U0171-LOST COMMUNICATION W/UP-FRONT RIGHT SATELLITE ACCELERATION SENSOR

For a complete wiring diagram, refer to the Wiring Information.
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. Refer to the enclosed graphic as a reference of specific Side Impact Satellite Acceleration, Side Impact Satellite Pressure, and Up-Front Satellite Acceleration sensor locations on the vehicle. It is important to review this graphic thoroughly to understand the specific area of diagnosis you are looking to complete.

The Up-Front Right and Up-Front Left Satellite Acceleration Sensors are located behind the Front End Module carrier and below the front lamp unit housing inboard end in the engine area. The number 1 side sensors are located in the 1st row door area with the number 1 side sensor being on the passenger side (Right Side Satellite Pressure Sensor 1) and the number 1 side sensor also being on the driver side (Left Side Satellite Pressure Sensor 1). The number 4 side sensors are located in the “B” pillar area just past the 1st row doors (these side sensors will be new side sensors to be added for the 2011 model year). The number 4 side sensor is located on the passenger side (Right Side Satellite Acceleration Sensor 4) and the number 4 side sensor is also located on the driver side (Left Side Satellite Acceleration Sensor 4). The number 2 side sensors are located in the 2nd row sliding side door track area. The number 2 side sensor is located on the passenger side (Right Side Satellite Acceleration Sensor 2) and the number 2 side sensor is also located on the driver side (Left Side Satellite Acceleration Sensor 2). The number 3 side sensor is located in the 3rd row area just above the rear axle. The number 3 side sensor is located on the passenger side (Right Side Satellite Acceleration Sensor 3) and the number 3 side sensor is also located on the driver side (Left Side Satellite Acceleration Sensor 3).

- **When Monitored:**
  
The ORC monitors communication with the impact sensor continuously.

- **Set Condition:**
  
  This DTC sets when the ORC no longer receives notification of the status update from the impact sensor. Once set, this DTC is latched for the entire ignition cycle.

**Possible Causes**

| (R80) RIGHT FRONT IMPACT SENSOR SIGNAL CIRCUIT OPEN |
### Possible Causes

- (R82) RIGHT FRONT IMPACT SENSOR GROUND CIRCUIT OPEN
- (R80) RIGHT FRONT IMPACT SENSOR SIGNAL CIRCUIT SHORTED TO (R82) RIGHT FRONT IMPACT SENSOR GROUND CIRCUIT
- (R80) RIGHT FRONT IMPACT SENSOR SIGNAL CIRCUIT SHORTED TO GROUND
- (R80) RIGHT FRONT IMPACT SENSOR SIGNAL CIRCUIT SHORTED TO VOLTAGE
- (R82) RIGHT FRONT IMPACT SENSOR GROUND CIRCUIT SHORTED TO VOLTAGE
- (R81) LEFT FRONT IMPACT SENSOR GROUND CIRCUIT SHORTED TO VOLTAGE
- RIGHT FRONT IMPACT SENSOR
- OCCUPANT RESTRAINT CONTROLLER (ORC)

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

1. **DETERMINE ACTIVE OR STORED DTC**

   **NOTE:** Make sure the battery is fully charged.

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

   **Is the DTC active or stored?**

   **ORC**
   - **ACTIVE DTC**
   - **STORED DTC**

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

2. **CHECK FOR ADDITIONAL ACTIVE SATELLITE SENSOR DTCS**

   **NOTE:** The scan tool, Load Tool ORC Adaptor, and a DVOM are required to perform the following tests.

   1. With the scan tool, read all active ORC DTCs.

   **Is DTC U0170-LOST COMMUNICATION W/UP-FRONT LEFT SATELLITE ACCELERATION SENSOR also active?**

   **Yes**
   - Go To 8

   **No**
   - Go To 3
3. **CHECK (R80) RIGHT FRONT IMPACT SENSOR SIGNAL CIRCUIT FOR AN OPEN**

**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 Right Front Impact Sensor connector.
2. Disconnect the ORC connectors.

**NOTE:** Check connectors - Clean and repair as necessary.

3. Connect the SRS Load Tool Adapter 8443-28 to the ORC connectors.

**Is the resistance below 1.0 Ohm?**

**Yes**
- Go To 4

**No**
- Repair or replace the (R80) Right Front Impact Sensor Signal circuit for an open in accordance with the Service Information. Then, Go To 4

4. **CHECK (R82) RIGHT FRONT IMPACT SENSOR GROUND CIRCUIT FOR AN OPEN**


**Is the resistance below 1.0 Ohm?**

**Yes**
- Go To 5

**No**
- Repair or replace the (R82) Right Front Impact Sensor Ground circuit for an open in accordance with the Service Information.
- Perform the RESTRAINTS SYSTEM VERIFICATION TEST. (Refer to 28 - DTC-Based Diagnostics/CONTROLLER, Occupant Restraint (ORC) - Standard Procedure).
5. CHECK (R80) RIGHT FRONT IMPACT SENSOR SIGNAL CIRCUIT FOR A SHORT TO (R82) RIGHT FRONT IMPACT SENSOR GROUND CIRCUIT

1. Measure the resistance between the (R80) Right Front Impact Sensor Signal circuit and the (R82) Right Front Impact Sensor Ground circuit at the Right Front Impact Sensor connector.

Is the resistance below 5K Ohms?

Yes  • Repair or replace the (R80) Right Front Impact Sensor Signal circuit for a short to the (R82) Right Front Impact Sensor Ground circuit in accordance with the Service Information.
    • Perform the RESTRAINTS SYSTEM VERIFICATION TEST. (Refer to 28 - DTC-Based Diagnostics/CONTROLLER, Occupant Restraint (ORC) - Standard Procedure).

No  • Go To 6

6. CHECK (R80) RIGHT FRONT IMPACT SENSOR SIGNAL CIRCUIT FOR A SHORT TO GROUND

1. Measure the resistance of the (R80) Right Front Impact Sensor Signal circuit between ground and the Right Front Impact Sensor connector.

Is the resistance below 5K Ohms?

Yes  • Repair or replace the (R80) Right Front Impact Sensor Signal circuit for a short to ground in accordance with the Service Information.
    • Perform the RESTRAINTS SYSTEM VERIFICATION TEST. (Refer to 28 - DTC-Based Diagnostics/CONTROLLER, Occupant Restraint (ORC) - Standard Procedure).

No  • Go To 7
7. **CHECK (R80) RIGHT FRONT IMPACT SENSOR SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE**

**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.

1. Measure the voltage of the (R80) Right Front Impact Sensor Signal circuit between the Right Front Impact Sensor connector and ground.

**Is there any voltage present?**

- **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.
  
  Repair or replace the (R80) Right Front Impact Sensor Signal circuit for a short to voltage in accordance with the Service Information.

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

- **No**
  - Perform the RESTRAINTS SYSTEM VERIFICATION TEST. (Refer to 28 - DTC-Based Diagnostics/CONTROLLER, Occupant Restraint (ORC) - Standard Procedure). If DTC U0171-LOST COMMUNICATION W/UP-FRONT RIGHT SATELLITE ACCELERATION SENSOR is still active, Go To 9. Otherwise, test complete.
8. CHECK (R82) RIGHT FRONT IMPACT SENSOR GROUND CIRCUIT AND (R81) LEFT FRONT IMPACT SENSOR GROUND CIRCUIT 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 Left Front Impact Sensor connector.
2. Disconnect the Right Front Impact Sensor connector.
3. Disconnect the ORC connectors.

NOTE: Check connectors - Clean and repair as necessary.

4. Connect the SRS Load Tool Adapter 8443-28 to the ORC connectors.

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. Measure the voltage of the (R81) Left Front Impact Sensor Ground circuit between the SRS Load Tool Adapter 8443-28 and ground.
6. Measure the voltage of the (R82) Right Front Impact Sensor Ground circuit between the SRS Load Tool Adapter 8443-28 and ground.

Is there any voltage present on either circuit?

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.

Repair or replace the impact sensor circuits with voltage present for a short to voltage in accordance with the Service Information.

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

No • Go To 9

9. CHECK OPERATION OF RIGHT FRONT IMPACT SENSOR
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. Replace the Right Front Impact Sensor.
2. Reconnect the vehicle body harness to the impact sensor.
3. Remove any special tools or jumper wires and reconnect all previously disconnected components - except the Battery.

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. Connect the scan tool to the Data Link Connector - use the most current software available.
5. With the scan tool, erase all codes in the ORC.
6. Perform ORC module reset. Access the Miscellaneous Function menu from the ORC ECU Overview screen on the scan tool to perform this operation.
7. Wait one minute, and read active codes.

Did the active DTC U0171-LOST COMMUNICATION W/UP-FRONT RIGHT SATELLITE ACCELERATION SENSOR return?

Yes
- 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.

- 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.
  - Replace the ORC in accordance with the Service Information.
  - 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).