U0170-LOST COMMUNICATION W/UP-FRONT LEFT SATELLITE ACCELERATION SENSOR

For a complete wiring diagram, refer to the Wiring Information.
Theory of Operation

Each front sensor is secured with a flanged hex nut to a weld stud on the back of the right and left vertical members of the radiator support within the engine compartment. The impact sensors perform their own self test using power supplied by the Occupant Restraint Controller (ORC) then communicate this status back to the ORC with periodic updates. The repair of this fault condition involves verifying the integrity of the wiring between the ORC and the sensor.

- **When Monitored:**

  The Occupant Restraint Controller (ORC) continuously communicates with the Front Left Impact Sensor over the sensor signal circuit. The sensor communication and on board diagnostics are powered by the ORC signal.

- **Set Condition:**

  This code will set, if the ORC and the Front Left Impact Sensor do not establish and maintain valid data communications. The DTC will become Active after the fault has set for 9 seconds. The DTC will go to Stored after the ORC to Front Left Impact Sensor communication has recovered for 4 seconds. The DTC can clear within this ignition cycle.

### Possible Causes

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Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. (Refer to 28 - DTC-Based Diagnostics/CONTROLLER, Occupant Restraint (ORC) - Standard Procedure).

1. **VERIFY THAT DTC U0170-LOST COMMUNICATION W/UP-FRONT LEFT SATELLITE ACCELERATION SENSOR IS ACTIVE**

   **NOTE:** Make sure the battery is fully charged.
   1. Turn the ignition on.
   2. With the scan tool, read ORC DTCs.

   **Does the scan tool display active: U0170-LOST COMMUNICATION W/UP-FRONT LEFT SATELLITE ACCELERATION SENSOR?**

   **Yes**   • Go To 2

   **No**    • Perform the RESTRAINTS SYSTEM INTERMITTENT TEST. (Refer to 28 - DTC-Based Diagnostics/CONTROLLER, Occupant Restraint (ORC) - Standard Procedure).
2. CHECK THE (R79), (R81) FRONT LEFT IMPACT SENSOR SIGNAL AND GROUND CIRCUITS FOR A SHORT TO VOLTAGE

**WARNING:** Turn the ignition off disconnect the 12-volt battery and wait two minutes before proceeding. Failure to follow these instructions may result in possible serious or fatal injury.

1. Disconnect the Front Left Impact Sensor harness connector.
2. Disconnect the ORC harness connector.
3. If equipped with the standard key ignition, use this ignition on warning.

**WARNING:** Turn the ignition on, then reconnect the 12-volt battery and wait two minutes before proceeding. Failure to follow these instructions may result in possible serious or fatal injury.

4. If equipped with the keyless ignition, use this ignition on warning.

**WARNING:** Disconnect the 12-volt battery wait two minutes before proceeding, remove the ORC fuses, connect the 12-volt battery, wait two minutes before proceeding. Cycle the ignition to the On position, then reconnect the ORC fuses. Wait two minutes before proceeding. Failure to follow these instructions may result in possible serious or fatal injury.

5. Measure the voltage of the (R79) Front Left Impact Sensor Signal circuit and (R81) Sensor Ground circuit at the Front Left Impact Sensor connector.

**Is there any voltage present?**

**Yes**
- Repair the (R79), (R81) Front Left Impact Sensor circuits for a short to voltage.
- Perform the RESTRAINTS SYSTEM VERIFICATION TEST. (Refer to 28 - DTC-Based Diagnostics/CONTROLLER, Occupant Restraint (ORC) - Standard Procedure).

**No**
- Go To 3
3. **CHECK THE (R79) FRONT LEFT IMPACT SENSOR SIGNAL CIRCUIT FOR A SHORT TO GROUND**

**WARNING:** Turn the ignition off disconnect the 12-volt battery and wait two minutes before proceeding. Failure to follow these instructions may result in possible serious or fatal injury.

1. Measure the resistance between ground and the (R79) Front Left Impact Sensor Signal circuit at the appropriate terminal of the Front Left Impact Sensor harness connector.

   **Is the resistance below 6K Ohms?**

   **Yes**
   - Repair the (R79) Front Left Impact Sensor Signal circuit for a short to ground.
   - Perform the RESTRAINTS SYSTEM VERIFICATION TEST. (Refer to 28 - DTC-Based Diagnostics/CONTROLLER, Occupant Restraint (ORC) - Standard Procedure).

   **No**
   - Go To 4

4. **CHECK THE (R79), (R81) FRONT LEFT IMPACT SENSOR CIRCUITS FOR A SHORT TOGETHER**

1. Measure the resistance between the (R79) Front Left Impact Sensor Signal and (R81) Sensor Ground circuits at the Front Left Impact Sensor harness connector.

   **Is the resistance below 5K Ohms?**

   **Yes**
   - Repair the (R79), (R81) Front Left Impact Sensor circuits that are shorted together.
   - Perform the RESTRAINTS SYSTEM VERIFICATION TEST. (Refer to 28 - DTC-Based Diagnostics/CONTROLLER, Occupant Restraint (ORC) - Standard Procedure).

   **No**
   - Go To 5
5. CHECK THE (R81) FRONT LEFT IMPACT SENSOR GROUND CIRCUIT FOR AN OPEN OR HIGH RESISTANCE

1. Connect the 32-Way Adapter 8443-24 to the ORC harness connector.
2. Measure the resistance of the (R81) Front Left Impact Sensor Ground circuit between the Front Left Impact Sensor harness connector and the appropriate terminal of the 32-Way Adapter 8443-24.

   Is the resistance below 1 Ohm?

   Yes • Go To 6

   No • Repair the (R81) Front Left Impact Sensor 1 Ground circuit for an open or high resistance.

   • Perform the RESTRAINTS SYSTEM VERIFICATION TEST. (Refer to 28 - DTC-Based Diagnostics/CONTROLLER, Occupant Restraint (ORC) - Standard Procedure).

6. CHECK THE (R79) FRONT LEFT IMPACT SENSOR SIGNAL CIRCUIT FOR AN OPEN OR HIGH RESISTANCE

1. Measure the resistance of the (R79) Front Left Impact Sensor Signal circuit between the Front Left Impact Sensor harness connector and the appropriate terminal of the 32-Way Adapter 8443-24.

   Is the resistance below 1 Ohm?

   Yes • Go To 7

   No • Repair the (R79) Front Left Impact Sensor Signal circuit for an open or high resistance.

   • Perform the RESTRAINTS SYSTEM VERIFICATION TEST. (Refer to 28 - DTC-Based Diagnostics/CONTROLLER, Occupant Restraint (ORC) - Standard Procedure).

7. CHECK OPERATION OF THE FRONT LEFT IMPACT SENSOR

1. Replace the Front Left Impact Sensor. (Refer to 10 - Restraints/SENSOR, Impact - Removal).
2. Reconnect the vehicle body harness to the impact sensor. Verify for proper connection.
3. Remove any special tools or jumper wires and reconnect all previously disconnected components - except the Battery.

4. If equipped with the standard key ignition, use this ignition on warning.

**WARNING:** Turn the ignition on, then reconnect the 12-volt battery and wait two minutes before proceeding. Failure to follow these instructions may result in possible serious or fatal injury.

5. If equipped with the keyless ignition, use this ignition on warning.

**WARNING:** Disconnect the 12-volt battery wait two minutes before proceeding, remove the ORC fuses, connect the 12-volt battery, wait two minutes before proceeding. Cycle the ignition to the On position, then reconnect the ORC fuses. Wait two minutes before proceeding. Failure to follow these instructions may result in possible serious or fatal injury.

6. Connect the scan tool to the Data Link Connector - use the most current software available.

7. Use the scan tool and erase the stored codes in all airbag system modules.

8. Turn the Ignition Off, and wait five seconds before turning the Ignition On.

9. Wait one minute, and read active codes and if there are none present read the stored codes.

**Did the active U0170-LOST COMMUNICATION W/UP-FRONT LEFT SATELLITE ACCELERATION SENSOR return?**

**Yes**  
- **WARNING:** Turn the ignition off disconnect the 12-volt battery and wait two minutes before proceeding. Failure to follow these instructions may result in possible serious or fatal injury.
- **WARNING:** If the Occupant Restraint Controller (ORC) is dropped at any time, it must be replaced. Failure to take the proper precautions can result in accidental airbag deployment. Failure to follow these instructions may result in possible serious or fatal injury.
- Replace the Occupant Restraint Controller. (Refer to 10 - Restraints/MODULE, Occupant Restraint Controller - Removal).
- Perform the RESTRAINTS SYSTEM VERIFICATION TEST. (Refer to 28 - DTC-Based Diagnostics/CONTROLLER, Occupant Restraint (ORC) - Standard Procedure).

**No**  
- Repair is complete.
- Perform the RESTRAINTS SYSTEM VERIFICATION TEST. (Refer to 28 - DTC-Based Diagnostics/CONTROLLER, Occupant Restraint (ORC) - Standard Procedure).