2007 BRAKES

ABS - Electrical Diagnostics - Nitro

DIAGNOSTIC CODE INDEX

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DTC	Description
C1008	BRAKE FLUID LEVEL CIRCUIT HIGH
C100A	LEFT FRONT WHEEL SPEED SENSOR CIRCUIT
C1011	LEFT FRONT WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE
C1014	LEFT FRONT WHEEL SPEED COMPARATIVE PERFORMANCE
C1015	RIGHT FRONT WHEEL SPEED SENSOR CIRCUIT
C101C	RIGHT FRONT WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE
C101F	RIGHT FRONT WHEEL SPEED COMPARATIVE PERFORMANCE
C1020	LEFT REAR WHEEL SPEED SENSOR CIRCUIT
C1027	LEFT REAR WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE
C102A	LEFT REAR WHEEL SPEED COMPARATIVE PERFORMANCE
C102B	RIGHT REAR WHEEL SPEED SENSOR CIRCUIT
C1032	RIGHT REAR WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE
C1035	RIGHT REAR WHEEL SPEED COMPARATIVE PERFORMANCE
C1041	LEFT FRONT TONE WHEEL PERFORMANCE
C1042	RIGHT FRONT TONE WHEEL PERFORMANCE
C1043	LEFT REAR TONE WHEEL PERFORMANCE
C1044	RIGHT REAR TONE WHEEL PERFORMANCE
C1046	LEFT FRONT WHEEL PRESSURE PHASE MONITORING
C1047	RIGHT FRONT WHEEL PRESSURE PHASE MONITORING
C1048	LEFT REAR WHEEL PRESSURE PHASE MONITORING
C1049	RIGHT REAR WHEEL PRESSURE PHASE MONITORING
C1073	ABS PUMP MOTOR CONTROL CIRCUIT
C1078	TIRE REVOLUTIONS RANGE PERFORMANCE
C107C	BRAKE PEDAL SWITCH 1/2 STUCK
C107D	BRAKE PEDAL SWITCH 1/2 CORRELATION
C1210	G SENSOR INPUT CIRCUIT PERFORMANCE
C1219	STEERING ANGLE SENSOR ERRATIC PERFORMANCE
C121A	STEERING ANGLE SENSOR NOT INITIALIZED
C121C	TORQUE REQUEST SIGNAL DENIED
C121D	BRAKE PRESSURE SENSOR CIRCUIT
C121E	BRAKE PRESSURE SENSOR COMPARATIVE PERFORMANCE
C1231	DRIVE TEST: STEERING ANGLE SENSOR
C1232	DRIVE TEST: PRESSURE SENSOR

C1234	DRIVE TEST: SENSOR CLUSTER INSTALLATION
C1238	DRIVE TEST: UNSUCCESSFUL
C1239	EMISSIONS ROLLS TEST ACTIVE
C123A	ESP SYSTEM SENSORS CALIBRATION
C123B	ESP SYSTEM CONTROL TOO LONG
C123C	DYNAMICS SENSOR MOUNTING/INSTALLATION PERFORMANCE
C123F	STEERING ANGLE SENSOR COMPARATIVE PERFORMANCE
C1240	STEERING ANGLE SENSOR OVERTRAVEL PERFORMANCE
C1242	G SENSOR INPUT SIGNAL PERFORMANCE
C1243	G SENSOR NOT INITIALIZED
C2100	BATTERY VOLTAGE LOW
C2101	BATTERY VOLTAGE HIGH
C2111	SENSOR SUPPLY 1 VOLTAGE CIRCUIT LOW
C2112	SENSOR SUPPLY 1 VOLTAGE CIRCUIT HIGH
C2114	DYNAMICS SENSOR SUPPLY VOLTAGE LOW
C2115	DYNAMICS SENSOR SUPPLY VOLTAGE HIGH
C2116	ABS PUMP MOTOR SUPPLY LOW VOLTAGE
C2200	ANTI-LOCK BRAKE MODULE INTERNAL
C2204	DYNAMICS SENSOR INTERNAL
C2205	STEERING ANGLE SENSOR INTERNAL
C2206	VEHICLE CONFIGURATION MISMATCH
U0002	CAN C BUS OFF PERFORMANCE
U0100	LOST COMMUNICATION WITH ECM/PCM
U0101	LOST COMMUNICATION WITH TCM
U0125	LOST COMMUNICATION WITH DYNAMICS SENSOR
U0126	LOST COMMUNICATION WITH STEERING ANGLE SENSOR
U0141	LOST COMMUNICATION WITH FRONT CONTROL MODULE
U0401	IMPLAUSIBLE DATA RECEIVED FROM ECM/PCM
U0429	IMPLAUSIBLE DATA RECEIVED FROM SCM
U1003	ESP CAN C BUS PERFORMANCE
U1104	CAN C BUS CRC PERFORMANCE
U140E	IMPLAUSIBLE VEHICLE CONFIGURATION DATA RECEIVED
U1501	IMPLAUSIBLE MESSAGE DATA LENGTH RECEIVED FROM ECM/PCM
U1502	IMPLAUSIBLE MESSAGE DATA LENGTH RECEIVED FROM TCM
U1503	IMPLAUSIBLE MESSAGE DATA LENGTH RECEIVED FROM FCM
U1601	MISSING APPLICATION FILE

ABS - ELECTRICAL DIAGNOSTICS

DIAGNOSIS AND TESTING

ABS INTERMITTENT CONDITION

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

Diagnostic Test

1) PERFORM ABS INTERMITTENT CONDITION TEST

NOTE: The conditions that set the DTC are not present at this time. The following list may help in identifying the intermittent condition.

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 can result in personal injury or death.

Refer to any Technical Service Bulletins (TSBs) that may apply.

Review the scan tool Environmental Data (EV Data). If possible, try to duplicate the conditions under which the DTC set.

Turn the ignition off.

Visually inspect the related wire harness. Disconnect all the related harness connectors. Look for any chafed, pierced, pinched, partially broken wires and broken, bent, pushed out, or corroded terminals.

Wiggle the wires while checking for shorts and open circuits.

Perform a voltage drop test on the related circuits between the suspected inoperative component and the Anti-Lock Brake Module.

Inspect and clean all PCM, ABS, engine, and chassis grounds that are related to the most current DTC.

If numerous trouble codes were set, use a wire schematic and look for any common ground or supply circuits

For any Relay DTCs, actuate the Relay with the scan tool and wiggle the related wire harness to try to interrupt the actuation.

Use the scan tool to perform a System Test if one applies to failing component.

A co-pilot, data recorder, or lab scope should be used to help diagnose intermittent conditions.

Were any problems found during the above inspections?

Yes

Perform the necessary repairs.
Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C1008-BRAKE FLUID LEVEL CIRCUIT HIGH

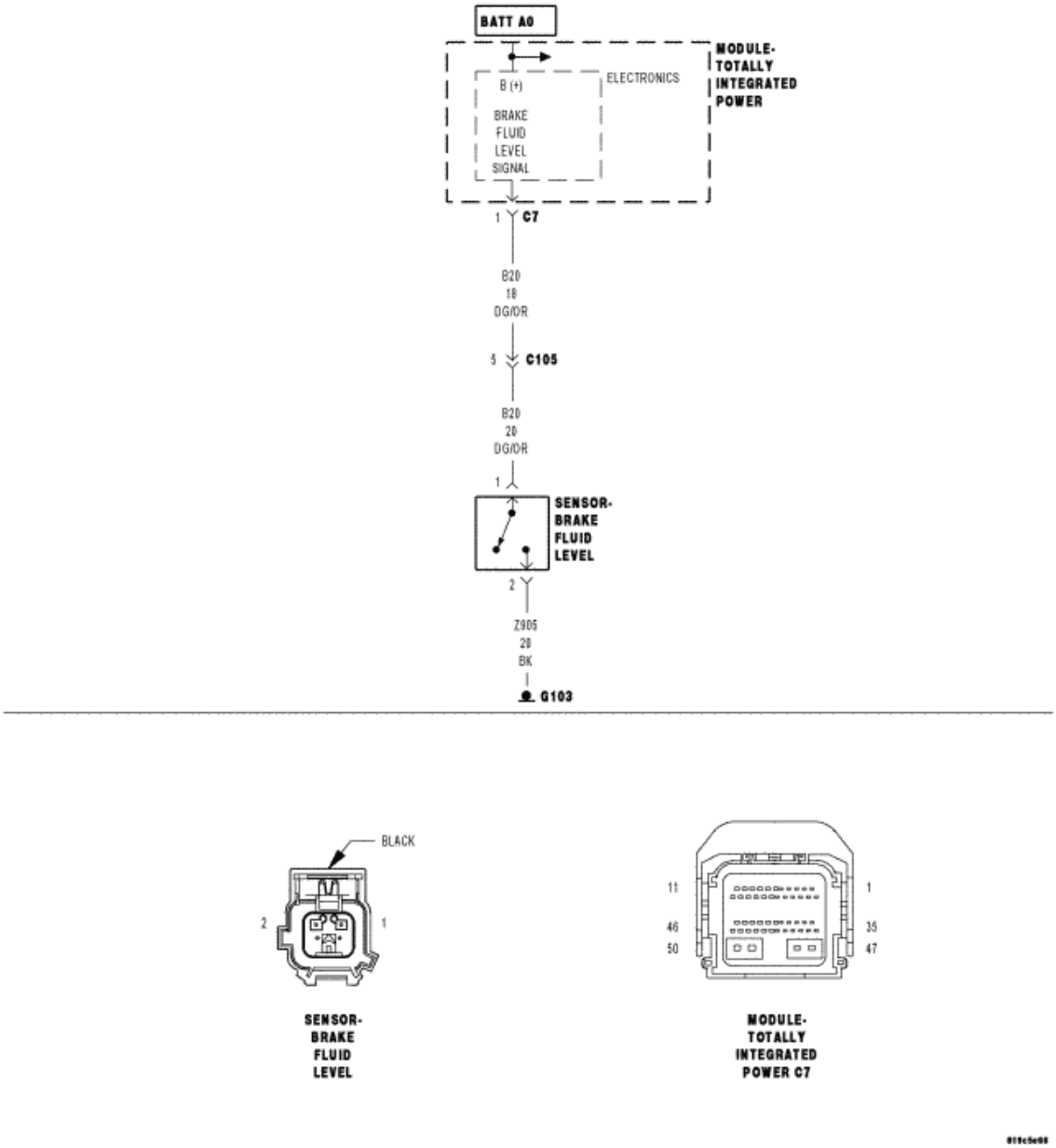


Fig. 1: Brake Fluid Level Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

With the ignition on.

Set Condition:

When the Totally Integrated Power Module indicates that the Brake Fluid Level Circuit is open and greater than 4.9 volts for more then 5 seconds.

Possible Causes
(B20) BRAKE FLUID LEVEL SWITCH SIGNAL CIRCUIT OPEN
BRAKE FLUID LEVEL SWITCH INTERNAL FAILURE
(Z905) SENSOR GROUND CIRCUIT OPEN
TOTALLY INTEGRATED POWER MODULE

Diagnostic Test

1) BRAKE FLUID LEVEL SWITCH SIGNAL VOLTAGE ABOVE 4.9 VOLTS

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

Turn the ignition on.

With the scan tool, read Brake Fluid Level Switch Signal voltage.

Is the voltage above 4.9 volts?

Yes

Go to 2).

No

Refer to the **INTERMITTENT CONDITION** diagnostic procedure.
Refer to the **ABS INTERMITTENT CONDITION**.

2) BRAKE FLUID LEVEL SWITCH INTERNAL FAILURE

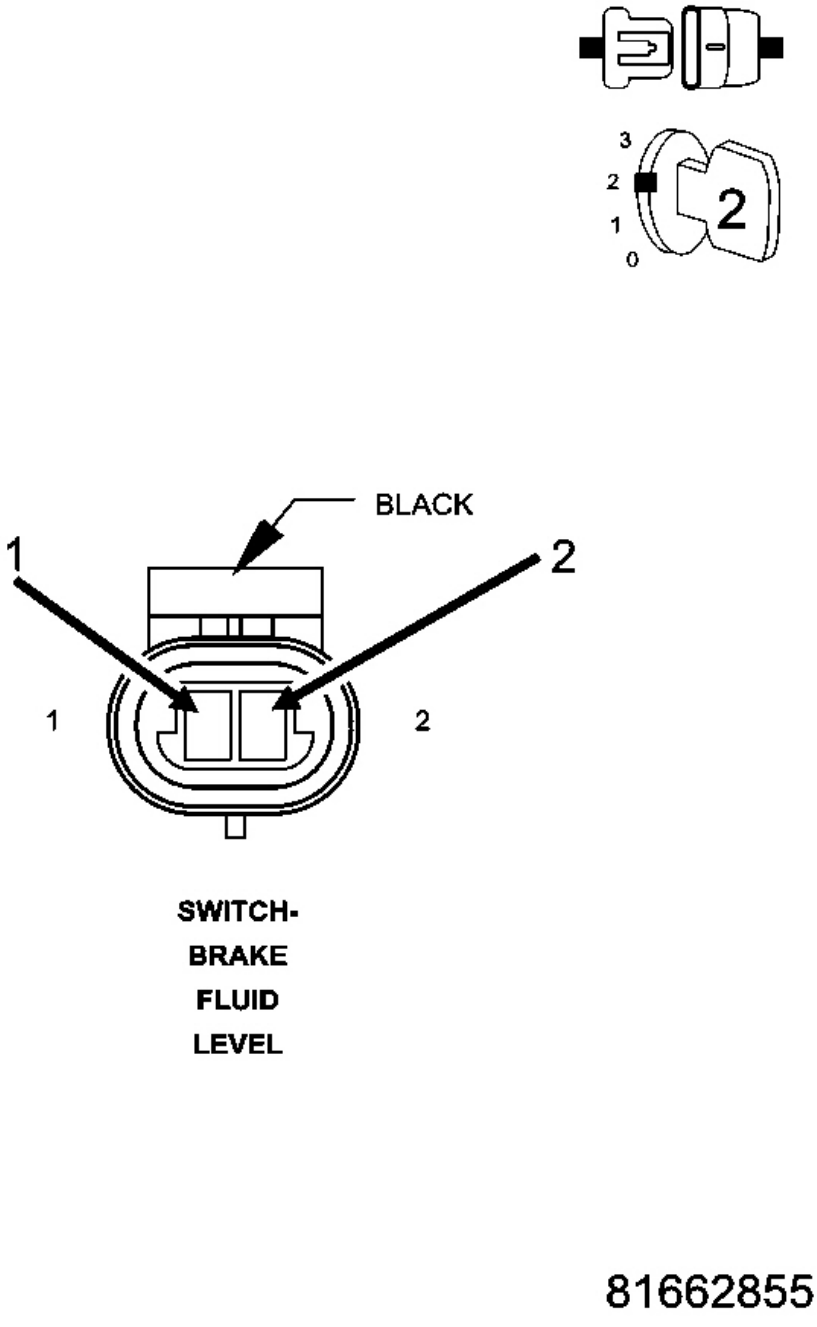


Fig. 2: Brake Fluid Level Switch
Courtesy of CHRYSLER LLC

Turn the ignition off.

Connect a jumper wire between the (B20) Brake Fluid Level signal circuit and the (Z905) Brake Fluid Level ground circuit in the Brake Fluid Level Switch harness connector

Turn the ignition on.

With the scan tool, read the Brake Fluid Level Switch voltage

Is the voltage below 1.0 volt?

Yes

Replace the Brake Fluid Level Switch in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) (B20) BRAKE FLUID LEVEL SWITCH CIRCUIT OPEN

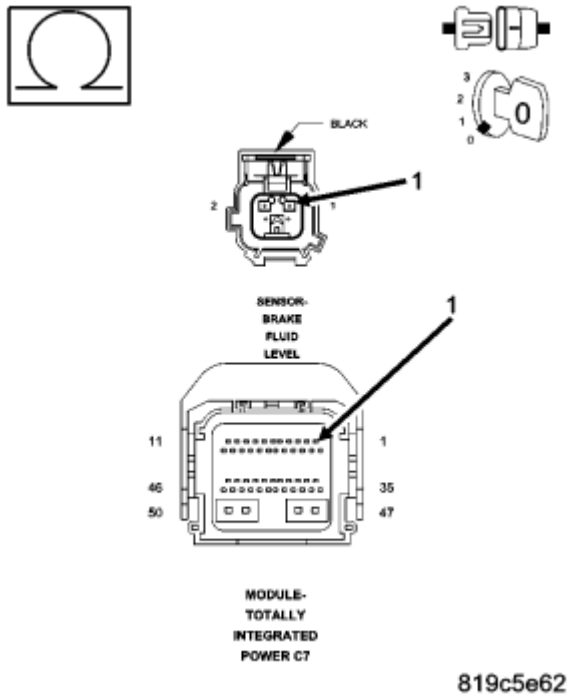


Fig. 3: Measuring Resistance Of (B20) Brake Fluid Level Signal Circuit Between Brake Fluid Level Switch Harness Connector And TIPM Harness Connector
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Brake Fluid Level Switch.

Disconnect the TIPM harness connector.

Measure the resistance of the (B20) Brake Fluid Level signal circuit between the Brake Fluid Level Switch harness connector and the TIPM harness connector.

Is the resistance below 5 ohms?

Yes

Go to 4).

No

Repair the open in the (B20) Brake Fluid Level Switch signal circuit.
Perform **ABS VERIFICATION TEST**.

4) (Z905) SENSOR GROUND CIRCUIT OPEN

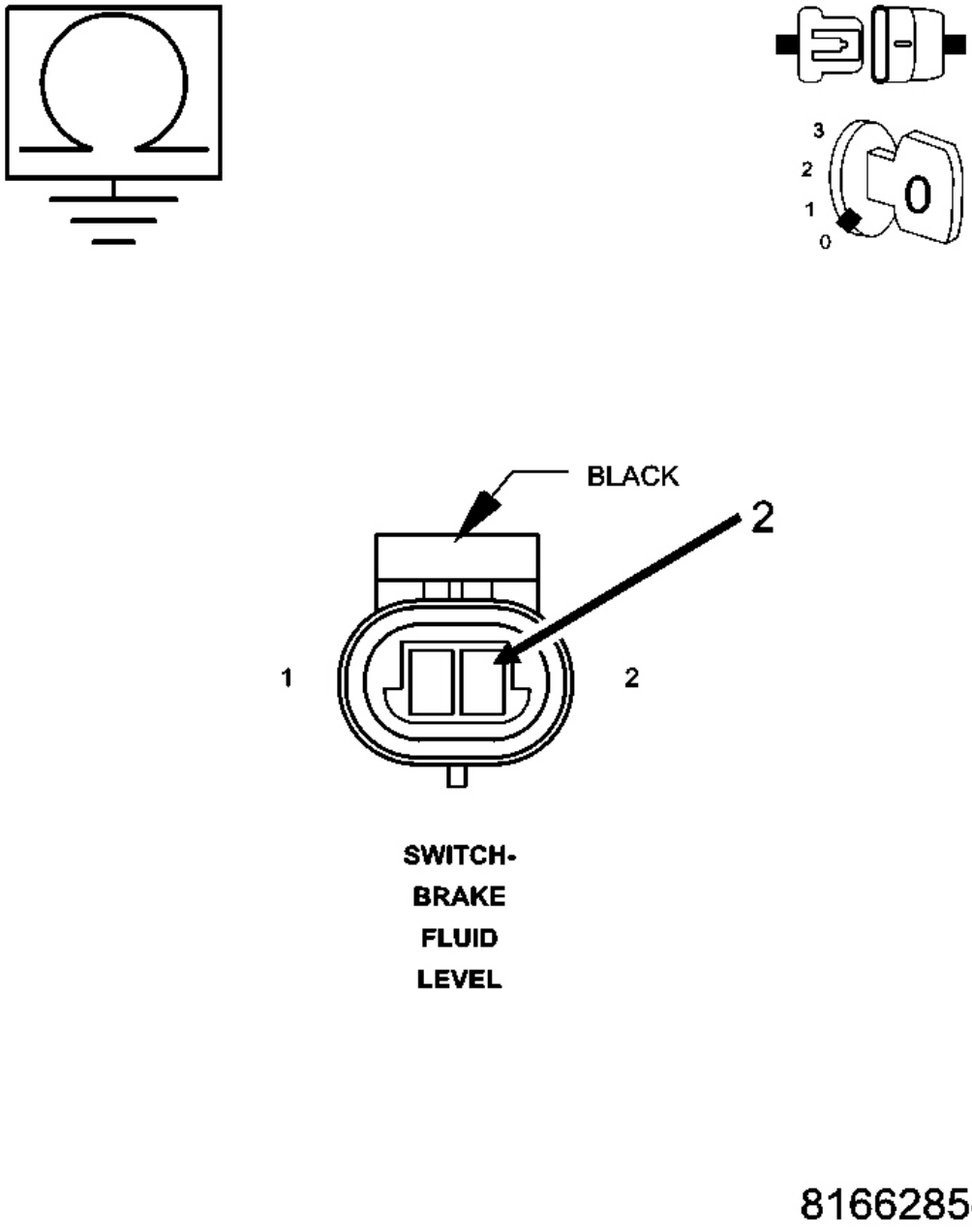


Fig. 4: Measuring Resistance Of (Z905) Brake Fluid Level Switch Ground Circuit Between Brake Fluid Level Switch Harness Connector And Ground
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Brake Fluid Level Switch harness connector.

Reconnect the TIPM harness connector.

Measure the resistance of the (Z905) Brake Fluid Level Switch ground circuit between the Brake Fluid Level Switch harness connector and ground.

Is the resistance below 5.0 ohms?

Yes

Replace and program the Totally Integrated Power Module in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

No

Repair the open or high resistance in the (Z905) Sensor ground circuit.

Perform **POWERTRAIN VERIFICATION TEST** .

C100A-LEFT FRONT WHEEL SPEED SENSOR CIRCUIT

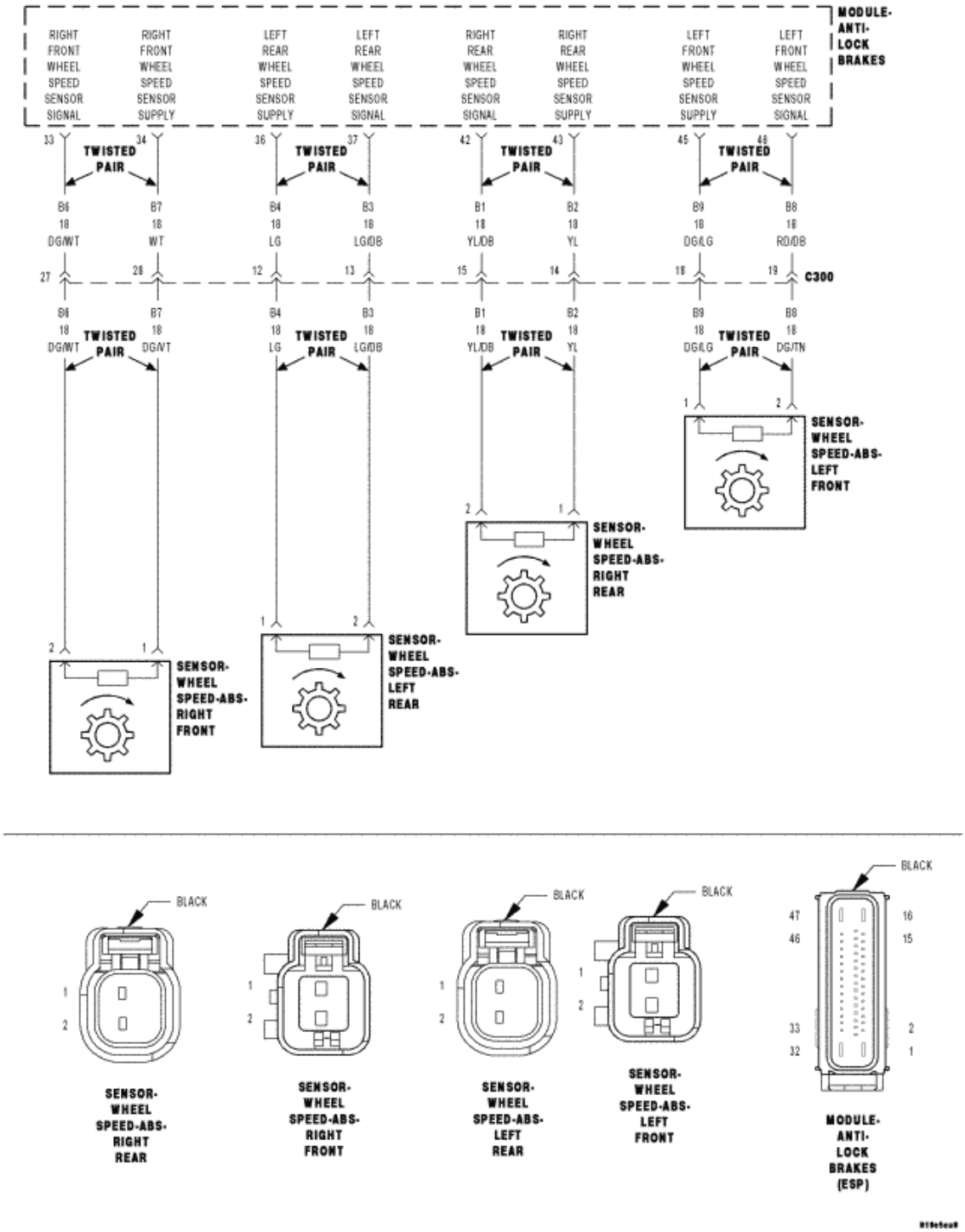


Fig. 5: Wheel Speed Sensor Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

With the ignition on.

Set Condition:

When the Left Front Wheel Speed Sensor (WSS) circuit fails the diagnostic test.

Possible Causes
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
(B9) LEFT FRONT WSS 12 VOLT SUPPLY CIRCUIT SHORTED TO VOLTAGE, GROUND, OR OPEN
(B8) LEFT FRONT WSS SIGNAL CIRCUIT SHORTED TO VOLTAGE, GROUND, OR OPEN
(B8) LEFT FRONT WSS SIGNAL CIRCUIT SHORTED TO (B9) LEFT FRONT WSS 12 VOLT SUPPLY CIRCUIT
LEFT FRONT WSS
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) CHECK FOR DTC C100A-LEFT FRONT WHEEL SPEED SENSOR CIRCUIT

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

Turn the ignition on.

With the scan tool, record and erase DTCs.

Cycle the ignition switch from off to on.

With the scan tool, read DTCs.

Does the scan tool display: C100A-LEFT FRONT WHEEL SPEED SENSOR CIRCUIT?

Yes

Go to 2).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

2) CHECK CONNECTOR/TERMINAL FOR DAMAGE

NOTE: Check all terminals for broken, bent, pushed out, or corroded terminals.

Turn the ignition off.

Inspect the Anti-Lock Brake Module harness connector, Left Front WSS, and Left Front WSS harness connector.

Is the Left Front WSS or any of the connectors/terminals damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) CHECK (B9) LEFT FRONT WSS 12 VOLT SUPPLY CIRCUIT VOLTAGE

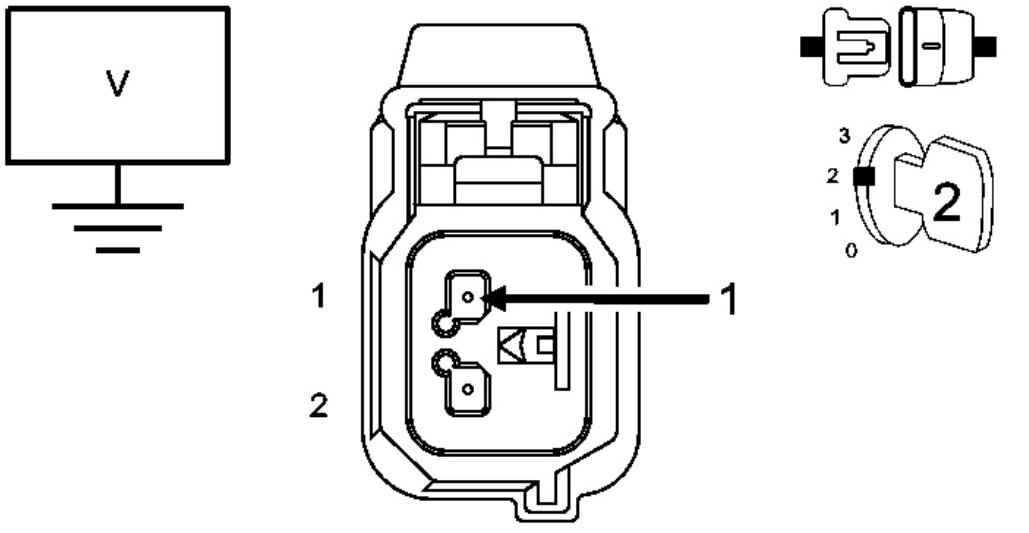


Fig. 6: Measuring Voltage Of (B9) Left Front WSS 12 Volt Supply Circuit
Courtesy of CHRYSLER LLC

Disconnect the Left Front WSS harness connector.

Turn the ignition on.

Measure the voltage of the (B9) Left Front WSS 12 Volt Supply circuit.

Is the voltage above 10.0 volts?

Yes

Go to 6).

No

Go to 4).

4) CHECK (B9) LEFT FRONT WSS SUPPLY CIRCUIT SHORT TO GROUND

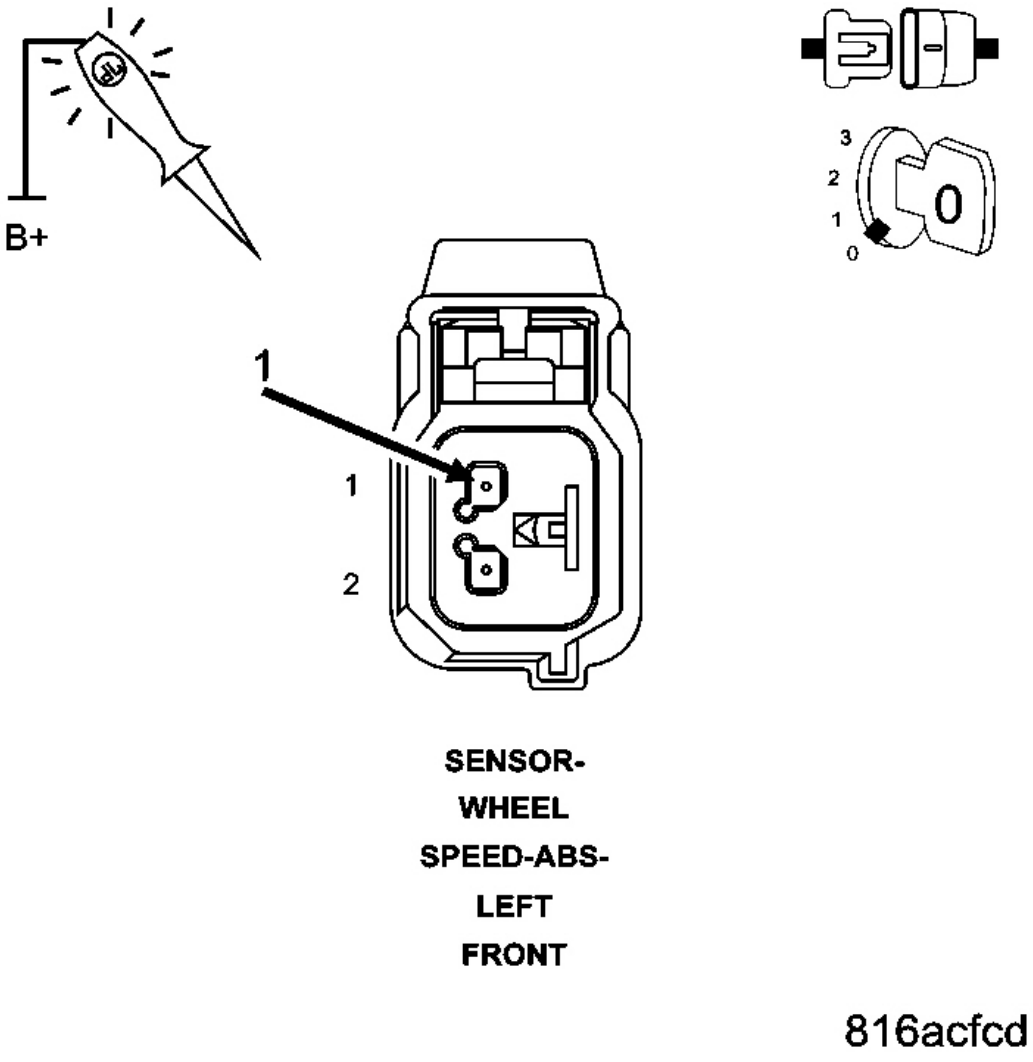


Fig. 7: Probing (B9) Left Front WSS Supply Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Anti-Lock Brake Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B9) Left Front WSS Supply circuit.

Does the test light illuminate brightly?

Yes

Repair the (B9) Left Front WSS Supply circuit for a short to ground.
Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) CHECK (B9) LEFT FRONT WSS SUPPLY CIRCUIT OPEN

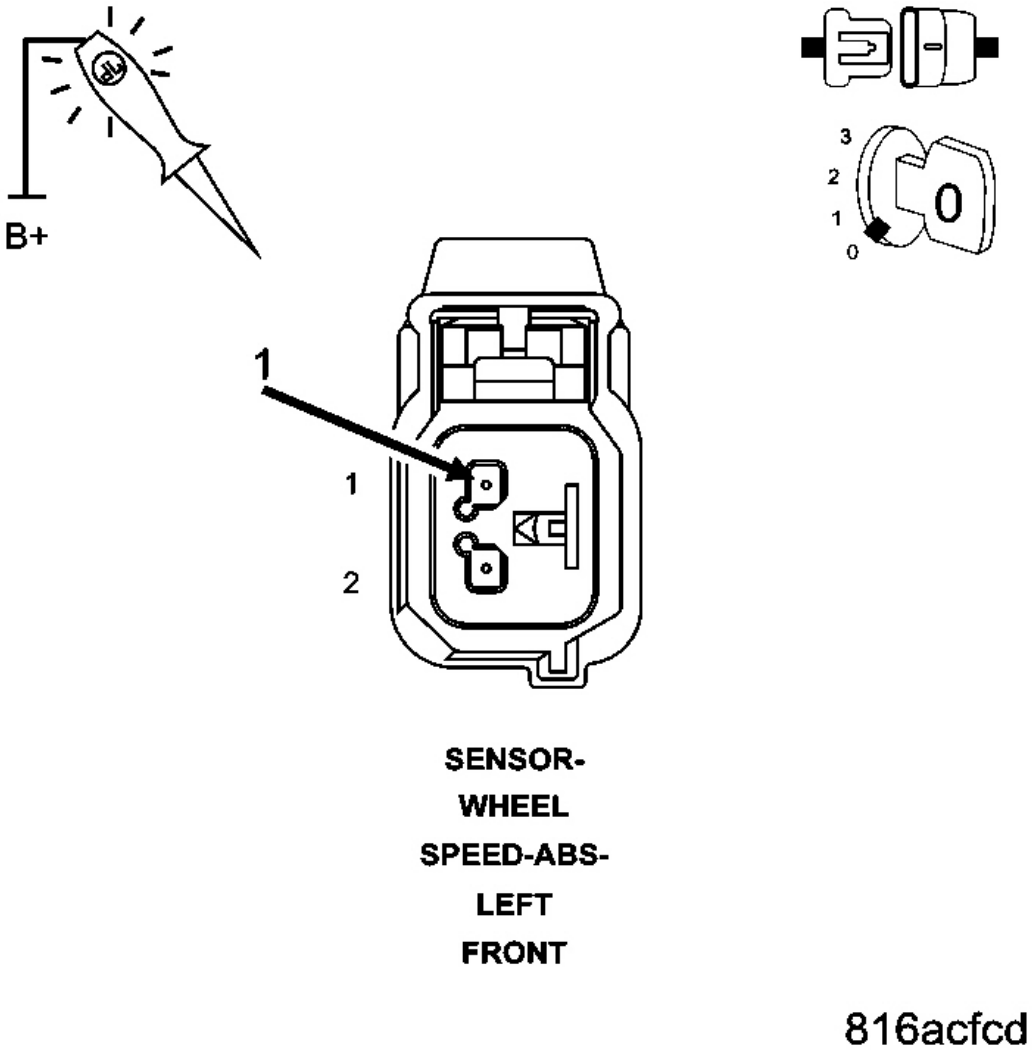


Fig. 8: Probing (B9) Left Front WSS Supply Circuit
Courtesy of CHRYSLER LLC

Connect a jumper wire between ground and the (B9) Left Front WSS Supply circuit in the Anti-Lock Brakes Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B9) Left Front WSS Supply circuit.

Does the test light illuminate brightly?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Repair the (B9) Left Front WSS Supply circuit for an open.
Perform **ABS VERIFICATION TEST**.

6) CHECK (B8) LEFT FRONT WSS SIGNAL CIRCUIT SHORT TO GROUND

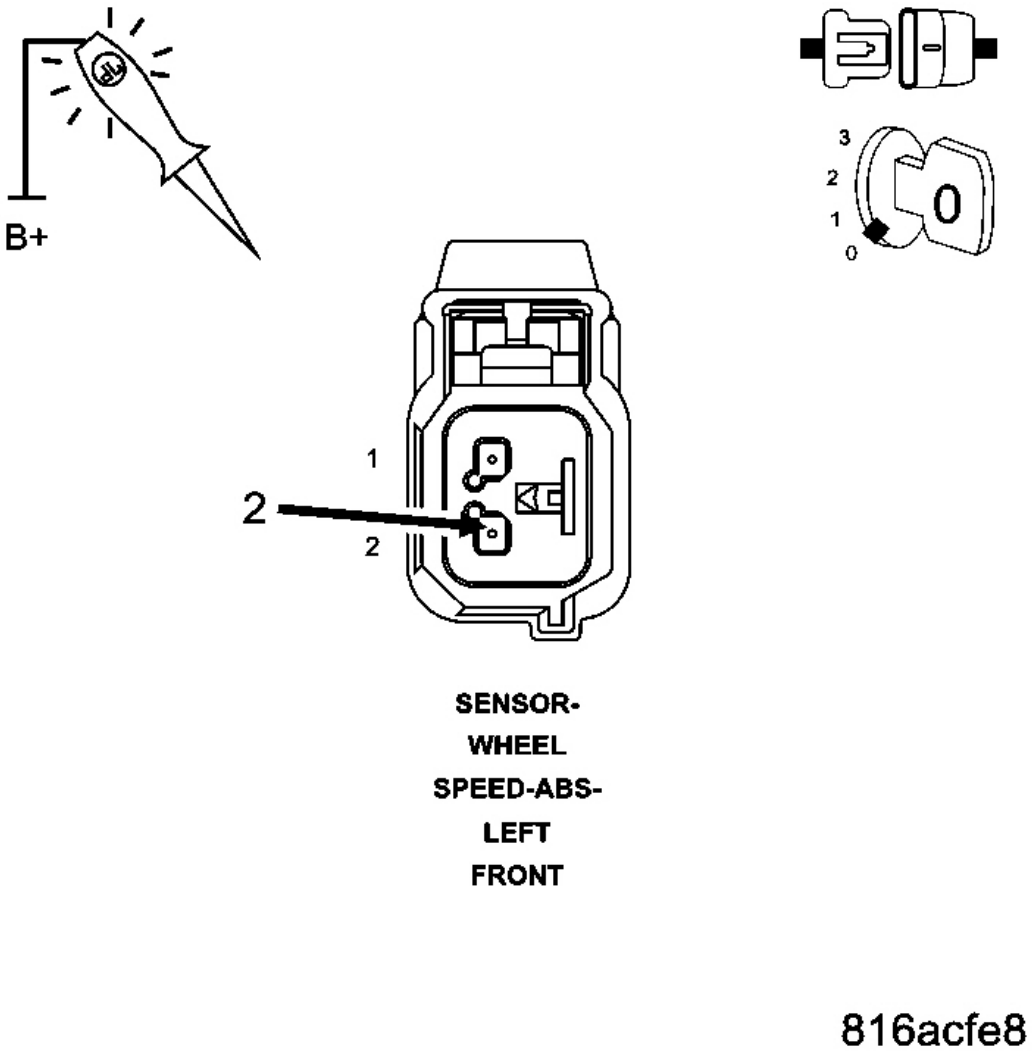


Fig. 9: Probing (B8) Left Front WSS Signal Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Anti-Lock Brake Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B8) Left Front WSS Signal circuit.

Does the test light illuminate brightly?

Yes

Repair the (B8) Left Front WSS Signal circuit for a short to ground.
Perform **ABS VERIFICATION TEST**.

No

Go to 7).

7) CHECK (B8) LEFT FRONT WSS SIGNAL CIRCUIT OPEN

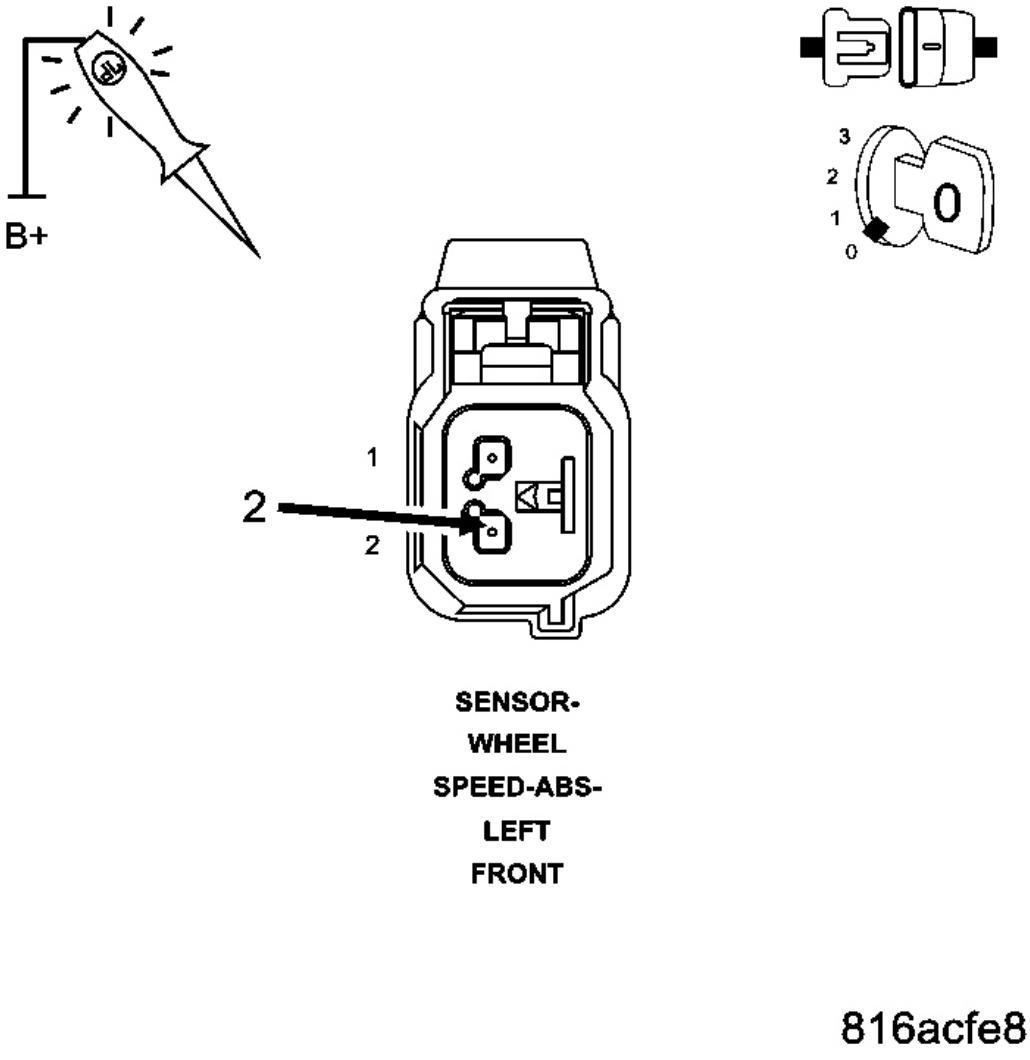


Fig. 10: Probing (B8) Left Front WSS Signal Circuit
Courtesy of CHRYSLER LLC

Connect a jumper wire between ground and the (B8) Left Front WSS Signal circuit in the Anti-Lock Brakes Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B8) Left Front WSS Signal circuit.

Does the test light illuminate brightly?

Yes

Go to 8).

No

Repair the (B8) Left Front WSS Signal circuit for an open.
Perform **ABS VERIFICATION TEST**.

8) CHECK (B8) LEFT FRONT WSS SIGNAL CIRCUIT SHORT TO VOLTAGE

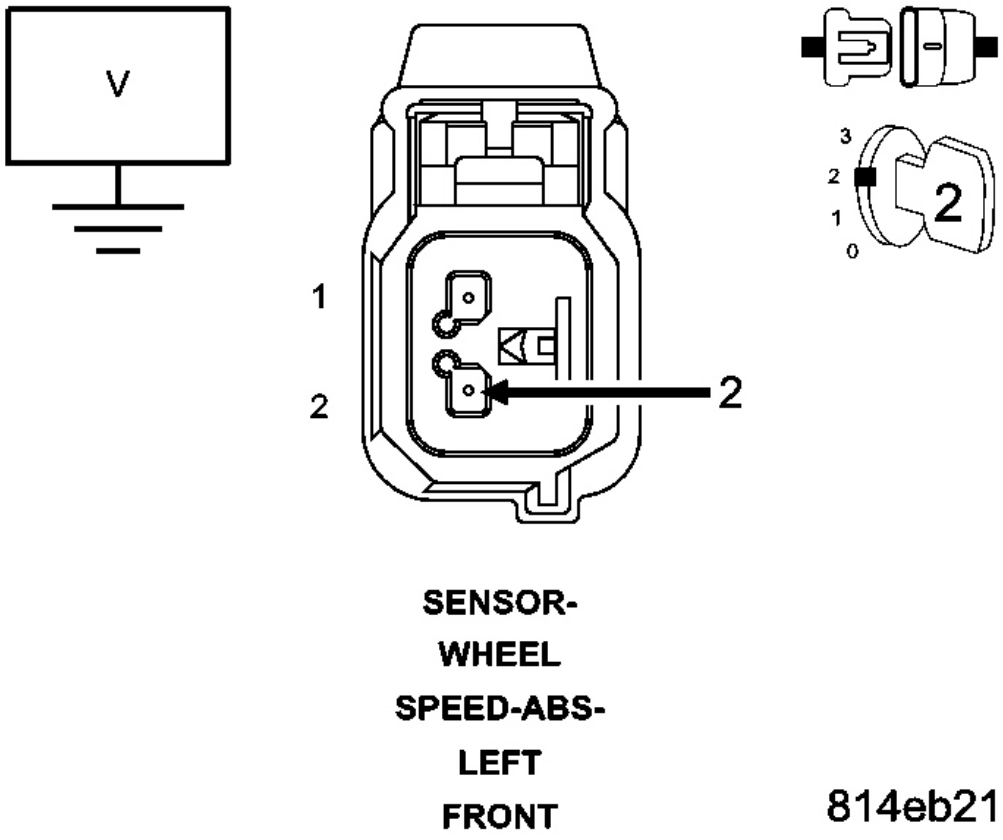


Fig. 11: Measuring Voltage Between (B8) Left Front WSS Signal Circuit And Ground
Courtesy of CHRYSLER LLC

Turn the ignition on.

Remove all jumper wires.

Measure the voltage between the (B8) Left Front WSS Signal circuit and ground.

Is the voltage above one volt?

Yes

Repair the (B8) Left Front WSS Signal circuit for a short to voltage.
Perform **ABS VERIFICATION TEST**.

No

Go to 9).

9) CHECK (B8) LEFT FRONT WSS SIGNAL CIRCUIT AND (B9) LEFT FRONT WSS SUPPLY CIRCUIT SHORT TOGETHER

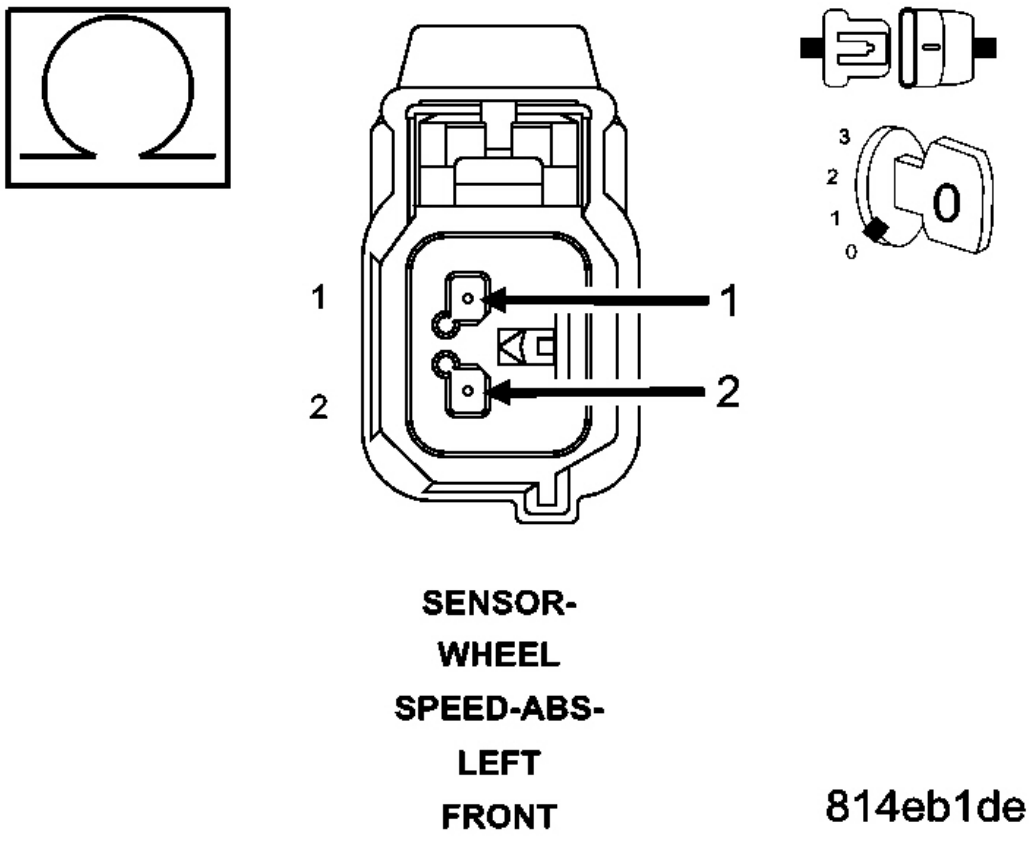


Fig. 12: Measuring Resistance Between (B8) Left Front WSS Signal Circuit And (B9) Left Front WSS Supply Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Measure the resistance between the (B8) Left Front WSS Signal circuit and the (B9) Left Front WSS Supply circuit.

Is the resistance above 120 ohms?

Yes

Go to step 10).

No

Repair the (B8) Left Front WSS Signal circuit and the (B9) Left Front WSS Supply circuit for a

short together.

Perform **ABS VERIFICATION TEST**.

10) LEFT FRONT WHEEL SPEED SENSOR

Replace the Left Front Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read ABS DTCs.

Did DTC C100A-LEFT FRONT WHEEL SPEED SENSOR CIRCUIT reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C1011-LEFT FRONT WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE

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

When Monitored:

With the ignition on.

Set Condition:

When the Left Front Wheel Speed Sensor (WSS) Signal is intermittently missing while vehicle speed is above 40 km/h (25 mph) or erratic wheel speed signal during acceleration or sensed wheel speed is different from other wheels.

Possible Causes

LEFT FRONT WSS LOOSE - B8, B9 CIRCUITS/CONNECTOR/TERMINAL DAMAGE
LEFT FRONT TONE WHEEL DAMAGE
LEFT FRONT WHEEL/BEARING DAMAGE
IMPROPER LEFT FRONT TIRE PRESSURE/MISMATCHED TIRES
LEFT FRONT WSS
ANTI-LOCK BRAKE MODULE

Diagnostic Test

1) CHECK FOR DTC C1011-LEFT FRONT WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE

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

NOTE: If DTC C100A Left Front Wheel Speed Sensor Circuit is present it must be repaired before continuing.

Turn the ignition on.

With the scan tool, record and erase DTCs.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read DTCs.

Does the scan tool display: C1011-LEFT FRONT WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE active?

Yes

Go to 3).

No

Go to 2).

2) CHECK WHEEL SPEED SENSOR SIGNALS

Turn the ignition on.

With the scan tool, monitor and graph ALL the WSS speeds and compare graph while an assistant drives the vehicle.

NOTE: If graph shows periodic dropouts pay close attention to the tone wheel.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Is the Left Front WSS speed showing 0 km/h (0 mph) or not matching other wheels or showing erratic behavior?

Yes

Go to 3).

No

Refer to the **ABS INTERMITTENT CONDITION**.

3) CHECK FOR IMPROPER LEFT FRONT TIRE PRESSURE/MISMATCHED TIRES

Turn the ignition off.

Check and adjust the Left Front Tire pressure.

Check and adjust all other tire pressures.

Inspect for mismatched tires on vehicle.

Is the Left Front Tire improperly inflated or mismatched tires on vehicle?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK LEFT FRONT WSS LOOSENESS, INSPECT B8, B9 CIRCUITS/TERMINALS FOR DAMAGE

NOTE: Check all terminals for broken, bent, pushed out, or corroded terminals

Inspect the Anti-Lock Brake Module harness connector, Left Front WSS, and Left Front WSS harness connector

Inspect the Left Front WSS for looseness, excessive corrosion and not properly fastened.

Inspect the (B8) Left Front WSS Signal and (B9) Left Front WSS Supply circuits between the Left Front WSS and Anti-Lock Brake Module for damage.

Is the Left Front WSS loose or any of the wiring/connectors/terminals damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) CHECK LEFT FRONT WHEEL SPEED SENSOR FOR DAMAGE

Remove the Left Front Wheel Speed Sensor

Inspect the Left Front Wheel Speed Sensor face for damage.

Is the Left Front Wheel Speed Sensor damaged?

Yes

Replace sensor and hub assembly.
Perform **ABS VERIFICATION TEST**.

No

Go to 6).

6) CHECK LEFT FRONT TONE WHEEL/BEARING FOR DAMAGE

Inspect the Left Front Tone Wheel/Bearing for damage, missing teeth, cracks, corrosion or looseness.

NOTE: The Tone Wheel teeth should be perfectly square, not bent, or nicked.

Is the Left Front Tone Wheel/Bearing damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 7).

7) CHECK LEFT FRONT WHEEL BEARING FOR DAMAGE

Inspect the Left Front wheel bearing for excessive runout or clearance.

NOTE: Refer to the appropriate service information, if necessary, for procedures or specifications.

Is the Left Front Wheel Bearing Damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 8).

8) LEFT FRONT WHEEL SPEED SENSOR

Replace the Left Front Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read ABS DTCs.

Did DTC C1011-LEFT FRONT WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C1014-LEFT FRONT WHEEL SPEED COMPARATIVE PERFORMANCE

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

When Monitored:

With the ignition on.

Set Condition:

When the Left Front Wheel Speed Sensor (WSS) Signal reading is different from the readings received from the other WSS's at a vehicle speed above 40 km/h (25 mph). The Anti-Lock Brake Module compares WSS readings from side-to-side on an axle and front-to-rear.

Possible Causes
LEFT FRONT WSS LOOSE - B8, B9 CIRCUITS/CONNECTOR/TERMINAL DAMAGE
IMPROPER LEFT FRONT TIRE PRESSURE/MISMATCHED TIRES
LEFT FRONT TONE WHEEL/BEARING DAMAGE
LEFT FRONT WSS
ANTI-LOCK BRAKE MODULE

Diagnostic Test

1) CHECK FOR DTC C1014-LEFT FRONT WHEEL SPEED COMPARATIVE PERFORMANCE

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

Turn the ignition on.

With the scan tool, record and erase DTCs.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read DTCs.

Does the scan tool display: C1014-LEFT FRONT WHEEL SPEED COMPARATIVE PERFORMANCE active?

Yes

Go to 3).

No

Go to 2).

2) CHECK WHEEL SPEED SENSOR SIGNALS

Turn the ignition on.

With the scan tool, monitor and graph ALL the WSS speeds and compare graph while an assistant drives the vehicle.

NOTE: If graph shows periodic dropouts pay close attention to the tone wheel.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Is the Left Front WSS speed showing 0 km/h (0 mph) or not matching other wheels or showing erratic behavior?

Yes

Go to 3).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.
Refer to the **ABS INTERMITTENT CONDITION**.

3) CHECK FOR IMPROPER LEFT FRONT TIRE PRESSURE/MISMATCHED TIRES

Turn the ignition off.

Check and adjust the Left Front Tire pressure.

Check and adjust all other tire pressures.

Inspect for mismatched tires on vehicle.

Is the Left Front Tire improperly inflated or mismatched tires on vehicle?

Yes

Repair as necessary
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK LEFT FRONT WSS LOOSENESS, INSPECT B8, B9 CIRCUITS/TERMINALS FOR DAMAGE

NOTE: Check all terminals for broken, bent, pushed out, or corroded terminals

Inspect the Anti-Lock Brake Module harness connector, Left Front WSS, and Left Front WSS harness connector.

Inspect the Left Front WSS for looseness, excessive corrosion and not properly fastened.

Inspect the (B8) Left Front WSS Signal and (B9) Left Front WSS Supply circuits between the Left Front WSS and Anti-Lock Brake Module for damage.

Is the Left Front WSS loose or any of the wiring/connectors/terminals damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) CHECK LEFT FRONT WHEEL SPEED SENSOR FOR DAMAGE

Remove the Left Front Wheel Speed Sensor

Inspect the Left Front Wheel Speed Sensor face for damage.

Is the Left Front Wheel Speed Sensor damaged?

Yes

Replace sensor and hub assembly.
Perform **ABS VERIFICATION TEST**.

No

Go to 6).

6) CHECK LEFT FRONT TONE WHEEL/BEARING FOR DAMAGE

Inspect the Left Front Tone Wheel/Bearing for damage, missing teeth, cracks, corrosion or looseness.

NOTE: The Tone Wheel teeth should be perfectly square, not bent, or nicked.

Is the Left Front Tone Wheel/Bearing damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 7).

7) LEFT FRONT WHEEL SPEED SENSOR

Replace the Left Front Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read ABS DTCs.

Did DTC C1014-LEFT FRONT WHEEL SPEED COMPARATIVE PERFORMANCE reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C1015-RIGHT FRONT WHEEL SPEED SENSOR CIRCUIT

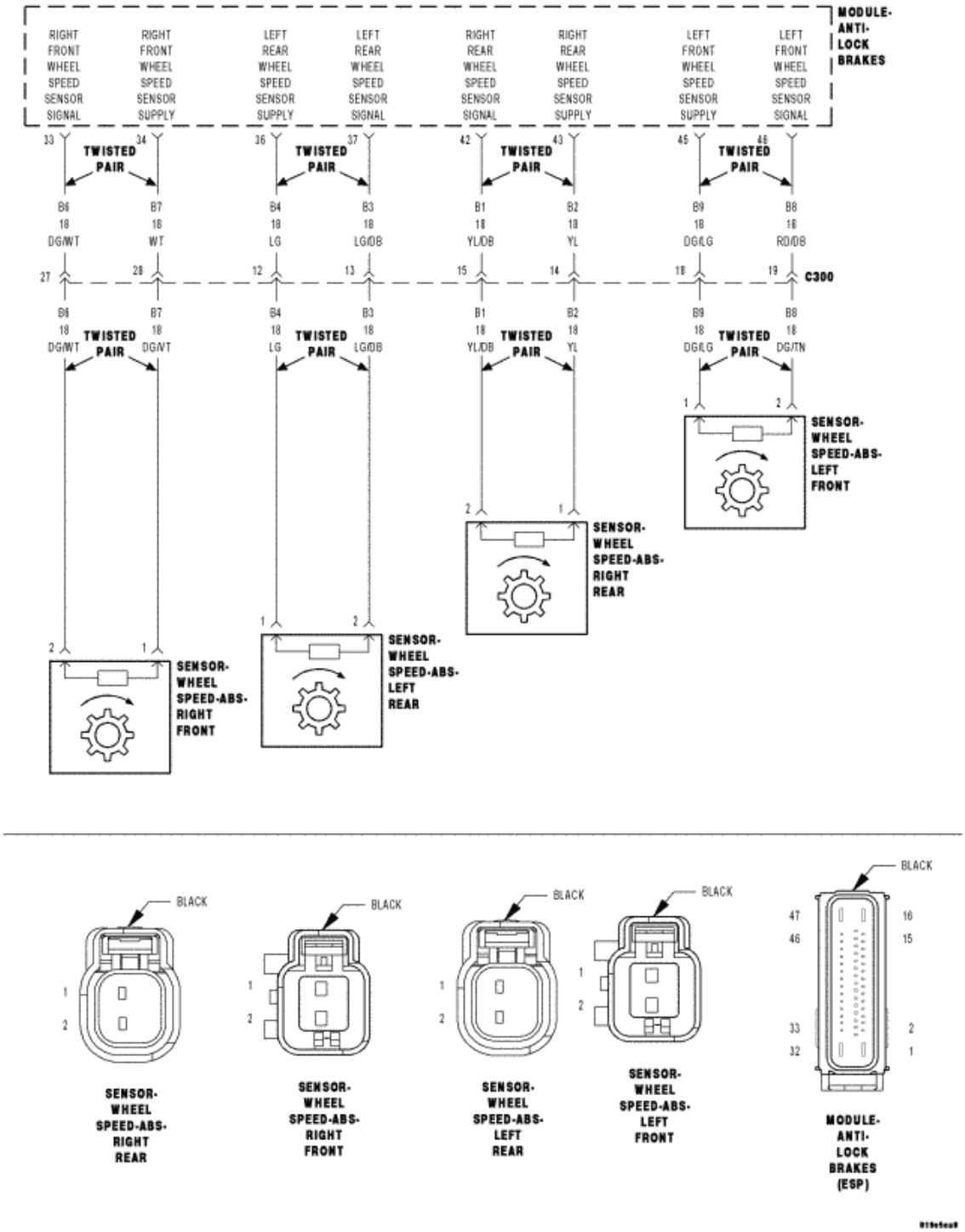


Fig. 13: Wheel Speed Sensor Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

With the ignition on.

Set Condition:

If the Right Front Wheel Speed Sensor (WSS) circuit fails the diagnostic test.

Possible Causes
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
(B7) RIGHT FRONT WSS 12 VOLT SUPPLY CIRCUIT SHORTED TO VOLTAGE, GROUND, OR OPEN
(B6) RIGHT FRONT WSS SIGNAL CIRCUIT SHORTED TO VOLTAGE, GROUND, OR OPEN
(B6) RIGHT FRONT WSS SIGNAL CIRCUIT SHORTED TO (B7) RIGHT FRONT WSS 12 VOLT SUPPLY CIRCUIT
RIGHT FRONT WSS
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) CHECK FOR DTC C1015-RIGHT FRONT WHEEL SPEED SENSOR CIRCUIT

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

Turn the ignition on.

With the scan tool, record and erase DTCs.

Cycle the ignition switch from off to on.

With the scan tool, read DTCs.

Does the scan tool display: C1015-RIGHT FRONT WHEEL SPEED SENSOR CIRCUIT?

Yes

Go to 2).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

2) CHECK CONNECTOR/TERMINAL FOR DAMAGE

NOTE: Check all terminals for broken, bent, pushed out, or corroded terminals.

Turn the ignition off.

Inspect the Anti-Lock Brake Module harness connector, Right Front WSS, and Right Front WSS harness connector.

Is the Right Front WSS or any of the connectors/terminals damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) CHECK (B7) RIGHT FRONT WSS 12 VOLT SUPPLY CIRCUIT VOLTAGE

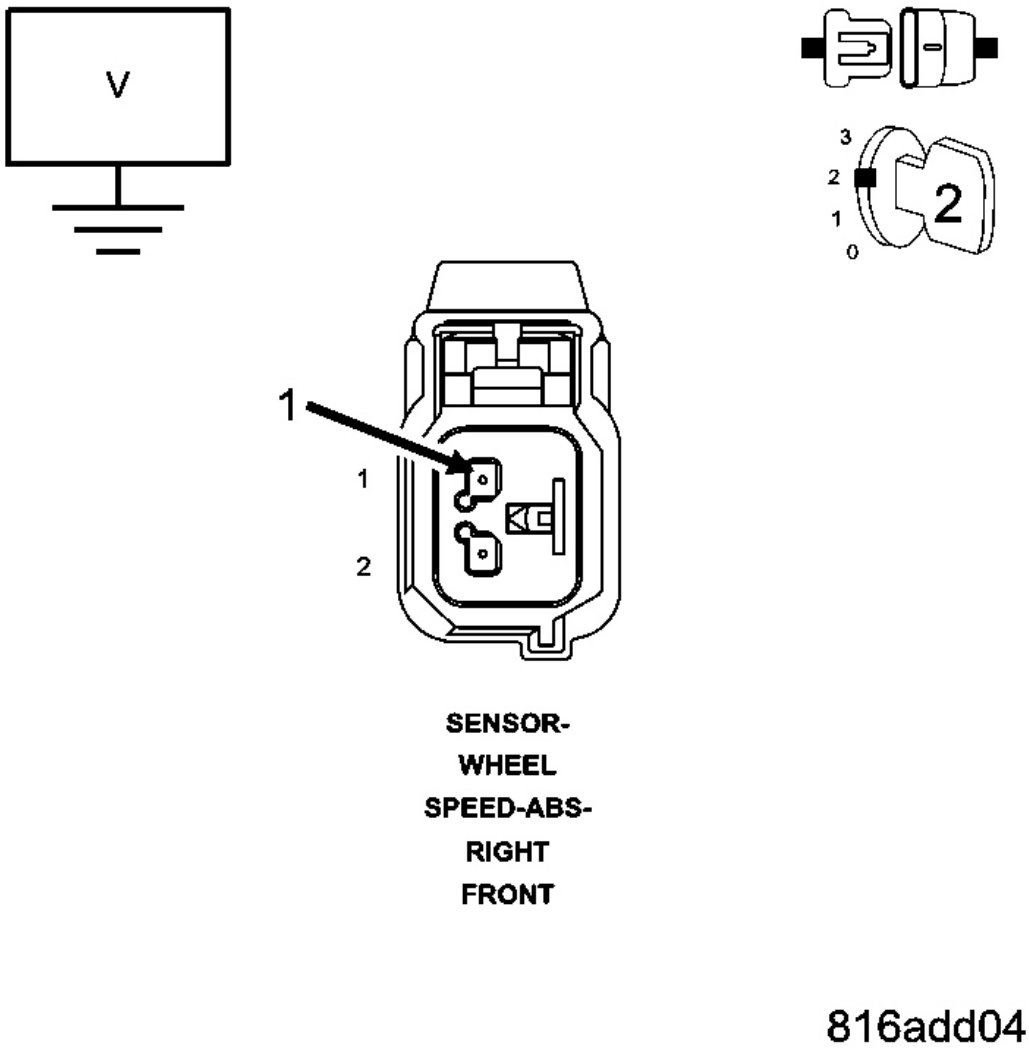


Fig. 14: Measuring Voltage Of (B7) Right Front WSS 12 Volt Supply Circuit
Courtesy of CHRYSLER LLC

Disconnect the Right Front WSS harness connector.

Turn the ignition on.

Measure the voltage of the (B7) Right Front WSS 12 Volt Supply circuit.

Is the voltage above 10.0 volts?

Yes

Go to 6).

No

Go to 4).

4) CHECK (B7) RIGHT FRONT WSS 12 VOLT SUPPLY CIRCUIT FOR A SHORT TO GROUND

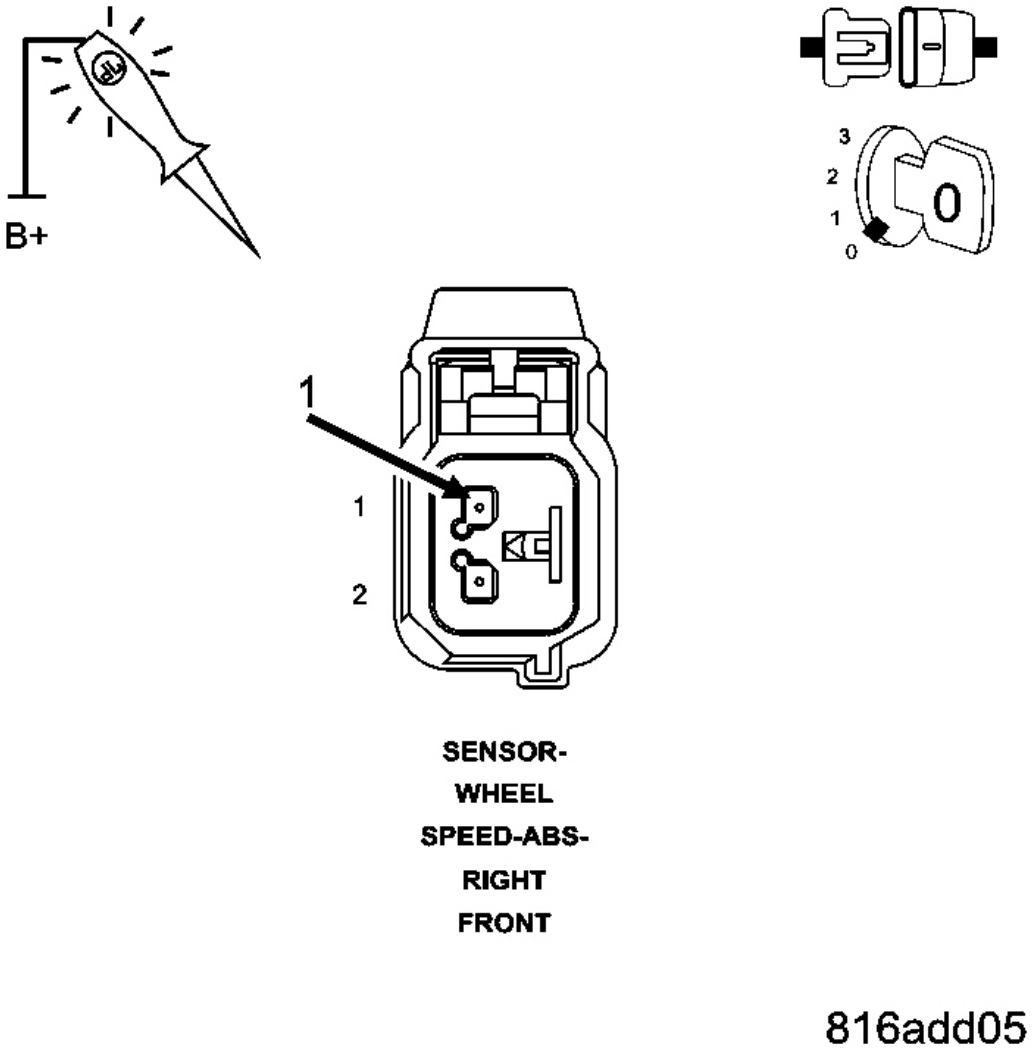


Fig. 15: Probing (B7) Right Front WSS Supply Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Right Front WSS harness connector.

Disconnect the Anti-Lock Brake Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B7) Right Front WSS Supply circuit.

Does the test light illuminate brightly?

Yes

Repair the (B7) Right Front WSS Supply circuit for a short to ground.
Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) CHECK (B7) RIGHT FRONT WSS 12 VOLT SUPPLY CIRCUIT FOR AN OPEN

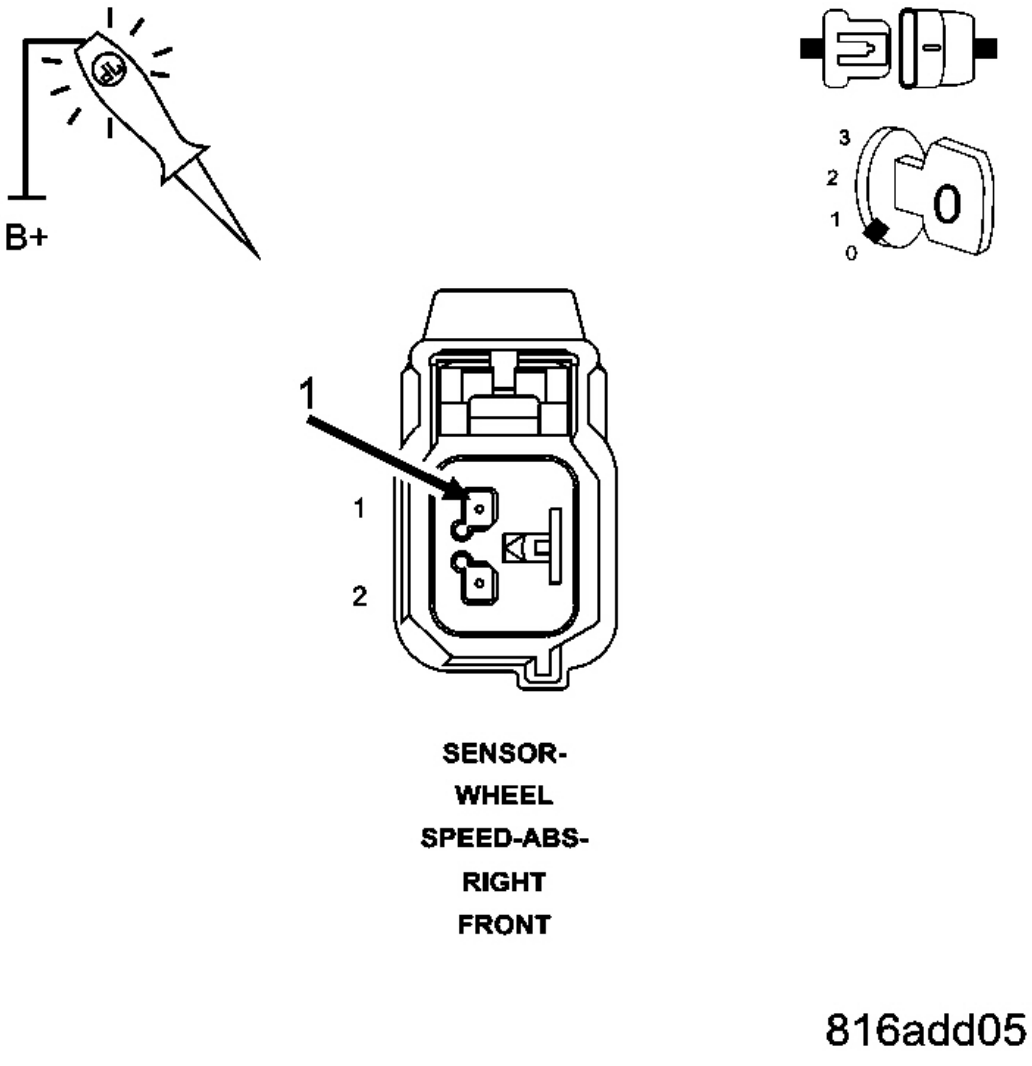


Fig. 16: Probing (B7) Right Front WSS Supply Circuit
Courtesy of CHRYSLER LLC

Connect a jumper wire between ground and the (B7) Right Front WSS Supply circuit in the Anti-Lock Brakes Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B7) Right Front WSS Supply circuit.

Does the test light illuminate brightly?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Repair the (B7) Right Front WSS Supply circuit for an open.
Perform **ABS VERIFICATION TEST**.

6) CHECK (B6) RIGHT FRONT WSS SIGNAL CIRCUIT SHORT TO GROUND

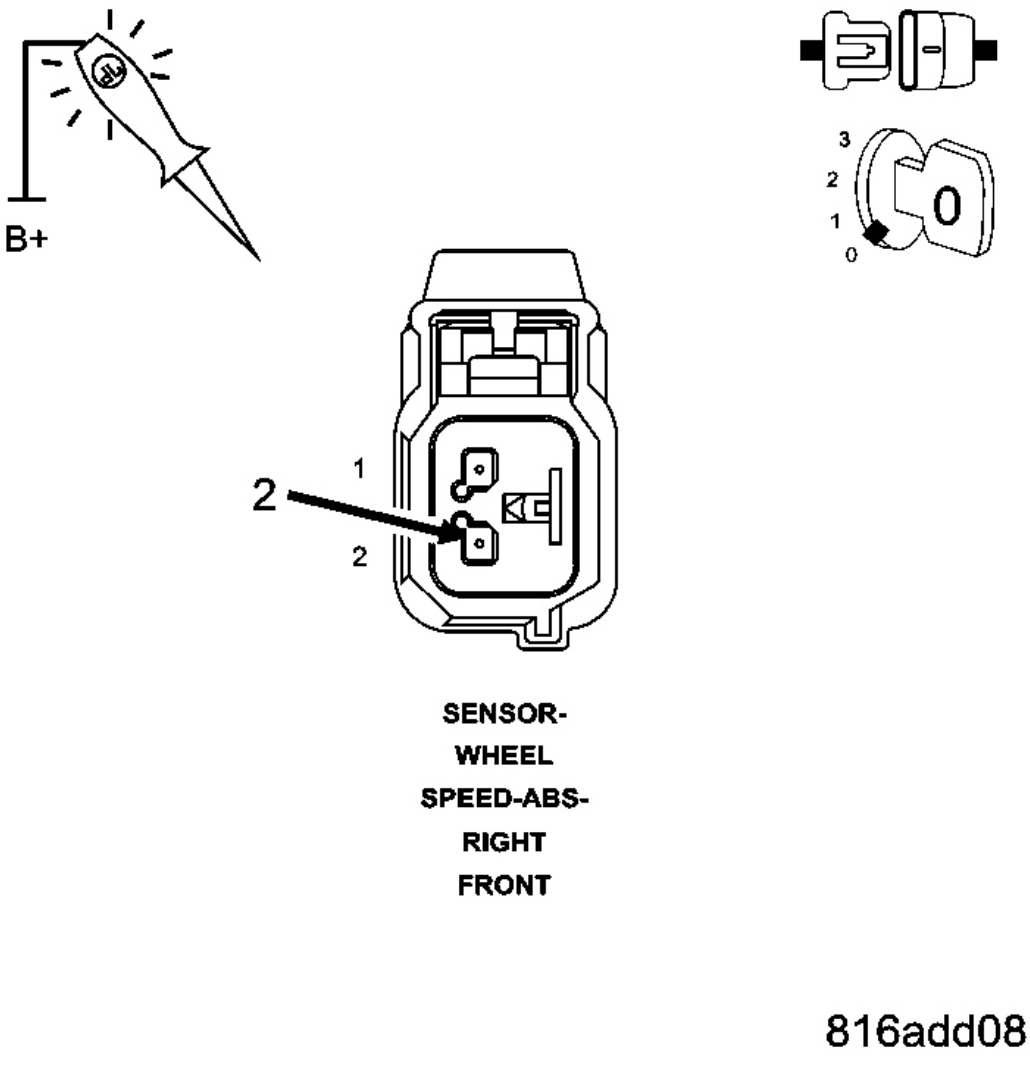


Fig. 17: Probing (B6) Right Front WSS Signal Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Anti-Lock Brake Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B6) Right Front WSS Signal circuit.

Does the test light illuminate brightly?

Yes

Repair the (B6) Right Front WSS Signal circuit for a short to ground.
Perform **ABS VERIFICATION TEST**.

No

Go to 7).

7) CHECK (B6) RIGHT FRONT WSS SIGNAL CIRCUIT OPEN

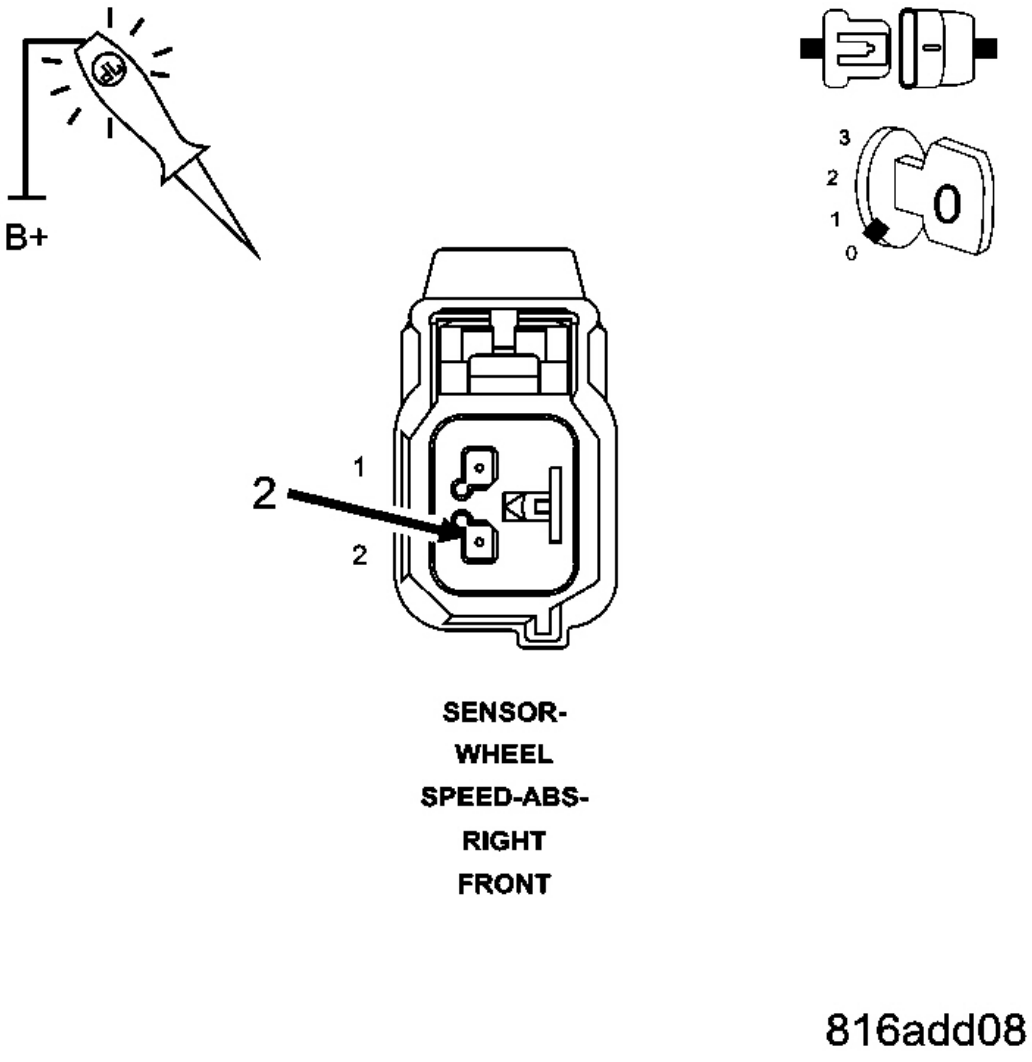


Fig. 18: Probing (B6) Right Front WSS Signal Circuit
Courtesy of CHRYSLER LLC

Connect a jumper wire between ground and the (B6) Right Front WSS Signal circuit in the Anti-Lock Brakes Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B6) Right Front WSS Signal circuit.

Does the test light illuminate brightly?

Yes

Go to 8).

No

Repair the (B6) Right Front WSS Signal circuit for an open.
Perform **ABS VERIFICATION TEST**.

8) CHECK (B6) RIGHT FRONT WSS SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE

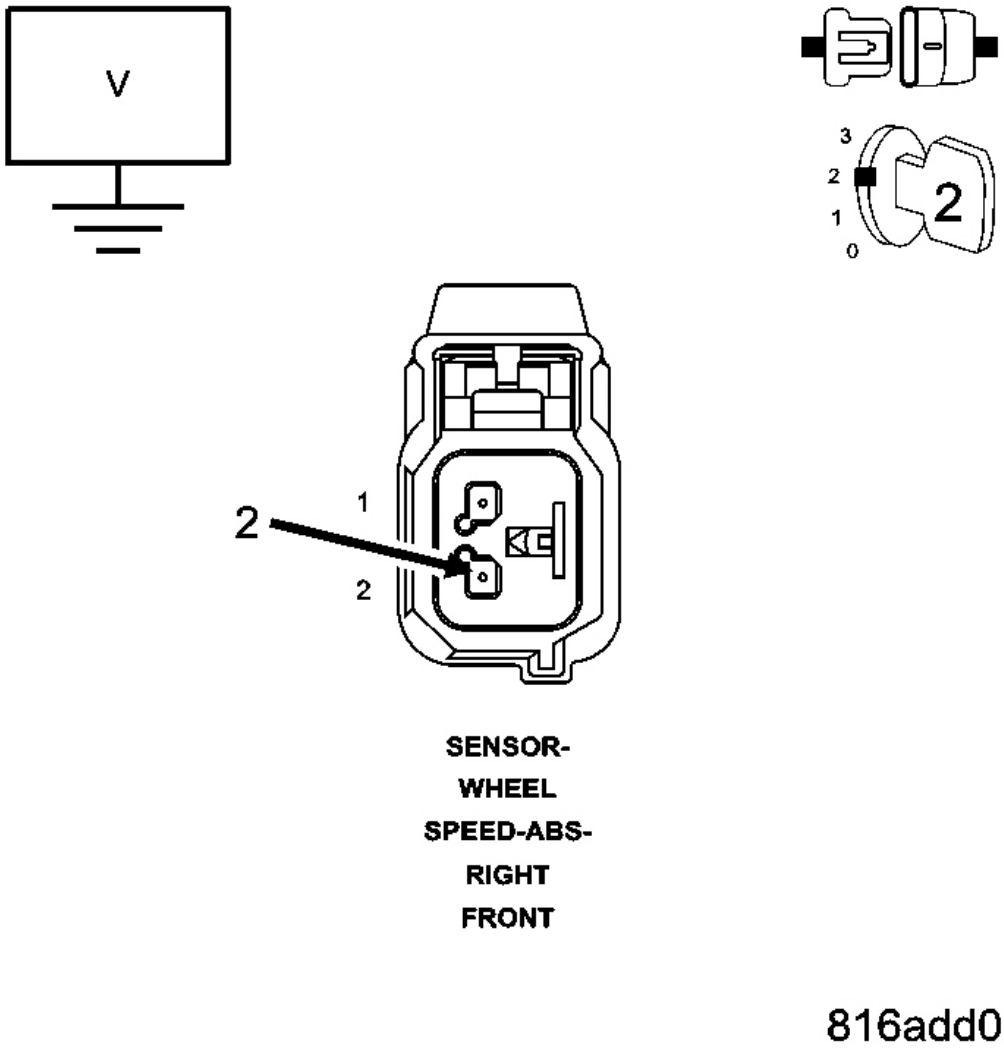


Fig. 19: Measuring Voltage Between (B6) Right Front WSS Signal Circuit And Ground
Courtesy of CHRYSLER LLC

Turn the ignition on.

Remove all jumper wires.

Measure the voltage between the (B6) Right Front WSS Signal circuit and ground.

Is the voltage above one volt?

Yes

Repair the (B6) Right Front WSS Signal circuit for a short to voltage.
Perform **ABS VERIFICATION TEST**.

No

Go to 9).

9) CHECK (B6) RIGHT FRONT WSS SIGNAL CIRCUIT AND (B7) RIGHT FRONT WSS 12 VOLT SUPPLY CIRCUIT SHORTED TOGETHER

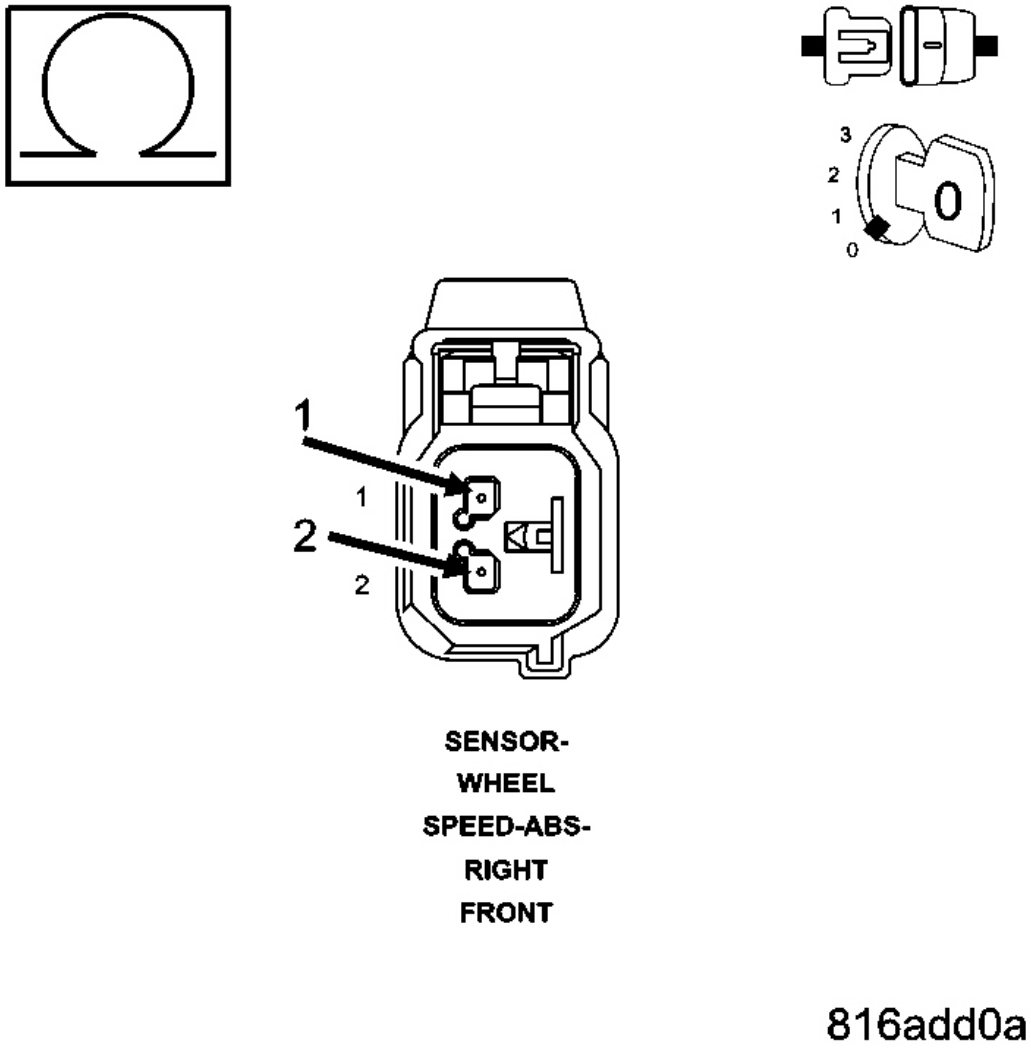


Fig. 20: Measuring Resistance Between (B6) Right Front WSS Signal Circuit And (B7) Right Front WSS Supply Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Measure the resistance between the (B6) Right Front WSS Signal circuit and the (B7) Right Front WSS Supply circuit.

Is the resistance above 120 ohms?

Yes

Go to step 10).

No

Repair the (B6) Right Front WSS Signal circuit and the (B7) Right Front WSS Supply circuit for a short together.

Perform **ABS VERIFICATION TEST**.

10) RIGHT FRONT WHEEL SPEED SENSOR

Replace the Right Front Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read ABS DTCs.

Did DTC C1015-RIGHT FRONT WHEEL SPEED SENSOR CIRCUIT reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C101C-RIGHT FRONT WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE

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

When Monitored:

With the ignition on.

Set Condition:

When the Right Front Wheel Speed Sensor (WSS) Signal is intermittently missing while vehicle speed is

above 40 km/h (25 mph) or erratic wheel speed signal during acceleration or sensed wheel speed is different from other wheels.

Possible Causes
RIGHT FRONT WSS LOOSE - B6, B7 CIRCUITS/CONNECTOR/TERMINAL DAMAGE
RIGHT FRONT TONE WHEEL DAMAGE
RIGHT FRONT WHEEL/BEARING DAMAGE
IMPROPER RIGHT FRONT TIRE PRESSURE/MISMATCHED TIRES
RIGHT FRONT WSS
ANTI-LOCK BRAKE MODULE

Diagnostic Test

1) CHECK FOR DTC C101C-RIGHT FRONT WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE

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

NOTE: If DTC C1015-Right Front Wheel Speed Sensor Circuit is present it must be repaired before continuing.

Turn the ignition on.

With the scan tool, record and erase DTCs.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read DTCs.

Does the scan tool display: C101C-RIGHT FRONT WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE active?

Yes

Go to 3).

No

Go to 2).

2) CHECK WHEEL SPEED SENSOR SIGNALS

Turn the ignition on.

With the scan tool, monitor and graph ALL the WSS speeds and compare graph while an assistant drives the vehicle.

NOTE: If graph shows periodic dropouts pay close attention to the tone wheel.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Is the Right Front WSS speed showing 0 km/h (0 mph) or not matching other wheels or showing erratic behavior?

Yes

Go to 3).

No

Refer to the **ABS INTERMITTENT CONDITION**.

3) CHECK FOR IMPROPER RIGHT FRONT TIRE PRESSURE/MISMATCHED TIRES

Turn the ignition off.

Check and adjust the Right Front Tire pressure.

Check and adjust all other tire pressures.

Inspect for mismatched tires on vehicle.

Is the Right Front Tire improperly inflated or mismatched tires on vehicle?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK RIGHT FRONT WSS LOOSENESS, INSPECT B6, B7 CIRCUITS/TERMINALS FOR DAMAGE

NOTE: Check all terminals for broken, bent, pushed out, or corroded terminals

Inspect the Anti-Lock Brake Module harness connector, Right Front WSS, and Right Front WSS harness connector

Inspect the Right Front WSS for looseness, excessive corrosion and not properly fastened.

Inspect the (B6) Right Front WSS Signal and (B7) Right Front WSS Supply circuits between the Right Front WSS and Anti-Lock Brake Module for damage.

Is the Right Front WSS loose or any of the wiring/connectors/terminals damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) CHECK RIGHT FRONT WHEEL SPEED SENSOR FOR DAMAGE

Remove the Right Front Wheel Speed Sensor

Inspect the Right Front Wheel Speed Sensor face for damage.

Is the Right Front Wheel Speed Sensor damaged?

Yes

Replace sensor and hub assembly.
Perform **ABS VERIFICATION TEST**.

No

Go to 6).

6) CHECK RIGHT FRONT TONE WHEEL/BEARING FOR DAMAGE

Inspect the Right Front Tone Wheel/Bearing for damage, missing teeth, cracks, corrosion or looseness.

NOTE: The Tone Wheel teeth should be perfectly square, not bent, or nicked.

Is the Right Front Tone Wheel/Bearing damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 7).

7) CHECK RIGHT FRONT WHEEL BEARING FOR DAMAGE

Inspect the Right Front wheel bearing for excessive runout or clearance.

NOTE: Refer to the appropriate service information, if necessary, for procedures or specifications.

Is the Right Front Wheel Bearing Damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 8).

8) RIGHT FRONT WHEEL SPEED SENSOR

Replace the Right Front Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read ABS DTCs.

Did DTC C101C-RIGHT FRONT WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C101F-RIGHT FRONT WHEEL SPEED COMPARATIVE PERFORMANCE

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

When Monitored:

With the ignition on.

Set Condition:

When the Right Front Wheel Speed Sensor (WSS) reading is different from the readings received from the other sensors at a vehicle speed above 40 km/h (25 mph). The Anti-Lock Brake Module compares WSS readings from side-to-side on an axle and front-to-rear.

Possible Causes
RIGHT FRONT WSS LOOSE - B6, B7 CIRCUITS/CONNECTOR/TERMINAL DAMAGE
IMPROPER RIGHT FRONT TIRE PRESSURE/MISMATCHED TIRES
RIGHT FRONT TONE WHEEL/BEARING DAMAGE
RIGHT FRONT WSS
ANTI-LOCK BRAKE MODULE

Diagnostic Test

1) CHECK FOR DTC C101F-RIGHT FRONT WHEEL SPEED COMPARATIVE PERFORMANCE

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

Turn the ignition on.

With the scan tool, record and erase DTCs.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read DTCs.

Does the scan tool display: C101F-RIGHT FRONT WHEEL SPEED COMPARATIVE PERFORMANCE active?

Yes

Go to 3).

No

Go to 2).

2) CHECK WHEEL SPEED SENSOR SIGNALS

Turn the ignition on.

With the scan tool, monitor and graph ALL the WSS speeds and compare graph while an assistant drives the vehicle.

NOTE: If graph shows periodic dropouts pay close attention to the tone wheel.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Is the Right Front WSS speed showing 0 km/h (0 mph) or not matching other wheels or showing erratic behavior?

Yes

Go to 3).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

3) CHECK FOR IMPROPER RIGHT FRONT TIRE PRESSURE/MISMATCHED TIRES

Turn the ignition off.

Check and adjust the Right Front Tire pressure.

Check and adjust all other tire pressures.

Inspect for mismatched tires on vehicle.

Is the Right Front Tire improperly inflated or mismatched tires on vehicle?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK RIGHT FRONT WSS LOOSENESS, INSPECT B6, B7 CIRCUITS/TERMINALS FOR DAMAGE

NOTE: Check all terminals for broken, bent, pushed out, or corroded terminals

Inspect the Anti-Lock Brake Module harness connector, Right Front WSS, and Right Front WSS harness connector

Inspect the Right Front WSS for looseness, excessive corrosion and not properly fastened.

Inspect the (B6) Right Front WSS Signal and (B7) Right Front WSS Supply circuits between the Right Front WSS and Anti-Lock Brake Module for damage.

Is the Right Front WSS loose or any of the wiring/connectors/terminals damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) CHECK RIGHT FRONT WHEEL SPEED SENSOR FOR DAMAGE

Remove the Right Front Wheel Speed Sensor

Inspect the Right Front Wheel Speed Sensor face for damage.

Is the Right Front Wheel Speed Sensor damaged?

Yes

Replace sensor and hub assembly.
Perform **ABS VERIFICATION TEST**.

No

Go to 6).

6) CHECK RIGHT FRONT TONE WHEEL/BEARING FOR DAMAGE

Inspect the Right Front Tone Wheel/Bearing for damage, missing teeth, cracks, corrosion or looseness.

NOTE: The Tone Wheel teeth should be perfectly square, not bent, or nicked.

Is the Right Front Tone Wheel/Bearing damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 7).

7) RIGHT FRONT WHEEL SPEED SENSOR

Replace the Right Front Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read ABS DTCs.

Did DTC C101F-RIGHT FRONT WHEEL SPEED COMPARATIVE PERFORMANCE reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C1020-LEFT REAR WHEEL SPEED SENSOR CIRCUIT

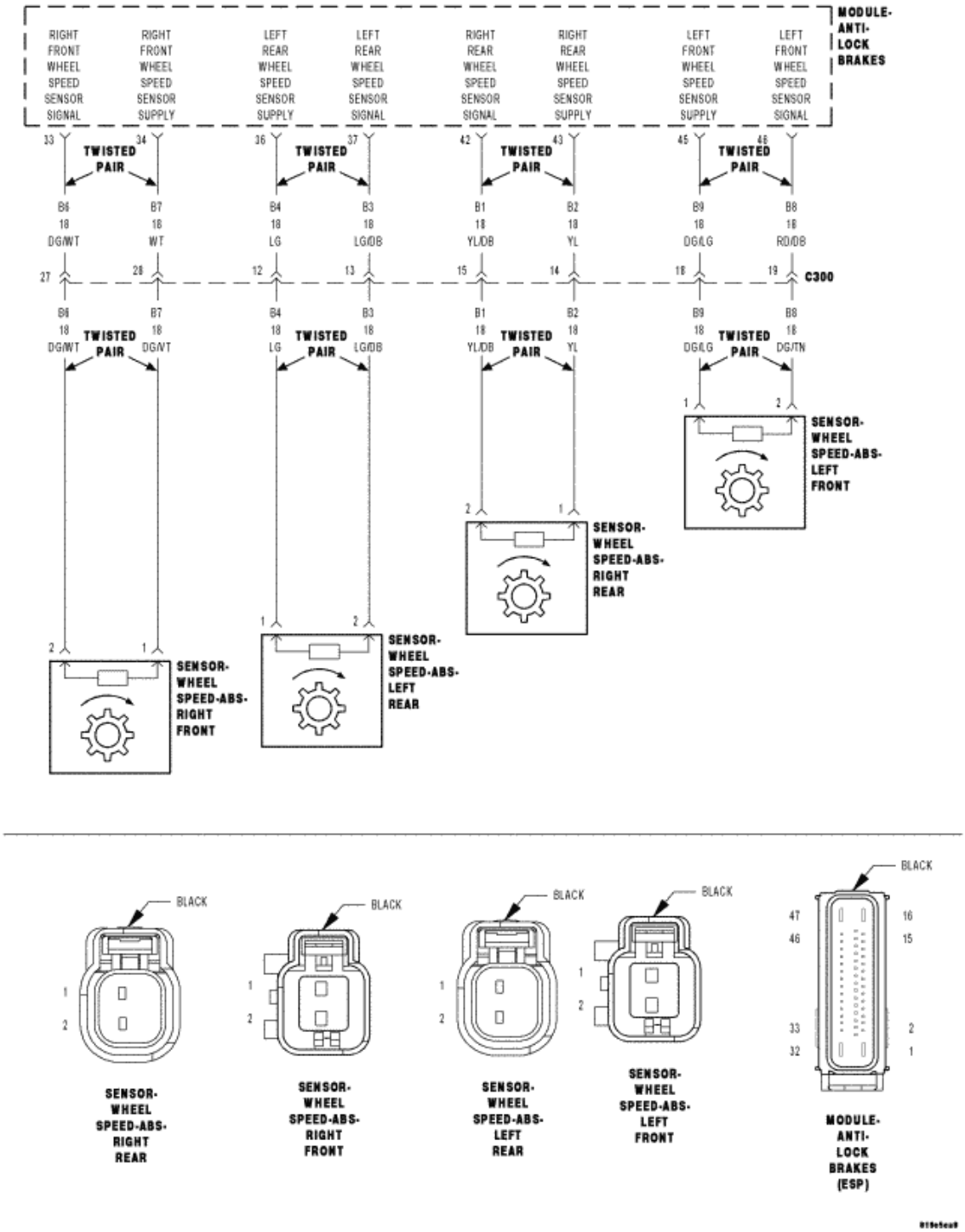


Fig. 21: Wheel Speed Sensor Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

With the ignition on.

Set Condition:

If the Left Rear Wheel Speed Sensor (WSS) circuit fails the diagnostic test.

Possible Causes
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
(B4) LEFT REAR WSS 12 VOLT SUPPLY CIRCUIT SHORTED TO VOLTAGE, GROUND, OR OPEN
(B3) LEFT REAR WSS SIGNAL CIRCUIT SHORTED TO VOLTAGE, GROUND, OR OPEN
(B3) LEFT REAR WSS SIGNAL CIRCUIT SHORTED TO (B4) LEFT REAR WSS 12 VOLT SUPPLY CIRCUIT
LEFT REAR WSS
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) CHECK FOR DTC C1020-LEFT REAR WHEEL SPEED SENSOR CIRCUIT

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

Turn the ignition on.

With the scan tool, record and erase DTCs.

Cycle the ignition switch from off to on.

With the scan tool, read DTCs.

Does the scan tool display: C1020-LEFT REAR WHEEL SPEED SENSOR CIRCUIT?

Yes

Go to 2).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

2) CHECK CONNECTOR/TERMINAL FOR DAMAGE

NOTE: Check all terminals for broken, bent, pushed out, or corroded terminals.

Turn the ignition off.

Inspect the Anti-Lock Brake Module harness connector, Left Rear WSS, and Left Rear WSS harness connector.

Is the Left Rear WSS or any of the connectors/terminals damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) CHECK (B4) LEFT REAR WSS 12 VOLT SUPPLY CIRCUIT VOLTAGE

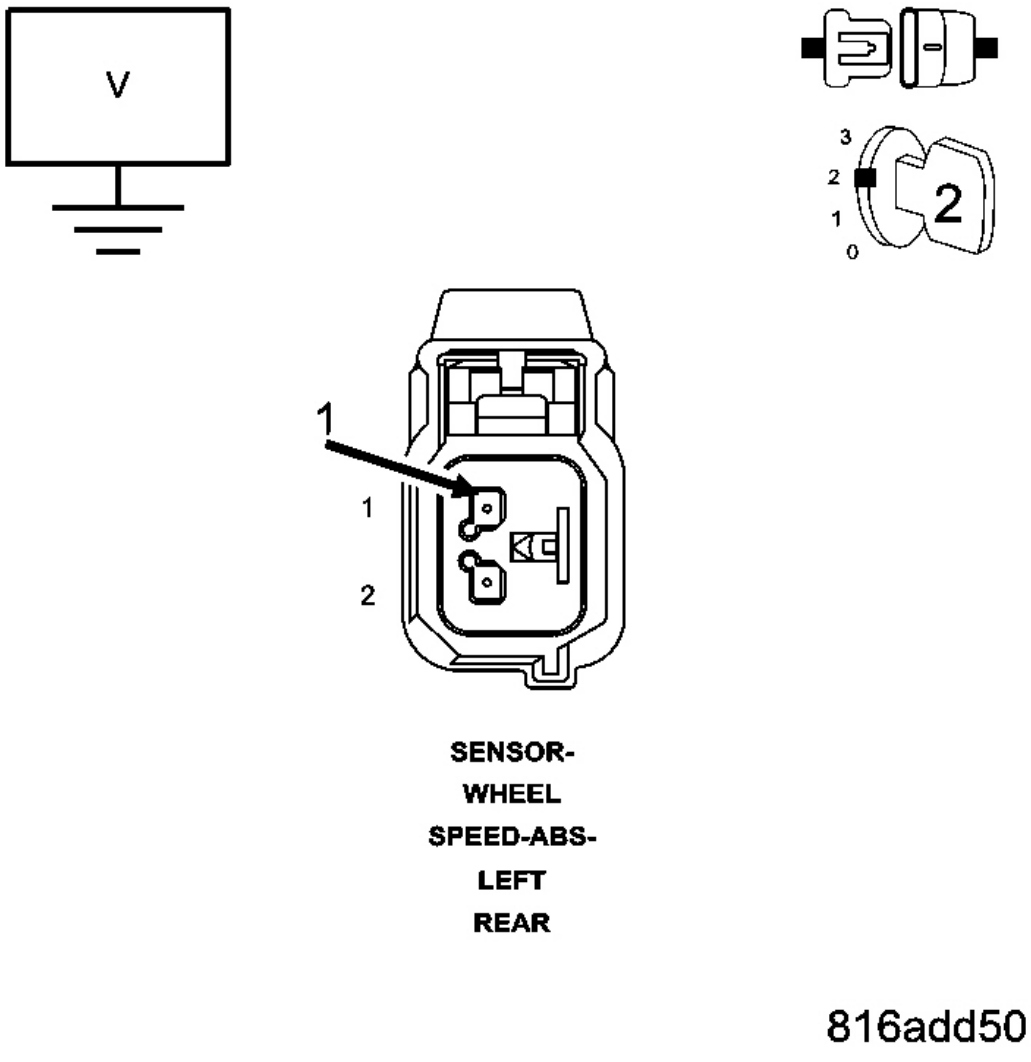


Fig. 22: Measuring Voltage Of (B4) Left Rear WSS 12 Volt Supply Circuit
Courtesy of CHRYSLER LLC

Disconnect the Left Rear WSS harness connector.

Turn the ignition on.

Measure the voltage of the (B4) Left Rear WSS 12 Volt Supply circuit.

Is the voltage above 10.0 volts?

Yes

Go to 6).

No

Go to 4).

4) CHECK (B4) LEFT REAR WSS 12 VOLT SUPPLY CIRCUIT FOR A SHORT TO GROUND

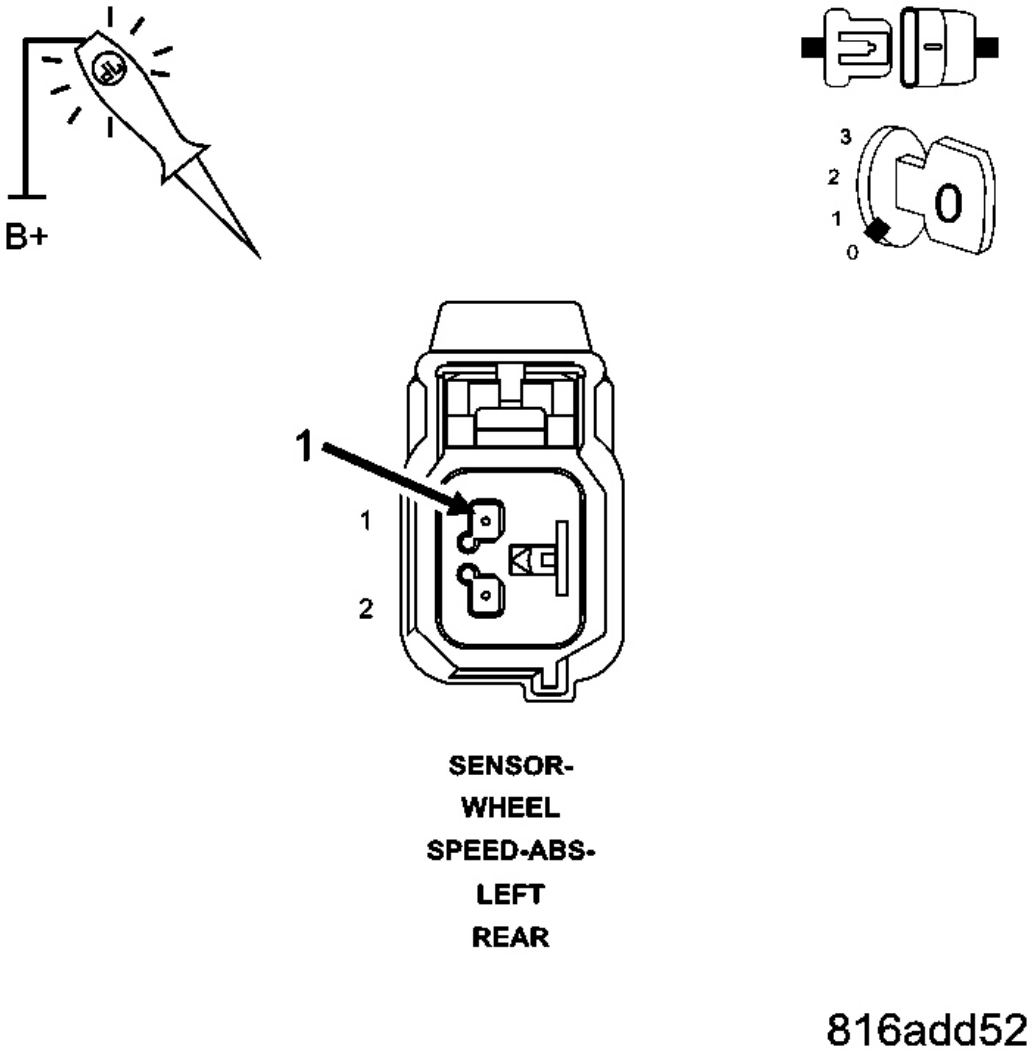


Fig. 23: Probing (B4) Left Rear WSS Supply Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Left Rear WSS harness connector.

Disconnect the Anti-Lock Brake Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B4) Left Rear WSS Supply circuit.

Does the test light illuminate brightly?

Yes

Repair the (B4) Left Rear WSS Supply circuit for a short to ground.
Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) CHECK (B4) LEFT REAR WSS 12 VOLT SUPPLY CIRCUIT FOR AN OPEN

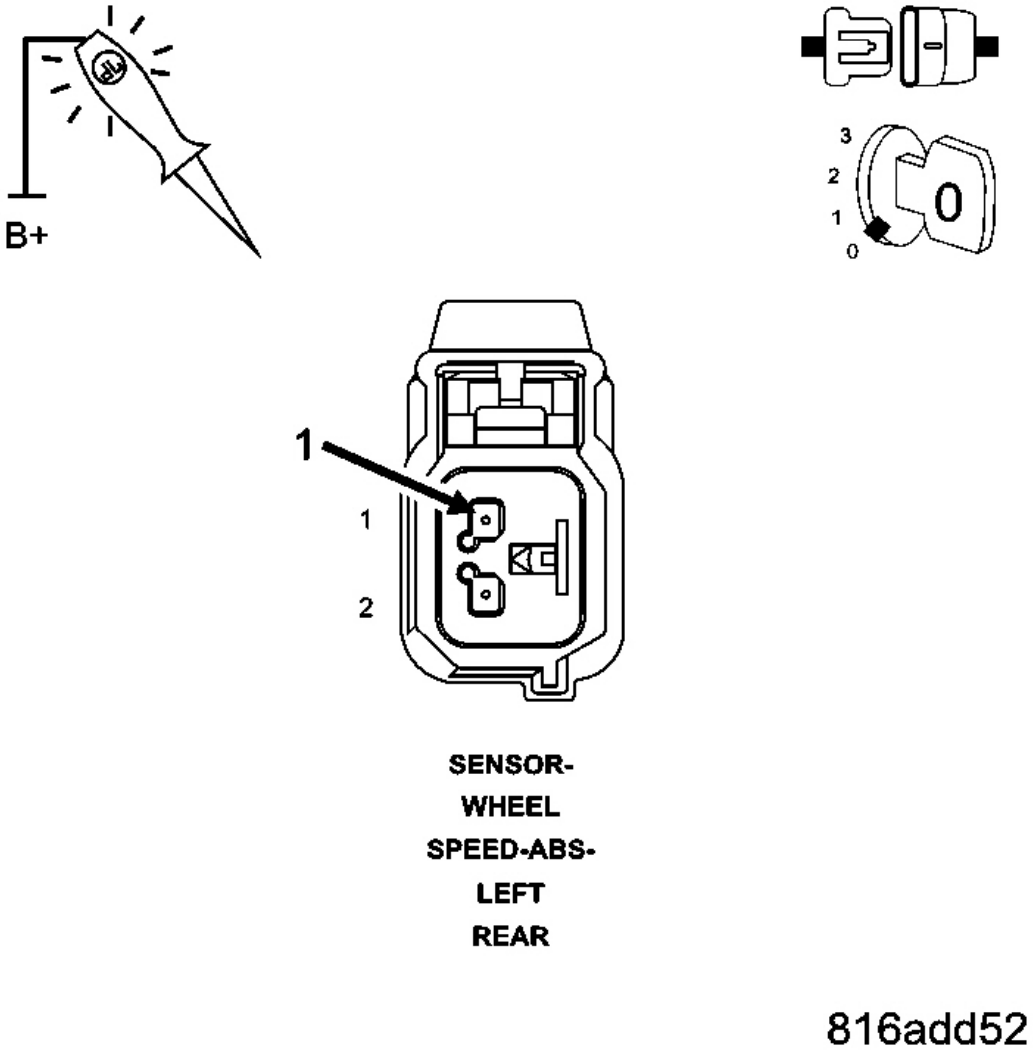


Fig. 24: Probing (B4) Left Rear WSS Supply Circuit
Courtesy of CHRYSLER LLC

Connect a jumper wire between ground and the (B4) Left Rear WSS Supply circuit in the Anti-Lock Brakes Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B4) Left Rear WSS Supply circuit.

Does the test light illuminate brightly?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Repair the (B4) Left Rear WSS Supply circuit for an open.
Perform **ABS VERIFICATION TEST**.

6) CHECK (B3) LEFT REAR WSS SIGNAL CIRCUIT FOR A SHORT TO GROUND

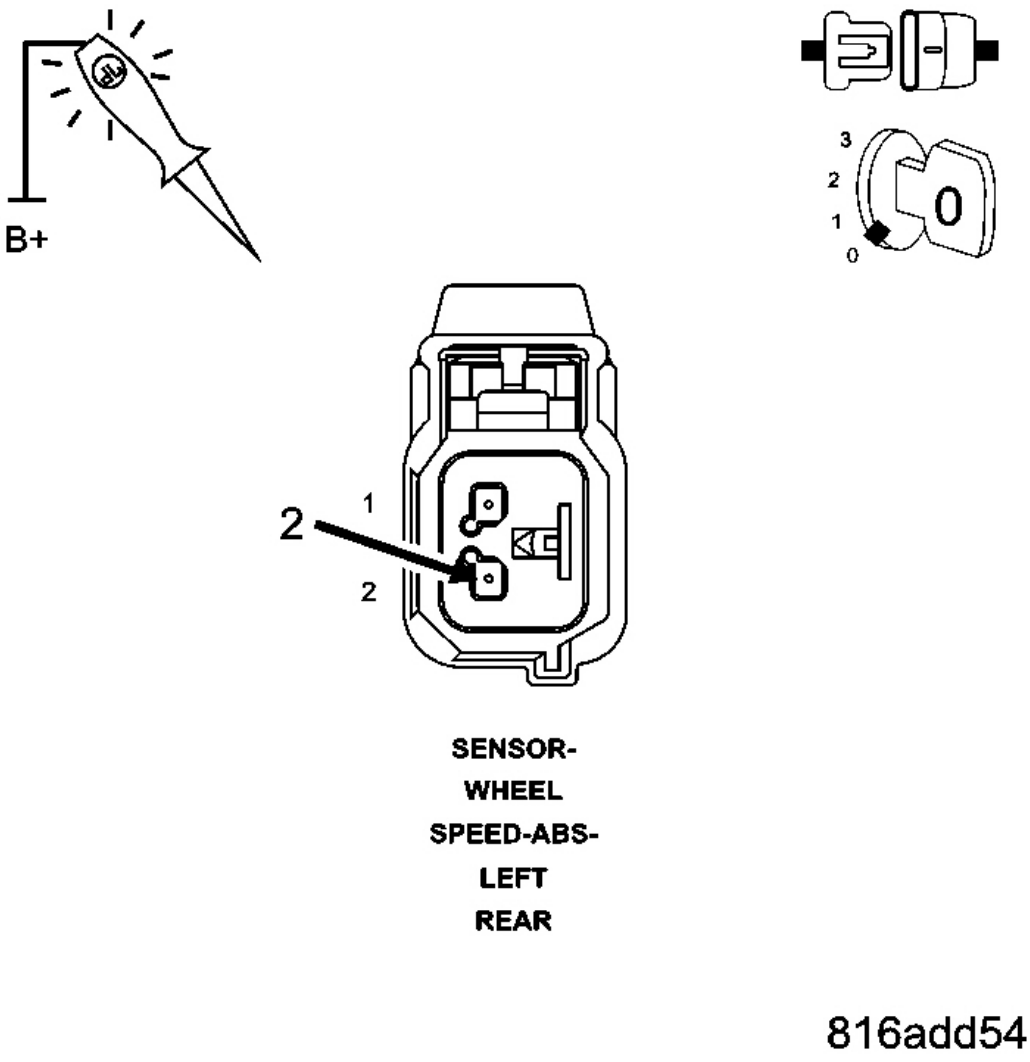


Fig. 25: Probing (B3) Left Rear WSS Signal Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Anti-Lock Brake Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B3) Left Rear WSS Signal circuit.

Does the test light illuminate brightly?

Yes

Repair the (B3) Left Rear WSS Signal circuit for a short to ground.
Perform **ABS VERIFICATION TEST**.

No

Go to 7).

7) CHECK (B3) LEFT REAR WSS SIGNAL CIRCUIT FOR AN OPEN

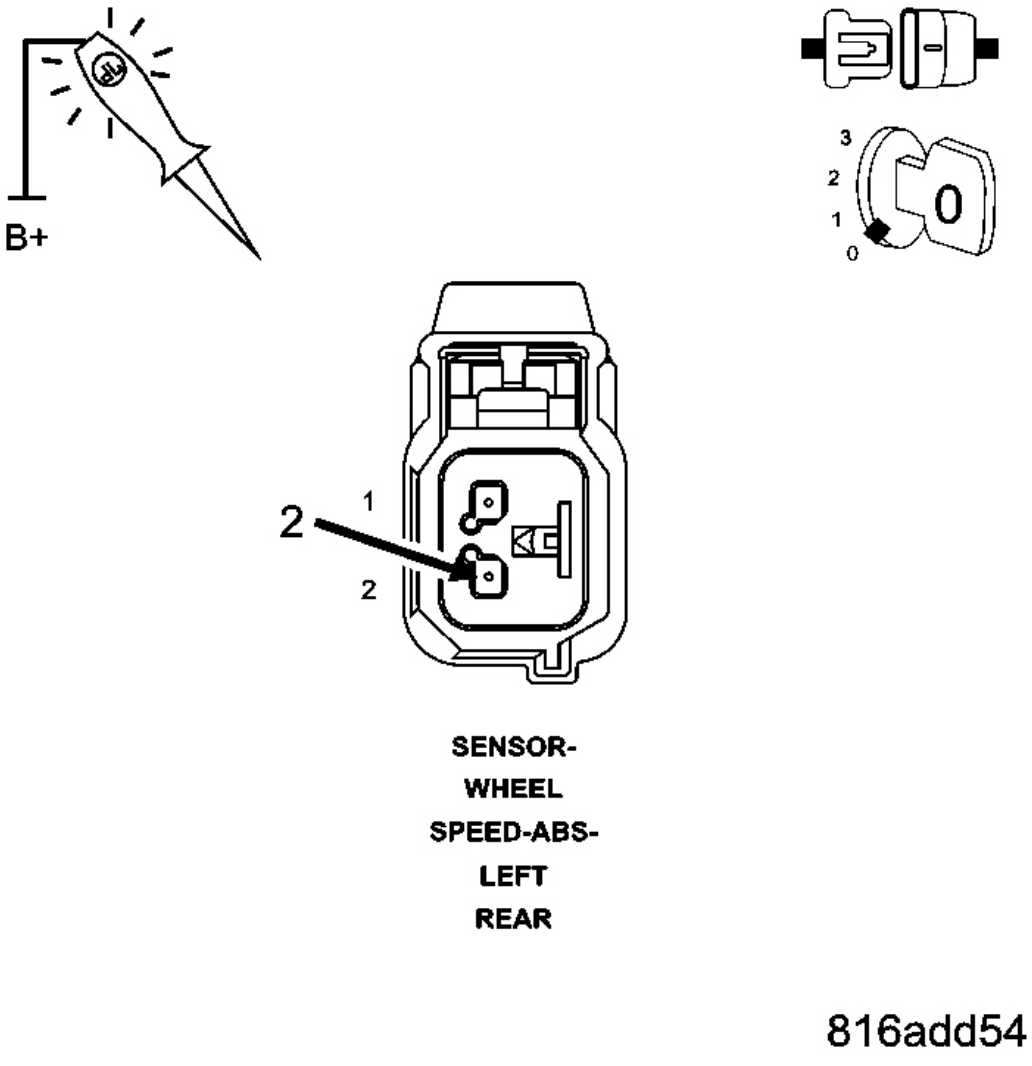


Fig. 26: Probing (B3) Left Rear WSS Signal Circuit
Courtesy of CHRYSLER LLC

Connect a jumper wire between ground and the (B3) Left Rear WSS Signal circuit in the Anti-Lock Brakes Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B3) Left Rear WSS Signal circuit.

Does the test light illuminate brightly?

Yes

Go to 8).

No

Repair the (B3) Left Rear WSS Signal circuit for an open.
Perform **ABS VERIFICATION TEST**.

8) CHECK (B3) LEFT REAR WSS SIGNAL CIRCUIT SHORT TO VOLTAGE

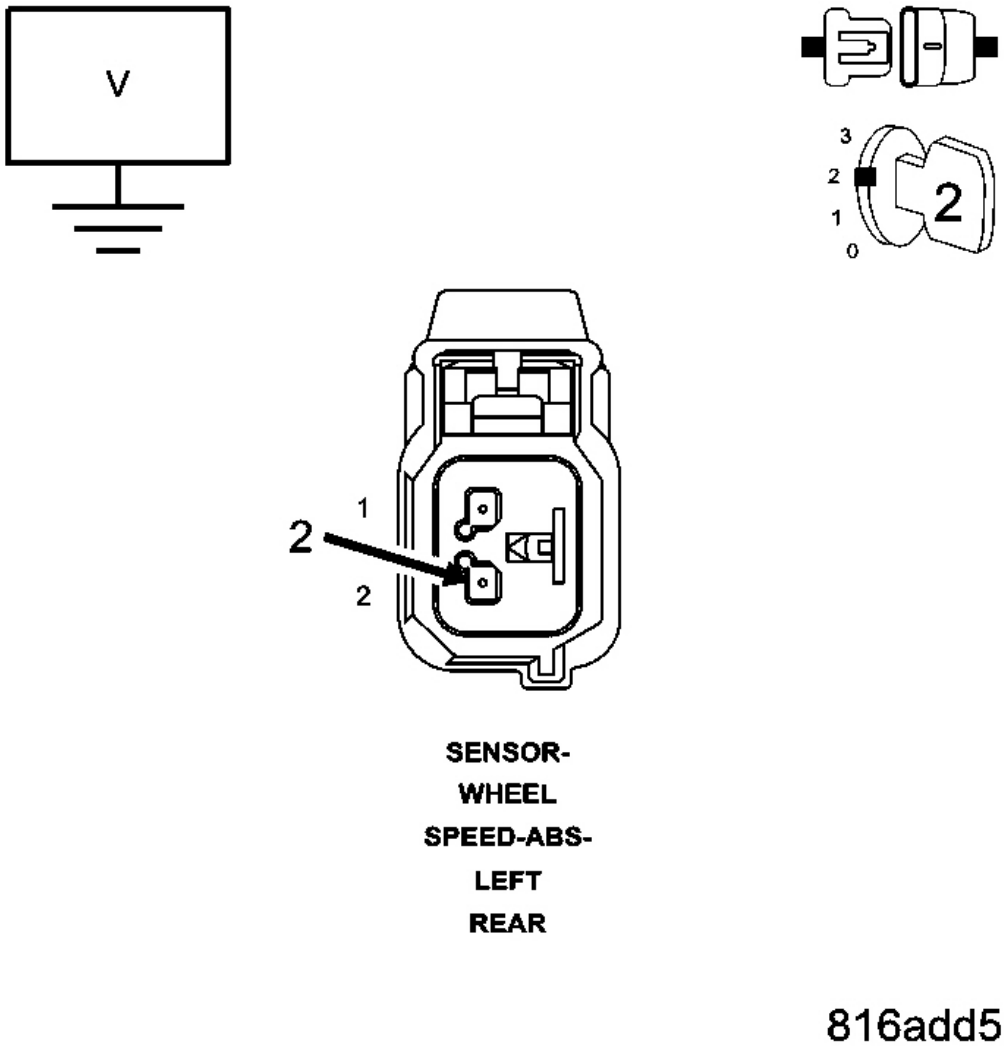


Fig. 27: Measuring Voltage Between (B3) Left Rear WSS Signal Circuit And Ground
Courtesy of CHRYSLER LLC

Turn the ignition on.

Remove all jumper wires.

Measure the voltage between the (B3) Left Rear WSS Signal circuit and ground.

Is the voltage above one volt?

Yes

Repair the (B3) Left Rear WSS Signal circuit for a short to voltage.
Perform **ABS VERIFICATION TEST**.

No

Go to 9).

9) CHECK (B3) LEFT REAR WSS SIGNAL CIRCUIT AND (B4) LEFT REAR WSS 12 VOLT SUPPLY CIRCUIT SHORTED TOGETHER

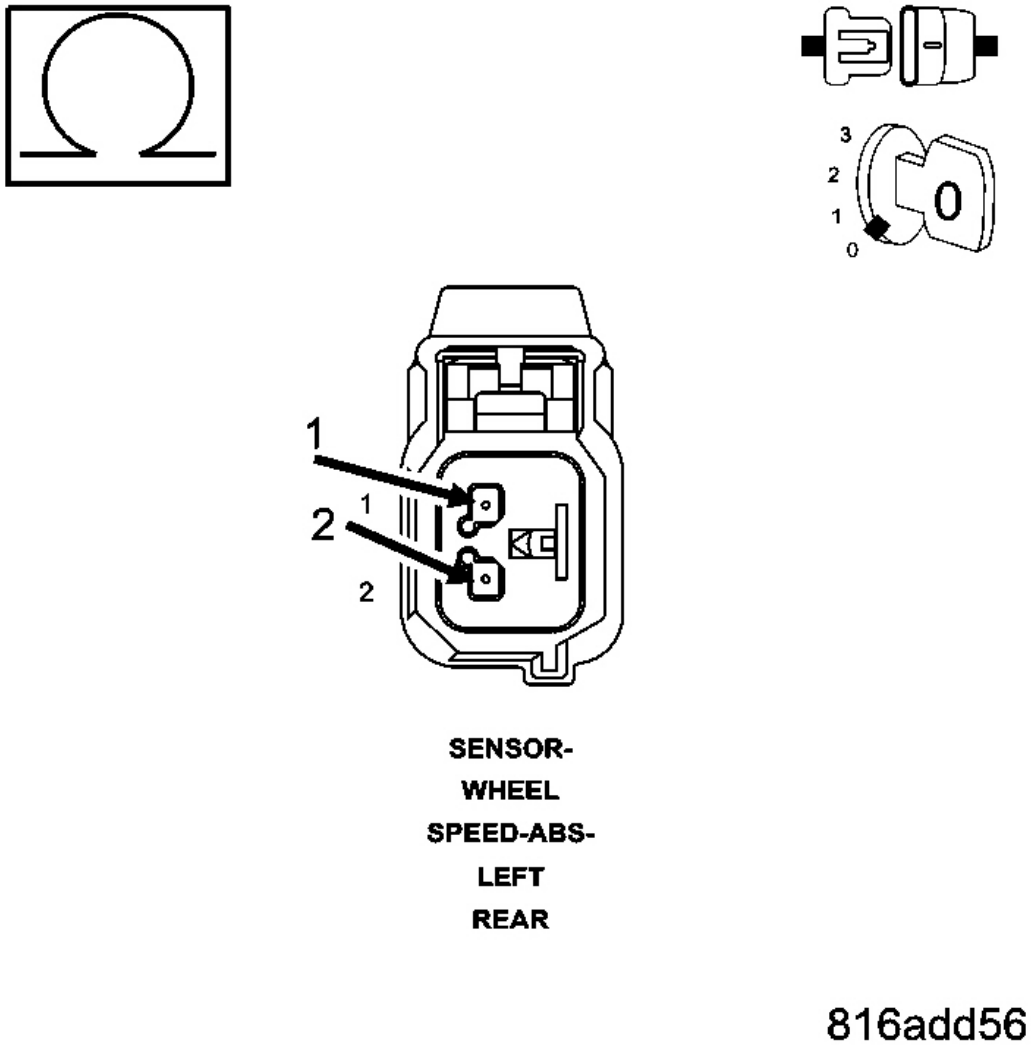


Fig. 28: Measuring Resistance Between (B3) Left Rear WSS Signal Circuit And (B4) Left Rear WSS Supply Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Measure the resistance between the (B3) Left Rear WSS Signal circuit and the (B4) Left Rear WSS Supply circuit.

Is the resistance above 120 ohms?

Yes

Go to step 10).

No

Repair the (B3) Left Rear WSS Signal circuit and the (B4) Left Rear WSS Supply circuit for a short together.

Perform **ABS VERIFICATION TEST**.

10) LEFT REAR WHEEL SPEED SENSOR

Replace the Left Rear Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read ABS DTCs.

Did DTC C1020-LEFT REAR WHEEL SPEED SENSOR CIRCUIT reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C1027-LEFT REAR WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE

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

When Monitored:

With the ignition on.

Set Condition:

When the Left Rear Wheel Speed Sensor (WSS) Signal is intermittently missing while vehicle speed is

above 40 km/h (25 mph) or erratic wheel speed signal during acceleration or sensed wheel speed is different from other wheels.

Possible Causes
LEFT REAR WSS LOOSE - B3, B4 CIRCUITS/CONNECTOR/TERMINAL DAMAGE
LEFT REAR TONE WHEEL DAMAGE
LEFT REAR WHEEL BEARING DAMAGE
AXLE SHAFT FASTENER HARDWARE
IMPROPER LEFT REAR TIRE PRESSURE/MISMATCHED TIRES
LEFT REAR WSS
ANTI-LOCK BRAKE MODULE

Diagnostic Test

1) CHECK FOR DTC C1027-LEFT REAR WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE

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

Turn the ignition on.

With the scan tool, record and erase DTCs.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read DTCs.

Does the scan tool display: C1027-LEFT REAR WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE active?

Yes

Go to 3).

No

Go to 2).

2) CHECK WHEEL SPEED SENSOR SIGNALS

Turn the ignition on.

With the scan tool, monitor and graph ALL the WSS speeds and compare graph while an assistant drives the vehicle.

NOTE: If graph shows periodic dropouts pay close attention to the tone wheel.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Is the Left Rear WSS speed showing 0 km/h (0 mph) or not matching other wheels or showing erratic behavior?

Yes

Go to 3).

No

Refer to the **ABS INTERMITTENT CONDITION**.

3) CHECK FOR IMPROPER LEFT REAR TIRE PRESSURE/MISMATCHED TIRES

Turn the ignition off.

Check and adjust the Left Rear Tire pressure.

Check and adjust all other tire pressures.

Inspect for mismatched tires on vehicle.

Is the Left Rear Tire improperly inflated or mismatched tires on vehicle?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK AXLE SHAFT FASTENER HARDWARE FOR LOOSENESS

Inspect the axle shaft fastener for looseness, and not properly fastened. Tighten fastener to proper specification as required.

Was the Axle Shaft fastener loose?

Yes

Repair as necessary.

No

Go to 5).

5) CHECK LEFT REAR WSS LOOSENESS, INSPECT B4, B5 CIRCUITS/TERMINALS FOR DAMAGE

NOTE: Check all terminals for broken, bent, pushed out, or corroded terminals

Inspect the Anti-Lock Brake Module harness connector, Left Rear WSS, and Left Rear WSS harness connector

Inspect the Left Rear WSS for looseness, excessive corrosion and not properly fastened.

Inspect the (B3) Left Rear WSS Signal and (B4) Left Rear WSS Supply circuits between the Left Rear WSS and Anti-Lock Brake Module for damage.

Is the Left Rear WSS loose or any of the wiring/connectors/terminals damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 6).

6) CHECK LEFT REAR WHEEL SPEED SENSOR FOR DAMAGE

Remove the Left Rear Wheel Speed Sensor

Inspect the Left Rear Wheel Speed Sensor face for damage.

Is the Left Rear Wheel Speed Sensor damaged?

Yes

Replace sensor and hub assembly.
Perform **ABS VERIFICATION TEST**.

No

Go to 7).

7) CHECK LEFT REAR TONE WHEEL FOR DAMAGE

Inspect the Left Rear Tone Wheel for damage, missing teeth, cracks, corrosion or looseness.

NOTE: The Tone Wheel teeth should be perfectly square, not bent, or nicked.

Is the Left Rear Tone Wheel damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 8).

8) CHECK LEFT REAR WHEEL BEARING FOR DAMAGE

Inspect the Left Rear wheel bearing for excessive runout or clearance.

NOTE: Refer to the appropriate service information, if necessary, for procedures or specifications.

Is the Left Rear Wheel Bearing Damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 9).

9) LEFT REAR WHEEL SPEED SENSOR

Replace the Left Rear Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read ABS DTCs.

Did DTC C1027-LEFT REAR WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C102A-LEFT REAR WHEEL SPEED COMPARATIVE PERFORMANCE

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

When Monitored:

With the ignition on.

Set Condition:

When the Left Rear Wheel Speed Sensor (WSS) reading is different from the readings received from the other sensors at a vehicle speed above 40 km/h (25 mph). The Anti-Lock Brake Module compares WSS readings from side-to-side on an axle and front-to-rear.

Possible Causes
LEFT REAR WSS LOOSE - B3, B4 CIRCUITS/CONNECTOR/TERMINAL DAMAGE
IMPROPER LEFT REAR TIRE PRESSURE/MISMATCHED TIRES
LEFT REAR TONE WHEEL DAMAGE
AXLE SHAFT FASTENER HARDWARE
LEFT REAR WSS
ANTI-LOCK BRAKE MODULE

Diagnostic Test

1) CHECK FOR DTC C102A-LEFT REAR WHEEL SPEED COMPARATIVE PERFORMANCE

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

Turn the ignition on.

With the scan tool, record and erase DTCs.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read DTCs.

Does the scan tool display: C102A-LEFT REAR WHEEL SPEED COMPARATIVE PERFORMANCE active?

Yes

Go to 3).

No

Go to 2).

2) CHECK WHEEL SPEED SENSOR SIGNALS

Turn the ignition on.

With the scan tool, monitor and graph ALL the WSS speeds and compare graph while an assistant drives the vehicle.

NOTE: If graph shows periodic dropouts pay close attention to the tone wheel.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Is the Left Rear WSS speed showing 0 km/h (0 mph) or not matching other wheels or showing erratic behavior?

Yes

Go to 3).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

3) CHECK FOR IMPROPER LEFT REAR TIRE PRESSURE/MISMATCHED TIRES

Turn the ignition off.

Check and adjust the Left Rear Tire pressure.

Check and adjust all other tire pressures.

Inspect for mismatched tires on vehicle.

Is the Left Rear Tire improperly inflated or mismatched tires on vehicle?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK AXLE SHAFT FASTENER HARDWARE FOR LOOSENESS

Inspect the axle shaft fastener for looseness, and not properly fastened. Tighten fastener to proper specification as required.

Was the Axle Shaft fastener loose?

Yes

Repair as necessary.

No

Go to 5).

5) CHECK LEFT REAR WSS LOOSENESS, INSPECT B3, B4 CIRCUITS/TERMINALS FOR DAMAGE

NOTE: Check all terminals for broken, bent, pushed out, or corroded terminals

Inspect the Anti-Lock Brake Module harness connector, Left Rear WSS, and Left Rear WSS harness connector.

Inspect the Left Rear WSS for looseness, excessive corrosion and not properly fastened.

Inspect the (B3) Left Rear WSS Signal and (B4) Left Rear WSS Supply circuits between the Left Rear WSS and Anti-Lock Brake Module for damage.

Is the Left Rear WSS loose or any of the wiring/connectors/terminals damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 6).

6) CHECK LEFT REAR WHEEL SPEED SENSOR FOR DAMAGE

Remove the Left Rear Wheel Speed Sensor

Inspect the Left Rear Wheel Speed Sensor face for damage.

Is the Left Rear Wheel Speed Sensor damaged?

Yes

Replace sensor and hub assembly.
Perform **ABS VERIFICATION TEST**.

No

Go to 7).

7) CHECK LEFT REAR TONE WHEEL FOR DAMAGE

Inspect the Left Rear Tone Wheel for damage, missing teeth, cracks, corrosion or looseness.

NOTE: The Tone Wheel teeth should be perfectly square, not bent, or nicked.

Is the Left Rear Tone Wheel damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 8).

8) LEFT REAR WHEEL SPEED SENSOR

Replace the Left Rear Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read ABS DTCs.

Did DTC C102A-LEFT REAR WHEEL SPEED COMPARATIVE PERFORMANCE reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C102B-RIGHT REAR WHEEL SPEED SENSOR CIRCUIT

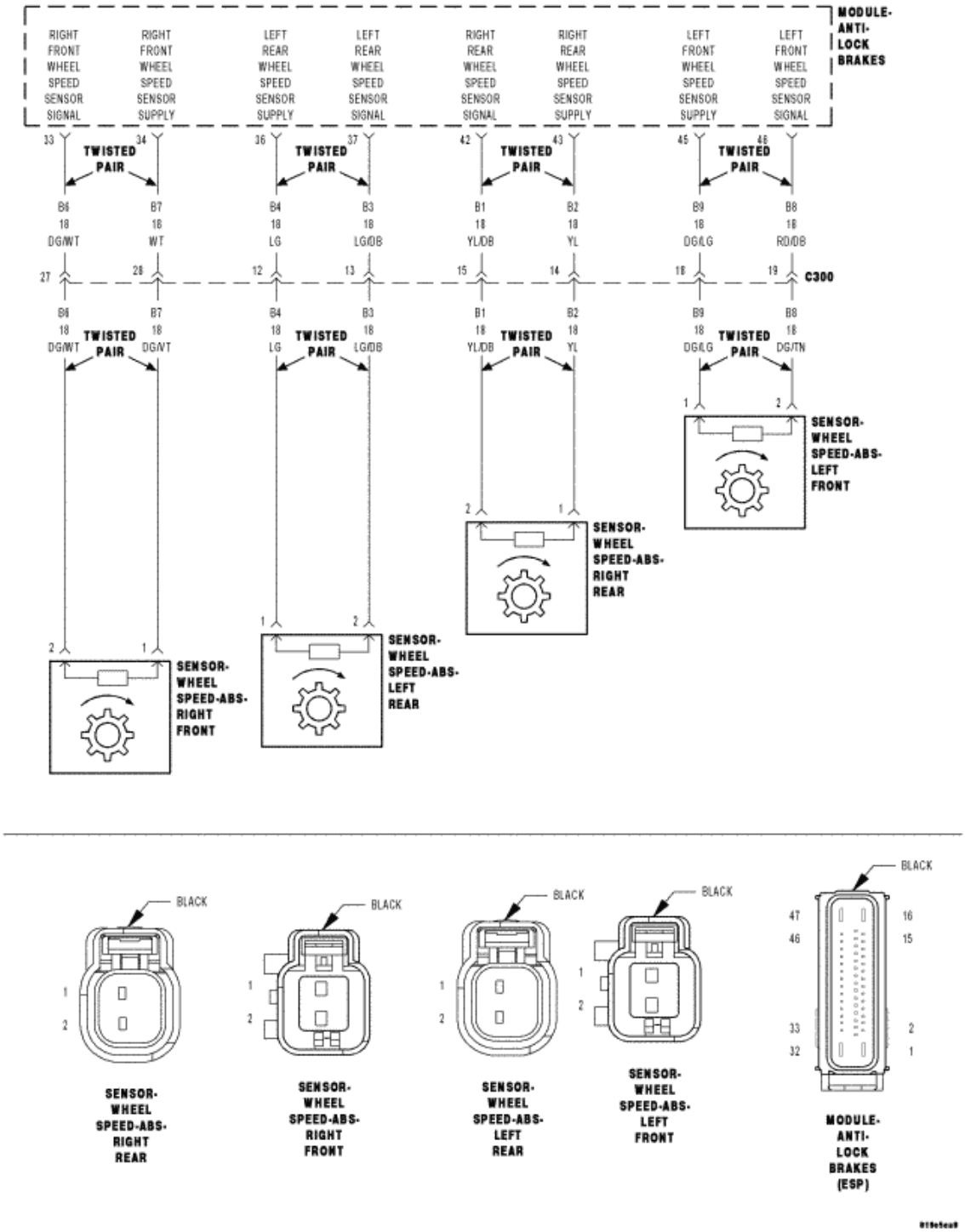


Fig. 29: Wheel Speed Sensor Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

With the ignition on.

Set Condition:

If the Right Rear Wheel Speed Sensor (WSS) circuit fails the diagnostic test.

Possible Causes
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
(B2) RIGHT REAR WSS 12 VOLT SUPPLY CIRCUIT SHORTED TO VOLTAGE, GROUND, OR OPEN
(B1) RIGHT REAR WSS SIGNAL CIRCUIT SHORTED TO VOLTAGE, GROUND, OR OPEN
(B1) RIGHT REAR WSS SIGNAL CIRCUIT SHORTED TO (B2) RIGHT REAR WSS 12 VOLT SUPPLY CIRCUIT
RIGHT REAR WSS
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) CHECK FOR DTC C102B-RIGHT REAR WHEEL SPEED SENSOR CIRCUIT

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

Turn the ignition on.

With the scan tool, record and erase DTCs.

Cycle the ignition switch from off to on.

With the scan tool, read DTCs.

Does the scan tool display: C102B-RIGHT REAR WHEEL SPEED SENSOR CIRCUIT?

Yes

Go to 2).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

2) CHECK CONNECTOR/TERMINAL FOR DAMAGE

NOTE: Check all terminals for broken, bent, pushed out, or corroded terminals.

Turn the ignition off.

Inspect the Anti-Lock Brake Module harness connector, Right Rear WSS, and Right Rear WSS harness connector.

Is the Right Rear WSS or any of the connectors/terminals damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) CHECK (B2) RIGHT REAR WSS 12 VOLT SUPPLY CIRCUIT VOLTAGE

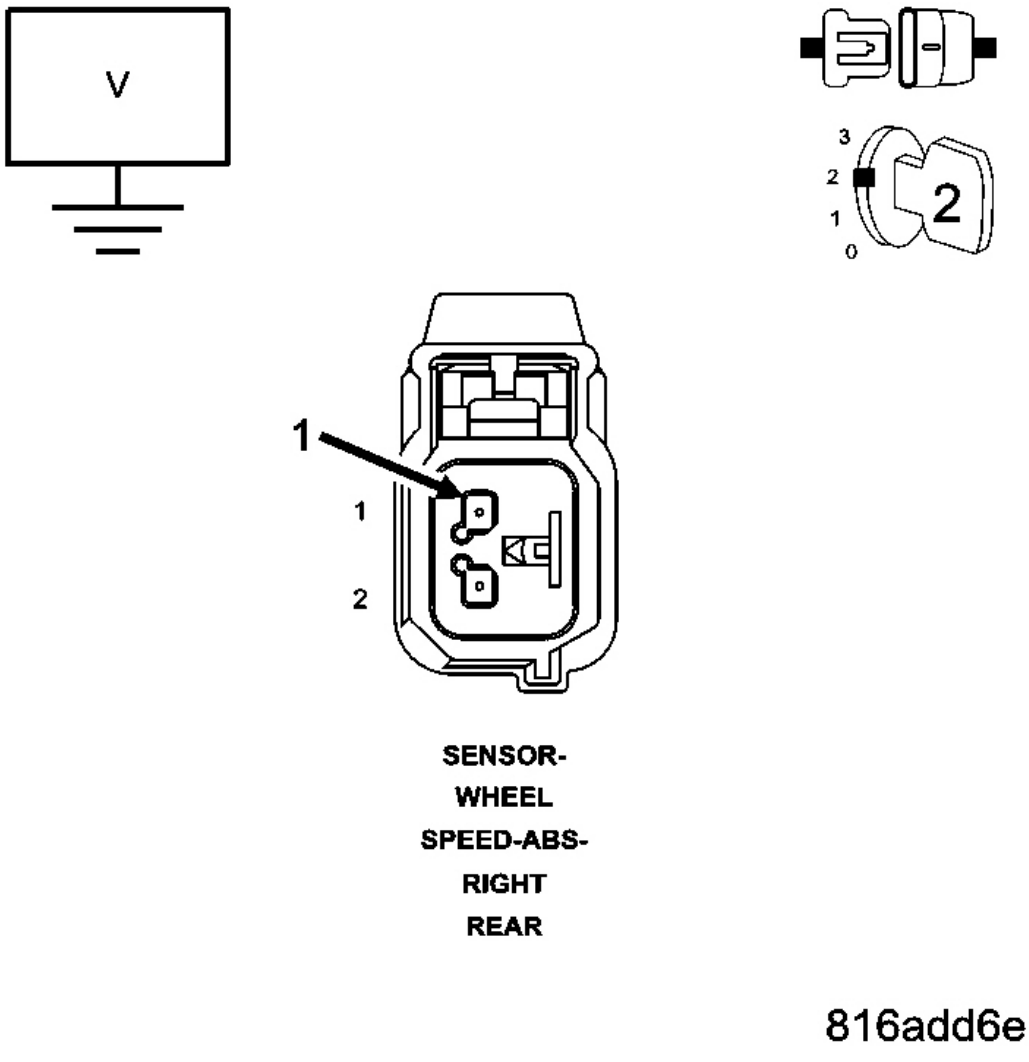


Fig. 30: Measuring Voltage Of (B2) Right Rear WSS 12 Volt Supply Circuit
Courtesy of CHRYSLER LLC

Disconnect the Right Rear WSS harness connector.

Turn the ignition on.

Measure the voltage of the (B2) Right Rear WSS 12 Volt Supply circuit.

Is the voltage above 10.0 volts?

Yes

Go to 6).

No

Go to 4).

4) CHECK (B2) RIGHT REAR WSS 12 VOLT SUPPLY CIRCUIT FOR A SHORT TO GROUND

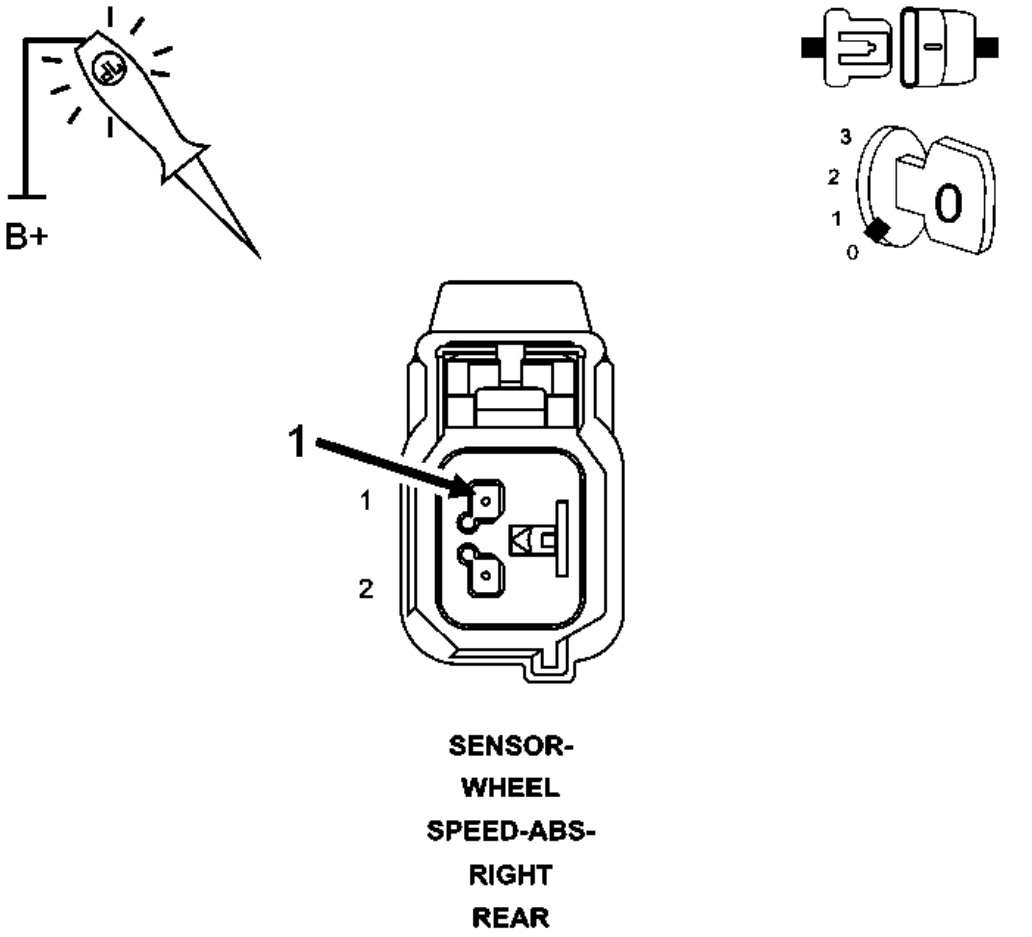


Fig. 31: Probing (B2) Right Rear WSS Supply Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Right Rear WSS harness connector.

Disconnect the Anti-Lock Brake Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B2) Right Rear WSS Supply circuit.

Does the test light illuminate brightly?

Yes

Repair the (B2) Right Rear WSS Supply circuit for a short to ground.
Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) CHECK (B2) RIGHT REAR WSS 12 VOLT SUPPLY CIRCUIT FOR AN OPEN

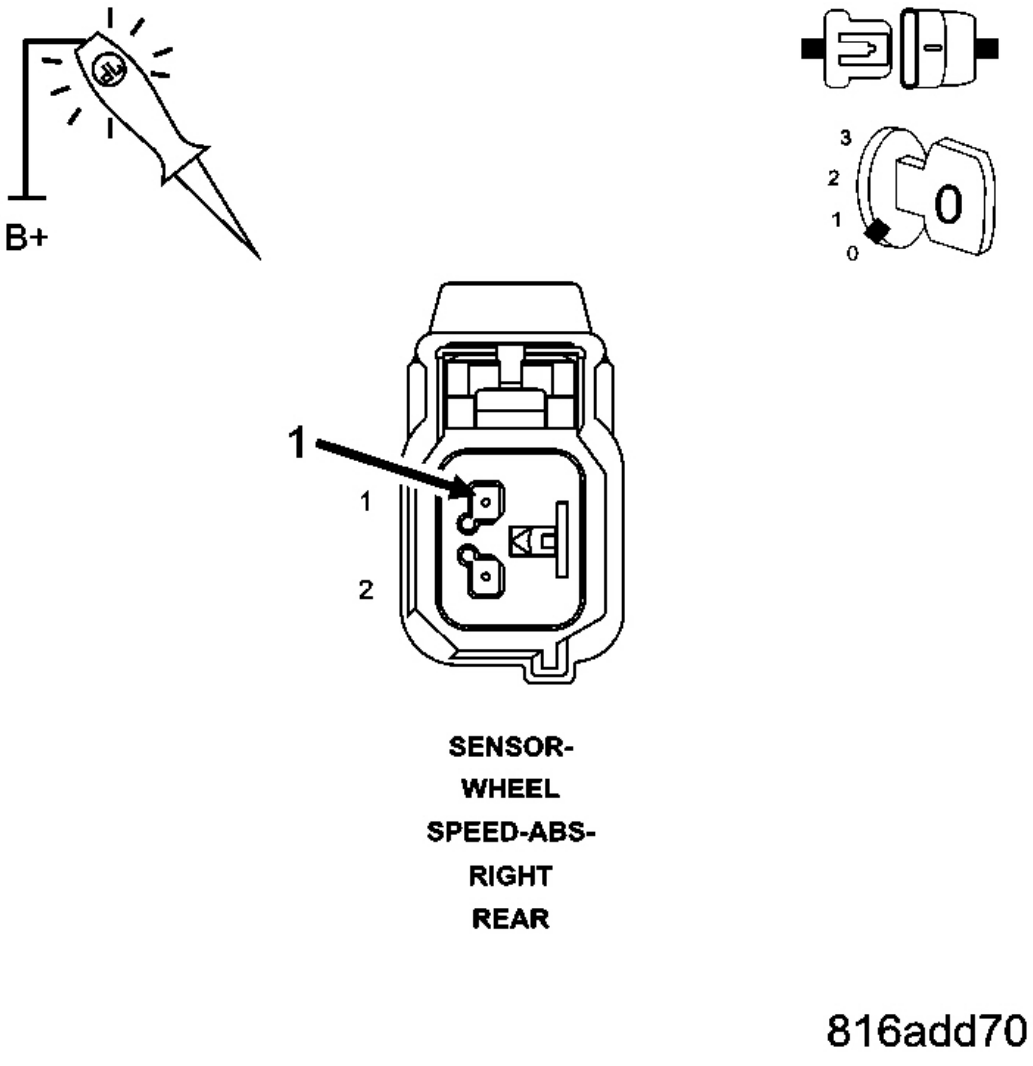


Fig. 32: Probing (B2) Right Rear WSS Supply Circuit
Courtesy of CHRYSLER LLC

Connect a jumper wire between ground and the (B2) Right Rear WSS Supply circuit in the Anti-Lock Brakes Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B2) Right Rear WSS Supply circuit.

Does the test light illuminate brightly?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Repair the (B2) Right Rear WSS Supply circuit for an open.
Perform **ABS VERIFICATION TEST**.

6) CHECK (B1) RIGHT REAR WSS SIGNAL CIRCUIT FOR A SHORT TO GROUND

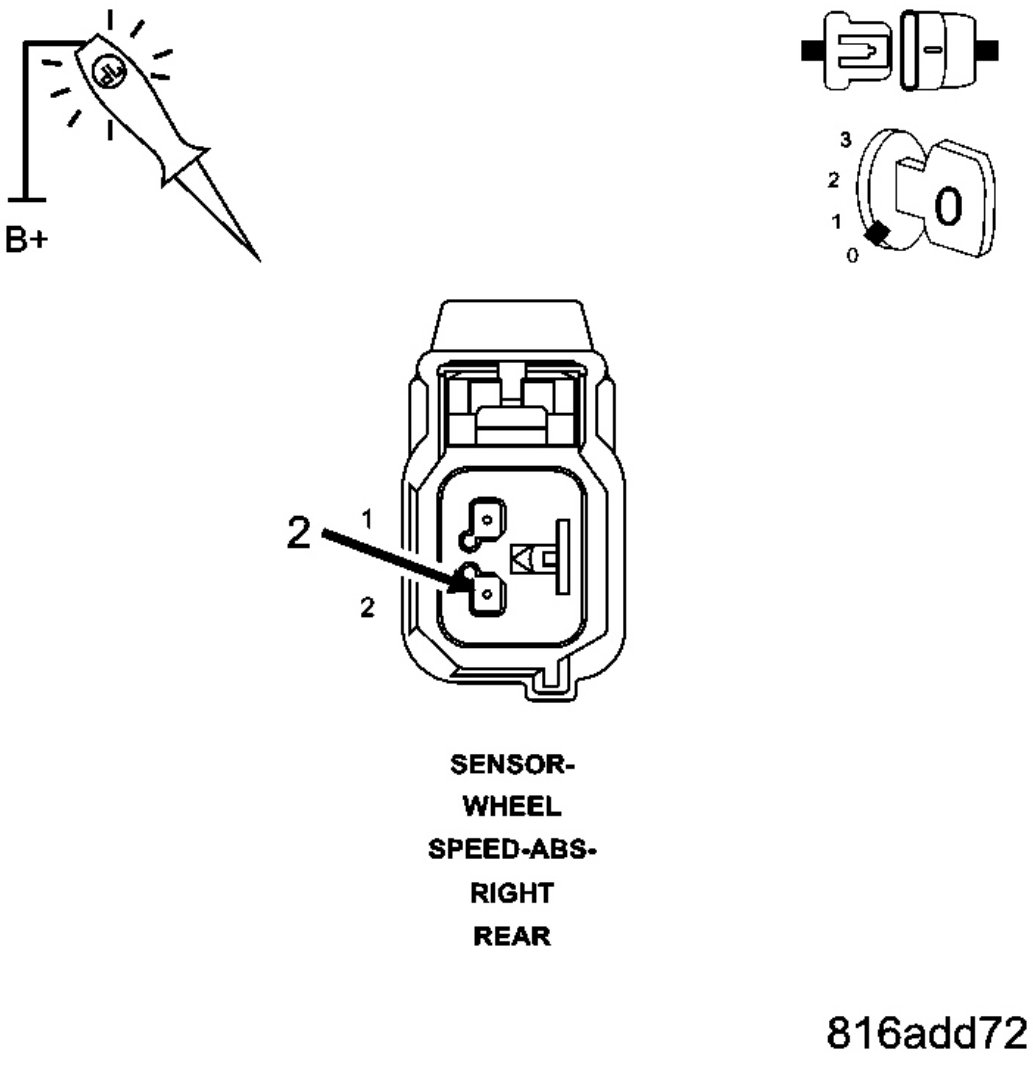


Fig. 33: Probing (B1) Right Rear WSS Signal Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Anti-Lock Brake Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B1) Right Rear WSS Signal circuit.

Does the test light illuminate brightly?

Yes

Repair the (B1) Right Rear WSS Signal circuit for a short to ground.
Perform **ABS VERIFICATION TEST**.

No

Go to 7).

7) CHECK (B1) RIGHT REAR WSS SIGNAL CIRCUIT FOR AN OPEN

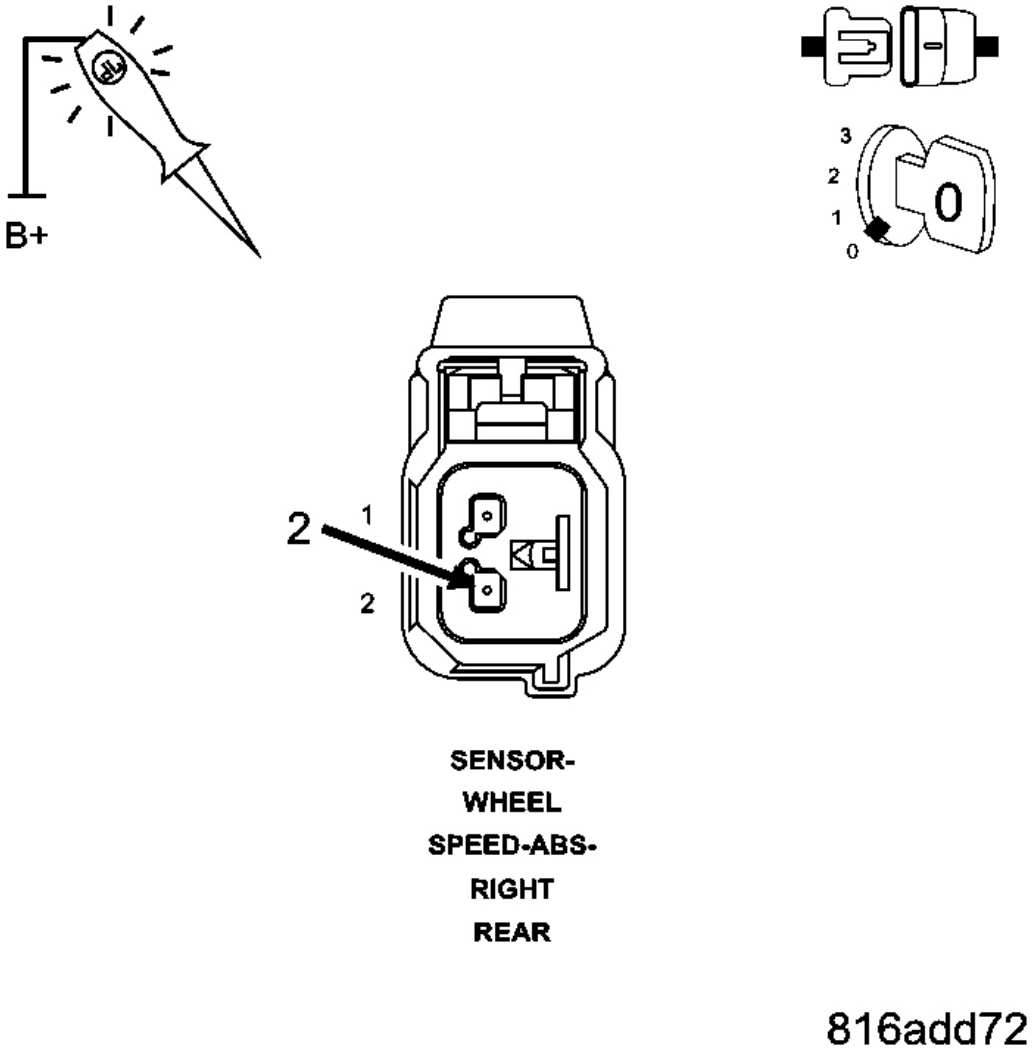


Fig. 34: Probing (B1) Right Rear WSS Signal Circuit
Courtesy of CHRYSLER LLC

Connect a jumper wire between ground and the (B1) Right Rear WSS Signal circuit in the Anti-Lock Brakes Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (B1) Right Rear WSS Signal circuit.

Does the test light illuminate brightly?

Yes

Go to 8).

No

Repair the (B1) Right Rear WSS Signal circuit for an open.
Perform **ABS VERIFICATION TEST**.

8) CHECK (B1) RIGHT REAR WSS SIGNAL CIRCUIT SHORT TO VOLTAGE

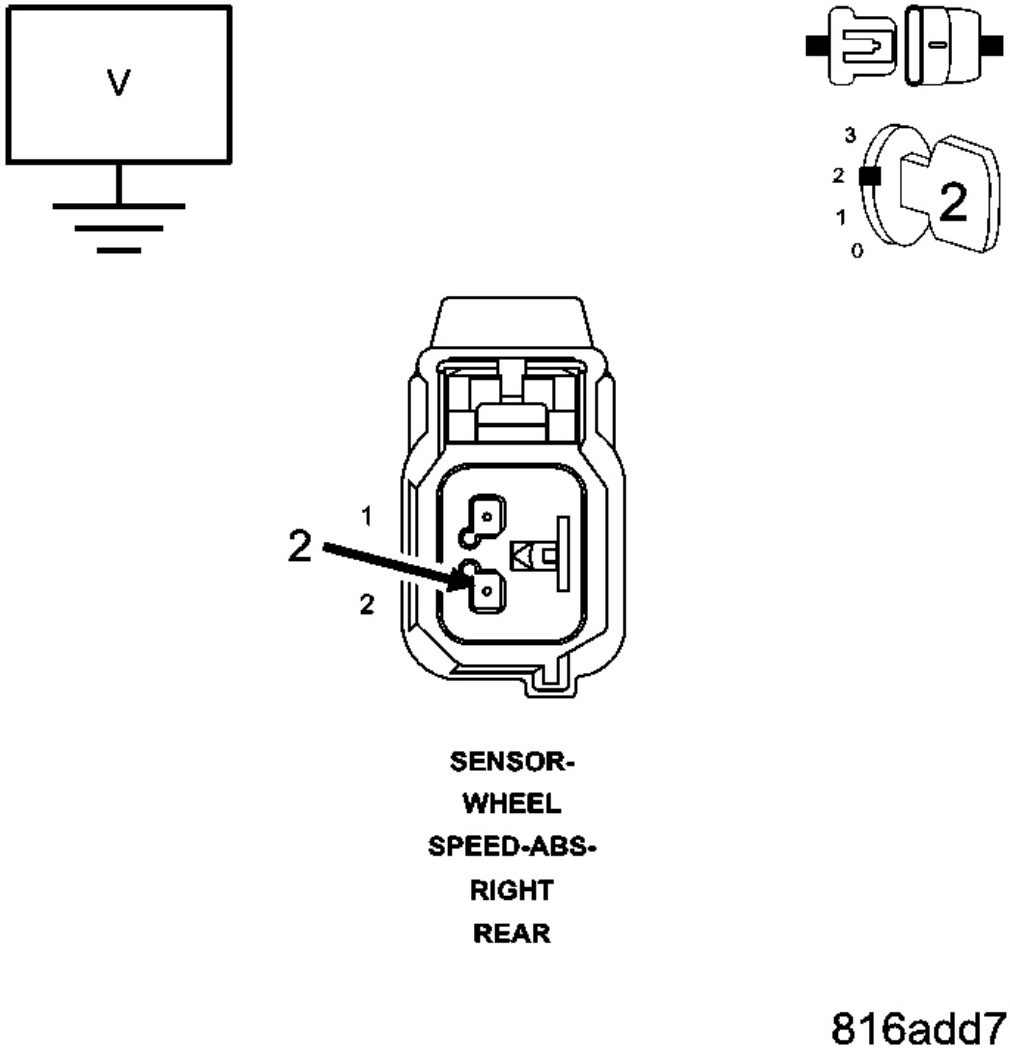


Fig. 35: Measuring Voltage Between (B1) Right Rear WSS Signal Circuit And Ground
Courtesy of CHRYSLER LLC

Turn the ignition on.

Remove all jumper wires.

Measure the voltage between the (B1) Right Rear WSS Signal circuit and ground.

Is the voltage above one volt?

Yes

Repair the (B1) Right Rear WSS Signal circuit for a short to voltage.
Perform **ABS VERIFICATION TEST**.

No

Go to 9).

9) CHECK (B1) RIGHT REAR WSS SIGNAL CIRCUIT FOR A SHORT TO (B2) RIGHT REAR WSS 12 VOLT SUPPLY CIRCUIT

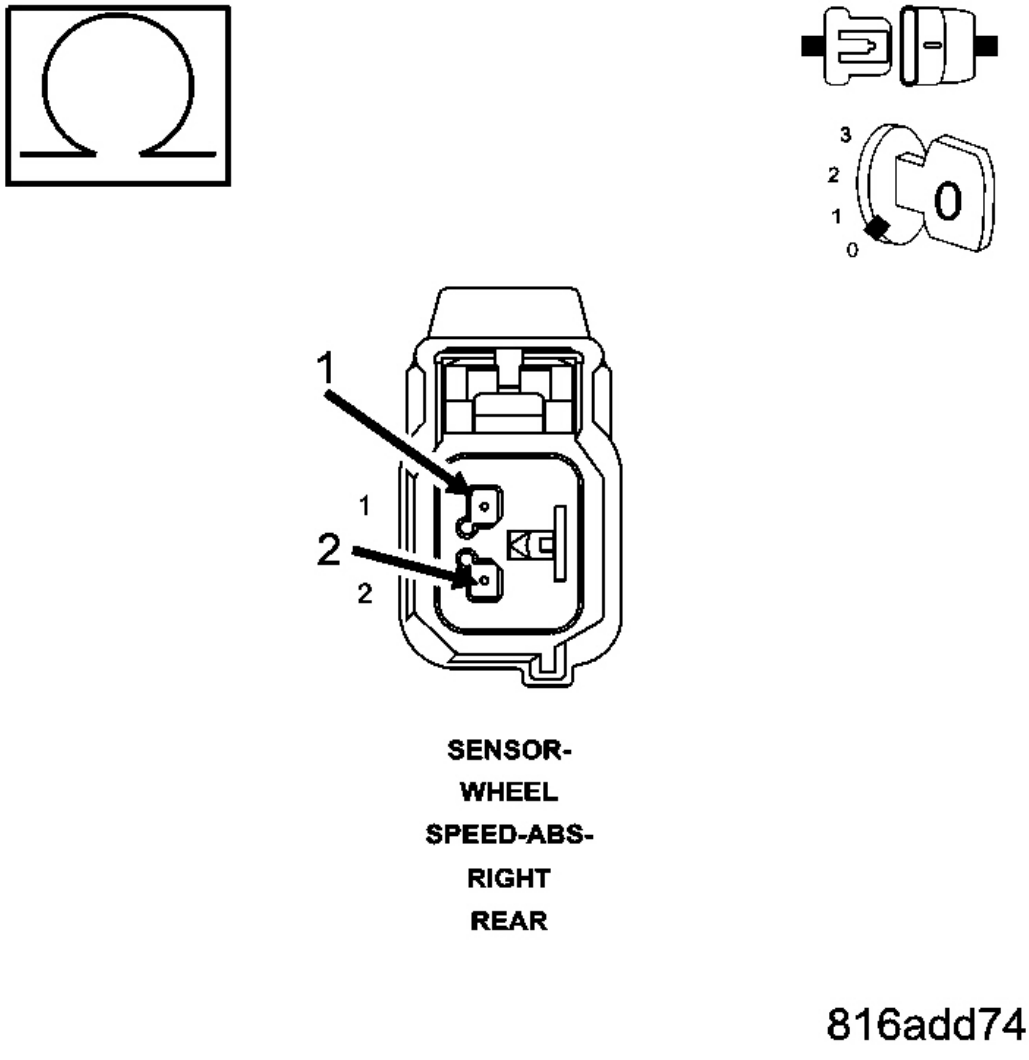


Fig. 36: Measuring Resistance Between (B1) Right Rear WSS Signal Circuit And (B2) Right Rear WSS Supply Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Measure the resistance between the (B1) Right Rear WSS Signal circuit and the (B2) Right Rear WSS Supply circuit.

Is the resistance above 120 ohms?

Yes

Go to step 10).

No

Repair the (B1) Right Rear WSS Signal circuit and the (B2) Right Rear WSS Supply circuit for a short together.

Perform **ABS VERIFICATION TEST**.

10) RIGHT REAR WHEEL SPEED SENSOR

Replace the Right Rear Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read ABS DTCs.

Did DTC C102B-RIGHT REAR WHEEL SPEED SENSOR CIRCUIT reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C1032-RIGHT REAR WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE

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

When Monitored:

With the ignition on.

Set Condition:

When the Right Rear Wheel Speed Sensor (WSS) Signal is intermittently missing while vehicle speed is

above 40 km/h (25 mph) or erratic wheel speed signal during acceleration or sensed wheel speed is different from other wheels.

Possible Causes
RIGHT REAR WSS LOOSE - B1, B2 CIRCUITS/CONNECTOR/TERMINAL DAMAGE
RIGHT REAR TONE WHEEL DAMAGE
RIGHT REAR WHEEL BEARING DAMAGE
AXLE SHAFT FASTENER HARDWARE
IMPROPER RIGHT REAR TIRE PRESSURE/MISMATCHED TIRES
RIGHT REAR WSS
ANTI-LOCK BRAKE MODULE

Diagnostic Test

1) CHECK FOR DTC C1032-RIGHT REAR WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE

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

Turn the ignition on.

With the scan tool, record and erase DTCs.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read DTCs.

Does the scan tool display: C1032-RIGHT REAR WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE active?

Yes

Go to 3).

No

Go to 2).

2) CHECK WHEEL SPEED SENSOR SIGNALS

Turn the ignition on.

With the scan tool, monitor and graph ALL the WSS speeds and compare graph while an assistant drives the vehicle.

NOTE: If graph shows periodic dropouts pay close attention to the tone wheel.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Is the Right Rear WSS speed showing 0 km/h (0 mph) or not matching other wheels or showing erratic behavior?

Yes

Go to 3).

No

Refer to the **INTERMITTENT CONDITION** .

3) CHECK FOR IMPROPER RIGHT REAR TIRE PRESSURE/MISMATCHED TIRES

Turn the ignition off.

Check and adjust the Right Rear Tire pressure.

Check and adjust all other tire pressures.

Inspect for mismatched tires on vehicle.

Is the Right Rear Tire improperly inflated or mismatched tires on vehicle?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK AXLE SHAFT FASTENER HARDWARE FOR LOOSENESS

Inspect the axle shaft fastener for looseness, and not properly fastened. Tighten fastener to proper specification as required.

Was the Axle Shaft fastener loose?

Yes

Repair as necessary.

No

Go to 5).

5) CHECK RIGHT REAR WSS LOOSENESS, INSPECT B1, B2 CIRCUITS/TERMINALS FOR DAMAGE

NOTE: Check all terminals for broken, bent, pushed out, or corroded terminals.

Inspect the Anti-Lock Brake Module harness connector, Right Rear WSS, and Right Rear WSS harness connector.

Inspect the Right Rear WSS for looseness, excessive corrosion and not properly fastened.

Inspect the (B1) Right Rear WSS Signal and (B2) Right Rear WSS Supply circuits between the Right Rear WSS and Anti-Lock Brake Module for damage.

Is the Right Rear WSS loose or any of the wiring/connectors/terminals damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 6).

6) CHECK RIGHT REAR WHEEL SPEED SENSOR FOR DAMAGE

Remove the Right Rear Wheel Speed Sensor.

Inspect the Right Rear Wheel Speed Sensor face for damage.

Is the Right Rear Wheel Speed Sensor damaged?

Yes

Replace sensor and hub assembly.
Perform **ABS VERIFICATION TEST**.

No

Go to 7).

7) CHECK RIGHT REAR TONE WHEEL FOR DAMAGE

Inspect the Right Rear Tone Wheel for damage, missing teeth, cracks, corrosion or looseness.

NOTE: The Tone Wheel teeth should be perfectly square, not bent, or nicked.

Is the Right Rear Tone Wheel damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 8).

8) CHECK RIGHT REAR WHEEL BEARING FOR DAMAGE

Inspect the Right Rear wheel bearing for excessive runout or clearance.

NOTE: Refer to the appropriate service information, if necessary, for procedures or specifications.

Is the Right Rear Wheel Bearing Damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 9).

9) RIGHT REAR WHEEL SPEED SENSOR

Replace the Right Rear Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read ABS DTCs.

Did DTC C1032-RIGHT REAR WHEEL SPEED SENSOR SIGNAL ERRATIC PERFORMANCE reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C1035-RIGHT REAR WHEEL SPEED COMPARATIVE PERFORMANCE

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

When Monitored:

With the ignition on.

Set Condition:

When the Right Rear Wheel Speed Sensor (WSS) reading is different from the readings received from the other sensors at a vehicle speed above 40 km/h (25 mph). The Anti-Lock Brake Module compares WSS readings from side-to-side on an axle and front-to-rear.

Possible Causes
RIGHT REAR WSS LOOSE - B1, B2 CIRCUITS/CONNECTOR/TERMINAL DAMAGE
IMPROPER RIGHT REAR TIRE PRESSURE/MISMATCHED TIRES
RIGHT REAR TONE WHEEL/BEARING DAMAGE
AXLE SHAFT FASTENER HARDWARE
RIGHT REAR WSS
ANTI-LOCK BRAKE MODULE

Diagnostic Test

1) CHECK FOR DTC C1035-RIGHT REAR WHEEL SPEED COMPARATIVE PERFORMANCE

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

Turn the ignition on.

With the scan tool, record and erase DTCs.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read DTCs.

Does the scan tool display: C1035-RIGHT REAR WHEEL SPEED COMPARATIVE PERFORMANCE active?

Yes

Go to 3).

No

Go to 2).

2) CHECK WHEEL SPEED SENSOR SIGNALS

Turn the ignition on.

With the scan tool, monitor and graph ALL the WSS speeds and compare graph while an assistant drives the vehicle.

NOTE: If graph shows periodic dropouts pay close attention to the tone wheel.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Is the Right Rear WSS speed showing 0 km/h (0 mph) or not matching other wheels or showing erratic behavior?

Yes

Go to 3).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

3) CHECK FOR IMPROPER RIGHT REAR TIRE PRESSURE/MISMATCHED TIRES

Turn the ignition off.

Check and adjust the Right Rear Tire pressure.

Check and adjust all other tire pressures.

Inspect for mismatched tires on vehicle.

Is the Right Rear Tire improperly inflated or mismatched tires on vehicle?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK AXLE SHAFT FASTENER HARDWARE FOR LOOSENESS

Inspect the axle shaft fastener for looseness, and not properly fastened. Tighten fastener to proper specification as required.

Was the Axle Shaft fastener loose?

Yes

Repair as necessary.

No

Go to 5).

5) CHECK RIGHT REAR WSS LOOSENESS, INSPECT B1, B2 CIRCUITS/TERMINALS FOR DAMAGE

NOTE: Check all terminals for broken, bent, pushed out, or corroded terminals

Inspect the Anti-Lock Brake Module harness connector, Right Rear WSS, and Right Rear WSS harness connector

Inspect the Right Rear WSS for looseness, excessive corrosion and not properly fastened.

Inspect the (B1) Right Rear WSS Signal and (B2) Right Rear WSS Supply circuits between the Right

Rear WSS and Anti-Lock Brake Module for damage.

Is the Right Rear WSS loose or any of the wiring/connectors/terminals damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 6).

6) CHECK RIGHT REAR WHEEL SPEED SENSOR FOR DAMAGE

Remove the Right Rear Wheel Speed Sensor.

Inspect the Right Rear Wheel Speed Sensor face for damage.

Is the Right Rear Wheel Speed Sensor damaged?

Yes

Replace sensor and hub assembly.
Perform **ABS VERIFICATION TEST**.

No

Go to 7).

7) CHECK RIGHT REAR TONE WHEEL/BEARING FOR DAMAGE

Inspect the Right Rear Tone Wheel/Bearing for damage, missing teeth, cracks, corrosion or looseness.

NOTE: The Tone Wheel teeth should be perfectly square, not bent, or nicked.

Is the Right Rear Tone Wheel/Bearing damaged?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 8).

8) RIGHT REAR WHEEL SPEED SENSOR

Replace the Right Rear Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read ABS DTCs.

Did DTC C1035-RIGHT REAR WHEEL SPEED COMPARATIVE PERFORMANCE reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C1041-LEFT FRONT TONE WHEEL PERFORMANCE

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

When Monitored:

With the ignition on.

Set Condition:

When the Anti-Lock Brake Module detects periodic drops of a WSS signal.

Possible Causes
LEFT FRONT TONE WHEEL/BEARING DAMAGE
IMPROPER LEFT FRONT TIRE PRESSURE/MISMATCHED TIRES
DIRT, METAL, DAMAGED TONE WHEEL/SENSOR

Diagnostic Test

1) CHECK FOR A DTC C1041-LEFT FRONT TONE WHEEL PERFORMANCE

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

Turn the ignition on.

With the scan tool, read DTCs.

Record DTC and Freeze Frame information.

With the scan tool, erase DTCs.

Cycle the ignition switch off then on.

CAUTION: Ensure brake capability is available before road testing.

Test drive the vehicle in a straight line to 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read DTCs.

Does the scan tool display: C1041-LEFT FRONT TONE WHEEL PERFORMANCE active?

Yes

Go to 3).

No

Go to 2).

2) CHECK WHEEL SPEED SENSOR SIGNALS

Turn the ignition on.

With the scan tool, monitor and graph ALL the WSS speeds and compare graph while an assistant drives the vehicle.

NOTE: If graph shows periodic dropouts pay close attention to the tone wheel.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Is the Left Front WSS speed showing 0 km/h (0 mph) or not matching other wheels or showing erratic behavior?

Yes

Go to 3).

No

Refer to the **ABS INTERMITTENT CONDITION**.

3) CHECK FOR IMPROPER LEFT FRONT TIRE PRESSURE/MISMATCHED TIRES

Turn the ignition off.

Check and adjust the Left Front Tire pressure.

Check and adjust all other tire pressures.

Inspect for mismatched tires on vehicle.

Is the Left Front Tire improperly inflated or mismatched tires on vehicle?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK THE LEFT FRONT TONE WHEEL/BEARING FOR DAMAGE

NOTE: Check the tone wheel teeth for missing teeth, cracks, or looseness. Teeth should be perfectly square, not bent, or nicked.

Check the Left Front Tone Wheel/Bearing for damage.

Check the Left Front Tone Wheel for dirt.

Was the tone wheel dirty?

Yes

Clean tone wheel and sensor. Clear codes and retest.
Perform **ABS VERIFICATION TEST**.

No

Replace the Left Front Tone Wheel/Bearing in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

C1042-RIGHT FRONT TONE WHEEL PERFORMANCE

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

When Monitored:

With the ignition on.

Set Condition:

When the Anti-Lock Brake Module detects periodic drops of a Wheel Speed Sensor (WSS) signal.

Possible Causes
DIRTY TONE WHEEL/SENSOR
IMPROPER RIGHT FRONT TIRE PRESSURE/MISMATCHED TIRES
RIGHT FRONT TONE WHEEL/BEARING DAMAGE

Diagnostic Test

1) CHECK FOR A DTC C1042-RIGHT FRONT TONE WHEEL PERFORMANCE

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

Turn the ignition on.

With the scan tool, read DTCs.

Record DTC and Freeze Frame information.

With the scan tool, erase DTCs.

Cycle the ignition switch off then on.

CAUTION: Ensure brake capability is available before road testing.

Test drive the vehicle in a straight line to 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read DTCs.

Does the scan tool display: C1042-RIGHT FRONT TONE WHEEL PERFORMANCE?

Yes

Go to 3).

No

Go to 2).

2) CHECK WHEEL SPEED SENSOR SIGNALS

Turn the ignition on.

With the scan tool, monitor and graph ALL the WSS speeds and compare graph while an assistant drives the vehicle.

NOTE: If graph shows periodic dropouts pay close attention to the tone wheel.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Is the Right Front WSS speed showing 0 km/h (0 mph) or not matching other wheels or showing erratic behavior?

Yes

Go to 3).

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

3) CHECK FOR IMPROPER RIGHT FRONT TIRE PRESSURE/MISMATCHED TIRES

Turn the ignition off.

Check and adjust the Right Front Tire pressure.

Check and adjust all other tire pressures.

Inspect for mismatched tires on vehicle.

Is the Right Front Tire improperly inflated or mismatched tires on vehicle?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK THE RIGHT FRONT TONE WHEEL/BEARING FOR DAMAGE

NOTE: Check the tone wheel teeth for missing teeth, cracks, or looseness. Teeth should be perfectly square, not bent, or nicked.

Check the Right Front Tone Wheel/Bearing for damage.

Check the Right Front Tone Wheel for dirt.

Was the tone wheel dirty?

Yes

Clean tone wheel and sensor. Clear codes and retest.
Perform **ABS VERIFICATION TEST**.

No

Replace the Right Front Tone Wheel/Bearing in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

C1043-LEFT REAR TONE WHEEL PERFORMANCE

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

When Monitored:

With the ignition on.

Set Condition:

When the Anti-Lock Brake Module detects periodic drops of a Wheel Speed Sensor (WSS) signal.

Possible Causes
DIRTY TONE WHEEL/SENSOR
IMPROPER LEFT REAR TIRE PRESSURE/MISMATCHED TIRES
AXLE SHAFT FASTENER HARDWARE
LEFT REAR TONE WHEEL/BEARING DAMAGE

Diagnostic Test

1) CHECK FOR A DTC C1043-LEFT REAR TONE WHEEL PERFORMANCE

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

Turn the ignition on.

With the scan tool, read DTCs.

Record DTC and Freeze Frame information.

With the scan tool, erase DTCs.

Cycle the ignition switch off then on.

CAUTION: Ensure brake capability is available before road testing.

Test drive the vehicle in a straight line to 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read DTCs.

Does the scan tool display: C1043-LEFT REAR TONE WHEEL PERFORMANCE?

Yes

Go to 3).

No

Go to 2).

2) CHECK WHEEL SPEED SENSOR SIGNALS

Turn the ignition on.

With the scan tool, monitor and graph ALL the WSS speeds and compare graph while an assistant drives the vehicle.

NOTE: If graph shows periodic dropouts pay close attention to the tone wheel.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Is the Left Rear WSS speed showing 0 km/h (0 mph) or not matching other wheels or showing erratic behavior?

Yes

Go to 3).

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

3) CHECK FOR IMPROPER LEFT REAR TIRE PRESSURE/MISMATCHED TIRES

Turn the ignition off.

Check and adjust the Left Rear Tire pressure.

Check and adjust all other tire pressures.

Inspect for mismatched tires on vehicle.

Is the Left Rear Tire improperly inflated or mismatched tires on vehicle?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK AXLE SHAFT FASTENER HARDWARE FOR LOOSENESS

Inspect the axle shaft fastener for looseness, and not properly fastened. Tighten fastener to proper specification as required.

Was the Axle Shaft fastener loose?

Yes

Repair as necessary.

No

Go to 5).

5) CHECK THE LEFT REAR TONE WHEEL/BEARING FOR DAMAGE

NOTE: Check the tone wheel teeth for missing teeth, cracks, or looseness. Teeth should be perfectly square, not bent, or nicked.

Check the Left Rear Tone Wheel/Bearing for damage.

Check the Left Rear Tone Wheel for dirt.

Was the tone wheel dirty?

Yes

Clean tone wheel and sensor. Clear codes and retest.
Perform **ABS VERIFICATION TEST**.

No

Replace the Left Rear Tone Wheel/Bearing in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

C1044-RIGHT REAR TONE WHEEL PERFORMANCE

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

When Monitored:

With the ignition on.

Set Condition:

When the Anti-Lock Brake Module detects periodic drops of a Wheel Speed Sensor (WSS) signal.

Possible Causes
DIRTY TONE WHEEL/SENSOR
IMPROPER RIGHT REAR TIRE PRESSURE/MISMATCHED TIRES
AXLE SHAFT FASTENER HARDWARE
RIGHT REAR TONE WHEEL/BEARING DAMAGE

Diagnostic Test

1) CHECK FOR A DTC C1044-RIGHT REAR TONE WHEEL PERFORMANCE

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

Turn the ignition on.

With the scan tool, read DTCs.

Record DTC and Freeze Frame information.

With the scan tool, erase DTCs.

Cycle the ignition switch off then on.

CAUTION: Ensure brake capability is available before road testing.

Test drive the vehicle in a straight line to 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read DTCs.

Does the scan tool display: C1044-RIGHT REAR TONE WHEEL PERFORMANCE?

Yes

Go to 3).

No

Go to 2).

2) CHECK WHEEL SPEED SENSOR SIGNALS

Turn the ignition on.

With the scan tool, monitor and graph ALL the WSS speeds and compare graph while an assistant drives the vehicle.

NOTE: If graph shows periodic dropouts pay close attention to the tone wheel.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Is the Right Rear WSS speed showing 0 km/h (0 mph) or not matching other wheels or showing erratic behavior?

Yes

Go to 3).

No

Refer to the **INTERMITTENT CONDITION** diagnostic procedure.
Refer to the **ABS INTERMITTENT CONDITION**.

3) CHECK FOR IMPROPER RIGHT REAR TIRE PRESSURE/MISMATCHED TIRES

Turn the ignition off.

Check and adjust the Right Rear Tire pressure.

Check and adjust all other tire pressures.

Inspect for mismatched tires on vehicle.

Is the Right Rear Tire improperly inflated or mismatched tires on vehicle?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK AXLE SHAFT FASTENER HARDWARE FOR LOOSENESS

Inspect the axle shaft fastener for looseness, and not properly fastened. Tighten fastener to proper specification as required.

Was the Axle Shaft fastener loose?

Yes

Repair as necessary.

No

Go to 5).

5) CHECK THE RIGHT REAR TONE WHEEL FOR DAMAGE

NOTE: Check the tone wheel teeth for missing teeth, cracks, or looseness. Teeth should be perfectly square, not bent, or nicked.

Check the Right Rear Tone Wheel for damage.

Check the Right Rear Tone Wheel for dirt.

Was the tone wheel dirty?

Yes

Clean tone wheel and sensor. Clear codes and retest.
Perform **ABS VERIFICATION TEST**.

No

Replace the Right Rear Tone Wheel in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

C1046-LEFT FRONT WHEEL PRESSURE PHASE MONITORING

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

When Monitored:

During active ABS control.

Set Condition:

If the Anti-Lock Brakes Module detects a pressure reduction phase and the following pressure hold phase is too long.

Possible Causes
LEFT FRONT TONE WHEEL/BEARING DAMAGED
WHEEL SPEED SIGNALS SWAPPED
LEFT FRONT WSS
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) COMPARE WHEEL SPEED SENSOR SIGNALS

WARNING: Ensure brake capability is available before road testing.

With the scan tool, monitor ALL the WSS speeds while an assistant drives the vehicle.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Does the Left Front WSS speed differ from the other WSS speeds by 8 km/h (5 mph) or show NO speed?

Yes

Go to 3).

No

Go to 2).

2) CHECKING INSIDE WHEEL SPEED

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph) and perform a 90 degree turn while monitoring if inside wheel is slower than outside.

Was the inside wheel slower than outside?

Yes

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

No

Go to 3).

3) INSPECT TONE WHEEL/BEARING

Turn the ignition off.

Visually inspect the tone wheel and bearing for damage.

Check the tone wheel teeth for missing teeth, cracks, and looseness. The teeth must be perfectly square, not bent, or nicked. Check the wheel bearing for worn/looseness.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK WHEEL SPEED SENSOR WIRING

Check the Anti-Lock Brakes Module and Wheel Speed Sensors harness connectors for incorrectly wired connectors.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) LEFT FRONT WHEEL SPEED SENSOR

Replace the Left Front Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read ABS DTCs.

NOTE: The Anti-Lock Brake Module must sense ALL 4 wheels at 12 km/h (7.5 mph) before it will extinguish the ABS indicators.

Did DTC C1046-LEFT FRONT WHEEL PRESSURE PHASE MONITORING reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C1047-RIGHT FRONT WHEEL PRESSURE PHASE MONITORING

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

When Monitored:

During active ABS control

Set Condition:

If the Anti-Lock Brakes Module detects a pressure reduction phase and the following pressure hold phase is too long.

Possible Causes
RIGHT FRONT TONE WHEEL DAMAGED
WHEEL SPEED SIGNALS SWAPPED
RIGHT FRONT WSS
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) COMPARE WHEEL SPEED SENSOR SIGNALS

WARNING: Ensure brake capability is available before road testing.

With the scan tool, monitor ALL the WSS speeds while an assistant drives the vehicle.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Does the Right Front WSS speed differ from the other WSS speeds by 8 km/h (5 mph) or show NO speed?

Yes

Go to 3).

No

Go to 2).

2) CHECKING INSIDE WHEEL SPEED

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph) and perform a 90 degree turn while monitoring if inside wheel is slower than outside.

Was the inside wheel slower than outside?

Yes

Perform the **ABS INTERMITTENT CONDITION**.

No

Go to 3).

3) INSPECT TONE WHEEL/BEARING

Turn the ignition off.

Visually inspect the tone wheel and bearing for damage.

Check the tone wheel teeth for missing teeth, cracks, and looseness. The teeth must be perfectly square, not bent, or nicked. Check the wheel bearing for worn/looseness.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK WHEEL SPEED SENSOR WIRING

Check the Anti-Lock Brakes Module and Wheel Speed Sensors harness connectors for incorrectly wired connectors.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) RIGHT FRONT WHEEL SPEED SENSOR

Replace the Right Front Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be meet.

With the scan tool, read ABS DTCs.

NOTE: The Anti-Lock Brake Module must sense ALL 4 wheels at 12 km/h (7.5 mph) before it will extinguish the ABS indicators.

Did DTC C1047-RIGHT FRONT WHEEL PRESSURE PHASE MONITORING reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C1048-LEFT REAR WHEEL PRESSURE PHASE MONITORING

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

When Monitored:

During active ABS control.

Set Condition:

If the Anti-Lock Brakes Module detects a pressure reduction phase and the following pressure hold phase is too long.

Possible Causes
LEFT REAR TONE WHEEL/WHEEL BEARING
WHEEL SPEED SIGNALS SWAPPED
LEFT REAR WSS
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) COMPARE WHEEL SPEED SENSOR SIGNALS

WARNING: Ensure brake capability is available before road testing.

With the scan tool, monitor ALL the WSS speeds while an assistant drives the vehicle.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Does the Left Rear WSS speed differ from the other WSS speeds by 8 km/h (5 mph) or show NO speed?

Yes

Go to 3).

No

Go to 2).

2) CHECKING INSIDE WHEEL SPEED

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph) and perform a 90 degree turn while monitoring if inside wheel is slower than outside.

Was the inside wheel slower than outside?

Yes

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

No

Go to 3).

3) INSPECT TONE WHEEL/BEARING

Turn the ignition off.

Visually inspect the tone wheel and bearing for damage.

Check the tone wheel teeth for missing teeth, cracks, and looseness. The teeth must be perfectly square, not bent, or nicked. Check the wheel bearing for worn/looseness.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK WHEEL SPEED SENSOR WIRING

Check the Anti-Lock Brakes Module and Wheel Speed Sensors harness connectors for incorrectly wired connectors.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) LEFT REAR WHEEL SPEED SENSOR

Replace the Left Rear Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read ABS DTCs.

NOTE: The Anti-Lock Brake Module must sense ALL 4 wheels at 12 km/h (7.5 mph) before it will extinguish the ABS indicators.

Did DTC C1048-LEFT REAR WHEEL PRESSURE PHASE MONITORING reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C1049-RIGHT REAR WHEEL PRESSURE PHASE MONITORING

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

When Monitored:

During active ABS control.

Set Condition:

When the Anti-Lock Brakes Module detects a pressure reduction phase and the following pressure hold phase is too long.

Possible Causes
RIGHT REAR TONE WHEEL DAMAGED
WHEEL SPEED SIGNALS SWAPPED
RIGHT REAR WSS
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) COMPARE WHEEL SPEED SENSOR SIGNALS

WARNING: Ensure brake capability is available before road testing.

With the scan tool, monitor ALL the WSS speeds while an assistant drives the vehicle.

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph).

Does the Right Rear WSS speed differ from the other WSS speeds by 8 km/h (5 mph) or show NO speed?

Yes

Go to 3).

No

Go to 2).

2) CHECKING INSIDE WHEEL SPEED

Slowly accelerate as straight as possible from a stop to 40 km/h (25 mph) and perform a 90 degree turn while monitoring if inside wheel is slower than outside.

Was the inside wheel slower than outside?

Yes

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

No

Go to 3).

3) INSPECT TONE WHEEL/BEARING

Turn the ignition off.

Visually inspect the tone wheel and bearing for damage.

Check the tone wheel teeth for missing teeth, cracks, and looseness. The teeth must be perfectly square, not bent, or nicked. Check the wheel bearing for worn/looseness.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK WHEEL SPEED SENSOR WIRING

Check the Anti-Lock Brakes Module and Wheel Speed Sensors harness connectors for incorrectly wired connectors.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) RIGHT REAR WHEEL SPEED SENSOR

Replace the Right Rear Wheel Speed Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

CAUTION: Ensure brake capability is available before road testing.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read ABS DTCs.

NOTE: The Anti-Lock Brake Module must sense ALL 4 wheels at 12 km/h (7.5 mph) before it will extinguish the ABS indicators.

Did DTC C1049-RIGHT REAR WHEEL PRESSURE PHASE MONITORING reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Test Complete.

C1073-ABS PUMP MOTOR CONTROL CIRCUIT

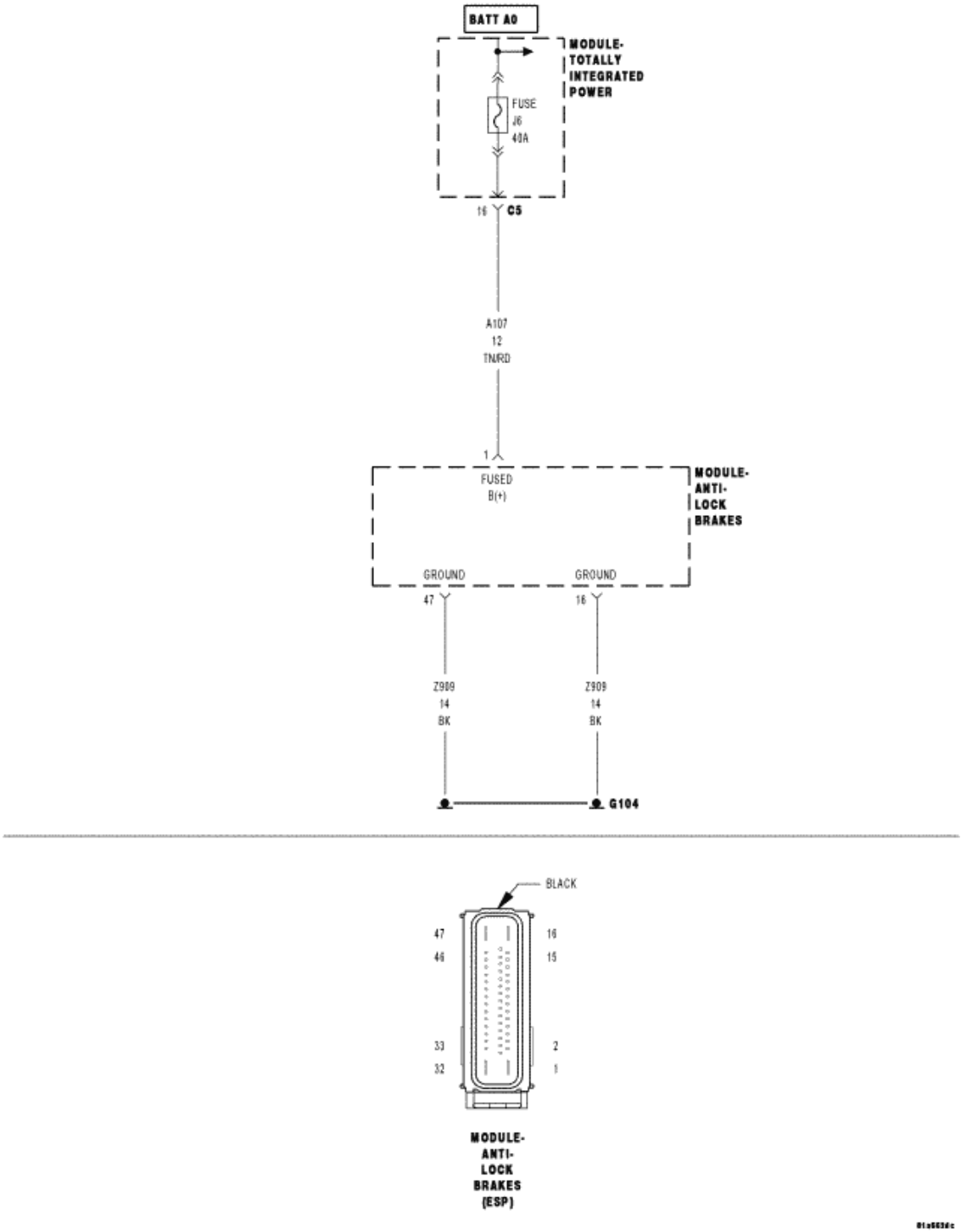


Fig. 37: ABS Pump Motor Control Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

When the ABS Pump Motor is activated.

Set Condition:

The ABM detects low pump motor feedback voltage with actuation of the pump motor relay.

Possible Causes
BLOWN PUMP FUSE
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
HIGH RESISTANCE IN B+ CIRCUITS
HIGH RESISTANCE IN GROUND CIRCUITS
INTEGRATED CONTROL UNIT

Diagnostic Test

1) CHECK FOR A DTC C1073-ABS PUMP MOTOR CONTROL CIRCUIT

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

Turn the ignition on.

With the scan tool, record and erase DTCs.

Cycle the ignition switch from off to on.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be met.

With the scan tool, read DTCs

NOTE: The Anti-Lock Brake Module must sense ALL 4 wheels at 12 km/h (7.5 mph) before it will extinguish the ABS indicators.

Does the scan tool display: C1073-ABS PUMP MOTOR CONTROL CIRCUIT?

Yes

Go to 2).

No

Refer to the **ABS INTERMITTENT CONDITION**.

2) INSPECT RELATED WIRING HARNESS, TERMINALS, & CONNECTORS

Turn the ignition off.

Visually inspect the related wiring harness. Look for any pinched, chafed, pierced, and partially broken wires.

Visually inspect the related wiring harness connectors. Look for broken, bent, pushed out, and corroded terminals.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) CHECK THE ABS PUMP MOTOR FUSED B+ FOR AN OPEN

Turn the ignition off.

Remove and visually inspect the ABS Pump Motor B+ fuse.

Is the ABS Pump Motor B+ fuse open?

Yes

Go to 4).

No

Go to 6).

4) CHECK THE (A107) FUSED B(+) FOR A SHORT TO GROUND

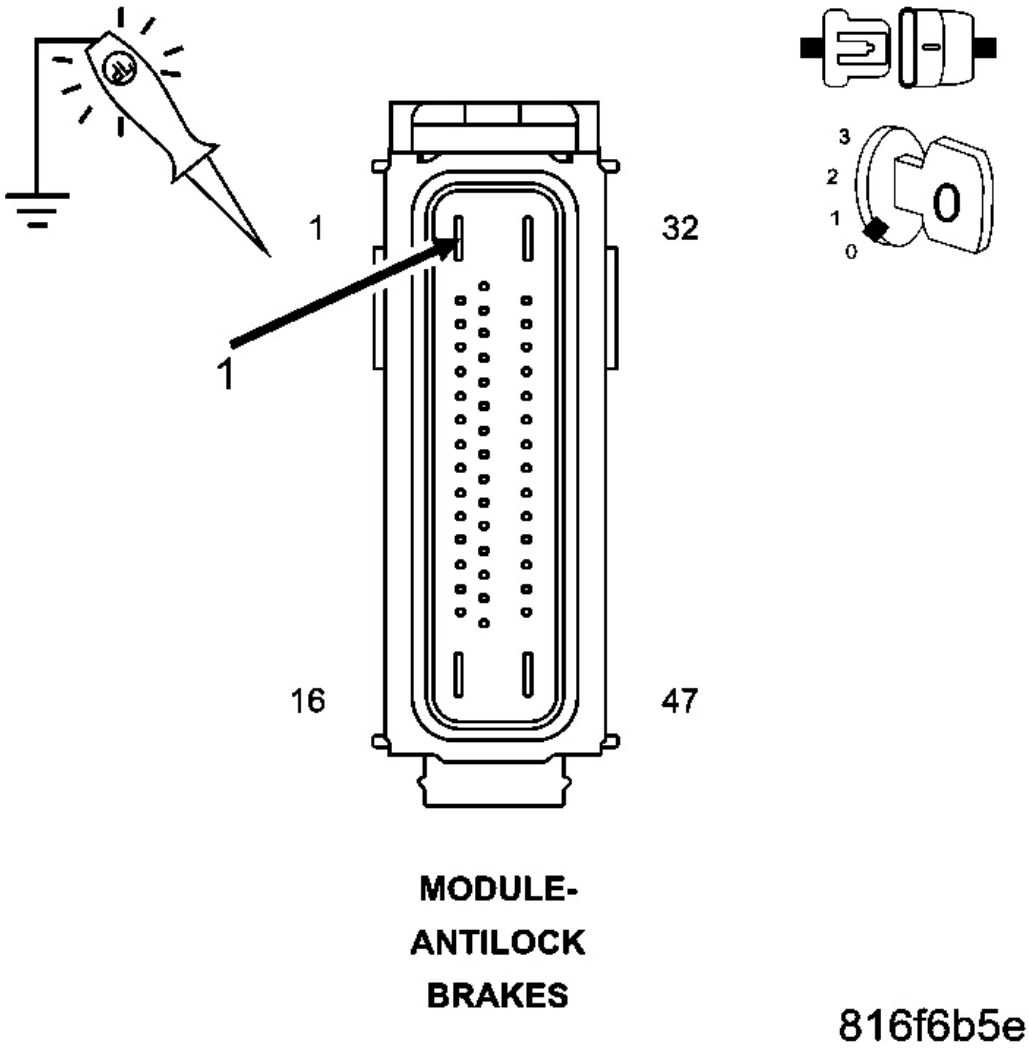


Fig. 38: Probing (A107) Fused B+ Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Anti-Lock Brake Module harness connector.

Using a 12-volt test light connected to 12-volts, probe the (A107) Fused B+ circuit.

Does the test light illuminate brightly?

Yes

Repair the (A107) Fused B(+) circuit for a short to ground.
Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) CHECK THE (A107) FUSED B(+) CIRCUIT

Turn the ignition off.

Visually inspect the (A107) Fused B(+) circuit in the wiring harness.

Look for any signs of intermittent short to ground.

Is the wiring harness OK?

Yes

Go to 6).

No

Repair the (A107) Fused B(+) circuit for a short to ground.
Perform **ABS VERIFICATION TEST**.

6) CHECK THE VOLTAGE ON THE (A107) FUSED B(+) CIRCUIT

Turn the ignition off.

Disconnect the Anti-Lock Brake Module harness connector.

Measure the voltage of the (A107) Fused B(+) circuit in the Anti-Lock Brake Module harness connector.

Is the voltage above 10 volts?

Yes

Go to 7).

No

Repair the (A107) Fused B(+) circuit for an open.
Perform **ABS VERIFICATION TEST**.

7) CHECK THE (Z909) GROUND CIRCUIT FOR AN OPEN

Measure the resistance of the (Z909) Ground circuit between the Anti-Lock Brake Module harness

connector and ground

Is the resistance below 5.0 ohms?

Yes

Replace the ICU per service information.
Perform **ABS VERIFICATION TEST**.

No

Repair the high resistance in the (Z909) Ground circuit.
Perform **ABS VERIFICATION TEST**.

C1078-TIRE REVOLUTIONS RANGE PERFORMANCE

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

When Monitored:

Continuously.

Set Condition:

A comparison between the tire circumference value contained in the EEPROM and the tire circumference value received on the CAN bus. Programmed value for tire size is not within acceptable range.

Possible Causes
INCORRECT VALUE PROGRAMMED INTO TIPM
ENGINE CONTROL MODULE

Diagnostic Test

1) INCORRECT VALUE PROGRAMMED INTO TIPM

TIRE SIZE	BODY STYLE	ENGINE SIZE	SALES CODE	REVS/MILE
P225/75R 16 BSW WRANGLER ST	KA	ALL	TRY	689
P235/65R 17 OWL WRANGLER HP	KA	ALL	TUB, TUP, TPV	695
P245/50R 20 BSW WRANGLER HP	KA	ALL	TX1, TSV	680
P245/50R 20 BSW EAGLE RSA	KA	ALL	TX1	680
P235/70R 16 BSW EAGLE	KA	ALL	TSE	697

RSA				
P235/65R 17 BSW EAGLE RSA	KA	ALL	TCC	695
P255/50R 20 BSW EAGLE RSA	KA	ALL	TP3	671

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 **ABS VERIFICATION TEST**.

No

Program the correct Tire/Wheel information in the TIPM.
Perform **ABS VERIFICATION TEST**.

C107C-BRAKE PEDAL SWITCH 1/2 STUCK

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

Diagnostic Test

1) ENGINE DTCS PRESENT

With the scan tool, read Engine DTCs.

Are there any Engine DTCs present?

Yes

Refer to appropriate Engine ELECTRICAL DIAGNOSTICS article and perform the appropriate diagnostic procedure.

No

Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits.
Perform **POWERTRAIN VERIFICATION TEST** .

C107D-BRAKE PEDAL SWITCH 1/2 CORRELATION

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

Diagnostic Test

1) ENGINE DTCS PRESENT

With the scan tool, read Engine DTCs.

Are there any Engine DTCs present?

Yes

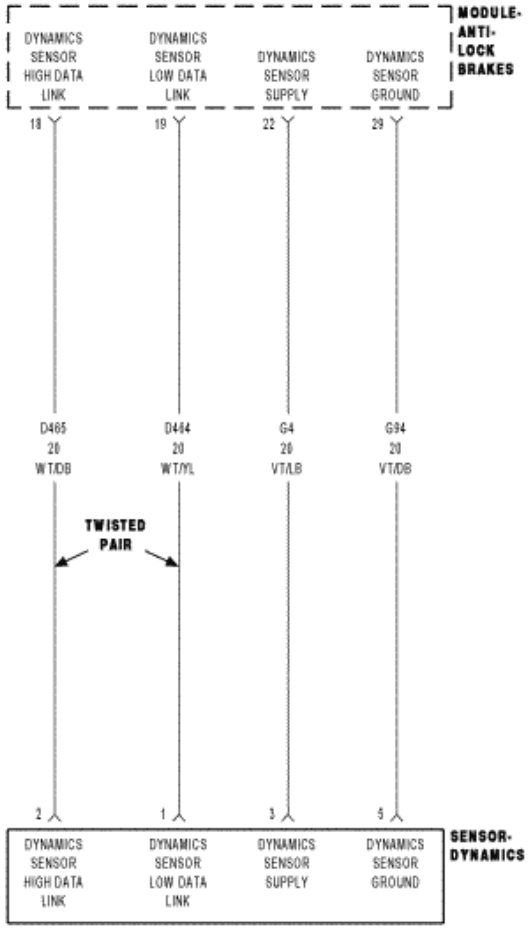
Refer to appropriate Engine ELECTRICAL DIAGNOSTICS article and perform the appropriate diagnostic procedure.

No

Using the schematics as a guide, check the Powertrain Control Module (PCM) terminals for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits.

Perform **POWERTRAIN VERIFICATION TEST** .

C1210-G SENSOR INPUT CIRCUIT PERFORMANCE



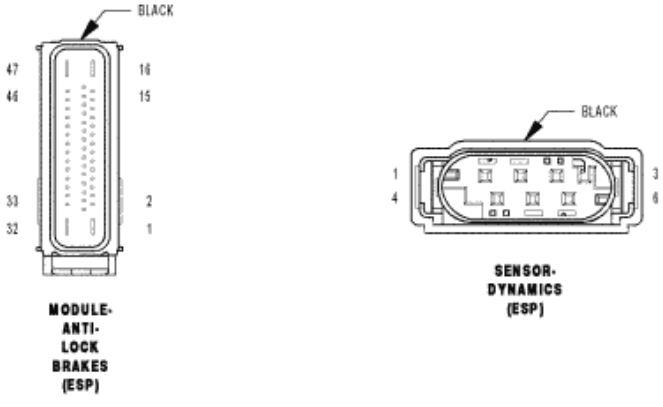


Fig. 39: Dynamics Sensor Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

Continuously, with ignition on, until vehicle speed exceeds 20 km/h (12.4 m.p.h.) for the first time, but not if the sensor voltage is out of range.

Or, during diagnostic mode.

Or, if the monitoring was inhibited by a corresponding diagnostics command.

Set Condition:

If the measured acceleration signal is higher than 0.8 g for longer than the specified detection time.

Possible Causes
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
(G4) DYNAMICS SENSOR SUPPLY HIGH RESISTANCE
(G94) GROUND CIRCUIT HIGH RESISTANCE
DYNAMICS SENSOR INSTALLATION
DYNAMICS SENSOR
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) CHECK FOR A DTC C1210-G SENSOR INPUT CIRCUIT PERFORMANCE

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

Turn the ignition on.

With the scan tool, read and record DTCs.

With the scan tool, read and record Freeze Frame information.

With the scan tool, erase DTCs.

Cycle the ignition switch from off to on.

With the scan tool, read and record DTCs.

Does the scan tool display: C1210-G SENSOR INPUT CIRCUIT PERFORMANCE?

Yes

Go to 2).

No

Perform **ABS VERIFICATION TEST**.

2) CHECK THE TERMINALS/CONNECTORS/WIRING HARNESS FOR DAMAGE

Check the Dynamics Sensor installation.

Check all related wiring for bruised, chafed, pierced, or partially broken wires.

Check all related connectors for broken, bent, pushed out, or corroded terminals.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) (G4) DYNAMICS SENSOR SUPPLY HIGH RESISTANCE

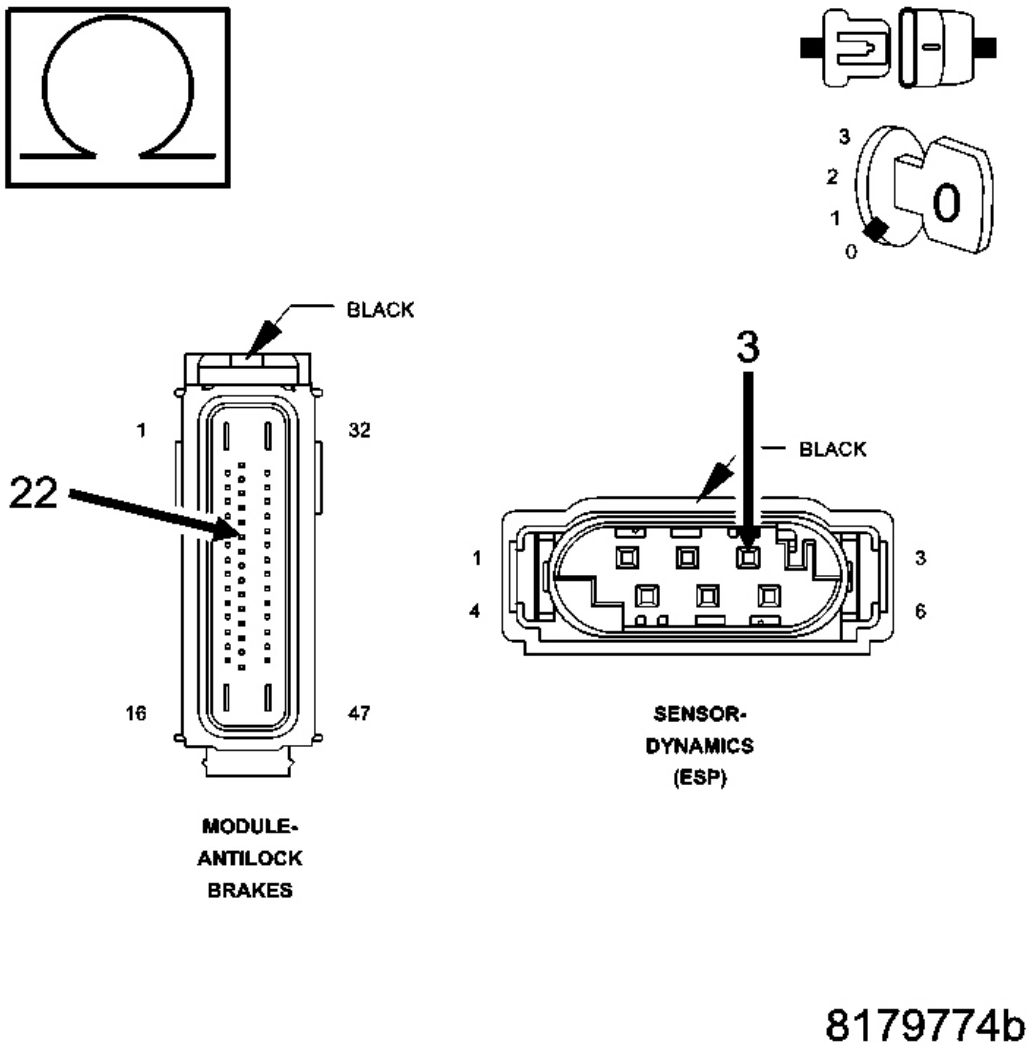


Fig. 40: Measuring Resistance Of (G4) Dynamics Sensor Supply Circuit Between Dynamics Sensor Harness Connector And Anti-Lock Brakes Module Harness Connector
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Dynamics Sensor harness connector.

Disconnect the Anti-Lock Brakes Module harness connector.

Measure the resistance of the (G4) Dynamics Sensor Supply circuit between the Dynamics Sensor harness connector and the Anti-Lock Brakes Module harness connector.

Is the resistance below 5.0 ohms?

Yes

Go to 4).

No

Repair the (G4) Dynamics Sensor Supply circuit for high resistance.
Perform **ABS VERIFICATION TEST**.

4) (G94) GROUND CIRCUIT HIGH RESISTANCE

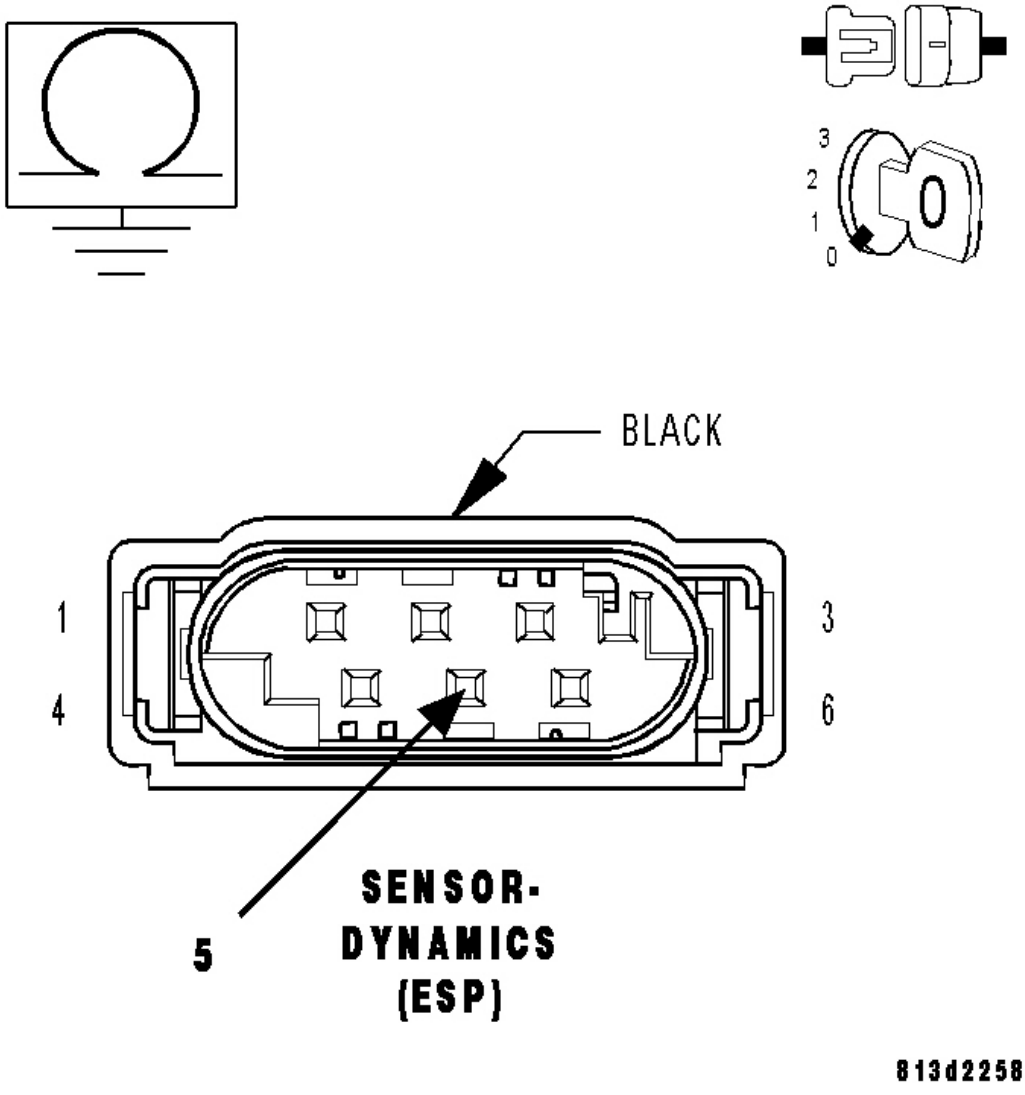


Fig. 41: Measuring Resistance Between (G94) Ground Circuit And Ground
Courtesy of CHRYSLER LLC

Turn the ignition off.

Measure the resistance between the (G94) Ground circuit and ground.

Is the resistance below 5.0 ohms?

Yes

Go to 5).

No

Repair the (G94) Ground circuit for high resistance.
Perform **ABS VERIFICATION TEST**.

5) CHECK THE DYNAMICS SENSOR INSTALLATION

NOTE: Dynamics Sensor installation and mounting bolt torque is crucial for proper operation.

Turn the ignition off.

Check the Dynamics Sensor for damaged, modified, and bent mounting brackets.

Check the Dynamics Sensor mounting bolts for a loose or over tightened condition.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Replace the Dynamics Sensor in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

C1219-STEERING ANGLE SENSOR ERRATIC PERFORMANCE

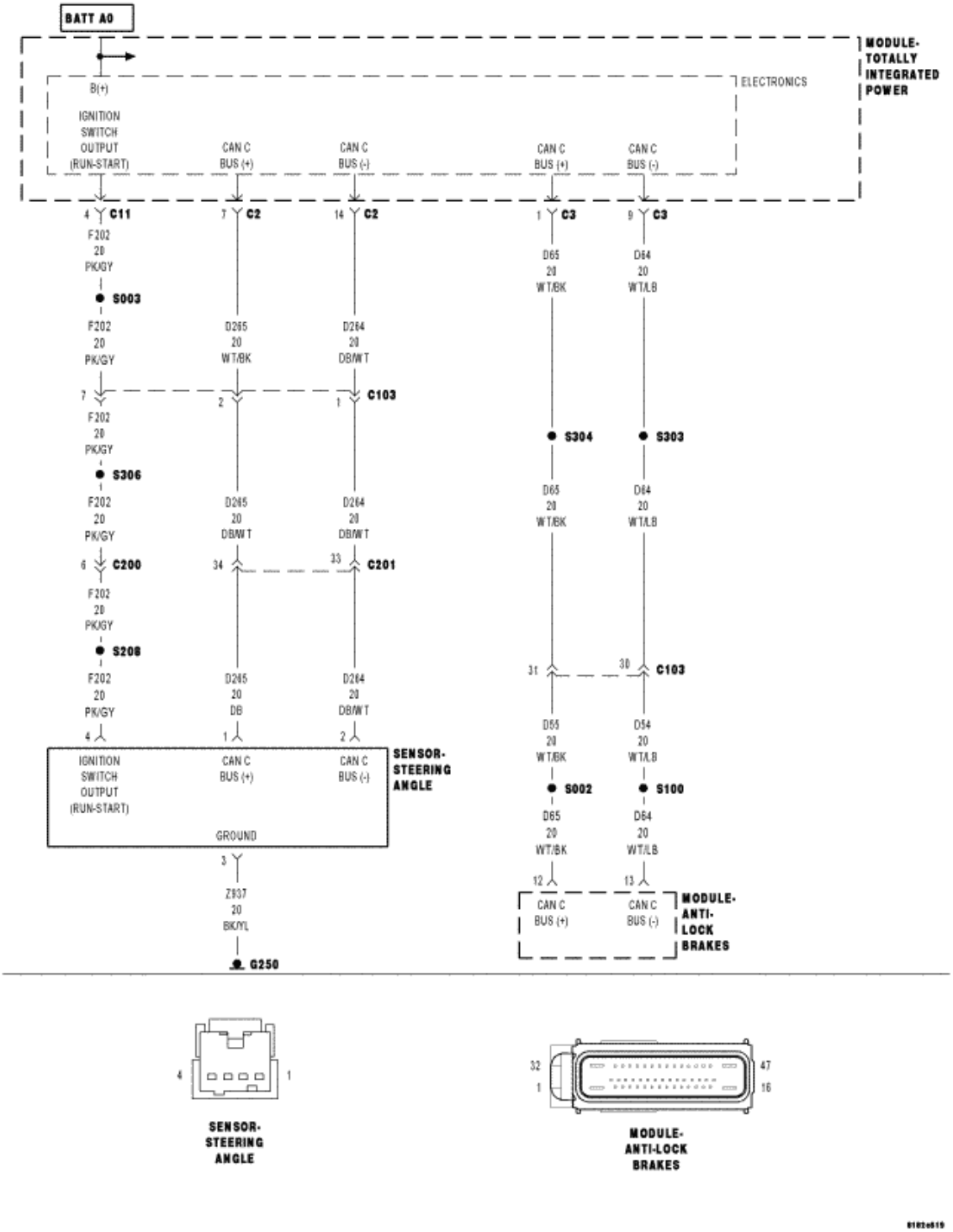


Fig. 42: Steering Angle Sensor Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

With the ignition on.

Set Condition:

If the Anti-Lock Brake Module detects that the calculated steering wheel angle exceeds what is physically possible.

Possible Causes
VEHICLE DAMAGE
STEERING COLUMN/INTERMEDIATE SHAFT DAMAGE
STEERING ANGLE SENSOR LOOSE
STEERING ANGLE SENSOR IMPROPERLY INSTALLED (WRONG MOUNTING POSITION)
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
(F202) FUSED IGNITION SWITCH OUTPUT (RUN-ACC) CIRCUIT HIGH RESISTANCE
(Z937) GROUND CIRCUIT HIGH RESISTANCE
STEERING ANGLE SENSOR
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) PERFORM TEST DRIVE & VERIFY DTC IS STILL ACTIVE

Turn the ignition on.

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

WARNING: To avoid personal injury or death, check brake capability is available before road testing.

Test drive the vehicle by turning the vehicle left or right in a curving manner at a velocity between 10 and 25 km/hr (6 and 15 mph.) for 1 minute.

Park the vehicle.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

2) CHECK STEERING ANGLE SENSOR OUTPUT

Start the engine.

Center the steering wheel.

With the scan tool, read the Steering Angle Sensor Position.

Is the Steering Angle Sensor Position within ±15°?

Yes

Go to 3).

No

Go to 8).

3) INSPECT VEHICLE, STEERING COLUMN, & INTERMEDIATE SHAFT FOR DAMAGE

NOTE: If possible, check vehicle repair history for collision damage.

Turn the ignition off.

Inspect the vehicle for damage causing tracking problems.

Inspect the steering column and intermediate shaft for damage.

Were any problems found?

Yes

Repair as necessary.

Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK STEERING ANGLE SENSOR INSTALLATION

WARNING: To avoid personal injury or death, on vehicles equipped with airbags, disable the supplemental restraint system before attempting

any steering wheel, steering column, airbag, occupant classification system, seat belt tensioner, impact sensor, or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the supplemental restraint system. Failure to take the proper precautions could result in accidental airbag deployment.

NOTE: Proper Steering Angle Sensor installation is crucial for proper operation.

Verify that the Steering Angle Sensor is properly installed.

Is the Steering Angle Sensor properly installed?

Yes

Go to 5).

No

Repair as necessary and clear offsets by initializing ECU with wheels pointing straight ahead.
Perform **ABS VERIFICATION TEST**.

5) INSPECT RELATED WIRING HARNESS, TERMINALS, & CONNECTORS

NOTE: A low voltage condition at the Steering Angle Sensor will cause this DTC to set.

Check all related wiring for pinched, chafed, pierced, and partially broken wires.

Check all related connectors for broken, bent, pushed out, and corroded terminals.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 6).

6) CHECK (F202) FUSED IGNITION SWITCH OUTPUT (RUN-ACC) CIRCUIT FOR HIGH RESISTANCE

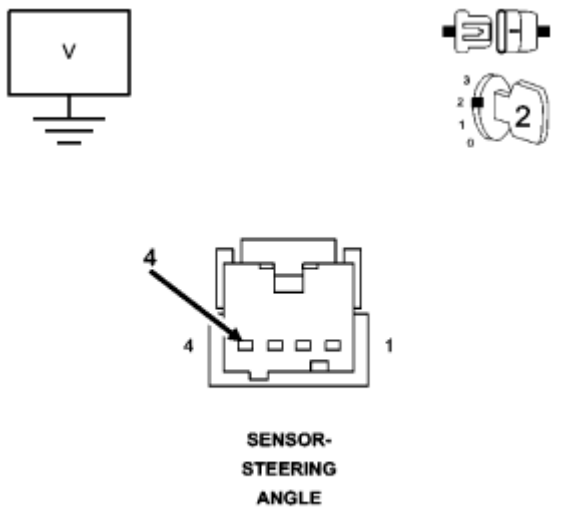


Fig. 43: Measuring Voltage Of (F202) Fused Ignition Switch Output (Run-ACC) Circuit
Courtesy of CHRYSLER LLC

Disconnect the Steering Angle Sensor harness connector.

Turn the ignition on.

Measure the voltage of the (F202) Fused Ignition Switch Output (Run-ACC) circuit.

Is the voltage above 11.0 volts?

Yes

Go to 7).

No

Repair the (F202) Fused Ignition Switch Output (Run-ACC) circuit for high resistance. Perform **ABS VERIFICATION TEST**.

7) CHECK (Z937) GROUND CIRCUIT FOR HIGH RESISTANCE

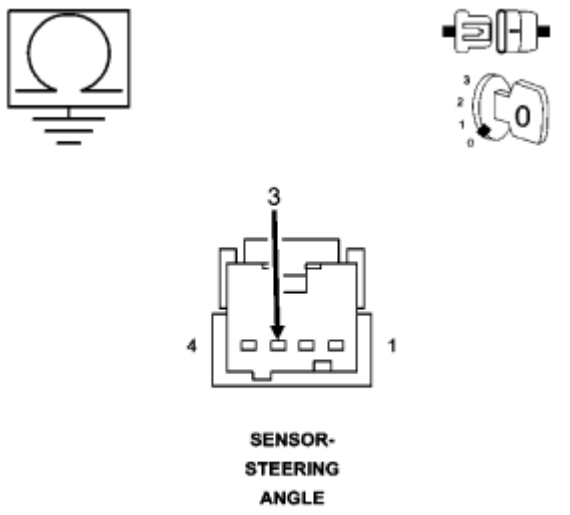


Fig. 44: Measuring Resistance Of (Z937) Ground Circuit Between Ground And Steering Angle Sensor Harness Connector
Courtesy of CHRYSLER LLC

Turn the ignition off.

Measure the resistance of the (Z937) Ground circuit between ground and the Steering Angle Sensor harness connector.

Is the resistance below 5.0 ohms?

Yes

Replace the Steering Angle Sensor in accordance with the Service Information and clear offsets by initializing ECU with wheels pointing straight ahead. Refer to **ABS VERIFICATION TEST**.

No

Repair the (Z937) Ground circuit for high resistance.

Perform **ABS VERIFICATION TEST**.

8) CHECK STEERING ANGLE SENSOR OUTPUT WHILE ROTATING THE STEERING WHEEL

With the scan tool, read the Steering Angle Sensor Position while rotating the steering wheel to the right and then to the left. The Steering Angle Sensor Position should decrease when rotating the steering wheel to the right and increase when rotating the steering wheel to the left.

Did the steering angle change accordingly?

Yes

Replace the Anti-Lock Brake Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Replace the Steering Angle Sensor in accordance with the Service Information and clear offsets by initializing ECU with wheels pointing straight ahead.
Perform **ABS VERIFICATION TEST**.

C121A-STEERING ANGLE SENSOR NOT INITIALIZED

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

When Monitored:

With the ignition on.

Set Condition:

When the Anti-Lock Brake Module detects a low voltage at the Steering Angle Sensor or Steering Angle Sensor failure.

Possible Causes
TERMINAL/CONNECTOR/WIRING HARNESS DAMAGE
(F943) FUSED B(+) CIRCUIT OPEN
(Z385) GROUND CIRCUIT OPEN
STEERING CONTROL MODULE

Diagnostic Test

1) CHECK FOR A DTC C121A-STEERING ANGLE SENSOR NOT INITIALIZED

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

Turn the ignition on.

With the scan tool, read and record DTCs.

With the scan tool, read and record Freeze Frame information.

With the scan tool, erase DTCs.

Road test the vehicle over 30 km/h (19 mph) for at least 30 seconds.

With the scan tool, read and record DTCs.

Does the scan tool display: C121A-STEERING ANGLE SENSOR NOT INITIALIZED?

Yes

Go to 2).

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

2) CHECK THE TERMINALS/CONNECTORS/WIRING HARNESS FOR DAMAGE

WARNING: To avoid personal injury or death, on vehicles equipped with airbags, disable the supplemental restraint system before attempting any steering wheel, steering column, airbag, occupant classification system, seat belt tensioner, impact sensor, or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the supplemental restraint system. Failure to take the proper precautions could result in accidental airbag deployment.

NOTE: Proper Steering Angle Sensor installation is crucial for proper operation.

Check the Steering Angle Sensor installation.

Check all related wiring for bruised, chafed, pierced, or partially broken wires.

Check all related connectors for broken, bent, pushed out, or corroded terminals.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) CHECK THE VOLTAGE ON THE (F943) FUSED B(+) CIRCUIT

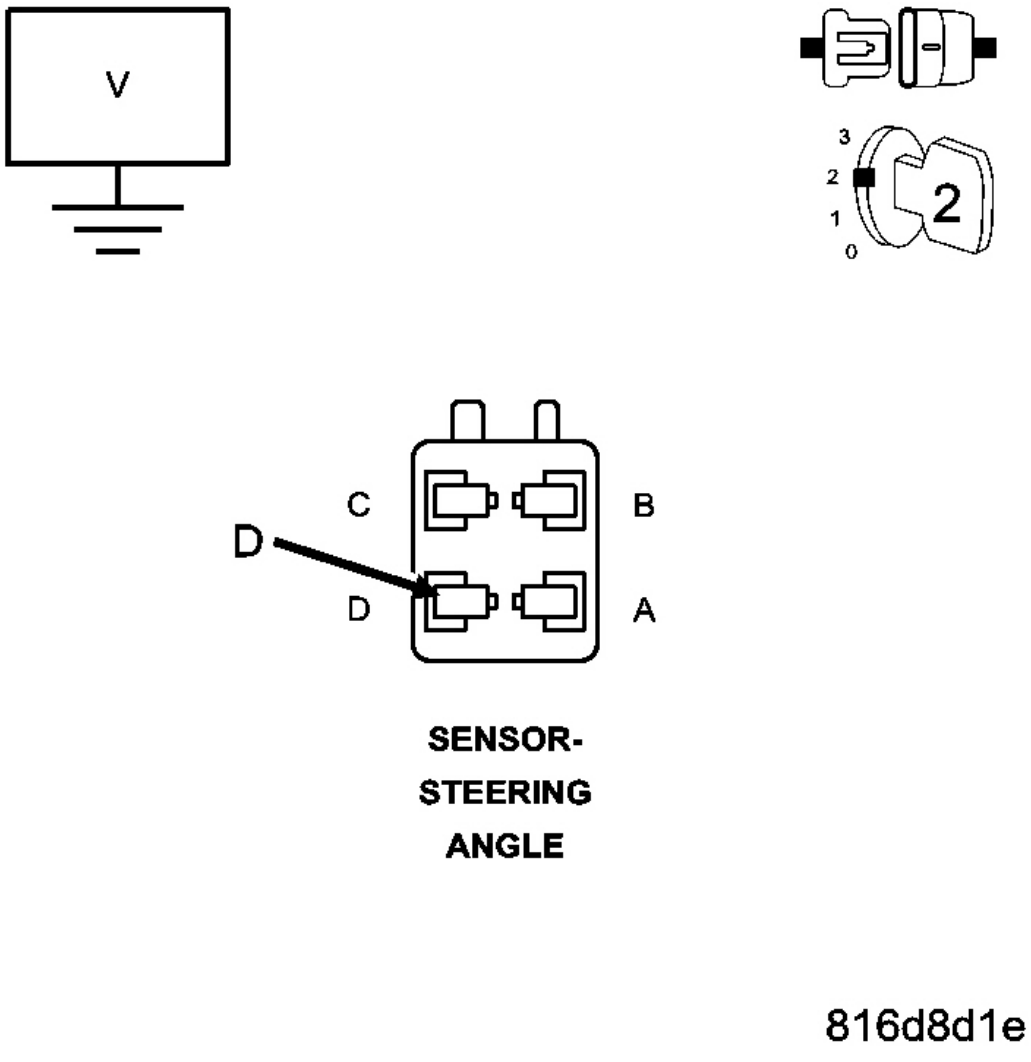


Fig. 45: Measuring Voltage Of (F943) Fused B(+) Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Steering Control Module harness connector.

Turn the ignition on.

Measure the voltage of the (F943) Fused B(+) circuit.

Is the voltage above 10 volts?

Yes

Go to 4).

No

Repair the (F943) Fused B(+) circuit for an open.
Perform **ABS VERIFICATION TEST**.

4) CHECK THE RESISTANCE OF THE (Z385) GROUND CIRCUIT

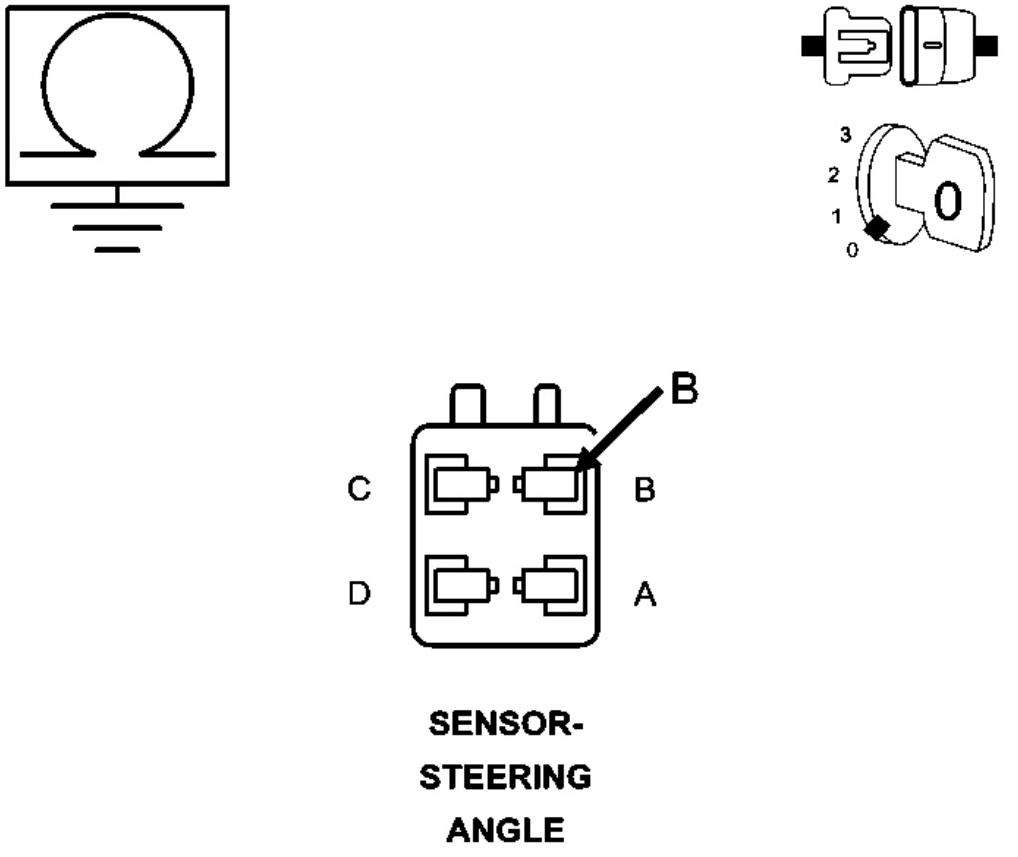


Fig. 46: Measuring Resistance Between (Z385) Ground Circuit And Ground

Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Steering Control Module harness connector.

Measure the resistance between the (Z385) Ground circuit and ground.

Is the resistance below 5.0 ohms?

Yes

Replace the Steering Control Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Repair the (Z385) Ground circuit for an open.
Perform **ABS VERIFICATION TEST**.

C121C-TORQUE REQUEST SIGNAL DENIED

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

When Monitored:

With the engine running.

Set Condition:

When the Powertrain Control Module indicates, for an extended period of time, that engine management relevant for Automatic Yaw Control/Traction Control System control can not be accomplished.

Possible Causes
ANTI-LOCK BRAKE MODULE
POWERTRAIN CONTROL MODULE

Diagnostic Test

1) CHECK FOR A DTC C121C-TORQUE REQUEST SIGNAL DENIED

NOTE: This DTC must be active for the results of this test to be valid and this DTC may set while driving under severe load conditions.

Turn the ignition on.

With the scan tool, read and record DTCs.

With the scan tool, read and record Freeze Frame information.

With the scan tool, erase DTCs.

Cycle the ignition switch from off to on.

Start Engine.

With the scan tool, read and record DTCs and monitor ESP Torque Request status.

Does the scan tool display: C121C-TORQUE REQUEST SIGNAL DENIED?

Yes

Go to 2).

No

Refer to the **ABS INTERMITTENT CONDITION**.

2) CHECK THE POWERTRAIN DTCS

With the scan tool, read and record Powertrain DTCs.

Were any Powertrain related DTCs found?

Yes

Repair the Powertrain System in accordance with the Service Information.

No

Go to 3).

3) ESP TORQUE REQUEST SIGNAL

Engine started.

With the scan tool, read the Allow ESP Torque Request status bit.

Was the Allow ESP Torque Request showing NOT set?

Yes

Replace the Powertrain Module in accordance with the Service Information.

No

Replace the Anti-Lock Brake Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

C121D-BRAKE PRESSURE SENSOR CIRCUIT

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

When Monitored:

With the ignition on.

Set Condition:

When the Anti-Lock Brake Module indicates that the Brake Pressure Sensor Signal is out of range.

Possible Causes
AIR IN BRAKE SYSTEM/WORN MECHANICAL COMPONENTS
ECU INTERNAL FAILURE
HCU INTERNAL FAILURE

Diagnostic Test

1) CHECK FOR A DTC C121D-BRAKE PRESSURE SENSOR CIRCUIT

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

Turn the ignition on.

With the scan tool, read and record DTCs.

With the scan tool, read and record Freeze Frame information.

With the scan tool, erase DTCs.

Start the engine.

Slowly depress and release the brake pedal.

With the scan tool, read and record DTCs.

Does the scan tool display: C121D-BRAKE PRESSURE SENSOR CIRCUIT?

Yes

Go to 2).

No

Refer to the **ABS INTERMITTENT CONDITION**.

2) HCU/ECU ISOLATION

Turn the ignition off.

Separate the ECU from the HCU.

With the scan tool, monitor brake pressure.

Does the scan tool display brake pressure above 218 bar (3162 psi)?

Yes

Replace the HCU in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Replace the ECU in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

C121E-BRAKE PRESSURE SENSOR COMPARATIVE PERFORMANCE

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

When Monitored:

With the ignition on.

Set Condition:

When the Anti-Lock Brake Module indicates that the Brake Pressure Sensor Signal is out of range.

Possible Causes
AIR IN BRAKE SYSTEM/WORN MECHANICAL COMPONENTS
ECU INTERNAL FAILURE
HCU INTERNAL FAILURE

Diagnostic Test

1) CHECK FOR A DTC C121E-BRAKE PRESSURE SENSOR COMPARATIVE

PERFORMANCE

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

Turn the ignition on.

With the scan tool, read and record DTCs.

With the scan tool, read and record Freeze Frame information.

With the scan tool, erase DTCs.

Start the engine.

Slowly depress and release the brake pedal.

With the scan tool, read and record DTCs.

Does the scan tool display: C121E-BRAKE PRESSURE SENSOR COMPARATIVE PERFORMANCE?

Yes

Go to 2).

No

Refer to the **ABS INTERMITTENT CONDITION**.

2) HCU/ECU ISOLATION

Turn the ignition off.

Separate the ECU from the HCU.

With the scan tool, monitor brake pressure.

Does the scan tool display brake pressure above 218 bar (3162 psi)?

Yes

Replace the HCU in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Replace the ECU in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

C1231-DRIVE TEST: STEERING ANGLE SENSOR

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

When Monitored:

During the Drive Test.

Set Condition:

If the Anti-Lock Brakes Module detects implausible Steering Angle Sensor data.

Possible Causes
STEERING ANGLE SENSOR INSTALLATION
STEERING ANGLE SENSOR
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) CHECK FOR A DTC C1231-DRIVE TEST: STEERING ANGLE SENSOR

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

NOTE: If any of the following DTCs are present they must be repaired before continuing.

DTC C1219-STEERING ANGLE SENSOR ERRATIC PERFORMANCE

DTC C123F-STEERING ANGLE SENSOR COMPARATIVE PERFORMANCE

DTC C1240-STEERING ANGLE SENSOR ANGLE OVERTRAVEL PERFORMANCE

Turn the ignition on.

With the scan tool, read and record DTCs.

With the scan tool, read and record Freeze Frame information.

Perform ECU initialization with drive test. Perform **ABS VERIFICATION TEST**.

NOTE: The drive test requires a 90° turn.

Start the engine.

With the scan tool, read and record DTCs.

Does the scan tool display: C1231-DRIVE TEST: STEERING ANGLE SENSOR?

Yes

Go to 2).

No

Refer to the **ABS INTERMITTENT CONDITION**.

2) VERIFY THAT THE STEERING ANGLE SENSOR IS ACTIVE ON THE BUS

With the scan tool, select Steering Control Module.

Verify that the Steering Angle Sensor is active on the bus.

Is the Steering Angle Sensor active on the bus?

Yes

Go to 3).

No

Refer to **DIAGNOSIS AND TESTING** for No Response related diagnostic procedures.

3) CHECK STEERING ANGLE

Turn steering wheel so wheels point in a straight ahead position.

With scan tool check steering angle.

Is the Steering Angle reading within ±15 degrees?

Yes

Go to 4).

No

Go to 5).

4) CHECK STEERING ANGLE CHANGE

Turn steering wheel so wheels point in a straight ahead position.

With scan tool check steering angle.

Slowly rotate steering wheel while looking for a smooth change. The degrees will decrease to the right and increase when rotating steering wheel to the left.

Did the steering angle change accordingly?

Yes

Replace the Anti-Lock Brake Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Replace the Steering Angle Sensor in accordance with the Service Information and clear offsets by initializing ECU with wheels pointing straight ahead.
Perform **ABS VERIFICATION TEST**.

5) CHECK STEERING ANGLE SENSOR INSTALLATION

WARNING: To avoid personal injury or death, on vehicles equipped with airbags, disable the supplemental restraint system before attempting any steering wheel, steering column, airbag, occupant classification system, seat belt tensioner, impact sensor, or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the supplemental restraint system. Failure to take the proper precautions could result in accidental airbag deployment.

NOTE: Proper Steering Angle Sensor installation is crucial for proper operation.

Turn the ignition off.

Verify that the Steering Angle Sensor is properly installed. Refer to **INSTALLATION** .

Is the Steering Angle Sensor properly installed?

Yes

Replace the Anti-Lock Brake Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Repair as necessary and clear offsets by initializing ECU with wheels pointing straight ahead.
Perform **ABS VERIFICATION TEST**.

C1232-DRIVE TEST: PRESSURE SENSOR

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

When Monitored:

During the Drive Test.

Set Condition:

If the Pressure Sensor fails to activate.

Possible Causes
HYDRAULIC/BRAKE SYSTEM COMPONENT INSTALLATION
INTEGRATED CONTROL UNIT
PRESSURE SENSOR (HYDRAULIC CONTROL UNIT)

Diagnostic Test

1) CHECK FOR A DTC C1232-DRIVE TEST: PRESSURE SENSOR

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

Turn the ignition on.

With the scan tool, read and record DTCs.

With the scan tool, read and record Freeze Frame information.

Perform ECU initialization with drive test. Perform **ABS VERIFICATION TEST**.

Start the engine and apply the brake firmly.

With the scan tool, read and record DTCs.

Does the scan tool display: C1232-DRIVE TEST: PRESSURE SENSOR?

Yes

Go to 2).

No

Refer to the **ABS INTERMITTENT CONDITION**.

2) CHECK HYDRAULIC SYSTEM & BRAKE SYSTEM COMPONENT INSTALLATION & FUNCTION

Verify that the Anti-Lock Brakes Module and Hydraulic Control Unit are properly installed.

Verify that the hydraulic system is properly filled and bled.

Verify that the brake system components are installed and functioning properly.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Clean contacts in HCU first if problem reoccurs replace the Integrated Control Unit in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

C1234-DRIVE TEST: SENSOR CLUSTER INSTALLATION

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

When Monitored:

During the Drive Test.

Set Condition:

If the Anti-Lock Brakes Module detects implausible Dynamics Sensor data.

Possible Causes
DYNAMICS SENSOR INSTALLATION
DYNAMICS SENSOR
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) CHECK FOR A DTC C1234-DRIVE TEST: SENSOR CLUSTER INSTALLATION

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

Turn the ignition on.

With the scan tool, read and record DTCs.

With the scan tool, read and record Freeze Frame information.

Perform ECU initialization with drive test. Perform **ABS VERIFICATION TEST**.

NOTE: The drive test requires a 90° turn.

Start the engine.

With the scan tool, read and record DTCs.

Does the scan tool display: C1234-DRIVE TEST: SENSOR CLUSTER INSTALLATION?

Yes

Go to 2).

No

Refer to the **ABS INTERMITTENT CONDITION**.

2) CHECK THE DYNAMICS SENSOR INSTALLATION

NOTE: Dynamics Sensor installation and mounting bolt torque is crucial for proper operation.

Turn the ignition off.

Check the Dynamics Sensor for damaged, modified, and bent mounting brackets.

Check the Dynamics Sensor mounting bolts for a loose or over tightened condition.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Replace the Dynamics Sensor in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

C1238-DRIVE TEST: UNSUCCESSFUL

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

When Monitored:

During the Drive Test.

Set Condition:

If the Anti-Lock Brakes Module detects a fault with the Steering Angle Sensor, the Pressure Sensor, or the Dynamics Sensor.

Possible Causes
STEERING ANGLE SENSOR
PRESSURE SENSOR
DYNAMICS SENSOR
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) DIAGNOSE & REPAIR ALL DTCs

Repair

Diagnose and repair all DTCs.

C1239-EMISSIONS ROLLS TEST ACTIVE

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

Theory of Operation

The functional effects are that the output signal for all wheel speeds mimic the wheel with the highest wheel speed.

This DTC sets when the Emissions Rolls Test is active.

Close out the Emissions Rolls Test though the Gateway Module.

C123A-ESP SYSTEM SENSORS CALIBRATION

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

When Monitored:

Once per ignition cycle.

Set Condition:

If the calculated checksum does not match the stored checksum.

Possible Causes
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) INITIALIZE ANTI-LOCK BRAKES MODULE

Initialize ECU refer to **ABS VERIFICATION TEST**.

Does this DTC reset?

Yes

Replace the Anti-Lock Brake Module in accordance with the Service Information. Perform **ABS VERIFICATION TEST**.

No

Test complete.

C123B-ESP SYSTEM CONTROL TOO LONG

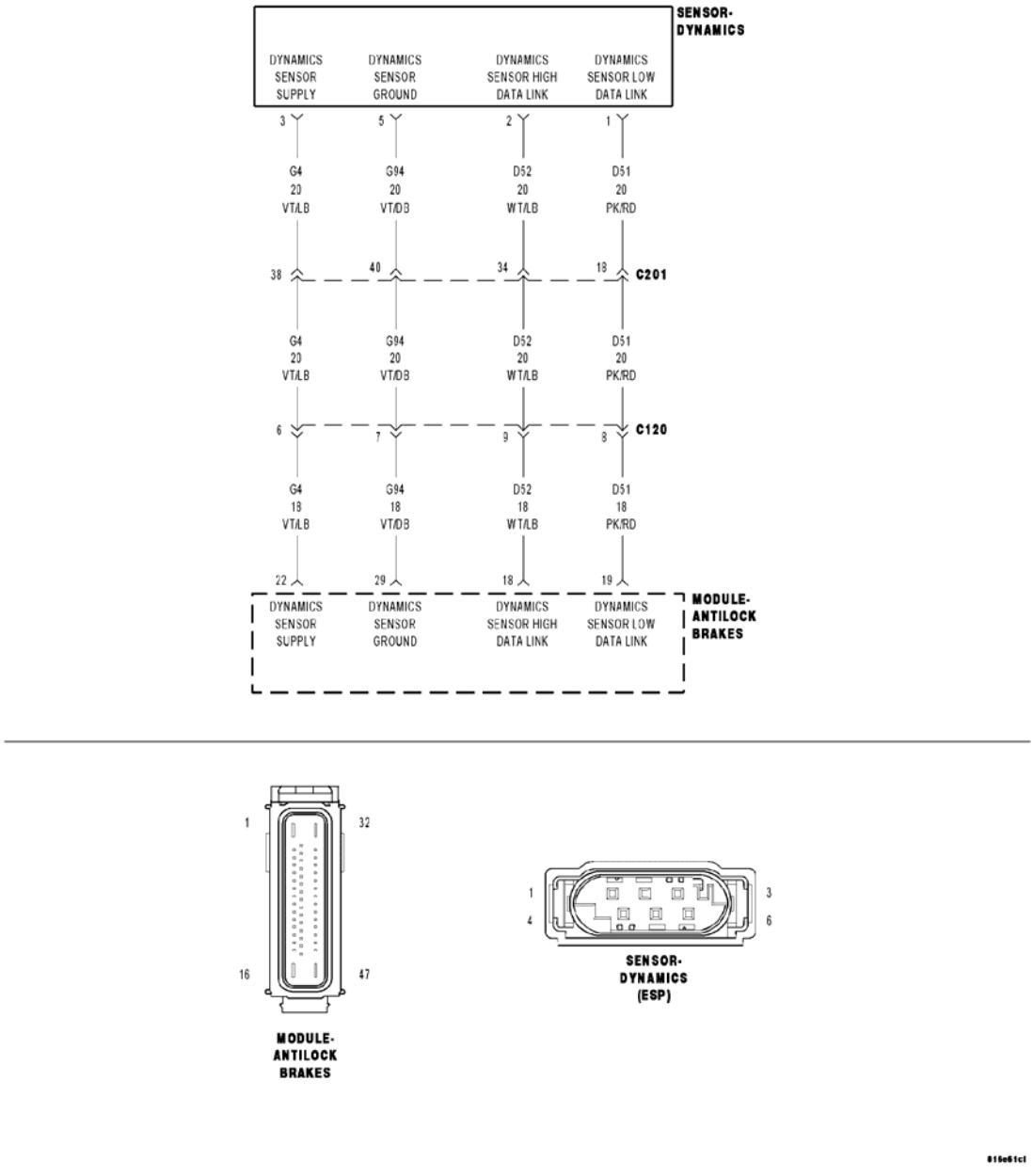


Fig. 47: Dynamics Sensor Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

With the ignition on.

Set Condition:

When the Anti-Lock Brake Module indicates ESP control lasting longer the 15 seconds.

Possible Causes
HYDRAULIC/BRAKE ISSUE
DYNAMICS SENSOR
INTEGRATED CONTROL MODULE

Diagnostic Test

1) VERIFY DTC IS ACTIVE

NOTE: If other DTC's are set they must be repaired before continuing. This DTC must be active for the results of this test to be valid and this DTC may set while driving under excessive driving conditions.

Turn the ignition on.

With the scan tool, read and record ABS DTCs.

With the scan tool, read and record Environmental Data (EV Data).

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

WARNING: Ensure brake capability is available before road testing.

Test drive the vehicle by turning the vehicle left or right in a curving manner at a velocity between 10 and 20 km/h (6 and 12 mph).

Park the vehicle.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

2) CHECK HYDRAULIC SYSTEM & BRAKE SYSTEM COMPONENT INSTALLATION &

FUNCTION

Verify that the Anti-Lock Brakes Module and Hydraulic Control Unit are properly installed.

Verify that the hydraulic system is properly filled and bled.

Verify that the brake system components are installed and functioning properly.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Replace the Dynamics Sensor in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

C123C-DYNAMICS SENSOR MOUNTING/INSTALLATION PERFORMANCE

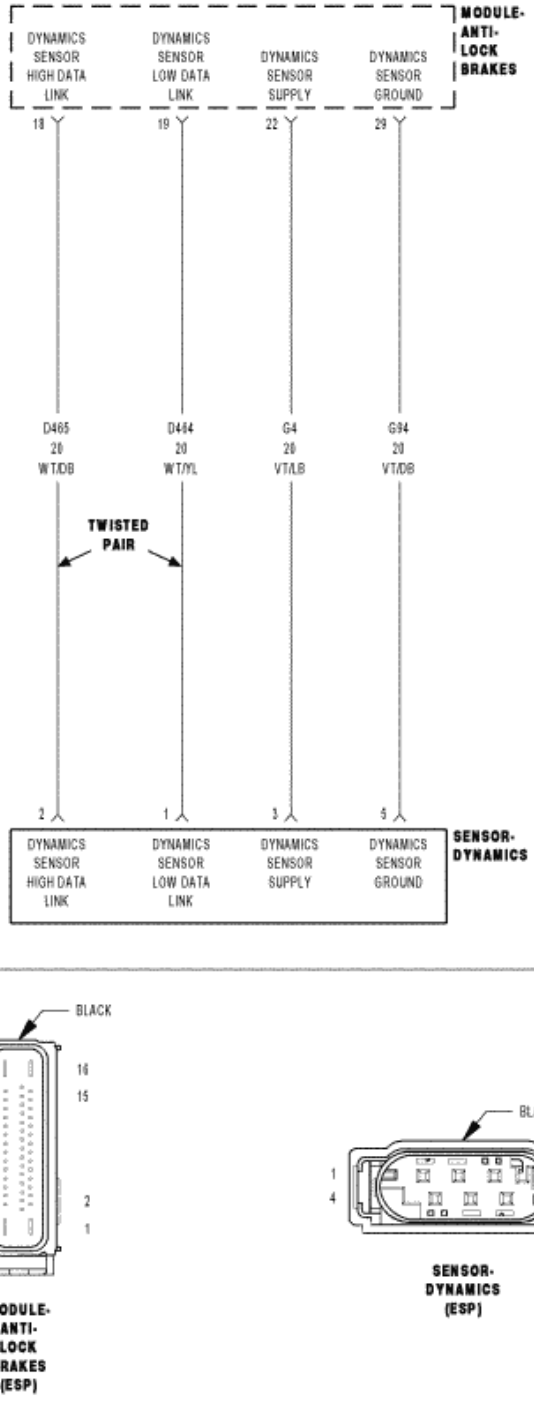


Fig. 48: Dynamics Sensor Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

With vehicle speed above 11 km/h (7 mph), but not if the sensor signal is invalid.

Or, during skidding.

Or, when driving in reverse.

Set Condition:

If the Anti-Lock Brakes Module detects implausible Dynamics Sensor values.

Possible Causes
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
DYNAMICS SENSOR INSTALLATION
DYNAMICS SENSOR

Diagnostic Test

1) VERIFY DTC IS ACTIVE

NOTE: If present, diagnose and repair DTC C2114-DYNAMICS SENSOR SUPPLY VOLTAGE LOW or DTC C2115-DYNAMICS SENSOR SUPPLY VOLTAGE HIGH before diagnosing this DTC.

Turn the ignition on.

With the scan tool, read and record ABS DTCs.

With the scan tool, read and record Environmental Data (EV Data).

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

WARNING: Ensure brake capability is available before road testing.

Test drive the vehicle by turning the vehicle left or right in a curving manner at a velocity between 10 and 20 km/h (6 and 12 mph).

Park the vehicle.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

2) CHECK THE DYNAMICS SENSOR INSTALLATION

NOTE: Dynamics Sensor installation and mounting bolt torque is crucial for proper operation.

Turn the ignition off.

Check the Dynamics Sensor for damaged, modified, and bent mounting brackets.

Check the Dynamics Sensor mounting bolts for a loose or over tightened condition.

Were any problems found?

Yes

Repair as necessary.

Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) INSPECT RELATED WIRING HARNESS, TERMINALS, & CONNECTORS

Visually inspect the related wiring harness. Look for any pinched, chafed, pierced, and partially broken wires.

Visually inspect the related wiring harness connectors. Look for broken, bent, pushed out, and corroded terminals.

Were any problems found?

Yes

Repair as necessary.

Perform **ABS VERIFICATION TEST**.

No

Replace the Dynamics Sensor in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

C123F-STEERING ANGLE SENSOR COMPARATIVE PERFORMANCE

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

When Monitored:

With ignition on, but not if a checksum failure of the stored offset values is detected.

Or, a CAN time-out failure is detected.

Or, a failure is detected by the Steering Angle Sensor.

Set Condition:

If the Anti-Lock Brakes Module detects that either the calculated steering wheel angle offset or the steering wheel angle signal measured output is out of range.

Possible Causes
VEHICLE DAMAGE
STEERING COLUMN/INTERMEDIATE SHAFT DAMAGE
STEERING WHEEL ALIGNMENT
STEERING ANGLE SENSOR LOOSE
STEERING ANGLE SENSOR IMPROPERLY INSTALLED (WRONG MOUNTING POSITION)
STEERING ANGLE SENSOR
ANTI-LOCK BRAKE MODULE

Diagnostic Test

1) PERFORM TEST DRIVE & VERIFY DTC IS STILL ACTIVE

NOTE: If present, diagnose and repair DTC C1219-STEERING ANGLE SENSOR ERRATIC PERFORMANCE, C121A-STEERING ANGLE SENSOR NOT INITIALIZED, or C1240-STEERING ANGLE SENSOR OVERTRAVEL PERFORMANCE before diagnosing this DTC.

Turn the ignition on.

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

WARNING: To avoid personal injury or death, check brake capability is available before road testing.

Test drive the vehicle by turning the vehicle left or right in a curving manner at a velocity between 10 and 25 km/h (6 and 15 mph).

Park the vehicle.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

2) INSPECT VEHICLE, STEERING COLUMN, & INTERMEDIATE SHAFT FOR DAMAGE

NOTE: If possible, check vehicle repair history for collision damage.

Turn the ignition off.

Inspect the vehicle for damage causing tracking problems or steering wheel misalignment.

Inspect the steering column and intermediate shaft for damage.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) CHECK STEERING ANGLE SENSOR OUTPUT

Start the engine.

Turn the steering wheel so wheels point in a straight ahead position.

With the scan tool, read the Steering Angle Sensor position.

Is the Steering Angle Sensor Position within ± 15° degrees?

Yes

Go to 5).

No

Go to 4).

4) CHECK STEERING ANGLE SENSOR INSTALLATION

WARNING: To avoid personal injury or death, on vehicles equipped with airbags, disable the supplemental restraint system before attempting any steering wheel, steering column, airbag, occupant classification system, seat belt tensioner, impact sensor, or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the supplemental restraint system. Failure to take the proper precautions could result in accidental airbag deployment.

NOTE: Proper Steering Angle Sensor installation is crucial for proper operation.

Verify that the Steering Angle Sensor is properly installed.

Is the Steering Angle Sensor properly installed?

Yes

Go to 5).

No

Repair as necessary and clear offsets by initializing ECU with wheels pointing straight ahead. Perform **ABS VERIFICATION TEST**.

5) RE-INITIALIZE THE ESP MODULE

Perform ECU initialization with drive test to clear offsets. Perform **ABS VERIFICATION TEST**.

Is DTC C123F-STEERING ANGLE SENSOR COMPARATIVE PERFORMANCE still active?

Yes

Go to 6).

No

Sensor was probably loose or calibrated with wheels not centered to vehicle. Test complete.

Perform **ABS VERIFICATION TEST**.

6) CHECK STEERING ANGLE SENSOR OUTPUT WHILE ROTATING THE STEERING WHEEL

With the scan tool, read the Steering Angle Sensor position while rotating the steering wheel to the right and then to the left. The Steering Angle Sensor position should decrease when rotating the steering wheel to the right and increase when rotating the steering wheel to the left.

Did the steering angle change accordingly?

Yes

Replace the Anti-Lock Brake Module in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

No

Replace the Steering Angle Sensor in accordance with the Service Information and clear offsets by initializing ECU with wheels pointing straight ahead.

Perform **ABS VERIFICATION TEST**.

C1240-STEERING ANGLE SENSOR OVERTRAVEL PERFORMANCE

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

When Monitored:

With ignition on, but not if a CAN time out failure is detected.

Or, if a fault is detected by the Steering Angle Sensor.

Set Condition:

If the Anti-Lock Brakes Module detects that the absolute value of the measured steering wheel angle is greater than 720 degrees.

Possible Causes
VEHICLE DAMAGE
STEERING COLUMN/INTERMEDIATE SHAFT DAMAGE
STEERING WHEEL ALIGNMENT

STEERING ANGLE SENSOR LOOSE
STEERING ANGLE SENSOR IMPROPERLY INSTALLED (WRONG MOUNTING POSITION)
STEERING ANGLE SENSOR

Diagnostic Test

1) PERFORM TEST DRIVE & VERIFY DTC IS STILL ACTIVE

Turn the ignition on.

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

WARNING: To avoid personal injury or death, check brake capability is available before road testing.

Test drive the vehicle by turning the vehicle left or right in a curving manner at a velocity between 10 and 25 km/h (6 and 15 mph).

Park the vehicle.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

2) INSPECT VEHICLE, STEERING COLUMN, & INTERMEDIATE SHAFT FOR DAMAGE

NOTE: If possible, check vehicle repair history for collision damage.

Turn the ignition off.

Inspect the vehicle for damage causing tracking problems or steering wheel misalignment.

Inspect the steering column and intermediate shaft for damage.

Were any problems found?

Yes

Repair as necessary.

Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) CHECK STEERING ANGLE CHANGE

Turn steering wheel so wheels point in a straight ahead position.

With scan tool check steering angle if reading travels to 720 degrees while rotating wheel from lock to lock.

NOTE: Sensor damage can occur if wheel is turned over 720 degrees.

Rotate steering wheel to the right and the degrees will decrease and rotate steering wheel to the left and the degrees will increase.

Did the steering angle change accordingly and display less than 720 degrees from lock to lock?

Yes

Go to 4).

No

Replace the Steering Angle Sensor in accordance with the Service Information and clear offsets by initializing ECU with wheels pointing straight ahead.

Perform **ABS VERIFICATION TEST**.

4) CHECK STEERING ANGLE SENSOR INSTALLATION

WARNING: To avoid personal injury or death, on vehicles equipped with airbags, disable the supplemental restraint system before attempting any steering wheel, steering column, airbag, occupant classification system, seat belt tensioner, impact sensor, or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the supplemental restraint system. Failure to take the proper precautions could result in accidental airbag deployment.

NOTE: Proper Steering Angle Sensor installation is crucial for proper operation.

Verify that the Steering Angle Sensor is properly installed. Refer to **INSTALLATION** .

Is the Steering Angle Sensor properly installed?

Yes

Replace the Steering Angle Sensor and clear offsets by initializing ECU with wheels pointing straight ahead, in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Repair as necessary and clear offsets by initializing ECU with wheels pointing straight ahead.
Perform **ABS VERIFICATION TEST**.

C1242-G SENSOR INPUT SIGNAL PERFORMANCE

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

When Monitored:

Continuously, with ignition on and vehicle speed present.

Set Condition:

If the measured acceleration and calculated signal differs or have opposite signs.

Possible Causes
DYNAMICS SENSOR INSTALLATION
DYNAMICS SENSOR

Diagnostic Test

1) VERIFY DTC IS ACTIVE

Turn the ignition on.

With the scan tool, read and record ABS DTCs.

With the scan tool, read and record Environmental Data (EV Data).

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

Perform ECU initialization with drive test. Perform **ABS VERIFICATION TEST**.

WARNING: To avoid personal injury or death, check brake capability is available before road testing.

Test drive the vehicle by turning the vehicle left or right in a curving manner at a velocity greater than 20 km/hr (12 m.p.h.).

Park the vehicle.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic proceduren.

2) CHECK THE DYNAMICS SENSOR INSTALLATION

NOTE: Dynamics Sensor installation and mounting bolt torque is crucial for proper operation.

Turn the ignition off.

Check the Dynamics Sensor for damaged, modified, and bent mounting brackets.

Check the Dynamics Sensor mounting bolts for a loose or over tightened condition.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Replace the Dynamics Sensor in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

C1243-G SENSOR NOT INITIALIZED

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

When Monitored:

Once after ignition on.

Set Condition:

If the stored zero point calibration value of the longitudinal acceleration sensor is invalid.

Possible Causes
DYNAMICS SENSOR NOT CALIBRATED
DYNAMICS SENSOR
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) PERFORM ECU INITIALIZATION

Turn the ignition on.

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

WARNING: To avoid personal injury or death, check brake capability is available before road testing.

Perform ECU initialization with drive test. Perform **ABS VERIFICATION TEST**.

NOTE: The ECU Initialization process must include driving the vehicle into a 90° turn.

Park the vehicle.

Go to 2).

2) VERIFY IF DTC IS STILL ACTIVE

Cycle the ignition switch.

WARNING: To avoid personal injury or death, check brake capability is available before road testing.

Test drive the vehicle by turning the vehicle left or right in a curving manner at a velocity between 10 and 25 km/h (6 and 15 mph).

Park the vehicle.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

NOTE: Vehicles without a Dynamics Sensor replace Anti-Lock Brake Module.

Replace the Dynamics Sensor or Anti-Lock Brake Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Perform the **ABS INTERMITTENT CONDITION** procedure.

C2100-BATTERY VOLTAGE LOW

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

When Monitored:

With the ignition on.

Set Condition:

If the Anti-Lock Brakes Module detects system voltage is below 9.5 volts.

Possible Causes
ECM OR PCM DTCs PRESENT
VEHICLE BATTERY/CHARGING SYSTEM
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) DTCS IN THE PCM

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

Turn the ignition on.

With the scan tool, read and record DTCs from the PCM.

With the scan tool, read and record Freeze Frame information.

With the scan tool, erase DTCs.

Start the engine.

With the scan tool, read and record DTCs.

With the scan tool read DTCs from the PCM.

Are any charging system codes present?

Yes

Repair the charging system DTC in the PCM.
Perform **ABS VERIFICATION TEST**.

No

Go to 2).

2) CHARGING SYSTEM FAILURE

Start the engine.

Connect voltmeter to vehicle battery.

Is the vehicle battery voltage under 8.2 volts?

No

Perform the **ABS INTERMITTENT CONDITION** procedure.

Yes

Repair the charging system per service information.
Perform **ABS VERIFICATION TEST**.

C2101-BATTERY VOLTAGE HIGH

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

When Monitored:

With the ignition on.

Set Condition:

If the Anti-Lock Brakes Module detects system voltage is above 17 volts.

Possible Causes
ECM/PCM DTCs PRESENT
VEHICLE BATTERY/CHARGING SYSTEM
ANTI-LOCK BRAKES MODULE

Diagnostic Test

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

Turn the ignition on.

With the scan tool, read and record DTCs from the ECM/PCM.

With the scan tool, read and record Freeze Frame information.

With the scan tool, erase DTCs.

Start the engine.

With the scan tool, read and record DTCs.

With the scan tool read DTCs from the PCM.

Are any charging system codes present?

Yes

Repair the charging system DTC in the ECM/PCM.
Perform **POWERTRAIN VERIFICATION TEST** .

No

Go to 2).

2) CHARGING SYSTEM FAILURE

Start the engine.

Connect voltmeter to vehicle battery.

Is the vehicle battery voltage over 16.8 volts?

No

Go to 3).

Yes

Repair the charging system per service information.
Perform **ABS VERIFICATION TEST**.

3) CHARGING POWER SUPPLY VOLTAGE

With a scan tool read Power Supply Voltage.

Is Power Supply Voltage over 16.8 volts?

No

Perform the **ABS INTERMITTENT CONDITION** procedure.
Refer to the .

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

C2111-SENSOR SUPPLY 1 VOLTAGE CIRCUIT LOW

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

When Monitored:

With the ignition on.

Set Condition:

If the Anti-Lock Brakes Module detects that the supply voltage for external analog sensors is out of range.

Possible Causes
ANTI-LOCK BRAKES MODULE
HYDRAULIC CONTROL UNIT (PRESSURE SENSOR)

Diagnostic Test

1) REPLACE ANTI-LOCK BRAKES MODULE & VERIFY IF DTC IS STILL ACTIVE

Turn the ignition off.

Replace the Anti-Lock Brakes Module in accordance with the Service Information.

Turn the ignition on.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Replace the Hydraulic Control Unit in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

C2112-SENSOR SUPPLY 1 VOLTAGE CIRCUIT HIGH

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

When Monitored:

With the ignition on.

Set Condition:

If the Anti-Lock Brakes Module detects that the supply voltage for external analog sensors is out of range.

Possible Causes
ANTI-LOCK BRAKES MODULE HYDRAULIC CONTROL UNIT (PRESSURE SENSOR)

Diagnostic Test

1) REPLACE ANTI-LOCK BRAKES MODULE & VERIFY IF DTC IS STILL ACTIVE

Turn the ignition off.

Replace the Anti-Lock Brakes Module in accordance with the Service Information. Perform ABS VERIFICATION TEST. See **STANDARD PROCEDURE**.

Turn the ignition on.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Replace the Hydraulic Control Unit in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

C2114-DYNAMICS SENSOR SUPPLY VOLTAGE LOW

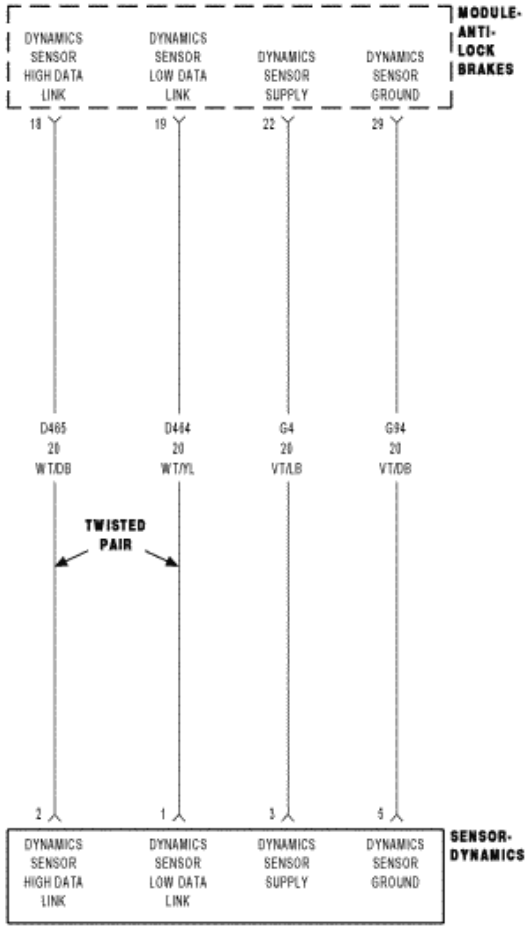


Fig. 49: Dynamics Sensor Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

With the ignition on.

Set Condition:

If the Dynamics Sensor status changes from initialized to not initialized due to low voltage on the (G4) Dynamics Sensor Supply circuit.

Possible Causes
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
(G4) DYNAMICS SENSOR SUPPLY CIRCUIT HIGH RESISTANCE
(G94) DYNAMICS SENSOR GROUND CIRCUIT HIGH RESISTANCE
DYNAMICS SENSOR
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) VERIFY DTC IS ACTIVE

Turn the ignition on.

With the scan tool, read and record ABS DTCs.

With the scan tool, read and record Environmental Data (EV Data).

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

2) INSPECT RELATED WIRING HARNESS, TERMINALS, & CONNECTORS

Turn the ignition off.

Check all related wiring for pinched, chafed, pierced, and partially broken wires.

Check all related connectors for broken, bent, pushed out, and corroded terminals.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) CHECK (G4) DYNAMICS SENSOR SUPPLY CIRCUIT & (G94) DYNAMICS SENSOR GROUND CIRCUIT FUNCTION

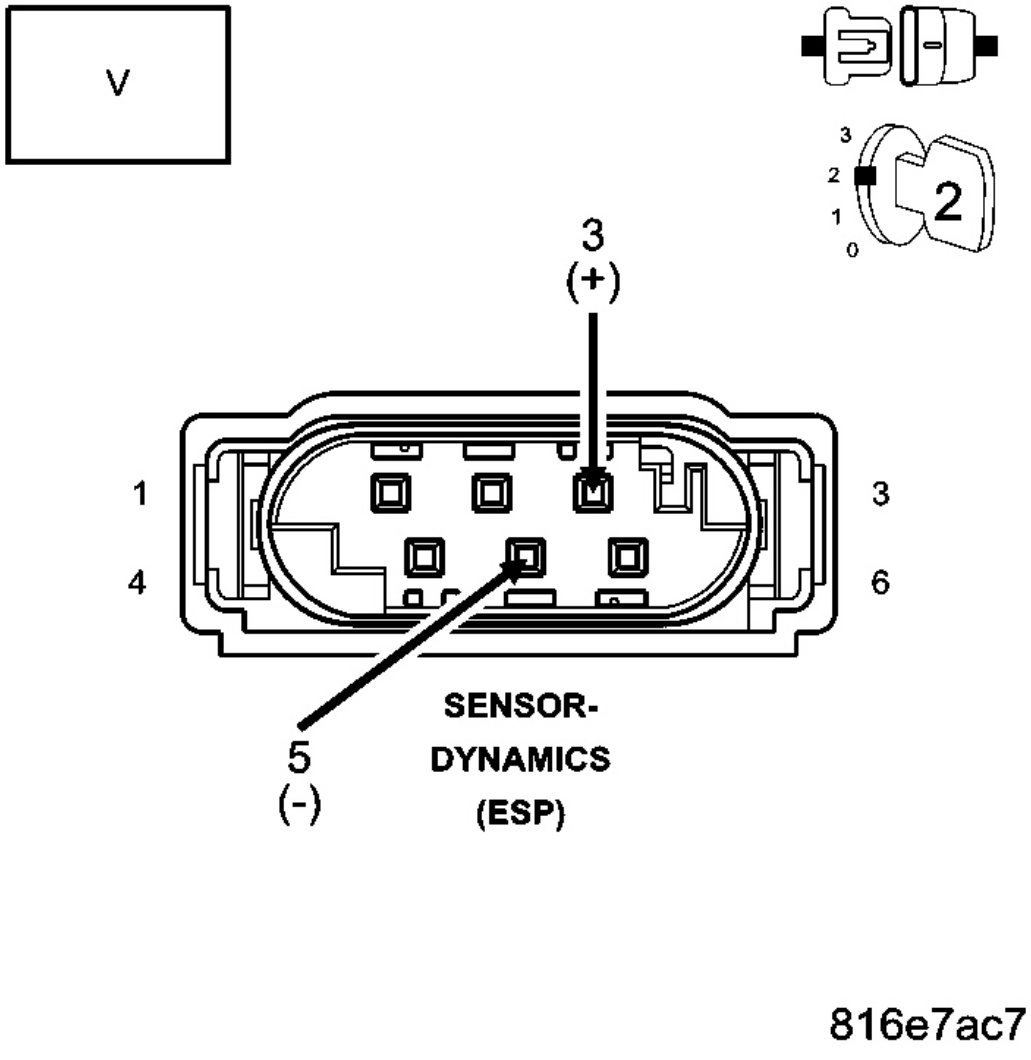


Fig. 50: Measuring Voltage Between (G4) Dynamics Sensor Supply Circuit And (G94) Dynamics Sensor Ground Circuit
Courtesy of CHRYSLER LLC

Disconnect the Dynamics Sensor harness connector.

Turn the ignition on.

Measure the voltage between the (G4) Dynamics Sensor Supply Circuit and the (G94) Dynamics Sensor Ground Circuit.

Is the voltage above 10.5 volts?

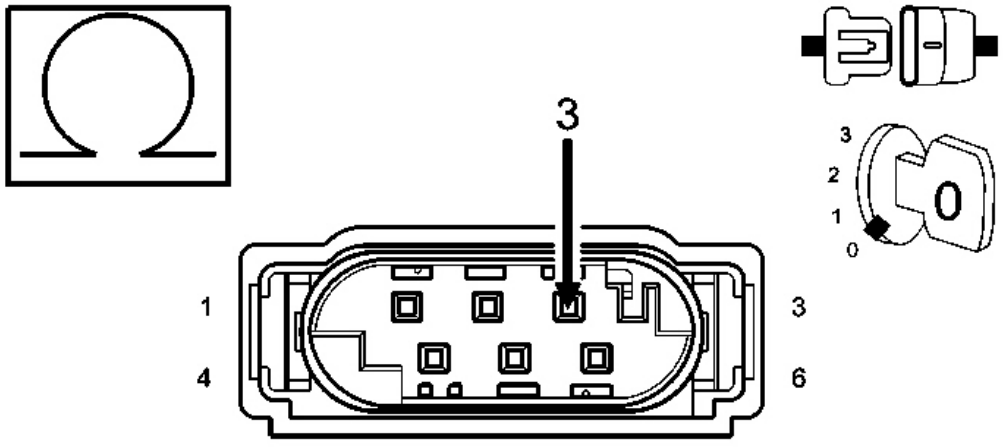
Yes

Replace the Dynamics Sensor in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

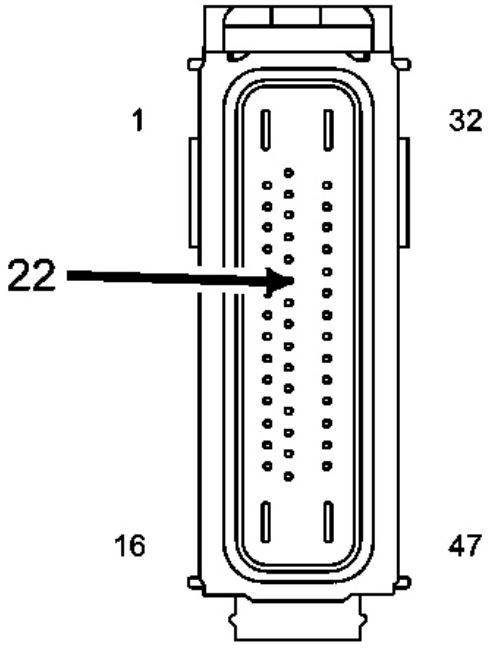
No

Go to 4).

4) CHECK (G4) DYNAMICS SENSOR SUPPLY CIRCUIT FOR HIGH RESISTANCE



SENSOR-
DYNAMICS
(ESP)



MODULE-
ANTILOCK
BRAKES

816e79b7

Fig. 51: Measuring Resistance Of (G4) Dynamics Sensor Supply Circuit Between Dynamics Sensor Harness Connector And Anti-Lock Brakes Module Harness Connector
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Anti-Lock Brakes Module harness connector.

Measure the resistance of the (G4) Dynamics Sensor Supply circuit between the Dynamics Sensor harness connector and the Anti-Lock Brakes Module harness connector.

Is the resistance below 5.0 ohms?

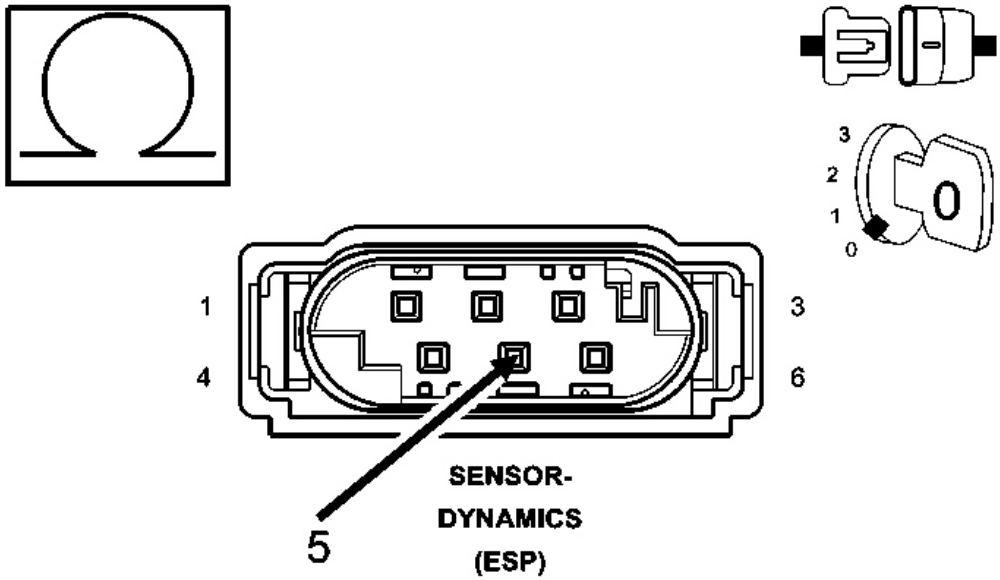
Yes

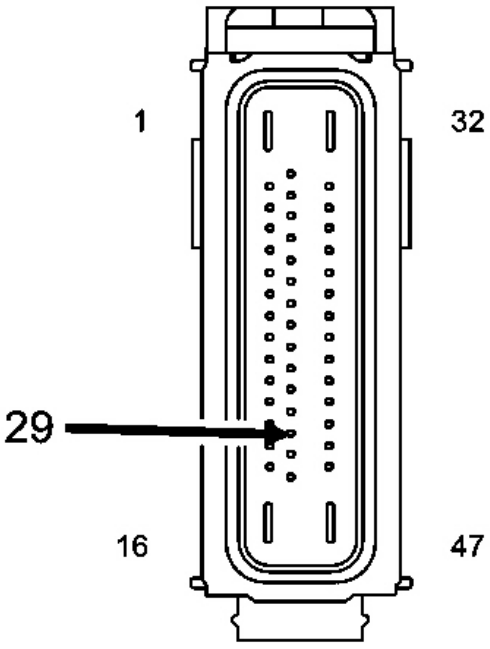
Go to 5).

No

Repair the (G4) Dynamics Sensor Supply circuit for high resistance.
Perform **ABS VERIFICATION TEST**.

5) CHECK (G94) DYNAMICS SENSOR GROUND CIRCUIT FOR HIGH RESISTANCE


3
2
1
0
1
3
4
6
5
SENSOR-
DYNAMICS
(ESP)


1
32
29
16
47
MODULE-
ANTILOCK
BRAKES

816e79bb

Fig. 52: Measuring Resistance Of (G94) Dynamics Sensor Ground Circuit Between Dynamics Sensor Harness Connector And Anti-Lock Brakes Module Harness Connector
Courtesy of CHRYSLER LLC

Measure the resistance of the (G94) Dynamics Sensor Ground circuit between the Dynamics Sensor harness connector and the Anti-Lock Brakes Module harness connector.

Is the resistance below 5.0 ohms?

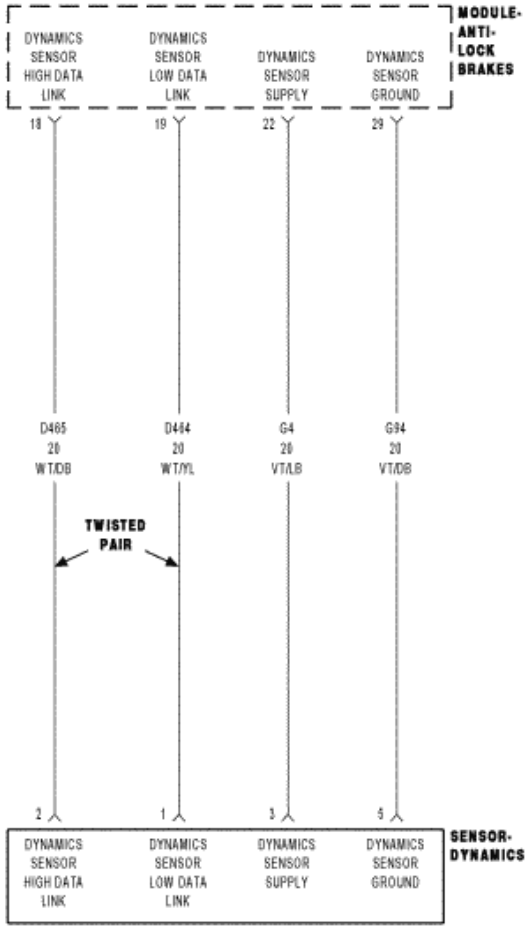
Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Repair the (G94) Dynamics Sensor Ground circuit for high resistance.
Perform **ABS VERIFICATION TEST**.

C2115-DYNAMICS SENSOR SUPPLY VOLTAGE HIGH



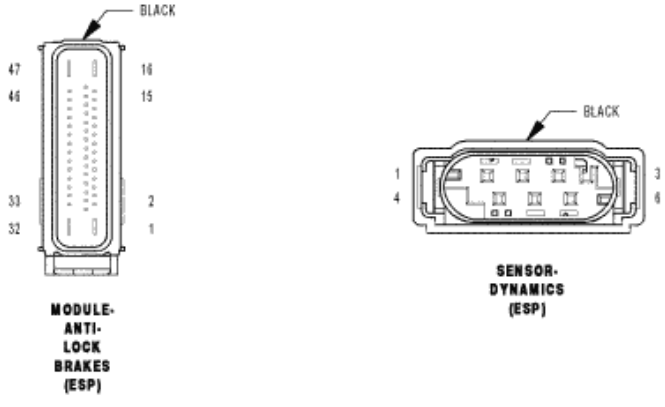


Fig. 53: Dynamics Sensor Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

Upon ignition on, prior to switching the (G4) Dynamics Sensor Supply circuit power on.

Set Condition:

If the Anti-Lock Brakes Module detects voltage on the (G4) Dynamics Sensor Supply circuit when the circuit's power is turned off.

Possible Causes
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
(G4) DYNAMICS SENSOR SUPPLY CIRCUIT SHORTED TO VOLTAGE
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) VERIFY DTC IS ACTIVE

Turn the ignition on.

With the scan tool, read and record ABS DTCs.

With the scan tool, read and record Environmental Data (EV Data).

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.
Refer to the .

2) INSPECT RELATED WIRING HARNESS, TERMINALS, & CONNECTORS

Turn the ignition off.

Check all related wiring for pinched, chafed, pierced, and partially broken wires.

Check all related connectors for broken, bent, pushed out, and corroded terminals.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) CHECK (G4) DYNAMICS SENSOR SUPPLY CIRCUIT SHORT FOR A SHORT TO VOLTAGE

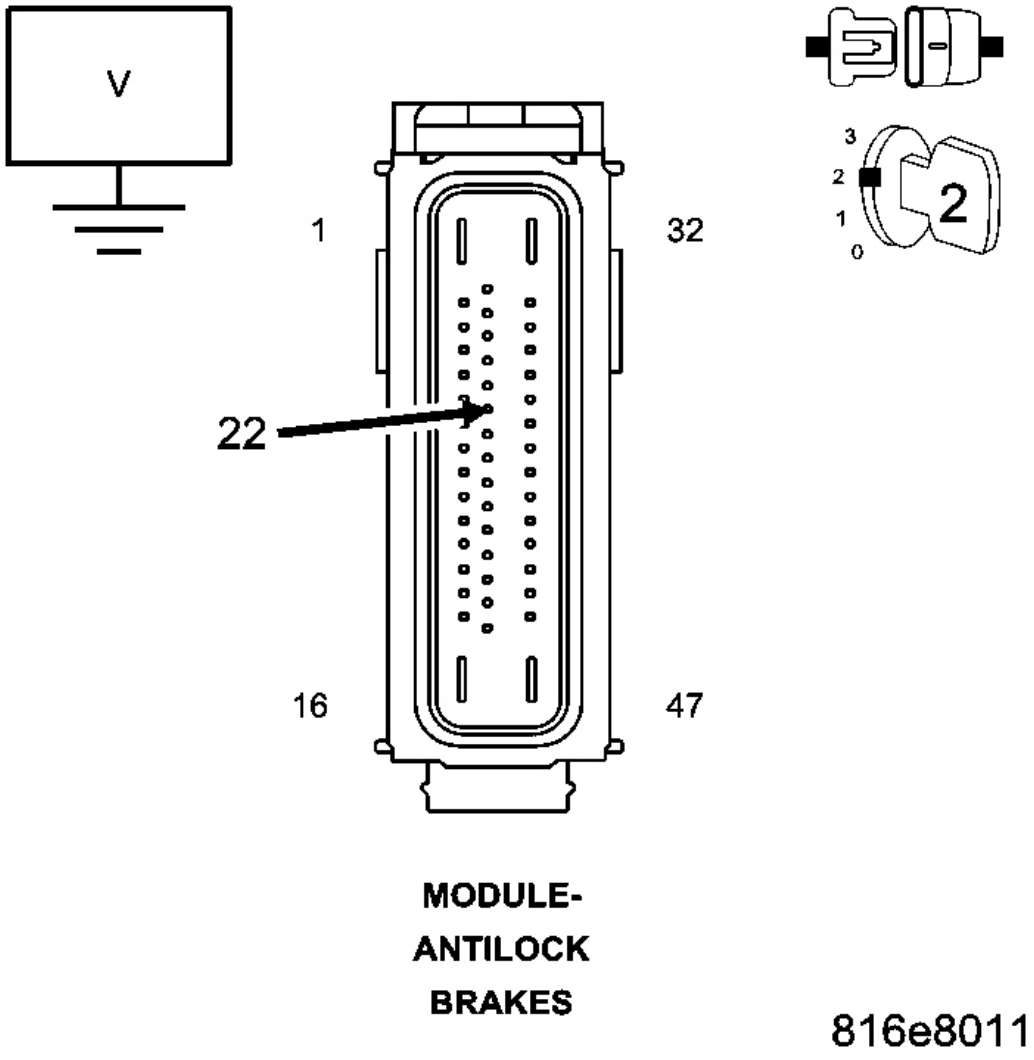


Fig. 54: Measuring Voltage Of (G4) Dynamics Sensor Supply Circuit
Courtesy of CHRYSLER LLC

Disconnect the Anti-Lock Brakes Module harness connector.

Turn the ignition on.

Measure the voltage of the (G4) Dynamics Sensor Supply Circuit.

Is the voltage above 0.2 volts?

Yes

Repair the (G4) Dynamics Sensor Supply Circuit for a short to voltage.
Perform **ABS VERIFICATION TEST**.

No

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

C2116-ABS PUMP MOTOR SUPPLY LOW VOLTAGE

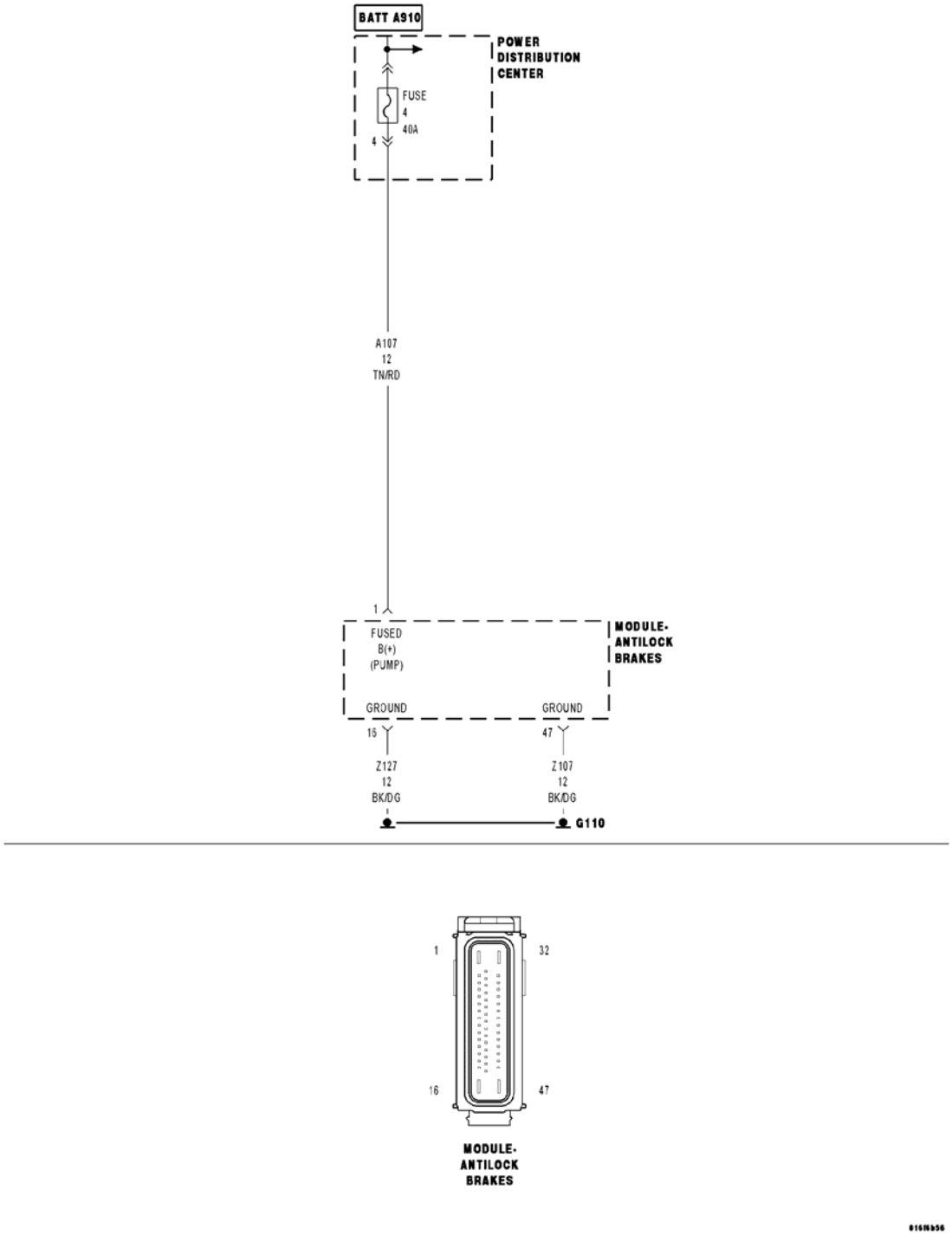


Fig. 55: Anti-Lock Brakes Module Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

With the ignition on and the ABS Pump Motor deactivated, but not if supply voltage faults are detected.

Or, if the control is switched off.

Set Condition:

If the Anti-Lock Brakes Module detects either a low voltage condition when the ABS Pump Motor is activated or deactivated or a high voltage condition when the ABS Pump Motor is deactivated.

Possible Causes
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
ABS PUMP MOTOR FUSE OPEN
(A107) FUSED B(+) CIRCUIT SHORTED TO GROUND, OPEN, OR HIGH RESISTANCE
(Z127) OR (Z107) GROUND CIRCUIT OPEN, OR HIGH RESISTANCE
ANTI-LOCK BRAKES MODULE
PUMP MOTOR (HYDRAULIC CONTROL UNIT)

Diagnostic Test

1) CHECK FOR A DTC C2116-ABS PUMP MOTOR SUPPLY LOW VOLTAGE

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

Turn the ignition on.

With the scan tool, record and erase DTCs.

Cycle the ignition switch from off to on.

Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven above 40 km/h (25 mph) for set conditions to be meet.

With the scan tool, read DTCs.

Does the scan tool display: C2116-ABS PUMP MOTOR SUPPLY LOW VOLTAGE?

Yes

Go to 2).

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

2) INSPECT RELATED WIRING HARNESS, TERMINALS, & CONNECTORS

Turn the ignition off.

Visually inspect the Anti-Lock Brakes Module harness connector and wiring harness for damage.

Check all related wiring for pinched, chafed, pierced, and partially broken wires.

Check all related connectors for broken, bent, pushed out, and corroded terminals.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) CHECK ABS PUMP MOTOR FUSE

Remove and visually inspect the ABS Pump Motor fuse.

Is the fuse open?

Yes

Go to 4).

No

Go to 5).

4) CHECK (A107) FUSED B(+) CIRCUIT FOR A SHORT TO GROUND

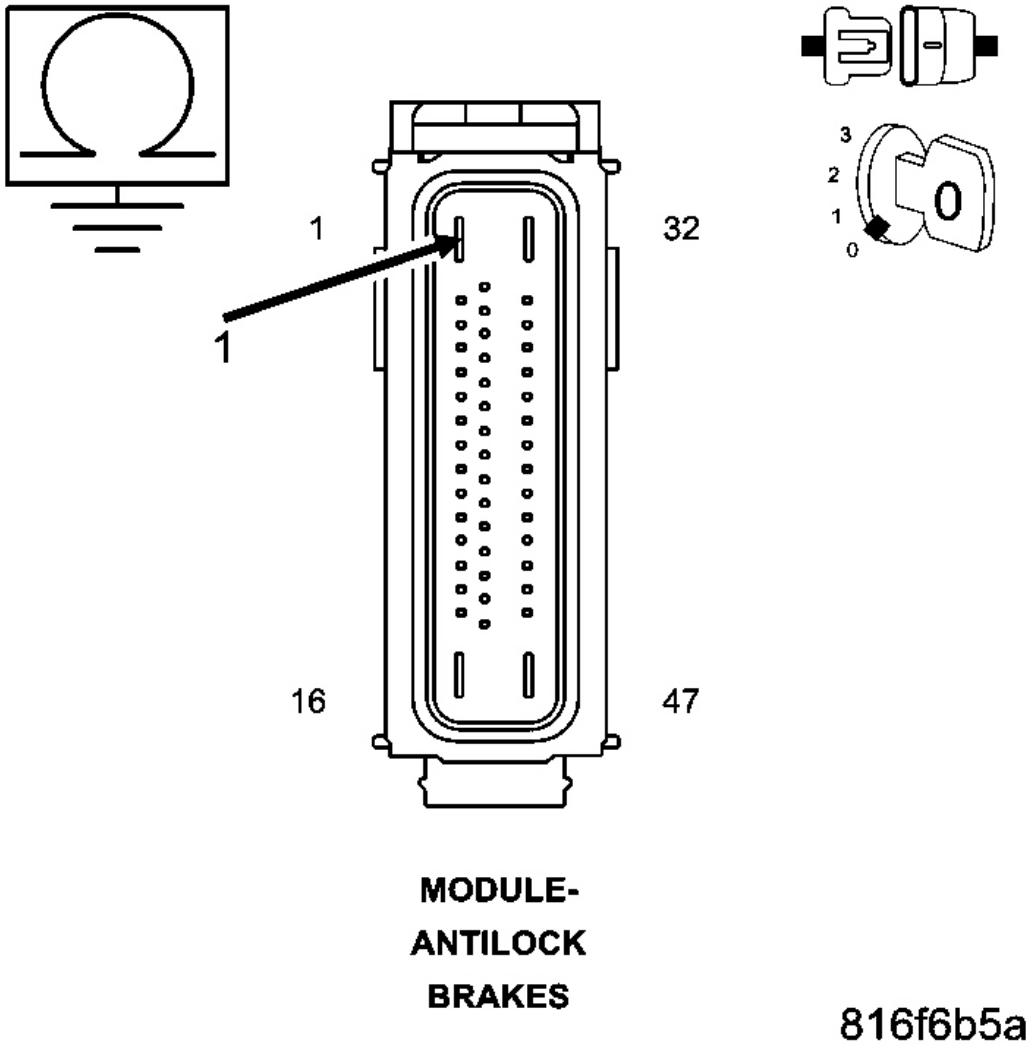


Fig. 56: Measuring Resistance Of (A107) Fused B(+) Circuit Between Ground And Anti-Lock Brakes Module Harness Connector
Courtesy of CHRYSLER LLC

Disconnect the Anti-Lock Brakes Module harness connector.

Measure the resistance of the (A107) Fused B(+) circuit between ground and the Anti-Lock Brakes Module harness connector.

Is the resistance below 10k ohms?

Yes

Repair the (A107) Fused B(+) circuit for a short to ground.
Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) CHECK (A107) FUSED B(+) CIRCUIT FOR AN OPEN OR HIGH RESISTANCE

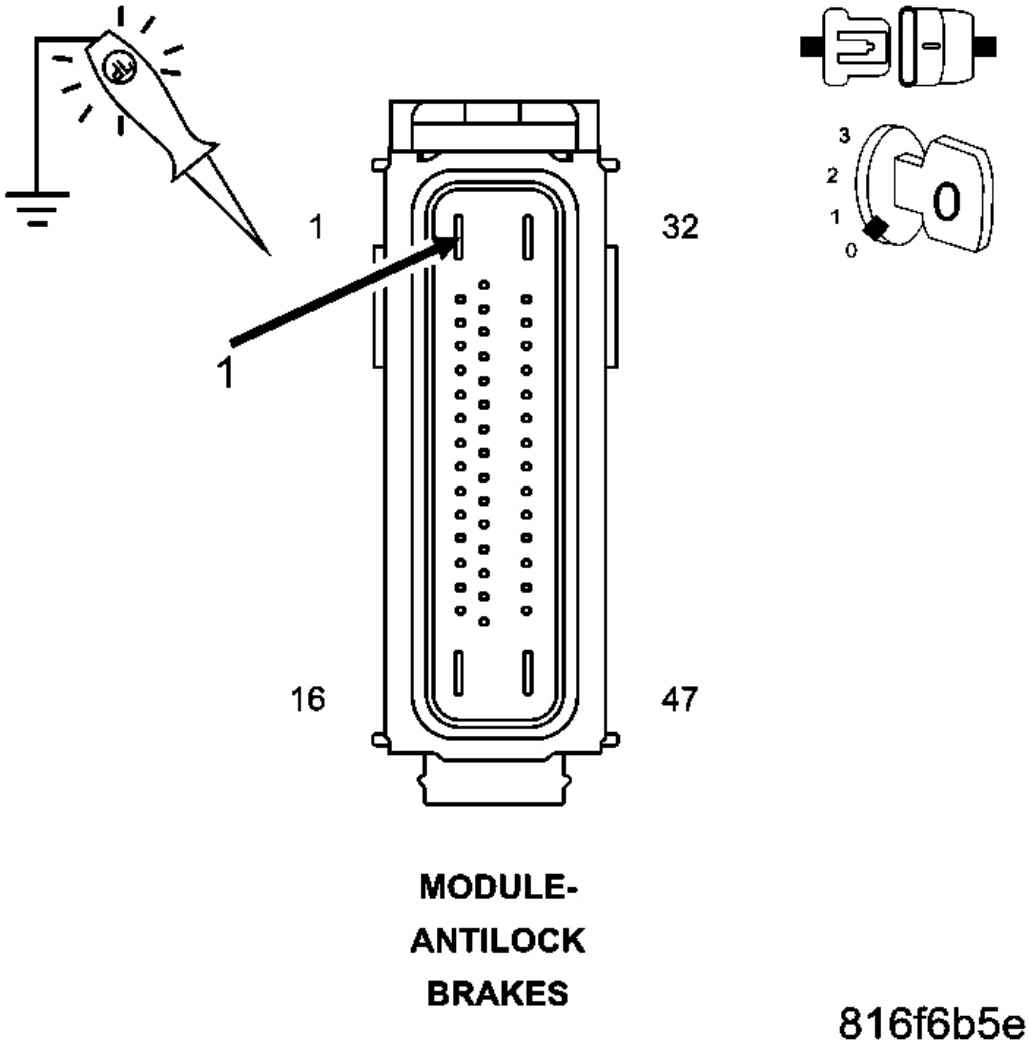


Fig. 57: Probing (A107) Fused B+ Circuit
Courtesy of CHRYSLER LLC

Replace the ABS Pump Motor fuse.

Using a 12-volt test light connected to ground, probe the (A107) Fused B(+) circuit.

NOTE: The test light should 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 (A107) Fused B(+) circuit for an open or high resistance.
Perform **ABS VERIFICATION TEST**.

6) CHECK (Z127) OR (Z107) GROUND CIRCUIT FOR AN OPEN OR HIGH RESISTANCE

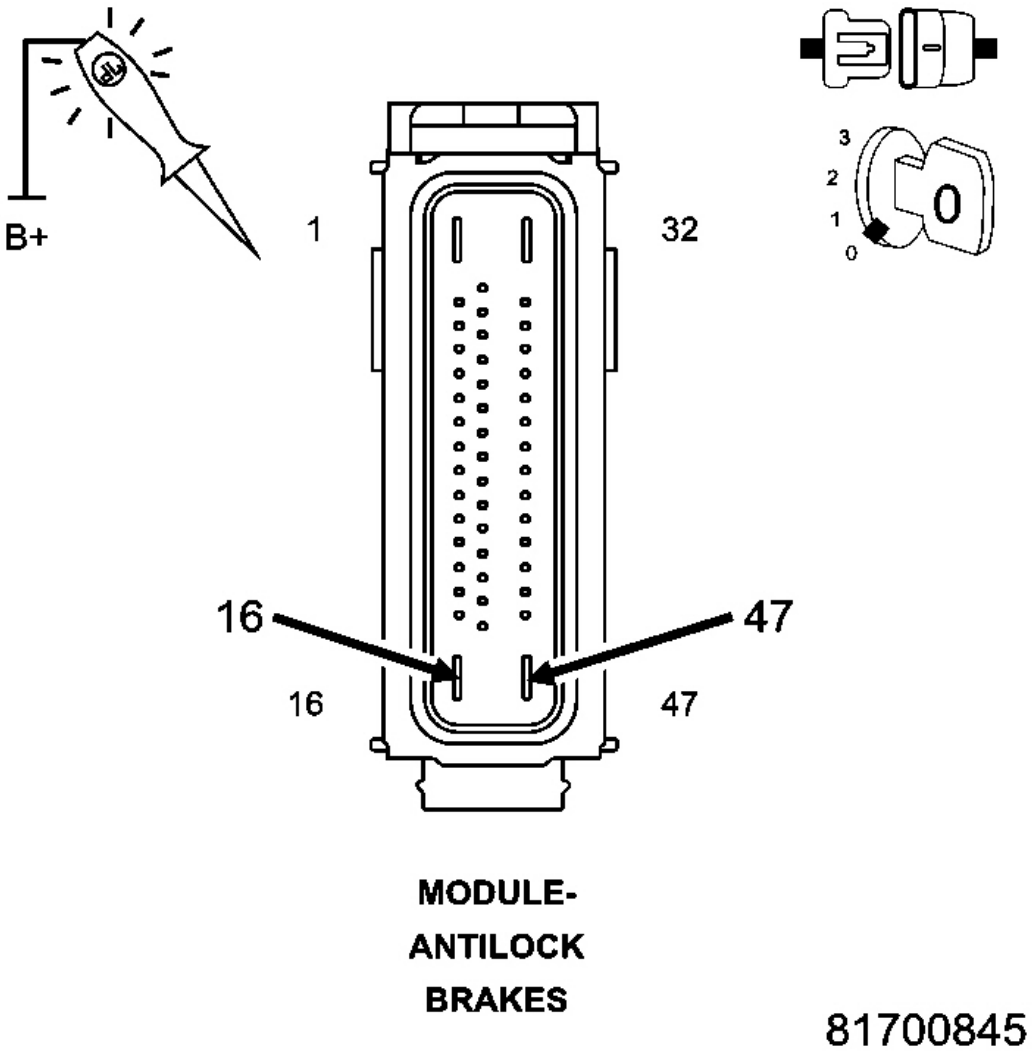


Fig. 58: Probing (Z127) And (Z107) Ground Circuit
Courtesy of CHRYSLER LLC

Using a 12-volt test light connected to 12 volts, probe the (Z127) and (Z107) Ground circuit.

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

Does the test light illuminate brightly on both circuits?

Yes

Go to 7).

No

Repair (Z127) or (Z107) circuit for an open or high resistance.
Perform **ABS VERIFICATION TEST**.

7) REPLACE ANTI-LOCK BRAKES MODULE & VERIFY IF DTC IS STILL ACTIVE

Replace the Anti-Lock Brakes Module in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

Turn the ignition on.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Replace the Hydraulic Control Unit in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

C2200-ANTI-LOCK BRAKE MODULE INTERNAL

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

When Monitored:

Ignition on. The Anti-Lock Brake Module monitors its internal microprocessors for correct operation.

Set Condition:

If the Anti-lock brake module detects an internal fault, the DTC is set.

Possible Causes
ABM - INTERNAL FAULT

Diagnostic Test

1) ABM INTERNAL FAILURE DTC PRESENT

Turn the ignition on.

With the scan tool, read DTCs.

With the scan tool, erase DTCs.

Turn the ignition off.

Turn the ignition on.

With the scan tool, read DTCs.

Does the scan tool display ANTI-LOCK BRAKE MODULE INTERNAL FAILURE?

Yes

Replace the Anti-Lock Brake Module in accordance with the Service Information. Perform **ABS VERIFICATION TEST**.

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

C2204-DYNAMICS SENSOR INTERNAL

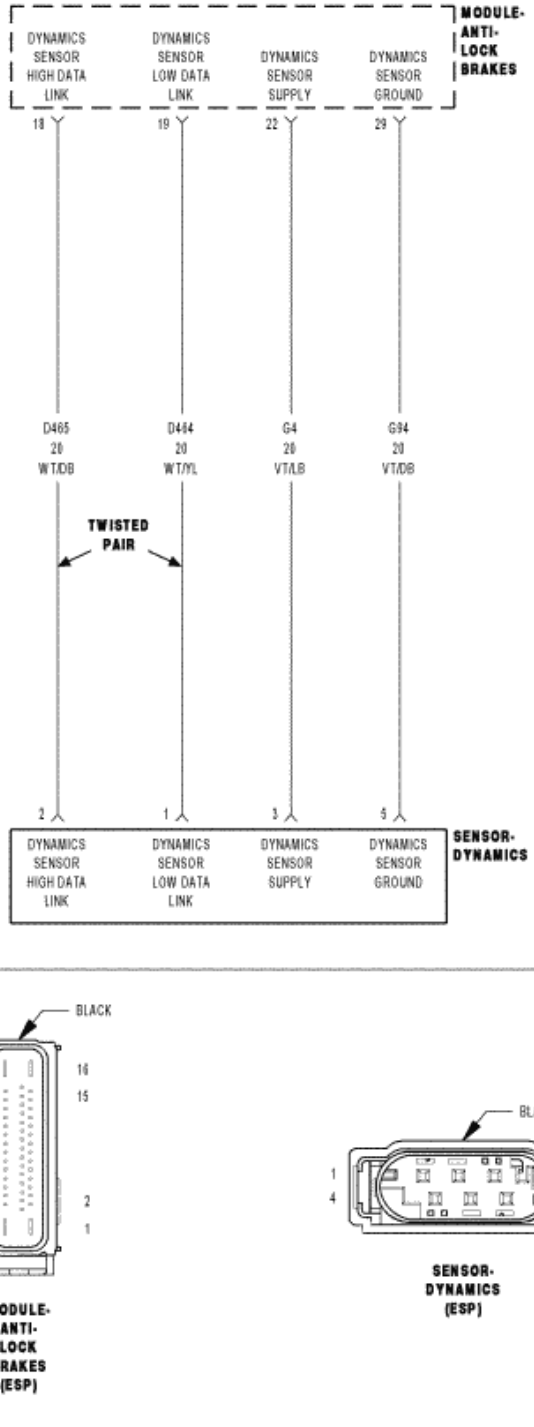


Fig. 59: Dynamics Sensor Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

Continuously, with ignition on, until vehicle speed exceeds 20 km/h (12.4 mph) for the first time, but not if the sensor voltage is out of range.

Or, during diagnostic mode.

Or, if the monitoring was inhibited by a corresponding diagnostics command.

Or, if the vehicle speed has exceeded 20 km/h (12.4 mph) during the actual ignition cycle.

Or, if at least one over spinning wheel is detected.

Or, if one of the control functions is active.

Set Condition:

If the Anti-Lock Brakes Module detects that the Lateral Sensor signal is out of range.

Possible Causes
DYNAMICS SENSOR INSTALLATION
DYNAMICS SENSOR
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) VERIFY DTC IS ACTIVE

Turn the ignition on.

With the scan tool, read and record ABS DTCs.

With the scan tool, read and record Environmental Data (EV Data).

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

WARNING: Ensure brake capability is available before road testing.

Test drive the vehicle by turning the vehicle left or right in a curving manner at a velocity between 10 and 20 km/h (6 and 12 mph).

Park the vehicle.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

2) CHECK THE DYNAMICS SENSOR INSTALLATION

NOTE: Dynamics Sensor installation and mounting bolt torque is crucial for proper operation.

Turn the ignition off.

Check the Dynamics Sensor for damaged, modified, and bent mounting brackets.

Check the Dynamics Sensor mounting bolts for a loose or over tightened condition.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) DYNAMICS SENSOR

Connect all previously disconnected components and connectors.

WARNING: Ensure brake capability is available before road testing.

Replace the Dynamics Sensor in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

Did DTC C2204-DYNAMICS SENSOR INTERNAL reset?

Yes

Replace the Anti-Lock Brake Module
Perform **ABS VERIFICATION TEST**.

No

Repair is complete.

C2205-STEERING ANGLE SENSOR INTERNAL

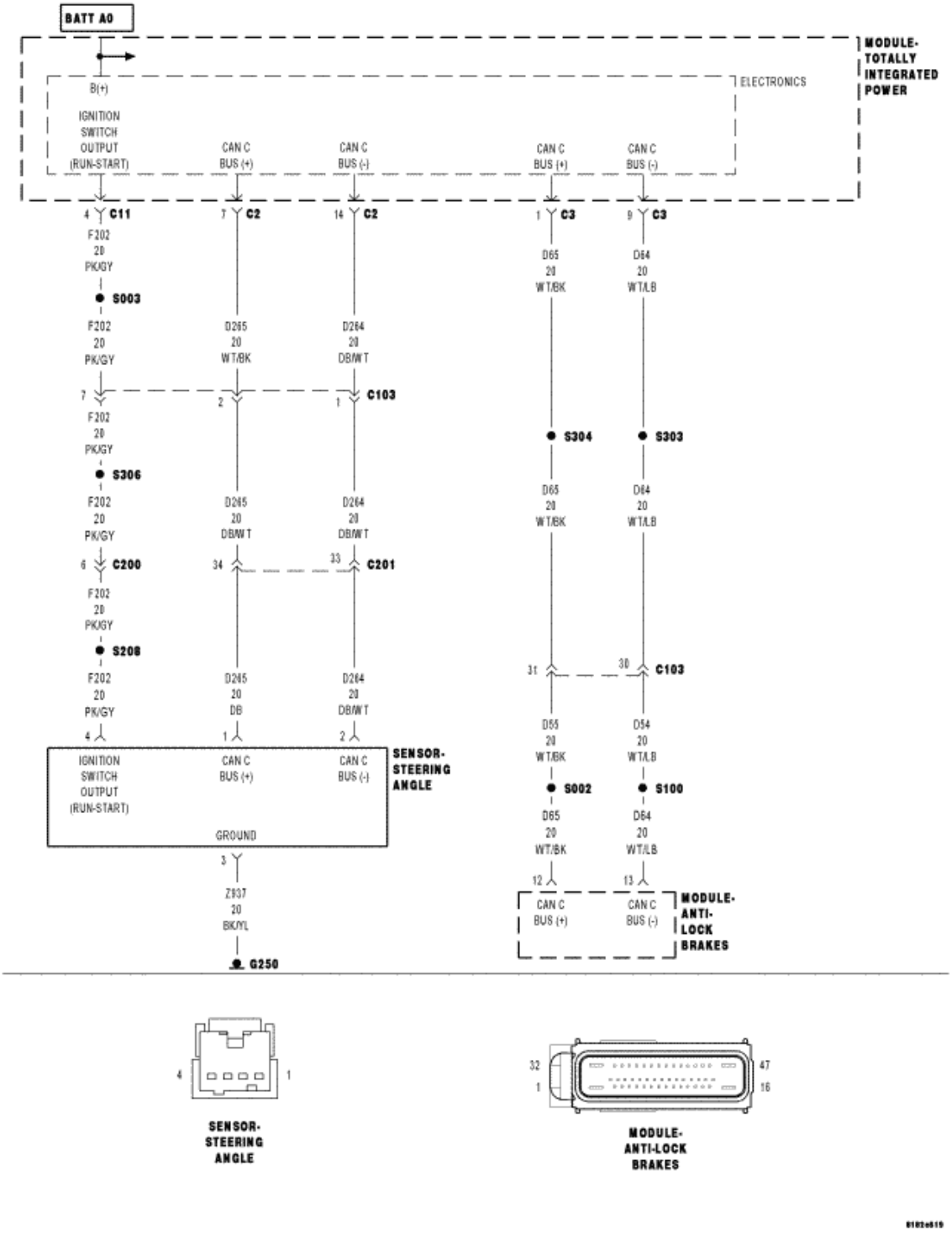


Fig. 60: Steering Angle Sensor Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

With ignition on, but not if supply voltage faults are detected.

Set Condition:

If the Anti-Lock Brakes Module detects that the Steering Angle Sensor sends an internal failure message.

Possible Causes
STEERING ANGLE SENSOR

Diagnostic Test

1) CHECK FOR A DTC C2205-STEERING ANGLE SENSOR INTERNAL

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

Turn the ignition on.

With the scan tool, read and record DTCs.

With the scan tool, read and record Freeze Frame information.

With the scan tool, erase DTCs.

WARNING: Ensure brake capability is available before road testing.

Start the vehicle and turn the wheel from lock to lock.

Test drive the vehicle by turning the vehicle left or right in a curving manner at a velocity between 10 and 25 km/h (6 and 15 mph).

Park the vehicle.

With the scan tool, read and record DTCs.

Does the scan tool display: C2205-STEERING ANGLE SENSOR INTERNAL?

Yes

Replace the Steering Angle Sensor in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Refer to the **ABS INTERMITTENT CONDITION** diagnostic procedure.

Perform **ABS VERIFICATION TEST**.

C2206-VEHICLE CONFIGURATION MISMATCH

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

When Monitored:

With the ignition on.

Set Condition:

When the Anti-Lock Brake Module detects the signal from the gateway module relevant for vehicle characteristic is missing or does not match for a period greater than the specified fault duration.

Possible Causes
TIPM/PCM NOT CONFIGURED CORRECTLY
ANTI-LOCK BRAKE MODULE
ANTI-LOCK BRAKE MODULE NOT INITIALIZED

Diagnostic Test

1) CHECK FOR A DTC C2206-VEHICLE CONFIGURATION MISMATCH

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

NOTE: This DTC will be active when a new module is installed until initialization is performed.

Turn the ignition on.

With the scan tool, read and record DTCs.

With the scan tool, read and record Freeze Frame information.

With the scan tool, erase DTCs.

Perform ECU initialization with drive test on ABM. Perform **ABS VERIFICATION TEST**.

Cycle the ignition switch from off to on.

With the scan tool, read and record DTCs.

Does the scan tool display: C2206-VEHICLE CONFIGURATION MISMATCH?

Yes

Go to 2).

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

2) VERIFY THAT THE TIPM/PCM IS CONFIGURED CORRECTLY

Turn the ignition on.

Check the following data to verify the TIPM/PCM is configured correctly. Engine Displacement (PCM), XWD 4x2, 4x4, all Wheel Drive, (TIPM), Axle ratio (TIPM), Vehicle Line (TIPM), Brake type 0= ABS 1=ESP (TIPM).

NOTE: The DTC will be active when a new controller is installed until initialization is performed.

Was the TIPM/PCM configured correctly?

Yes

Replace the Anti-Lock Brake Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Reprogram the appropriate module.
Perform **ABS VERIFICATION TEST**.

U0002-CAN C BUS OFF PERFORMANCE

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

When Monitored:

With the ignition on.

Set Condition:

The Anti-Lock Brake Module detects a corrupt CAN C Bus message.

Possible Causes
(D65) CAN C BUS (+) CIRCUIT SHORTED TO GROUND
(D64) CAN C BUS (-) CIRCUIT SHORTED TO GROUND

(D65) CAN C BUS (+) CIRCUIT SHORTED TO VOLTAGE
(D64) CAN C BUS (-) CIRCUIT SHORTED TO VOLTAGE
(D65) CAN C BUS (+) CIRCUIT SHORTED TO (D64) CAN C BUS (-) CIRCUIT
ANTILOCK BRAKE MODULE
POWERTRAIN CONTROL MODULE
ENGINE CONTROL MODULE (DIESEL ONLY)
TRANSMISSION CONTROL MODULE
STEERING ANGLE SENSOR
AUTOMATIC SWAY BAR SYSTEM MODULE
WIRELESS CONTROL MODULE
OCCUPANT RESTRAINT CONTROLLER MODULE
OCCUPANT CLASSIFICATION MODULE
TOTALLY INTEGRATED POWER MODULE

Diagnostic Test

1) TEST FOR INTERMITTENT CONDITION

Turn the ignition on.

With the scan tool, record and erase TIPM DTCs.

Cycle the ignition from on to off 3 times.

Turn the ignition on.

With the scan tool, read active TIPM DTCs.

Does the scan tool display U0002-CAN C BUS OFF PERFORMANCE as active?

Yes

Go to 2).

No

The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

2) ANTILOCK BRAKE MODULE - INTERNAL SHORT

Turn the ignition off.

Disconnect the Anti-Lock Brake Module harness connector.

Turn the ignition on.

With the scan tool, record and erase TIPM DTCs.

Cycle the ignition from on to off 3 times.

Turn the ignition on.

With the scan tool, read active TIPM DTCs.

Does the scan tool display U0002-CAN C BUS OFF PERFORMANCE as active?

Yes

Go to 3).

No

Inspect the wiring and connectors for damage or shorted circuits in accordance with the service information. If ok, replace and program the Anti-Lock Brake Module in accordance with the service information.

Perform **ABS VERIFICATION TEST**.

3) POWERTRAIN CONTROL MODULE - INTERNAL SHORT

Turn the ignition off.

Disconnect the Powertrain Control Module C1 harness connector.

Turn the ignition on.

With the scan tool, record and erase TIPM DTCs.

Cycle the ignition from on to off 3 times.

Turn the ignition on.

With the scan tool, read active TIPM DTCs.

Does the scan tool display U0002-CAN C BUS OFF PERFORMANCE as active?

Yes

Go to 4).

No

Inspect the wiring and connectors for damage or shorted circuits. If ok, replace and program the Powertrain Control Module in accordance with the service information.

Perform **POWERTRAIN VERIFICATION TEST** .

4) ENGINE CONTROL MODULE (DIESEL ONLY) - INTERNAL SHORT

Turn the ignition off.

NOTE: If vehicle is not equipped with this module, answer yes to the question.

Disconnect the Engine Control Module harness connectors.

Turn the ignition on.

With the scan tool, record and erase TIPM DTCs.

Cycle the ignition from on to off 3 times.

Turn the ignition on.

With the scan tool, read active TIPM DTCs.

Does the scan tool display U0002-CAN C BUS OFF PERFORMANCE as active?

Yes

Go to 5).

No

Inspect the wiring and connectors for damage or shorted circuits. If ok, replace and program the Engine Control Module in accordance with the service information.

Perform **PCM/ECM PROGRAMMING - GAS, POWERTRAIN VERIFICATION TEST** .

5) TRANSMISSION CONTROL MODULE - INTERNAL SHORT

Turn the ignition off.

NOTE: If vehicle is not equipped with this module, answer yes to the question.

Disconnect the Transmission Control Module harness connectors.

Turn the ignition on.

With the scan tool, record and erase TIPM DTCs.

Cycle the ignition from on to off 3 times.

Turn the ignition on.

With the scan tool, read active TIPM DTCs.

Does the scan tool display U0002-CAN C BUS OFF PERFORMANCE as active?

Yes

Go to 6).

No

Inspect the wiring and connectors for damage or shorted circuits. If ok, replace and program the Transmission Control Module in accordance with the service information.

Perform **POWERTRAIN VERIFICATION TEST** .

6) STEERING ANGLE SENSOR - INTERNAL SHORT

Turn the ignition off.

NOTE: If vehicle is not equipped with this module, answer yes to the question.

Disconnect the Steering Angle Sensor harness connector.

Turn the ignition on.

With the scan tool, record and erase TIPM DTCs.

Cycle the ignition from on to off 3 times.

Turn the ignition on.

With the scan tool, read active TIPM DTCs.

Does the scan tool display U0002-CAN C BUS OFF PERFORMANCE as active?

Yes

Go to 7).

No

Inspect the wiring and connectors for damage or shorted circuits. If ok, replace the Steering Angle Sensor in accordance with the service information.

Perform **ABS VERIFICATION TEST**.

7) AUTOMATIC SWAY BAR SYSTEM MODULE - INTERNAL SHORT

Turn the ignition off.

NOTE: If vehicle is not equipped with this module, answer yes to the question.

Disconnect the Automatic Sway Bar System Module harness connector.

Turn the ignition on.

With the scan tool, record and erase TIPM DTCs.

Cycle the ignition from on to off 3 times.

Turn the ignition on.

With the scan tool, read active TIPM DTCs.

Does the scan tool display U0002-CAN C BUS OFF PERFORMANCE as active?

Yes

Go to 8).

No

Inspect the wiring and connectors for damage or shorted circuits. If ok, replace the Automatic Sway Bar System Module in accordance with the service information.

Perform **BODY VERIFICATION TEST - VER 1** .

8) WIRELESS CONTROL MODULE - INTERNAL SHORT

Turn the ignition off.

NOTE: If vehicle is not equipped with this module, answer yes to the question.

Disconnect the Wireless Control Module harness connector.

Turn the ignition on.

With the scan tool, record and erase TIPM DTCs.

Cycle the ignition from on to off 3 times.

Turn the ignition on.

With the scan tool, read active TIPM DTCs.

Does the scan tool display U0002-CAN C BUS OFF PERFORMANCE as active?

Yes

Go to 9).

No

Inspect the wiring and connectors for damage or shorted circuits. If ok, replace the Wireless Control Module in accordance with the service information.

Perform **BODY VERIFICATION TEST - VER 1** .

9) OCCUPANT RESTRAINT CONTROLLER MODULE - INTERNAL SHORT

Turn the ignition off.

NOTE: If vehicle is not equipped with this module, answer yes to the question.

Disconnect the Occupant Restraint Controller Module harness connectors.

Turn the ignition on.

With the scan tool, record and erase TIPM DTCs.

Cycle the ignition from on to off 3 times.

Turn the ignition on.

With the scan tool, read active TIPM DTCs.

Does the scan tool display U0002-CAN C BUS OFF PERFORMANCE as active?

Yes

Go to 10).

No

Inspect the wiring and connectors for damage or shorted circuits. If ok, replace the Occupant Restraint Controller Module in accordance with the service information.

Perform **BODY VERIFICATION TEST - VER 1** .

10) OCCUPANT CLASSIFICATION MODULE - INTERNAL SHORT

Turn the ignition off.

NOTE: If vehicle is not equipped with this module, answer yes to the question.

Disconnect the Occupant Classification Module harness connectors.

Turn the ignition on.

With the scan tool, record and erase TIPM DTCs.

Cycle the ignition from on to off 3 times.

Turn the ignition on.

With the scan tool, read active TIPM DTCs.

Does the scan tool display U0002-CAN C BUS OFF PERFORMANCE as active?

Yes

Go to 11).

No

Inspect the wiring and connectors for damage or shorted circuits. If ok, replace the Occupant Classification Module in accordance with the service information.

Perform **BODY VERIFICATION TEST - VER 1** .

11) (D65) CAN C BUS (+) CIRCUIT SHORTED TO VOLTAGE

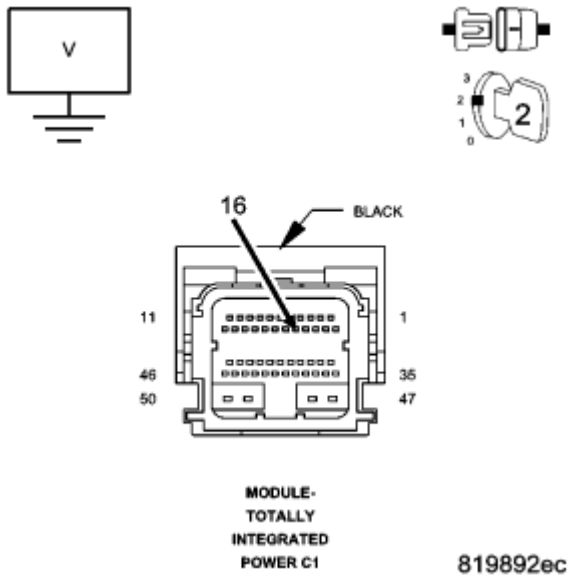


Fig. 61: Measuring Voltage Between (D65) CAN C Bus (+) Circuit And Ground
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the Totally Integrated Power Module C1 harness connector.

Turn the ignition on.

Measure the voltage between the (D65) CAN C Bus (+) circuit and ground.

Is there any voltage present?

Yes

Repair the (D65) CAN C Bus (+) circuit for a short to voltage.
Perform **BODY VERIFICATION TEST - VER 1** .

No

Go to 12).

12) (D64) CAN C BUS (-) CIRCUIT SHORTED TO VOLTAGE

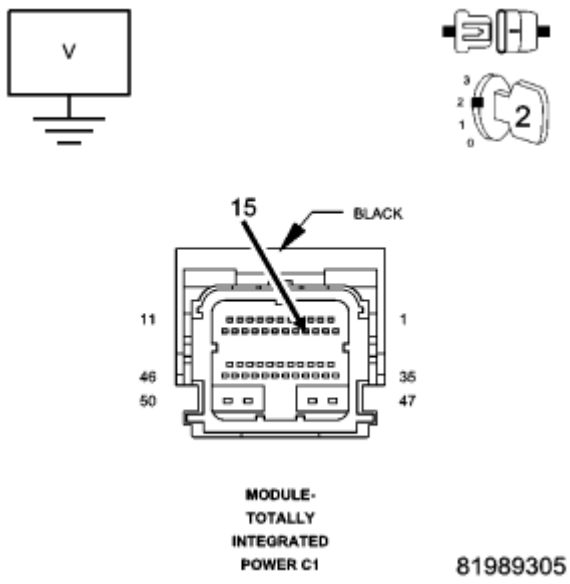


Fig. 62: Measuring Voltage Between (D64) CAN C Bus (-) Circuit And Ground
Courtesy of CHRYSLER LLC

Measure the voltage between the (D64) CAN C Bus (-) circuit and ground.

Is there any voltage present?

Yes

Repair the (D64) CAN C Bus (-) circuit for a short to voltage.
Perform **BODY VERIFICATION TEST - VER 1** .

No

Go to 13).

13) (D65) CAN C BUS (+) CIRCUIT SHORTED TO GROUND

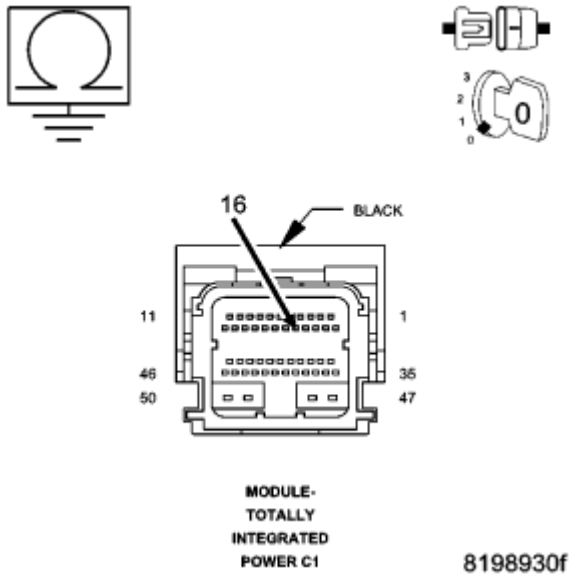


Fig. 63: Measuring Resistance Between Ground And (D65) CAN C Bus (+) Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Measure the resistance between ground and the (D65) CAN C Bus (+) circuit.

Is any resistance present?

Yes

Repair the (D65) CAN C Bus (+) circuit for a short to ground.
Perform **BODY VERIFICATION TEST - VER 1** .

No

Go to 14).

14) (D64) CAN C BUS (-) CIRCUIT SHORTED TO GROUND

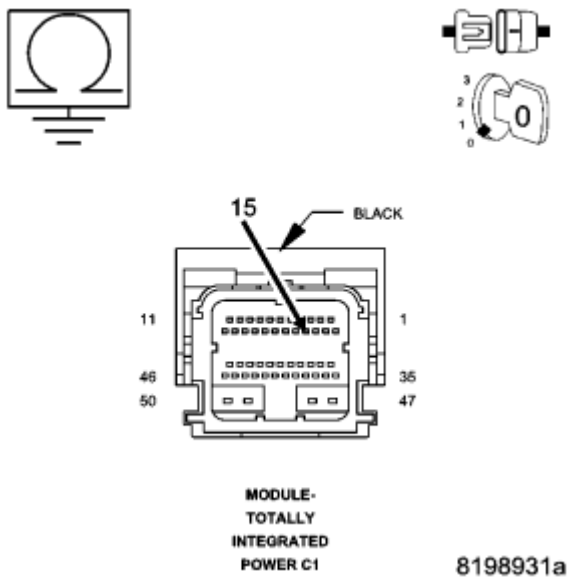


Fig. 64: Measuring Resistance Between Ground And (D64) CAN C Bus (-) Circuit
Courtesy of CHRYSLER LLC

Measure the resistance between ground and the (D64) CAN C Bus (-) circuit.

Is any resistance present?

Yes

Repair the (D64) CAN C Bus (-) circuit for a short to ground.
Perform **BODY VERIFICATION TEST - VER 1** .

No

Go to 15).

15) (D65) CAN C BUS (+) CIRCUIT SHORTED TO (D64) CAN C BUS (-) CIRCUIT

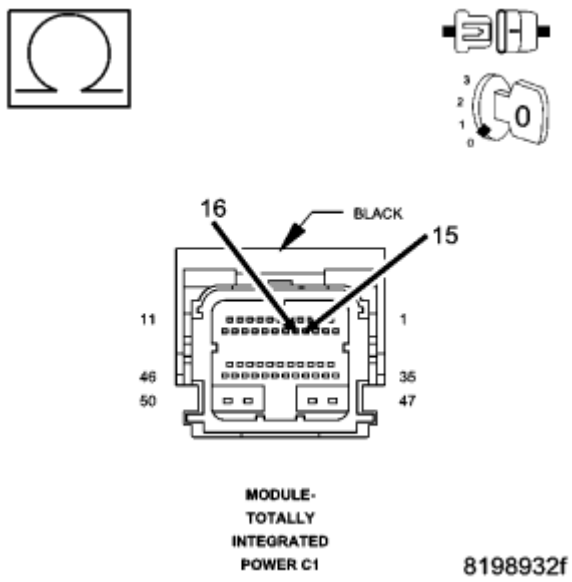


Fig. 65: Measuring Resistance Between (D65) CAN C Bus (+) Circuit And (D64) CAN C Bus (-) Circuit
Courtesy of CHRYSLER LLC

Measure the resistance between the (D65) CAN C Bus (+) circuit and the (D64) CAN C Bus (-) circuit.

Is any resistance present?

Yes

Repair the (D65) CAN C Bus (+) circuit for a short to the (D64) CAN C Bus (-) circuit.
Perform **BODY VERIFICATION TEST - VER 1** .

No

Inspect the wiring and connectors for damage or shorted circuits. If ok, replace and program the Totally Integrated Power Module in accordance with the service information.
Perform **BODY VERIFICATION TEST - VER 1** .

U0100-LOST COMMUNICATION WITH ECM/PCM

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

When Monitored:

With the ignition on
Battery voltage between 10 and 16 volts
IOD fuse installed

Set Condition:

If the Anti-Lock Brakes Module fails to receive bus messages from the ECM or PCM for approximately 500 ms.

Possible Causes
DTCs RELATED TO BATTERY VOLTAGE, IGNITION, OR VIN MESSAGES
CAN C BUS CIRCUITS OPEN OR SHORTED
ECM OR PCM POWER AND GROUND
ECM OR PCM
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) VERIFY DTC IS ACTIVE

NOTE: Verify the IOD fuse is installed and battery voltage is between 10 and 16 volts before proceeding.

Turn the ignition on.

With the scan tool, read and record ABS DTCs.

With the scan tool, read and record Environmental Data (EV Data).

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

2) CHECK FOR ANY OF THE FOLLOWING ACTIVE DTCs

With the scan tool, read all active DTCs from all CAN C Bus modules.

NOTE: Check for CAN C hardware electrical, VIN Missing/Mismatch, battery or

ignition related DTCs.

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

Yes

Diagnose and repair the DTC(s). Refer to the **DIAGNOSTIC CODE INDEX** .

No

Go to 3).

3) VERIFY THAT THE ECM OR PCM IS ACTIVE ON THE BUS

With the scan tool, select ECU View.

Verify that the ECM or PCM is active on the bus.

Is the ECM or PCM active on the bus?

Yes

Go to 4).

No

Perform the Stored Lost Communication test procedure. Refer to **DIAGNOSIS AND TESTING** .

4) CHECK FOR ADDITIONAL COMMUNICATION RELATED DTCs

With the scan tool, select Network View and select Advanced.

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

Yes

Replace/update the ECM or PCM in accordance with the service information.
Perform **POWERTRAIN VERIFICATION TEST** .

No

Replace the Anti-Lock Brakes Module in accordance with the service information.
Perform **ABS VERIFICATION TEST**.

U0101-LOST COMMUNICATION WITH TCM

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

When Monitored:

With the ignition on
Battery voltage between 10 and 16 volts
IOD fuse installed

Set Condition:

If the Anti-Lock Brakes Module fails to receive bus messages from the TCM for approximately 500 ms.

Possible Causes
DTCs RELATED TO BATTERY VOLTAGE, IGNITION, OR VIN MESSAGES
CAN C BUS CIRCUITS OPEN OR SHORTED
TCM POWER AND GROUND
PCM DTCs PRESENT
TCM
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) VERIFY DTC IS ACTIVE

NOTE: Verify the IOD fuse is installed and battery voltage is between 10 and 16 volts before proceeding.

NOTE: If present, diagnose and repair DTC U0002-CAN C BUS OFF PERFORMANCE, DTC or DTC U1502-IMPLAUSIBLE MESSAGE DATA LENGTH RECEIVED FROM TIPM before diagnosing this DTC.

Turn the ignition on.

With the scan tool, read and record ABS DTCs.

With the scan tool, read and record Environmental Data (EV Data).

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

Perform the Stored Lost Communication test procedure. Refer to **DIAGNOSTIC CODE INDEX** . Refer to **DIAGNOSIS AND TESTING** .

Perform **BODY VERIFICATION TEST - VER 1** .

2) CHECK FOR ANY OF THE FOLLOWING ACTIVE DTCs

With the scan tool, read all active DTCs from all CAN C Bus modules.

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

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

Yes

Diagnose and repair the DTC(s). Refer to the **DIAGNOSTIC CODE INDEX** .

No

Go to 3).

3) VERIFY THAT THE TCM IS ACTIVE ON THE BUS

With the scan tool, select ECU View.

Verify that the TCM is active on the bus.

Is the TCM active on the bus?

Yes

Go to 4).

No

Refer to the **DIAGNOSTIC CODE INDEX** for a no response test procedure.

Perform **BODY VERIFICATION TEST - VER 1** .

4) CHECK FOR ADDITIONAL COMMUNICATION RELATED DTCs

With the scan tool, select Network View and select Advanced.

Is there more than one module with active DTCs "Logged Against" the TCM?

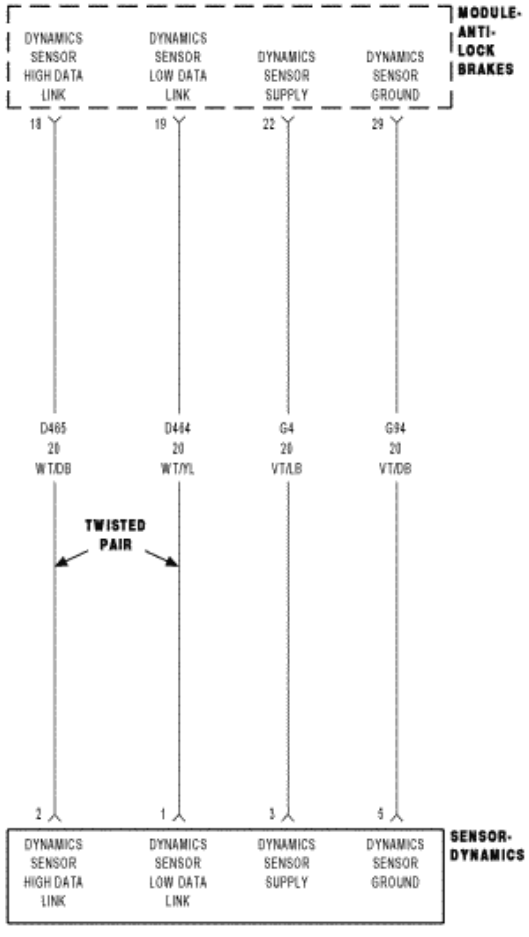
Yes

Replace/update the TCM in accordance with the service information.
Perform **BODY VERIFICATION TEST - VER 1** .

No

Replace the Anti-Lock Brakes Module in accordance with the service information.
Perform **BODY VERIFICATION TEST - VER 1** .

U0125-LOST COMMUNICATION WITH DYNAMICS SENSOR



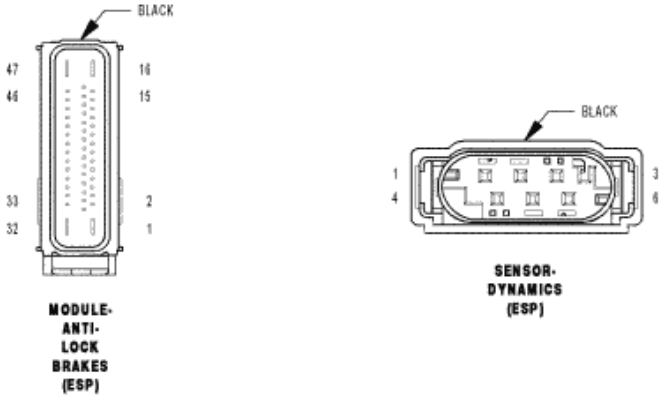


Fig. 66: Dynamics Sensor Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

With the ignition on.

Set Condition:

If the Anti-Lock Brakes Module fails to receive bus messages from the Dynamics Sensor.

Possible Causes
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
(D52) DYNAMICS SENSOR HIGH DATA LINK CIRCUIT SHORTED TO GROUND, SHORTED TO VOLTAGE, OR OPEN
(D51) DYNAMICS SENSOR LOW DATA LINK CIRCUIT SHORTED TO GROUND, SHORTED TO VOLTAGE, OR OPEN
DYNAMICS SENSOR
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) VERIFY DTC IS ACTIVE

NOTE: If present, diagnose and repair DTC C2114-DYNAMICS SENSOR SUPPLY VOLTAGE LOW or DTC C2115-DYNAMICS SENSOR SUPPLY VOLTAGE HIGH before proceeding.

Turn the ignition on.

With the scan tool, read and record ABS DTCs.

With the scan tool, read and record Environmental Data (EV Data).

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

2) INSPECT RELATED WIRING HARNESS, TERMINALS, & CONNECTORS

Visually inspect the related wiring harness. Look for any pinched, chafed, pierced, and partially broken wires.

Visually inspect the related wiring harness connectors. Look for broken, bent, pushed out, and corroded terminals.

Were any problems found?

Yes

Repair as necessary.

Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) CHECK THE (D52) DYNAMICS SENSOR HIGH DATA LINK CIRCUIT FOR A SHORT TO VOLTAGE

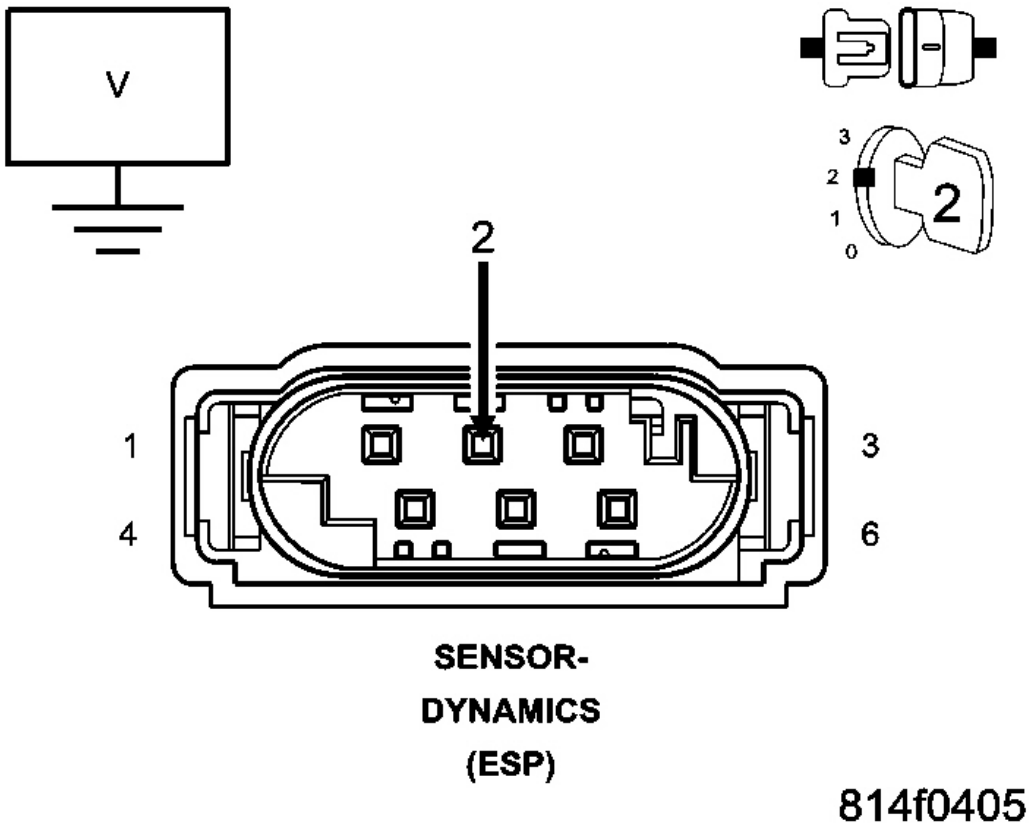


Fig. 67: Measuring Voltage Of (D52) Dynamics Sensor High Data Link Circuit
Courtesy of CHRYSLER LLC

Disconnect the Anti-Lock Brakes Module harness connector.

Disconnect the Dynamics Sensor harness connector.

Turn the ignition on.

Measure the voltage of the (D52) Dynamics Sensor High Data Link circuit.

Is there any voltage present?

Yes

Repair the (D52) Dynamics Sensor High Data Link circuit for a short to voltage. Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK THE (D52) DYNAMICS SENSOR HIGH DATA LINK CIRCUIT FOR A SHORT TO GROUND

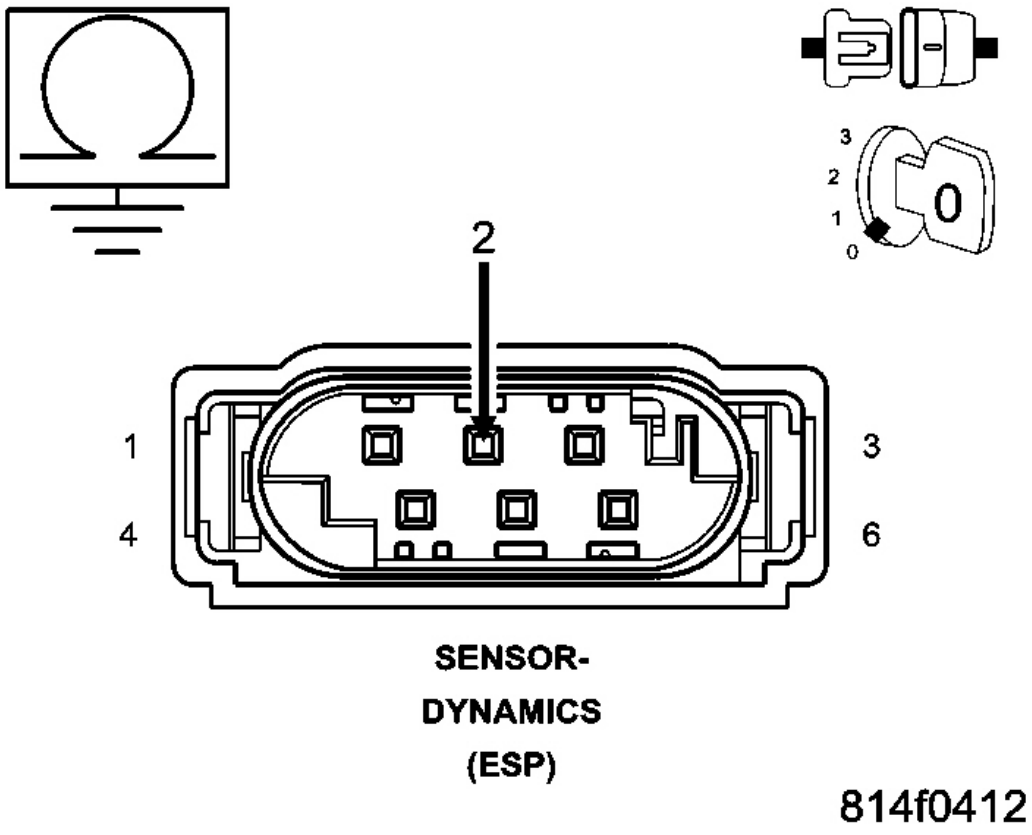


Fig. 68: Measuring Resistance Of (D52) Dynamics Sensor High Data Link Circuit Between Ground And Dynamics Sensor Harness Connector
Courtesy of CHRYSLER LLC

Turn the ignition off.

Measure the resistance of the (D52) Dynamics Sensor High Data Link circuit between ground and the Dynamics Sensor harness connector.

Is the resistance below 5.0 ohms?

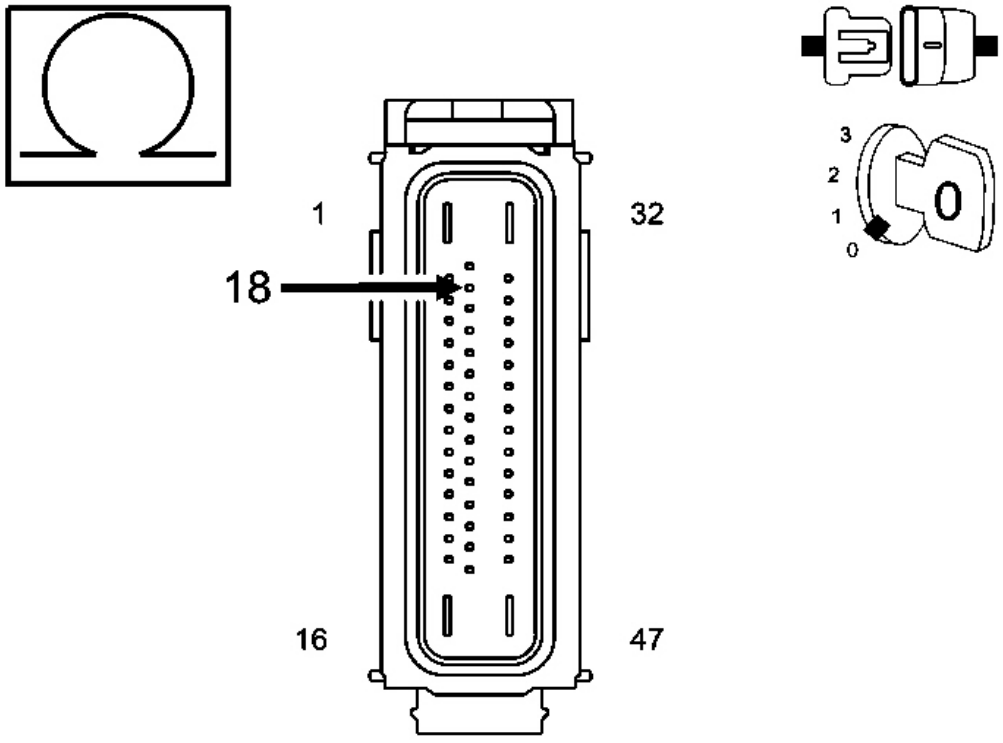
Yes

Repair the (D52) Dynamics Sensor High Data Link circuit for a short to ground.
Perform **ABS VERIFICATION TEST**.

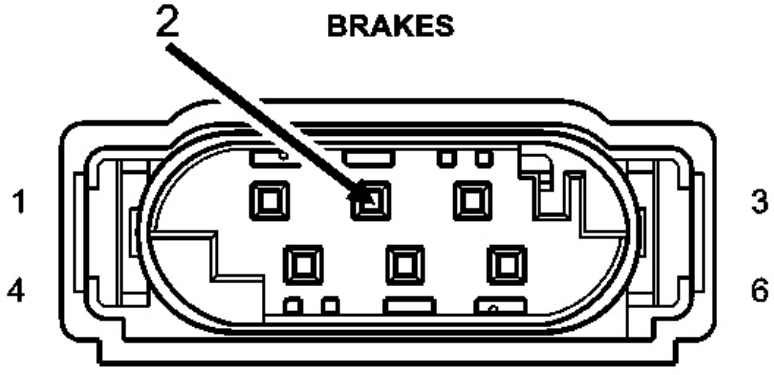
No

Go to 5).

5) CHECK THE (D52) DYNAMICS SENSOR HIGH DATA LINK CIRCUIT FOR AN OPEN



MODULE-
ANTILOCK
BRAKES



SENSOR-
DYNAMICS
(ESP)

816e6232

Fig. 69: Measuring Resistance Of (D52) Dynamics Sensor High Data Link Circuit Between Dynamics Sensor Harness Connector And Anti-Lock Brakes Module Harness Connector
Courtesy of CHRYSLER LLC

Measure the resistance of the (D52) Dynamics Sensor High Data Link circuit between the Dynamics Sensor harness connector and the Anti-Lock Brakes Module harness connector.

Is the resistance below 5.0 ohms?

Yes

Go to 6).

No

Repair the (D52) Dynamics Sensor High Data Link circuit for an open.

Perform **ABS VERIFICATION TEST**.

6) CHECK THE (D51) DYNAMICS SENSOR LOW DATA LINK CIRCUIT FOR A SHORT TO VOLTAGE

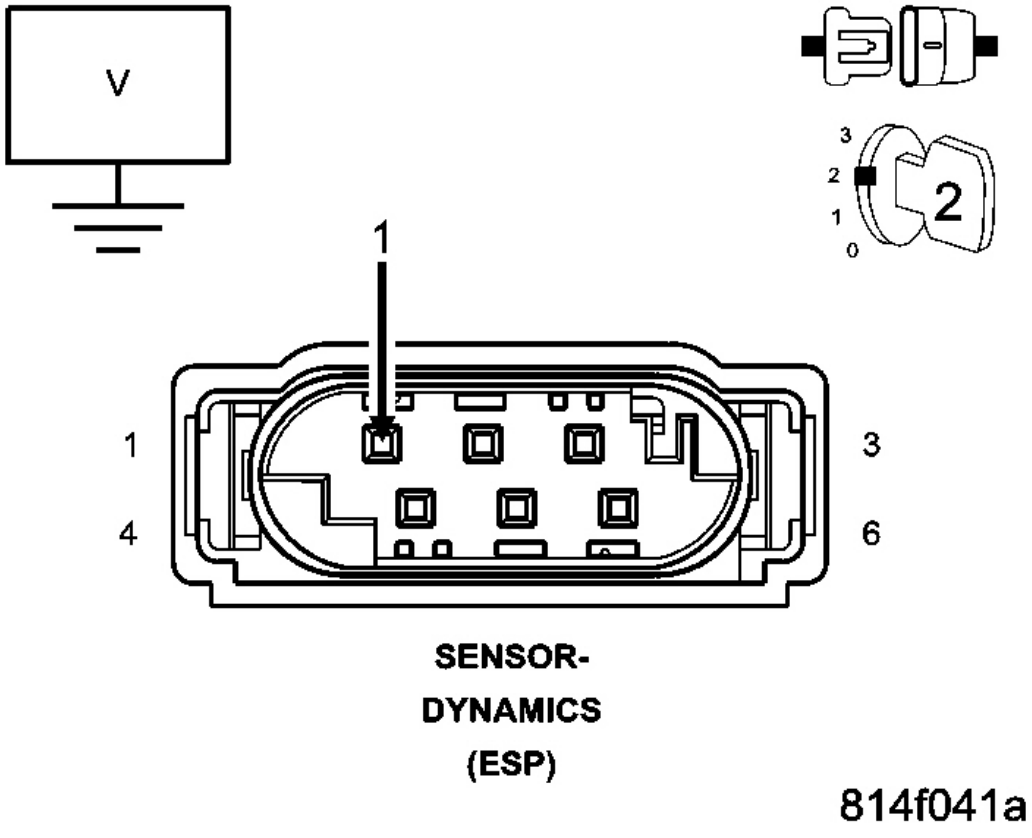


Fig. 70: Measuring Voltage Of (D51) Dynamics Sensor Low Data Link Circuit
Courtesy of CHRYSLER LLC

Turn the ignition on.

Measure the voltage of the (D51) Dynamics Sensor Low Data Link circuit.

Is there any voltage present?

Yes

Repair the (D51) Dynamics Sensor Low Data Link circuit for a short to voltage. Perform **ABS VERIFICATION TEST**.

No

Go to 7).

7) CHECK THE (D51) DYNAMICS SENSOR LOW DATA LINK CIRCUIT FOR A SHORT TO GROUND

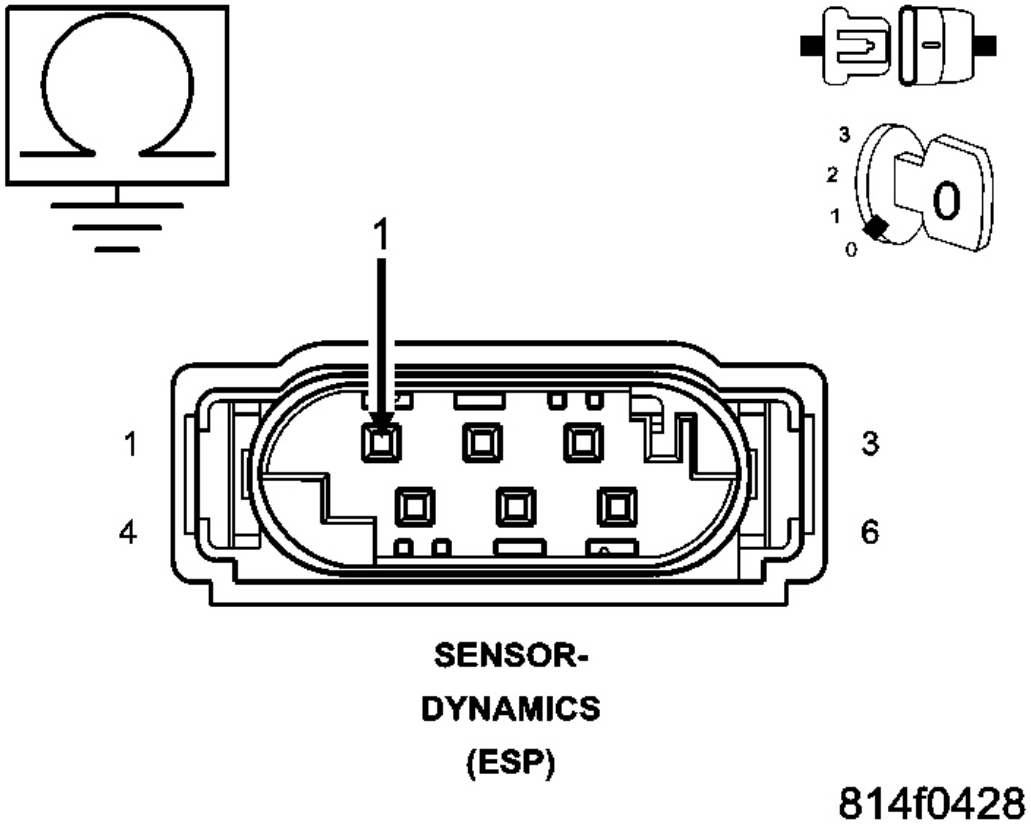


Fig. 71: Measuring Resistance Of (D51) Dynamics Sensor Low Data Link Circuit Between Ground And Dynamics Sensor Harness Connector
Courtesy of CHRYSLER LLC

Turn the ignition off.

Measure the resistance of the (D51) Dynamics Sensor Low Data Link circuit between ground and the Dynamics Sensor harness connector.

Is the resistance below 5.0 ohms?

Yes

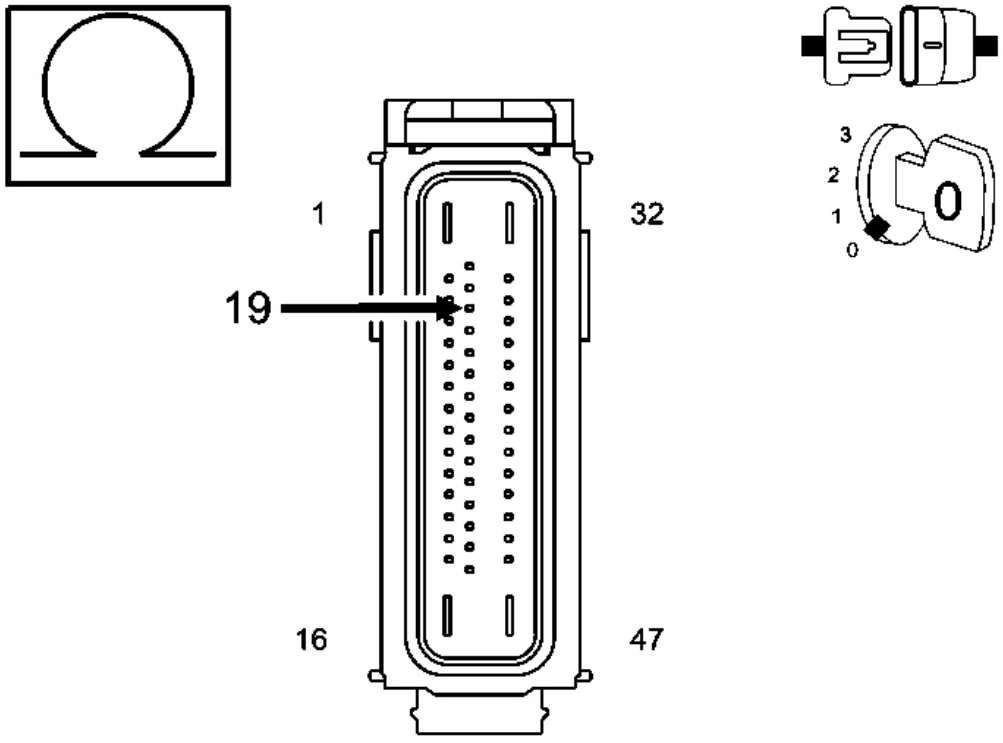
Repair the (D51) Dynamics Sensor Low Data Link circuit for a short to ground.

Perform **ABS VERIFICATION TEST**.

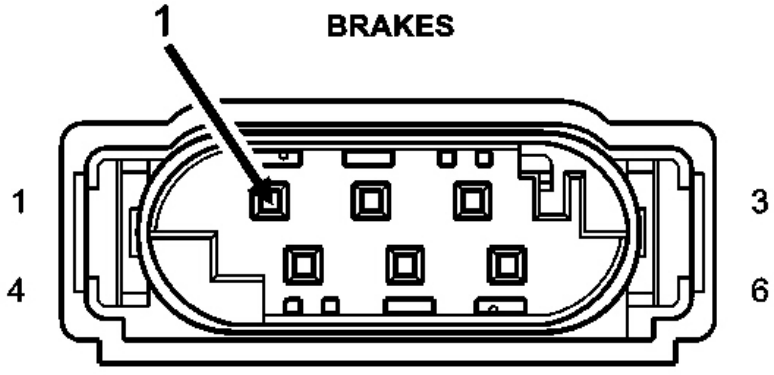
No

Go to 8).

8) CHECK THE (D51) DYNAMICS SENSOR LOW DATA LINK CIRCUIT FOR AN OPEN



MODULE-
ANTILOCK
BRAKES



SENSOR-
DYNAMICS
(ESP)

816e6236

Fig. 72: Measuring Resistance Of (D51) Dynamics Sensor Low Data Link Circuit Between Dynamics Sensor Harness Connector And Anti-Lock Brakes Module Harness Connector
Courtesy of CHRYSLER LLC

Measure the resistance of the (D51) Dynamics Sensor Low Data Link circuit between the Dynamics Sensor harness connector and the Anti-Lock Brakes Module harness connector.

Is the resistance below 5.0 ohms?

Yes

Replace the Dynamics Sensor in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Repair the (D51) Dynamics Sensor Low Data Link circuit for an open.
Perform **ABS VERIFICATION TEST**.

U0126-LOST COMMUNICATION WITH STEERING ANGLE SENSOR

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

When Monitored:

With the ignition on
Battery voltage between 10 and 16 volts
IOD fuse installed

Set Condition:

If the Anti-Lock Brakes Module fails to receive bus messages from the Steering Angle Sensor for approximately 500 ms.

Possible Causes
DTCs RELATED TO BATTERY VOLTAGE, IGNITION, OR VIN MESSAGES
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
(F202) FUSED B(+) CIRCUIT OPEN
(Z937) GROUND CIRCUIT OPEN
CAN C BUS CIRCUITS OPEN OR SHORTED
STEERING ANGLE SENSOR POWER AND GROUND
STEERING ANGLE SENSOR
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) VERIFY DTC IS ACTIVE

NOTE: Ensure the IOD fuse is installed and battery voltage is between 10 and 16 volts before proceeding.

Turn the ignition on.

With the scan tool, read and record ABS DTCs.

With the scan tool, read and record Environmental Data (EV Data).

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

2) CHECK FOR ANY OF THE FOLLOWING ACTIVE DTCs

With the scan tool, read all active DTCs from all CAN C Bus modules.

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

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

Yes

Diagnose and repair the DTC(s). Refer to the **DIAGNOSTIC CODE INDEX** .

Perform **BODY VERIFICATION TEST - VER 1** .

No

Go to 3).

3) VERIFY THAT THE STEERING ANGLE SENSOR IS ACTIVE ON THE BUS

With the scan tool, select ECU View.

Verify that the Steering Angle Sensor is active on the bus.

Is the Steering Angle Sensor active on the bus?

Yes

Go to 4).

No

Refer to the Stored Lost Communication test procedure. Refer to the **DIAGNOSTIC CODE INDEX** .

Perform **BODY VERIFICATION TEST - VER 1** .

4) CHECK THE WIRING HARNESS, TERMINALS, AND CONNECTORS

WARNING: To avoid personal injury or death, on vehicles equipped with airbags, disable the supplemental restraint system before attempting any steering wheel, steering column, airbag, occupant classification system, seat belt tensioner, impact sensor, or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the supplemental restraint system. Failure to take the proper precautions could result in accidental airbag deployment.

NOTE: Proper Steering Angle Sensor installation is crucial for proper operation.

Check the Steering Angle Sensor installation.

Visually inspect the related wiring harness. Look for any bruised, chafed, pierced, or partially broken wires.

Visually inspect the related wiring harness connectors. Look for broken, bent, pushed out, or corroded terminals.

Were any problems found?

Yes

Repair as necessary.

Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) CHECK THE VOLTAGE OF THE STEERING CONTROL MODULE (F202) FUSED B(+) CIRCUIT

Turn the ignition off.

Disconnect the Steering Control Module harness connector.

Turn the ignition on.

Measure the voltage of the (F202) Fused B(+) circuit.

Is the voltage above 10 volts?

Yes

Go to 6).

No

Repair the (F202) Fused B(+) circuit for an open.
Perform **ABS VERIFICATION TEST**.

6) CHECK THE RESISTANCE OF THE STEERING CONTROL MODULE (Z937) GROUND CIRCUIT

Turn the ignition off.

Disconnect the Steering Control Module harness connector.

Measure resistance between the (Z937) Ground circuit and ground.

Is the resistance below 5.0 ohms?

Yes

Go to 7).
Perform **ABS VERIFICATION TEST**.

No

Repair the (Z937) Ground circuit for an open.

Perform **ABS VERIFICATION TEST**.

7) CHECK FOR ADDITIONAL COMMUNICATION RELATED DTCs

With the scan tool, select Network View and select Advanced.

Is there more than one module with active DTCs "Logged Against" the STEERING ANGLE SENSOR?

Yes

Replace/update the Steering Angle Sensor in accordance with the service information.
Perform **ABS VERIFICATION TEST**.

No

Replace the Anti-Lock Brakes Module in accordance with the service information.
Perform **ABS VERIFICATION TEST**.

U0141-LOST COMMUNICATION WITH FRONT CONTROL MODULE

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

When Monitored:

With the ignition on
Battery voltage between 10 and 16 volts
IOD fuse installed
TIPM is configured correctly

Set Condition:

Bus messages not received from the Totally Integrated Power Module (TIPM) for approximately 2 to 5 seconds.

Possible Causes
DTCS RELATED TO BATTERY VOLTAGE, IGNITION, OR VIN MESSAGES
TIPM NOT CONFIGURED CORRECTLY
TOTALLY INTEGRATED CONTROL MODULE
MODULE THAT SET THIS DTC

Diagnostic Test

1) VERIFY DTC IS ACTIVE

NOTE: Ensure the IOD fuse is installed and battery voltage is between 10 and 16 volts before proceeding.

With the scan tool, read active DTCs.

Is this DTC active?

Yes

Go to 2).

No

Refer to the Stored Lost Communication test procedure. Refer to **DIAGNOSTIC CODE INDEX** .
Perform **BODY VERIFICATION TEST - VER 1** .

2) CHECK FOR ANY OF THE FOLLOWING ACTIVE DTCS

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

Diagnose and repair the DTC. Refer to the **DIAGNOSTIC CODE INDEX** for a complete list of the symptoms.
Perform **BODY VERIFICATION TEST - VER 1** .

No

Go to 3).

3) VERIFY THAT THE TIPM IS ACTIVE ON THE BUS

Turn the ignition on.

With the scan tool, select Network Diagnostics.

Verify that the TIPM is active on the bus.

Is the TIPM active on the bus?

Yes

Go to 4).

No

Refer to **DIAGNOSIS AND TESTING** for No Response diagnostic procedures.
Perform **BODY VERIFICATION TEST - VER 1** .

4) CHECK FOR ADDITIONAL COMMUNICATION RELATED DTCS

With the scan tool, select Network Diagnostics.

Is there more than one module with active DTCs "Logged Against" the TIPM?

Yes

Replace/update the Front Control Module in accordance with the service information.
Perform **BODY VERIFICATION TEST - VER 1** .

No

Replace/update the module that set this DTC in accordance with the service information
Perform **BODY VERIFICATION TEST - VER 1** .

U0401-IMPLAUSIBLE DATA RECEIVED FROM ECM/PCM

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

When Monitored:

Continuously with the ignition on, one valid CAN message received at least once, and no U0002-CAN C Bus Off Performance DTC present.

Set Condition:

When the Anti-Lock Brake Module detects an incorrect CAN message from the Engine Module.

Possible Causes
ABM CAN BUS DTCS
ENGINE DTCS
ANTI-LOCK BRAKE 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.

Turn the ignition on.

With the scan tool, record and erase DTCs.

Cycle the ignition switch from off to on.

With the scan tool, read DTCs.

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

Yes

Go to 2).

No

Perform the **ABS INTERMITTENT CONDITION** diagnostic procedure.

2) CHECK IF TIPM CAN BUS DTCs ARE PRESENT

With the scan tool, read TIPM DTCs.

Are there any TIPM CAN BUS DTCs present?

Yes

Refer to the appropriate diagnostic. See **DIAGNOSIS AND TESTING**.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) CHECK IF ENGINE DTCs ARE PRESENT

With the scan tool, read Engine DTCs.

Are there any Engine DTCs present?

Yes

Refer to the Engine ELECTRICAL DIAGNOSTICS article and diagnose the appropriate symptom.
Perform **ABS VERIFICATION TEST**.

No

Using the schematics as a guide, check the Anti-Lock Brake 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 Anti-Lock Brake Module per the Service Information.
Perform **ABS VERIFICATION TEST**.

U0429-IMPLAUSIBLE DATA RECEIVED FROM SCM

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

When Monitored:

With ignition on, but not if low voltage is detected.

Or, if a CAN Bus off event is detected.

Set Condition:

If the Anti-Lock Brakes Module detects either the sequence or integrity of the Steering Angle Sensor messages is invalid.

Possible Causes
CAN C BUS CIRCUIT(S) SHORTED
LOAD TOO HIGH ON CAN C BUS
STEERING ANGLE SENSOR DTCs PRESENT
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) CHECK IF COMMUNICATION RELATED DTCs ARE PRESENT

Turn the ignition on.

With the scan tool, read ABS DTCs.

Are any Communication related DTCs present?

Yes

Diagnose and repair the DTC(s). Refer to the **DIAGNOSTIC CODE INDEX** for a complete list of symptoms.
Perform **ABS VERIFICATION TEST**.

No

Go to 2).

2) CHECK IF OTHER STEERING ANGLE SENSOR RELATED DTCs ARE PRESENT

With the scan tool, read ABS DTCs.

Are any other STEERING ANGLE SENSOR DTCs present?

Yes

Diagnose and repair the DTC(s). Refer to the **DIAGNOSTIC CODE INDEX** for a complete list of symptoms.
Perform **ABS VERIFICATION TEST**.

No

Replace the Steering Angle Sensor in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

U1003-ESP CAN C BUS PERFORMANCE

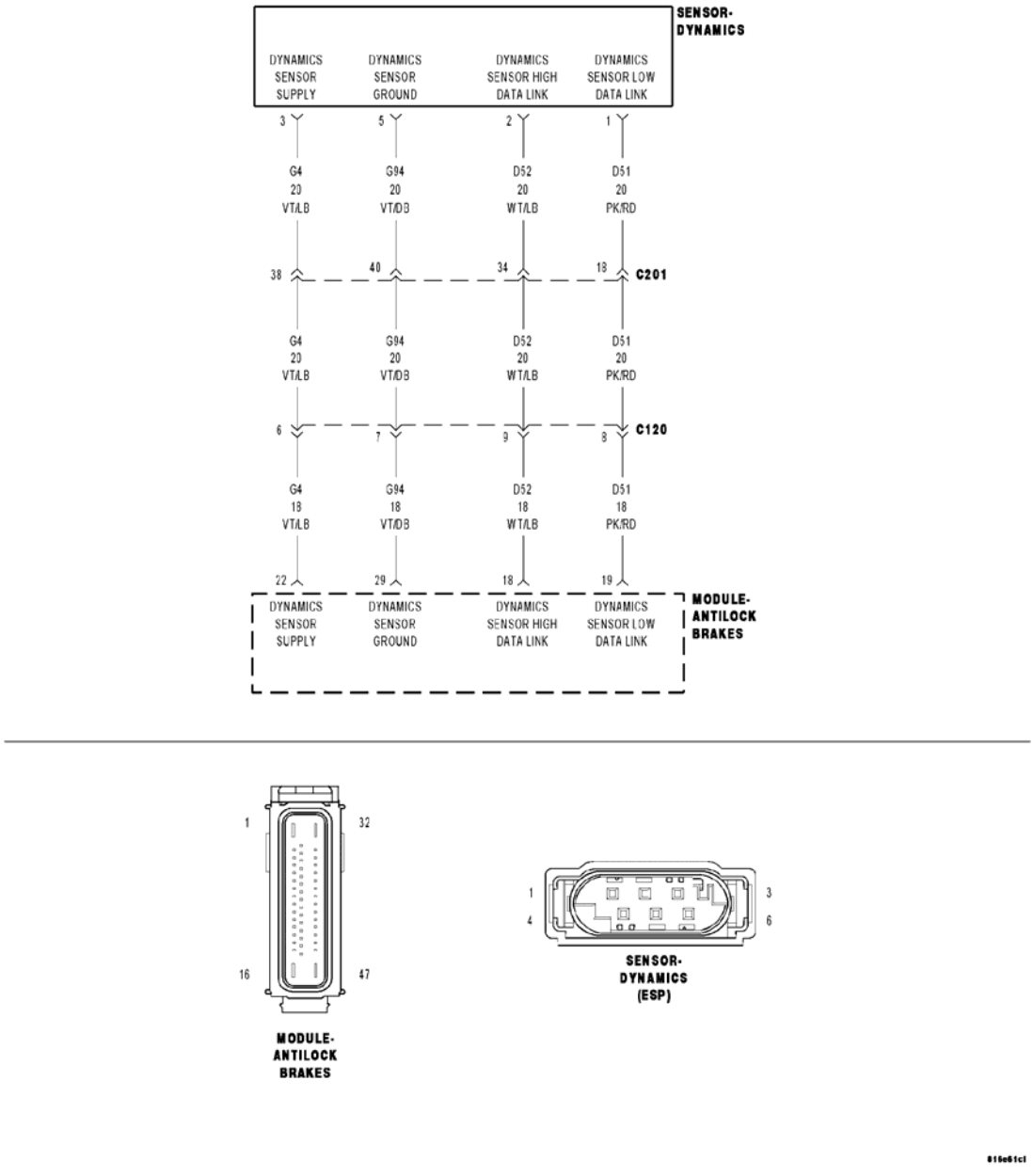


Fig. 73: Dynamics Sensor Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

With the ignition on.

Set Condition:

If the Anti-Lock Brakes Module detects too many CAN Bus off events on the Dynamics Sensor Data Link circuits.

Possible Causes
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
(D52) DYNAMICS SENSOR HIGH DATA LINK CIRCUIT SHORTED TO GROUND, VOLTAGE, OR OPEN
(D51) DYNAMICS SENSOR LOW DATA LINK CIRCUIT SHORTED TO GROUND, VOLTAGE, OR OPEN
DYNAMICS SENSOR
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) VERIFY DTC IS ACTIVE

Turn the ignition on.

With the scan tool, read and record ABS DTCs.

With the scan tool, read and record Environmental Data (EV Data).

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

2) INSPECT RELATED WIRING HARNESS, TERMINALS, & CONNECTORS

Visually inspect the related wiring harness. Look for any pinched, chafed, pierced, and partially broken wires.

Visually inspect the related wiring harness connectors. Look for broken, bent, pushed out, and corroded terminals.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) CHECK THE (D52) DYNAMICS SENSOR HIGH DATA LINK CIRCUIT FOR A SHORT TO VOLTAGE

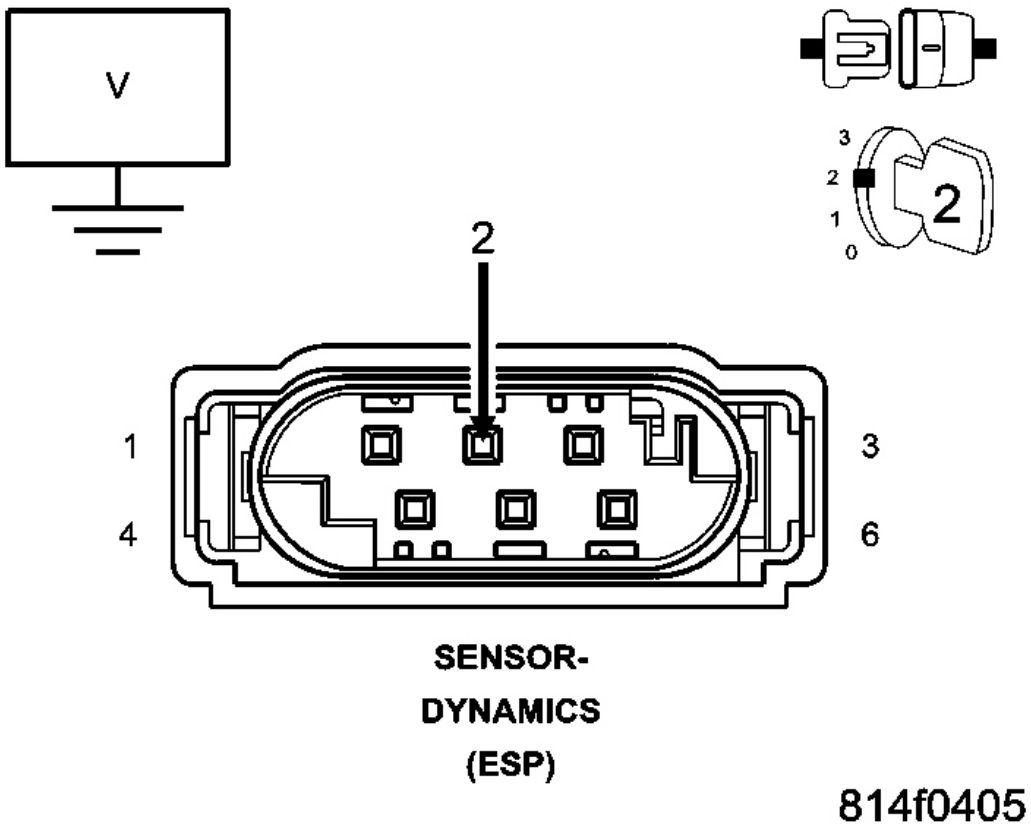


Fig. 74: Measuring Voltage Of (D52) Dynamics Sensor High Data Link Circuit
Courtesy of CHRYSLER LLC

Disconnect the Anti-Lock Brakes Module harness connector.

Disconnect the Dynamics Sensor harness connector.

Turn the ignition on.

Measure the voltage of the (D52) Dynamics Sensor High Data Link circuit.

Is there any voltage present?

Yes

Repair the (D52) Dynamics Sensor High Data Link circuit for a short to voltage.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK THE (D52) DYNAMICS SENSOR HIGH DATA LINK CIRCUIT FOR A SHORT TO GROUND

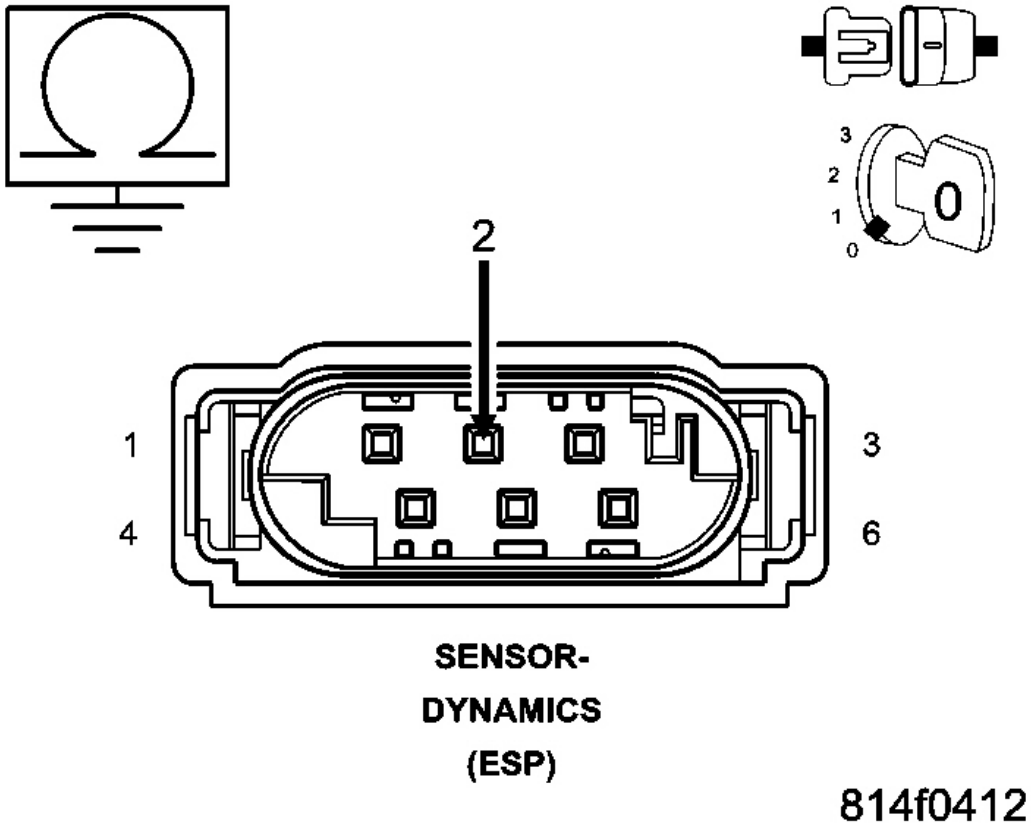


Fig. 75: Measuring Resistance Of (D52) Dynamics Sensor High Data Link Circuit Between Ground And Dynamics Sensor Harness Connector
Courtesy of CHRYSLER LLC

Turn the ignition off.

Measure the resistance of the (D52) Dynamics Sensor High Data Link circuit between ground and the Dynamics Sensor harness connector.

Is the resistance below 5.0 ohms?

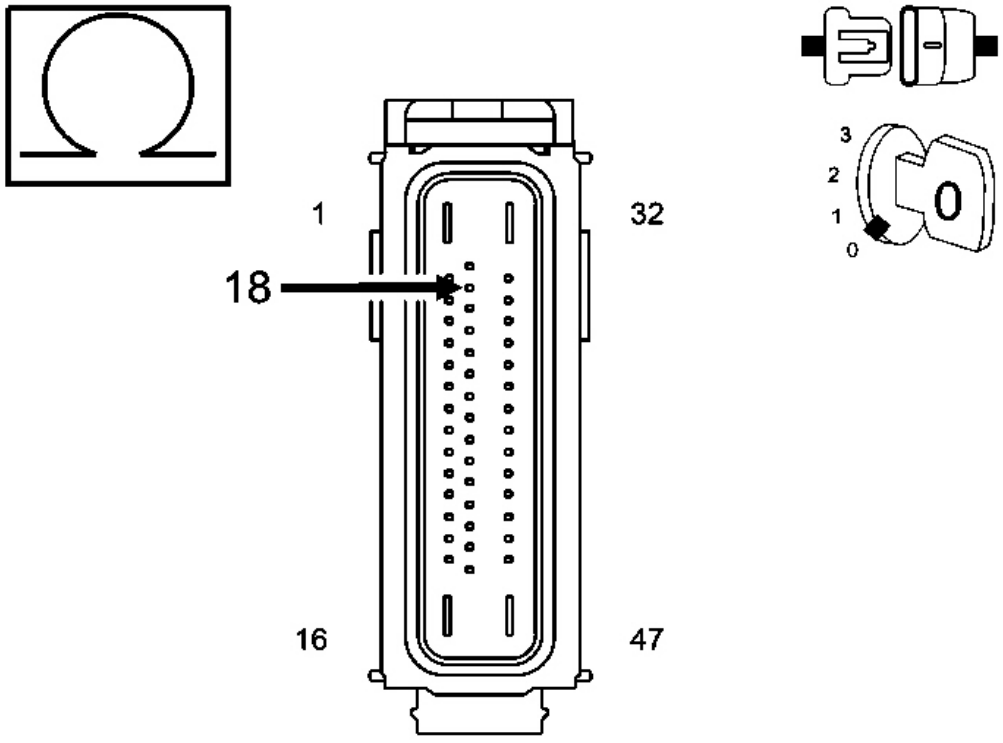
Yes

Repair the (D52) Dynamics Sensor High Data Link circuit for a short to ground.
Perform **ABS VERIFICATION TEST**.

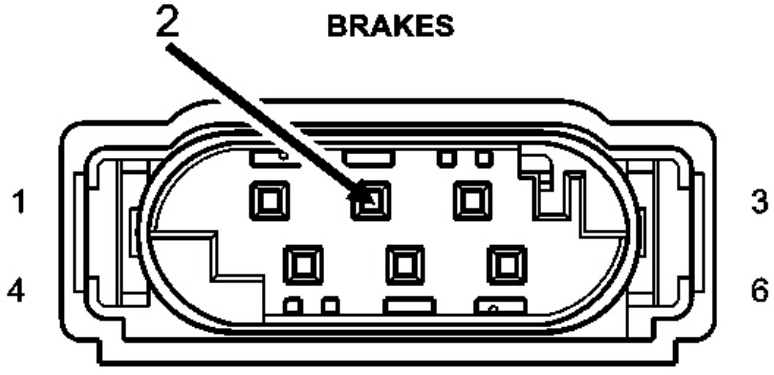
No

Go to 5).

5) CHECK THE (D52) DYNAMICS SENSOR HIGH DATA LINK CIRCUIT FOR AN OPEN



MODULE-
ANTILOCK
BRAKES



SENSOR-
DYNAMICS
(ESP)

816e6232

Fig. 76: Measuring Resistance Of (D52) Dynamics Sensor High Data Link Circuit Between Dynamics Sensor Harness Connector And Anti-Lock Brakes Module Harness Connector
Courtesy of CHRYSLER LLC

Measure the resistance of the (D52) Dynamics Sensor High Data Link circuit between the Dynamics Sensor harness connector and the Anti-Lock Brakes Module harness connector.

Is the resistance below 5.0 ohms?

Yes

Go to 6).

No

Repair the (D52) Dynamics Sensor High Data Link circuit for an open.

Perform **ABS VERIFICATION TEST**.

6) CHECK THE (D51) DYNAMICS SENSOR LOW DATA LINK CIRCUIT FOR A SHORT TO VOLTAGE

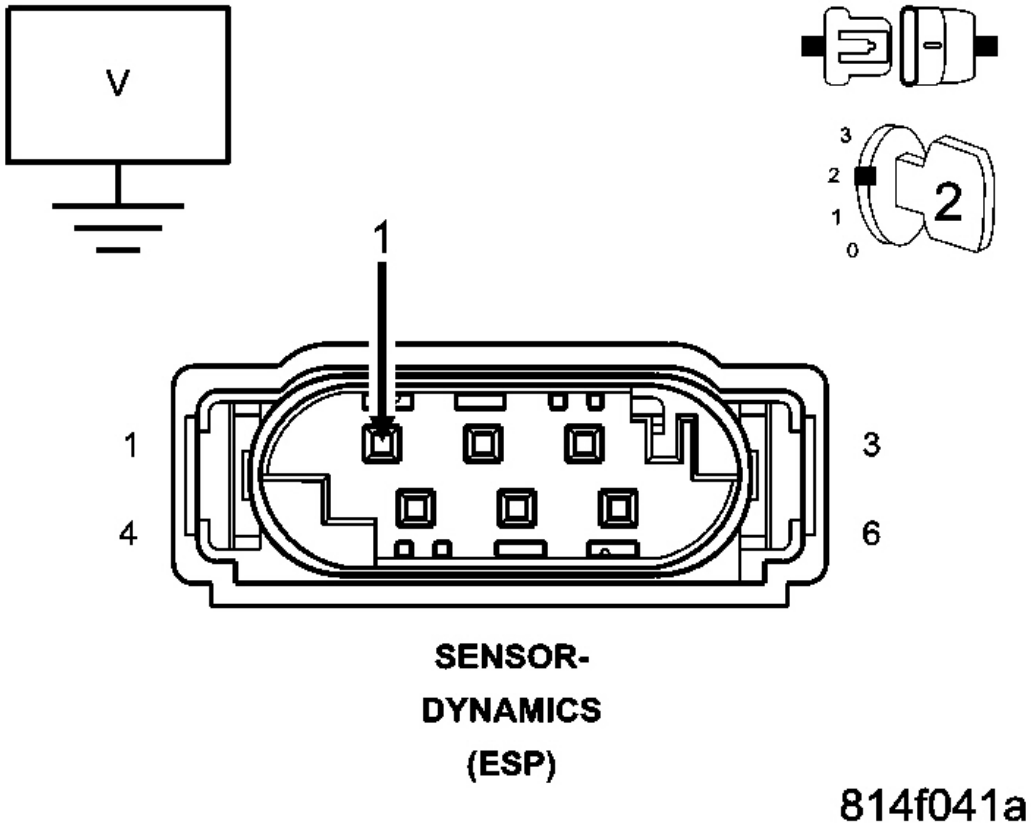


Fig. 77: Measuring Voltage Of (D51) Dynamics Sensor Low Data Link Circuit
Courtesy of CHRYSLER LLC

Turn the ignition on.

Measure the voltage of the (D51) Dynamics Sensor Low Data Link circuit.

Is there any voltage present?

Yes

Repair the (D51) Dynamics Sensor Low Data Link circuit for a short to voltage. Perform **ABS VERIFICATION TEST**.

No

Go to 7).

7) CHECK THE (D51) DYNAMICS SENSOR LOW DATA LINK CIRCUIT FOR A SHORT TO GROUND

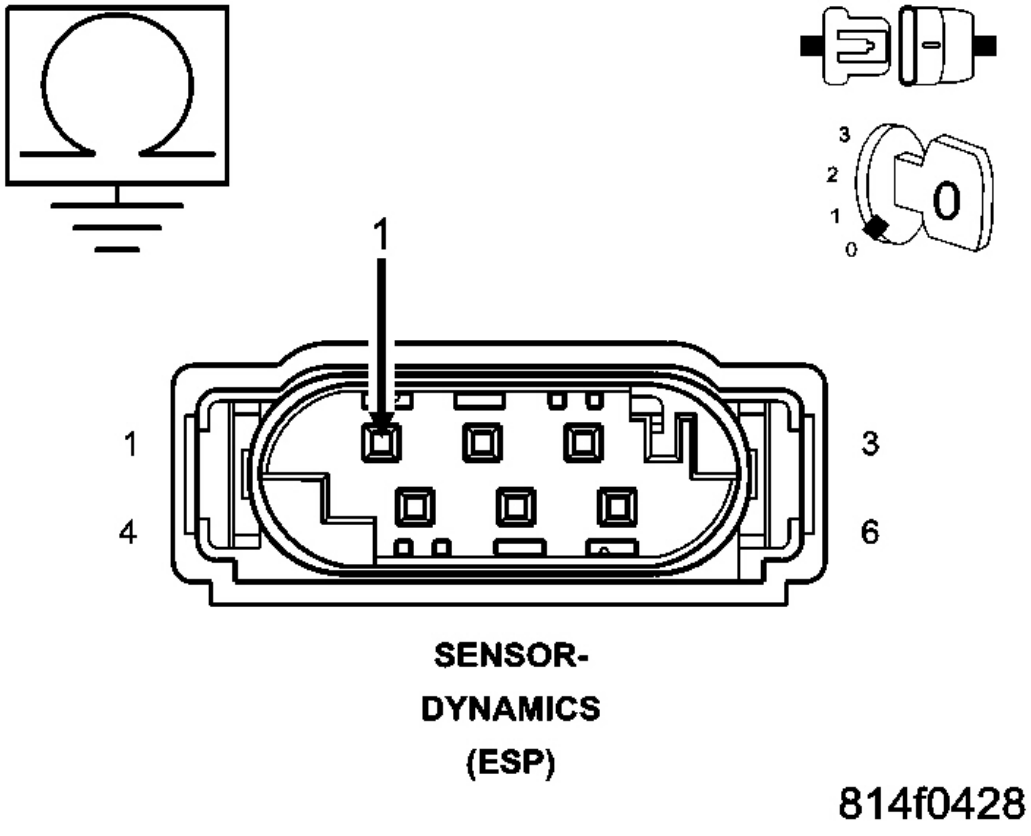


Fig. 78: Measuring Resistance Of (D51) Dynamics Sensor Low Data Link Circuit Between Ground And Dynamics Sensor Harness Connector
Courtesy of CHRYSLER LLC

Turn the ignition off.

Measure the resistance of the (D51) Dynamics Sensor Low Data Link circuit between ground and the Dynamics Sensor harness connector.

Is the resistance below 5.0 ohms?

Yes

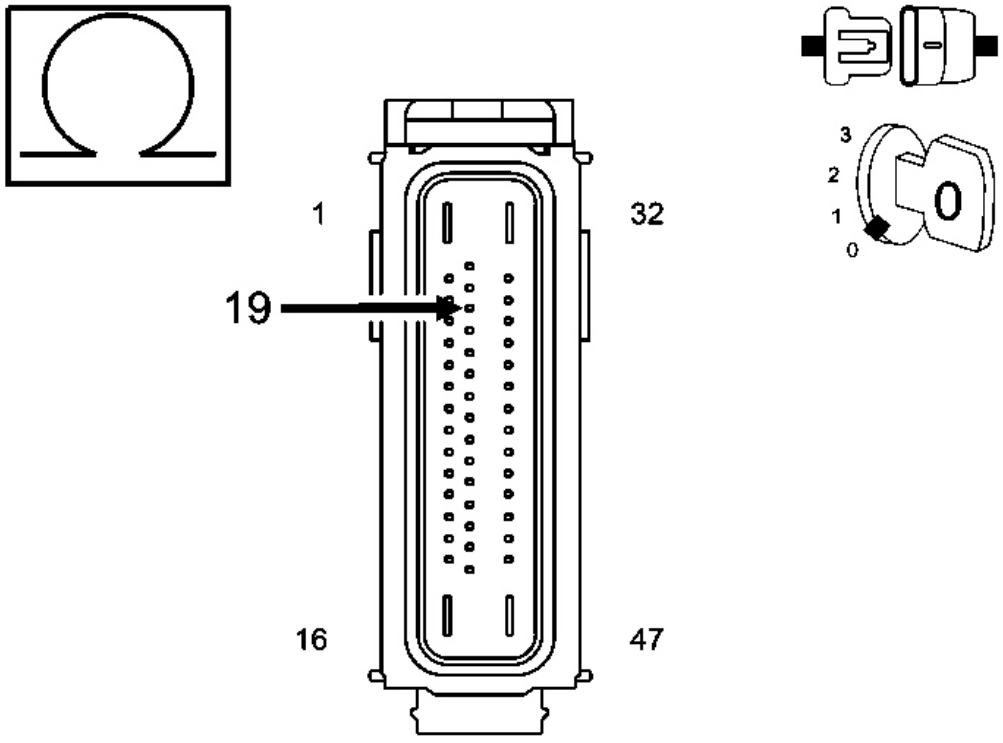
Repair the (D51) Dynamics Sensor Low Data Link circuit for a short to ground.

Perform **ABS VERIFICATION TEST**.

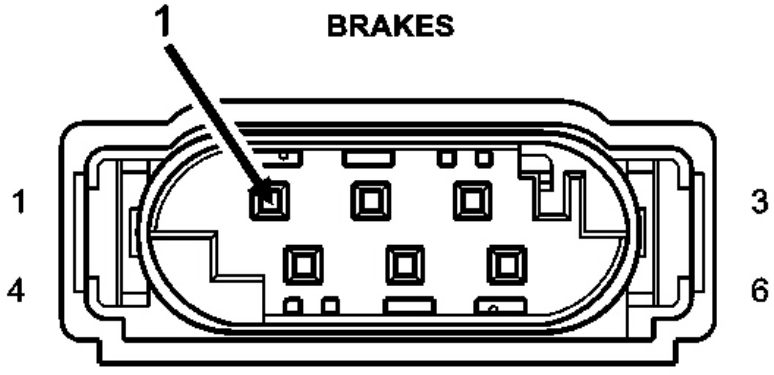
No

Go to 8).

8) CHECK THE (D51) DYNAMICS SENSOR LOW DATA LINK CIRCUIT FOR AN OPEN



MODULE-
ANTILOCK
BRAKES



SENSOR-
DYNAMICS
(ESP)

816e6236

Fig. 79: Measuring Resistance Of (D51) Dynamics Sensor Low Data Link Circuit Between Dynamics Sensor Harness Connector And Anti-Lock Brakes Module Harness Connector
Courtesy of CHRYSLER LLC

Measure the resistance of the (D51) Dynamics Sensor Low Data Link circuit between the Dynamics Sensor harness connector and the Anti-Lock Brakes Module harness connector.

Is the resistance below 5.0 ohms?

Yes

Go to 9).

No

Repair the (D51) Dynamics Sensor Low Data Link circuit for an open.
Perform **ABS VERIFICATION TEST**.

9) REPLACE DYNAMICS SENSOR & VERIFY IF DTC IS STILL ACTIVE

Replace the Dynamics Sensor in accordance with the Service Information. Perform **ABS VERIFICATION TEST**.

Turn the ignition on.

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

WARNING: Ensure brake capability is available before road testing.

Test drive the vehicle by turning the vehicle left or right in a curving manner at a velocity between 10 and 25 km/h (6 and 15 mph).

Park the vehicle.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Perform **ABS VERIFICATION TEST**.

U1104-CAN C BUS CRC PERFORMANCE

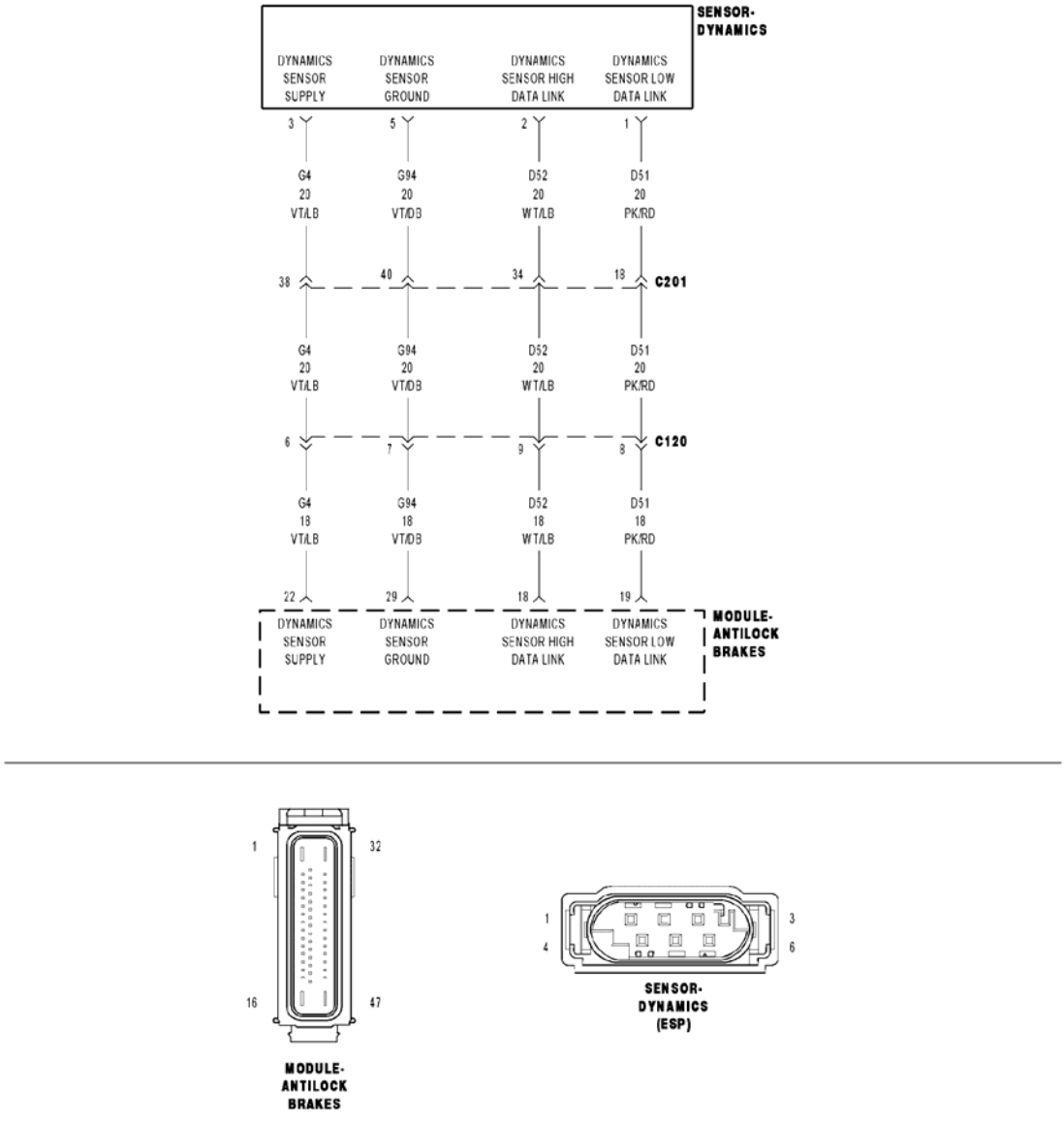


Fig. 80: Dynamics Sensor Circuit Schematic
Courtesy of CHRYSLER LLC

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

When Monitored:

With the ignition on.

Set Condition:

If the Anti-Lock Brakes Module detects an invalid CAN message from the Dynamics Sensor.

Possible Causes
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
(D52) DYNAMICS SENSOR HIGH DATA LINK CIRCUIT SHORTED TO GROUND, VOLTAGE, OR OPEN
(D51) DYNAMICS SENSOR LOW DATA LINK CIRCUIT SHORTED TO GROUND, VOLTAGE, OR OPEN
DYNAMICS SENSOR INSTALLATION
DYNAMICS SENSOR

Diagnostic Test

1) VERIFY DTC IS ACTIVE

Turn the ignition on.

With the scan tool, read and record ABS DTCs.

With the scan tool, read and record Environmental Data (EV Data).

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

2) CHECK THE DYNAMICS SENSOR INSTALLATION

NOTE: Dynamics Sensor installation and mounting bolt torque is crucial for proper operation.

Turn the ignition off.

Check the Dynamics Sensor for damaged, modified, and bent mounting brackets.

Check the Dynamics Sensor mounting bolts for a loose or over tightened condition.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 3).

3) INSPECT RELATED WIRING HARNESS, TERMINALS, & CONNECTORS

Visually inspect the related wiring harness. Look for any pinched, chafed, pierced, and partially broken wires.

Visually inspect the related wiring harness connectors. Look for broken, bent, pushed out, and corroded terminals.

Were any problems found?

Yes

Repair as necessary.
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK THE (D52) DYNAMICS SENSOR HIGH DATA LINK CIRCUIT FOR A SHORT TO VOLTAGE

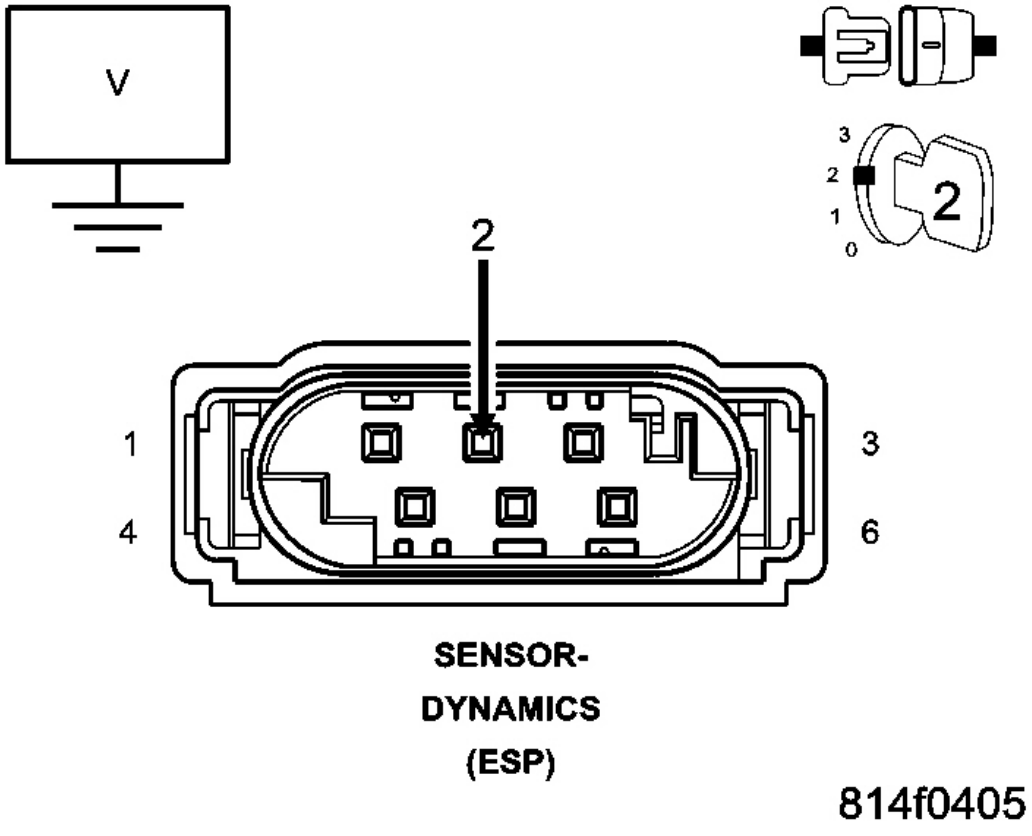


Fig. 81: Measuring Voltage Of (D52) Dynamics Sensor High Data Link Circuit
Courtesy of CHRYSLER LLC

Disconnect the Anti-Lock Brakes Module harness connector.

Disconnect the Dynamics Sensor harness connector.

Turn the ignition on.

Measure the voltage of the (D52) Dynamics Sensor High Data Link circuit.

Is there any voltage present?

Yes

Repair the (D52) Dynamics Sensor High Data Link circuit for a short to voltage. Perform **ABS VERIFICATION TEST**.

No

Go to 5).

5) CHECK THE (D52) DYNAMICS SENSOR HIGH DATA LINK CIRCUIT FOR A SHORT TO GROUND

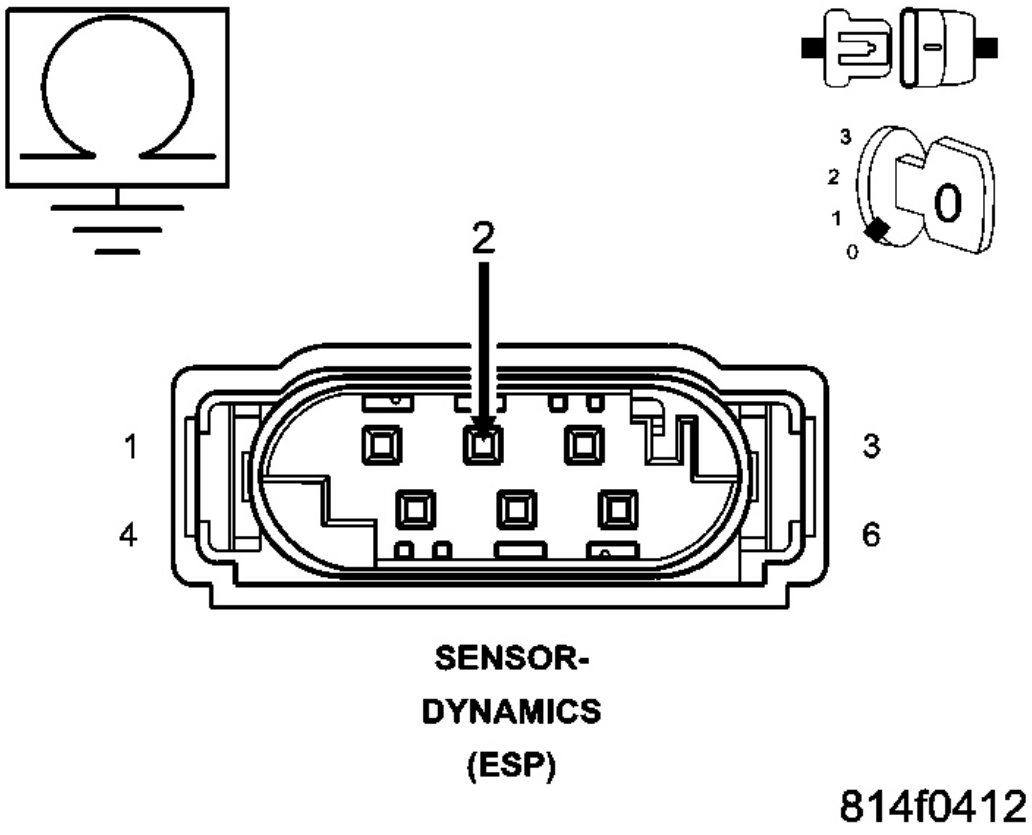


Fig. 82: Measuring Resistance Of (D52) Dynamics Sensor High Data Link Circuit Between Ground And Dynamics Sensor Harness Connector
Courtesy of CHRYSLER LLC

Turn the ignition off.

Measure the resistance of the (D52) Dynamics Sensor High Data Link circuit between ground and the Dynamics Sensor harness connector.

Is the resistance below 5.0 ohms?

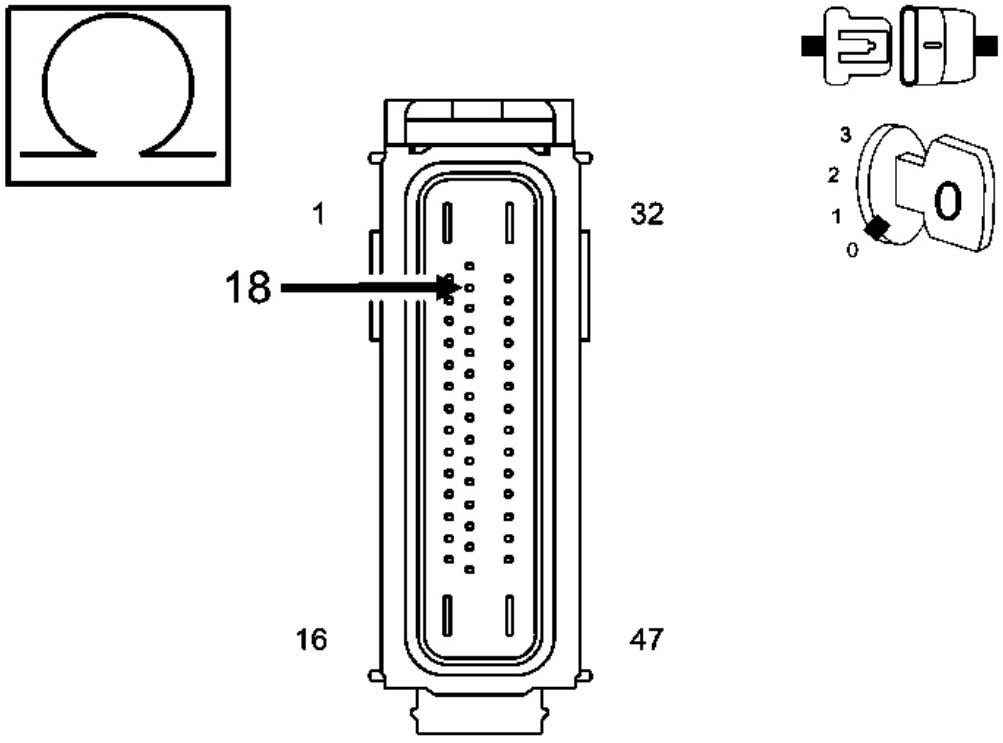
Yes

Repair the (D52) Dynamics Sensor High Data Link circuit for a short to ground.
Perform **ABS VERIFICATION TEST**.

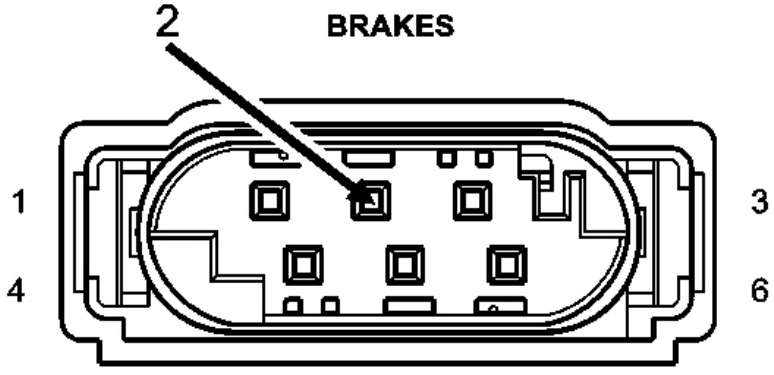
No

Go to 6).

6) CHECK THE (D52) DYNAMICS SENSOR HIGH DATA LINK CIRCUIT FOR AN OPEN



MODULE-
ANTILOCK
BRAKES



SENSOR-
DYNAMICS
(ESP)

816e6232

Fig. 83: Measuring Resistance Of (D52) Dynamics Sensor High Data Link Circuit Between Dynamics Sensor Harness Connector And Anti-Lock Brakes Module Harness Connector
Courtesy of CHRYSLER LLC

Measure the resistance of the (D52) Dynamics Sensor High Data Link circuit between the Dynamics Sensor harness connector and the Anti-Lock Brakes Module harness connector.

Is the resistance below 5.0 ohms?

Yes

Go to 7).

No

Repair the (D52) Dynamics Sensor High Data Link circuit for an open.

Perform **ABS VERIFICATION TEST**.

7) CHECK THE (D51) DYNAMICS SENSOR LOW DATA LINK CIRCUIT FOR A SHORT TO VOLTAGE

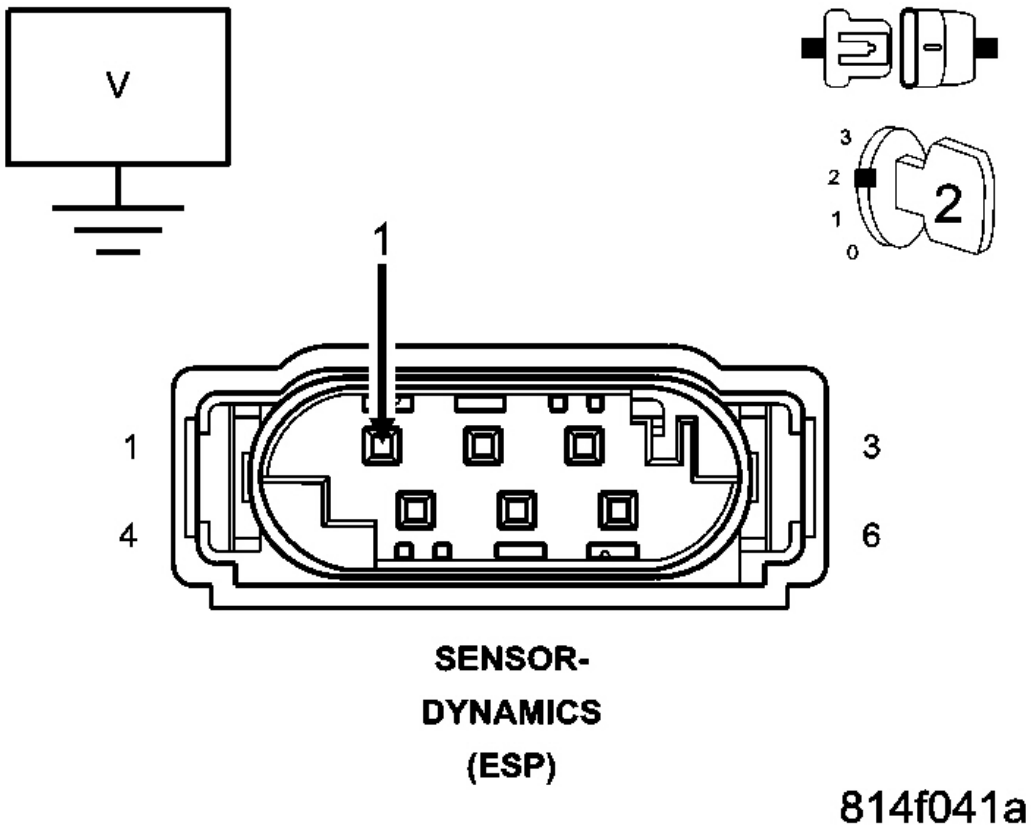


Fig. 84: Measuring Voltage Of (D51) Dynamics Sensor Low Data Link Circuit
Courtesy of CHRYSLER LLC

Turn the ignition on.

Measure the voltage of the (D51) Dynamics Sensor Low Data Link circuit.

Is there any voltage present?

Yes

Repair the (D51) Dynamics Sensor Low Data Link circuit for a short to voltage. Perform **ABS VERIFICATION TEST**.

No

Go to 8).

8) CHECK THE (D51) DYNAMICS SENSOR LOW DATA LINK CIRCUIT FOR A SHORT TO GROUND

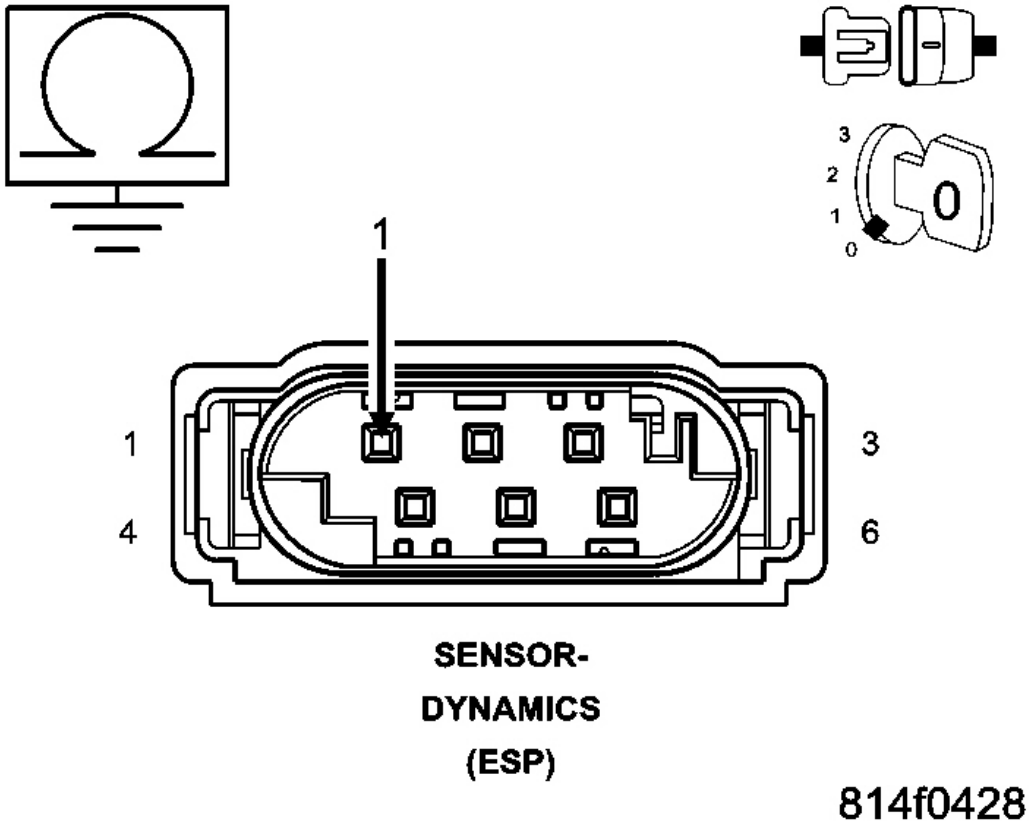


Fig. 85: Measuring Resistance Of (D51) Dynamics Sensor Low Data Link Circuit Between Ground And Dynamics Sensor Harness Connector
Courtesy of CHRYSLER LLC

Turn the ignition off.

Measure the resistance of the (D51) Dynamics Sensor Low Data Link circuit between ground and the Dynamics Sensor harness connector.

Is the resistance below 5.0 ohms?

Yes

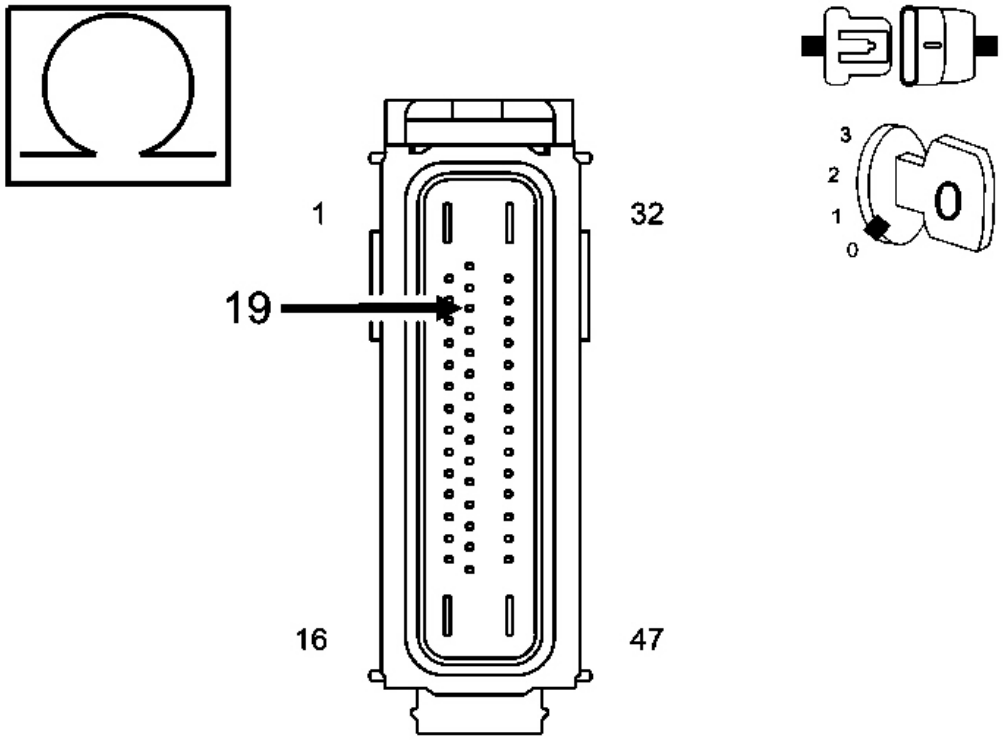
Repair the (D51) Dynamics Sensor Low Data Link circuit for a short to ground.

Perform **ABS VERIFICATION TEST**.

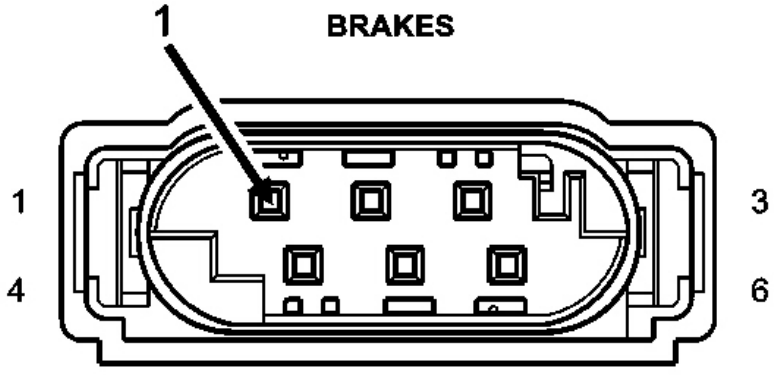
No

Go to 9).

9) CHECK THE (D51) DYNAMICS SENSOR LOW DATA LINK CIRCUIT FOR AN OPEN



MODULE-
ANTILOCK
BRAKES



SENSOR-
DYNAMICS
(ESP)

816e6236

Fig. 86: Measuring Resistance Of (D51) Dynamics Sensor Low Data Link Circuit Between Dynamics Sensor Harness Connector And Anti-Lock Brakes Module Harness Connector
Courtesy of CHRYSLER LLC

Measure the resistance of the (D51) Dynamics Sensor Low Data Link circuit between the Dynamics Sensor harness connector and the Anti-Lock Brakes Module harness connector.

Is the resistance below 5.0 ohms?

Yes

Replace the Dynamics Sensor in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Repair the (D51) Dynamics Sensor Low Data Link circuit for an open.
Perform **ABS VERIFICATION TEST**.

U140E-IMPLAUSIBLE VEHICLE CONFIGURATION DATA RECEIVED

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

When Monitored:

Once per ignition cycle, but not during cranking.

Set Condition:

If the Anti-Lock Brakes Module either fails to receive vehicle configuration data from the Engine Control Module (ECM) or Powertrain Control Module (PCM) or the configuration data it receives from the ECM or PCM is different than that received during the previous ignition cycle.

Possible Causes
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
DTCs RELATED TO BATTERY VOLTAGE, IGNITION, OR VIN MESSAGES
CAN C BUS CIRCUITS OPEN OR SHORTED
ECM OR PCM DTCs PRESENT
ECM OR PCM NOT PROGRAMMED OR PROGRAMMED WITH INCORRECT VIN
TIPM NOT PROGRAMMED OR PROGRAMMED WITH INCORRECT INFORMATION
ECM OR PCM
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) VERIFY DTC IS ACTIVE

Turn the ignition on.

With the scan tool, read and record ABS DTCs.

With the scan tool, read and record Environmental Data (EV Data).

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

2) CHECK FOR ANY OF THE FOLLOWING ACTIVE DTCs

With the scan tool, read all active DTCs from all CAN C Bus modules.

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

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

Yes

Diagnose and repair the DTC(s). Refer to the **DIAGNOSTIC CODE INDEX** .

No

Go to 3).

3) CHECK IF TIPM DTCs ARE PRESENT

With the scan tool, read TIPM DTCs.

Are any DTCs present?

Yes

Diagnose and repair the DTC(s). Refer to the **DIAGNOSTIC CODE INDEX** .
Perform **BODY VERIFICATION TEST - VER 1** .

No

Go to 4).

4) VERIFY TIPM IS CONFIGURED CORRECTLY

With the scan tool, verify that the TIPM part number and configuration is correct for the vehicle.

Is the correct TIPM installed in the vehicle?

No

Replace and program the TIPM in accordance with the Service Information.
Perform **BODY VERIFICATION TEST - VER 1** .

Yes

Go to 5).

5) CHECK IF ECM OR PCM DTCs ARE PRESENT

With the scan tool, read ECM or PCM DTCs.

Are any DTCs present?

Yes

Diagnose and repair the DTC(s). Refer to appropriate Engine ELECTRICAL DIAGNOSTICS article .
Perform **POWERTRAIN VERIFICATION TEST** .

No

Go to 6).

6) VERIFY CORRECT ECM OR PCM IS INSTALLED IN THE VEHICLE

With the scan tool, verify that the ECM or PCM part number is correct for the vehicle.

Is the correct ECM or PCM installed in the vehicle?

Yes

Go to 7).

No

Replace and program the ECM or PCM in accordance with the Service Information.
Perform **POWERTRAIN VERIFICATION TEST** .

7) VERIFY ECM OR PCM IS PROGRAMMED WITH CORRECT VIN

With the scan tool, verify that the ECM or PCM is programmed with the correct VIN.

Is the ECM or PCM programmed with the correct VIN?

Yes

Go to 8).

No

Using the scan tool, perform PCM Replaced to update the VIN in the PCM.
Perform **POWERTRAIN VERIFICATION TEST** .

8) CHECK FOR ADDITIONAL COMMUNICATION RELATED DTCs

With the scan tool, select Network View and select Advanced.

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

Yes

Replace/update the ECM or PCM in accordance with the service information.
Perform **POWERTRAIN VERIFICATION TEST** .

No

Using the schematics as a guide, check the Anti-Lock Brakes Module pins, terminals, and connectors for corrosion, damage, and terminal push out. Pay particular attention to all Communication circuits. If no problems are found, replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

U1501-IMPLAUSIBLE MESSAGE DATA LENGTH RECEIVED FROM ECM/PCM

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

When Monitored:

Continuously, with ignition on.

Set Condition:

If the Anti-Lock Brakes Module detects bus messages from the Engine Control Module (ECM) or Powertrain Control Module (PCM) are of improper data length.

Possible Causes
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
DTCs RELATED TO BATTERY VOLTAGE, IGNITION, OR VIN MESSAGES
CAN C BUS CIRCUITS OPEN OR SHORTED
ECM OR PCM DTCs PRESENT
ECM OR PCM
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) VERIFY DTC IS ACTIVE

Turn the ignition on.

With the scan tool, read and record ABS DTCs.

With the scan tool, read and record Environmental Data (EV Data).

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

2) CHECK FOR ANY OF THE FOLLOWING ACTIVE DTCs

With the scan tool, read all active DTCs from all CAN C Bus modules.

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

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

Yes

Diagnose and repair the DTC(s). Refer to the **DIAGNOSTIC CODE INDEX** .

No

Go to 3).

3) CHECK IF ECM OR PCM DTCs ARE PRESENT

With the scan tool, read ECM or PCM DTCs.

Are any DTCs present?

Yes

Diagnose and repair the DTC(s). Refer to the appropriate Engine ELECTRICAL DIAGNOSTICS article .
Perform **ABS VERIFICATION TEST**.

No

Go to 4).

4) CHECK FOR ADDITIONAL COMMUNICATION RELATED DTCs

With the scan tool, select Network View and select Advanced.

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

Yes

Replace/update the ECM or PCM in accordance with the service information.
Perform **POWERTRAIN VERIFICATION TEST** . .
Perform **ABS VERIFICATION TEST**.

No

Using the schematics as a guide, check the Anti-Lock Brakes Module pins, terminals, and connectors for corrosion, damage, and terminal push out. Pay particular attention to all

Communication circuits. If no problems are found, replace the Anti-Lock Brakes Module in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

U1502-IMPLAUSIBLE MESSAGE DATA LENGTH RECEIVED FROM TCM

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

When Monitored:

Continuously, with ignition on.

Set Condition:

If the Anti-Lock Brakes Module detects bus messages from the Transmission Control Module (TCM) are of improper data length.

Possible Causes
WIRING HARNESS, TERMINAL, CONNECTOR DAMAGE
DTCs RELATED TO BATTERY VOLTAGE, IGNITION, OR VIN MESSAGES
CAN C BUS CIRCUITS OPEN OR SHORTED
TCM DTCs PRESENT
TCM
ANTI-LOCK BRAKES MODULE

Diagnostic Test

1) VERIFY DTC IS ACTIVE

Turn the ignition on.

With the scan tool, read and record ABS DTCs.

With the scan tool, read and record Environmental Data (EV Data).

With the scan tool, erase ABS DTCs.

Cycle the ignition switch.

With the scan tool, read ABS DTCs.

Does this DTC reset?

Yes

Go to 2).

No

The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Refer to the **ABS INTERMITTENT CONDITION**.

2) CHECK FOR ANY OF THE FOLLOWING ACTIVE DTCs

With the scan tool, read all active DTCs from all CAN C Bus modules.

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

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

Yes

Diagnose and repair the DTC(s). Refer to the **DIAGNOSTIC CODE INDEX** .

No

Go to 3).

3) CHECK IF TCM DTCs ARE PRESENT

With the scan tool, read TCM DTCs.

Are any TCM DTCs present?

Yes

Diagnose and repair the DTC(s).

Perform **42RLE TRANSMISSION VERIFICATION TEST** .

No

Using the schematics as a guide, check the Anti-Lock Brakes Module pins, terminals, and connectors for corrosion, damage, and terminal push out. Pay particular attention to all Communication circuits. If no problems are found, replace the Anti-Lock Brakes Module in accordance with the Service Information.

Perform **ABS VERIFICATION TEST**.

U1503-IMPLAUSIBLE MESSAGE DATA LENGTH RECEIVED FROM FCM

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

When Monitored:

Continuously with the ignition on.

Set Condition:

When the Anti-Lock Brake Module detects an incorrect CAN message from the Totally Integrated Power Module (TIPM).

Possible Causes
TIPM CAN BUS DTCS
ANTI-LOCK BRAKE MODULE

Diagnostic Test

1) CHECK IF TIPM CAN BUS DTCs ARE PRESENT

With the scan tool, read TIPM DTCs.

Are there any TIPM CAN BUS DTCs present?

Yes

Refer to **DIAGNOSIS AND TESTING** and diagnose the appropriate symptom.
Perform **ABS VERIFICATION TEST**.

No

Replace the Anti-Lock Brakes Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

U1601-MISSING APPLICATION FILE

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

When Monitored:

With the ignition on.

Set Condition:

During reflashing of the Anti-Lock Brake Module the process gets interrupted, times out or battery voltage drops below the minimum voltage requirement.

Possible Causes
REFLASH MODULE
ANTI-LOCK BRAKE MODULE

Diagnostic Test

1) CHECK FOR A DTC U1601-MISSING APPLICATION FILE

NOTE: This DTC must be active for the results of this test to be valid. Check for a loose scan tool connection. Verify that battery charger is installed and charge rate provides approximately 13.5 volts.

Turn the ignition on.

Connect scan tool, read DTCs.

Follow reprogramming procedure and reflash the module while maintaining voltage as noted above.

Perform ECU initialization with drive test on ABM. Perform **ABS VERIFICATION TEST**.

With the scan tool, read DTCs.

Does the scan tool display: U1601-MISSING APPLICATION FILE?

Yes

Replace the Anti-Lock Brake Module in accordance with the Service Information.
Perform **ABS VERIFICATION TEST**.

No

Repair complete.

STANDARD PROCEDURE

ABS VERIFICATION TEST

Diagnostic Test

1) ABS VERIFICATION TEST

WARNING: To avoid personal injury or death, check brake capability is available before road testing.

NOTE: If the ABM (Anti-Lock Brake Module), SAS (Steering Angle Sensor), Dynamics Sensor was replaced, it must be initialized using the scan tool. If not initialized, the ABS indicator will flash continuously with no DTCs. To initialize the ABM and clear offsets have wheels pointing straight ahead and follow the directions on the scan tool. The drive test requires a 90°

turn. If the Dynamics Sensor was replaced, test drive the vehicle by turning the vehicle left or right in a curving manner at a velocity between 10 and 25 km/h (6 and 15 mph).

1. Turn the ignition off.

2. Connect all previously disconnected components and connectors.

3. Verify all accessories are turned off and the battery is fully charged.

4. Verify that the ignition is on, with the scan tool, erase all Diagnostic Trouble Codes from All modules. Start the engine and allow it to run for 2 minutes and fully operate the system that was indicating the failure.

5. Turn the ignition off and wait 5 seconds. Turn the ignition on and using the scan tool, read DTCs from all modules.

6. If any Diagnostic Trouble Codes are present, return to symptom list and trouble shoot new or recurring symptom.

NOTE: For Sensor Signal and Pump Motor faults, the ABM must sense all 4 wheels at 12 km/h (7.5 mph) before it will extinguish the ABS indicator.

7. If there are no DTCs present after turning ignition on, road test the vehicle for at least 5 minutes. Perform several anti-lock braking stops.

8. Again, with the scan tool read DTCs. If any DTCs are present, refer to the **DIAGNOSTIC CODE INDEX** for the diagnostic test procedure and troubleshoot the new or recurring symptom.

9. If there are no Diagnostic Trouble Codes (DTCs) present, and the customer's concern can no longer be duplicated, the repair is complete.

Are any DTCs present or is the original concern still present?

Yes

Repair is not complete, refer to appropriate symptom.

No

Repair is complete.