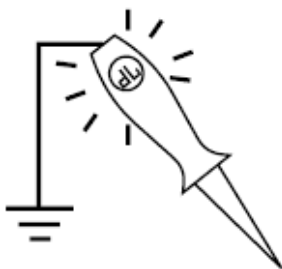
Yes

- Go to Step 6.

No

- Repair the excessive resistance in the (Z901) A/C Clutch Ground circuit.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

6. A/C CLUTCH CONTROL OUTPUT FROM TIPM



CLUTCH-A/C
COMPRESSOR

106603

Fig. 37: Checking A/C Clutch Control Output Circuit

Courtesy of CHRYSLER LLC

1. Reconnect the C1 TIPM harness connector.
2. Ignition on, engine not running.
3. With a scan tool in the TIPM Actuators, actuate the A/C Clutch.
4. Using the 12-volt test light connected to ground, probe the (C3) A/C Clutch Control Output circuit in the A/C Compressor Clutch harness connector.

Does the test light illuminate brightly?

Yes

- Replace the A/C Compressor Clutch.
- Perform the PCM Verification Test. Refer to **INTERMITTENT DTC, PCM/TCM PROGRAMMING, PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE & PCM VERIFICATION TEST - GPEC** .

No

- Replace the TIPM in accordance with the Service Information.
- Perform the BODY VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

P1275-A/C CLUTCH CONTROL CIRCUIT 2 OVERCURRENT - NGC

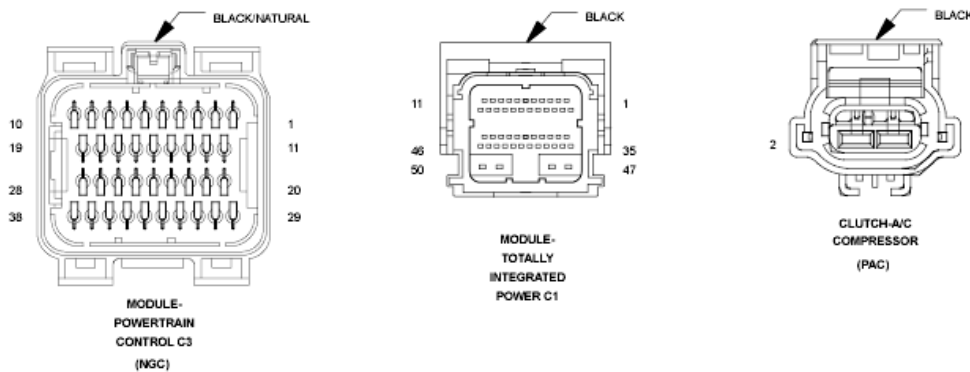
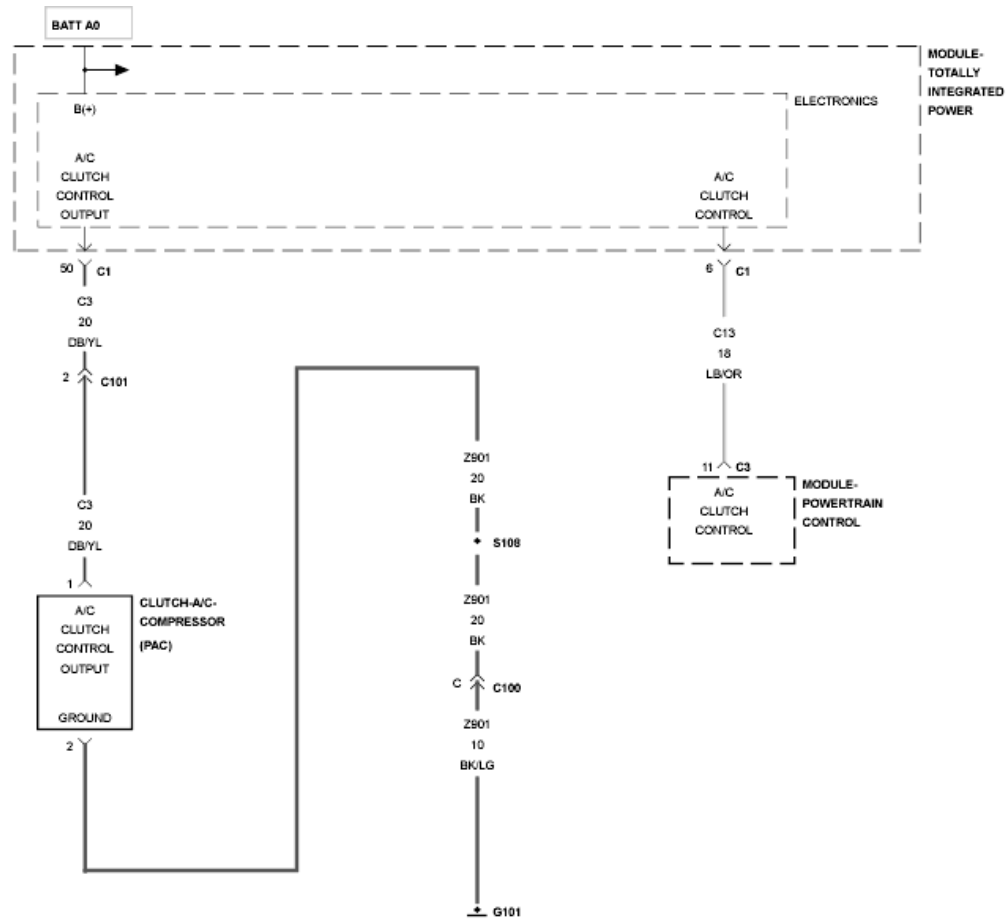


Fig. 38: A/C Clutch Control Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

- **When Monitored:**

With the ignition on. Battery voltage greater than 10.4 volts. TIPM requesting A/C Clutch operation.

- **Set Condition:**

An overcurrent condition is detected in the A/C Clutch control output circuit. One Trip Fault. Three good trips to turn off the MIL.

Possible Causes
TERMINAL DAMAGE OR CORROSION (Z901) A/C CLUTCH GROUND HIGH RESISTANCE EXCESSIVE RESISTANCE IN THE (C3) A/C CLUTCH CONTROL OUTPUT CIRCUIT (C3) A/C CLUTCH CONTROL OUTPUT CIRCUIT SHORTED TO GROUND A/C COMPRESSOR CLUTCH TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

DIAGNOSTIC TEST

1. A/C CLUTCH OPERATION

1. Ignition on, engine not running.
2. With a scan tool in the TIPM Actuators, actuate the A/C Clutch.

Is the A/C Clutch actuating?

Yes

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .**

No

- Go to Step 2.

2. VISUAL AND PHYSICAL CONNECTOR AND TERMINAL INSPECTION

1. Turn the ignition off.
2. Disconnect the C1 TIPM harness connector.
3. Disconnect the A/C Compressor Clutch harness connector.
4. Inspect the terminal and connector condition. Check for signs of corrosion build up or damage the would compromise the terminal to controller pin connector.

NOTE: **Make sure that all in-line connectors are inspected for corrosion and/or damage.**

5. Visually inspect the wiring harness. Look for any chafed, pierced, pinched or partially broken wires hidden in the wire insulation.

Were any of the above conditions found?

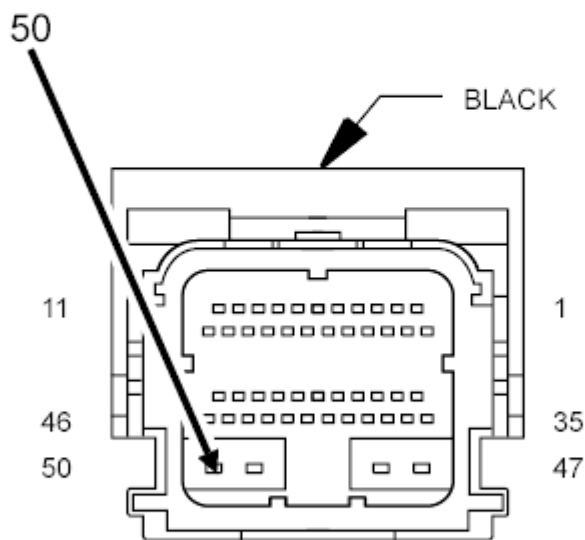
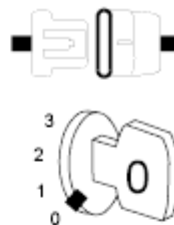
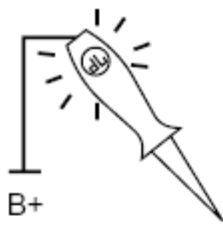
Yes

- Repair or replace as necessary.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Go to Step 3.

3. EXCESSIVE RESISTANCE IN THE (C3) A/C CLUTCH CONTROL OUTPUT CIRCUIT



MODULE-
TOTALLY
INTEGRATED
POWER C1

106607

Fig. 39: Checking A/C Clutch Control Output Circuit
Courtesy of CHRYSLER LLC

1. With a jumper wire, connect one end to the (C3) A/C Clutch Control Output circuit in the A/C Clutch harness connector and the other to a clean chassis ground.
2. Using a 12-volt test light connected to battery voltage, probe the (C3) A/C Clutch Control Output circuit in the C1 TIPM harness connector.

NOTE: The test light should be illuminated and bright. Compared the

brightness to that of a direct connection to the battery.

Does the test light illuminate brightly?

Yes

- Go to Step 4.

No

- Repair the excessive resistance in the (C3) A/C Clutch Control Output circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC**.

4. (C3) A/C CLUTCH CONTROL OUTPUT CIRCUIT SHORTED TO GROUND

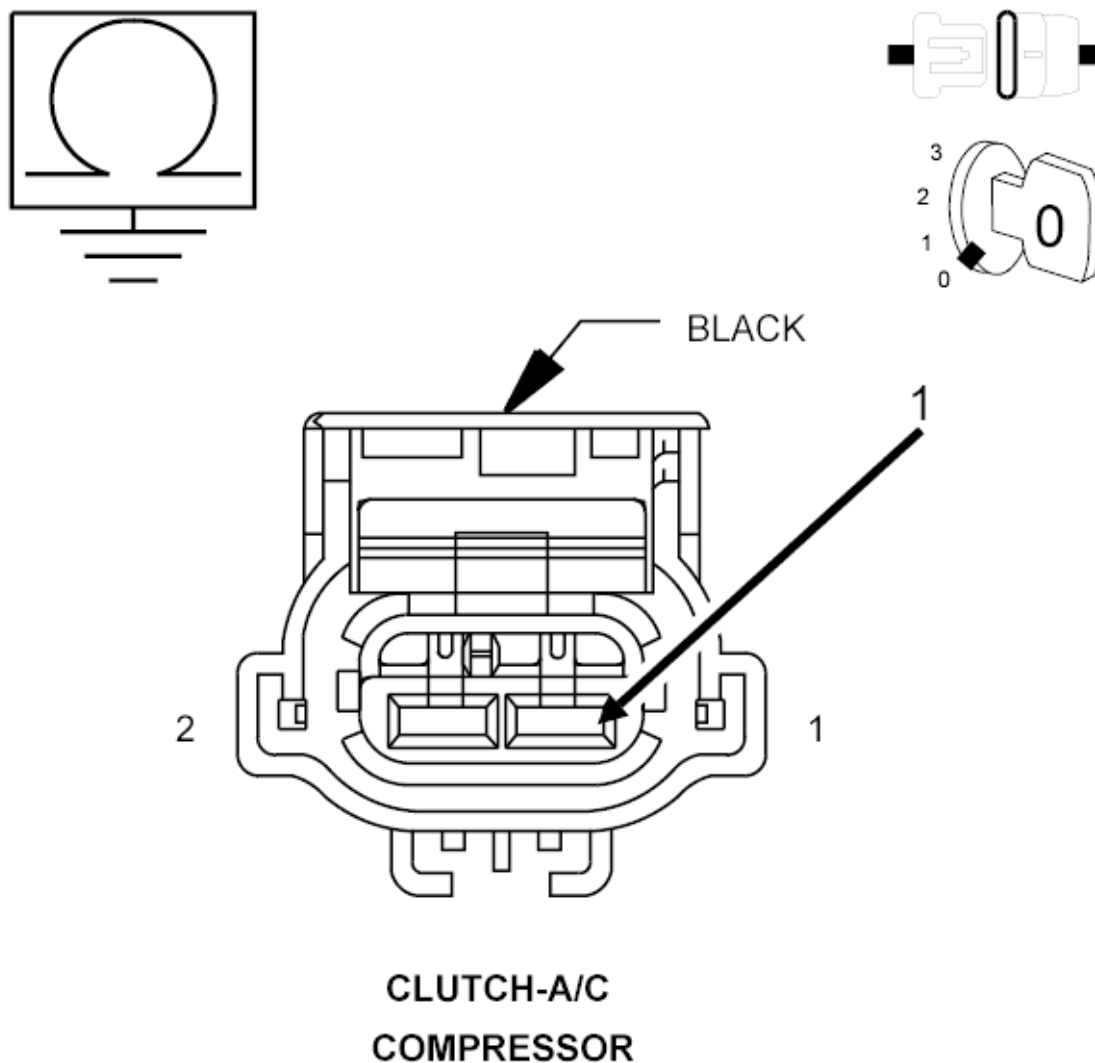


Fig. 40: Measuring Resistance Between Ground & A/C Clutch Control Output Circuit At A/C Compressor Clutch Harness Connector

Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (C3) A/C Clutch Control Output circuit at the A/C Compressor Clutch harness connector.

Is the resistance below 100 Ohms?

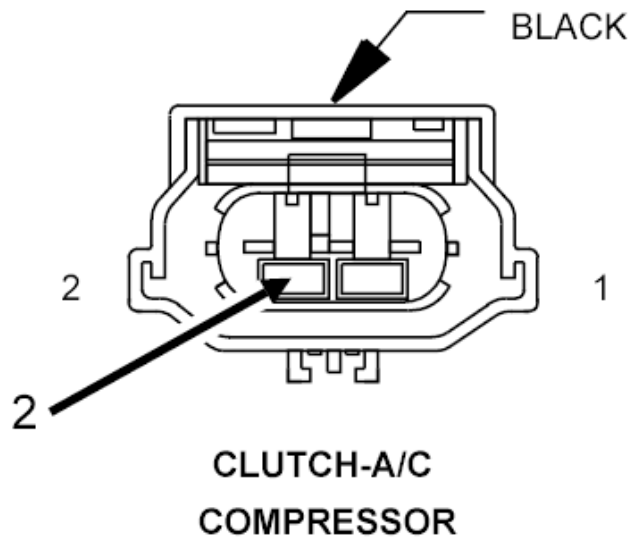
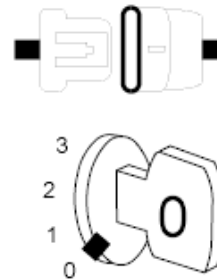
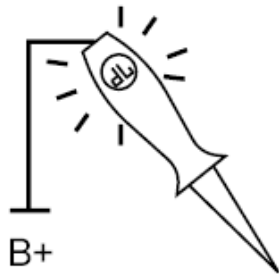
Yes

- Repair the short to ground in the (C3) A/C Clutch Control Output circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC**.

No

- Go to Step 5.

5. (Z901) A/C COMPRESSOR CLUTCH GROUND CIRCUIT



106601

Fig. 41: Checking A/C Clutch Ground Circuit
Courtesy of CHRYSLER LLC

1. Using a 12-volt test light connected to battery voltage, probe the (Z901) A/C Clutch Ground circuit in the A/C Compressor Clutch harness connector.

NOTE: The test light should be illuminated and bright. Compared the brightness to that of a direct connection to the battery.

Does the test light illuminate brightly?

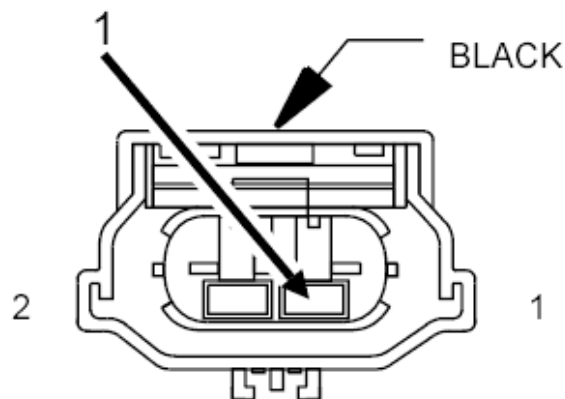
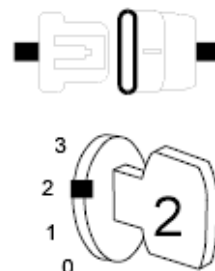
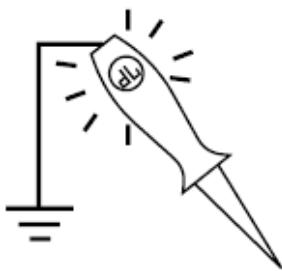
Yes

- Go to Step 6.

No

- Repair the excessive resistance in the (Z901) A/C Clutch Ground circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

6. A/C CLUTCH CONTROL OUTPUT FROM TIPM



CLUTCH-A/C
COMPRESSOR

106603

Fig. 42: Checking A/C Clutch Control Output Circuit

Courtesy of CHRYSLER LLC

1. Reconnect the C1 TIPM harness connector.
2. Ignition on, engine not running.
3. With a scan tool in the TIPM Actuators, actuate the A/C Clutch.
4. Using the 12-volt test light connected to ground, probe the (C3) A/C Clutch Control Output circuit in the A/C Compressor Clutch harness connector.

Does the test light illuminate brightly?

Yes

- Replace the A/C Compressor Clutch.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Replace the TIPM in accordance with the Service Information.
- Perform the BODY VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

P1277-STARTER CONTROL CIRCUIT 2 LOW (TIPM)

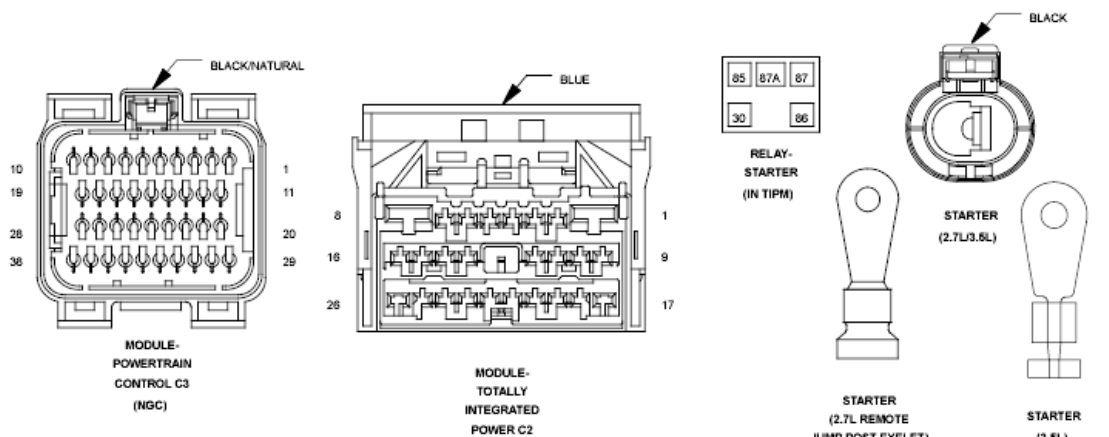
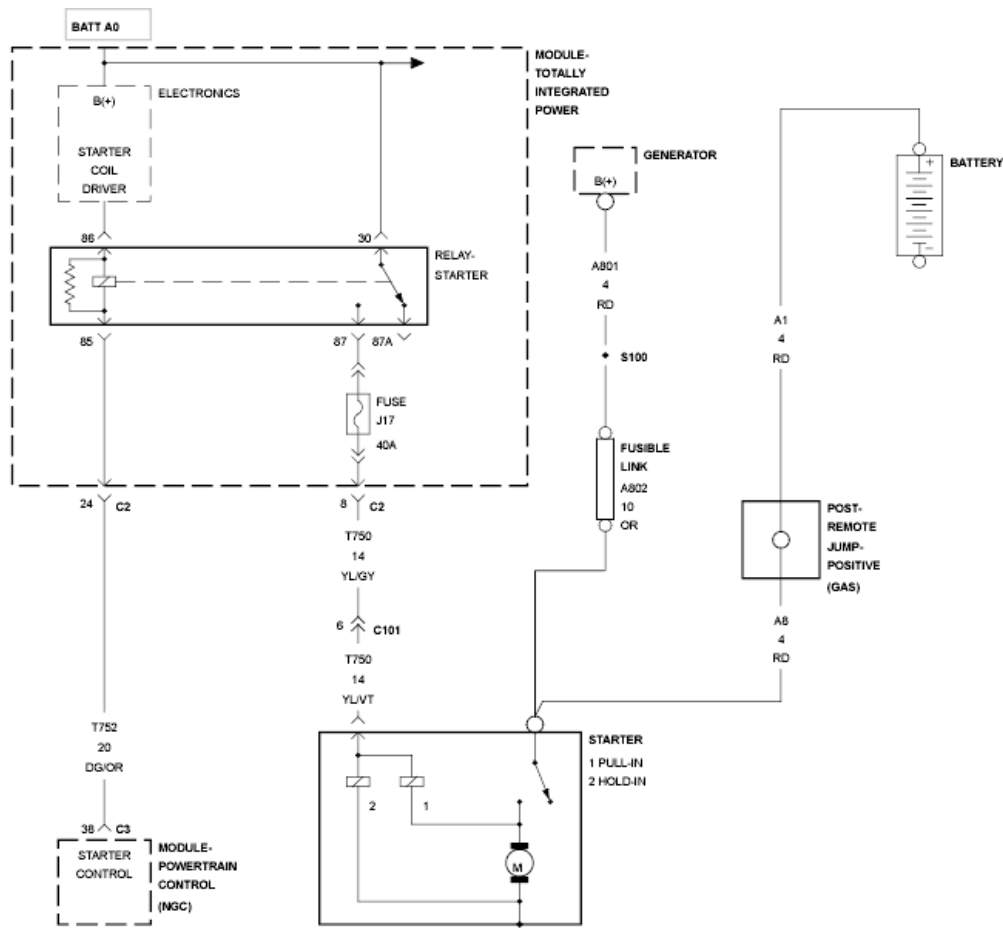


Fig. 43: Starter Control - Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** .

- **When Monitored:**

With the ignition on. Battery voltage greater than 10.4 volts and Main Relay is on. TIPM requesting Starter operation.

- **Set Condition:**

Actual Starter state is not equal to desired state. One Trip Fault. Three good trips to turn off the MIL.

Possible Causes
(T750) STARTER CONTROL OUTPUT CIRCUIT SHORTED TO GROUND STARTER TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

DIAGNOSTIC TEST

1. DTC IS ACTIVE

1. Ignition on, engine not running.
2. Attempt to start the engine.
3. Ignition on, engine not running.
4. With the scan tool, select View DTCs.

Is the DTC Active at this time?

Yes

- Go to Step 2.

No

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .**

2. STARTER CONTROL OUTPUT OPERATION

1. Turn the ignition off.
2. Disconnect the Starter (1-way) harness connector.
3. With a 12-volt test light connected to ground, probe the (T750) Starter Control Output circuit in the Starter (1-way) harness connector

WARNING: When the engine is operating, do not stand in direct line with the fan. Do not put your hands near the pulleys, belts or fan. Do

not wear loose clothing. Failure to follow these instructions may result in possible serious or fatal injury.

4. Crank the engine and monitor the test light.

NOTE: **The test light should be illuminated and bright. Compare the brightness to that of a direct connection to the battery.**

Does the test light illuminate brightly?

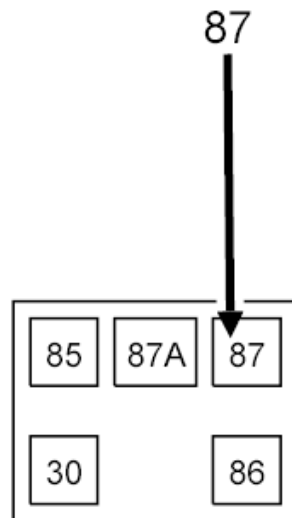
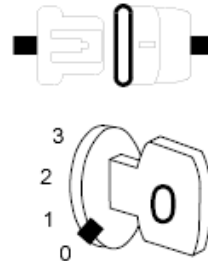
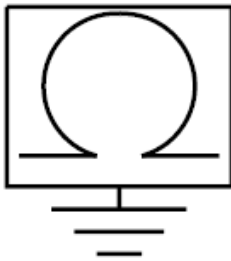
Yes

- Replace the Starter in accordance with the Service Information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Go to Step 3.

3. (T750) STARTER CONTROL OUTPUT CIRCUIT SHORTED TO GROUND



RELAY-
STARTER
(IN TIPM)

106627

Fig. 44: Measuring Resistance Between Ground & Starter Control Output Circuit At Starter Relay Terminal

Courtesy of CHRYSLER LLC

1. Turn the ignition off
2. Remove the Starter Relay.
3. Measure the resistance between ground and the (T750) Starter Control Output circuit at the Starter Relay terminal.

Is the resistance below 100 Ohms?

Yes

- Repair the short to ground in the (T750) Starter Control Output circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING**

FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

No

- Go to Step 4.

4. TOTALLY INTEGRATED POWER MODULE

NOTE: Before continuing, check the TIPM harness connector terminals for corrosion, damage, or terminal push out. Repair as necessary.

1. Using the schematics as a guide, inspect the wire harness and connectors.
2. Pay particular attention to all Power and Ground circuits.

Were any problems found?

Yes

- Repair as necessary.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .**

No

- Replace the Totally Integrated Power Module in accordance with the Service Information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .**

P1278-STARTER CONTROL CIRCUIT 2 HIGH (TIPM)

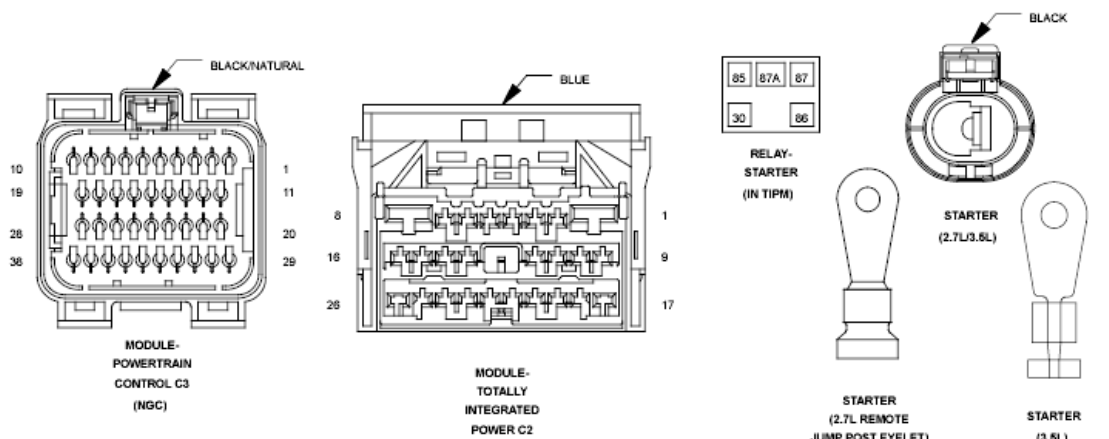
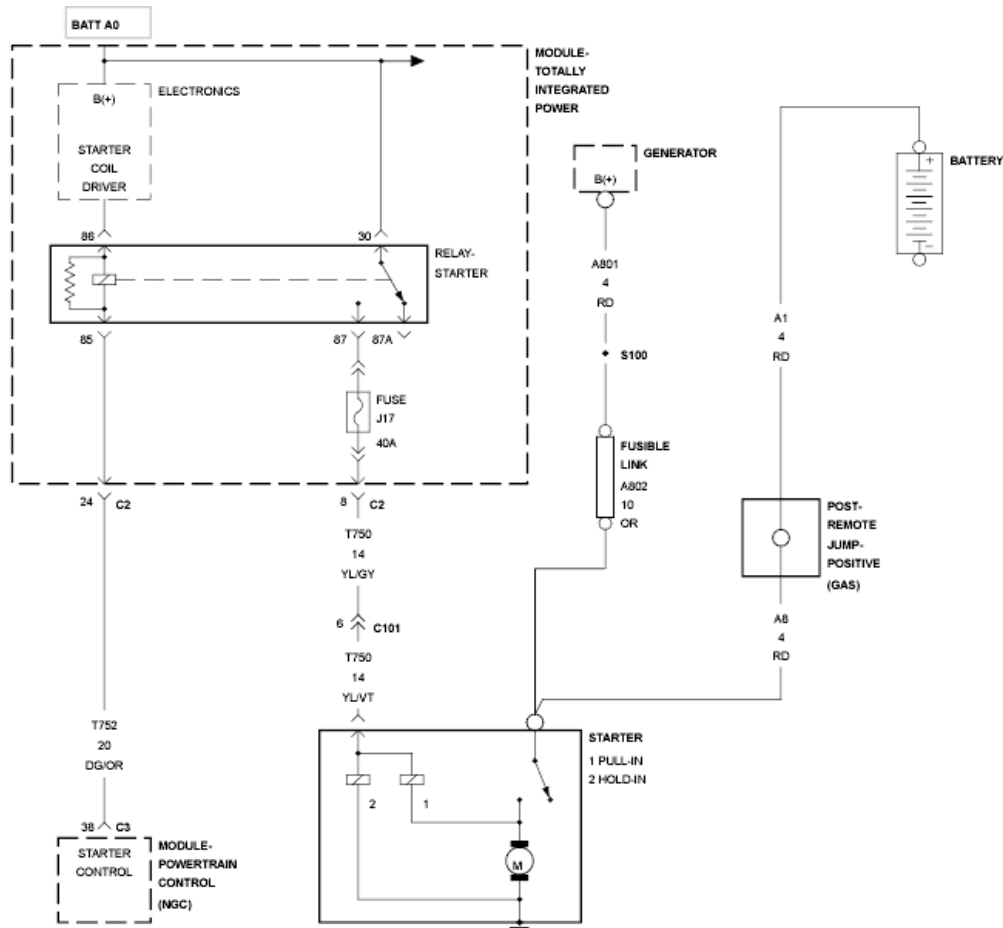


Fig. 45: Starter Control - Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

- **When Monitored:**

With the ignition on. Battery voltage greater than 10.4 volts and the Main Relay on. TIPM requesting Starter operation.

- **Set Condition:**

Actual Starter state is not equal to desired state. One Trip Fault. Three good trips to turn off the MIL.

Possible Causes
(T750) STARTER CONTROL OUTPUT CIRCUIT SHORTED TO BATTERY VOLTAGE
STARTER MOTOR
TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

DIAGNOSTIC TEST

1. DTC IS ACTIVE

1. Ignition on, engine not running.
2. With the scan tool, select View DTCs.

Is the DTC Active at this time?

Yes

- Go to Step 2.

No

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .**

2. STARTER CONTROL OUTPUT VERIFICATION

1. Turn the ignition off.
2. Remove the Starter Relay.
3. Turn the ignition on.
4. Measure the voltage of the (T750) Starter Control Output circuit in the Starter Relay terminal.

Is there any voltage present?

Yes

- Go to Step 3.

No

- Go to Step 4.

3. (T750) STARTER CONTROL OUTPUT CIRCUIT SHORTED TO BATTERY VOLTAGE

1. Turn the ignition off
2. Disconnect the Starter (1-way) harness connector.
3. Turn the ignition on.
4. Using a voltmeter, measure the voltage of the (T750) Starter Control Output circuit at the Starter Relay terminal.

Is voltage present?

Yes

- Repair the short to battery voltage in the (T750) Starter Control Output circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Replace the Starter in accordance with the Service information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

4. TOTALLY INTEGRATED POWER MODULE

NOTE: Before continuing, check the TIPM harness connector terminals for corrosion, damage, or terminal push out. Repair as necessary.

1. Using the schematics as a guide, inspect the wire harness and connectors.
2. Pay particular attention to all Power and Ground circuits.

Were any problems found?

Yes

- Repair as necessary.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Replace the Totally Integrated Power Module per Service Information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

P1279-STARTER CONTROL CIRCUIT 2 OPEN (TIPM)

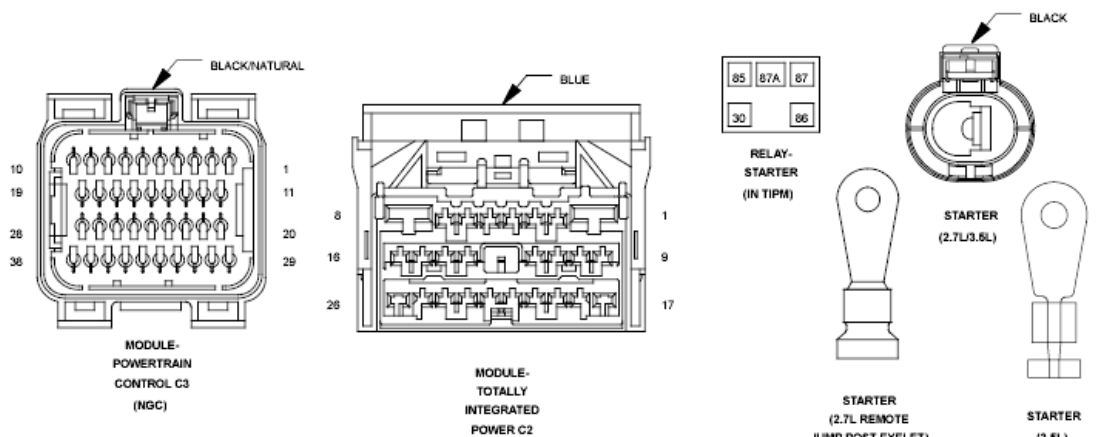
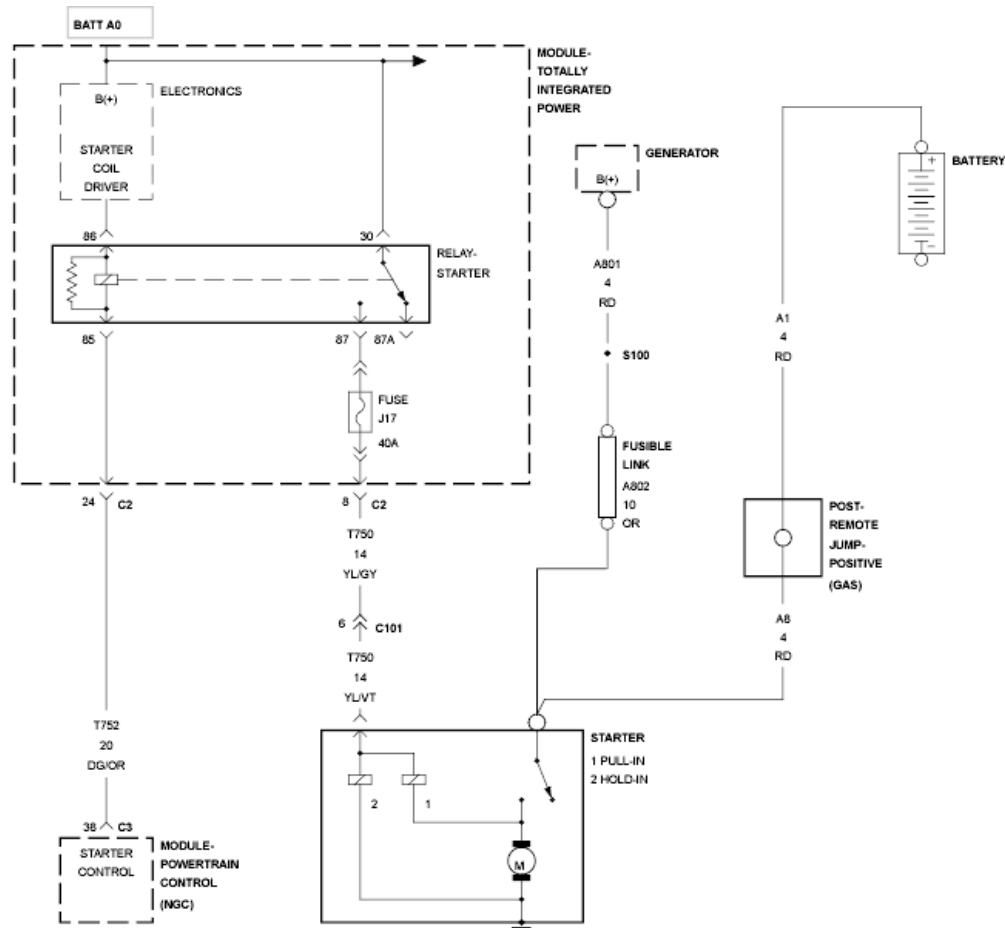


Fig. 46: Starter Control - Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

- **When Monitored:**

With the ignition on. Battery voltage greater than 10.4 volts and the Main Relay on. TIPM requesting Starter operation.

• **Set Condition:**

Actual Starter state is not equal to desired state. One Trip Fault. Three good trips to turn off the MIL.

Possible Causes
(T750) STARTER CONTROL OUTPUT CIRCUIT OPEN STARTER TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

DIAGNOSTIC TEST

1. DTC IS ACTIVE

1. Ignition on, engine not running.
2. With the scan tool, select View DTCs.

Is the status Active for this DTC?

Yes

- Go to Step 2.

No

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

2. STARTER CONTROL OUTPUT OPERATION

1. Turn the ignition off.
2. Disconnect the Starter (1-way) harness connector.
3. With a 12-volt test light connected to ground, probe the (T750) Starter Control Output circuit in the Starter (1-way) harness connector

WARNING: When the engine is operating, do not stand in direct line with the fan. Do not put your hands near the pulleys, belts or fan. Do not wear loose clothing. Failure to follow these instructions may result in possible serious or fatal injury.

4. Crank the engine and monitor the test light.

NOTE: **The test light should be illuminated and bright. Compare the brightness to that of a direct connection to the battery.**

Does the test light illuminate brightly?

Yes

- Replace the Starter in accordance with the Service Information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Go to Step 3.

3. (T750) STARTER CONTROL OUTPUT CIRCUIT OPEN

1. Turn the ignition off
2. Remove the Starter Relay.
3. Measure the resistance of the (T750) Starter Control Output circuit between the Starter Relay Terminal and the Starter harness connector.

Is the resistance below 5.0 Ohms?

Yes

- Go to Step 4.

No

- Repair the open in the (T750) Starter Control Output circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

4. TOTALLY INTEGRATED POWER MODULE

NOTE: **Before continuing, check the TIPM harness connector terminals for corrosion, damage, or terminal push out. Repair as necessary.**

1. Using the schematics as a guide, inspect the wire harness and connectors.
2. Pay particular attention to all Power and Ground circuits.

Were any problems found?

Yes

- Repair as necessary.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Replace the Totally Integrated Power Module in accordance with the Service Information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

P127A-STARTER CONTROL CIRCUIT 2 OVERCURRENT (TIPM)

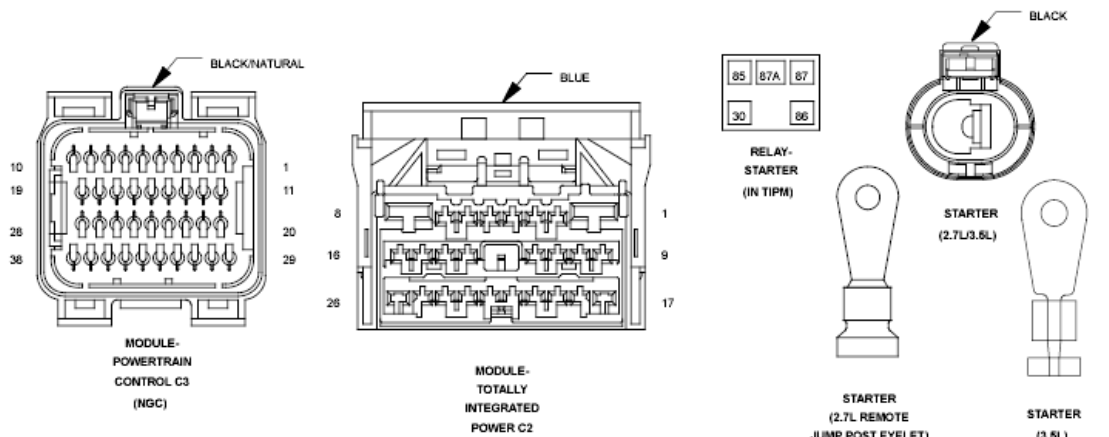
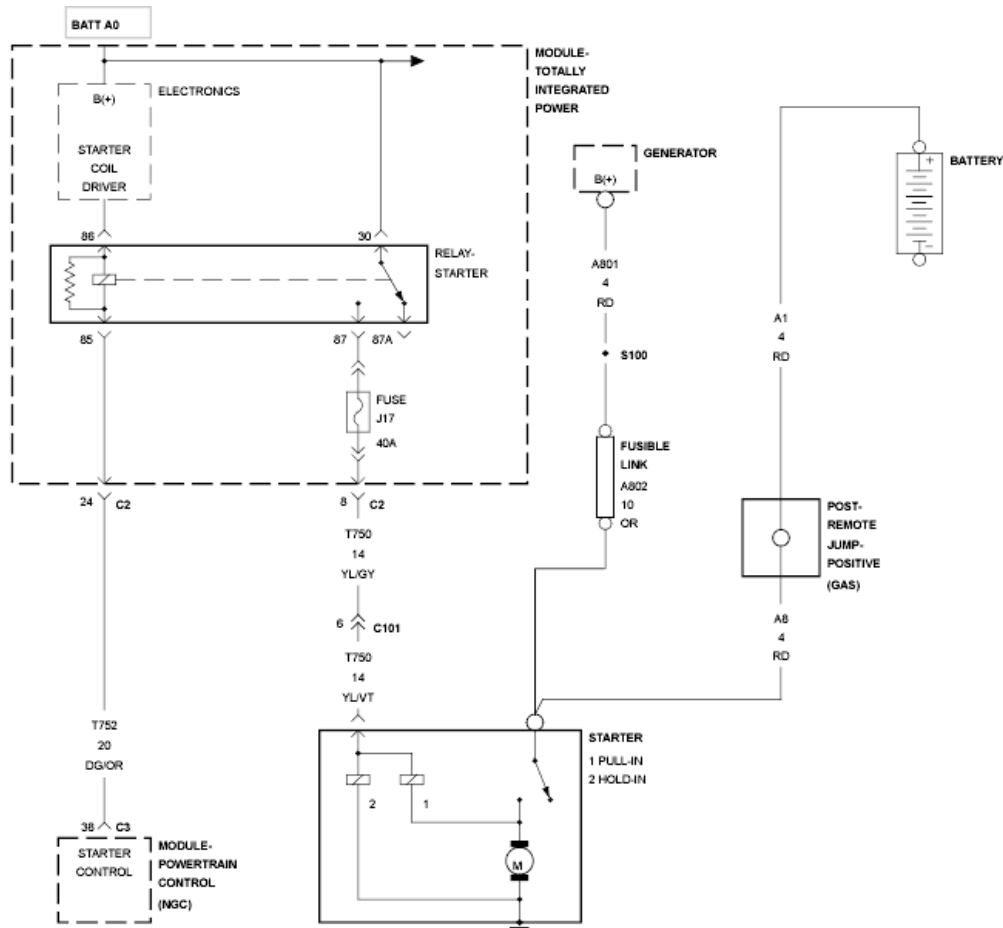


Fig. 47: Starter Control - Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

- **When Monitored:**

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With the ignition on. Battery voltage greater than 10.4 volts. TIPM requesting Starter operation.

• Set Condition:

An overcurrent condition is detected in the Starter control output circuit. One Trip Fault. Three good trips to turn off the MIL.

Possible Causes

TERMINAL DAMAGE OR CORROSION
(T750) STARTER CONTROL OUTPUT CIRCUIT HIGH RESISTANCE
STARTER
TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

DIAGNOSTIC TEST

1. DTC IS ACTIVE

1. Ignition on, engine not running.
2. With the scan tool, select View DTCs.

Is the DTC Active at this time?

Yes

- Go to Step 2.

No

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .**

2. VISUAL AND PHYSICAL CONNECTOR AND TERMINAL INSPECTION

NOTE: Ensure the Starter is bolted securely and is properly mounted.

1. Turn the ignition off.
2. Disconnect the TIPM C2 harness connector.
3. Disconnect the Starter (1-way) harness connector.
4. Inspect the terminal and connector condition. Check for signs of corrosion build up or damage that would compromise the terminal to controller pin connector.

NOTE: **Make sure that all in-line connectors are inspected for corrosion and/or damage.**

5. Visually inspect the wiring harness. Look for any chafed, pierced, pinched or partially broken wires hidden in the wire insulation.
6. Were any of the above conditions found?

Yes

- Repair or replace as necessary.
- Perform the PCM Verification Test. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure**

No

- Go to Step 3.

3. STARTER CONTROL OUTPUT OPERATION

1. Turn the ignition off.
2. Reconnect the C2 TIPM harness connector.
3. With a 12-volt test light connected to ground, probe the (T750) Starter Control Output circuit in the Starter (1-way) harness connector

WARNING: When the engine is operating, do not stand in direct line with the fan. Do not put your hands near the pulleys, belts or fan. Do not wear loose clothing. Failure to follow these instructions may result in possible serious or fatal injury.

4. Crank the engine and monitor the test light.

NOTE: **The test light should be illuminated only when cranking the engine. Compare the brightness to that of a direct connection to the battery.**

Does the test light illuminate brightly when cranking the engine and then turn off when it is not being cranked?

Yes

- Replace the Starter in accordance with the Service Information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Go to Step 4.

4. (T750) STARTER CONTROL OUTPUT CIRCUIT HIGH RESISTANCE

1. Turn the ignition off.
2. Remove the Starter Relay.
3. With a jumper wire, connect one end to the (T750) Starter Control Output circuit in the Starter harness connector and the other to a clean chassis ground.
4. Using a 12-volt test light to battery voltage, probe the (T750) Starter Control Output circuit in the Starter Relay terminal.

NOTE: **The test light should be illuminated and bright. Compared the brightness to that of a direct connection to the battery.**

Does the test light illuminate brightly?

Yes

- Go to Step 5.

No

- Repair the high resistance in the (T750) Starter Control Output circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

5. TOTALLY INTEGRATED POWER MODULE

NOTE: **Before continuing, check the TIPM harness connector terminals for corrosion, damage, or terminal push out. Repair as necessary.**

1. Using the schematics as a guide, inspect the wire harness and connectors.
2. Pay particular attention to all Power and Ground circuits.

Were any problems found?

Yes

- Repair as necessary.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- ## P127C-FUEL PUMP CONTROL CIRCUIT 2 LOW (TIPM)

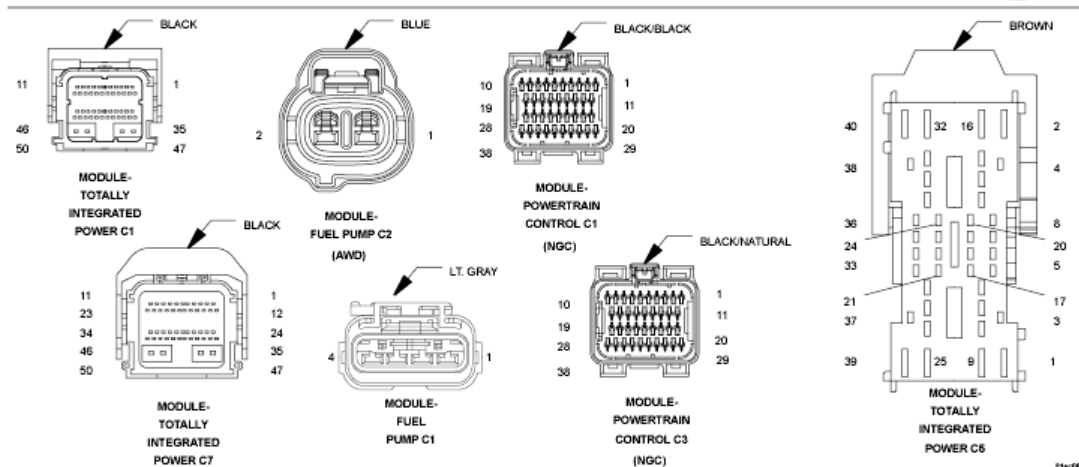


Fig. 48: Fuel Pump Module & TIPM - Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** .

- **When Monitored:**

With the ignition on. Battery voltage greater than 10.4 volts and the Main Relay on. TIPM requesting Fuel Pump operation.

- **Set Condition:**

Actual Fuel Pump state is not equal to desired state. One Trip Fault. Three good trips to turn off the MIL.

Possible Causes
(N1) FUEL PUMP CONTROL OUTPUT CIRCUIT SHORTED TO GROUND FUEL PUMP TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

DIAGNOSTIC TEST

1. DTC IS ACTIVE

NOTE: If P0627 has set along with this DTC, diagnose that DTC(s) first before continuing.

1. Ignition on, engine not running.
2. With the scan tool, select View DTCs.

Is the DTC Active at this time?

Yes

- Go to Step 2.

No

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .**

2. FUEL PUMP MODULE

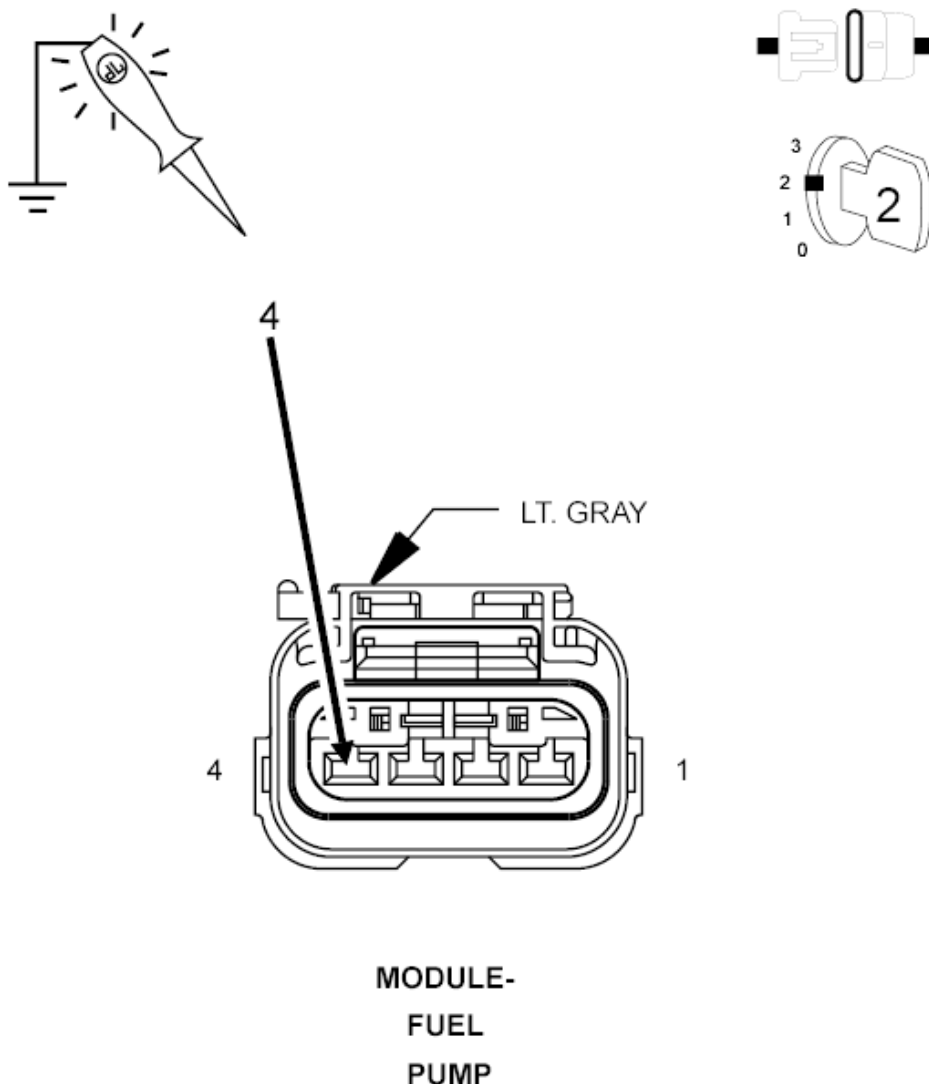


Fig. 49: Checking Fuel Pump Control Output Circuit
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the C1 Fuel Pump Module harness connector.
3. Ignition on, engine not running.
4. Using the scan tool under the TIPM Actuators, actuate the Fuel Pump.
5. With a 12-volt test light connected to ground, probe the (N1) Fuel Pump Control Output circuit at the C1 Fuel Pump Module harness connector.

NOTE: The test light should be illuminated and bright. Compared the brightness to that of a direct connection to the battery.

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Does the test light illuminate brightly and flash on and off?

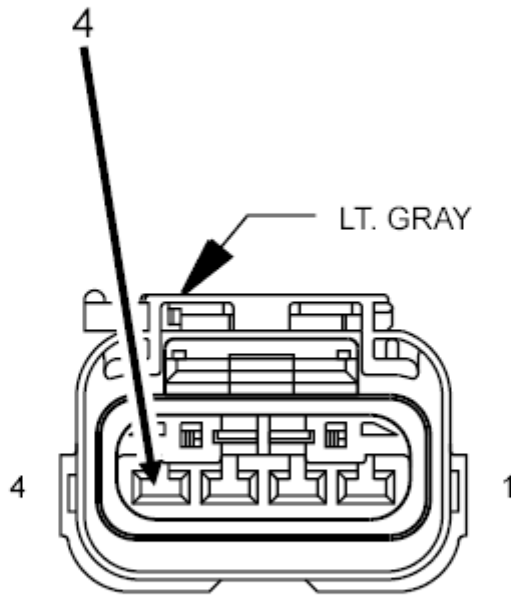
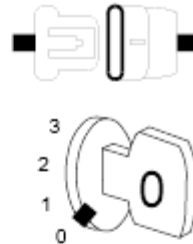
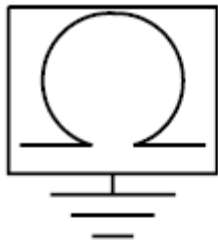
Yes

- Replace the Fuel Pump Module in accordance with the Service Information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Go to Step 3.

3. (N1) FUEL PUMP CONTROL OUTPUT CIRCUIT SHORTED TO GROUND



MODULE-
FUEL
PUMP

105655

Fig. 50: Measuring Resistance Between Ground & Fuel Pump Control Output Circuit At C1 Fuel Pump Module Harness Connector

Courtesy of CHRYSLER LLC

1. Turn the ignition off
2. Disconnect the C5 TIPM harness connector.
3. Measure the resistance between ground and the (N1) Fuel Pump Control Output circuit at the C1 Fuel Pump Module harness connector.

Is the resistance below 100 Ohms?

Yes

- Repair the short to ground in the (N1) Fuel Pump Control Output circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Go to Step 4.

4. TOTALLY INTEGRATED POWER MODULE

NOTE: Before continuing, check the TIPM harness connector terminals for corrosion, damage, or terminal push out. Repair as necessary.

1. Using the schematics as a guide, inspect the wire harness and connectors.
2. Pay particular attention to all Power and Ground circuits.

Were any problems found?

Yes

- Repair as necessary.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Replace the Totally Integrated Power Module in accordance with the Service Information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

P127D-FUEL PUMP CONTROL CIRCUIT 2 HIGH (TIPM)

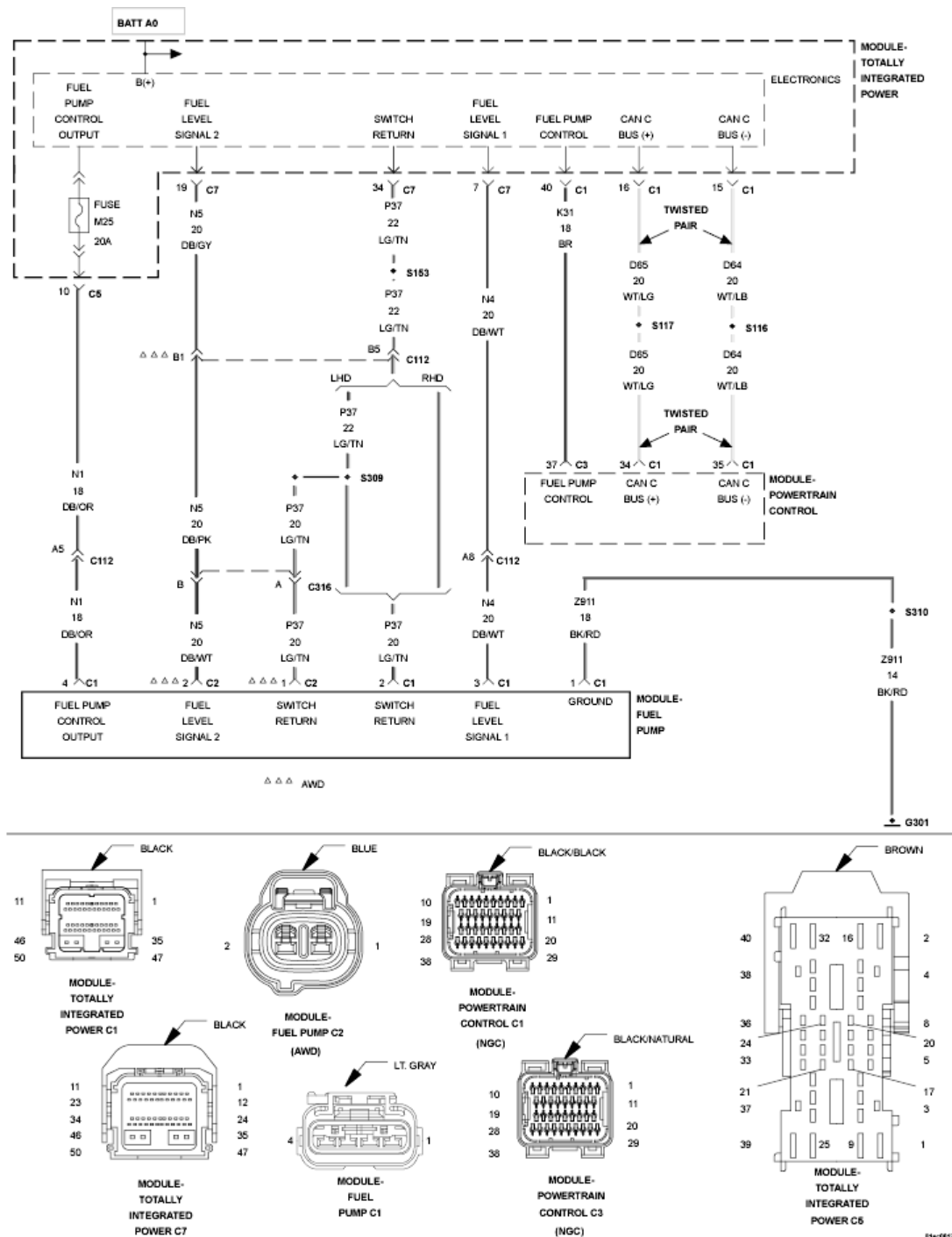


Fig. 51: Fuel Pump Module & TIPM - Circuit Schematic
 Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

• When Monitored:

With the ignition on. Battery voltage greater than 10.4 volts and the Main Relay on. TIPM requesting

Fuel Pump operation.

• **Set Condition:**

Actual Fuel Pump state is not equal to desired state. One Trip Fault. Three good trips to turn off the MIL.

Possible Causes

(N1) FUEL PUMP CONTROL OUTPUT CIRCUIT SHORTED TO BATTERY VOLTAGE
FUEL PUMP MOTOR GROUND CIRCUIT
FUEL PUMP MOTOR
TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

DIAGNOSTIC TEST

1. DTC IS ACTIVE

NOTE: If P0627 has set along with this DTC, diagnose that DTC(s) first before continuing.

1. Ignition on, engine not running.
2. With the scan tool, select View DTCs.

Is the DTC Active at this time?

Yes

- Go to Step 2.

No

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

2. (N1) FUEL PUMP CONTROL OUTPUT CIRCUIT SHORTED TO BATTERY VOLTAGE

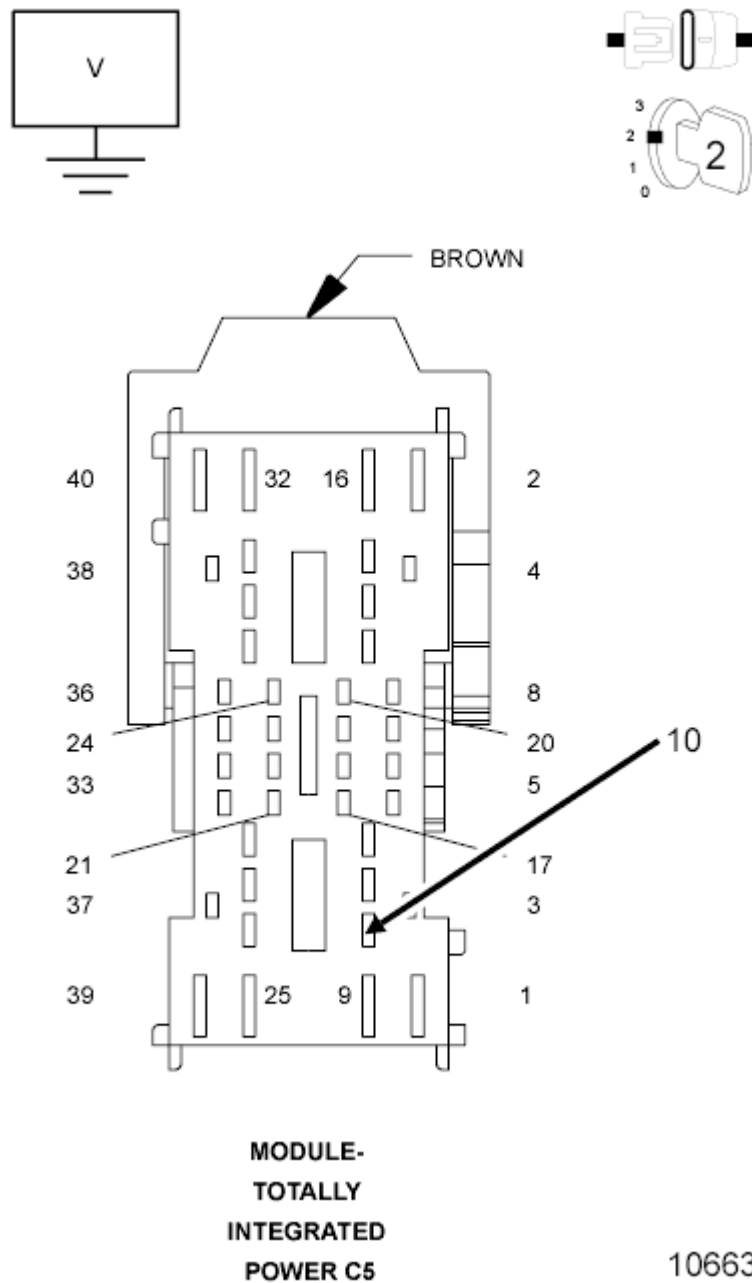


Fig. 52: Measuring Voltage Of Fuel Pump Control Output Circuit In C5 TIPM Harness Connector
 Courtesy of CHRYSLER LLC

1. Turn the ignition off
2. Disconnect the C5 TIPM harness connector.
3. Turn the ignition on.
4. Using a voltmeter, measure the voltage of the (N1) Fuel Pump Control Output circuit in the C5 TIPM harness connector.

Does the voltmeter indicate voltage present?

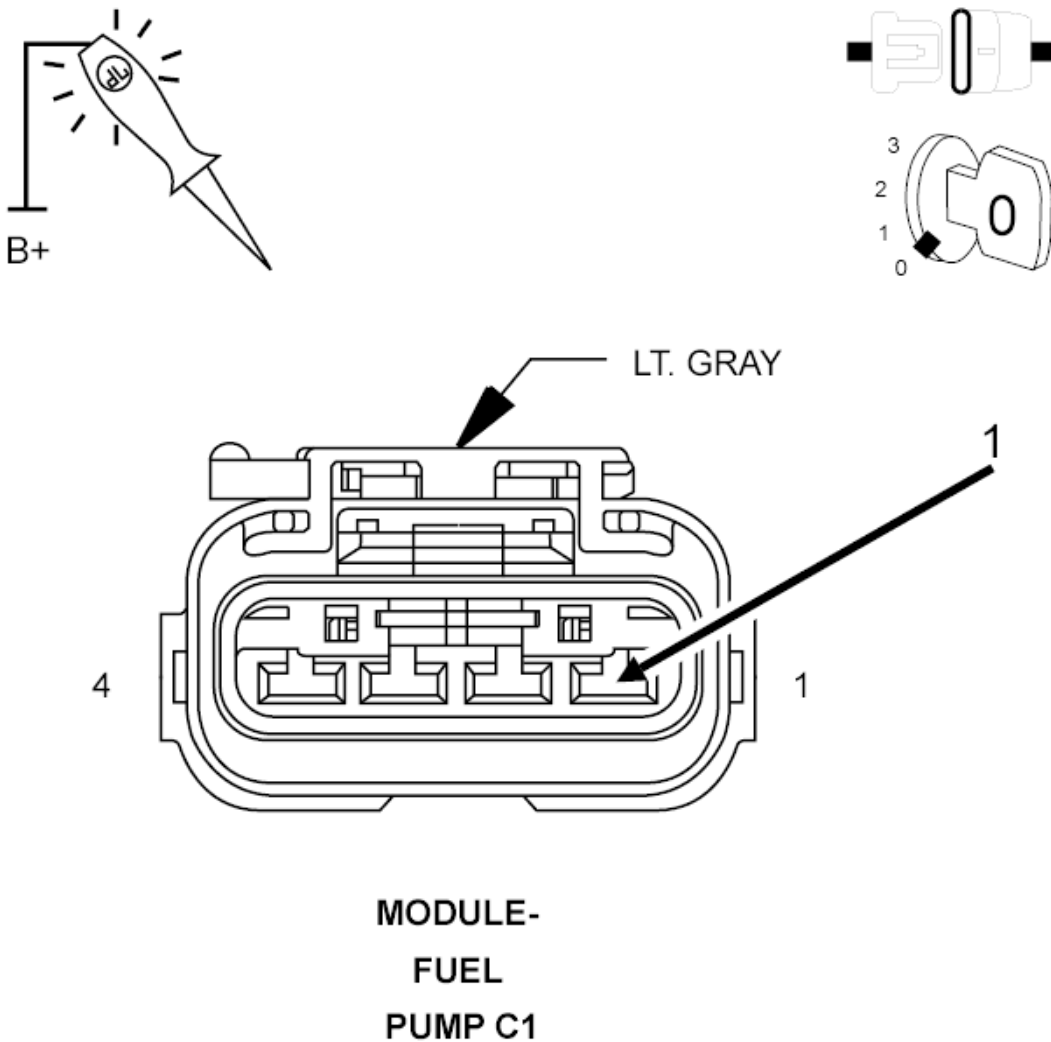
Yes

- Repair the short to battery voltage in the (N1) Fuel Pump Control Output circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Go to Step 3.

3. (Z911) FUEL PUMP MOTOR GROUND CIRCUIT



106641

Fig. 53: Checking Fuel Pump Motor Ground Circuit

Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the Fuel Pump Module harness connector.
3. Using a 12-volt test light to battery voltage, probe the (Z911) Fuel Pump Motor Ground circuit in the Fuel Pump Module harness connector.

NOTE: **The test light should be illuminated and bright. Compare the brightness to that of a direct connection to the battery.**

Does the test light illuminate brightly?

Yes

- Go to Step 4.

No

- Repair the (Z911) Fuel Pump Motor Ground circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

4. FUEL PUMP MODULE

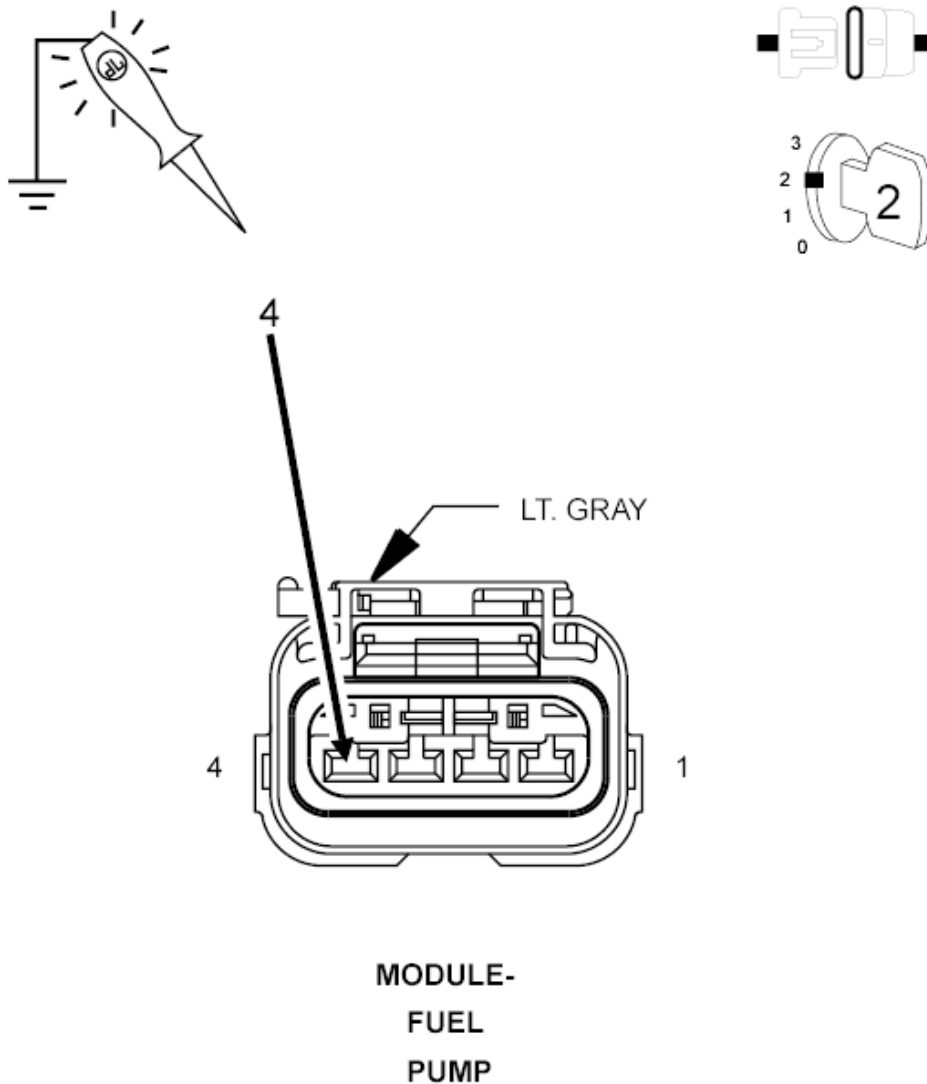


Fig. 54: Checking Fuel Pump Control Output Circuit
Courtesy of CHRYSLER LLC

1. Connect the C5 TIPM harness connectors.
2. Ignition on, engine not running.
3. Using the scan tool under the TIPM Actuators, actuate (Toggle) the Fuel Pump.
4. With a 12-volt test light connected to ground, probe the (N1) Fuel Pump Control Output circuit at the C1 Fuel Pump Module harness connector.

Does the test light illuminate brightly and flash on and off?

Yes

- Replace the Fuel Pump Module in accordance with the Service Information.
Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST. CHECKING**

FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

No

- Go to Step 5.

5. TOTALLY INTEGRATED POWER MODULE

NOTE: Before continuing, check the TIPM harness connector terminals for corrosion, damage, or terminal push out. Repair as necessary.

1. Using the schematics as a guide, inspect the wire harness and connectors.
2. Pay particular attention to all Power and Ground circuits.

Were any problems found?

Yes

- Repair as necessary.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .**

No

- Replace the Totally Integrated Power Module per Service Information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .**

P127E-FUEL PUMP CONTROL CIRCUIT 2 OPEN (TIPM)

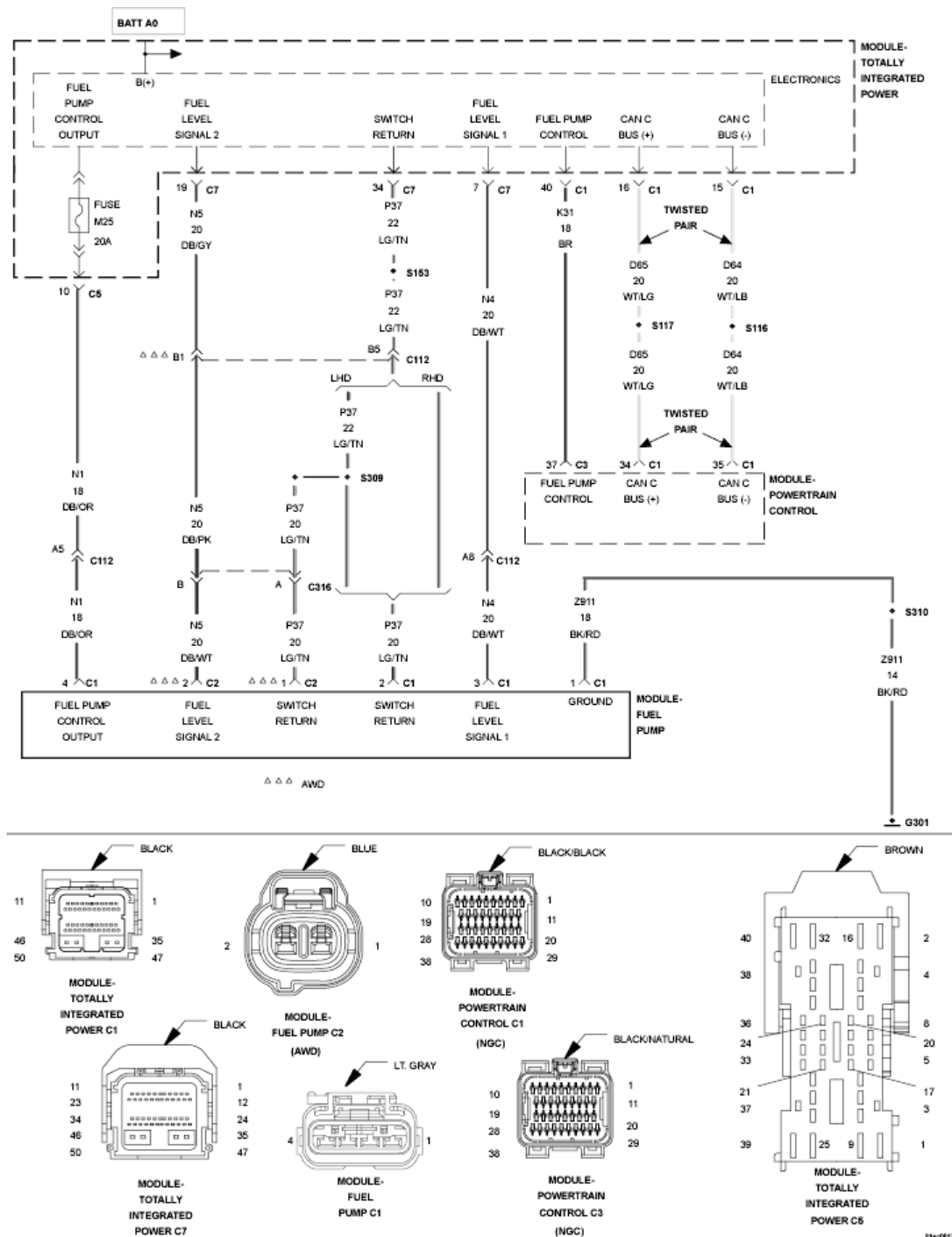


Fig. 55: Fuel Pump Module & TIPM - Circuit Schematic
 Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

• When Monitored:

With the ignition on. Battery voltage greater than 10.4 volts and the Main relay is on. TIPM requesting

Fuel Pump operation.

• **Set Condition:**

Actual Fuel Pump state is not equal to desired state. One Trip Fault. Three good trips to turn off the MIL.

Possible Causes
(N1) FUEL PUMP CONTROL OUTPUT CIRCUIT OPEN
FUEL PUMP MODULE
TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

DIAGNOSTIC TEST

1. DTC IS ACTIVE

NOTE: If P0627 has set along with this DTC, diagnose that DTC(s) first before continuing.

1. Ignition on, engine not running.
2. With the scan tool, select View DTCs.

Is the DTC Active at this time?

Yes

- Go to Step 2.

No

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .**

2. FUEL PUMP MODULE

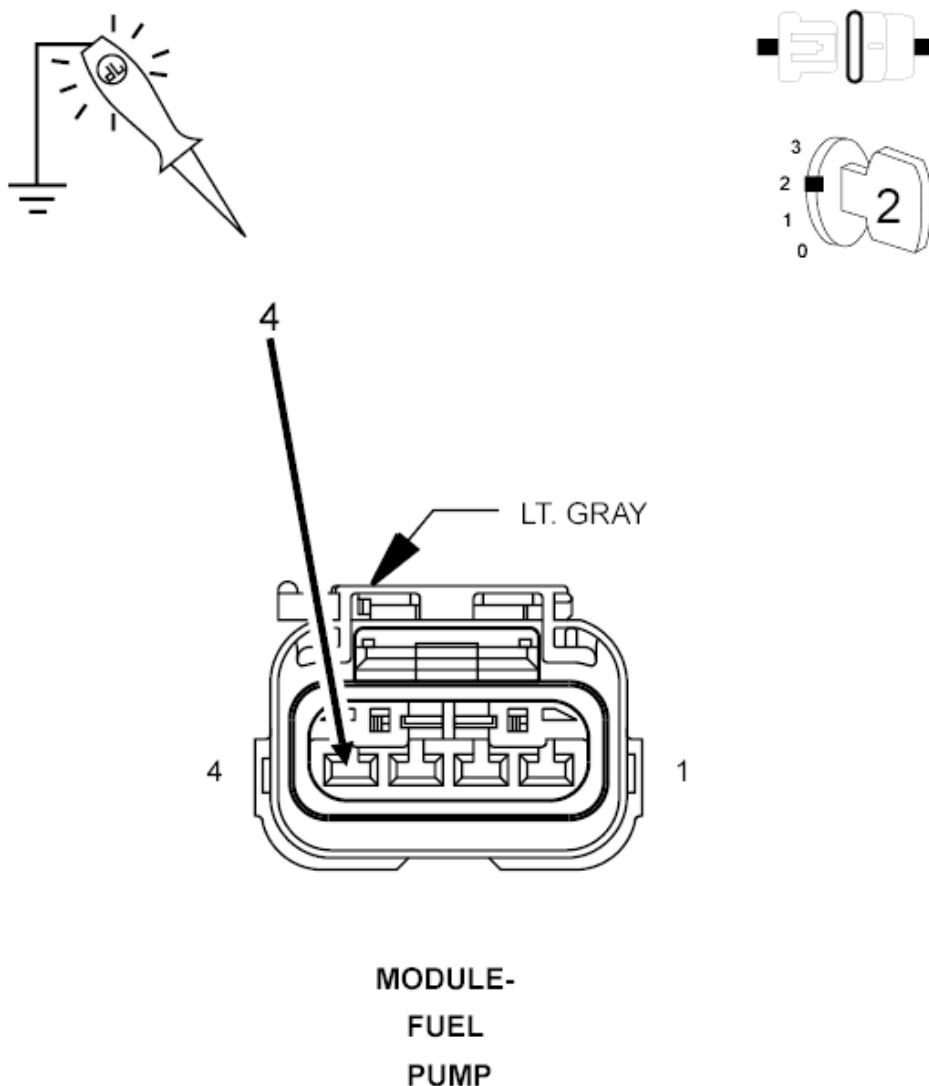


Fig. 56: Checking Fuel Pump Control Output Circuit
Courtesy of CHRYSLER LLC

1. Disconnect the C1 Fuel Pump Module harness connector.
2. Ignition on, engine not running.
3. Using the scan tool under the TIPM Actuators, actuate the Fuel Pump.
4. With a 12-volt test light connected to ground, probe the (N1) Fuel Pump Control Output circuit at the C1 Fuel Pump Module harness connector.

Does the test light illuminate brightly and flash on and off?

Yes

- Replace the Fuel Pump Module in accordance with the Service Information.
Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST. CHECKING**

FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

No

- Go to Step 3.

3. (N1) FUEL PUMP CONTROL OUTPUT CIRCUIT OPEN

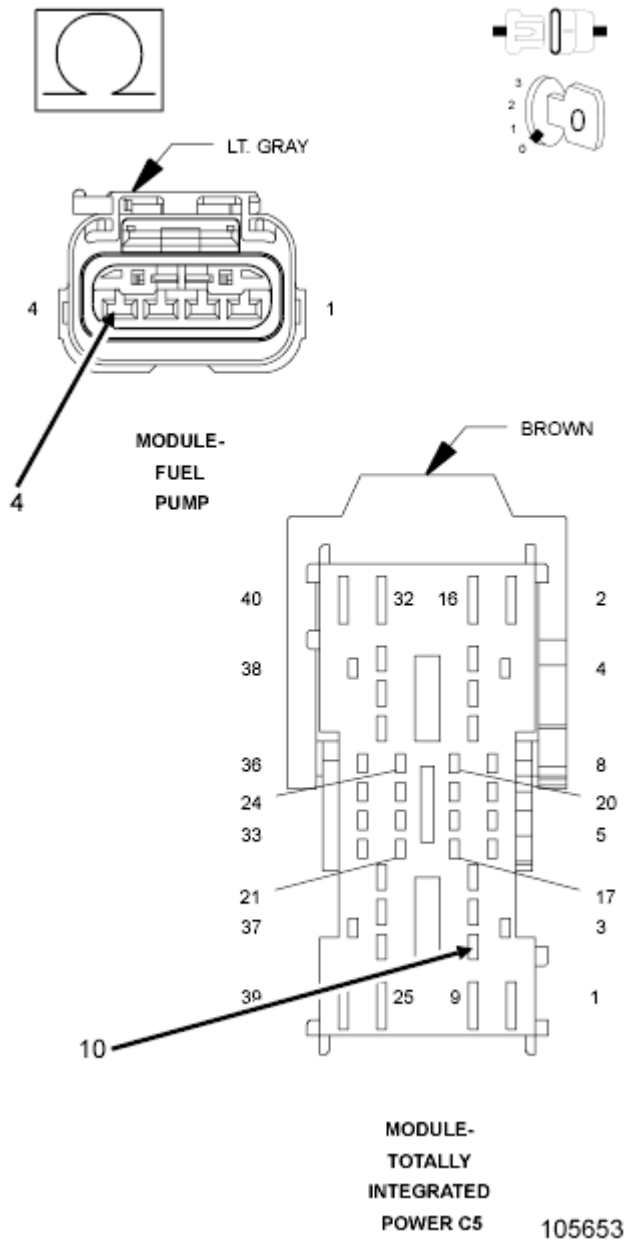


Fig. 57: Measuring Resistance Of Fuel Pump Control Output Circuit From C5 TIPM Harness Conn & C1 Fuel Pump Module Harness Conn
 Courtesy of CHRYSLER LLC

1. Turn the ignition off
2. Disconnect the C5 TIPM harness connector.
3. Measure the resistance of the (N1) Fuel Pump Control Output circuit between the TIPM C5 harness connector and the C1 Fuel Pump Module harness connector.

Is the resistance below 5.0 Ohms?

Yes

- Go to Step 4.

No

- Repair the short to ground in the (N1) Fuel Pump Control Output circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

4. TOTALLY INTEGRATED POWER MODULE

NOTE: Before continuing, check the TIPM harness connector terminals for corrosion, damage, or terminal push out. Repair as necessary.

1. Using the schematics as a guide, inspect the wire harness and connectors.
2. Pay particular attention to all Power and Ground circuits.

Were any problems found?

Yes

- Repair as necessary.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Replace the Totally Integrated Power Module in accordance with the Service Information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

P127F-FUEL PUMP CONTROL CIRCUIT 2 OVERCURRENT (TIPM)

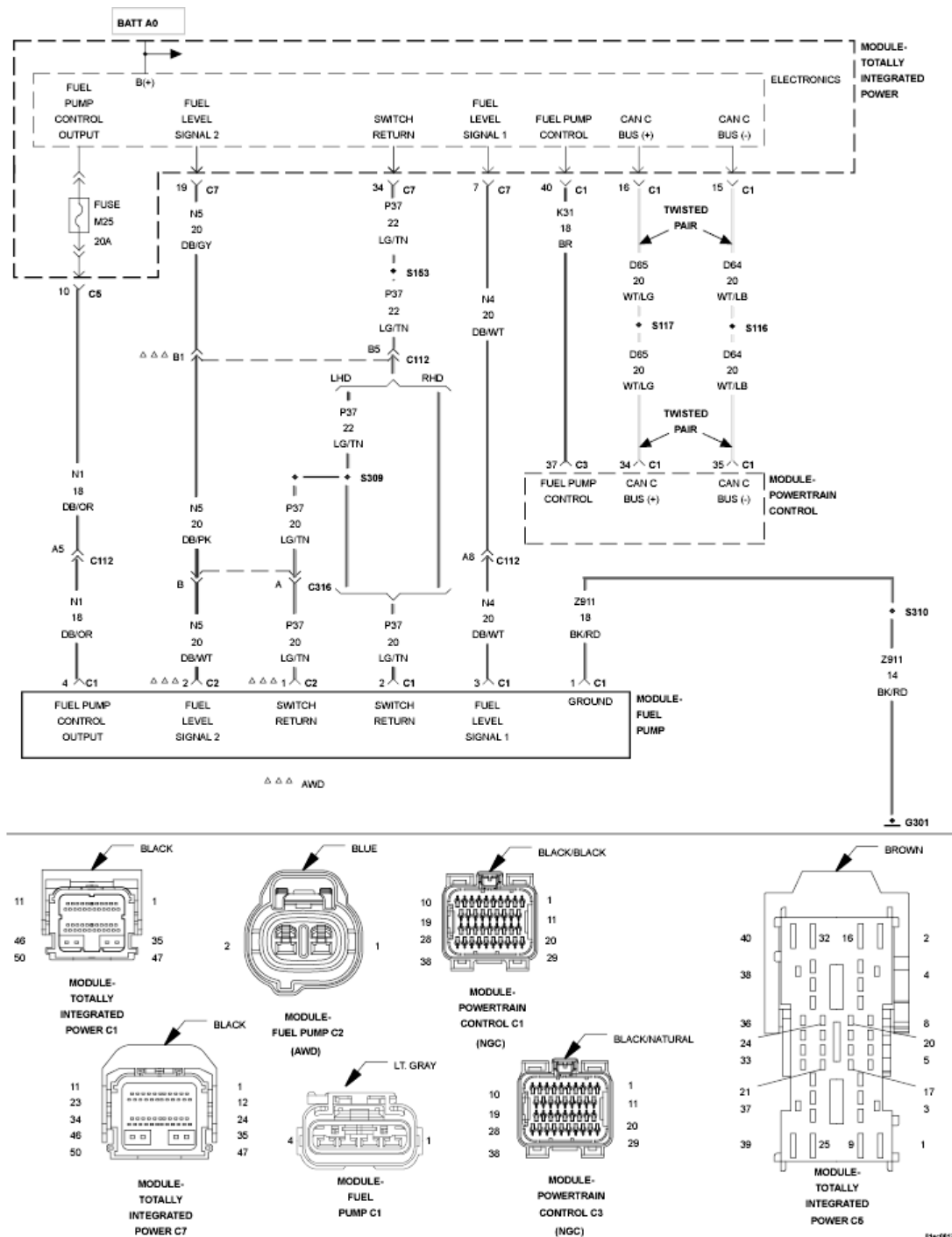


Fig. 58: Fuel Pump Module & TIPM - Circuit Schematic
 Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

• When Monitored:

With the ignition on. Battery voltage greater than 10.4 volts. TIPM requesting fuel pump operation.

- **Set Condition:**

An overcurrent condition is detected in the Fuel Pump control output circuit. One Trip Fault. Three good trips to turn off the MIL.

Possible Causes
TERMINAL DAMAGE OR CORROSION (Z911) FUEL PUMP GROUND HIGH RESISTANCE (N1) FUEL PUMP CONTROL OUTPUT CIRCUIT HIGH RESISTANCE FUEL PUMP MODULE TOTALLY INTEGRATED POWER MODULE (TIPM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

DIAGNOSTIC TEST

1. DTC IS ACTIVE

NOTE: If P0627 has set along with this DTC, diagnose that DTC(s) first before continuing.

1. Ignition on, engine not running.
2. With the scan tool, select View DTCs.

Is the DTC Active at this time?

Yes

- Go to Step 2.

No

- Refer to the CHECKING FOR AN INTERMITTENT DTC Diagnostic Procedure. Refer to PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

2. VISUAL AND PHYSICAL CONNECTOR AND TERMINAL INSPECTION

1. Turn the ignition off.
2. Disconnect the C5 TIPM harness connector.
3. Disconnect the C1 Fuel Pump Module harness connector.
4. Inspect the terminal and connector condition. Check for signs of corrosion build up or damage the would compromise the terminal to controller pin connector.

NOTE: **Make sure that all in-line connectors are inspected for corrosion and/or damage.**

5. Visually inspect the wiring harness. Look for any chafed, pierced, pinched or partially broken wires hidden in the wire insulation.
6. Were any of the above conditions found?

Yes

- Repair or replace as necessary.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

No

- Go to Step 3.

3. (N1) FUEL PUMP CONTROL OUTPUT CIRCUIT HIGH RESISTANCE

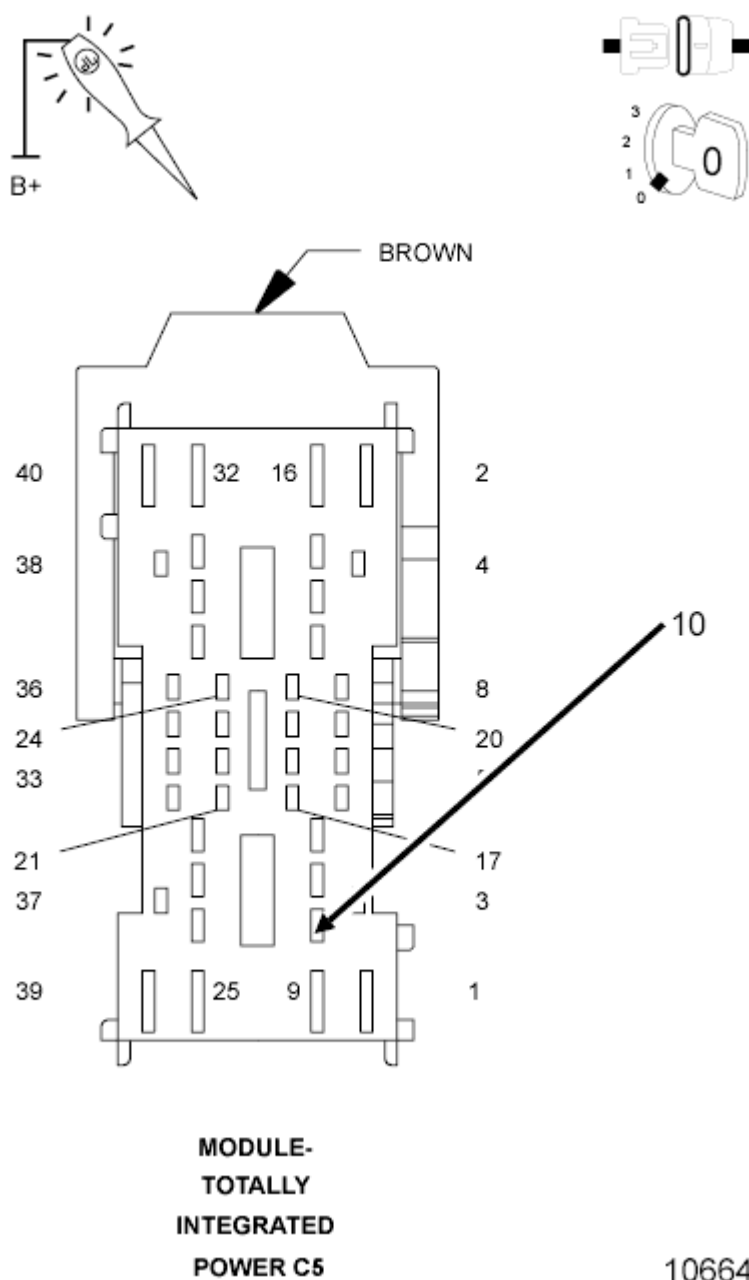


Fig. 59: Checking Fuel Pump Control Output Circuit
 Courtesy of CHRYSLER LLC

1. With a jumper wire, connect one end to the (N1) Fuel Pump Control Output circuit in the Fuel Pump Module harness connector and the other to a clean chassis ground.
2. Using a 12-volt test light to battery voltage, probe the (N1) Fuel Pump Control Output circuit in the C5 TIPM harness connector.

NOTE: The test light should be illuminated and bright. Compared the brightness to that of a direct connection to the battery.

Does the test light illuminate brightly?

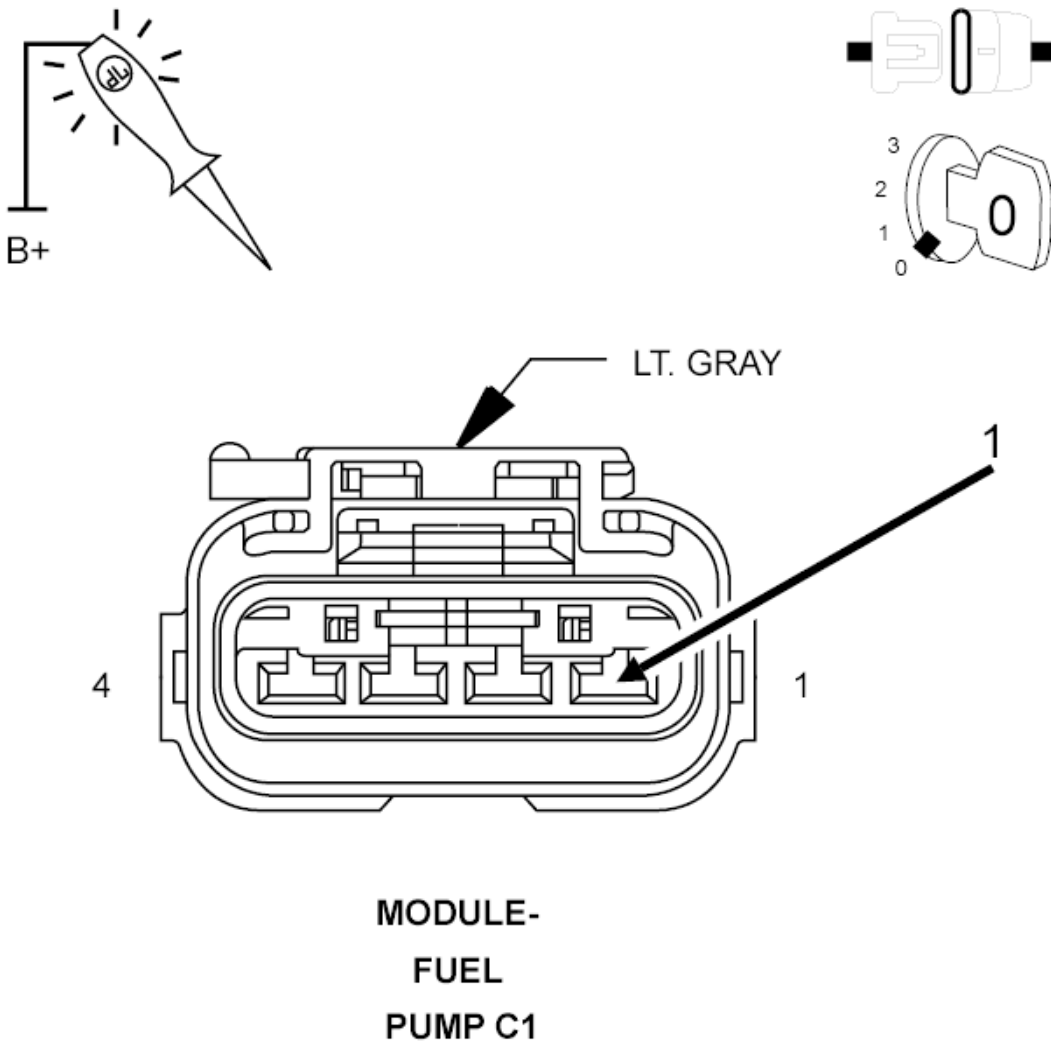
Yes

- Go to Step 4.

No

- Repair the high resistance in the (N1) Fuel Pump Control Output circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

4. (Z911) FUEL PUMP GROUND CIRCUIT



106641

Fig. 60: Checking Fuel Pump Motor Ground Circuit

Courtesy of CHRYSLER LLC

1. Using a 12-volt test light to battery voltage, probe the (Z911) Fuel Pump Ground circuit in the Fuel Pump harness connector.

NOTE: **The test light should be illuminated and bright. Compared the brightness to that of a direct connection to the battery.**

Does the test light illuminate brightly?

Yes

- Go to Step 5.

No

- Repair the excessive resistance in the (Z911) Fuel Pump Ground circuit.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC** .

5. FUEL PUMP CONTROL OUTPUT FROM TIPM

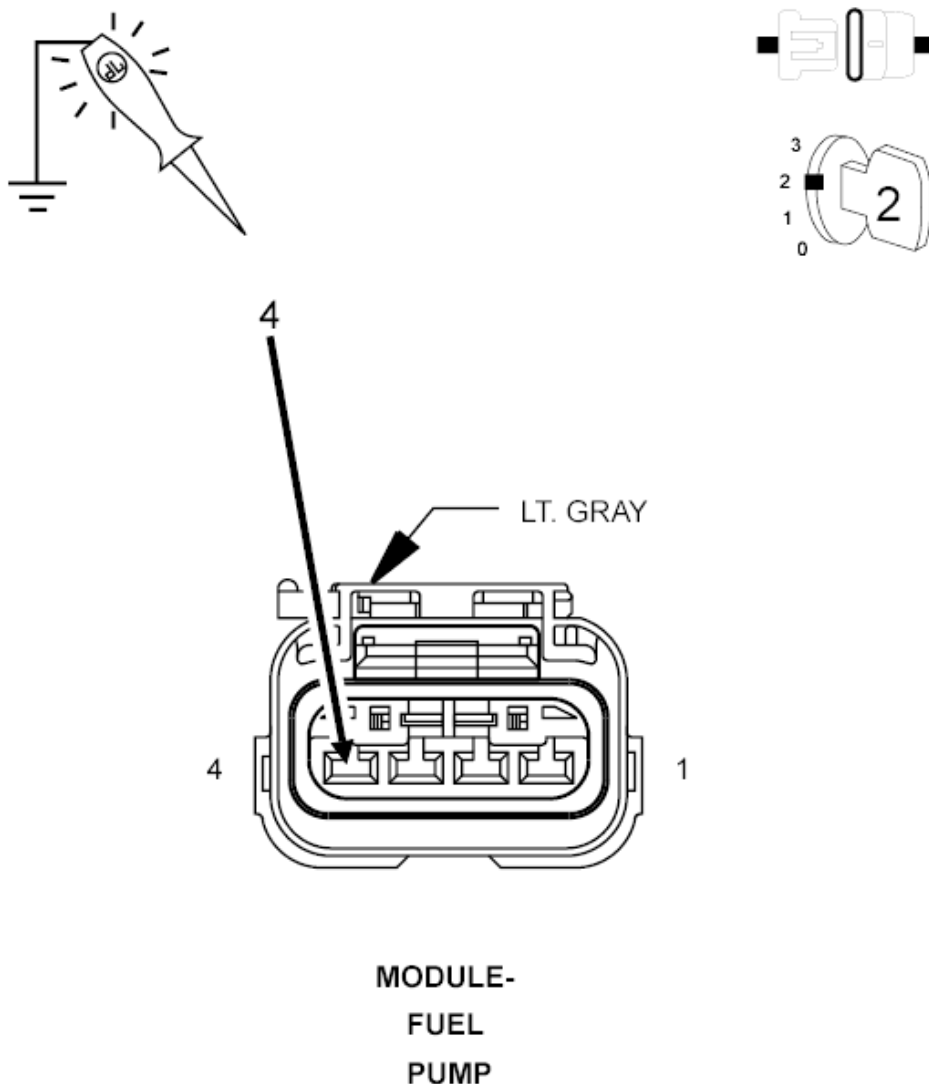


Fig. 61: Checking Fuel Pump Control Output Circuit
Courtesy of CHRYSLER LLC

1. Reconnect the C5 TIPM harness connector.
2. Ignition on, engine not running.
3. With a scan tool in the TIPM Actuators, actuate the Fuel Pump.
4. Using the 12-volt test light connected to ground, probe the (N1) Fuel Pump Control Output circuit in the Fuel Pump harness connector.

Does the test light illuminate brightly?

Yes

- Replace the Fuel Pump.

Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST. CHECKING**

FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .

No

- Replace the TIPM in accordance with the Service Information.
- Perform the PCM Verification Test. Refer to **PCM VERIFICATION TEST, CHECKING FOR AN INTERMITTENT DTC, PCM/TCM PROGRAMMING & PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE - NGC .**

P128B-TCM POWER CONTROL CIRCUIT 2 LOW - 41TE - GPEC



For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

- **When Monitored:**

2009 Dodge Journey R/T

2009 ACCESSORIES AND EQUIPMENT Totally Integrated Power Module (TIPM) - Electrical Diagnostics - Journey

With the ignition on with battery voltage greater than 10.0 volts.

- **Set Condition:**

The Totally Integrated Power Module (TIPM) has detected a short or open condition in the Transmission Control Output circuit.

Possible Causes
(T16) TRANSMISSION CONTROL OUTPUT CIRCUIT SHORT TO GROUND TOTALLY INTEGRATED POWER MODULE (TIPM)

DIAGNOSTIC TEST

1. CHECK IF THE DTC IS ACTIVE

1. Ignition on, engine not running.
2. With the scan tool, read TIPM DTCs.

Is the status Active for this DTC?

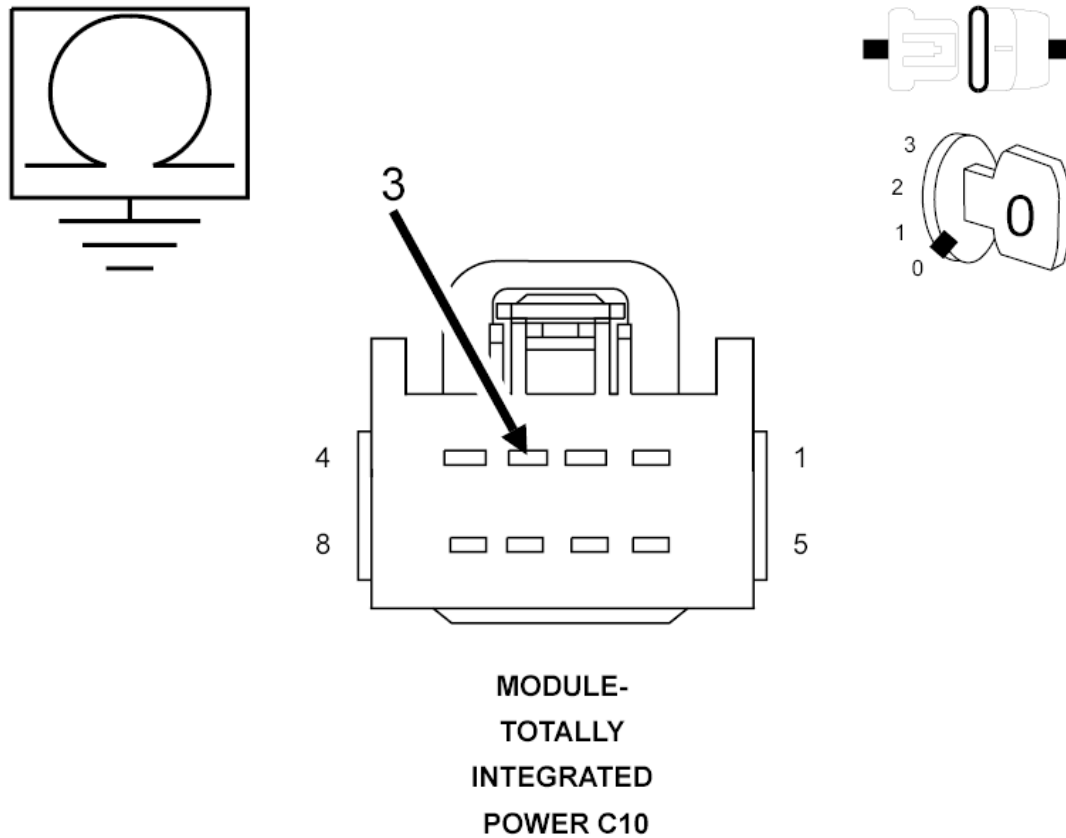
Yes

- Go to Step 2.

No

- Go to Step 4.

2. CHECK THE (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT FOR A SHORT TO GROUND



106151

Fig. 63: Measuring Resistance Between Ground & Transmission Control Output Circuit
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the TIPM C10 harness connector.
3. Disconnect the PCM C1 and C2 harness connectors.
4. Measure the resistance between ground and the (T16) Transmission Control Output circuit.

Is the resistance below 100k Ohms?

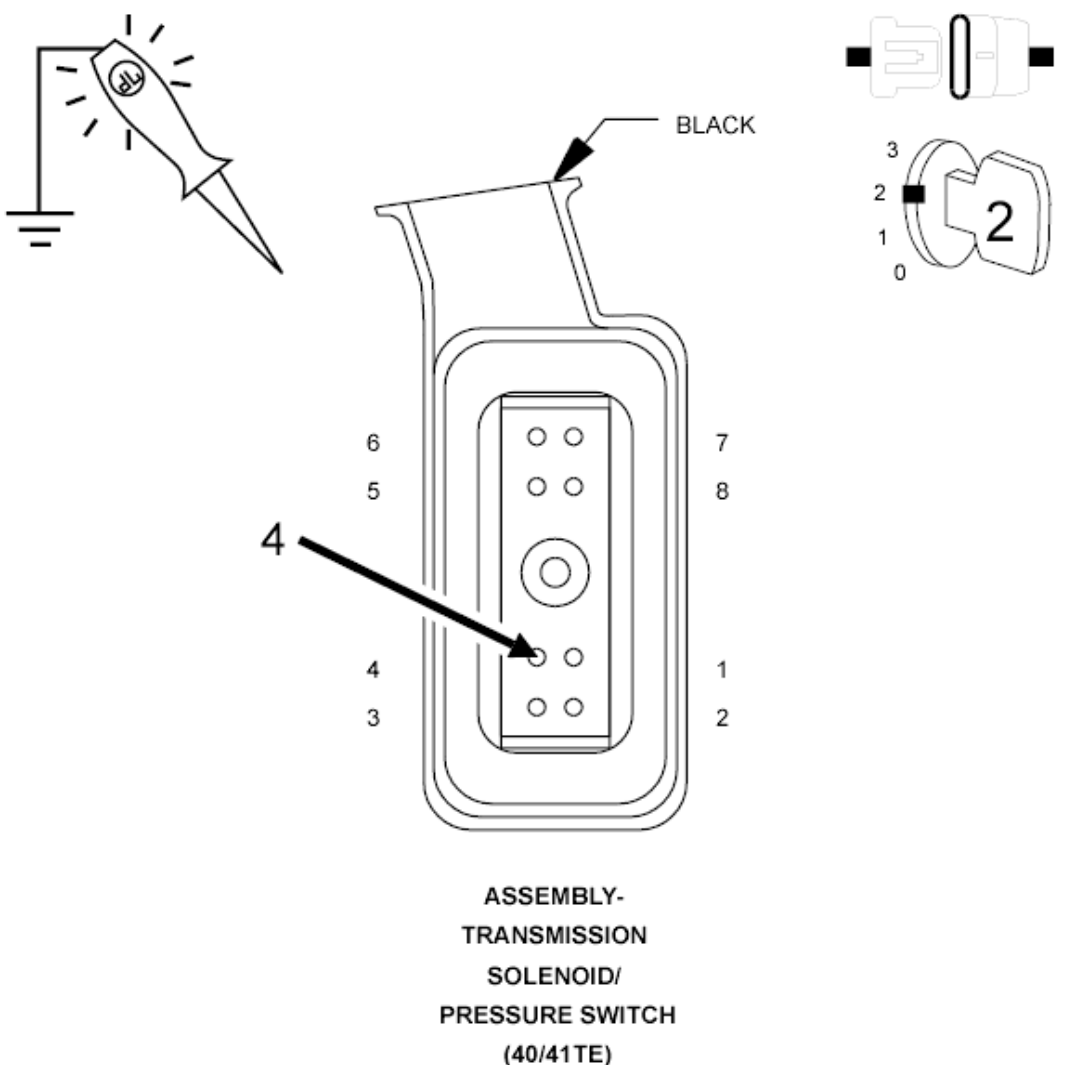
Yes

- Repair the (T16) Transmission Control Output circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Go to Step 3.

3. CHECK THE (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT FOR AN OPEN



106065

Fig. 64: Checking Transmission Control Output Circuit For An Open
 Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Reconnect the TIPM C10 harness connector.
3. Disconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.
4. Ignition on, engine not running.
5. Using the scan tool under TIPM, actuate the Transmission.
6. Using a 12-volt test light connected to ground, check the (T16) Transmission Control Output circuit.

NOTE: The test light must illuminate brightly. Compare the brightness to that of a direct connection to the battery.

Does the test light illuminate brightly?

Yes

- Using the schematics as a guide, check the Totally Integrated Power Module (TIPM) terminals for corrosion, damage, water intrusion, or terminal push out. Check for any Service Bulletins that may apply. If no problems are found, replace and program the TIPM in accordance with the Service Information.
- Perform the 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Repair the (T16) Transmission Control Output circuit for an open.
- Perform the 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

4. INTERMITTENT WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using **Fig. 62** as a guide, inspect the wiring and connectors.
3. While monitoring the scan tool data relative to this circuit, wiggle test the wiring and connectors.
4. Look for the data to change or for the DTC to reset during the wiggle test.

Were any problems found?

Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Test complete.

P128C-TCM POWER CONTROL CIRCUIT 2 HIGH - 41TE - GPEC



For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

- **When Monitored:**

2009 Dodge Journey R/T

2009 ACCESSORIES AND EQUIPMENT Totally Integrated Power Module (TIPM) - Electrical Diagnostics - Journey

With the ignition on with the battery voltage greater than 10.0 volts.

- **Set Condition:**

The Totally Integrated Power Module (TIPM) has detected voltage on the Transmission Control Output circuit when none should be present.

Possible Causes
(T16) TRANSMISSION CONTROL OUTPUT CIRCUIT SHORT TO VOLTAGE TOTALLY INTEGRATED POWER MODULE (TIPM)

DIAGNOSTIC TEST

1. CHECK IF THE DTC IS ACTIVE

1. Ignition on, engine not running.
2. With the scan tool, read TIPM DTCs.

Is the status Active for this DTC?

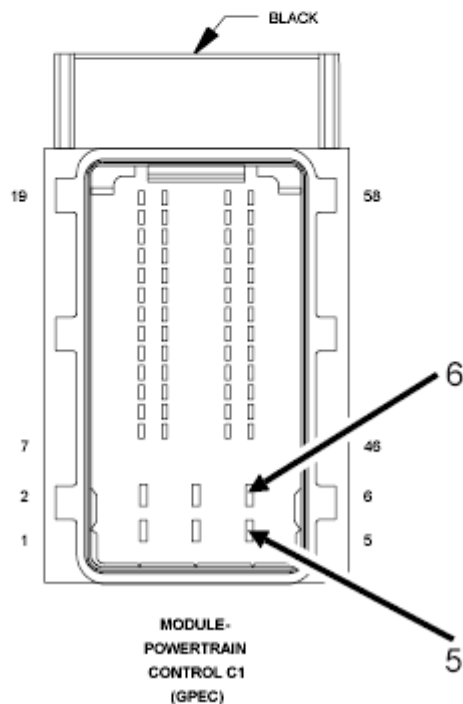
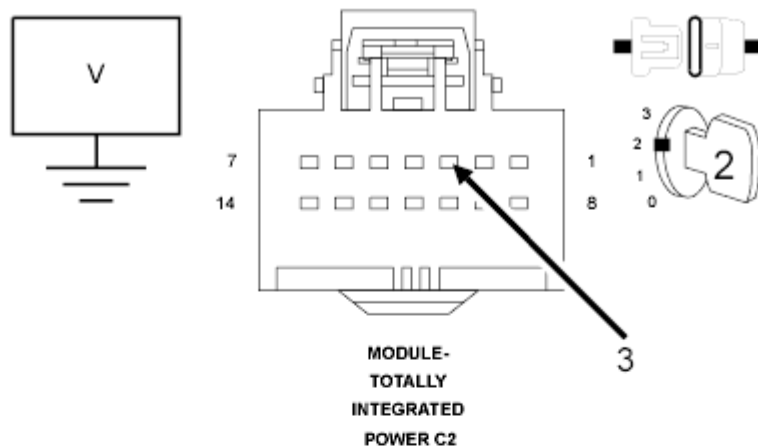
Yes

- Go to Step 2.

No

- Go to Step 3.

2. CHECK THE (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT FOR A SHORT TO VOLTAGE



106107

Fig. 66: Measuring Voltage Between Ground & Transmission Control Output Circuit
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the TIPM C2 harness connector.
3. Disconnect the PCM C1 harness connector.
4. Measure the voltage between ground and the (T16) Transmission Control Output circuit.

Is the voltage above 10.0 volts?

Yes

- Repair the (T16) Transmission Control Output circuit for a short to voltage.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Using the schematics as a guide, check the Totally Integrated Power Module (TIPM) terminals for corrosion, damage, water intrusion, or terminal push out. Check for any Service Bulletins that may apply. If no problems are found, replace and program the TIPM per Service Information.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

3. CHECK THE WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using **Fig. 65** as a guide, inspect the wiring and connectors.
3. While monitoring the scan tool data relative to this circuit, wiggle test the wiring and connectors.
4. Look for the data to change or for the DTC to reset during the wiggle test.

Were any problems found?

Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Test complete.

P128D-TCM POWER CONTROL CIRCUIT 2 OPEN - 41TE - GPEC

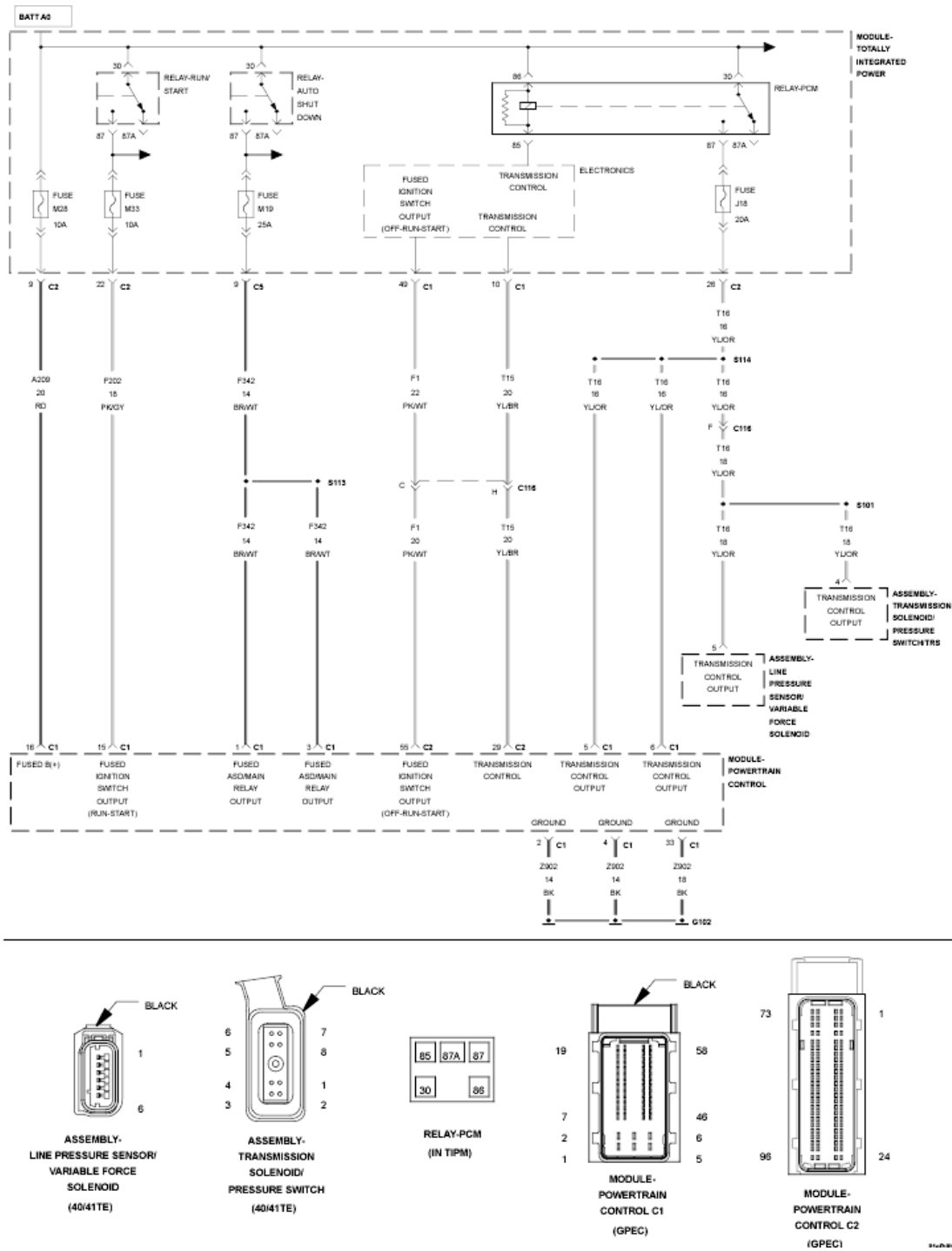


Fig. 67: TCM Power Control - Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** .

- **When Monitored:**

2009 Dodge Journey R/T

2009 ACCESSORIES AND EQUIPMENT Totally Integrated Power Module (TIPM) - Electrical Diagnostics - Journey

With the ignition on with battery voltage greater than 10.0 volts.

- **Set Condition:**

The Totally Integrated Power Module (TIPM) has detected an open condition on the Transmission Control Output circuit.

Possible Causes
(T16) TRANSMISSION CONTROL OUTPUT CIRCUIT OPEN TOTALLY INTEGRATED POWER MODULE (TIPM)

DIAGNOSTIC TEST

1. CHECK IF THE DTC IS ACTIVE

1. Ignition on, engine not running.
2. With the scan tool, read TIPM DTCs.

Is the status Active for this DTC?

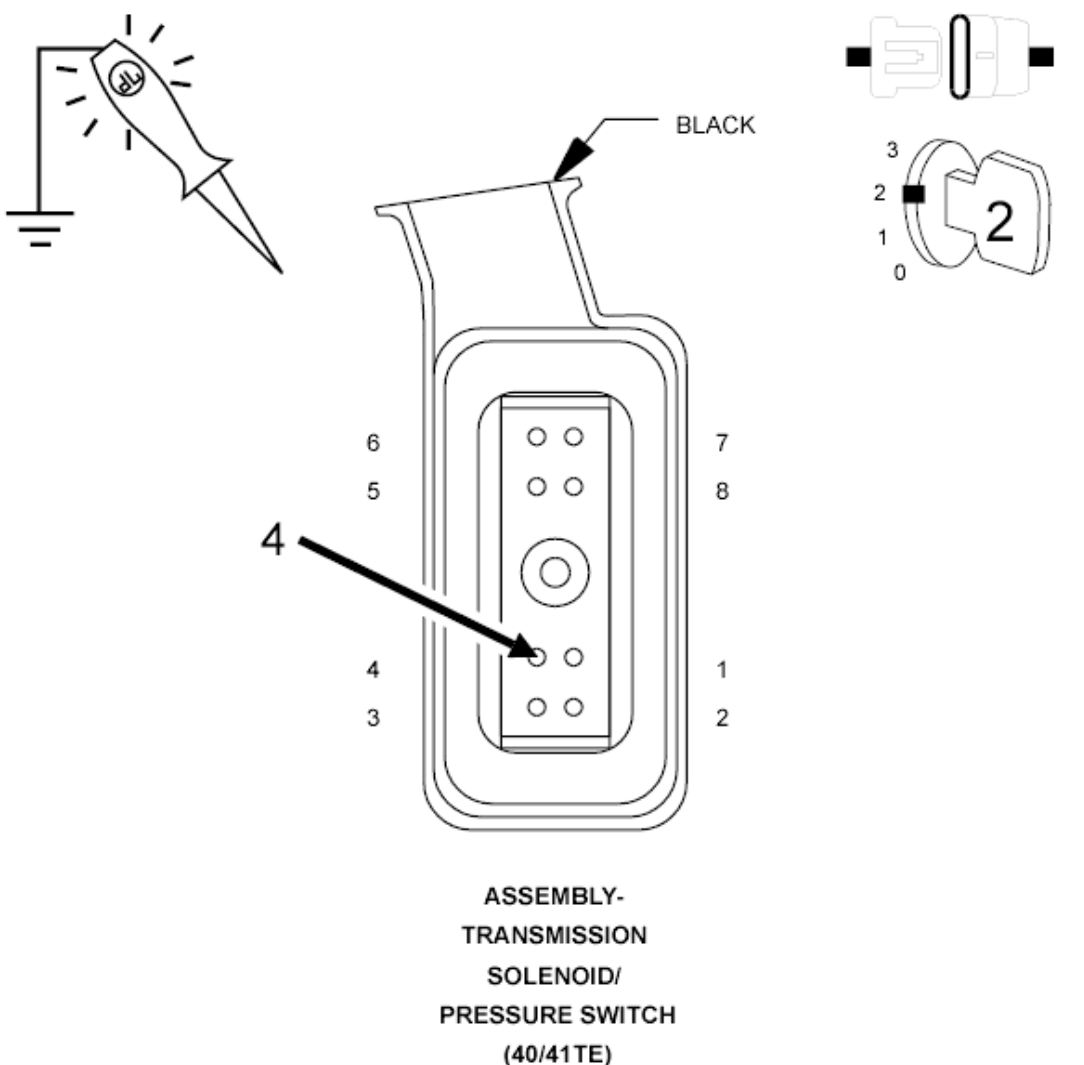
Yes

- Go to Step 2.

No

- Go to Step 3.

2. CHECK THE (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT FOR AN OPEN



106065

Fig. 68: Checking Transmission Control Output Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the PCM C2 harness connector.
3. Disconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.
4. Ignition on, engine not running.
5. Using the scan tool under TIPM, actuate the Transmission.
6. Using a 12-volt test light connected to ground, check the (T16) Transmission Control Output circuit.

NOTE: The test light must illuminate brightly. Compare the brightness to that of a direct connection to the battery.

Does the test light illuminate brightly?

Yes

- Using the schematics as a guide, check the Totally Integrated Power Module (TIPM) terminals for corrosion, damage, water intrusion, or terminal push out. Check for any Service Bulletins that may apply. If no problems are found, replace and program the TIPM per Service Information.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Repair the (T16) Transmission Control Output circuit for an open.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

3. INTERMITTENT WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using **Fig. 67** as a guide, inspect the wiring and connectors.
3. While monitoring the scan tool data relative to this circuit, wiggle test the wiring and connectors.
4. Look for the data to change or for the DTC to reset during the wiggle test.

Were any problems found?

Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Test complete.

P128E-TCM POWER CONTROL CIRCUIT 2 OVERCURRENT - 41TE - GPEC



For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

- **When Monitored:**

With the ignition on and battery voltage greater than 10.0 volts.

- **Set Condition:**

The Totally Integrated Power Module (TIPM) has detected an overcurrent condition in the Transmission Control Output circuit.

Possible Causes
(T16) TRANSMISSION CONTROL OUTPUT CIRCUIT SHORT TO GROUND TRANSMISSION SOLENOID/PRESSURE SWITCH ASSEMBLY LINE PRESSURE SENSOR/VARIABLE FORCE SOLENOID ASSEMBLY POWERTRAIN CONTROL MODULE (PCM) TOTALLY INTEGRATED POWER MODULE (TIPM)

DIAGNOSTIC TEST

1. CHECK IF THE DTC IS ACTIVE

1. Ignition on, engine not running.
2. With a scan tool, read TIPM DTCs.

Is the DTC active?

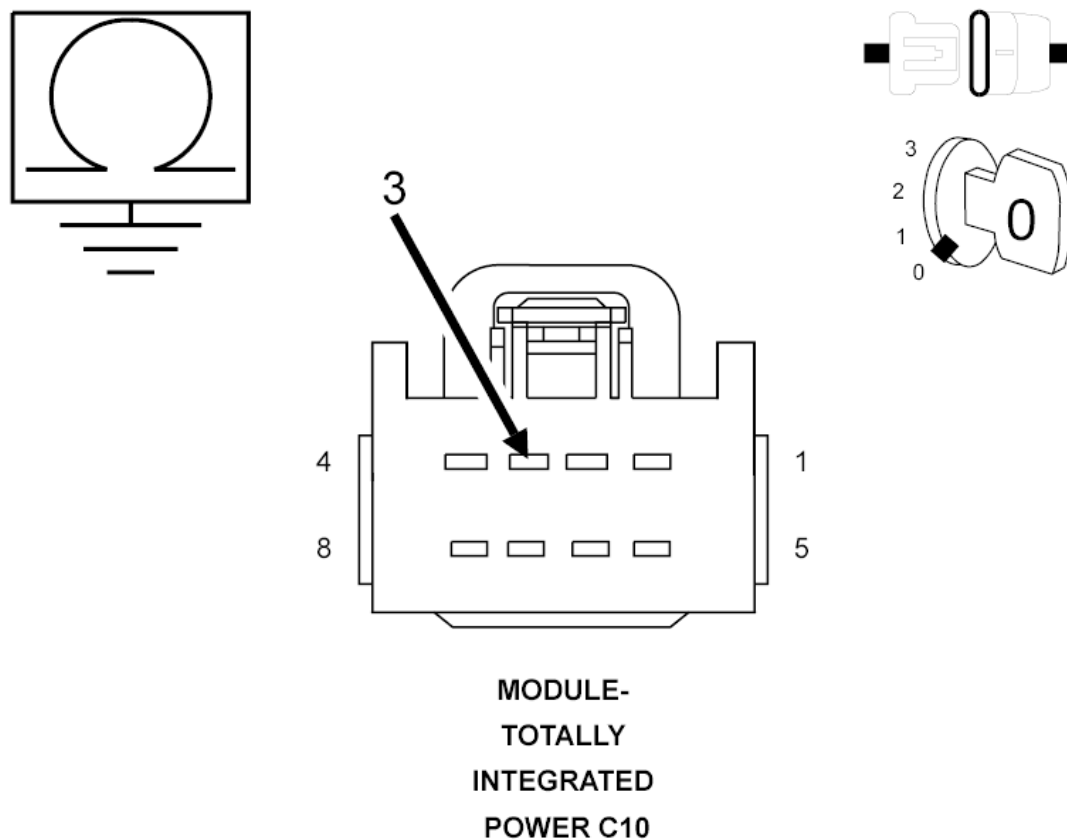
Yes

- Go to Step 2.

No

- Go to Step 6.

2. CHECK THE (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT FOR A SHORT TO GROUND



106151

Fig. 70: Measuring Resistance Between Ground & Transmission Control Output Circuit
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the TIPM C10 harness connector.
3. Disconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.
4. Disconnect the Line Pressure Sensor/Variable Force Solenoid Assembly harness connector.
5. Disconnect the PCM C2 harness connector.
6. Measure the resistance between ground and the (T16) Transmission Control Output circuit.

Is the resistance below 100k Ohms?

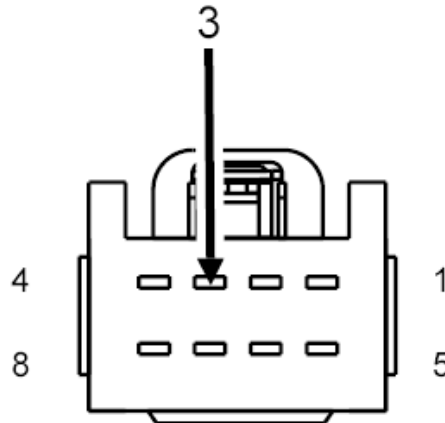
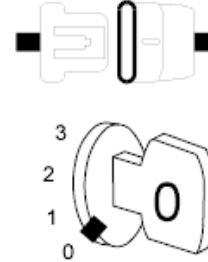
Yes

- Repair the (T16) Transmission Control Output circuit for a short to ground.
- Perform the 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Go to Step 3.

3. CHECK THE (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT



MODULE-
TOTALLY
INTEGRATED
POWER C10

Fig. 71: Checking Transmission Control Output Circuit
Courtesy of CHRYSLER LLC

1. Reconnect the PCM C4 harness connector.
2. Reconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.
3. Reconnect the Line Pressure Sensor/Variable Force Solenoid Assembly harness connector.
4. Connect the positive probe of an ammeter to battery positive and connect the negative probe to the (T16) Transmission Control Output circuit in the TIPM C10 harness connector.
5. Read the amperage on the ammeter.

Does the amperage read below 1.0 amp?

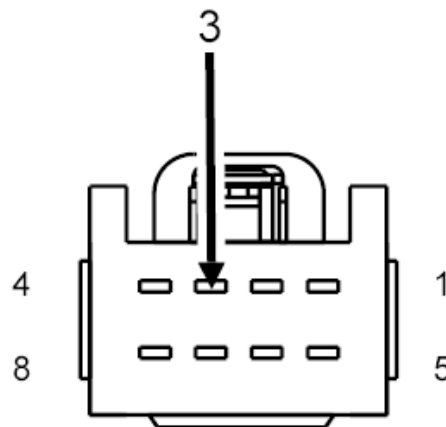
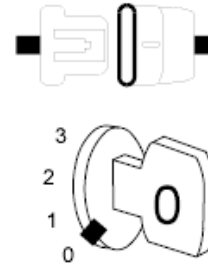
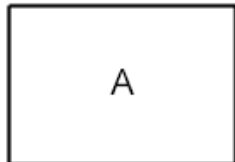
Yes

- Go to Step 5.

No

- Go to Step 4.

4. CHECK THE POWERTRAIN CONTROL MODULE



MODULE-
TOTALLY
INTEGRATED
POWER C10

Fig. 72: Checking Transmission Control Output Circuit
Courtesy of CHRYSLER LLC

1. Disconnect the ammeter from battery positive.
2. Disconnect the PCM C1 harness connector.
3. Reconnect the positive probe of an ammeter to battery positive.
4. Read the amperage on the ammeter.

Does the amperage read below 1.0 amp?

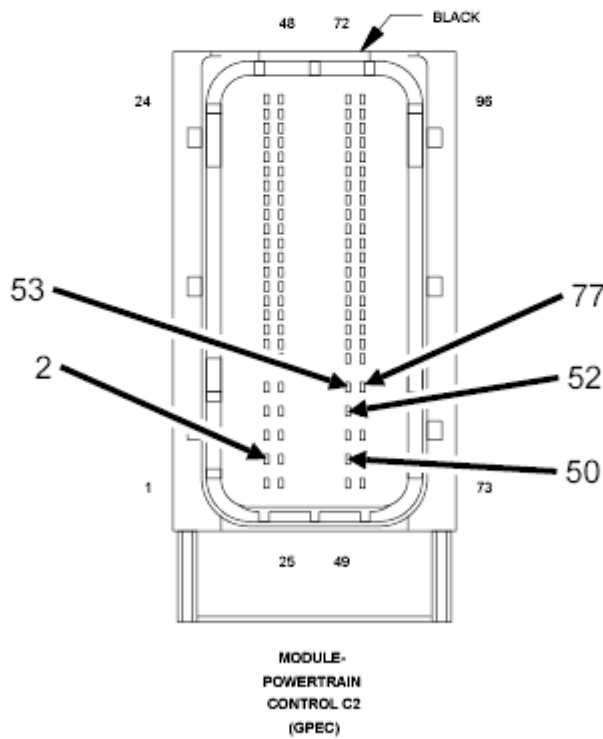
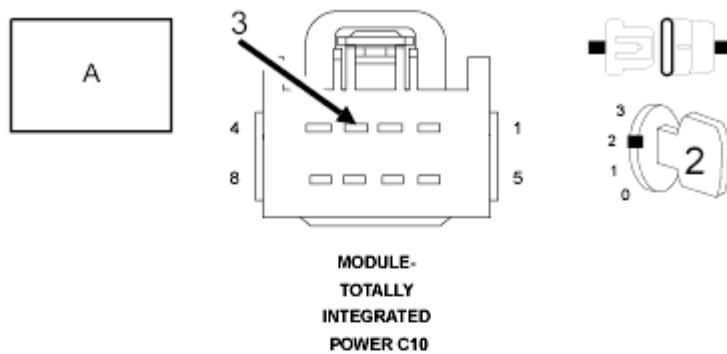
Yes

- 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. Check for any Service Bulletins that may apply. If no problems are found, replace and program the PCM in accordance with the Service Information. With the scan tool perform the Quick Learn procedure.
- Perform the 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Go to Step 5.

5. CHECK THE TRANSMISSION SOLENOIDS



106161

Fig. 73: Checking Transmission Solenoid Control Circuits
Courtesy of CHRYSLER LLC

1. Disconnect the ammeter from battery positive.
2. Disconnect the PCM C2 harness connector.
3. Reconnect the positive probe of an ammeter to battery positive.
4. While monitoring the amperage reading of the ammeter, using a fused jumper wire, jump each solenoid control circuit one at a time to ground in the PCM C2 harness connector.

TYPE OF SOLENOID	AMPERAGE READING

VARIABLE FORCE SOLENOID (VFS)	2000 milliamps (mA) $\pm$ 10%
CLUTCH SOLENOID	6.0 to 6.5 amps

6. INTERMITTENT WIRING AND CONNECTORS

1. The conditions necessary to set the DTC are not present at this time.
2. Using **Fig. 69** as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle the wires while checking for shorted and open circuits.
4. With the scan tool, check the Event Data to help identify the conditions in which the DTC was set.
5. Check for any Service Bulletins that may apply.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Test Complete.

P128B-TCM POWER CONTROL CIRCUIT 2 LOW - 41TE - NGC

2009 Dodge Journey R/T

2009 ACCESSORIES AND EQUIPMENT Totally Integrated Power Module (TIPM) - Electrical Diagnostics - Journey

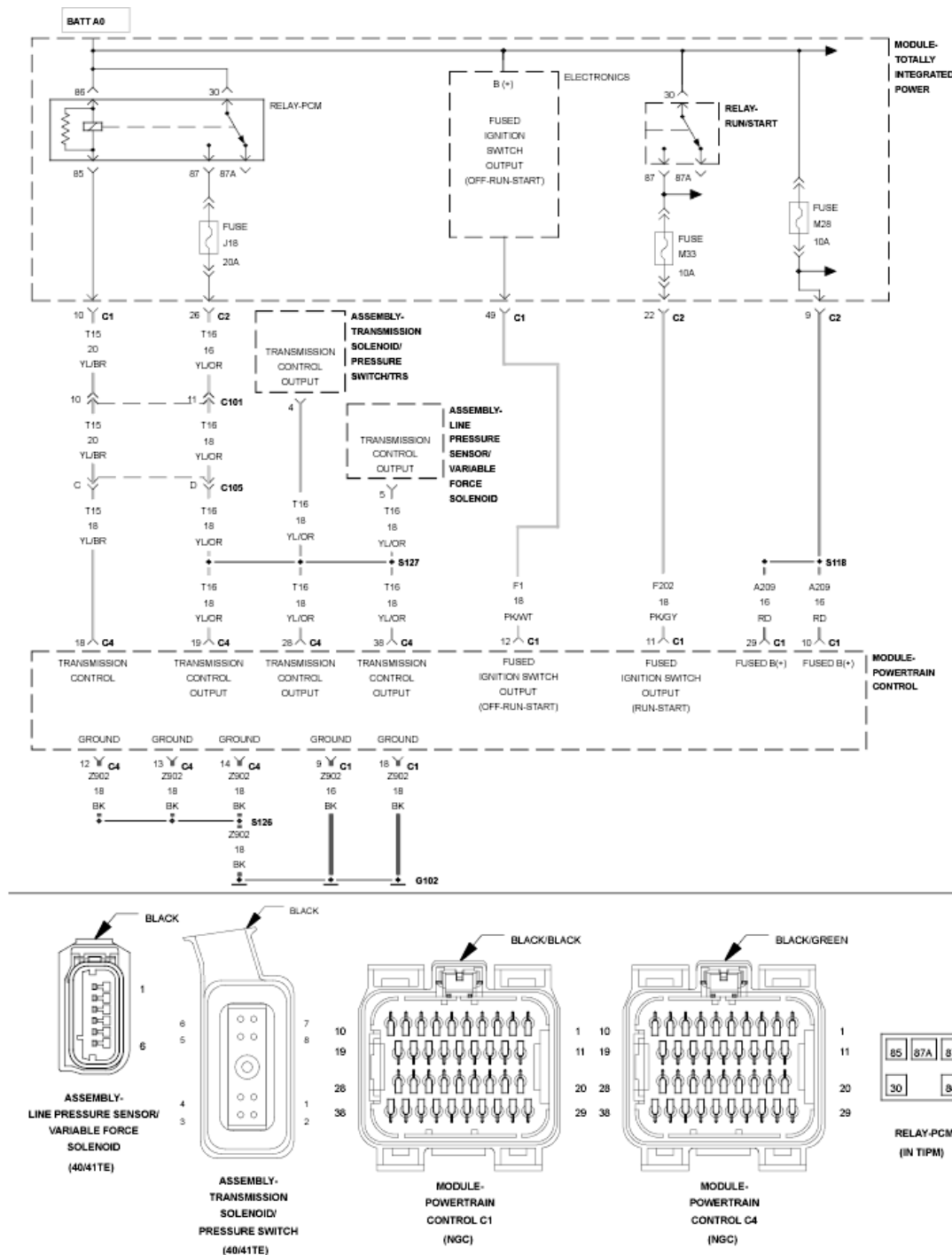


Fig. 74: TCM Power Control - Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

- **When Monitored:**

2009 Dodge Journey R/T

2009 ACCESSORIES AND EQUIPMENT Totally Integrated Power Module (TIPM) - Electrical Diagnostics - Journey

With the ignition on with battery voltage greater than 10.0 volts.

- **Set Condition:**

The Totally Integrated Power Module (TIPM) has detected a short or open condition in the Transmission Control Output circuit.

Possible Causes
(T16) TRANSMISSION CONTROL OUTPUT CIRCUIT SHORT TO GROUND TOTALLY INTEGRATED POWER MODULE (TIPM)

DIAGNOSTIC TEST

1. CHECK IF THE DTC IS ACTIVE

1. Ignition on, engine not running.
2. With the scan tool, read DTCs.

Is the status Active for this DTC?

Yes

- Go to Step 2.

No

- Go to Step 4.

2. CHECK THE (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT FOR A SHORT TO GROUND

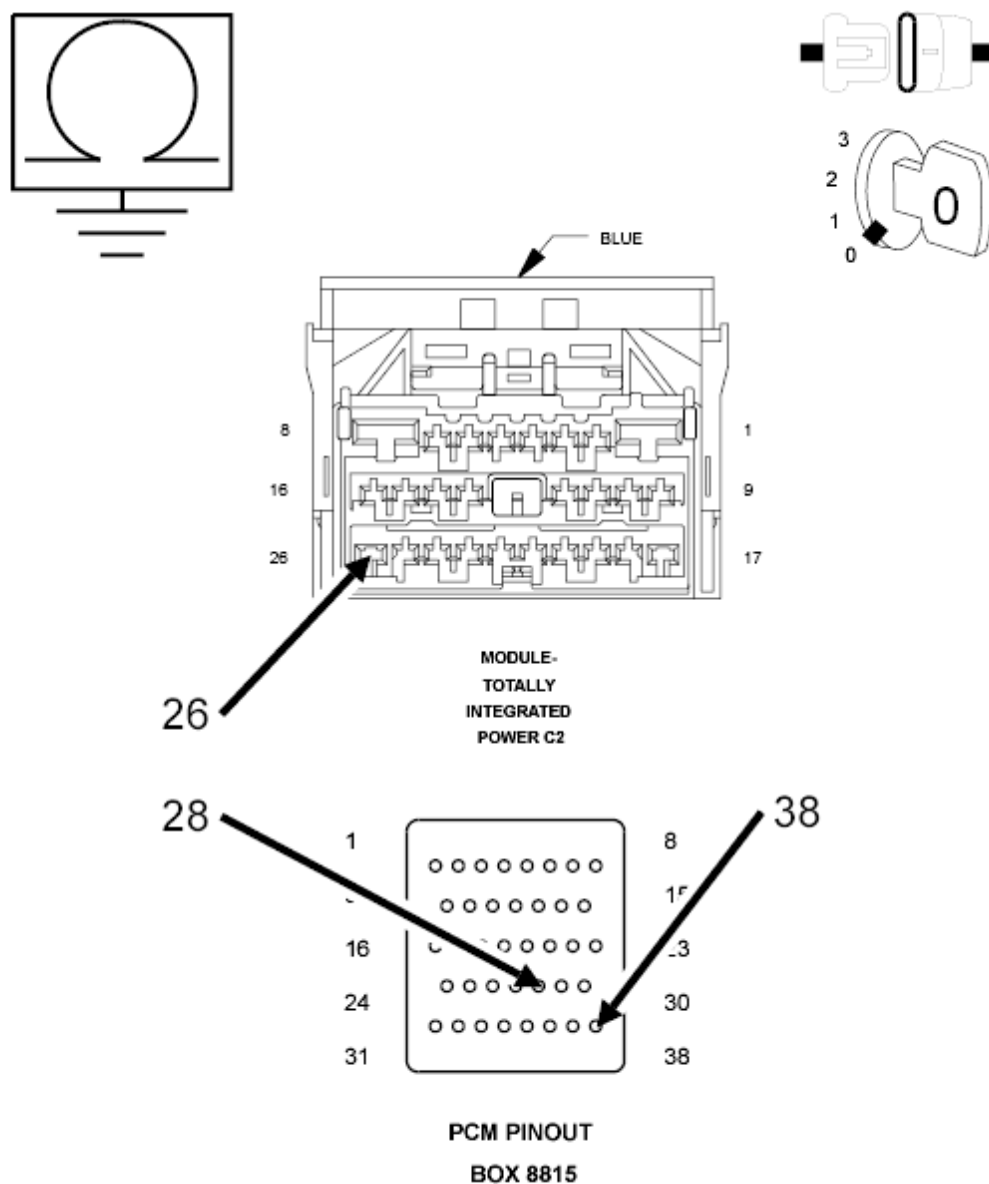


Fig. 75: Measuring Resistance Between Ground & Transmission Control Output Circuit
 Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the TIPM C2 harness connector.
3. Disconnect the PCM C4 harness connector and connect Miller tool #8815.

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 the PCM Pinout Box 8815 to perform diagnosis.

4. Measure the resistance between ground and the (T16) Transmission Control Output circuit.

Is the resistance below 5.0 Ohms?

Yes

- Repair the (T16) Transmission Control Output circuit for a short to ground.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Go to Step 3.

3. CHECK THE (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT FOR AN OPEN

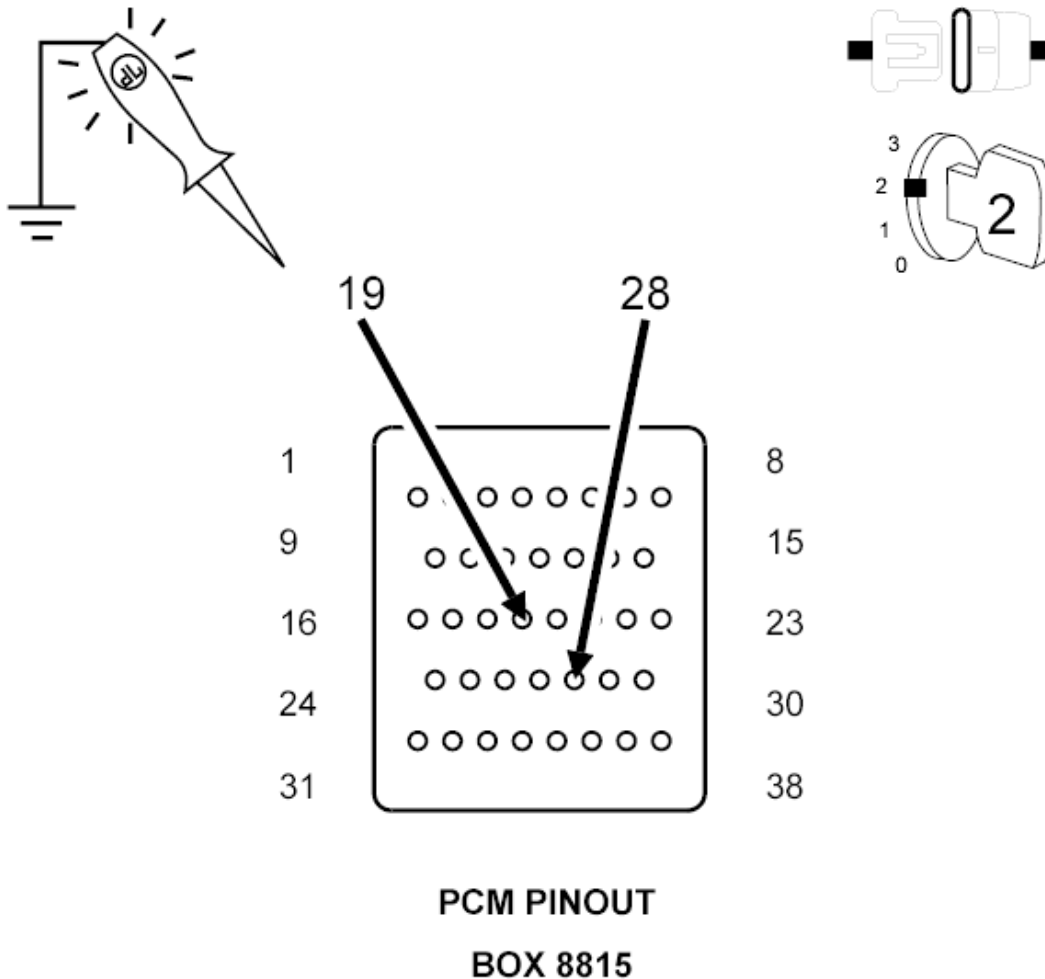


Fig. 76: Checking Transmission Control Output Circuit For An Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Reconnect the TIPM C2 harness connector.
3. Disconnect the Transmission Solenoid/Pressure Switch Assembly harness connector.
4. Ignition on, engine not running.
5. With the scan tool under TIPM, actuate the Transmission.
6. Using a 12-volt test light connected to ground, check the (T16) Transmission Control Output circuit (s).

NOTE: **The test light must illuminate brightly. Compare the brightness to that of a direct connection to the battery.**

Does the test light illuminate brightly?

Yes

- Using the schematics as a guide, check the Totally Integrated Power Module (TIPM) terminals for corrosion, damage, water intrusion, or terminal push out. Check for any Service Bulletins that may apply. If no problems are found, replace and program the TIPM per Service Information.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Repair the (T16) Transmission Control Output circuit for an open.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

4. INTERMITTENT WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using **Fig. 74** as a guide, inspect the wiring and connectors.
3. While monitoring the scan tool data relative to this circuit, wiggle test the wiring and connectors.
4. Look for the data to change or for the DTC to reset during the wiggle test.

Were any problems found?

Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

- Test complete.

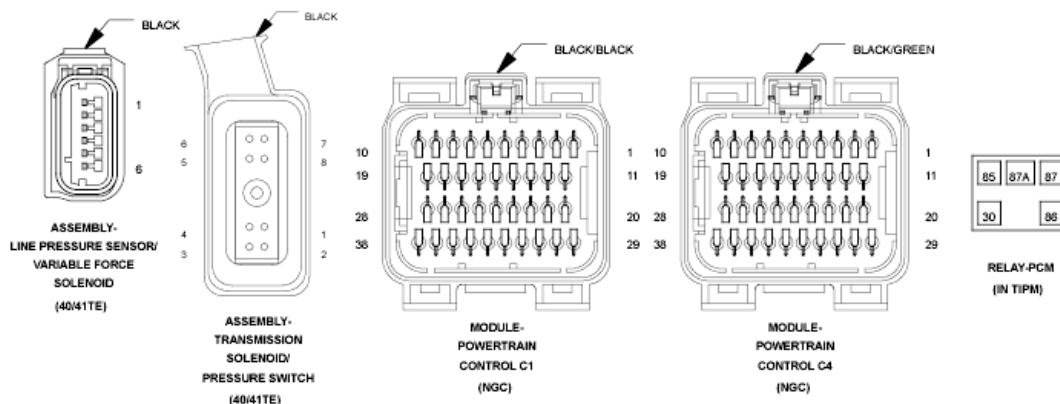


Fig. 77: TCM Power Control - Circuit Schematic
Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS** .

- **When Monitored:**

With the ignition on with the battery voltage greater than 10.0 volts.

- **Set Condition:**

The Totally Integrated Power Module (TIPM) has detected voltage on the Transmission Control Output circuit when none should be present.

Possible Causes
(T16) TRANSMISSION CONTROL OUTPUT CIRCUIT SHORT TO VOLTAGE TOTALLY INTEGRATED POWER MODULE (TIPM)

DIAGNOSTIC TEST

1. CHECK IF THE DTC IS ACTIVE

1. Ignition on, engine not running.
2. With the scan tool, read DTCs.

Is the status Active for this DTC?

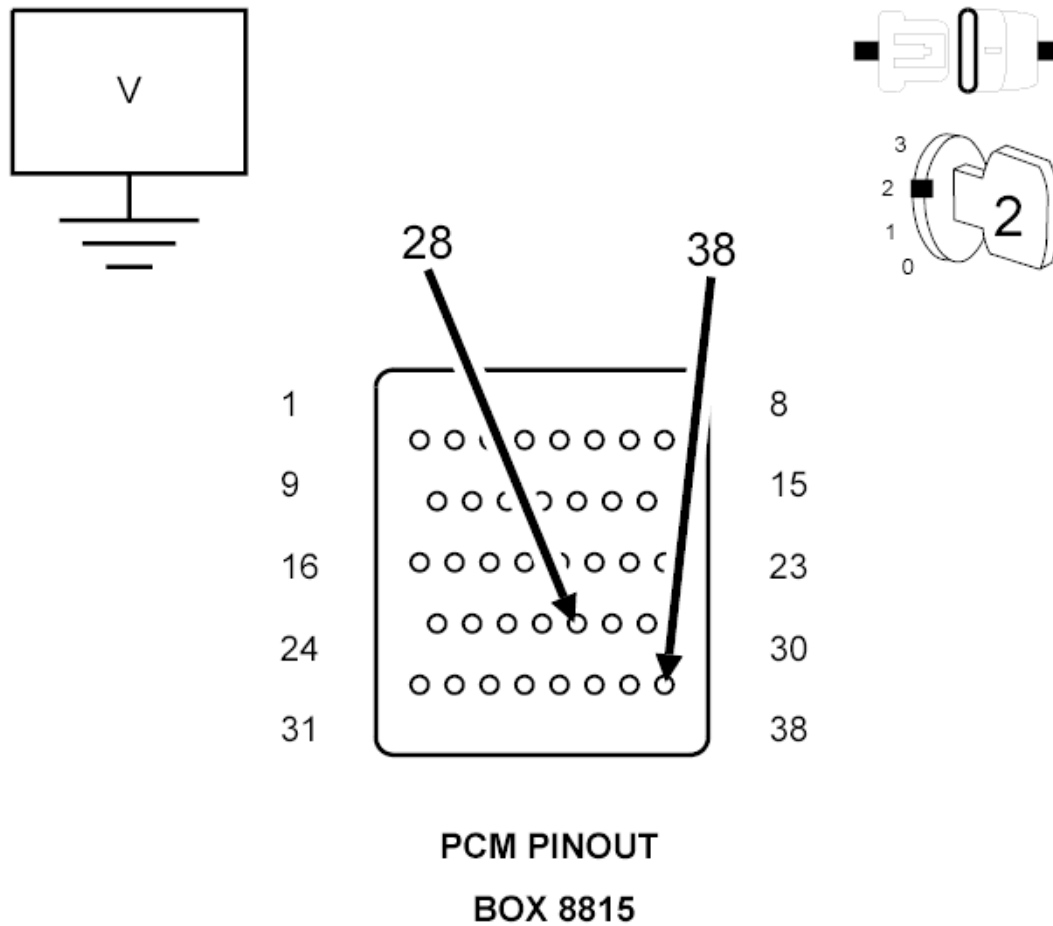
Yes

- Go to Step 2.

No

- Go to Step 3.

2. CHECK THE (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT FOR A SHORT TO VOLTAGE



77121

Fig. 78: Measuring Voltage Of Transmission Control Output Circuit
Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the TIPM C2 harness connector.
3. Disconnect the PCM C4 harness connector and install Miller tool #8815.

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 the PCM Pinout Box 8815 to perform diagnosis.

4. Measure the voltage of the (T16) Transmission Control Output circuit.

Is the voltage above 0.5 volts?

Yes

- Repair the (T16) Transmission Control Output circuit for a short to voltage.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Using the schematics as a guide, check the Totally Integrated Power Module (TIPM) terminals for corrosion, damage, water intrusion, or terminal push out. Check for any Service Bulletins that may apply. If no problems are found, replace and program the TIPM per Service Information.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

3. INTERMITTENT WIRING AND CONNECTORS

1. Using **Fig. 77** as a guide, inspect the wiring and connectors.
2. While monitoring the scan tool data relative to this circuit, wiggle test the wiring and connectors.
3. Look for the data to change or for the DTC to reset during the wiggle test.

Were any problems found?

Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Test complete.

P128D-TCM POWER CONTROL CIRCUIT 2 OPEN - 41TE - NGC



For complete wiring diagrams refer to **SYSTEM WIRING DIAGRAMS**.

- **When Monitored:**

2009 Dodge Journey R/T

2009 ACCESSORIES AND EQUIPMENT Totally Integrated Power Module (TIPM) - Electrical Diagnostics - Journey

With the ignition on, with battery voltage greater than 10.0 volts.

- **Set Condition:**

The Totally Integrated Power Module (TIPM) has detected an open condition on the Transmission Control Output circuit.

Possible Causes
(T16) TRANSMISSION CONTROL OUTPUT CIRCUIT OPEN TOTALLY INTEGRATED POWER MODULE (TIPM)

DIAGNOSTIC TEST

1. CHECK IF THE DTC IS ACTIVE

1. Ignition on, engine not running.
2. With the scan tool, select read DTCs.

Is the status Active for this DTC?

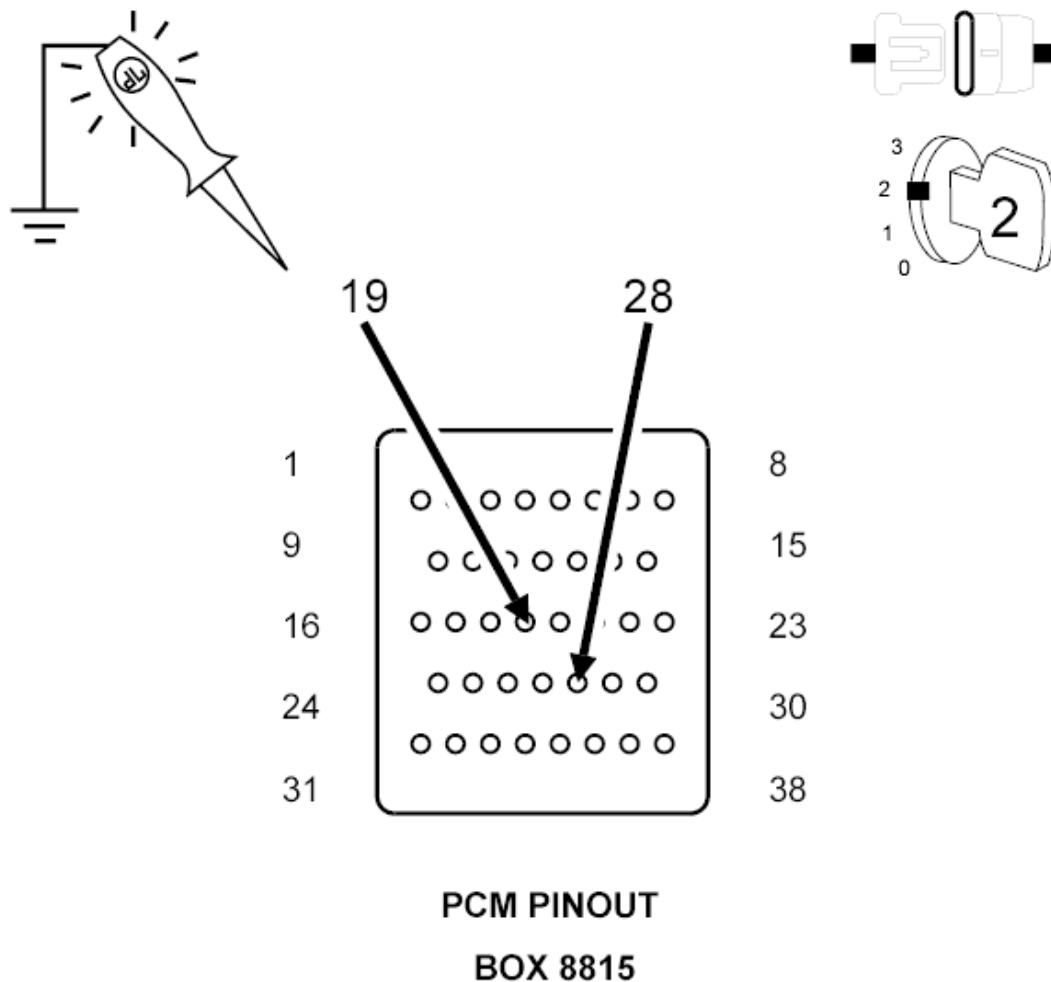
Yes

- Go to Step 2.

No

- Go to Step 3.

2. CHECK THE (T16) TRANSMISSION CONTROL OUTPUT CIRCUIT FOR AN OPEN



77043

Fig. 80: Checking Transmission Control Output Circuit For An Open
 Courtesy of CHRYSLER LLC

1. Turn the ignition off to the lock position.
2. Disconnect the Transmission Solenoid/Pressure Switch harness connector.
3. Disconnect the PCM C4 harness connector and install Miller tool #8815.

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 the PCM Pinout Box 8815 to perform diagnosis.

4. Ignition on, engine not running.
5. Using the scan tool under TIPM, actuate the Transmission.

6. Using a 12-volt test light connected to ground, check the (T16) Transmission Control Output circuit.

NOTE: **The test light must illuminate brightly. Compare the brightness to that of a direct connection to the battery.**

Does the test light illuminate brightly?

Yes

- Using the schematics as a guide, check the Totally Integrated Power Module (TIPM) terminals for corrosion, damage, water intrusion, or terminal push out. Check for any Service Bulletins that may apply. If no problems are found, replace and program the TIPM per Service Information.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Repair the (T16) Transmission Control Output circuit for an open.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

3. INTERMITTENT WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using **Fig. 79** as a guide, inspect the wiring and connectors.
3. While monitoring the scan tool data relative to this circuit, wiggle test the wiring and connectors.
4. Look for the data to change or for the DTC to reset during the wiggle test.

Were any problems found?

Yes

- Repair as necessary.
- Perform 40/41TE VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

No

- Test complete.