# U0402-IMPLAUSIBLE DATA RECEIVED FROM TCM

## ADDITIONAL WIRING

For a complete wiring diagram, refer to appropriate SYSTEM WIRING DIAGRAMS article(s).

## MONITOR CONDITIONS

- **When Monitored:**

  Continuously while the system is active.

## SET CONDITIONS

- **Set Condition:**

  An error message has been received over the bus from the Transmission Control Module (TCM).

## POSSIBLE CAUSES

| Possible Causes |
|---|
| INTERMITTENT DTC |
| CAN BUS OPEN OR SHORTED CONDITION |
| TRANSMISSION CONTROL MODULE (TCM) |
| ENGINE CONTROL MODULE (ECM) |

**Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure .**

## DIAGNOSTIC TEST

1. **ACTIVE DTC**

   **NOTE: Diagnose all CAN B and C communication DTCs before continuing.**

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

      Is the status Active for this DTC?

      **Yes**

      - Go to step 2

      **No**

- Refer to the INTERMITTENT DTC Diagnostic Procedure. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** ,

2. **TCM COMMUNICATION RELATED DTCS IN OTHER MODULES**
    1. With a scan tool check for TCM communication related DTCs in other modules on the CAN Bus.

       Are there any TCM communication related DTCs in other modules on the CAN Bus at this time?

       **Yes**

       - Replace and program the Transmission Control Module (TCM) in accordance with the Service Information.
       - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** ,

       **No**

       - Replace and program the Engine Control Module (ECM) in accordance with the Service Information.
       - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** ,

# U0407-IMPLAUSIBLE DATA RECEIVED FROM GLOW PLUG CONTROL MODULE

## ADDITIONAL WIRING

For a complete wiring diagram, refer to appropriate SYSTEM WIRING DIAGRAMS article(s).

## MONITOR CONDITIONS

- **When Monitored:**

  Continuously while the system is active.

## SET CONDITIONS

- **Set Condition:**

  An error message has been received over the bus from the Glow Plug Control Module (GPCM).

## POSSIBLE CAUSES

| Possible Causes |
| --- |
| CAN BUS OPEN OR SHORTED CONDITION<br>GLOW PLUG CONTROL MODULE (GPCM) |

**Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based**

**Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

### DIAGNOSTIC TEST

1. **ACTIVE DTC**

   **NOTE: Diagnose all CAN B and C communication DTCs before continuing.**

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

      Is the status Active for this DTC?

      **Yes**

      - Replace and program the Glow Plug Control Module (GPCM) in accordance with the Service Information.
      - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

      **No**

      - Refer to the INTERMITTENT DTC Diagnostic Procedure. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

## U0415-IMPLAUSIBLE DATA RECEIVED FROM ABS

### ADDITIONAL WIRING

For a complete wiring diagram, refer to appropriate SYSTEM WIRING DIAGRAMS article(s).

### MONITOR CONDITIONS

- **When Monitored:**

  Continuously while the system is active.

### SET CONDITIONS

- **Set Condition:**

  An error message has been received over the bus from the Anti-lock Brake Module.

### POSSIBLE CAUSES

| Possible Causes |
| --- |
| INTERMITTENT DTC<br>CAN BUS OPEN OR SHORTED CONDITION<br>ANTI-LOCK BRAKE MODULE (CAB) |

**Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure .**

### DIAGNOSTIC TEST

1. **ACTIVE DTC**

   **NOTE: Diagnose all CAN B and C communication DTCs before continuing.**

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

      Is the status Active for this DTC?

      **Yes**

      - Go to step 2

      **No**

      - Refer to the INTERMITTENT DTC Diagnostic Procedure. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

2. **ABS COMMUNICATION RELATED DTC'S IN OTHER MODULES**
   1. With a scan tool check for ABS communication related DTCs in other modules on the CAN Bus.

      Are there any ABS communication related DTCs in other modules on the CAN Bus at this time?

      **Yes**

      - Replace and program the Anti-Lock Brake Control Module (CAB) in accordance with the Service Information.
      - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

      **No**

      - Replace and program the Engine Control Module (ECM) in accordance with the Service Information.
      - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

## U0429-IMPLAUSIBLE DATA RECEIVED FROM SCM

### ADDITIONAL WIRING

For a complete wiring diagram, refer to appropriate SYSTEM WIRING DIAGRAMS article(s).

## MONITOR CONDITIONS

- **When Monitored:**

  Continuously while the system is active.

## SET CONDITIONS

- **Set Condition:**

  An error message has been received over the bus from the Steering Control Module (SCM).

## POSSIBLE CAUSES

| Possible Causes |
| --- |
| CAN BUS OPEN OR SHORTED CONDITION |
| STEERING CONTROL MODULE (SCM) |
| ENGINE CONTROL MODULE (ECM) |

**Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure .**

## DIAGNOSTIC TEST

1. **ACTIVE DTC**

   **NOTE: Diagnose all CAN B and C communication DTCs before continuing.**

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

      Is the status Active for this DTC?

      **Yes**

      - Go to step 2

      **No**

      - Refer to the INTERMITTENT DTC Diagnostic Procedure. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .
2. **SCM COMMUNICATION RELATED DTC'S IN OTHER MODULES**
   1. With a scan tool check for SCM communication related DTCs in other modules on the CAN Bus.

      Are there any SCM communication related DTCs in other modules on the CAN Bus at this time?

**Yes**

- Replace and program the Steering Control Module (SCM) in accordance with the Service Information.
- Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

**No**

- Replace and program the Engine Control Module (ECM) in accordance with the Service Information.
- Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

# U0452-INVALID DATA RECEIVED RESTRAINTS CONTROL MODULE

## ADDITIONAL WIRING

For a complete wiring diagram, refer to appropriate SYSTEM WIRING DIAGRAMS article(s).

## MONITOR CONDITIONS

- **When Monitored:**

  Continuously while the system is active.

## SET CONDITIONS

- **Set Condition:**

  An error message has been received over the bus from the Airbag Control Module.

## POSSIBLE CAUSES

| Possible Causes |
|---|
| INTERMITTENT DTC |
| CAN BUS OPEN OR SHORTED CONDITION |
| AIRBAG CONTROL MODULE (ACM) |
| ENGINE CONTROL MODULE (ECM) |

**Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure .**

## DIAGNOSTIC TEST

1. **ACTIVE DTC**

   **NOTE: Diagnose all CAN B and C communication DTCs before continuing.**

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

   Is the status Active for this DTC?

   **Yes**

   - Go to step 2

   **No**

   - Refer to the INTERMITTENT DTC Diagnostic Procedure. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

2. **ACM COMMUNICATION RELATED DTC'S IN OTHER MODULES**
   1. With a scan tool check for ACM communication related DTCs in other modules on the CAN Bus.

      Are there any ACM communication related DTCs in other modules on the CAN Bus at this time?

      **Yes**

      - Replace and program the Airbag Control Module (ACM) in accordance with the Service Information.
      - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

      **No**

      - Replace and program the Engine Control Module (ECM) in accordance with the Service Information.
      - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

# U1004-CAN C BUS TRANSMIT PERFORMANCE

### CIRCUIT SCHEMATIC

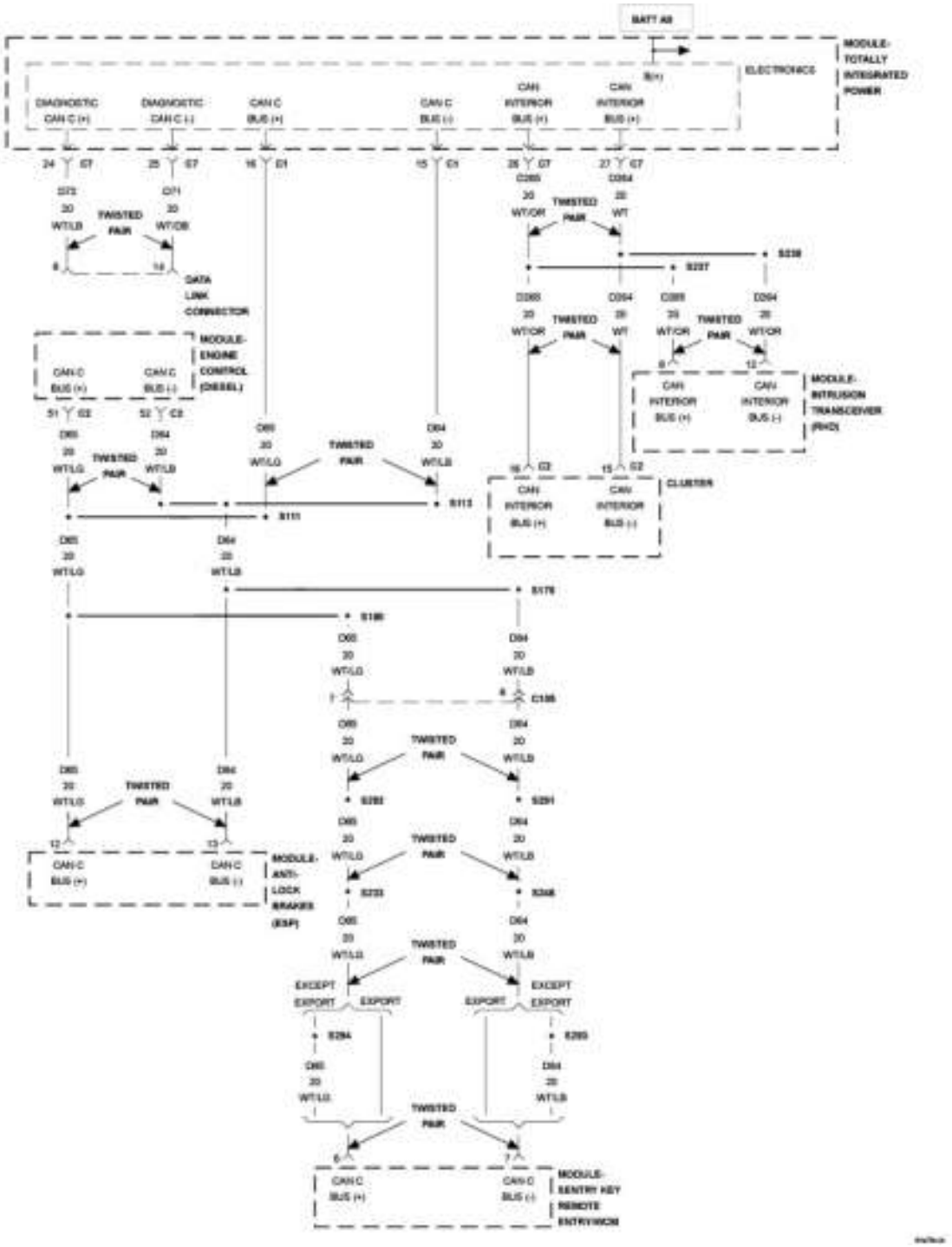



**Fig. 1: CAN C BUS Circuit Schematic**
**Courtesy of CHRYSLER LLC**

## ADDITIONAL WIRING

For a complete wiring diagram, refer to appropriate SYSTEM WIRING DIAGRAMS article(s).

## MONITOR CONDITIONS

- **When Monitored:**

Continuously while the system is active and there are no ECM system voltage DTCs present.

## SET CONDITIONS

- **Set Condition:**

The ECM is reporting an error condition when attempting to transmit a CAN bus message.

## POSSIBLE CAUSES

| Possible Causes |
| --- |
| CAN BUS ERROR CONDITION<br>ENGINE CONTROL MODULE (ECM) |

**Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure**

## DIAGNOSTIC TEST

1. **ACTIVE DTC**

   **NOTE: Diagnose all CAN B and C communication DTCs before continuing.**

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

      Is the status Active for this DTC?

      **Yes**

      - Go to step 2

      **No**

      - Refer to the INTERMITTENT DTC Diagnostic Procedure. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .
2. **COMMUNICATION DTCS PRESENT**
   1. With a scan tool check for any other communication DTCs present in other modules on the CAN C bus.

      Are there any CAN C bus DTCs active at this time?

      **Yes**

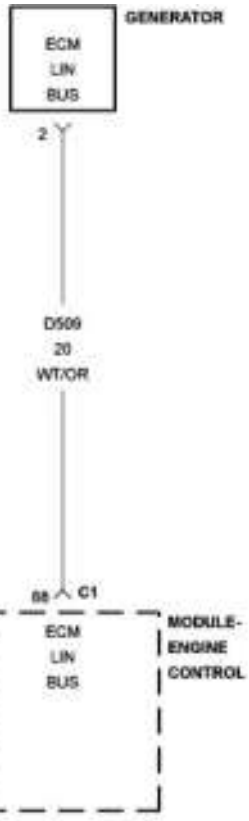
      - Refer to **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Diagnosis and Testing** for additional vehicle communication diagnostic procedures.

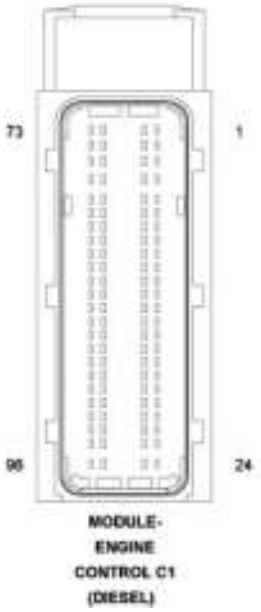
      **No**

- Replace and program the Engine Control Module (ECM) in accordance with the Service Information.
- Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

## U1008-LIN 1 BUS

### CIRCUIT SCHEMATIC



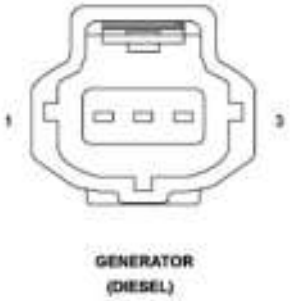



**Fig. 2: LIN Bus Circuit Schematic**
**Courtesy of CHRYSLER LLC**

## ADDITIONAL WIRING

For a complete wiring diagram, refer to appropriate SYSTEM WIRING DIAGRAMS article(s).

## MONITOR CONDITIONS

- **When Monitored:**

  Continuously while the system is active.

## SET CONDITIONS

- **Set Condition:**

  The ECM is receiving a LIN bus error message.

## POSSIBLE CAUSES

| Possible Causes |
| --- |
| INTERMITTENT DTC |
| (D509) LIN BUS CIRCUIT SHORTED TO GROUND |
| (D509) LIN BUS CIRCUIT SHORTED TO VOLTAGE |
| GENERATOR |
| ENGINE CONTROL MODULE (ECM) |

**Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure**

## DIAGNOSTIC TEST

1. **DTC IS ACTIVE**
    1. Turn the ignition on.
    2. With a scan tool, View DTCs.
    3. Record all DTC information.
    4. With a scan tool, Clear DTCs.
    5. Start the engine and allow it to reach normal operating temperature.
    6. Monitor the scan tool for at least 2 minutes.
    7. With a scan tool, View DTCs.

    Is the status Active for this DTC?

    **Yes**

    - Go to step 2

**No**

- Refer to the INTERMITTENT DTC Diagnostic Procedure. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure**

2. **GENERATOR**
    1. Turn the ignition off.
    2. Disconnect the Generator harness connector.
    3. Turn the ignition on.
    4. With a scan tool, Clear DTCs.
    5. With a scan tool, View DTCs.
    6. Monitor the scan tool for at least 2 minutes.

    **NOTE: If the Generator LIN bus circuit is shorted internally, the LIN Bus DTC will not set with the Generator disconnected. If the LIN bus is shorted to voltage or ground, this DTC will remain Active.**

    Is the status Active for this DTC?

    **Yes**

    - Go to step 3

    **No**

    - Replace the Generator in accordance with the Service Information.
    - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure**
3. **(D509) LIN BUS CIRCUIT SHORTED TO GROUND**

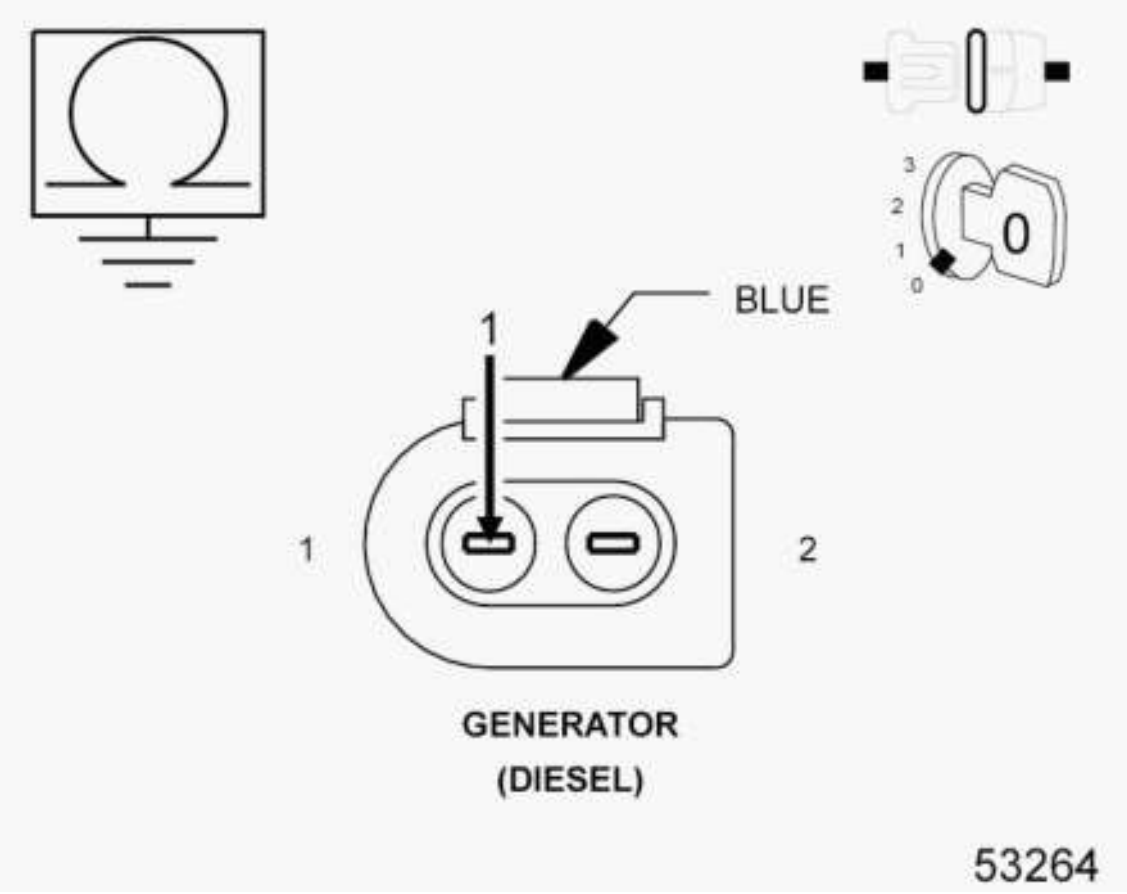



**Fig. 3: Measuring Resistance Between Ground And LIN Bus Circuit In Generator Harness Connector**
**Courtesy of CHRYSLER LLC**

1. Turn the ignition off.
2. Disconnect the Engine Control Module (ECM) harness connector.
3. Measure the resistance between ground and the (D509) LIN Bus circuit in the Generator harness connector.

   Is the resistance above 1000 ohms?

   **Yes**

   - Go to step 4

   **No**

   - Repair the (D509) LIN Bus for a short to ground.
   - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure**

4. **(D509) LIN BUS CIRCUIT SHORTED TO VOLTAGE**

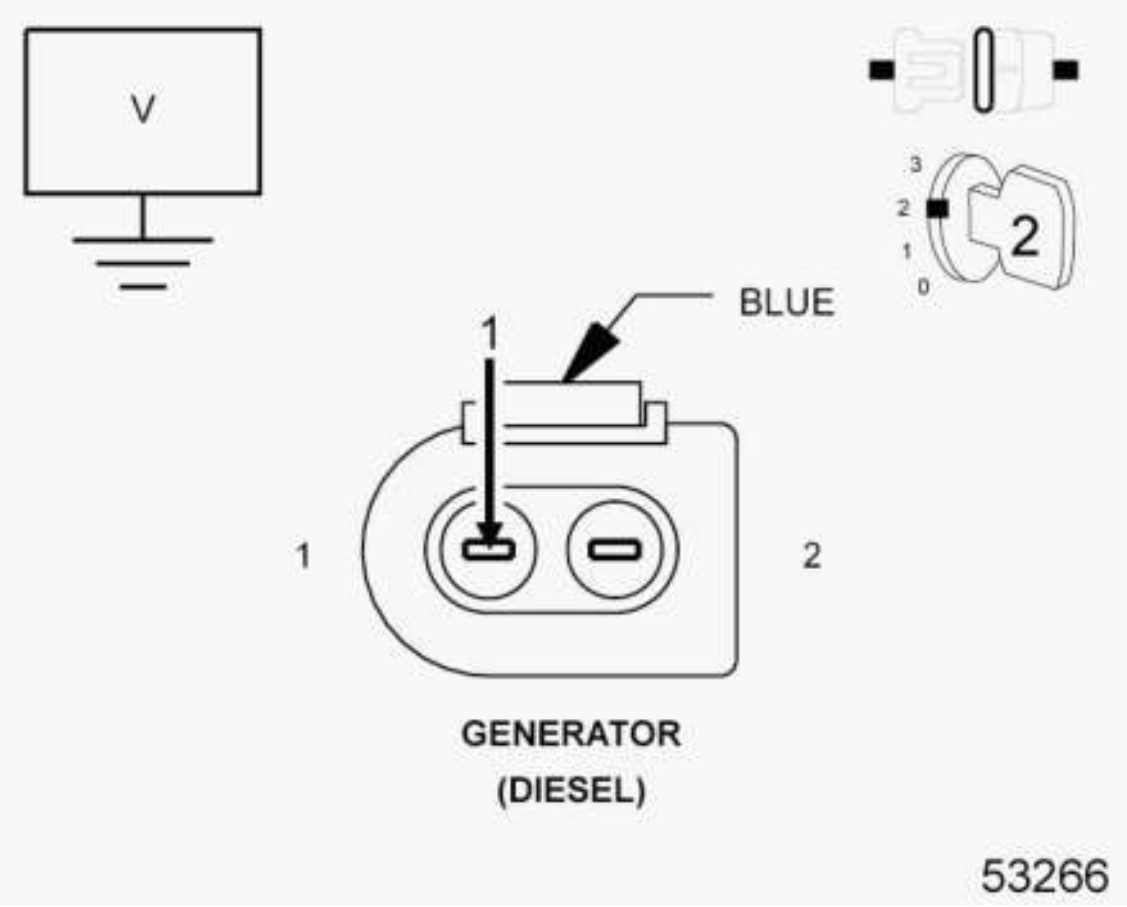



**Fig. 4: Measuring Voltage Of LIN Bus Circuit In Generator Harness Connector**
**Courtesy of CHRYSLER LLC**

1. Remove the ASD Relay.
2. Connect a jumper wire between cavity 30 and cavity 87 of the ASD Relay Connector.
3. Turn the ignition on.
4. Measure the voltage of the (D509) LIN Bus circuit in the Generator harness connector.

   Is there any voltage present?

   **Yes**

   - Repair the (D509) LIN Bus circuit for a short to voltage.
   - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure**

   **No**

   - Go to step 5

5. **ENGINE CONTROL MODULE (ECM)**
   1. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors between the Glow Plug Module and the Engine Control Module (ECM).
   2. Look for any chafed, pierced, pinched, or partially broken wires.
   3. Look for broken, bent, pushed out or corroded terminals.

4. Monitor the scan tool data relative to this circuit and wiggle test the wiring and connectors.
5. Look for the data to change or for the DTC to reset during the wiggle test.
6. Refer to any Technical Service Bulletins that may apply.

   Were any problems found?

   **Yes**

   - Repair as necessary.
   - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure**

   **No**

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

# U110A-LOST COMMUNICATION WITH SCM (SAS)

## ADDITIONAL WIRING

For a complete wiring diagram, refer to appropriate SYSTEM WIRING DIAGRAMS article(s).

## MONITOR CONDITIONS

- **When Monitored:**

  Continuously while the system is active.

## SET CONDITIONS

- **Set Condition:**

  The Engine Control Module (ECM) doesn't receive a Bus Message from the Steering Angle Sensor (SAS).

## POSSIBLE CAUSES

| Possible Causes |
| --- |
| CAN BUS OPEN OR SHORTED CONDITION |
| CLOCKSPRING |
| ENGINE CONTROL MODULE (ECM) |

**Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure .**

## DIAGNOSTIC TEST

1. **DIAGNOSTIC TROUBLE CODE (DTC) IS ACTIVE**
    1. Ignition on, engine not running.
    2. Using the scan tool, clear DTCs in the Engine Control Module (ECM).
    3. Monitor the scan tool for at least two minutes.
    4. Cycle the ignition key off and on several times, leaving the ignition on for at least 10 seconds at a time.
    5. Start the engine.
    6. Allow the engine to reach normal operating temperature.
    7. Using the scan tool, select View DTCs.

    Is the status Active for this DTC?

    **Yes**

    - **. Refer to DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Diagnosis and Testing** and perform the U110A-Lost Communication with SCM (SAS) diagnostic procedure.

    **No**

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

# U110E-LOST AMBIENT TEMPERATURE MESSAGE

## CIRCUIT SCHEMATIC

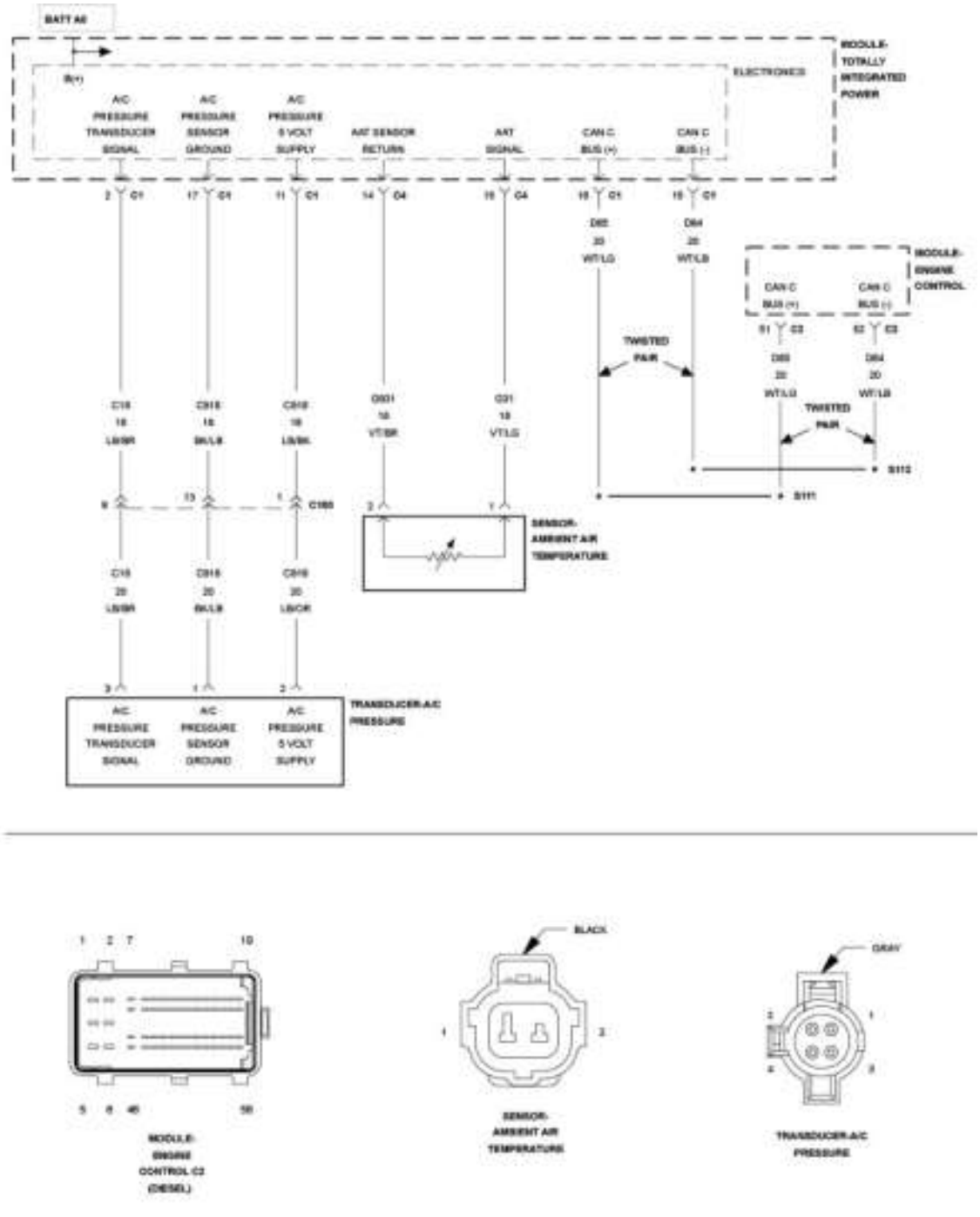



**Fig. 5: Ambient Air Temperature Sensor & A/C Pressure Transducer Circuit Schematic**
**Courtesy of CHRYSLER LLC**

## ADDITIONAL WIRING

For a complete wiring diagram, refer to appropriate SYSTEM WIRING DIAGRAMS article(s).

## MONITOR CONDITIONS

- **When Monitored:**

  Continuously while the system is active.

### SET CONDITIONS

- **Set Condition:**

  The ECM doesn't receive a Bus Message from the Totally Integrated Power Module (TIPM).

### POSSIBLE CAUSES

| Possible Causes |
|---|
| CAN BUS OPEN OR SHORTED CONDITION |
| TOTALLY INTEGRATED POWER MODULE (TIPM) |
| ENGINE CONTROL MODULE (ECM) |

**Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure .**

### DIAGNOSTIC TEST

1. **DTC IS ACTIVE**
   1. Ignition on, engine not running.
   2. With the scan tool, Clear DTCs in the Engine Control Module (ECM).
   3. Monitor the scan tool for at least two minutes.
   4. Cycle the ignition key off and on several times, leaving the ignition on for at least 10 seconds at a time.
   5. Start the engine.
   6. Allow the engine to reach normal operating temperature.
   7. With the scan tool, select View DTCs.

      Is the status Active for this DTC?

      **Yes**

      - Refer to **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Diagnosis and Testing** for diagnostic procedures and for additional possible causes related to TIPM Communication Errors. If there are no other communication errors present, replace and program the ECM in accordance with the Service Information.

      **No**

      - Perform the INTERMITTENT DTC Diagnostic Procedure. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

## U1113-LOST AC PRESSURE MESSAGE

### CIRCUIT SCHEMATIC

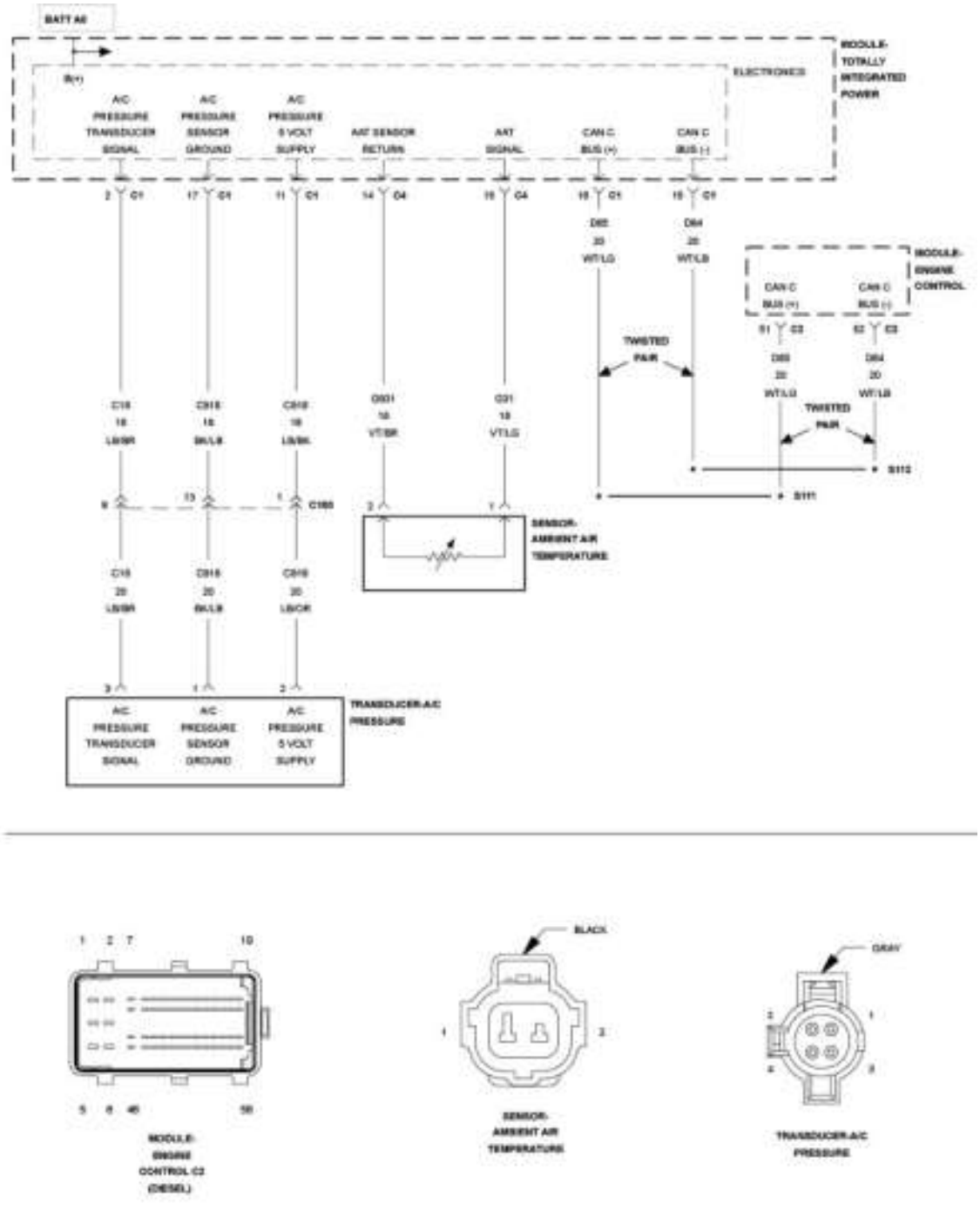



**Fig. 6: Ambient Air Temperature Sensor & A/C Pressure Transducer Circuit Schematic**
**Courtesy of CHRYSLER LLC**

## ADDITIONAL WIRING

For a complete wiring diagram, refer to appropriate SYSTEM WIRING DIAGRAMS article(s).

## MONITOR CONDITIONS

- **When Monitored:**

  Continuously while the system is active.

## SET CONDITIONS

- **Set Condition:**

  An invalid message has been received over the bus from the Totally Integrated Power Module (TIPM).

## POSSIBLE CAUSES

| Possible Causes |
|---|
| CAN BUS OPEN OR SHORTED CONDITION |
| TOTALLY INTEGRATED POWER MODULE (TIPM) |
| ENGINE CONTROL MODULE (ECM) |

**Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure .**

## DIAGNOSTIC TEST

1. **ACTIVE DTC**

   **NOTE: Diagnose all CAN B and C communication DTCs before continuing.**

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

      Is the status Active for this DTC?

      **Yes**

      - Go to step 2

      **No**

      - Refer to the INTERMITTENT DTC Diagnostic Procedure. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .
2. **COMMUNICATION DTCS PRESENT IN THE TOTALLY INTEGRATED POWER MODULE (TIPM)**
   1. With a scan tool check for DTCs in the TIPM.

      Are there any CAN bus DTCs active in the TIPM at this time?

      **Yes**

      - Refer to **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Diagnosis and Testing** for additional vehicle communication diagnostic procedures.
      - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

**No**

- Replace and program the Engine Control Module (ECM) in accordance with the Service Information.
- Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

# U1132-GENERATOR COMMUNICATION

## CIRCUIT SCHEMATIC

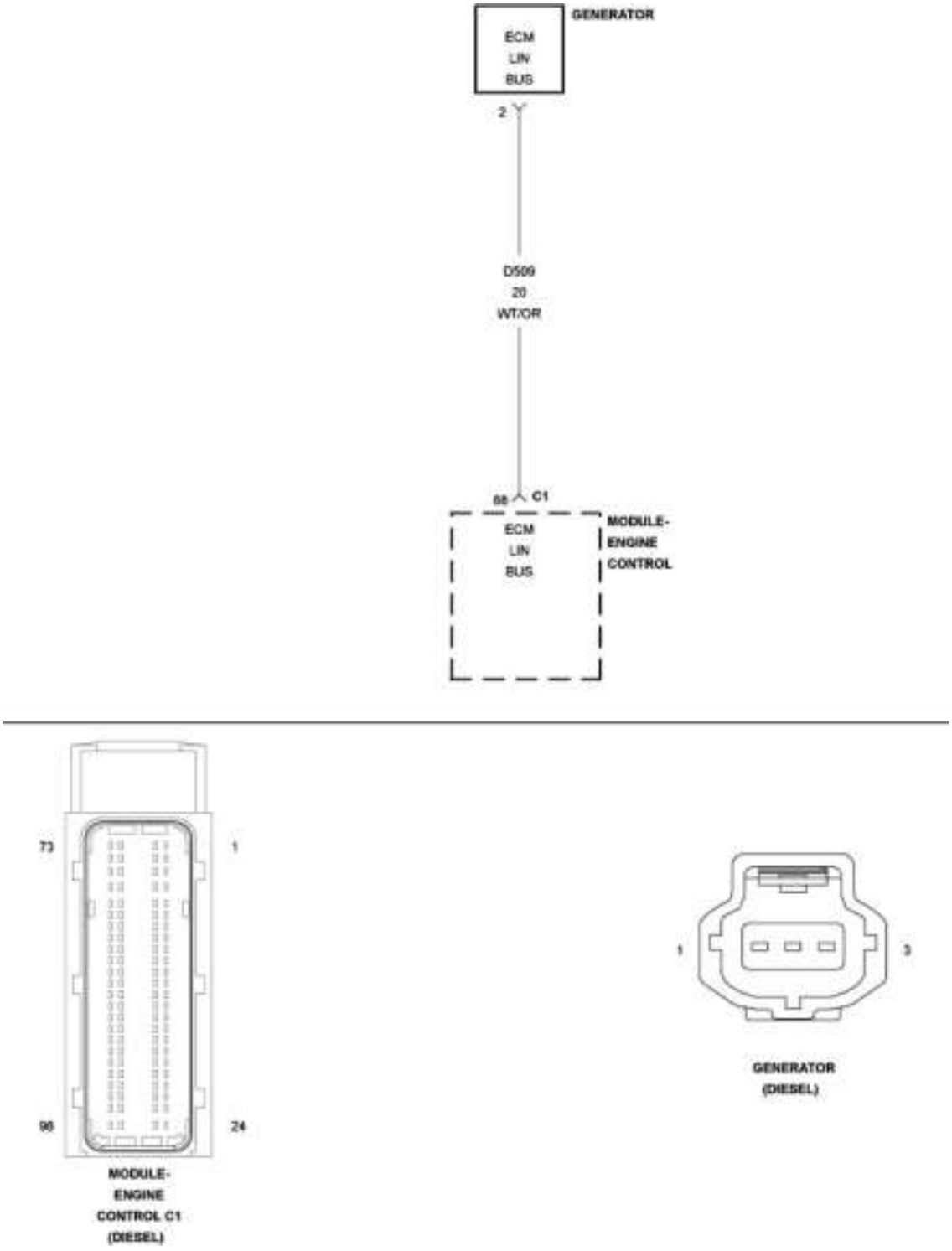



**Fig. 7: LIN Bus Circuit Schematic**
**Courtesy of CHRYSLER LLC**

## ADDITIONAL WIRING

For a complete wiring diagram, refer to appropriate SYSTEM WIRING DIAGRAMS article(s).

## MONITOR CONDITIONS

- **When Monitored:**

Continuously while the system is active.

## SET CONDITIONS

- **Set Condition:**

  The ECM isn't receiving a LIN bus message from the Generator.

## POSSIBLE CAUSES

| Possible Causes |
| --- |
| INTERMITTENT DTC |
| (D509) LIN BUS CIRCUIT OPEN OR HIGH RESISTANCE |
| GENERATOR |
| ENGINE CONTROL MODULE (ECM) |

**Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. See DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure**

## DIAGNOSTIC TEST

1. **DTC IS ACTIVE**
   1. Turn the ignition on.
   2. With a scan tool, View DTCs.
   3. Record all DTC information.

      **NOTE: If DTC U1008 LIN 1 BUS is active in addition to this DTC, perform the diagnostic procedure for that DTC before continuing with this test.**

   4. With a scan tool, Clear DTCs.
   5. Start the engine and allow it to reach normal operating temperature.
   6. Monitor the scan tool for at least 2 minutes.
   7. With a scan tool, View DTCs.

      Is the status Active for this DTC?

      **Yes**

      - Go to step 2

      **No**

      - Refer to the INTERMITTENT DTC Diagnostic Procedure. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure**
2. **(D509) LIN BUS CIRCUIT OPEN OR HIGH RESISTANCE**

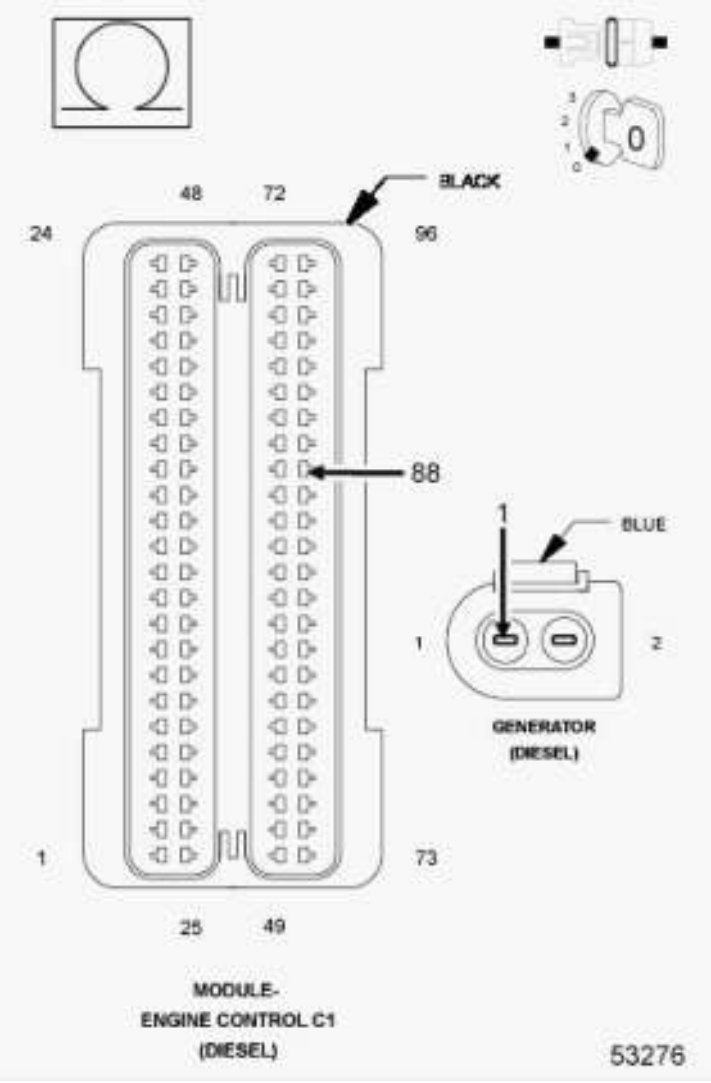



**Fig. 8: Measuring Resistance Of LIN Bus Circuit Between Generator Harness Connector & ECM Harness Connector**
**Courtesy of CHRYSLER LLC**

1. Turn the ignition off.
2. Disconnect the Generator harness connector.
3. Disconnect the Engine Control Module (ECM) harness connector.
4. Measure the resistance of the (D509) LIN Bus circuit between the Generator harness connector and the Engine Control Module (ECM) harness connector.

   Is the resistance below 10.0 ohms for both measurements?

   **Yes**

   - Go to step 3

   **No**

   - Repair the (D509) LIN Bus circuit for an open circuit or high resistance.
   - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE,**

**Engine Control (ECM) - Standard Procedure**

3. **GENERATOR**
    1. Ignition off, engine not running.
    2. Connect the Engine Control Module (ECM) harness connector.
    3. Replace the Generator in accordance with the Service Information.
    4. Turn the ignition on.
    5. With a scan tool, Clear DTCs.
    6. Start the engine and allow it to reach normal operating temperature.
    7. Monitor the scan tool for at least 2 minutes.
    8. With a scan tool, View DTCs.

    Is the status Active for this DTC?

    **Yes**

    - Go to step 4

    **No**

    - Test Complete.
    - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure**
4. **ENGINE CONTROL MODULE (ECM)**
    1. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors between the Glow Plug Module and the Engine Control Module (ECM).
    2. Look for any chafed, pierced, pinched, or partially broken wires.
    3. Look for broken, bent, pushed out or corroded terminals.
    4. Monitor the scan tool data relative to this circuit and wiggle test the wiring and connectors.
    5. Look for the data to change or for the DTC to reset during the wiggle test.
    6. Refer to any Technical Service Bulletins that may apply.

    Were any problems found?

    **Yes**

    - Repair as necessary.
    - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure**

    **No**

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

## U1421-IMPLAUSIBLE IGNITION KEY OFF TIME RECEIVED

## ADDITIONAL WIRING

For a complete wiring diagram, refer to appropriate SYSTEM WIRING DIAGRAMS article(s).

## MONITOR CONDITIONS

- **When Monitored:**

  At ignition on.

## SET CONDITIONS

- **Set Condition:**

  The ECM detects a problem when comparing the current ECT Sensor input to the ECT Sensor input at the last ECM power down and the amount of time that has elapsed based on an internal timer in the TIPM.

## POSSIBLE CAUSES

| Possible Causes |
|---|
| IGNITION SWITCH |
| TIPM POWERS AND GROUNDS |
| TOTALLY INTEGRATED POWER MODULE (TIPM) |
| ENGINE COOLANT TEMPERATURE SENSOR |

## DIAGNOSTIC TEST

1. **CHECK FOR ACTIVE DTC**

   **NOTE: If the ECM detects and stores a DTC, the ECM also stores the engine/vehicle operating conditions under which the DTC was set. Some of these conditions are displayed on the scan tool at the same time the DTC is displayed.**

   **NOTE: Before erasing stored DTCs, record these conditions. Attempting to duplicate these conditions may assist when checking for an active DTC.**

   1. Turn the ignition on.
   2. With the scan tool, erase ECM DTCs.
   3. Perform several ignition cycles, turning the ignition off for at least 10 seconds between each ignition cycle.
   4. Monitor the scan tool for ECM DTCs.

      Did this DTC set again?

      **Yes**

- Go to step 2

**No**

- Perform the INTERMITTENT DTC Diagnostic Procedure. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

2. **CHECKING FOR OTHER DTCS**
   1. With the scan tool, read other TIPM DTCs.

      **NOTE: Any ECM communication related DTCs in the TIPM must be diagnosed and corrected before continuing to diagnose this DTC.**

      Are there any ECM communication related DTCs in the TIPM?

      **Yes**

      - Refer to **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Diagnosis and Testing** and repair the active communication DTCs before continuing.
      - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

      **No**

      - Go to step 3

3. **CHECKING THE ECT SENSOR**
   1. Perform the CHECKING THE ENGINE COOLANT TEMPERATURE SENSOR CALIBRATION diagnostic procedure to verify proper ECT Sensor operation. Refer to **Non-DTC Diagnostics/Driveability - Diesel - Diagnosis and Testing** .

      Is the ECT Sensor operating correctly?

      **Yes**

      - Go to step 4

      **No**

      - Repair the (K344) ASD Relay Output circuit for an open.
      - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

4. **IGNITION SWITCH**
   1. Refer to the Wiring Information and verify proper Ignition Switch operation.
   2. Turn the ignition key to each position and verify correct voltage output at each ignition switch harness connector cavity.

      Is the Ignition Switch operating properly?

      **Yes**

- Go to step 5

**No**

- Repair or replace Ignition Switch, wiring or connectors as necessary.
- Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .

5. **TIPM POWER AND GROUND CIRCUITS**
   1. Refer to the Wiring Information and verify proper battery supply, ignition switch supply and grounds at the TIPM harness connectors.

      Are the TIPM power and grounds functioning properly?

      **Yes**

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

      **No**

      - Repair power/ground circuit(s) as necessary.
      - Perform the ECM VERIFICATION TEST. See **DTC-Based Diagnostics/MODULE, Engine Control (ECM) - Standard Procedure** .