

2009 Dodge Journey R/T

2009 DRIVELINE/AXLES All Wheel Drive (AWD) Module - Electrical Diagnostics - Journey

2009 DRIVELINE/AXLES

All Wheel Drive (AWD) Module - Electrical Diagnostics - Journey

DIAGNOSTIC CODE INDEX

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DTC	Description
<u>C1078</u>	TIRE REVOLUTIONS RANGE PERFORMANCE
<u>C1456</u>	AWD CLUTCH POWER CONTROL CIRCUIT LOW
<u>C145D</u>	AWD CLUTCH POWER/RETURN CONTROL CIRCUIT OPEN
<u>C145F</u>	AWD SYSTEM TEMPORARILY DISABLED - OVERTEMPERATURE
<u>C2100</u>	BATTERY VOLTAGE LOW
<u>C2101</u>	BATTERY VOLTAGE HIGH
<u>C211C</u>	IGNITION RUN/START INPUT CIRCUIT LOW
<u>C211D</u>	IGNITION RUN/START INPUT CIRCUIT HIGH
<u>C2206</u>	VEHICLE CONFIGURATION MISMATCH
<u>C2208</u>	AWD ECU INTERNAL
<u>U0001</u>	CAN C BUS
<u>U0100</u>	LOST COMMUNICATION WITH ECM/PCM
<u>U0121</u>	LOST COMMUNICATION WITH ABS
<u>U0126</u>	LOST COMMUNICATION WITH STEERING ANGLE SENSOR
<u>U0141</u>	LOST COMMUNICATION WITH IPM (FCM/TIPM)
<u>U0401</u>	IMPLAUSIBLE DATA RECEIVED FROM ECM/PCM
<u>U113C</u>	LOST WHEEL SPEED MESSAGES

DIAGNOSIS AND TESTING

C1078-TIRE REVOLUTIONS RANGE PERFORMANCE

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

- **When Monitored:**

Continuous.

- **Set Condition:**

Programmed value for tire size is not within acceptable range.

Possible Causes
INCORRECT VALUE PROGRAMMED INTO TOTALLY INTEGRATED POWER MODULE (TIPM)

NOTE: Make sure all tire pressure's are correct before continuing with this diagnostic procedure.

Diagnostic Test**1. ANTI-LOCK BRAKE SYSTEM (ABS) MODULE DTCS PRESENT**

NOTE: Make sure all tire/wheel sizes match and are at the correct tire pressure before continuing with this test.

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

Are there any ABS DTCs present?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Antilock Brake (ABS) - Diagnosis and Testing** and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. CHECK FOR A DTC C1078-TIRE REVOLUTIONS RANGE PERFORMANCE

NOTE: This DTC must be active for the results of this test to be valid.

1. Ignition on, engine not running.
2. With the scan tool, read and record DTCs.
3. With the scan tool, erase DTCs.
4. Cycle the ignition switch from off to on.
5. With the scan tool, read and record DTCs.

Does the scan tool display: C1078-TIRE REVOLUTIONS RANGE PERFORMANCE?

Yes

- Go to step 3

No

- Go to step 4

3. INCORRECT VALUE PROGRAMMED INTO TIPM

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TIRE SIZE	BODY STYLE	ENGINE SIZE	SALES CODE	TIRE CIRCUMFERENCE (MM PER REV)
P225/70R 16 ALL SEASON	JC	ALL	TRD	2206
225/65R 17 BSW TOURING	JC	ALL	TRF	2220
225/65R 16 BSW THREE SEASON	JC	ALL	TUJ	2130
P225/65R 17 BSW A/S TOURING	JC	ALL	TVK	2230
225/55R 19 BSW THREE SEASON	JC	ALL	TWC	2250
P225//55R 19 BSW AS TOURING	JC	ALL	TWV	2270

1. Verify the correct tire/wheel information is programmed in the TIPM.

Is the correct value programmed in the TIPM according to the chart?

Yes

- Test complete.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure.**

No

- Program the correct Tire/Wheel information in the TIPM.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure.**

4. INTERMITTENT WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle test the wiring harness and connectors while checking for shorted and open circuits.
4. Using the scan tool, monitor the data related to this circuit while performing the wiggle test. Look for the data to change or for the DTC to reset.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based**

No

- Test Complete.

REAR DIFFERENTIAL SOLENOID CONTROL

SOLENOID SUPPLY VOLTAGE

SOLENOID-ELECTRONICALLY CONTROLLED CLUTCH

REAR DIFFERENTIAL SOLENOID CONTROL

SOLENOID SUPPLY VOLTAGE

CAN C BUS (-) BODY

CAN C BUS (+) BODY

FUSED IGNITION SWITCH OUTPUT (RUN-START)

FUSED B (+)

MODULE-TOTALLY INTEGRATED POWER

MODULE-ALL WHEEL DRIVE CONTROL

NOTE: D51 AND D52 ARE TWISTED PAIR

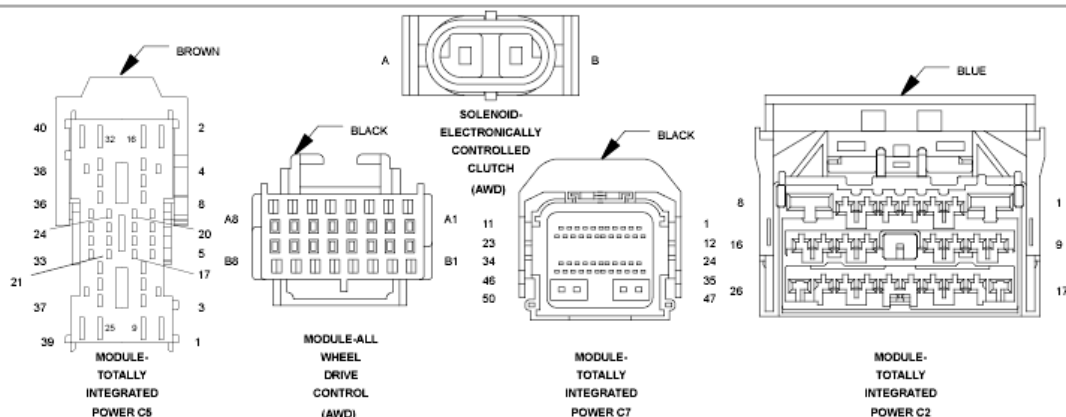


Fig. 1: Rear Differential Solenoid Control Circuit Schematic
Courtesy of CHRYSLER LLC

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

- **When Monitored:**

The Solenoid is active, no solenoid supply circuit DTCs are present and battery voltage is normal.

- **Set Condition:**

The AWD Module detects the ECC Solenoid Power Control is shorted low.

Possible Causes
(T78) SOLENOID SUPPLY VOLTAGE SHORTED TO GROUND
(T312) REAR DIFFERENTIAL SOLENOID CONTROL CIRCUIT SHORTED TO GROUND
ALL WHEEL DRIVE (AWD) CONTROL MODULE
ELECTRONIC CONTROLLED CLUTCH (ECC)

Diagnostic Test

1. ACTIVE DTC

1. Ignition on, engine not running.
2. Press the accelerator pedal and hold for 30 seconds.
3. With the scan tool, read DTCs.

Is the DTC active at this time?

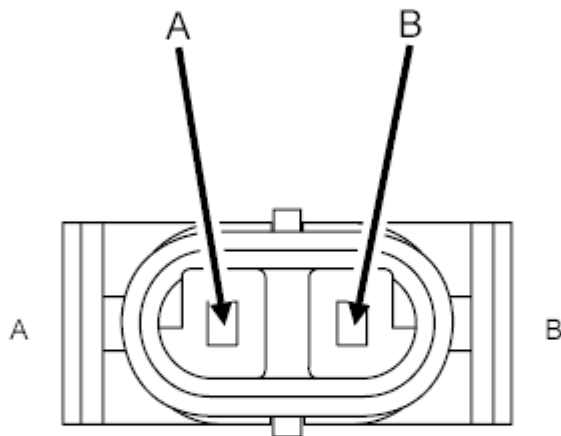
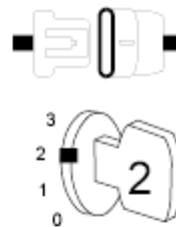
Yes

- Go to step 2

No

- Go to step 7

2. ECC SOLENOID OPERATION



SOLENOID-
ELECTRONICALLY
CONTROLLED
CLUTCH
(AWD)

102590

Fig. 2: Checking Electronic Controlled Clutch Solenoid Harness Connector
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the ECC Solenoid harness connector.
3. Ignition on, engine not running.
4. Using a 12-volt test light, jump across from the (T78) Solenoid Supply Voltage circuit and the (T312) Rear Differential Solenoid Control circuit in the ECC Solenoid harness connector.
5. With the scan tool, actuate the ECC Solenoid.

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

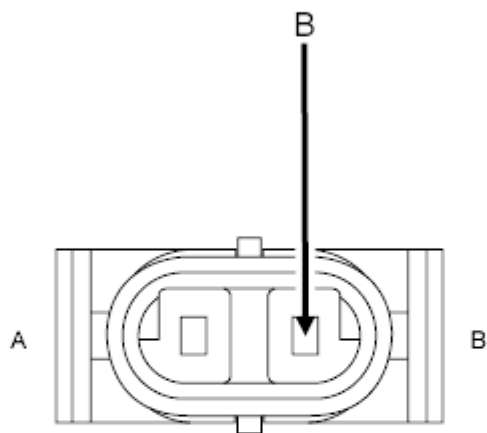
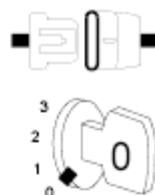
Yes

- Go to step 6

No

- Go to step 3

3. (T78) SWITCHED BATTERY SOLENOID SUPPLY CIRCUIT SHORTED TO GROUND



SOLENOID-
ELECTRONICALLY
CONTROLLED
CLUTCH
(AWD)

102596

Fig. 3: Checking Switched Battery Solenoid Supply Circuit Shorted To Ground
Courtesy of CHRYSLER LLC

1. Measure the resistance between ground and the (T78) Solenoid Supply Voltage circuit at the ECC

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Solenoid harness connector.

Is the resistance below 100 Ohms?

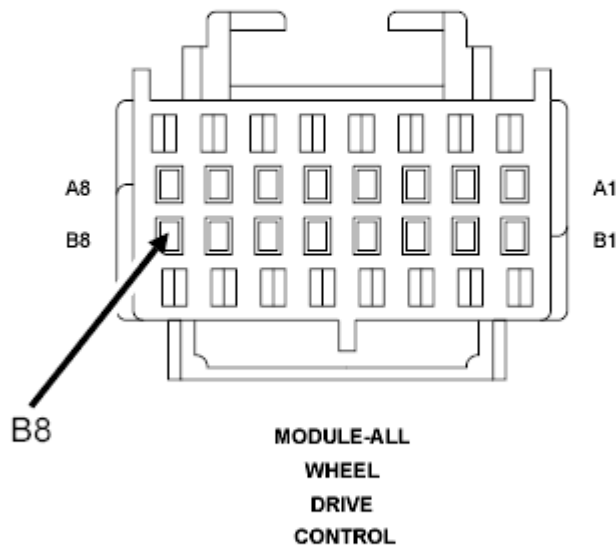
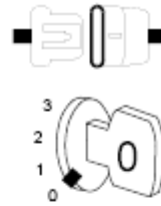
Yes

- Repair the short to ground in the (T78) Solenoid Supply Voltage circuit.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- Go to step 4

4. (T312) REAR DIFFERENTIAL SOLENOID CONTROL CIRCUIT SHORTED TO GROUND



102592

Fig. 4: Checking Rear Differential Solenoid Control Circuit Shorted To Ground
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the AWD Control Module harness connector.
3. Measure the resistance between ground and the (T312) Rear Differential Solenoid Control circuit at the AWD Module harness connector.

Is the resistance below 100 Ohms?

Yes

- Repair the short to ground in the (T312) Rear Differential Solenoid Control circuit.

- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- Go to step 5

5. ALL WHEEL DRIVE (AWD) CONTROL MODULE

NOTE: Before continuing, check the AWD Control Module 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. Pay particular attention to all Power and Ground circuits.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- Replace All Wheel Drive (AWD) Control Module in accordance with Service Information.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

6. ELECTRONICALLY CONTROLLED CLUTCH (ECC)

NOTE: Before continuing, check the ECC Solenoid jumper harness connector terminals for corrosion, damage, or terminals push out, repair/replace as necessary.

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

Were there any problems found?

Yes

- Repair as necessary.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- Replace Electronically Controlled Clutch (ECC) in accordance with Service Information.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

7. INTERMITTENT WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle test the wiring harness and connectors while checking for shorted and open circuits.
4. Using the scan tool, monitor the data related to this circuit while performing the wiggle test. Look for the data to change or for the DTC to reset.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- Test complete.

C145D-AWD CLUTCH POWER/RETURN CONTROL CIRCUIT OPEN

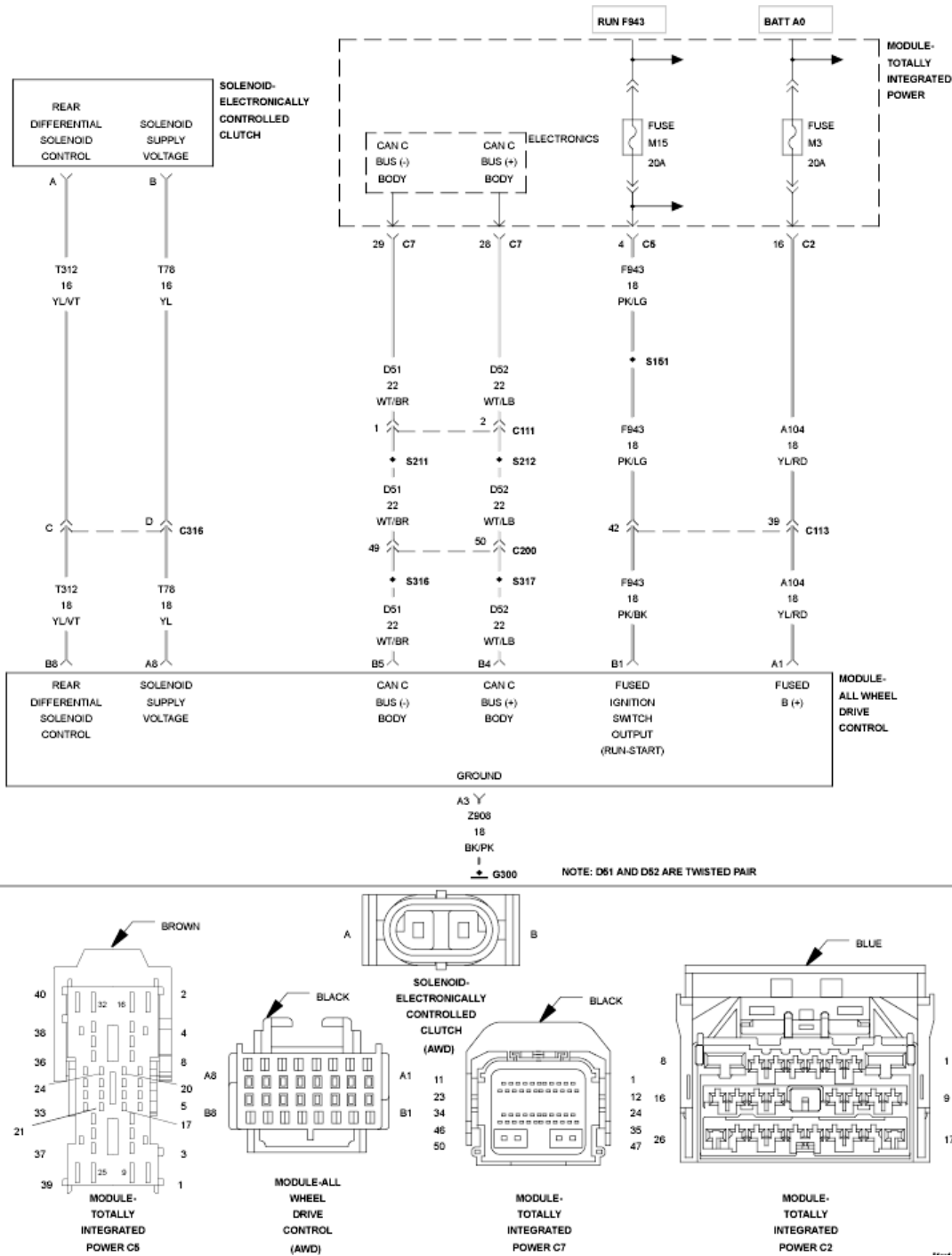


Fig. 5: Rear Differential Solenoid Control Circuit Schematic
Courtesy of CHRYSLER LLC

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

• **When Monitored:**

The Solenoid is active, no solenoid supply circuit DTCs are present and battery voltage is normal.

- **Set Condition:**

The AWD Module detects the Rear Differential Solenoid Power Control or Rear Differential Solenoid Return Control is open.

Possible Causes
(T78) SOLENOID SUPPLY VOLTAGE OPEN
(T78) SOLENOID SUPPLY VOLTAGE SHORTED TO VOLTAGE
(T312) REAR DIFFERENTIAL SOLENOID CONTROL CIRCUIT SHORTED TO VOLTAGE
(T312) REAR DIFFERENTIAL SOLENOID CONTROL CIRCUIT OPEN
ELECTRONIC CONTROLLED CLUTCH (ECC)
ALL WHEEL DRIVE (AWD) CONTROL MODULE

Diagnostic Test**1. ACTIVE DTC**

1. Ignition on, engine not running.
2. Press the accelerator pedal and hold for 30 seconds.
3. With the scan tool, read DTCs.

Is the DTC active at this time?

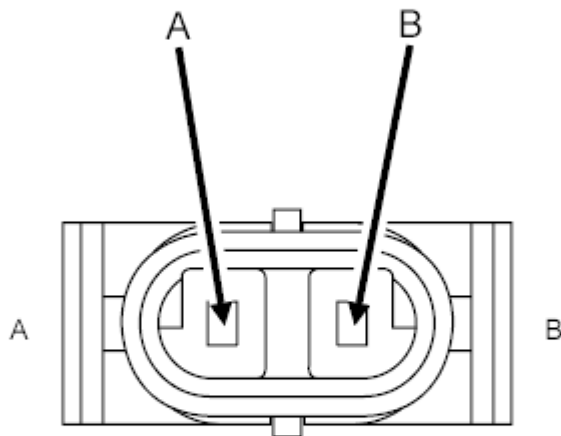
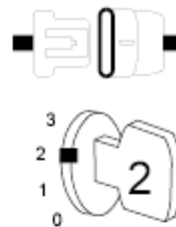
Yes

- Go to step 2

No

- Go to step 9

2. ECC SOLENOID OPERATION



SOLENOID-
ELECTRONICALLY
CONTROLLED
CLUTCH
(AWD)

102590

Fig. 6: Checking Electronic Controlled Clutch Solenoid Harness Connector
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the ECC Solenoid harness connector.
3. Ignition on, engine not running.
4. Using a 12-volt test light, jump across from the (T78) Solenoid Supply Voltage circuit and the (T312) Rear Differential Solenoid Control circuit in the ECC Solenoid harness connector.
5. With the scan tool, actuate the ECC Solenoid.

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

Yes

- Go to step 8

No

- Go to step 3

3. (T78) SWITCHED BATTERY SOLENOID SUPPLY CIRCUIT OPEN

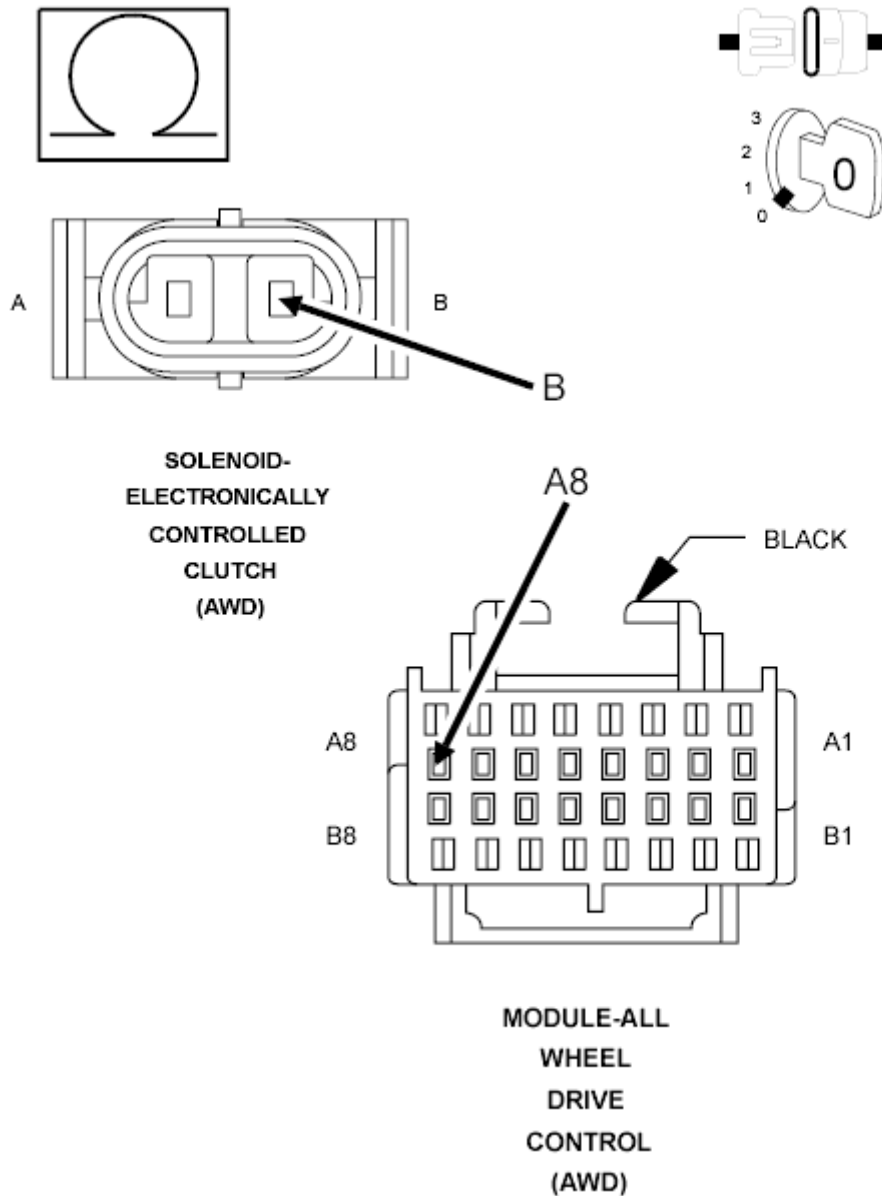


Fig. 7: Checking Switched Battery Solenoid Supply Circuit Open

Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the AWD Control Module harness connector.
3. Measure the resistance of the (T78) Solenoid Supply Voltage circuit between the ECC Solenoid harness connector and the AWD Control Module harness connector.

Is the resistance below 5.0 Ohms?

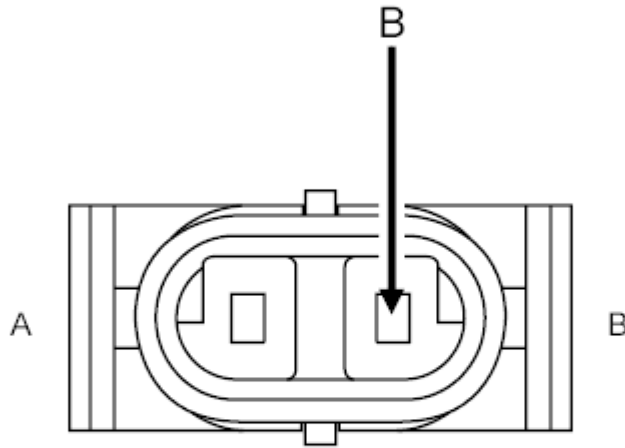
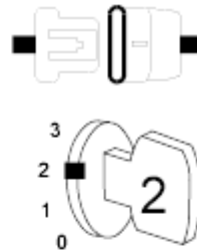
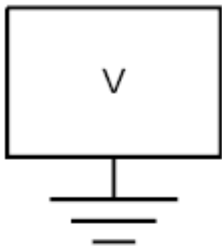
Yes

- Go to step 4

No

- Repair the (T78) Solenoid Supply Voltage circuit for an open.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

4. (T78) SWITCHED BATTERY SOLENOID SUPPLY CIRCUIT SHORTED TO VOLTAGE



SOLENOID-
ELECTRONICALLY
CONTROLLED
CLUTCH
(AWD)

2065661

Fig. 8: Checking Switched Battery Solenoid Supply Circuit Shorted To Voltage
Courtesy of CHRYSLER LLC

1. Ignition on, engine not running.
2. Measure the voltage between ground and the (T78) Solenoid Supply Voltage circuit at the ECC Solenoid harness connector.

Is there any voltage present?

Yes

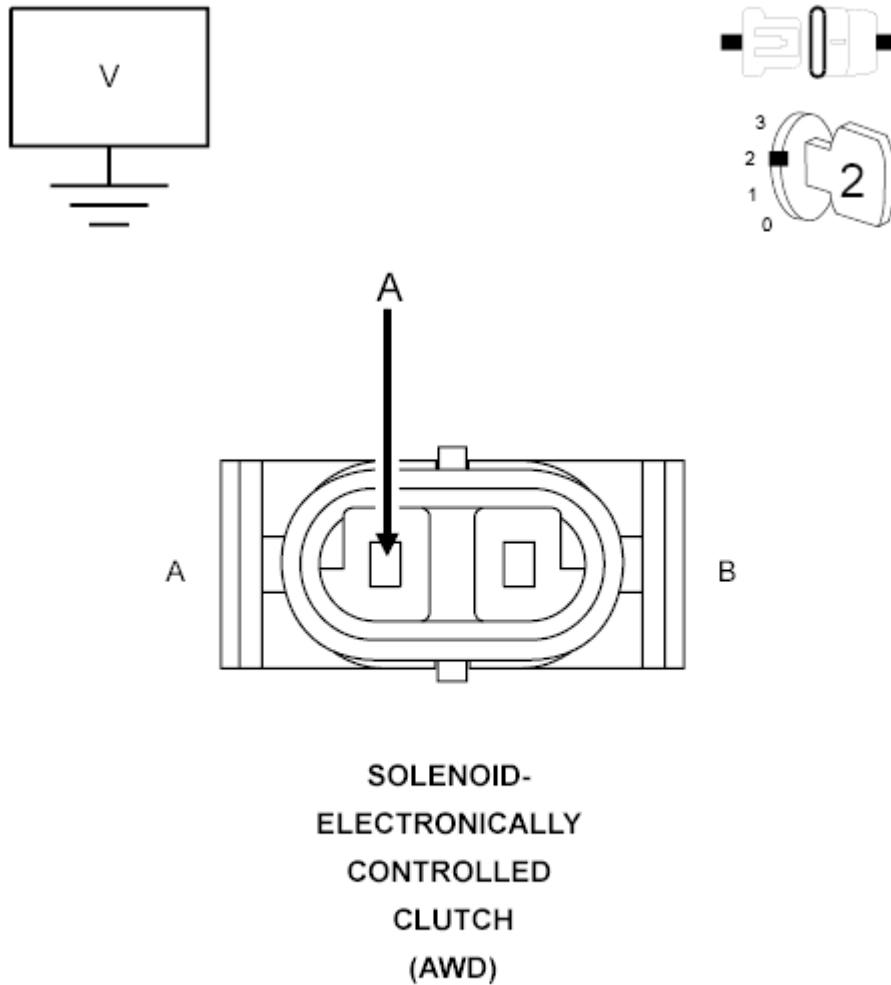
Repair the (T78) Solenoid Supply Voltage circuit for a short to voltage

- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- Go to step 5

5. (T312) REAR DIFFERENTIAL SOLENOID CONTROL CIRCUIT SHORTED TO VOLTAGE



2065700

Fig. 9: Checking Rear Differential Solenoid Control Circuit Shorted To Voltage
Courtesy of CHRYSLER LLC

1. Measure the voltage between ground and the (T312) Rear Differential Solenoid Control circuit in the ECC Solenoid harness connector.

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Is there any voltage present?

Yes

- Repair the (T312) Rear Differential Solenoid Control circuit for a short to voltage.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- Go to step 6

6. (T312) REAR DIFFERENTIAL SOLENOID CONTROL CIRCUIT OPEN

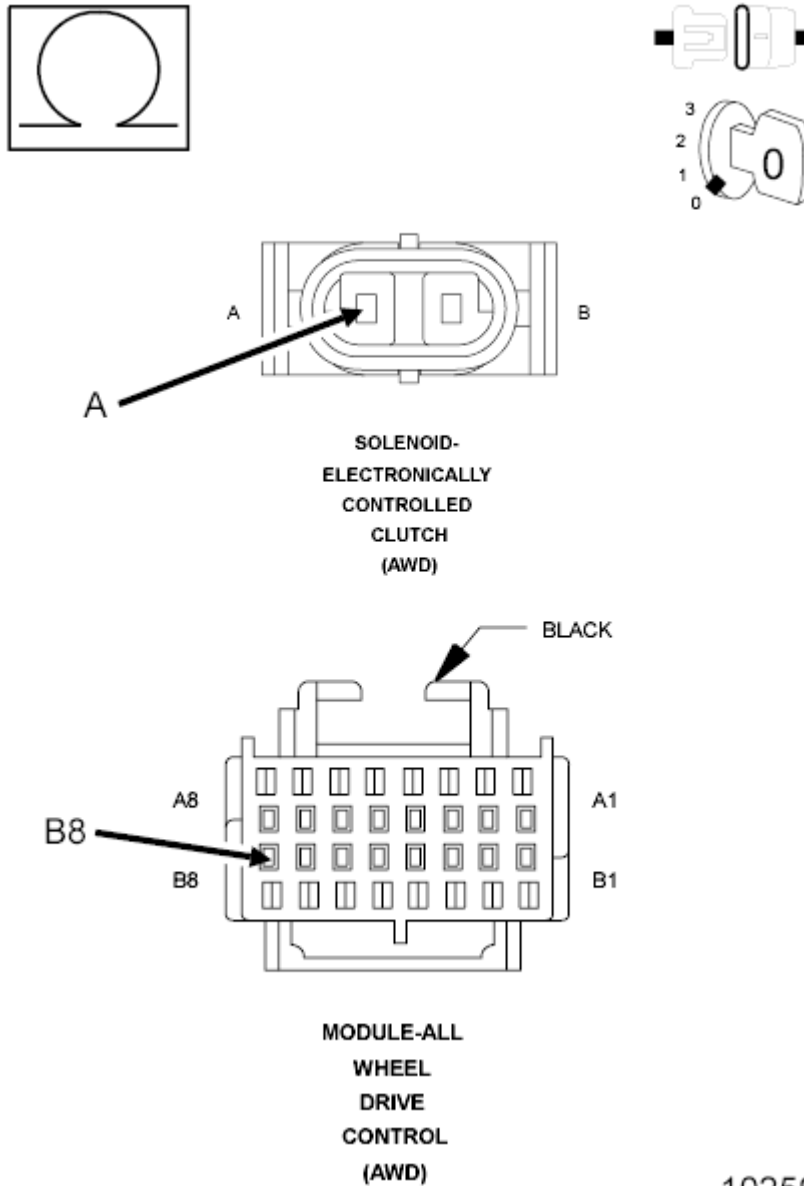


Fig. 10: Checking Rear Differential Solenoid Control Circuit Open
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Measure the resistance of the (T312) Rear Differential Solenoid Control circuit between the ECC Solenoid harness connector and the AWD Control Module harness connector.

Is the resistance below 5.0 Ohms?

Yes

- Go to step 7

No

- Repair the open in the (T312) Rear Differential Solenoid Control circuit.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

7. ALL WHEEL DRIVE (AWD) CONTROL MODULE

NOTE: Before continuing, check the AWD Control Module 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. Pay particular attention to all Power and Ground circuits.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- Replace All Wheel Drive (AWD) Control Module in accordance with Service Information.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

8. ELECTRONICALLY CONTROLLED CLUTCH (ECC)

NOTE: Before continuing, check the ECC Solenoid jumper harness connector terminals for corrosion, damage, or terminals push out, repair/replace as necessary.

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

Were there any problems found?

Yes

- Repair as necessary.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- Replace Electronically Controlled Clutch (ECC) in accordance with Service Information.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

9. INTERMITTENT WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle test the wiring harness and connectors while checking for shorted and open circuits.
4. Using the scan tool, monitor the data related to this circuit while performing the wiggle test. Look for the data to change or for the DTC to reset.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- Test complete.

C145F-AWD SYSTEM TEMPORARILY DISABLED - OVERTEMPERATURE

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

- **When Monitored:**

Ignition on.

- **Set Condition:**

The AWD Control Module detects an overheat condition due to excessive difference in speed across the ECC from hard driving conditions (Mud, Sand, Snow, 2WD Chassis dynamometer etc.).

Possible Causes
DRIVING CONDITIONS ALL WHEEL DRIVE (AWD) CONTROL MODULE ELECTRONICALLY CONTROLLED CLUTCH (ECC)

Always perform the AWD Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure.

Diagnostic Test

1. ANTI-LOCK BRAKE SYSTEM (ABS) MODULE DTCS PRESENT

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

Are there any ABS DTCs present?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Antilock Brake (ABS) - Diagnosis and Testing** and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. DTC IS ACTIVE

NOTE: If C1456, C145A or C145D has set along with this DTC, diagnose those DTC(s) first before continuing with this test.

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

Is the status Active for this DTC?

Yes

- Go to step 3

No

- Go to step 5

3. VERIFY SET CONDITION

NOTE: Check with customer on driving terrain (mud, sand, snow) for set condition.

1. With the scan tool, record and erase DTCs.
2. Test drive vehicle on dry paved road.
3. With the scan tool, read DTCs.

Is the status Active for this DTC?

Yes

- Go to step 4

No

- Test Complete.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure.**

4. AWD CONTROL MODULE

NOTE: Before continuing, check the AWD Control Module 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. Pay particular attention to all Power and Ground circuits.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure.**

No

- Replace All Wheel Drive (AWD) Control Module in accordance with Service Information.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure.**

5. INTERMITTENT WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle test the wiring harness and connectors while checking for shorted and open circuits.
4. Using the scan tool, monitor the data related to this circuit while performing the wiggle test. Look for the data to change or for the DTC to reset.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure.**

No

- Test complete.

C2100-BATTERY VOLTAGE LOW

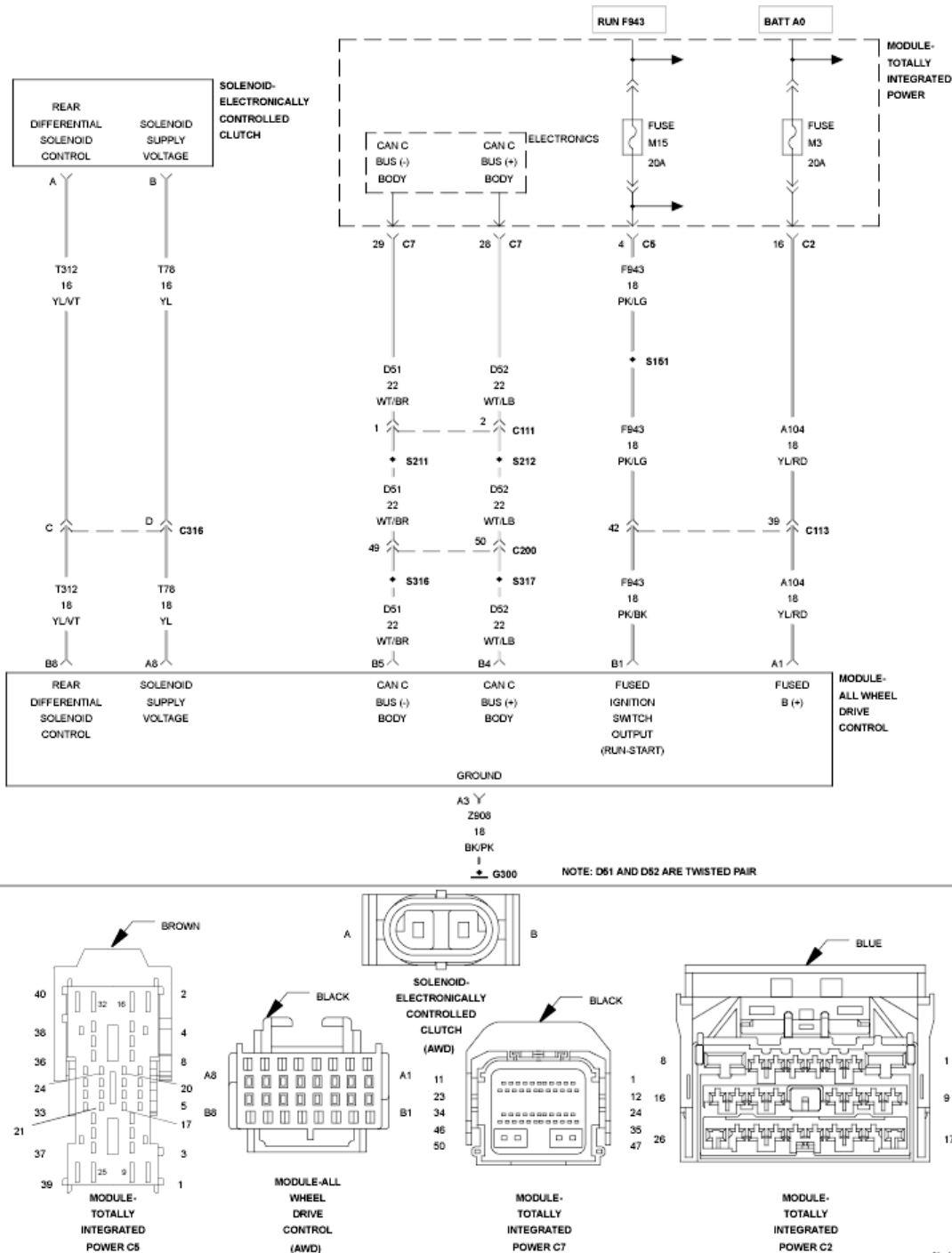


Fig. 11: Rear Differential Solenoid Control Circuit Schematic
 Courtesy of CHRYSLER LLC

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

- **When Monitored:**

Continuously.

- **Set Condition:**

The All Wheel Drive Control Module detects that system voltage is below 8.0 volts for 30 seconds.

Possible Causes
CHARGING SYSTEM DTCS PRESENT (F943) IGNITION SWITCH OUTPUT (RUN/START) CIRCUIT OPEN OR HIGH RESISTANCE (A104) FUSED B(+) CIRCUIT OPEN OR HIGH RESISTANCE (Z908) GROUND CIRCUIT OPEN OR HIGH RESISTANCE ALL WHEEL DRIVE (AWD) CONTROL MODULE TOTALLY INTEGRATED POWER MODULE (TIPM)

Diagnostic Test

1. CHARGING SYSTEM DTCS PRESENT

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

Are there any Charging System or related voltage DTCs present?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing** and perform any Charging System DTC diagnostic procedures before continuing with this test.

No

- Go to step 2

2. CHECK FOR ACTIVE DTC

1. Ignition on, engine running.
2. Accelerate the engine above 1500 RPM for 30 seconds.
3. With the scan tool, read DTCs.

Is the DTC active at this time?

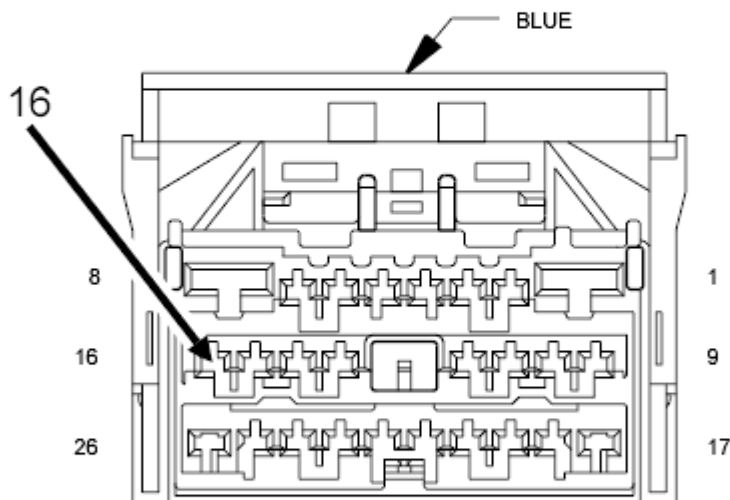
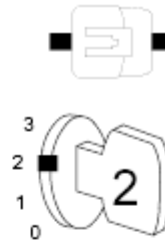
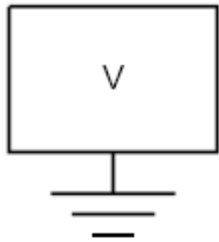
Yes

- Go to step 3

No

- Go to step 10

3. CHECK THE (A104) FUSED B(+) VOLTAGE



MODULE-
TOTALLY
INTEGRATED
POWER C2

2061595

Fig. 12: Checking Fused B(+) Voltage
Courtesy of CHRYSLER LLC

1. While back probing, measure the voltage of the (A104) Fused B(+) circuit in the TIPM C2 harness connector.

Is the voltage above 8 volts?

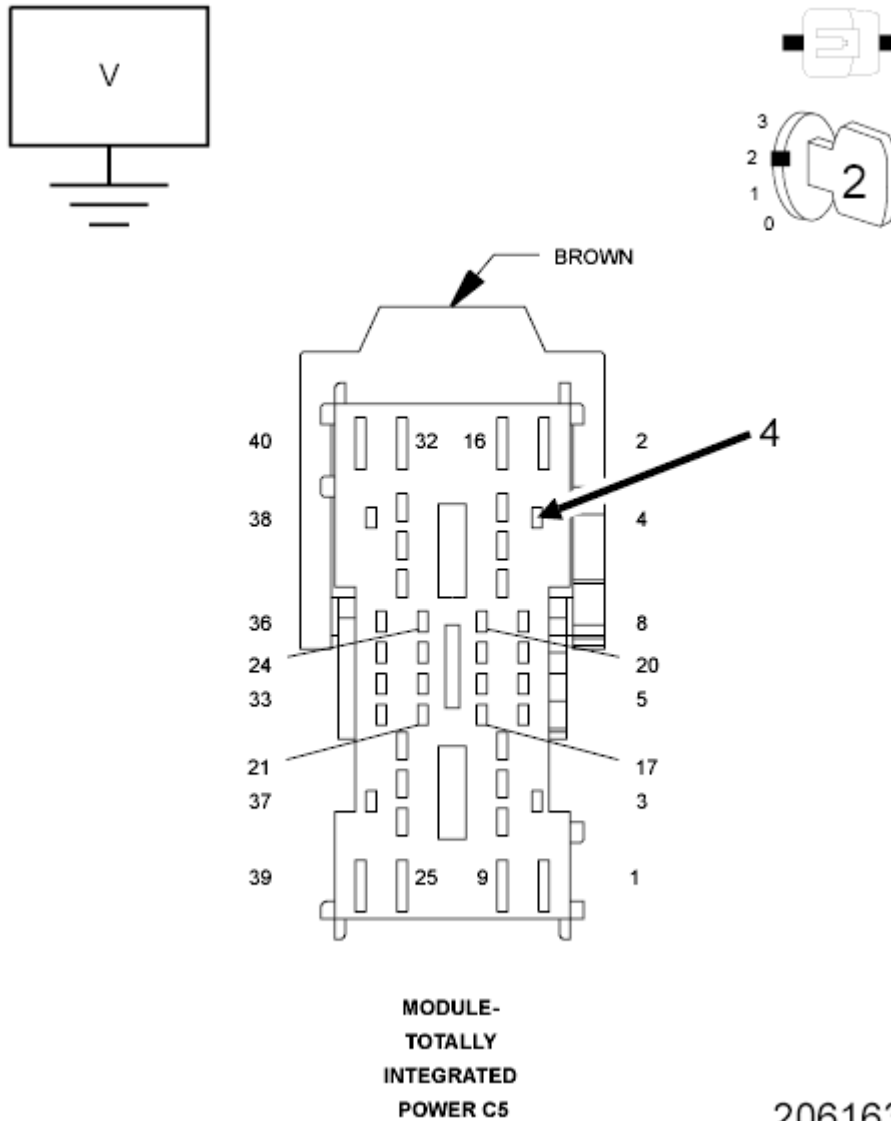
Yes

- Go to step 4

No

- Go to step 9

4. CHECK THE (F943) FUSED IGNITION SWITCH OUTPUT RUN/START VOLTAGE



2061630

Fig. 13: Checking Fused Ignition Switch Output Run/Start Voltage
Courtesy of CHRYSLER LLC

2009 Dodge Journey R/T

2009 DRIVELINE/AXLES All Wheel Drive (AWD) Module - Electrical Diagnostics - Journey

1. While back probing, measure the voltage of the (F943) Ignition Switch Output Run/Start circuit in the TIPM C5 harness connector.

Is the voltage above 8 volts?

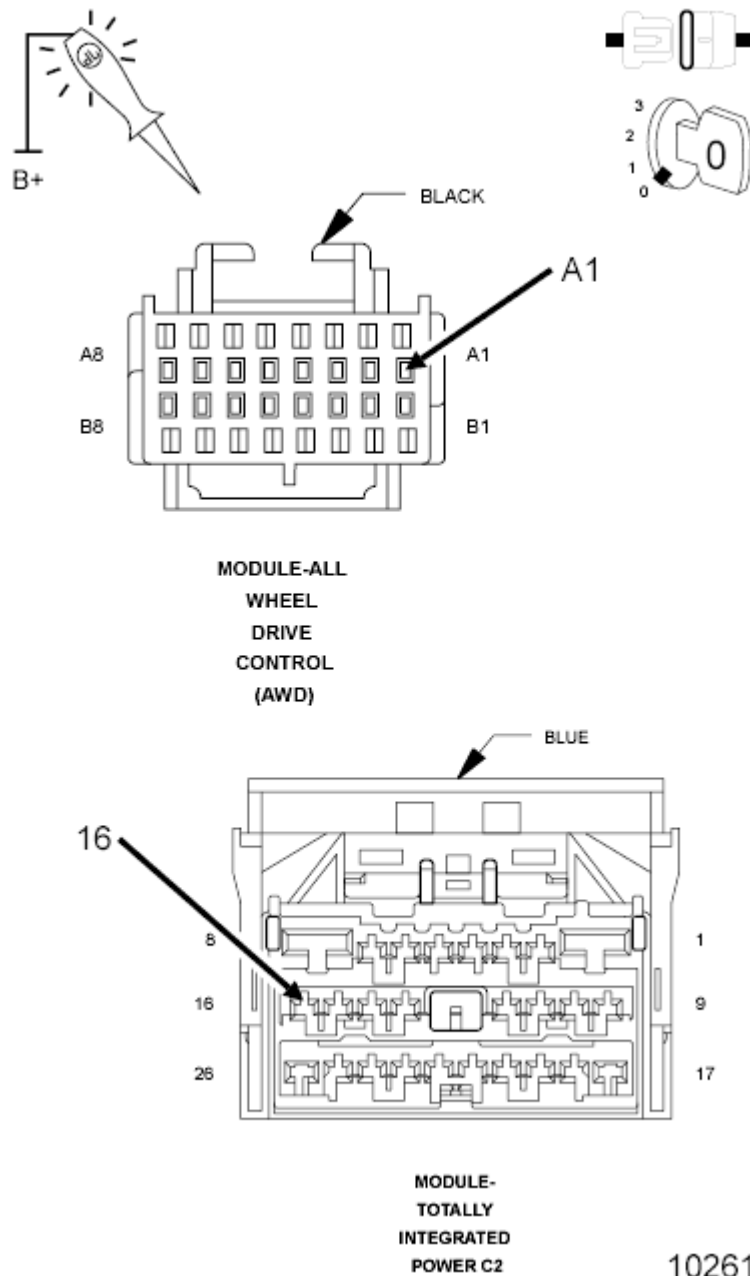
Yes

- Go to step 5

No

- Go to step 9

5. **(A104) FUSED B(+) CIRCUIT OPEN OR HIGH RESISTANCE**



102612

Fig. 14: Checking Fused B(+) Circuit Open Or High Resistance
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the AWD Module harness connector.
3. Disconnect the TIPM C2 harness connector.
4. Connect a jumper wire between the (A104) Fused B(+) circuit and Ground in the TIPM C2 harness connector.
5. With a 12-volt test light connected to B(+), check the (A104) Fused B(+) circuit in the AWD Control Module harness connector.

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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?

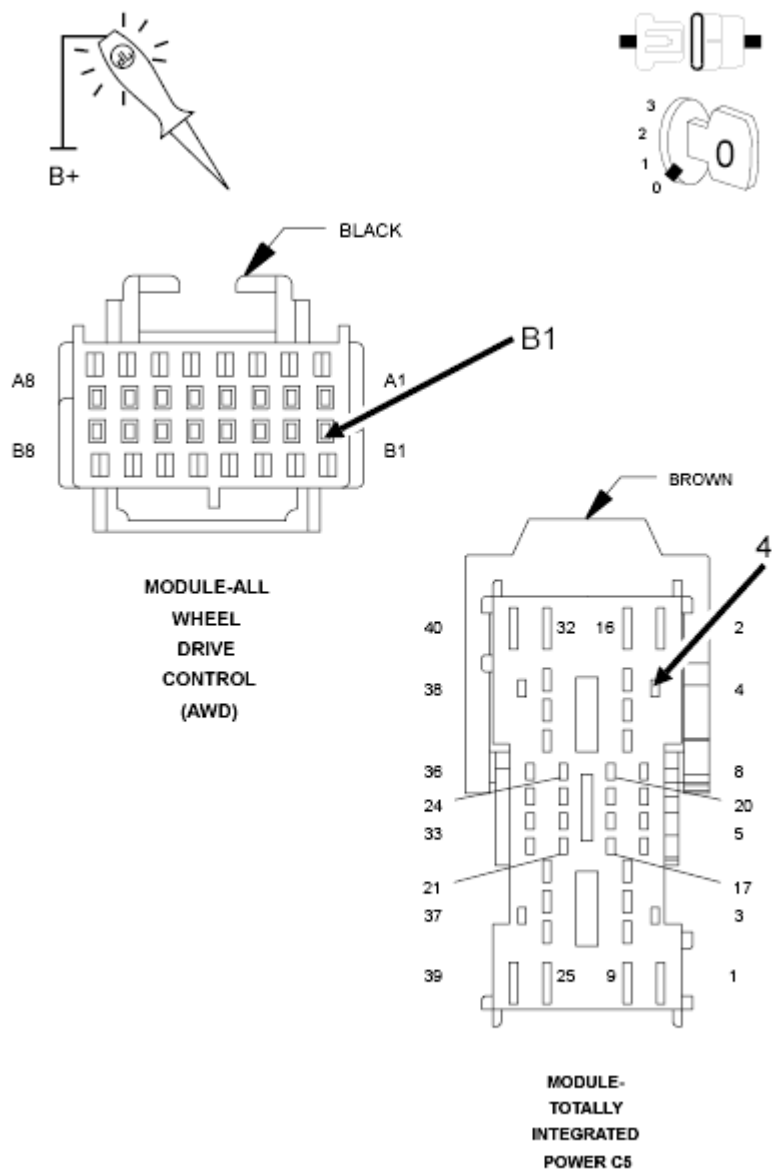
Yes

- Go to step 6

No

- Repair the (A104) Fused B(+) circuit for an open circuit or high resistance.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

6. (F943) IGNITION SWITCH OUTPUT (RUN/START) CIRCUIT OPEN OR HIGH RESISTANCE



102614

Fig. 15: Checking Ignition Switch Output (Run/Start) Circuit Open Or High Resistance
Courtesy of CHRYSLER LLC

1. Disconnect the TIPM C5 harness connector.
2. Connect a jumper wire between the (F943) Ignition Switch Output (RUN/START) circuit and ground in the TIPM C5 harness connector.
3. With a 12-volt test light connected to 12-volts, check the (F943) Ignition Switch Output (RUN/START) circuit in the AWD Control Module harness connector.

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?

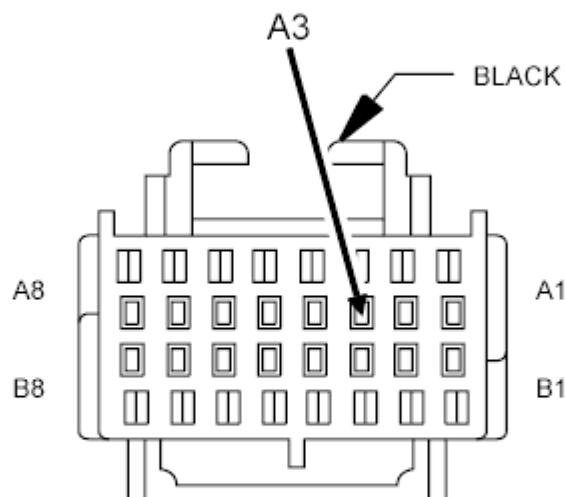
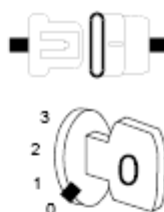
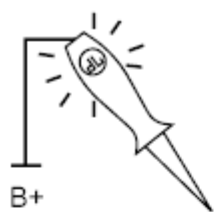
Yes

- Go to step 7

No

- Repair the (F943) Ignition Switch Output (RUN/START) circuit for an open circuit or high resistance.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

7. (Z908) GROUND CIRCUIT OPEN OR HIGH RESISTANCE



MODULE-ALL
WHEEL
DRIVE
CONTROL
(AWD)

102616

Fig. 16: Checking Ground Circuit Open Or High Resistance
Courtesy of CHRYSLER LLC

1. With a 12-volt test light connected to B(+), check the (Z908) ground circuit in the AWD Control Module harness connector.

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

- Go to step 8

No

- Repair the (Z908) Ground circuit for an open circuit or high resistance.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

8. AWD CONTROL MODULE

NOTE: Before continuing, check the AWD Module 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?

Repair

- Replace the AWD Control Module in accordance with the Service information.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

9. 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?

Repair

- Replace the Totally Integrated Power Module in accordance with the Service Information.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

10. INTERMITTENT WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle test the wiring harness and connectors while checking for shorted and open circuits.
4. Using the scan tool, monitor the data related to this circuit while performing the wiggle test. Look for the data to change or for the DTC to reset.

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2009 DRIVELINE/AXLES All Wheel Drive (AWD) Module - Electrical Diagnostics - Journey

Were there any problems found?

Yes

- Repair as necessary.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- Test Complete.

C2101-BATTERY VOLTAGE HIGH

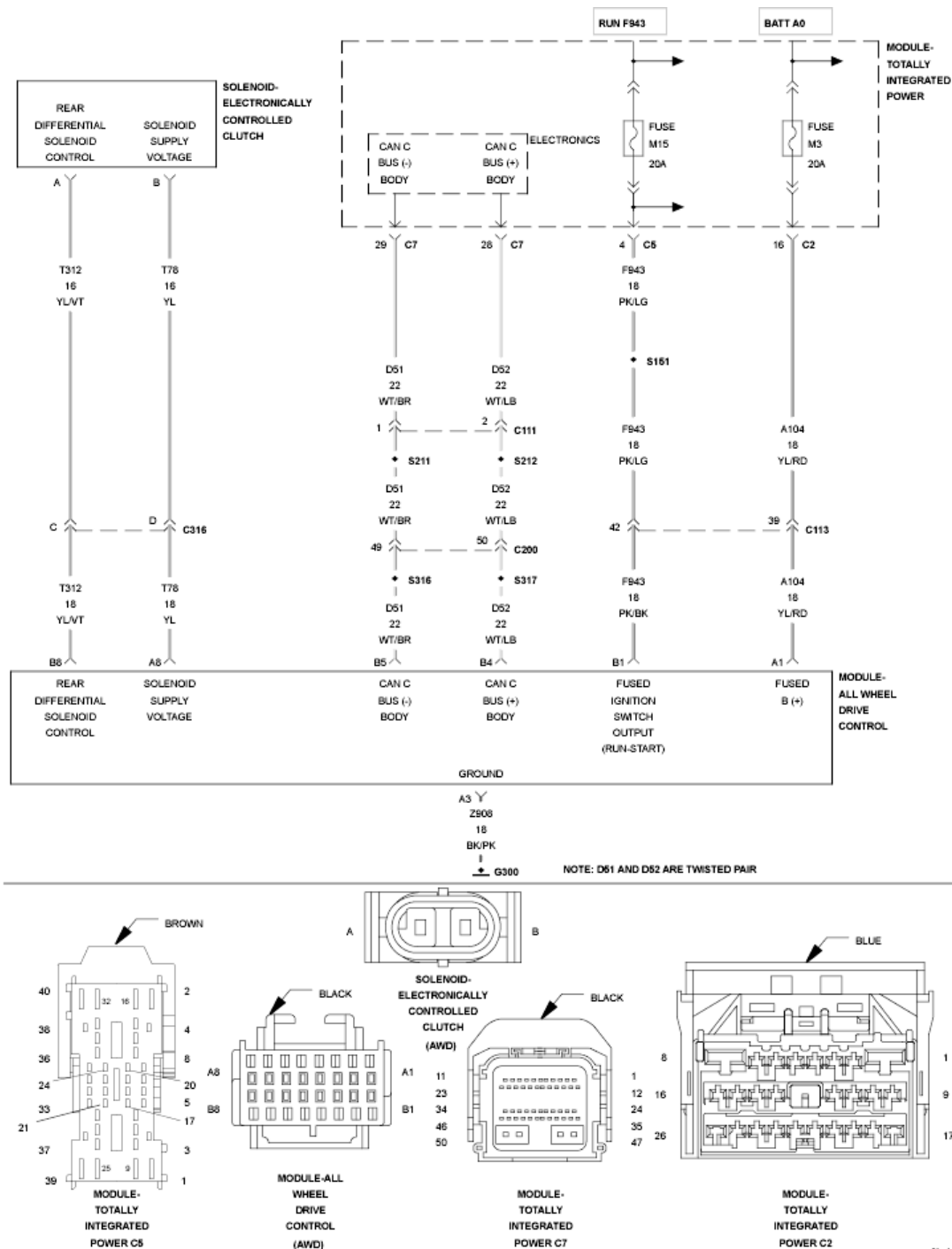


Fig. 17: Rear Differential Solenoid Control Circuit Schematic
Courtesy of CHRYSLER LLC

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

• **When Monitored:**

Continuously.

• **Set Condition:**

The All Wheel Drive Control Module detects that system voltage is above 17.0 volts for more than 30 seconds.

Possible Causes

CHARGING SYSTEM DTCS PRESENT
(F943) IGNITION SWITCH OUTPUT (RUN/START) CIRCUIT OPEN OR HIGH RESISTANCE
(A104) FUSED B(+) CIRCUIT OPEN OR HIGH RESISTANCE
ALL WHEEL DRIVE (AWD) CONTROL MODULE
TOTALLY INTEGRATED POWER MODULE (TIPM)

Diagnostic Test

1. CHARGING SYSTEM DTCS PRESENT

1. Ignition on, engine not running.
2. With the scan tool, read DTCs in the Powertrain Control Module (PCM).

Are there any Charging System or related voltage DTCs present?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing** and perform any Charging System DTC diagnostic procedures before continuing with this test.

No

- Go to step 2

2. CHECK FOR ACTIVE DTC

NOTE: Leave the ignition on for 30 seconds.

1. With the scan tool, read DTCs.

Is the DTC active at this time?

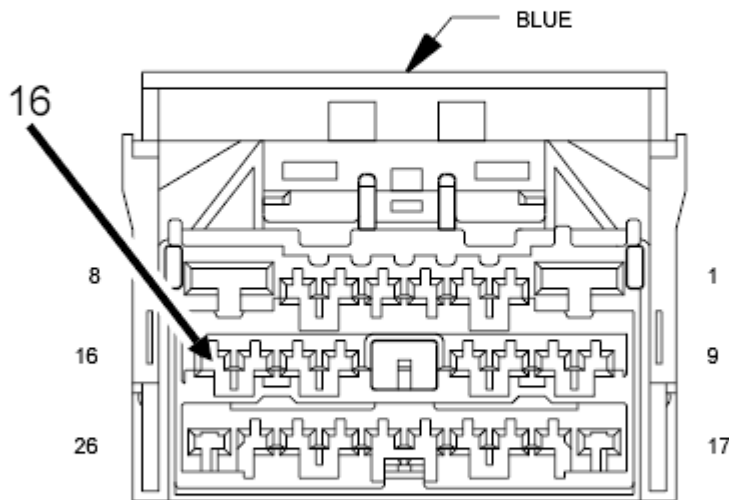
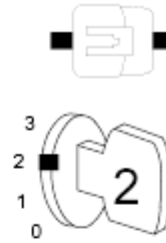
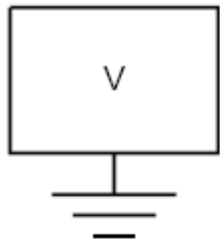
Yes

- Go to step 3

No

- Go to step 7

3. CHECK THE (A104) FUSED B(+) VOLTAGE



MODULE-
TOTALLY
INTEGRATED
POWER C2

2061595

Fig. 18: Checking Fused B(+) Voltage
Courtesy of CHRYSLER LLC

1. While back probing, measure the voltage of the (A104) Fused B(+) circuit in the TIPM C2 harness connector.

Is the voltage below 17 volts?

Yes

- Go to step 4

No

- Go to step 6

4. **CHECK THE (F943) FUSED IGNITION SWITCH OUTPUT RUN/START VOLTAGE**

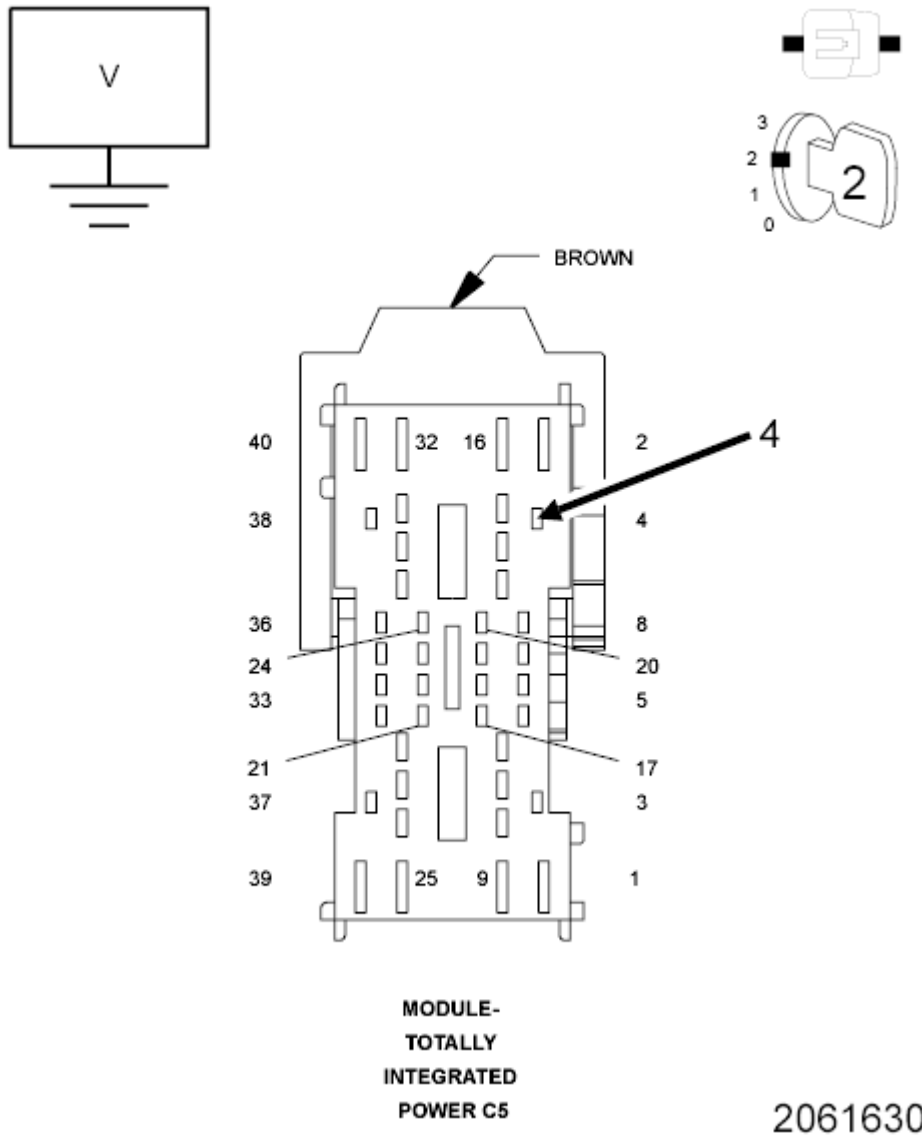


Fig. 19: Checking Fused Ignition Switch Output Run/Start Voltage
 Courtesy of CHRYSLER LLC

1. While back probing, measure the voltage of the (F943) Ignition Switch Output Run/Start circuit in the TIPM C5 harness connector.

Is the voltage below 17 volts?

Yes

- Go to step 5

No

- Go to step 6

5. AWD CONTROL MODULE

NOTE: Before continuing, check the AWD Module 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?

Repair

- Replace the AWD Control Module in accordance with the Service information.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

6. TOTALLY INTEGRATED POWER MODULE (TIPM)

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?

Repair

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

7. INTERMITTENT WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle test the wiring harness and connectors while checking for shorted and open circuits.
4. Using the scan tool, monitor the data related to this circuit while performing the wiggle test. Look

for the data to change or for the DTC to reset.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- Test Complete.

C211C-IGNITION RUN/START INPUT CIRCUIT LOW

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



Fig. 20: Rear Differential Solenoid Control Circuit Schematic
Courtesy of CHRYSLER LLC

- **When Monitored:**
With the ignition on.
- **Set Condition:**

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2009 DRIVELINE/AXLES All Wheel Drive (AWD) Module - Electrical Diagnostics - Journey

The AWD will set this DTC if the Ignition Run/Start circuit voltage is less than the expected value for more than 30 seconds.

Possible Causes

(F943) IGNITION SWITCH OUTPUT (RUN/START) CIRCUIT OPEN OR HIGH RESISTANCE
(Z908) GROUND CIRCUIT OPEN OR HIGH RESISTANCE
ALL WHEEL DRIVE (AWD) CONTROL MODULE
TOTALLY INTEGRATED POWER MODULE (TIPM)

Diagnostic Test

1. CHECK FOR ACTIVE DTC

1. Ignition on, engine running.
2. Accelerate the engine above 1500 RPM for 30 seconds.
3. With the scan tool, read DTCs.

Does the scan tool display this DTC as active?

Yes

- Go to step 2

No

- Go to step 7

2. (F943) IGNITION SWITCH OUTPUT (RUN/START)

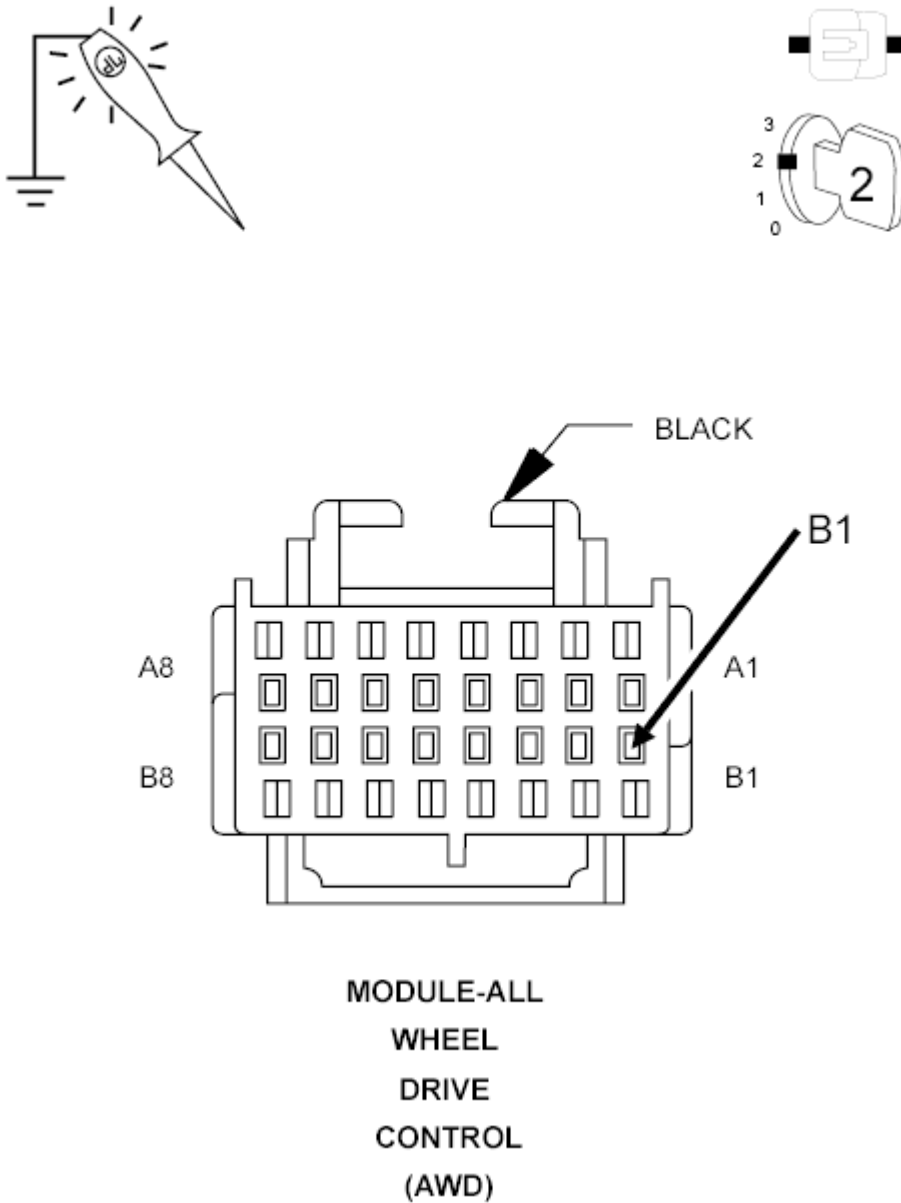


Fig. 21: Checking Ignition Switch Output (Run/Start)

Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the AWD Control Module harness connector.
3. Ignition on, engine not running.
4. With a 12-volt test light connected to ground, check the (F943) Ignition Switch Output (RUN/START) circuit in the AWD Control Module harness connector.

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?

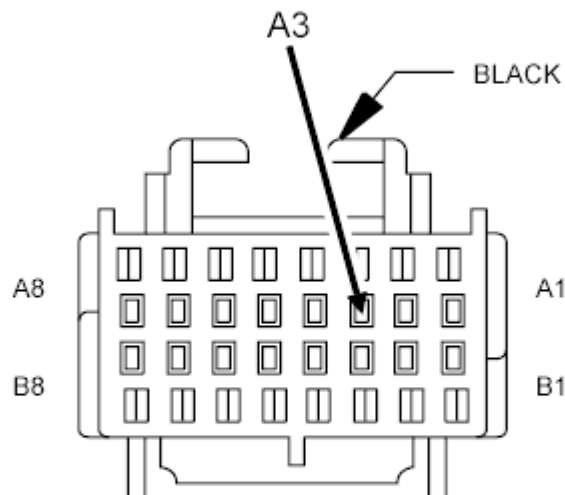
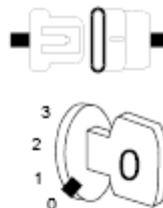
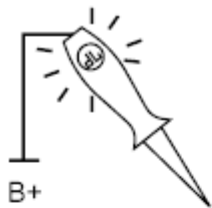
Yes

- Go to step 3

No

- Go to step 4

3. (Z908) GROUND CIRCUIT OPEN OR HIGH RESISTANCE



MODULE-ALL
WHEEL
DRIVE
CONTROL
(AWD)

102616

Fig. 22: Checking Ground Circuit Open Or High Resistance

Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. With a 12-volt test light connected to B+, check the (Z908) Ground circuit in the AWD Control Module harness connector.

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?

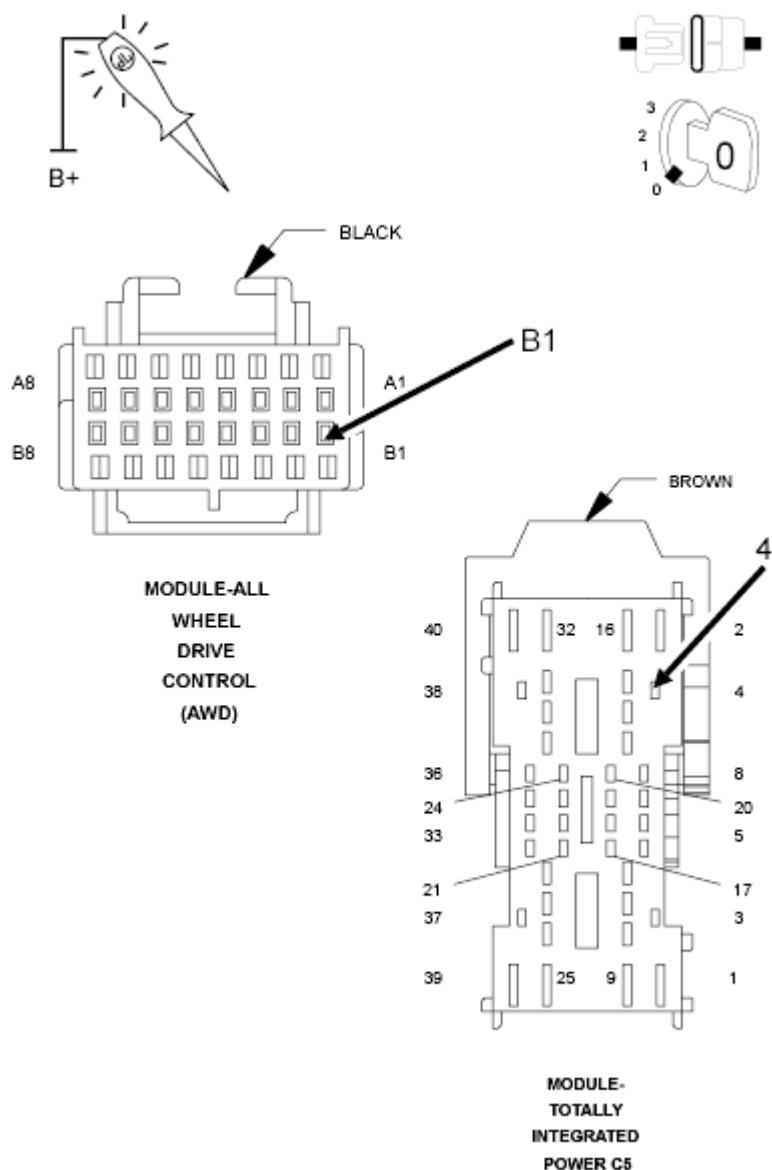
Yes

- Go to step 5

No

- Repair the (Z908) Ground circuit for an open circuit or high resistance.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

4. **(F943) IGNITION SWITCH OUTPUT (RUN/START) CIRCUIT OPEN OR HIGH RESISTANCE**



102614

Fig. 23: Checking Ignition Switch Output (Run/Start) Circuit Open Or High Resistance
Courtesy of CHRYSLER LLC

1. Disconnect the TIPM C5 harness connector.
2. Connect a jumper wire between the (F943) Ignition Switch Output (RUN/START) circuit and ground in the TIPM C5 harness connector.
3. With a 12-volt test light connected to 12-volts, check the (F943) Ignition Switch Output (RUN/START) circuit in the AWD Control Module harness connector.

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

- Go To 6

No

- Repair the (F943) Ignition Switch Output (RUN/START) circuit for an open circuit or high resistance.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

5. AWD CONTROL MODULE

NOTE: Before continuing, check the AWD Module 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.

Repair

- Replace the AWD Control Module in accordance with the Service information.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

6. 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?

Repair

- Replace the Totally Integrated Power Module in accordance with the Service Information.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

7. INTERMITTENT WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.

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3. Wiggle test the wiring harness and connectors while checking for shorted and open circuits.
4. Using the scan tool, monitor the data related to this circuit while performing the wiggle test. Look for the data to change or for the DTC to reset.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- Test complete.

C211D-IGNITION RUN/START INPUT CIRCUIT HIGH

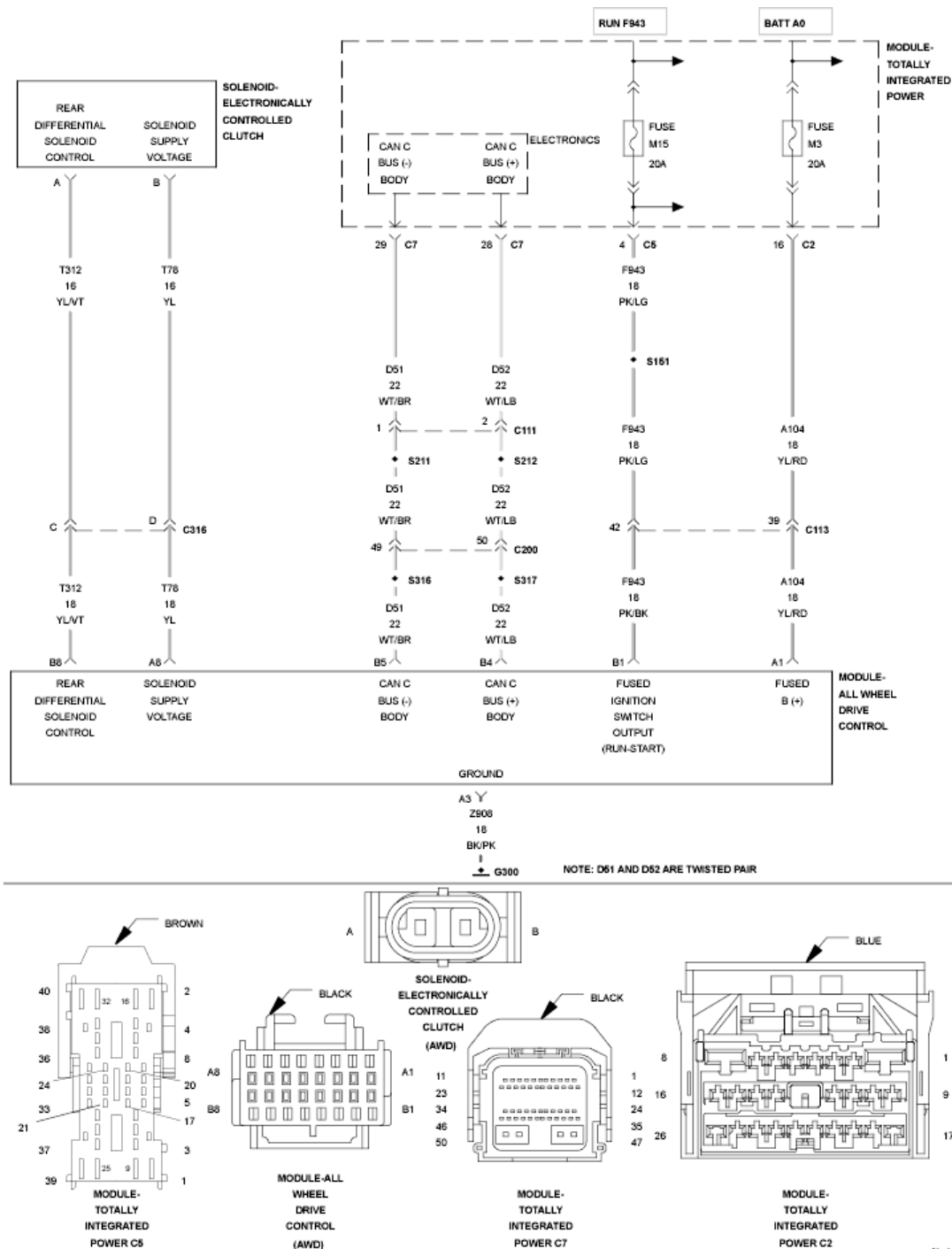


Fig. 24: Rear Differential Solenoid Control Circuit Schematic
Courtesy of CHRYSLER LLC

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

• **When Monitored:**

Continuously.

- **Set Condition:**

The All Wheel Drive (AWD) Control Module detects that the ignition Switch circuit voltage is above 17.0 volts for more than 30 seconds.

Possible Causes
(F943) IGNITION SWITCH OUTPUT (RUN/START) CIRCUIT SHORT TO VOLTAGE
ALL WHEEL DRIVE (AWD) CONTROL MODULE
TOTALLY INTEGRATED POWER MODULE (TIPM)

Diagnostic Test**1. CHARGING SYSTEM DTCS PRESENT**

1. Ignition on, engine not running.
2. With the scan tool, read DTCs in the Powertrain Control Module.

Are there any Charging System or related voltage DTCs present?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing** and perform the appropriate diagnostic procedure before continuing with this test.

No

- Go to step 2

2. CHECK FOR ACTIVE DTC

1. Ignition on, engine not running.
2. With the scan tool, read the active DTC.
3. Cycle the ignition switch from the OFF to ON position, leaving the ignition on for a minimum of 30 seconds.
4. With the scan tool, read the active DTC.

Does the scan tool display this DTC as active?

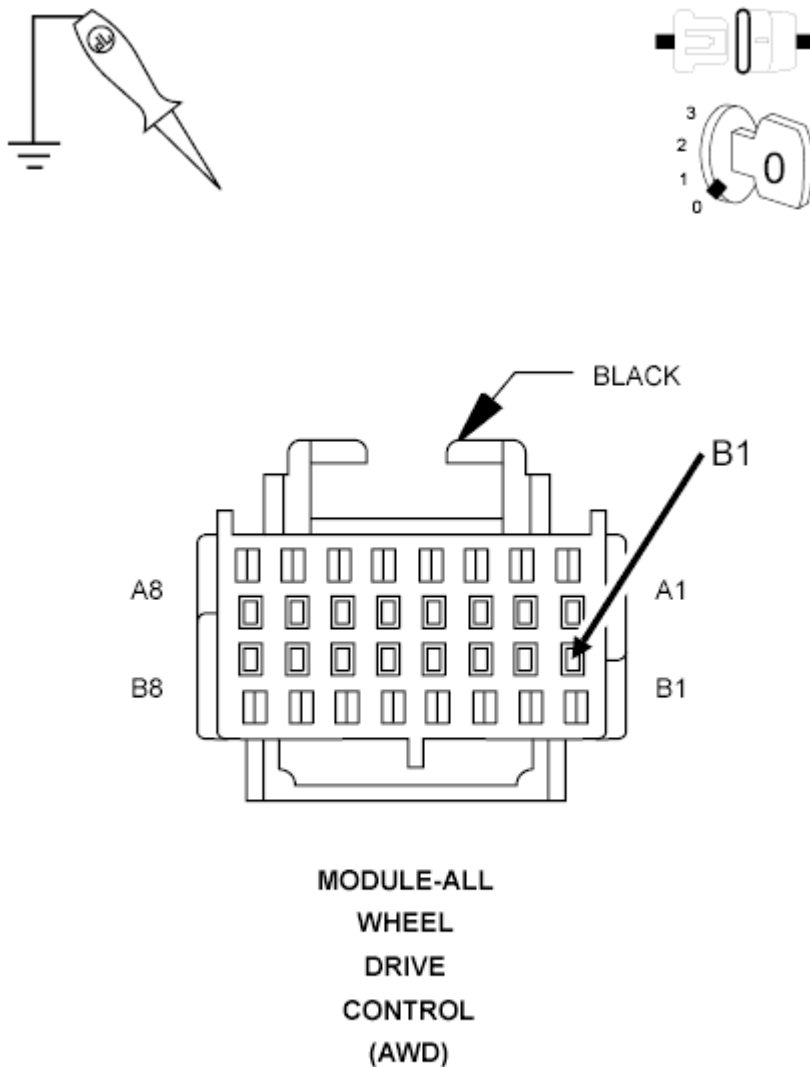
Yes

- Go to step 3

No

- Go to step 7

3. (F943) IGNITION SWITCH OUTPUT (RUN/START) CIRCUIT SHORTED TO VOLTAGE



102626

Fig. 25: Checking Ignition Switch Output (Run/Start) Circuit Shorted To Voltage
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the TIPM C5 harness connector.
3. Disconnect the AWD Control Module harness connector.
4. With a 12-volt test light connected to ground, check the (F943) Ignition Switch Output (RUN/START) circuit in the AWD Control Module harness connector.

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

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Does the test light illuminate brightly?

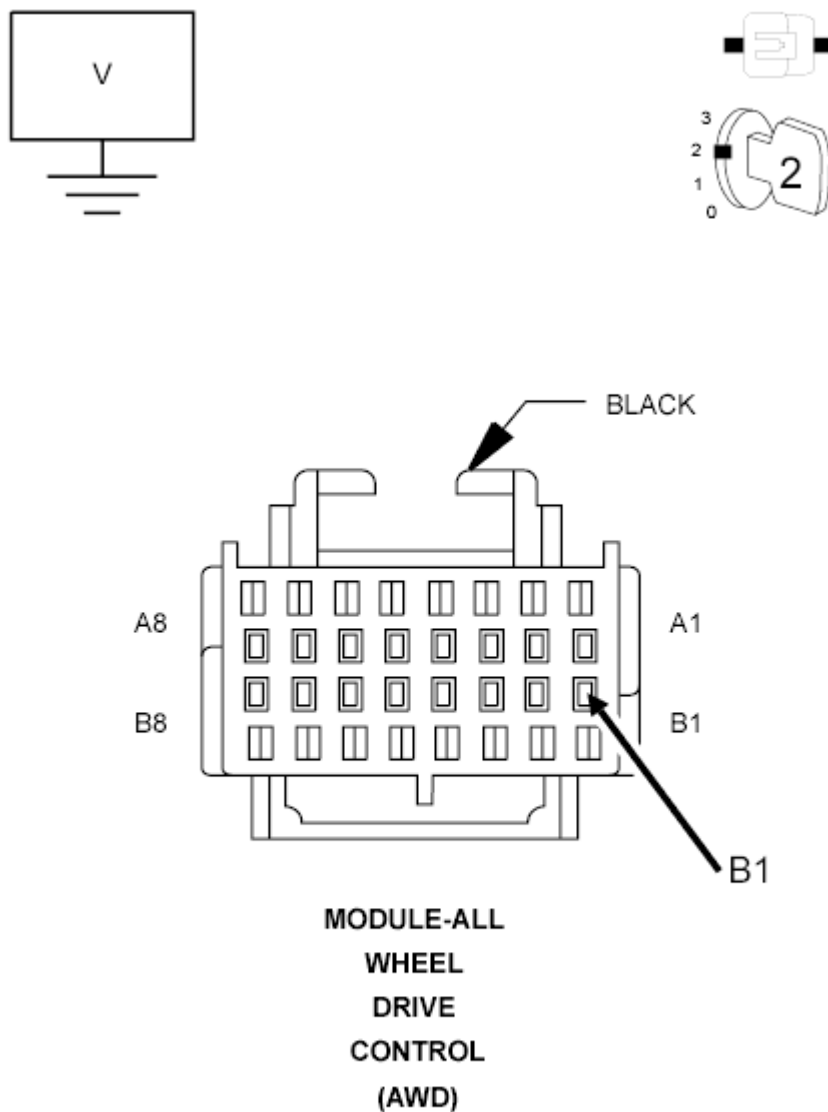
Yes

- Repair the (F943) Ignition Switch Output (RUN/START) circuit for a short to voltage.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

Go to step 4

4. (F943) IGNITION SWITCH OUTPUT (RUN/START) VOLTAGE



102610

Fig. 26: Checking Ignition Switch Output (Run/Start) Voltage
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Connect the TIPM C5 harness connector.
3. Ignition on, engine not running.
4. Measure the voltage between (F943) Ignition Switch Output (RUN/START) circuit and ground in the AWD Control Module harness connector.

Is the voltage greater than 17 volts?

Yes

- Go to step 6

No

- Go to step 5

5. AWD CONTROL MODULE

NOTE: Before continuing, check the AWD Module 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.

View repair.

Repair

- Replace the AWD Control Module in accordance with the Service information.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

6. 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.

View repair.

Repair

- Replace the Totally Integrated Power Module in accordance with the Service Information.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

7. INTERMITTENT WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle test the wiring harness and connectors while checking for shorted and open circuits.
4. Using the scan tool, monitor the data related to this circuit while performing the wiggle test. Look for the data to change or for the DTC to reset.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**

No

- Test Complete.

C2206-VEHICLE CONFIGURATION MISMATCH

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

• When Monitored:

Continuously with the ignition on.

• Set Condition:

When the All Wheel Drive (AWD) Module detects an incorrect CAN messages from the Powertrain Control Module (PCM) or the Totally Integrated Power Module (TIPM).

Possible Causes

TOTALLY INTEGRATED POWER MODULE (TIPM) NOT CONFIGURED CORRECTLY
 TOTALLY INTEGRATED POWER MODULE (TIPM) CAN BUS DTCS
 POWERTRAIN CONTROL MODULE (PCM) DTCS
 ALL WHEEL DRIVE (AWD) CONTROL MODULE

Diagnostic Test

1. TOTALLY INTEGRATED POWER MODULE (TIPM) CAN BUS DTCS ARE PRESENT

1. With the scan tool, read TIPM DTCS.

Are there any TIPM CAN BUS DTCS present?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Diagnosis and Testing** and perform the appropriate diagnostic procedure.

No

- Go to step 2

2. POWERTRAIN CONTROL MODULE (PCM) DTCS ARE PRESENT

1. With the scan tool, read Powertrain Control Module (PCM) DTCs.

Are there any PCM DTCs present?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing** and perform the appropriate diagnostic procedure.

No

- Using the schematics as a guide, check the AWD Module pins, terminals, and connectors for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. If no problems are found, replace the AWD Module in accordance with the Service Information.
- Perform the AWD VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

C2208-AWD ECU INTERNAL

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

- **When Monitored:**

With the ignition on.

- **Set Condition:**

The All Wheel Drive (AWD) Control Module has detected a failure internal to the controller.

Possible Causes
ALL WHEEL DRIVE (AWD) CONTROL MODULE

Diagnostic Test**1. ACTIVE DTC**

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

Is the DTC active at this time?

Yes

- Go to step 2

No

- Go to step 3

2. ALL WHEEL DRIVE (AWD) CONTROL MODULE

1. The AWD Control Module has detected an internal failure.

View repair

Repair

- Replace the All Wheel Drive (AWD) Control Module in accordance with the Service Information.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

3. INTERMITTENT WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle test the wiring harness and connectors while checking for shorted and open circuits.
4. Using the scan tool, monitor the data related to this circuit while performing the wiggle test. Look for the data to change or for the DTC to reset.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**

No

- Test Complete.

U0001-CAN C BUS

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

Theory of Operation

The All Wheel Drive (AWD) communicates with other controllers over the CAN C bus. The AWD Module continuously monitors the bus activity and receives the messages it needs.

• **When Monitored:**

Ignition run time is greater than one second. Battery voltage between 10 and 16 volts. Engine run time greater than three seconds.

• **Set Condition:**

The circuit is continuously monitored. Two Trip fault.

Possible Causes

CAN C BUS OPEN OR SHORTED CONDITION
ANTI-LOCK BRAKE SYSTEM (ABS) MODULE
ALL WHEEL DRIVE (AWD) CONTROL MODULE
OCCUPANT RESTRAINT CONTROLLER
POWERTRAIN CONTROL MODULE (PCM)
STEERING ANGLE SENSOR (SAS)
TRANSMISSION CONTROL MODULE (TCM)
TOTALLY INTEGRATED POWER MODULE (TIPM)
WIRELESS IGNITION NODE (WIN)

Diagnostic Test

1. **ACTIVE DTC**

NOTE: For vehicle communication problems, use the scan tool to refer to the **Network Review Screen**. The screen depicts a high level view of the vehicle network. Fault and problem areas appear in red. Selecting any of the network components allows access to the source of the problem.

1. Turn the ignition on.
2. With a scan tool, read DTCs.

Is the status Active for this DTC?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Diagnosis and Testing** and perform the **U0001-CAN C BUS** diagnostic procedure.

No

- Refer to **Non-DTC Diagnostics/Communication - Diagnosis and Testing** and perform the Stored Lost Communication DTCs diagnostic procedure.

U0100-LOST COMMUNICATION WITH ECM/PCM

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

- **When Monitored:**

With the ignition on.

Battery voltage between 10 and 16 volts.

Ignition Off Draw (IOD) fused installed.

Totally Integrated Power Module (TIPM) is configured correctly.

- **Set Condition:**

Bus messages not received from the ECM/PCM for approximately two to five seconds.

Possible Causes
CAN C+ OR CAN C- BUS CIRCUITS OPEN OR SHORTED
DTCS RELATED TO BATTERY VOLTAGE, IGNITION, OR VIN MESSAGES
TIPM NOT CONFIGURED CORRECTLY
ECM/PCM POWER AND GROUND
ECM/PCM
TOTALLY INTEGRATED POWER MODULE (TIPM)
MODULE THAT SET THIS DTC

Diagnostic Test

1. VERIFY DTC IS ACTIVE

NOTE: For vehicle communication problems, use the scan tool to refer to the **Network Review Screen**. The screen depicts a high level view of the vehicle network. Fault and problem areas appear in red. Selecting any of the network components allows access to the source of the problem.

1. Ignition on, engine off.
2. With the scan tool, read the DTCs.

Is this DTC active?

Yes

- Go to step 2

No

- Refer to **Non-DTC Diagnostics/Communication - Diagnosis and Testing** and perform the Stored Lost Communication DTC diagnostic procedure.

2. CHECK FOR ANY OF THE FOLLOWING ACTIVE DTCS

1. With the scan tool, read all active DTCs from all modules.

NOTE: Check for TIPM configuration, CAN B or C hardware electrical, VIN Missing/Mismatch, battery or ignition related DTCs.

Does the scan tool display any active DTCs to the conditions listed above?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Diagnosis and Testing** and perform the appropriate diagnostic procedure.

No

- Go to step 3

3. VERIFY THAT THE ECM/PCM IS ACTIVE ON THE BUS

1. Turn the ignition on.
2. With the scan tool, select Network Diagnostics.
3. Verify that the ECM/PCM is active on the bus.

Is the ECM/PCM active on the bus?

Yes

- Go to step 4

No

- Refer to **Non-DTC Diagnostics/Communication - Diagnosis and Testing** and perform the No Response from ECM/PCM diagnostic procedure.

4. CHECK FOR ADDITIONAL COMMUNICATION RELATED DTCS

1. With the scan tool, select Network Diagnostics.

Is there more than one module with active DTCs Logged Against the ECM/PCM?

Yes

- Replace/update the ECM/PCM in accordance with the Service Information.
- Perform the appropriate VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** for gas engine applications or. Refer to **DTC-Based Diagnostics/MODULE, Engine Control (ECM) -**

Standard Procedure for diesel engine applications.

No

- Replace/update the module that set this DTC in accordance with the Service Information.
- Perform the AWD VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

U0121-LOST COMMUNICATION WITH ABS

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

Theory of Operation

The ABS communicates with other controllers over the CAN C bus. The AWD Module continuously monitors the bus activity and receives the messages it needs.

- **When Monitored:**
 - With the ignition on
 - Battery voltage between 10 and 16 volts
 - Ignition Off Draw (IOD) fused installed.
- **Set Condition:**

CAN C bus messages not received for 500 msec.

Possible Causes
DTCS RELATED TO BATTERY VOLTAGE, IGNITION, OR VIN MESSAGES
CAN C BUS CIRCUITS OPEN OR SHORTED
ABS MODULE POWER AND GROUND
TOTALLY INTEGRATED POWER MODULE (TIPM) NOT CONFIGURED CORRECTLY
ANTI-LOCK BRAKE SYSTEM (ABS) MODULE
ALL WHEEL DRIVE (AWD) CONTROL MODULE
TOTALLY INTEGRATED POWER MODULE (TIPM)

Diagnostic Test

1. ACTIVE DTC

NOTE: For vehicle communication problems, use the scan tool to refer to the **Network Review Screen**. The screen depicts a high level view of the vehicle network. Fault and problem areas appear in red. Selecting any of the network components allows access to the source of the problem.

1. Ignition on, engine off.

2. With a scan tool, read DTCs.

Is the DTC active at this time?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Diagnosis and Testing** and perform the **U0121-LOST COMMUNICATION WITH ANTI-LOCK BRAKE MODULE ALSO SET** diagnostic procedure.

No

- Refer to **Non-DTC Diagnostics/Communication - Diagnosis and Testing** and perform the Stored Lost Communication DTCs diagnostic procedure.

U0126-LOST COMMUNICATION WITH STEERING ANGLE SENSOR

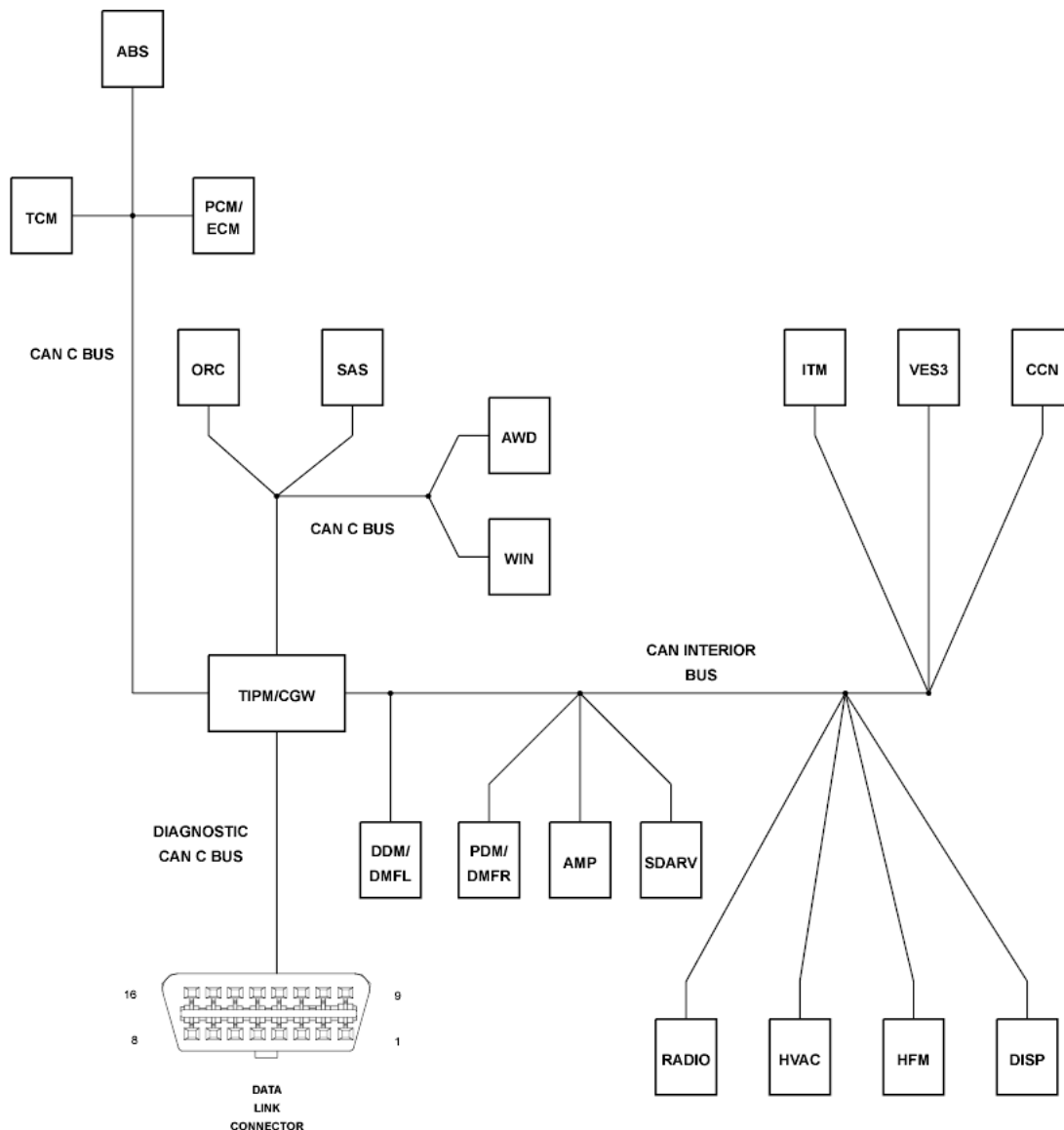


Fig. 27: CAN Interior Bus Circuit Schematic

Courtesy of CHRYSLER LLC

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

Theory of Operation

The Steering Angle Sensor (SAS) communicates with other controllers over the CAN C bus. The All Wheel Drive (AWD) Module continuously monitors the bus activity and receives the messages it needs. If the AWD Module does not receive messages from the Steering Angle Sensor (SAS) this fault will set.

• When Monitored:

- With the ignition on.
- Battery voltage between 10 and 16 Volts.

- Ignition Off Draw (IOD) fuse installed.
- **Set Condition:**

If the All Wheel Drive (AWD) Module fails to receive bus messages from the Steering Angle Sensor (SAS) for approximately 500 ms.

Possible Causes
DTCS RELATED TO BATTERY VOLTAGE, IGNITION, OR VIN MESSAGES
CAN C BUS CIRCUITS OPEN OR SHORTED
STEERING ANGLE SENSOR POWER AND GROUND
TOTALLY INTEGRATED POWER MODULE (TIPM) NOT CONFIGURED CORRECTLY
STEERING ANGLE SENSOR (SAS)
ALL WHEEL DRIVE (AWD) CONTROL MODULE
TOTALLY INTEGRATED POWER MODULE (TIPM)

Diagnostic Test

1. ACTIVE DTC

NOTE: For vehicle communication problems, use the scan tool to refer to the **Network Review Screen**. The screen depicts a high level view of the vehicle network. Fault and problem areas appear in red. Selecting any of the network components allows access to the source of the problem.

1. Ignition on, engine off.
2. With a scan tool, read DTCs.

Is the DTC active at this time?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Diagnosis and Testing** and perform the **U0126-LOST COMMUNICATION WITH STEERING ANGLE SENSOR** diagnostic procedure.

No

- Refer to **Non-DTC Diagnostics/Communication - Diagnosis and Testing** and perform the **Stored Lost Communication DTCs** diagnostic procedure.

U0141-LOST COMMUNICATION WITH IPM (FCM/TIPM)

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

Theory of Operation

2009 Dodge Journey R/T

2009 DRIVELINE/AXLES All Wheel Drive (AWD) Module - Electrical Diagnostics - Journey

Some control modules communicate with other controllers over the CAN C bus. The AWD Control Module continuously monitors the bus activity and receives the messages it needs.

- **When Monitored:**

Every 7 msec. Conditions: Battery voltage greater than 10v but less than 16v.

- **Set Condition:**

CAN C bus messages not received for 10 seconds.

Possible Causes
DTCS RELATED TO BATTERY VOLTAGE, IGNITION, OR VIN MESSAGES
CAN C BUS CIRCUITS OPEN OR SHORTED
TOTALLY INTEGRATED POWER MODULE (TIPM) NOT CONFIGURED CORRECTLY
TOTALLY INTEGRATED POWER MODULE (TIPM)
ALL WHEEL DRIVE (AWD) CONTROL MODULE

Diagnostic Test

1. ACTIVE DTC

NOTE: For vehicle communication problems, use the scan tool to refer to the **Network Review Screen**. The screen depicts a high level view of the vehicle network. Fault and problem areas appear in red. Selecting any of the network components allows access to the source of the problem.

1. Ignition on, engine off.
2. With a scan tool, read DTCs.

Is the DTC active at this time?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Diagnosis and Testing** and perform the **U0141-LOST COMMUNICATION WITH IPM (FCM/TIPM)** diagnostic procedure.

No

- Refer to **Non-DTC Diagnostics/Communication - Diagnosis and Testing** and perform the Stored Lost Communication DTCs diagnostic procedure.

U0401-IMPLAUSIBLE DATA RECEIVED FROM ECM/PCM

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

• **When Monitored:**

Continuously with the ignition on, one valid CAN message received at least once.

• **Set Condition:**

When the AWD Control Module detects an incorrect CAN message from the Power Control Module (PCM).

Possible Causes

TIPM NOT CONFIGURED CORRECTLY
ABS MODULE CAN BUS DTCS
ENGINE DTCS
ALL WHEEL DRIVE (AWD) CONTROL MODULE

Diagnostic Test

1. CHECK FOR DTC U0401-IMPLAUSIBLE DATA RECEIVED FROM ECM/PCM

NOTE: This DTC must be active for the results of this test to be valid.

1. Turn the ignition on.
2. With the scan tool, record and erase DTCS.
3. Cycle the ignition switch from off to on.
4. With the scan tool, read DTCS.

Does the scan tool display: U0401-IMPLAUSIBLE DATA RECEIVED FROM ECM/PCM?

Yes

- Go to step 2

No

- Go to step 4

2. CHECK IF TIPM CAN BUS DTCS ARE PRESENT

1. With the scan tool, read TIPM DTCS.

Are there any TIPM CAN BUS DTCS present?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Diagnosis and Testing** and perform the appropriate diagnostic procedure.

No

- Go to step 3

3. CHECK TO SEE ANY IF POWERTRAIN CONTROL MODULE (PCM) DTCS ARE PRESENT

1. With the scan tool, read PCM DTCs.

Are there any PCM DTCs present?

Yes

- Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Diagnosis and Testing** . and perform the appropriate diagnostic procedure.

No

- Replace the All Wheel Drive (AWD) Control Module in accordance with Service Information
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

4. INTERMITTENT WIRING AND CONNECTORS

1. The conditions necessary to set this DTC are not present at this time.
2. Using the schematics as a guide, inspect the wiring and connectors specific to this circuit.
3. Wiggle test the wiring harness and connectors while checking for shorted and open circuits.
4. Using the scan tool, monitor the data related to this circuit while performing the wiggle test. Look for the data to change or for the DTC to reset.

Were there any problems found?

Yes

- Repair as necessary.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- Test complete.

U113C-LOST WHEEL SPEED MESSAGES

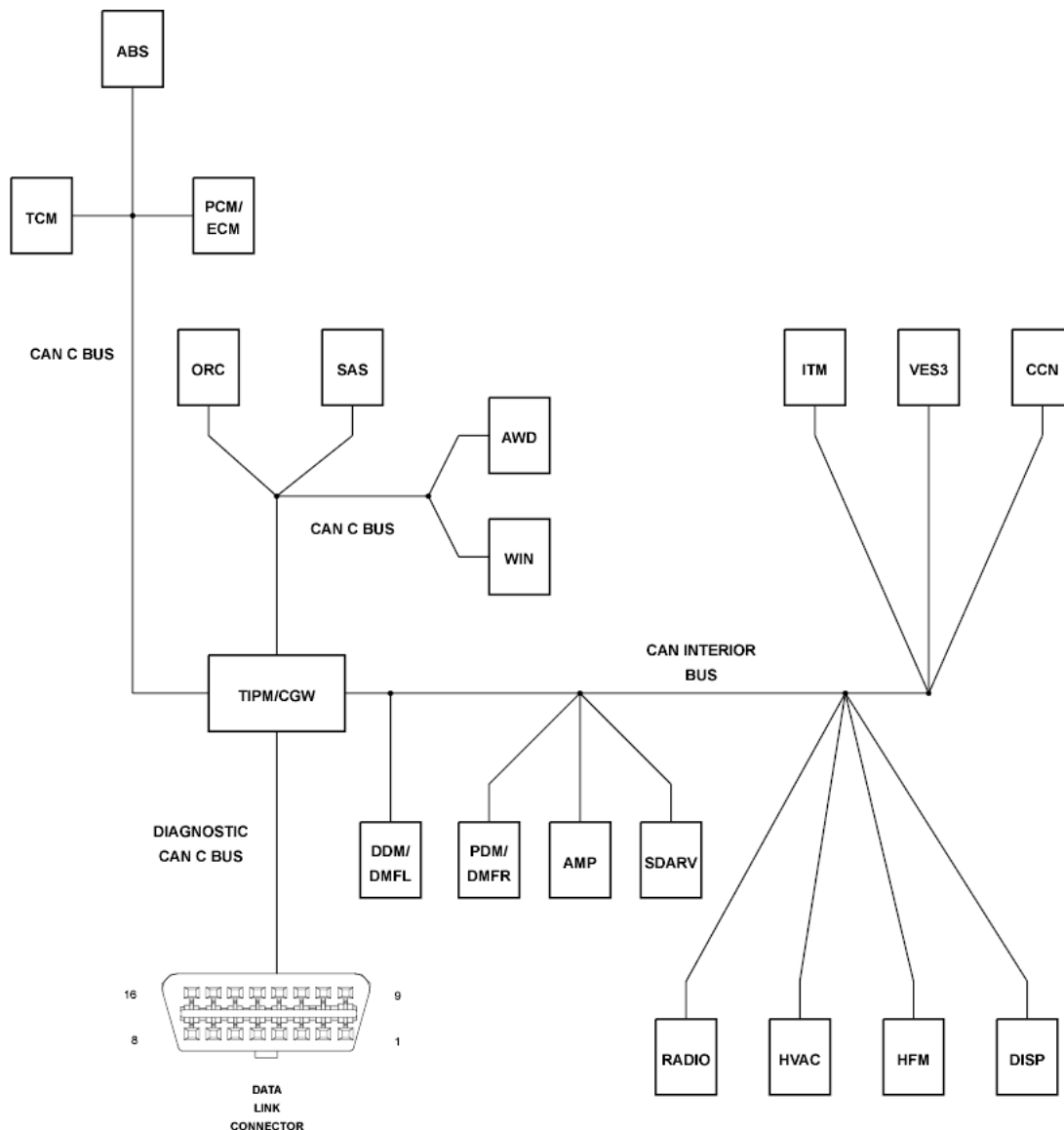


Fig. 28: CAN Interior Bus Circuit Schematic
Courtesy of CHRYSLER LLC

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

Theory of Operation

The ABS communicates with other controllers over the CAN C bus. The AWD Module continuously monitors the bus activity and receives the messages it needs.

- **When Monitored:**
 - With the ignition on
 - Battery voltage between 10 and 16 volts
 - Ignition Off Draw (IOD) fused installed.

• **Set Condition:**

The AWD does not receive a vehicle wheel speed signal from the Anti-lock Brake (ABS) Module over the CAN C bus.

Possible Causes

DTCS RELATED TO BATTERY VOLTAGE, IGNITION, OR VIN MESSAGES
CAN C BUS CIRCUIT OPEN OR SHORTED
ANTI-LOCK BRAKE (ABS) MODULE
ALL WHEEL DRIVE (AWD) CONTROL MODULE

Diagnostic Test

1. **ACTIVE DTC**

NOTE: For vehicle communication problems, use the scan tool to refer to the Network Review Screen. The screen depicts a high level view of the vehicle network. Fault and problem areas appear in red. Selecting any of the network components allows access to the source of the problem.

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

Is the status Active for this DTC?

Yes

- Go to **U0121-LOST COMMUNICATION WITH ANTI-LOCK BRAKE MODULE ALSO SET**

No

- Perform the CHECKING FOR AN INTERMITTENT DTC diagnostic procedure. Refer to **DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure** .

U0121-LOST COMMUNICATION WITH ANTI-LOCK BRAKE MODULE ALSO SET

1. With a scan tool, read DTCs.

Is the DTC U0121-LOST COMMUNICATION WITH ANTI-LOCK BRAKE MODULE also set?

Yes

- Perform the diagnostic procedure for U0121-LOST COMMUNICATION WITH ANTI-LOCK BRAKE MODULE.

- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- Replace the AWD Control Module in accordance with the Service information.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

STANDARD PROCEDURE

AWD - PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE

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

Perform the following pre-diagnostic troubleshooting procedures prior to performing any diagnostic test.

Always perform diagnostics with a fully charged battery to avoid false symptoms.

1. With the scan tool, read ABS DTCs. If ABS DTCs are present, perform to the appropriate diagnostic procedure(s) before proceeding. Refer to **DTC-Based Diagnostics/MODULE, Antilock Brake (ABS) - Diagnosis and Testing**.
2. Check the vehicles repair history.
3. If the vehicle has a repair history that pertains to the customer's current complaint, review the repair.
4. Check for any TSBs related to the customer's complaint.
5. Inspect the vehicle for any aftermarket accessories that may have been installed incorrectly.
6. With the scan tool, read All Wheel Drive (AWD) Control Module DTCs. Record all Stored, Active, and Pending DTC information. Diagnose any pending DTC as a matured DTC.
7. Use the **SYSTEM WIRING DIAGRAMS** as a guide, inspect the wiring and connectors related to this circuit and repair as necessary.
8. Refer to the When Monitored and Set Conditions for this DTC. DTCs can set at ignition on, at start up, driving under specific conditions, and after controller diagnostic monitors have run or otherwise known as a Good Trip.
9. Check for any Service Information Tune-ups or Service Bulletins for any possible causes that may apply. Check for controller software update information. Some conditions can be corrected by upgrading the Engine (PCM) controller software.

Did any of the above procedures repair the vehicle?

Yes

- Testing is complete.
- Perform the AWD Control Module VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Standard Procedure**.

No

- See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Diagnosis and Testing** and perform the appropriate diagnostic procedure.

AWD CONTROL MODULE VERIFICATION TEST

Diagnostic Test

1. AWD CONTROL MODULE VERIFICATION TEST

1. Disconnect all jumper wires and reconnect all previously disconnected components and connectors.
2. With the scan tool, select Clear Stored DTCs.
3. Make sure that all accessories are turned off and that the battery is fully charged.
4. Test drive the vehicle and verify proper operation.
5. With the scan tool, select View DTCs in the AWD Control Module.

Are there any DTCs present in the AWD Control Module?

Yes

- Perform the appropriate diagnostic test. See **DTC-Based Diagnostics/MODULE, All Wheel Drive (AWD) - Diagnosis and Testing**.

No

- Repair is complete.