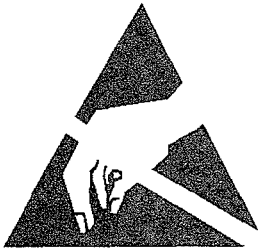
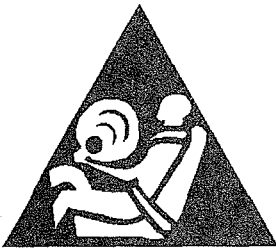
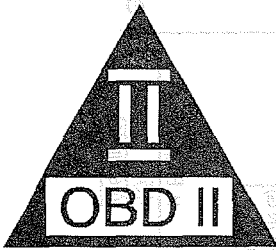


Data Link Communications

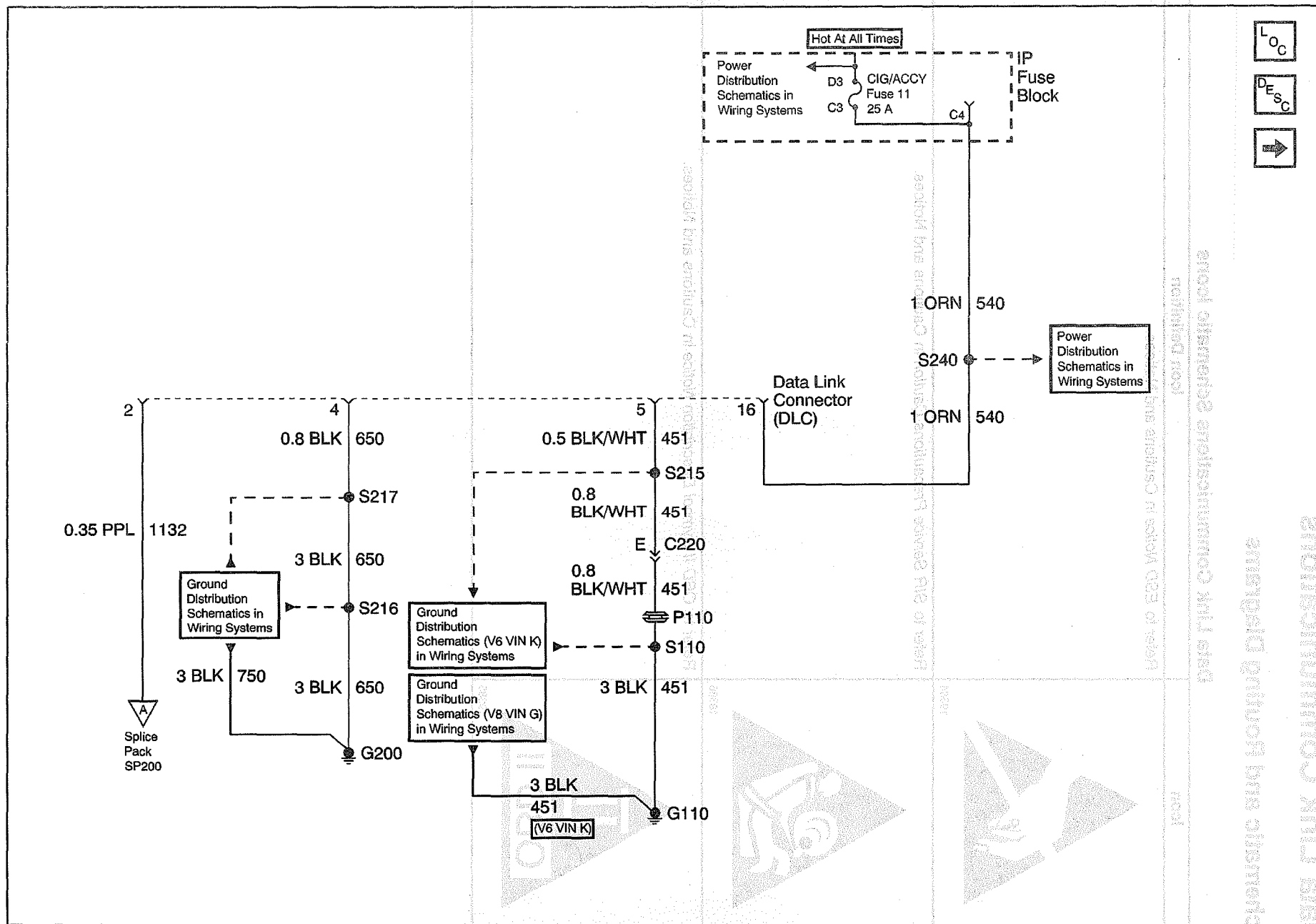
Schematic and Routing Diagrams



Data Link Communications Schematic Icons

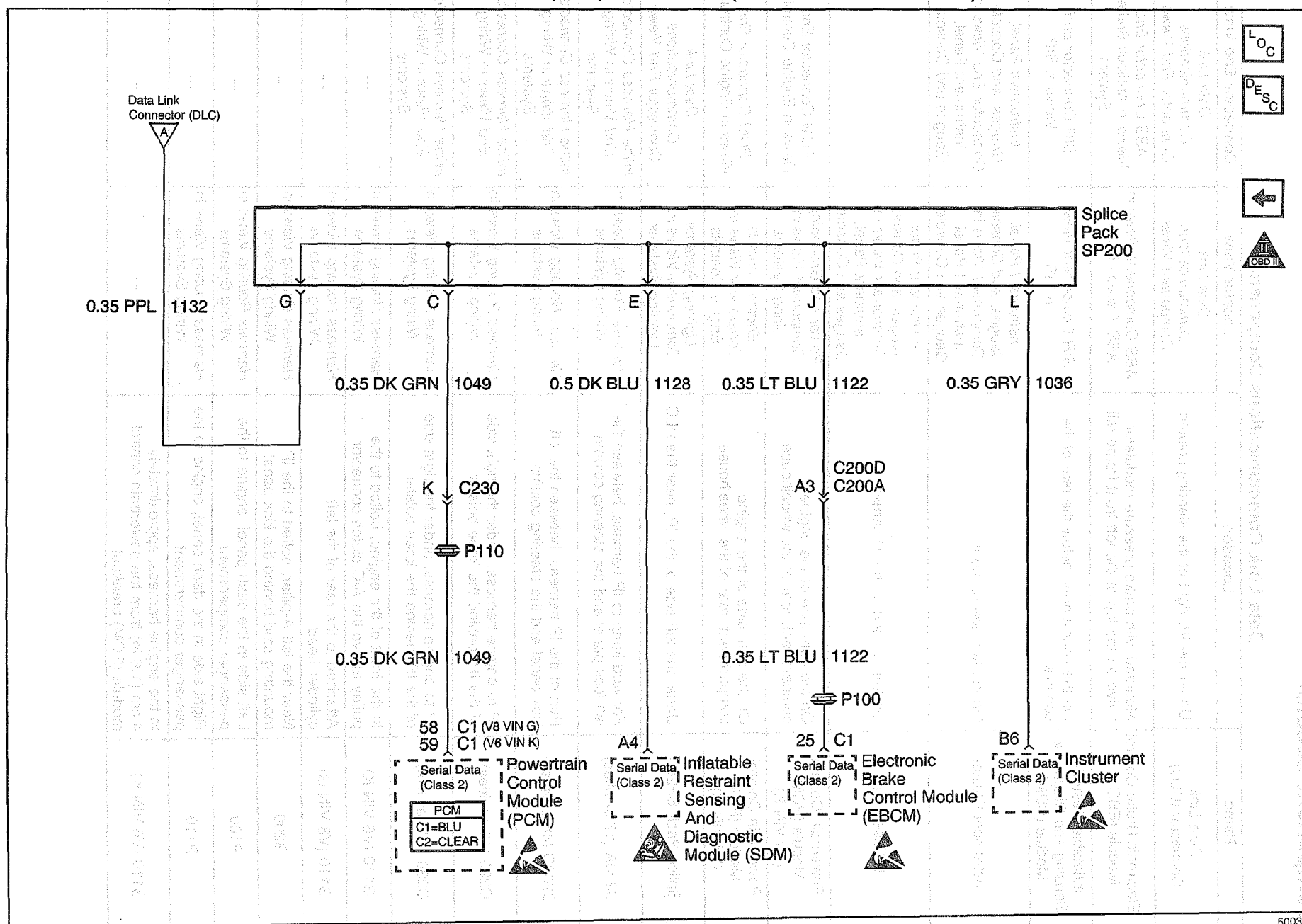
Icon	Icon Definition
 19384	Refer to <i>ESD Notice</i> in Cautions and Notices.
 19386	Refer to <i>SIR Service Precautions Caution</i> in Cautions and Notices.
 19385	Refer to <i>OBD II Symbol Description Notice</i> in Cautions and Notices.

Data Link Connector (DLC) Schematics (Power and Ground)



LOC
DESC
→

Data Link Connector (DLC) Schematics (Class 2 Serial Data Line)



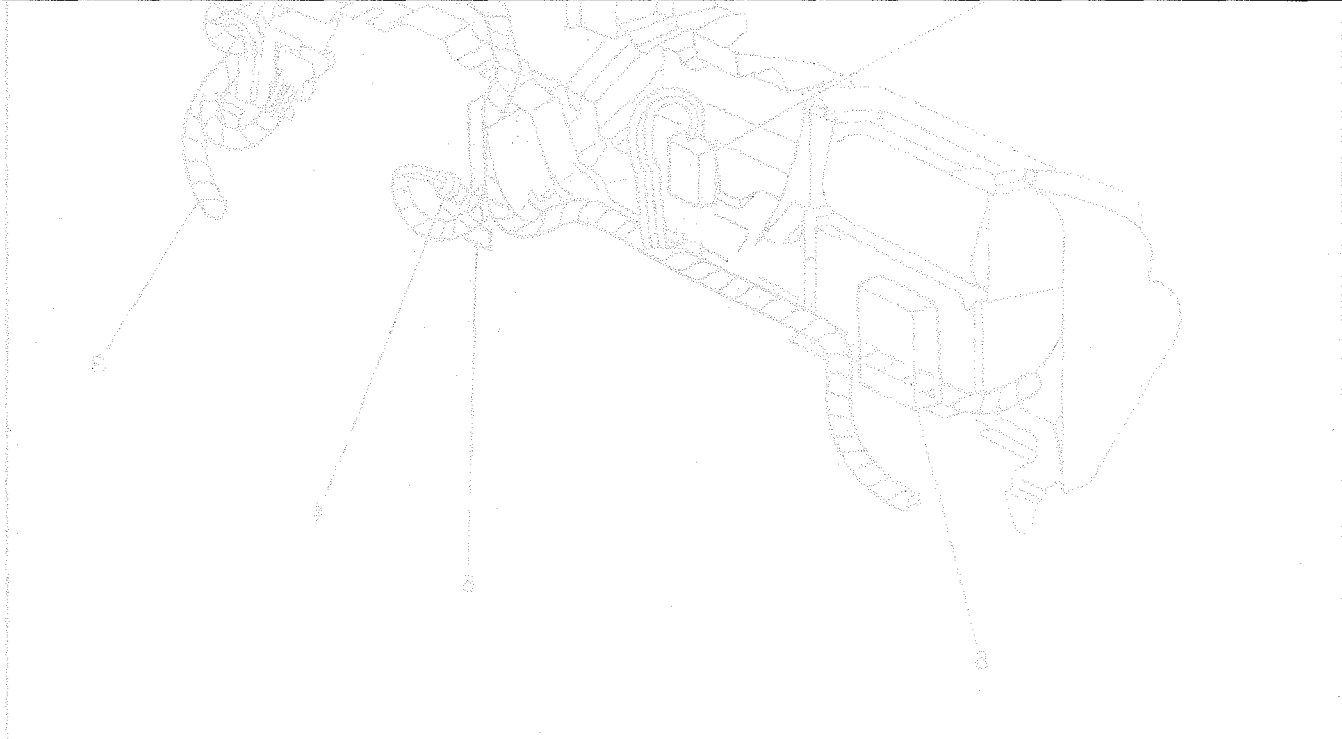
Component Locator

Data Link Communications Components

Name	Location	Locator View	Connector End View
Data Link Connector (DLC)	Under the IP, right of the steering column	<i>Data Link Communications Component Views</i>	<i>Data Link Communications Connector End Views</i>
Electronic Brake Control Module (EBCM)	Mounted with brake pressure modulator valve on the top of the left front frame rail	<i>ABS Component Views in ABS Traction Control</i>	<i>ABS Connector End Views in Antilock Brake System</i>
Inflatable Restraint Sensing and Diagnostic Module (SDM)	On the floor tunnel, below the rear of the console	<i>SIR Component Views in SIR</i>	<i>SIR Connector End Views in SIR</i>
Instrument Cluster	On the left side of the IP	<i>Instrument Panel, Gauges, and Console Component Views in Instrument Panel, Gauges and Console</i>	<i>Instrument Panel, Gauges, and Console Connector End Views in Instrument Panel, Gauges and Console</i>
IP Fuse Block	On the left end of the IP carrier	<i>Instrument Panel, Gauges, and Console Component Views in Instrument Panel, Gauges and Console</i>	—
Powertrain Control Module (PCM) (V6 VIN K)	On the right side of the engine compartment, rear of the wheelhouse	<i>Power and Grounding Component Views in Wiring Systems</i>	<i>PCM Connector End Views in Engine Controls</i>
Powertrain Control Module (PCM) (V8 VIN G)	On the right side of the engine compartment, rear of the wheelhouse	<i>Engine Controls Component Views in Engine Controls</i>	<i>PCM Connector End Views in Engine Controls</i>
Splice Pack SP200	Under the left side of the IP, near the DLC	<i>Lighting Systems Component Views in Lighting Systems</i>	<i>Data Link Communications Connector End Views</i>
C200A (17 cavities)	Forward lamp to IP harness, between the left kick panel and the steering column	<i>Harness Routing Views in Wiring Systems</i>	<i>Inline Harness Connector End Views in Wiring Systems</i>
C200D (48 cavities)	Part of the IP harness, between the left kick panel and the steering column	<i>Harness Routing Views in Wiring Systems</i>	<i>Inline Harness Connector End Views in Wiring Systems</i>
C220 (10 cavities)	IP to engine harness, under the right side of the IP, behind the knee bolster	<i>Harness Routing Views in Wiring Systems</i>	<i>Inline Harness Connector End Views in Wiring Systems</i>
C230 (10 cavities)	IP to engine harness, under the right side of the IP, behind the knee bolster	<i>Harness Routing Views in Wiring Systems</i>	<i>Inline Harness Connector End Views in Wiring Systems</i>
G110 (V6 VIN K)	In the front of the engine, bolted to the pulley above the A/C clutch connector	<i>Harness Routing Views in Wiring Systems</i>	—
G110 (V8 VIN G)	Attached to the rear of the left cylinder head	<i>Harness Routing Views in Wiring Systems</i>	—
G200	Near the left A-pillar, bolted to the IP mounting stud behind the kick panel	<i>Harness Routing Views in Wiring Systems</i>	—
P100	Left side in the dash panel, engine to the passenger compartment	<i>Harness Routing Views in Wiring Systems</i>	—
P110	Right side in the dash panel, engine to the passenger compartment	<i>Harness Routing Views in Wiring Systems</i>	—
S110 (V6 VIN K)	In the engine harness, approximately 4 cm (1.6 in) from the powertrain control module (PCM) breakout	—	—

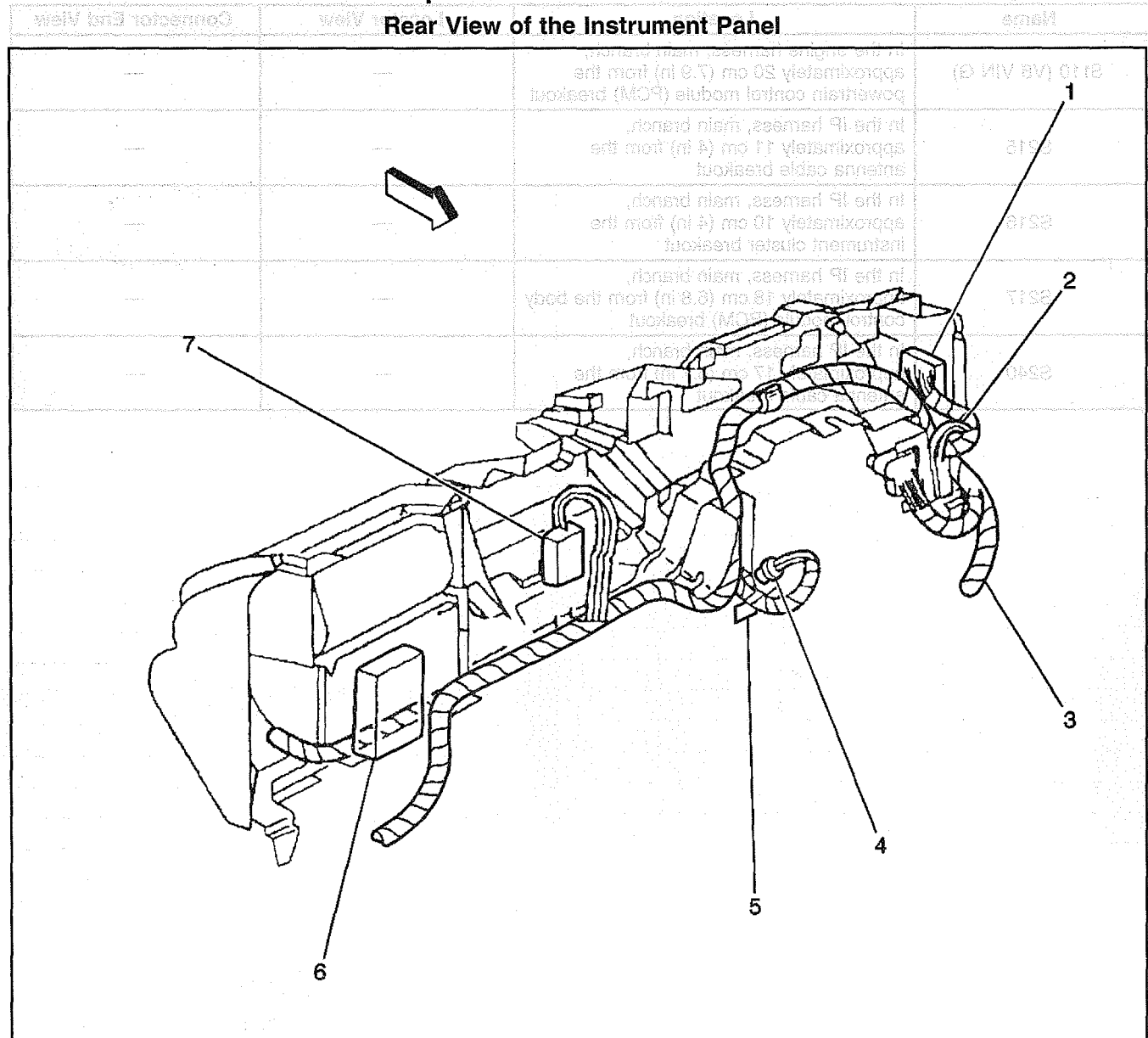
Data Link Communications Components (cont'd)

Name	Location	Locator View	Connector End View
S110 (V8 VIN G)	In the engine harness, main branch, approximately 20 cm (7.9 in) from the powertrain control module (PCM) breakout	—	—
S215	In the IP harness, main branch, approximately 11 cm (4 in) from the antenna cable breakout	—	—
S216	In the IP harness, main branch, approximately 10 cm (4 in) from the instrument cluster breakout	—	—
S217	In the IP harness, main branch, approximately 18 cm (6.8 in) from the body control module (BCM) breakout	—	—
S240	In the IP harness, main branch, approximately 17 cm (6.7 in) from the antenna cable breakout	—	—



- Legend
- (1) Fuel Block
 - (2) Hazard Lamp Flasher
 - (3) IP Wiring Harness
 - (4) Turn Signal Lamp Flasher
 - (5) Data Link Connector (DLC)
 - (6) Body Control Module (BCM)
 - (7) Daytime Running Lamps (DRL) Module

Data Link Communications Component Views



374415

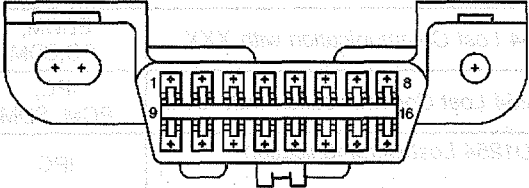
Legend

- | | |
|------------------------------|--|
| (1) IP Fuse Block | (5) Data Link Connector (DLC) |
| (2) Hazard Lamp Flasher | (6) Body Control Module (BCM) |
| (3) IP Wiring Harness | (7) Daytime Running Lamps (DRL) Module |
| (4) Turn Signal Lamp Flasher | |

Visual Identification

Data Link Communications Connector
End Views

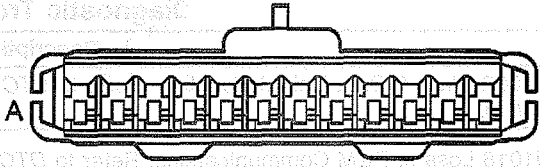
Data Link Connector (DLC)



68793

Connector Part Information		• 1211-0250 • 16-Way F Metri-pack 150 Series (BLK)	
Pin	Wire Color	Circuit No.	Function
1	—	—	Not Used
2	PPL	1132	Class 2 Serial Data Line
3	—	—	Not Used
4	BLK	650	Ground
5	BLK/WHT	451	Ground
6-15	—	—	Not Used
16	ORN	540	Fuse Input

Splice Pack SP200



338576

Connector Part Information		• 1219-1216 • 12 Way F GT 150 Splice Saver (GRY)	
Pin	Wire Color	Circuit No.	Function
A-B	—	—	Not Used
C	DK GRN	1049	PCM-Class 2
D	—	—	Not Used
E	DK BLU	1128	SDM-Class 2
F	—	—	Not Used
G	PPL	1132	DLC-Class 2
H	—	—	Not Used
J	LT BLU	1122	EBCM-Class 2
K	—	—	Not Used
L	GRY	1036	IP-Class 2
M	—	—	Not Used

Diagnostic Information and Procedures

A Diagnostic Starting Point

Begin the diagnosis of the data link communications by performing the Diagnostic System Check for the system in which the customer concern is apparent.

The Diagnostic System Check will direct you to the correct procedure within the Data Link Communications section when a communication malfunction is present.

Diagnostic Trouble Code (DTC) List

Description	Module
DTC U1000 Class 2 Data Link Malfunction. Refer to <i>DTC U1000 and DTC U1255 Class 2 Communication Malfunction</i> .	EBCM, IPC, PCM, SDM,
DTC U1016 Loss of PCM Communications. Refer to <i>DTC U1001 - U1254 Lost Communication with XXX</i> .	EBCM, IPC, SDM
DTC U1040 Loss of EBCM Communications. Refer to <i>DTC U1001 - U1254 Lost Communication with XXX</i> .	IPC, PCM, SDM
DTC U1088 Loss of SIR/SDM Communications. Refer to <i>DTC U1001 - U1254 Lost Communication with XXX</i> .	IPC
DTC U1096 Loss of IPC Communications. Refer to <i>DTC U1001 - U1254 Lost Communication with XXX</i> .	EBCM, PCM, SDM
DTC U1300 Class 2 Data Link Low. Refer to <i>DTC U1300 Class 2 Data Link Low</i> .	EBCM, IPC, PCM, SDM
DTC U1301 Class 2 Data Link High. Refer to <i>DTC U1301 Class 2 Data Link High</i> .	EBCM, IPC, PCM, SDM

DTC U1000 and DTC U1255 Class 2 Communication Malfunction**Circuit Description**

Modules connected to the class 2 serial data circuit monitor for serial data communications during normal vehicle operation. Operating information and commands are exchanged among the modules. When a module receives a message for a critical operating parameter, the module records the identification number of the module which sent the message for State of Health monitoring. A critical operating parameter is one which, when not received, requires that the module use a default value for that parameter. When a module does not associate an identification number with at least one critical parameter within about five seconds of beginning serial data communication, DTC U1000 is set. When more than one critical parameter does not have an identification number associated with it, the DTC will only be reported once.

Conditions for Running the DTC

- Voltage supplied to the module is in the normal operating voltage range (approximately 9 to 16 volts).
- Diagnostic trouble codes U1300 and U1301 do not have a current status.
- The vehicle power mode (ignition switch position) requires serial data communication to occur.

Conditions for Setting the DTC

At least one critical operating parameter has not been associated with an identification number within approximately five seconds after beginning serial data communication.

Action Taken When the DTC Sets

The module uses a default value for the missing parameter.

Conditions for Clearing the DTC

- A current DTC U1000 will clear when all of the critical operating parameters for the module have been associated with an identification number or when the current ignition cycle ends.
- A history DTC U1000 will clear upon receipt of a scan tool Clear DTCs command.

Diagnostic Aids

When a malfunction (such as an open fuse to a module) occurs while modules are communicating, a Lost Communication DTC is set as a current DTC. When the modules stop communicating (ignition is turned OFF) the current Lost Communication DTC is cleared but the history DTC remains. When the modules begin to communicate again, the module with the open fuse will not be learned by the other modules so DTC U1000 is set current by the other modules. If the malfunction occurs when the modules are not communicating, only DTC U1000 is set.

Test Description

The number(s) below refer to the step number(s) on the diagnostic table.

1. A Lost Communication with XXX DTC with a history status may indicate the cause of U1000.
2. The module(s) which is not communicating is the likely cause of U1000 being set. The following modules communicate on the class 2 serial data circuit:
 - PCM
 - EBCM
 - SDM
 - IPC
5. The module which was not communicating may have set Lost Communication with XXX DTCs for those modules that it was monitoring.
6. The module which was not communicating may have set Lost Communication with XXX DTCs for those modules that it was monitoring.
7. The module which was not communicating may have set Lost Communication with XXX DTCs for those modules that it was monitoring.
11. The modules which can communicate indicate the module which cannot communicate. You must clear the DTC from these modules to avoid future misdiagnosis.
13. If all modules are communicating, the module which set U1000 may have done so due to some other condition.
14. The module which set U1000 is the likely cause of the malfunction.

DTC U1000 and DTC U1255 Class 2 Communication Malfunction

Step	Action	Value(s)	Yes	No
1	Did you record any DTCs in the range of U1001-U1254 with a history status?	—	Go to DTC U1001 - U1254 Lost Communication with XXX	Go to Step 2
2	1. Turn ON the ignition with the engine OFF. 2. Attempt to communicate with each module on the class 2 serial data circuit. (If using a Tech 2, obtain this information using the class 2 Message Monitor feature.) 3. Record all of the modules communicating on the Class 2 serial data circuit. 4. Compare the list of modules which are communicating to the list given. Does any module(s) on the class 2 serial data circuit not communicate?	—	Go to Step 3	Go to Step 13
3	Test the battery positive voltage circuit(s) and the ignition positive voltage circuit(s) of the module that is not communicating for an open or a short to ground. Refer to <i>Control Module References</i> for the applicable schematic. Refer to <i>Circuit Testing</i> and <i>Wiring Repairs</i> in Wiring Systems. Did you find and correct the condition?	—	Go to Step 9	Go to Step 4
4	1. Turn OFF the ignition. 2. Test the ground circuit(s) of the module that is not communicating for an open. Refer to <i>Control Module References</i> for the applicable schematic. Refer to <i>Circuit Testing</i> and <i>Wiring Repairs</i> in Wiring Systems. Did you find and correct the condition?	—	Go to Step 9	Go to Step 5
5	1. Disconnect the splice pack SP200. 2. Inspect for poor connections at the splice pack SP200. Refer to <i>Testing for Intermittent and Poor Connections</i> and <i>Connector Repairs</i> in Wiring Systems. Did you find and correct the condition?	—	Go to Step 9	Go to Step 6
6	Test the class 2 serial data circuit of the module that is not communicating for an open. Refer to <i>Circuit Testing</i> and <i>Wiring Repairs</i> in Wiring Systems. Did you find and correct the condition?	—	Go to Step 9	Go to Step 7
7	Inspect for poor connections at the battery positive voltage circuit(s), the ignition positive voltage circuit(s), the ground circuit(s), and the class 2 serial data circuit of the module that is not communicating. Refer to <i>Testing for Intermittent and Poor Connections</i> and <i>Connector Repairs</i> in Wiring Systems. Did you find and correct the condition?	—	Go to Step 9	Go to Step 8
8	Replace the module which is not communicating. Refer to <i>Control Module References</i> for the appropriate repair instructions. Did you complete the replacement?	—	Go to Step 11	—
9	1. Install a scan tool. 2. Turn ON the ignition with the engine OFF. 3. Select the Display DTCs function for the module which was not communicating. Does the scan tool display and DTCs which do not begin with a U?	—	Go to <i>Control Module References</i> for the applicable Diagnostic System Check	Go to Step 10

DTC U1000 and DTC U1255 Class 2 Communication Malfunction (cont'd)

Step	Action	Value(s)	Yes	No
10	Use the scan tool in order to clear the DTCs. Did you complete the action?	—	Go to Step 11	—
11	Select the Display DTCs function for the module(s) which had U1000 set as a current DTC. Does the scan tool display DTCs which do not begin with a U?	—	Go to Control Module References for the applicable Diagnostic System Check	Go to Step 12
12	Use the scan tool in order to clear the DTCs. Did you complete the action?	—	System OK	—
13	Did you record any other DTCs for the module(s) which had U1000 set as a current DTC?	—	Go to Control Module References for the applicable Diagnostic System Check	Go to Step 14
14	1. Install a scan tool. 2. Turn ON the ignition with the engine OFF. 3. Use the scan tool in order to clear the DTCs. 4. Turn OFF the ignition for at least 5 seconds. 5. Turn ON the ignition leaving the engine OFF. 6. Select the Display DTCs function. Does the scan tool display U1000 set as a current DTC?	—	Go to Step 15	Go to D diagnostic Aids
15	Replace the module which had U1000 set as a current DTC. Refer to Control Module References for the appropriate repair instructions. Did you complete the replacement?	—	System OK	—

Conditions for Running the DTC

- Voltage supplied to the module is in the normal operating voltage range (approximately 9 – 18 volts).
- A short to ground or B+ is not present.
- Diagnostic trouble codes U1300 and U1301 are not set.
- The vehicle power mode (ignition switch position) requires serial data communication to occur.

DTC U1001 - U1254 Lost Communication with XXX

The Control Module ID Number list provides a method for determining which module is not communicating. A module with an internal class 2 serial data circuit malfunction or which loses power during the current ignition cycle would have a Lost Communication DTC set by other modules. Use the Control Module ID Number list in order to determine which module is not communicating and the Lost Communications with XXX diagnostic table in order to diagnose the malfunction.

Control Module	ID Number
Powertrain Control Module (PCM)	016
Electronic Brake and Control Module (EBCM)	040
Sensing and Diagnostic Module (SDM)	088
Instrument Panel Cluster (IPC)	096

Circuit Description

Modules connected to the class 2 serial data circuit monitor for serial data communications during normal vehicle operation. Operating information and commands are exchanged among the modules. When a module receives a message for a critical operating parameter, the module records the identification number of the module which sent the message for State of Health monitoring (Node Alive messages). A critical operating parameter is one which, when not received, requires that the module use a default value for that parameter. Once an identification number is learned by a module, it will monitor for that module's Node Alive message. Each module on the class 2 serial data circuit which is powered and performing functions that require detection of a communications malfunction is required to send a Node Alive message every two seconds. When no message is detected from a learned identification number for five seconds, a DTC U1XXX (where XXX is equal to the three digit identification number) is set.

Conditions for Running the DTC

- Voltage supplied to the module is in the normal operating voltage range (approximately 9 – 16 volts).
- A short to ground or B+ is not present.
- Diagnostic trouble codes U1300 and U1301 are not set.
- The vehicle power mode (ignition switch position) requires serial data communication to occur

Conditions for Setting the DTC

A message from a learned identification number has not been detected for the past five seconds.

Conditions for Clearing the DTC

- A current DTC will clear when a Node Alive message from the failed identification number is detected on the class 2 serial data circuit or at the end of the current ignition cycle.
- A history DTC will clear upon receipt of a scan tool Clear DTCs command.

Diagnostic Aids

- An intermittent open between the inoperative module and the splice pack SP200 may cause this code to set.
- A poor connection at the inoperative module or the splice pack SP200 may cause this code to set.
- An intermittent open in the splice pack SP200 may cause this code to set.
- An improperly powered module may cause this code to set.

Test Description

The number(s) below refer to the step number(s) on the diagnostic table.

1. A module which loses power during an ignition cycle will cause other module(s) to set Lost Communication DTCs.
2. A module which loses power during an ignition cycle will cause other module(s) to set Lost Communication DTCs.
3. The malfunction is due to an open in the class 2 serial data circuit or an open in the module.
7. The module which was not communicating may have set Lost Communication DTCs for those modules that it was monitoring.
9. The modules which can communicate indicate the module which cannot communicate. You must clear the DTC from these modules to avoid future misdiagnosis.

DTC U1001 - U1254 Lost Communication with XXX

Step	Action	Value(s)	Yes	No
1	Test the battery positive voltage circuit(s) and the ignition positive voltage circuit(s) of the module that is not communicating for an open or a short to ground. Refer to <i>Control Module References</i> for the applicable schematic. Refer to <i>Circuit Testing</i> and <i>Wiring Repairs</i> in Wiring Systems. Did you find and correct the condition?	—	Go to Step 9	Go to Step 2
2	1. Turn OFF the ignition. 2. Test the ground circuit(s) of the module that is not communicating for an open. Refer to <i>Control Module References</i> for the applicable schematic. Refer to <i>Circuit Testing</i> and <i>Wiring Repairs</i> in Wiring Systems. Did you find and correct the condition?	—	Go to Step 9	Go to Step 3
3	1. Disconnect the splice pack SP200. 2. Inspect for poor connections at the splice pack SP200. Refer to <i>Testing for Intermittent and Poor Connections</i> and <i>Connector Repairs</i> in Wiring Systems. Did you find and correct the condition?	—	Go to Step 7	Go to Step 4
4	Test the class 2 serial data circuit of the module that is not communicating for an open between the module and the splice pack SP200. Refer to <i>Circuit Testing</i> and <i>Wiring Repairs</i> in Wiring Systems. Did you find and correct the condition?	—	Go to Step 7	Go to Step 5
5	Inspect for poor connections at the battery positive voltage circuit(s), the ignition positive voltage circuit(s), the ground circuit(s), and the class 2 serial data circuit of the module that is not communicating. Refer to <i>Testing for Intermittent and Poor Connections</i> and <i>Connector Repairs</i> in Wiring Systems. Did you find and correct the condition?	—	Go to Step 7	Go to Step 6
6	Replace the module which is not communicating. Refer to <i>Control Module References</i> for the appropriate repair instructions. Did you complete the replacement?	—	Go to Step 9	—
7	1. Install a scan tool. 2. Turn ON the ignition with the engine OFF. 3. Select the Display DTCs function for the module which was not communicating. Does the scan tool display any DTCs which do not begin with a U?	—	Go to Control Module References for the applicable Diagnostic System Check	Go to Step 8
8	Use the scan tool in order to clear the DTCs. Did you complete the action?	—	Go to Step 9	—
9	Select the Display DTCs function for the module(s) which had the Lost Communication with XXX DTC set. Does the scan tool display any DTCs which do not begin with a U?	—	Go to Control Module References for the applicable Diagnostic System Check	Go to Step 10
10	1. Use the scan tool in order to clear the DTCs. 2. Continue diagnosing or clearing the DTCs until all the modules have been diagnosed and all the DTCs have been cleared. Did you complete the action?	—	System OK	—

DTC U1300 Class 2 Data Link Low**Circuit Description**

Modules connected to the class 2 serial data circuit monitor for serial data communications during normal vehicle operation. Operating information and commands are exchanged among the modules. In addition to this, Node Alive (State of Health) messages are transmitted by each module on the class 2 serial data circuit approximately once every two seconds. When the module detects no messages and a low voltage on the class 2 serial data circuit for approximately three seconds, U1300 is set. The setting of all other class 2 serial communication DTCs is inhibited.

Conditions for Running the DTC

- Voltage supplied to the module is in the normal operating voltage range (approximately 9 – 16 volts).
- The vehicle power mode (ignition switch position) requires serial data communication to occur.

Conditions for Setting the DTC

- No valid messages are detected on the class 2 serial data circuit.
- The voltage level detected on the class 2 serial data circuit is low.
- The above conditions are met for approximately three seconds.

Action Taken When the DTC Sets

- The module inhibits the setting of all other class 2 DTCs.
- The module uses default values for all parameters received on the class 2 serial data circuit.

Conditions for Clearing the DTC

- A U1300 will clear when a valid class 2 message is detected on the class 2 serial data circuit or at the end of the current ignition cycle.
- A history U1300 will clear upon receipt of a scan tool Clear DTCs command.

Diagnostic Aids

- This DTC cannot be retrieved with a current status. Diagnosis of a U1300 is accomplished via the symptom, *Scan Tool Does Not Communicate w/Class 2 Data Line*.
- An intermittent condition is likely to be caused by a short to ground on the class 2 serial data circuit. Refer to *Scan Tool Does Not Communicate w/Class 2 Data Line* in order to isolate an intermittent condition.

DTC U1301 Class 2 Data Link High**Circuit Description**

Modules connected to the class 2 serial data circuit monitor for serial data communications during normal vehicle operation. Operating information and commands are exchanged among the modules. In addition to this, Node Alive (State of Health) messages are transmitted by each module on the class 2 serial data circuit approximately once every two seconds. When the module detects no messages and a high voltage on the Class 2 serial data link for approximately three seconds, U1301 is set. The setting of all other class 2 serial communication DTCs is inhibited.

Conditions for Running the DTC

- Voltage supplied to the module is in the normal operating voltage range (approximately 9 – 16 volts).
- The vehicle power mode (ignition switch position) requires serial data communication to occur.

Conditions for Setting the DTC

- No valid class 2 messages are detected on the class 2 serial data circuit.
- The voltage level detected on the class 2 serial data circuit is high.
- The above conditions are met for approximately three seconds.

Action Taken When the DTC Sets

- The module inhibits the setting of all other class 2 DTCs.
- The module uses default values for all parameters received on the class 2 serial data circuit.

Conditions for Clearing the DTC

- A U1301 will clear when a valid class 2 message is detected on the class 2 serial data circuit or at the end of the current ignition cycle.
- A history U1301 will clear upon receipt of a scan tool Clear DTCs command.

Diagnostic Aids

- This DTC cannot be retrieved with a current status. Diagnosis of a U1301 is accomplished via the symptom, *Scan Tool Does Not Communicate w/Class 2 Data Line*.
- An intermittent condition is likely to be caused by a short to voltage on the class 2 serial data circuit. Refer to *Scan Tool Does Not Communicate w/Class 2 Data Line* in order to isolate an intermittent condition.

Scan Tool Does Not Power Up**Circuit Description**

The data link connector (DLC) provides operating power for the scan tool at terminal 16 (battery positive voltage) and at terminal 4 (ground). The DLC provides the class 2 serial data signal at terminal 2 and the signal ground at terminal 5. The scan tool will power up with the ignition off.

Test Description

1. The CIG/ACCY fuse supplies power to the DLC terminal 16.
4. The DLC battery positive voltage and ground circuits are functioning properly. The malfunction must be due to the scan tool.

Scan Tool Does Not Power Up

Step	Action	Yes	No
1	Test the DLC battery positive voltage circuit for an open or a short to ground. Refer to <i>Circuit Testing and Wiring Repairs</i> in Wiring Systems. Did you find and correct the condition?	Go to <i>Control Module References</i> for the applicable Diagnostic System Check	Go to Step 2
2	Test the DLC ground circuit terminal 4 for an open. Refer to <i>Circuit Testing and Wiring Repairs</i> in Wiring Systems. Did you find and correct the condition?	Go to <i>Control Module References</i> for the applicable Diagnostic System Check	Go to Step 3
3	Inspect for poor connections/terminal tension at the DLC terminals 4 and 16. Refer to <i>Testing for Intermittent and Poor Connections and Connector Repairs</i> . Did you find and correct the condition?	Go to <i>Control Module References</i> for the applicable Diagnostic System Check	Go to Step 4
4	The scan tool may be malfunctioning. Refer to the scan tool instruction manual. Did you obtain a properly operating scan tool?	Go to <i>Control Module References</i> for the applicable Diagnostic System Check	—

Scan Tool Does Not Communicate w/Class 2 Data Line

Circuit Description

Modules connected to the class 2 serial data circuit monitor for serial data communications during normal vehicle operation. Operating information and commands are exchanged among the modules. Connecting a scan tool to the DLC allows communication with the modules for diagnostic purposes. Diagnostic trouble codes (DTCs) may be set due to this symptom and during this diagnostic procedure. Complete the diagnostic procedure in order to ensure that all of the DTCs are diagnosed and cleared from memory.

Diagnostic Aids

- Use a *J 35616-A* when probing or checking electrical connector terminals. The *J 35616-A* prevents terminal damage, plus checks for proper terminal contact tension.
 - If a short to B+ is present, a history U1301 will set in the modules. Refer to *DTC U1301 Class 2 Data Link High*.
 - If a short to ground is present, a history U1300 will set in the modules. Refer to *DTC U1300 Class 2 Data Link Low*.
 - Disconnecting modules and turning the ignition switch to RUN may cause DTCs to set in these modules. Check for DTCs in each module upon completion of the required repair.
4. A state of health DTC with a history status may be present along with a U1000 having a current status. This indicates the malfunction occurred when the ignition was on.
 5. Data link connector terminals 2 and 5 provide the connection to the class 2 serial data circuit and the signal ground circuit respectively.
 7. A poor connection at terminal G would cause this condition but will not set a DTC.
 8. An open in the class 2 serial data circuit between the DLC and splice pack SP200 will prevent the scan tool from communicating with any module. This condition will not set a DTC.
 9. The class 2 serial data circuit is shorted to voltage or ground. The condition may be due to the wiring or due to a malfunction in one of the modules. When testing the wiring for a short, make sure there is not a module connected to the wire being tested. This test isolates the PCM class 2 serial data circuit.
 11. This test isolates the SDM class 2 serial data circuit.
 13. This test isolates the EBTCLM class 2 serial data circuit.
 15. This test isolates the instrument cluster class 2 serial data circuit.

Test Description

2. A partial malfunction in the class 2 serial data circuit uses a different procedure from a total malfunction of the class 2 serial data circuit.
3. DTCs U1300 or U1301 may be retrieved with a history status. These DTCs are not the cause of the present condition.
19. If there are no current DTCs that begin with a U, the communication malfunction has been repaired.
20. The communication malfunction may have prevented diagnosis of the customer complaint.

Scan Tool Does Not Communicate w/Class 2 Data Line

Step	Action	Yes	No
1	Does the scan tool power up?	Go to Step 2	Go to Scan Tool Does Not Power Up
2	1. Turn on the ignition leaving the engine off. 2. Attempt to communicate with each module on the Class 2 serial data circuit. (If using a Tech 2, obtain this information using the Class 2 Message Monitor feature.) Does the scan tool communicate with any module on the class 2 serial data circuit?	Go to Step 3	Go to Step 5
3	1. Select the display DTCs function for each module. (If using a Tech 2, use the Class 2 DTC Check feature in order to determine which modules do have DTCs set.) 2. Record all of the displayed DTCs, the DTC status and the module which set the DTC. Did you record any DTCs in the range of U1000 to U1255?	Go to Step 4	Go to Diagnostic Aids
4	Is U1000 the only DTC displayed in the previously specified range?	Go to DTC U1000 and DTC U1255 Class 2 Communication Malfunction	Go to DTC U1001 - U1254 Lost Communication with XXX

Scan Tool Does Not Communicate w/Class 2 Data Line (cont'd)

Step	Action	Yes	No
5	1. Turn off the ignition. 2. Disconnect the scan tool from the data link connector (DLC). 3. Inspect for poor connections at the DLC terminals 2 and 5. Refer to <i>Testing for Intermittent and Poor Connections</i> and <i>Connector Repairs</i> . Did you find and correct the condition?	Go to <i>Control Module References</i> for the applicable Diagnostic System Check	Go to Step 6
6	Test the DLC ground circuit terminal 5 for an open. Refer to <i>Circuit Testing</i> and <i>Wiring Repairs</i> in <i>Wiring Systems</i> . Did you find and correct the condition?	Go to <i>Control Module References</i> for the applicable Diagnostic System Check	Go to Step 7
7	1. Disconnect the splice pack SP200. 2. Inspect for poor connections at the splice pack SP200. Refer to <i>Testing for Intermittent and Poor Connections</i> and <i>Connector Repairs</i> . Did you find and correct the condition?	Go to <i>Control Module References</i> for the applicable Diagnostic System Check	Go to Step 8
8	Test the class 2 serial data circuit for an open or a short between the DLC terminal 2 and the splice pack SP200 terminal G. Refer to <i>Circuit Testing</i> and <i>Wiring Repairs</i> in <i>Wiring Systems</i> . Did you find and correct the condition?	Go to <i>Control Module References</i> for the applicable Diagnostic System Check	Go to Step 9
9	1. Using the correct terminal adapter from <i>J 35616-A</i> , connect a jumper wire to terminal G of the splice pack SP200. 2. Connect the other end of the jumper wire (with correct terminal adapter) to terminal C of the splice pack SP200. 3. Turn on the ignition with the engine off. 4. Attempt to communicate with the PCM. Does the scan tool communicate with the PCM?	Go to Step 11	Go to Step 10
10	1. Turn off the ignition. 2. Disconnect the PCM. 3. Test the class 2 serial data circuit between the splice pack SP200 and the PCM for a short to ground or a short to voltage. (Turn on the ignition with the engine off when testing for a short to voltage.) Refer to <i>Circuit Testing</i> and <i>Wiring Repairs</i> in <i>Wiring Systems</i> . Did you find and correct the condition?	Go to Step 19	Go to Step 17
11	1. Disconnect the jumper wire from terminal C of the splice pack SP200. 2. Connect the jumper wire to terminal E of the splice pack SP200. 3. Turn on the ignition with the engine off. 4. Attempt to communicate with the SDM. Does the scan tool communicate with the SDM?	Go to Step 13	Go to Step 12
12	1. Turn off the ignition. 2. Disconnect the SDM. 3. Test the class 2 serial data circuit between the splice pack SP200 and the SDM for a short to ground or a short to voltage. (Turn on the ignition with the engine off when testing for a short to voltage.) Refer to <i>Circuit Testing</i> and <i>Wiring Repairs</i> in <i>Wiring Systems</i> . Did you find and correct the condition?	Go to Step 19	Go to Step 17
13	1. Disconnect the jumper wire from terminal E of the splice pack SP200. 2. Connect the jumper wire to terminal J of the splice pack SP200. 3. Turn on the ignition with the engine off. 4. Attempt to communicate with the EBCM. Does the scan tool communicate with the EBCM?	Go to Step 15	Go to Step 14

Scan Tool Does Not Communicate w/Class 2 Data Line (cont'd)

Step	Action	Yes	No
14	1. Turn off the ignition. 2. Disconnect the EBCM. 3. Test the class 2 serial data circuit between the splice pack SP200 and the EBCM for a short to ground or a short to voltage. (Turn on the ignition with the engine off when testing for a short to voltage.) Refer to <i>Circuit Testing and Wiring Repairs</i> in Wiring Systems. Did you find and correct the condition?	Go to Step 19	Go to Step 17
15	1. Disconnect the jumper wire from terminal J of the splice pack SP200. 2. Connect the jumper wire to terminal L of the splice pack SP200. 3. Turn on the ignition with the engine off. 4. Attempt to communicate with the instrument cluster. Does the scan tool communicate with the instrument cluster?	Go to Step 19	Go to Step 16
16	1. Turn off the ignition. 2. Disconnect the instrument cluster. 3. Test the class 2 serial data circuit between the splice pack SP200 and the instrument cluster for a short to ground or a short to voltage. (Turn on the ignition with the engine off when testing for a short to voltage.) Refer to <i>Circuit Testing and Wiring Repairs</i> in Wiring Systems. Did you find and correct the condition?	Go to Step 19	Go to Step 17
17	Inspect for poor connections at the class 2 serial data circuit of the module that is not communicating. Refer to <i>Testing for Intermittent and Poor Connections</i> and <i>Connector Repairs</i>. Did you find and correct the condition?	Go to Step 19	Go to Step 18
18	Replace the module which is not communicating. Refer to <i>Control Module References</i> for the appropriate repair instructions for module replacement. Did you complete the replacement?	Go to Step 19	
19	1. Reconnect all of the disconnected modules. 2. Reconnect any other disconnected connectors. 3. Install a scan tool. 4. Turn on the ignition with the engine off. 5. Wait for 10 seconds. The scan tool may require a power up reset before communication will occur due to a short on the class 2 serial data circuit. Turn off or disconnect the scan tool prior to performing this test. 6. Select the display DTCs function for each module. (If using a Tech 2, use the Class 2 DTC Check feature in order to determine which modules do have DTCs set.) 7. Record all of the displayed DTCs and the DTC status. Did you record any DTCs which begin with a U and with a current status?	Go to Step 21	Go to Step 20
20	Did you record any DTCs which do not begin with a U?	Go to Step 21	Go to Step 23
21	Diagnose the DTCs as directed by the diagnostic procedures for the particular module or malfunction. Did you complete the action?	Go to Step 22	—
22	Did you diagnose all of the DTCs?	Go to Step 23	Go to Step 21
23	Clear the DTCs using the scan tool. Did you complete the action?	System OK	—

Control Module References

Control Module	Repair Instructions	Diagnostic System Check	Schematic
EBCM	Refer to <i>Electronic Brake Control Module (EBCM) Replacement</i> in Antilock Brake System	Refer to <i>A Diagnostic System Check - ABS</i> in Antilock Brake System	Refer to <i>ABS Schematics</i> in Antilock Brake System
IPC	Refer to <i>IP Cluster Replacement</i> in Instrument Panel, Gauges and Console	Refer to <i>A Diagnostic System Check - Instrument Cluster</i> in Instrument Panel, Gauges and Console	Refer to <i>Instrument Cluster: Analog Schematics</i> in Instrument Panel, Gauges and Console
PCM	Refer to <i>PCM Replacement/Programming</i> in Engine Controls (3.8)	Refer to <i>A Powertrain On Board Diagnostic (OBD) System Check</i> in Engine Controls (3.8)	Refer to <i>Engine Controls Schematics</i> in Engine Controls Schematics (3.8)
SDM	Refer to <i>Inflatable Restraint Sensing and Diagnostic Module Replacement</i> in SIR	Refer to <i>A Diagnostic System Check - SIR</i> in SIR	Refer to <i>SIR Schematics</i> in SIR Schematics

Description and Operation

Data Link Communications Circuit Description

Data Link Connector (DLC)

The DLC provides a power source for the scan tool as follows:

- Unswitched voltage (B+) at DLC terminal 16 (circuit 540)
- Ground at terminal 4 (circuit 650) and terminal 5 (circuit 451)

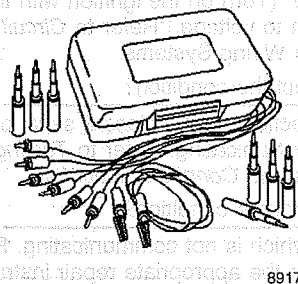
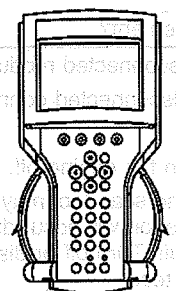
Class 2 Serial Data Link

The class 2 serial data link allows the following modules to communicate data with each other:

- Electronic brake control module (EBCM)
- Instrument cluster (IC)
- Powertrain control module (PCM)
- Inflatable restraint sensing and diagnostic module (SDM).

The Class 2 serial data link allows a scan tool to communicate with the above modules for diagnostic and testing purposes. The Class 2 serial data link is located at the DLC connector terminal 2.

Special Tools and Equipment

Illustration	Tool Number/ Description
	J 35616-A Connector Test Adapter Kit
	Scan Tool