DTC B0077, B0078, B0079, B0080, B0081, or B0082

Circuit Description

The inflatable restraint side impact sensor (SIS) utilizes a unidirectional 2-wire circuit. The SIS modulates current on the interface to send ID, State of Health, and deployment commands to the inflatable restraint sensing and diagnostic module (SDM). The SDM serves as a power source and a ground for the SIS. When the ignition is turned on and input power from the SDM is first detected, the SIS responds by performing internal diagnostics and sending an ID to the SDM. The SDM considers the ID to be valid if the response time is less than 5 seconds. The SIS continually communicates status messages to the SDM, which determines if a fault is present in the SIS circuit. When a fault is detected, the SDM resets the SIS twice by removing and reapplying power. If the fault is still present, the SDM will set a diagnostic trouble code (DTC).

Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

Conditions for Setting the DTC

- DTCs B0077 and B0078 will set when one of the following conditions occur:
  - A valid ID message is not received within 5 seconds of the SIS being powered up.
  - Status message is not received.
  - The SDM has failed twice to reset the SIS.
- DTCs B0079 and B0081 will set when one of the following conditions occur:
  - The SDM has received an ID message from the SIS which does not match the ID stored in the SDM memory.
  - When two SIS resets are attempted without the correct identification being detected by the SDM.
- DTCs B0080 and B0082 will set when the SDM has received a NOK (Not OK) message from the SIS.

Action Taken When the DTC Sets

- The SDM commands the AIR BAG indicator ON via Class 2 serial data.
- The SDM attempts to reset the SIS.

Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists.
- You issue a scan tool CLEAR DTCs command.
- A history DTC will clear once 255 malfunction free ignition cycles have occurred.

Diagnostic Aids

The following can cause an intermittent condition:

- A short between the SIS signal and voltage circuits
- High or low resistance in the SIS signal and voltage circuits
- Inspect the SIS signal and voltage circuits carefully for cutting and/or chafing
- Verify that the correct SIS is installed in the vehicle

Refer to Testing for Intermittent Conditions and Poor Connections in Wiring Systems.

Test Description

The numbers below refer to the step numbers on the diagnostic table:

2. Tests the communication status of the SIS.
6. Tests for a short to ground, a high resistance, or an open in the SIS signal circuit.
7. Tests for a short to ground, a high resistance, or an open in the SIS voltage circuit.
8. Tests for a short to voltage in the SIS signal and voltage circuits.

DTC B0077, B0078, B0079, B0080, B0081, or B0082

Step	Action	Yes	No
Schematic Reference: SIR Schematics **Connector End View Reference:** SIR Connector End Views			
1	Did you perform the Diagnostic System Check - SIR?	Go to Step 2	Go to Diagnostic System Check - SIR
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, request the SIR DTC display. Does the scan tool indicate that either DTC B0079, B0080, B0081, or B0082 is current?	Go to Step 12	Go to Step 3
3	1. Turn OFF the ignition. 2. If DTC B0077 is current, disconnect the left SIS connector. If DTC B0078 is current, disconnect the right SIS connector. Refer to Airbag Side Impact Sensor Replacement. 3. Inspect both the SIS and harness connector terminals for damage or corrosion. Does the SIS terminals or harness connector exhibit any signs of damage or corrosion?	Go to Step 4	Go to Step 5
4	1. If the SIS terminals are damaged, replace the SIS. Refer to Airbag Side Impact Sensor Replacement. 2. If the SIS harness connector is damaged, replace the connector. Refer to Connector Repairs in Wiring Systems. Did you complete the replacement?	Go to Step 13	—
5	1. Disconnect the SDM connector. Refer to Airbag Sensing and Diagnostic Module Replacement.	Go to Step 13	Go to Step 6

Step	Action	Yes	No
	2. Inspect the SDM connector for corrosion or damage. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?		
6	1. If DTC B0077 is current, test the left SIS signal circuit for a short to ground, a high resistance, or an open. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. 2. If DTC B0078 is current, test the right SIS signal circuit for a short to ground, a high resistance, or an open. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 13	Go to Step 7
7	1. If DTC B0077 is current, test the left SIS voltage circuit for a short to ground, a high resistance, or an open. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. 2. If DTC B0078 is current, test the right SIS voltage circuit for a short to ground, a high resistance, or an open. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 13	Go to Step 8
8	1. Turn ON the ignition, with the engine OFF. 2. If DTC B0077 is current, test the left SIS signal and voltage circuits for a short to voltage. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. 3. If DTC B0078 is current, test the right SIS signal and voltage circuits for a short to voltage. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 13	Go to Step 9
9	For DTC B0077 replace the left SIS. For DTC B0078 replace the right SIS. Refer to Airbag Side Impact Sensor Replacement. Did you complete the replacement?	Go to Step 10	—
10	1. Reconnect all SIR system components. 2. Use the scan tool in order to Clear the DTCs.	Go to Step 11	System OK

Step	Action	Yes	No
	3. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?		
11	Replace the SDM. Refer to Airbag Sensing and Diagnostic Module Replacement. Did you complete the replacement?	Go to Step 13	—
12	For DTCs B0079 and B0080 replace the left SIS. For DTCs B0081 and B0082 replace the right SIS. Refer to Airbag Side Impact Sensor Replacement. Did you complete the replacement?	Go to Step 13	—
13	1. Reconnect all SIR system components. 2. Verify that all components, connectors and CPAs are properly mounted. 3. Use the scan tool in order to clear the DTCs. 4. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	Go to Step 2	System OK