

Perimeter Anti-Theft Alarm

DTC Charts

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

BCM DTC Chart

DTC	Description	Action <i>New: hover over Pinpoint Test links to show title</i>
B109F:01	Intrusion Sensor Module: General Electrical Failure	GO to Pinpoint Test B
B109F:02	Intrusion Sensor Module: General Signal Failure	GO to Pinpoint Test B
B109F:08	Intrusion Sensor Module: Bus Signal / Message Failure	GO to Pinpoint Test B
B109F:49	Intrusion Sensor Module: Internal Electronic Failure	GO to Pinpoint Test E
B109F:55	Intrusion Sensor Module: Not Configured	GO to Pinpoint Test F
B109F:97	Intrusion Sensor Module: Component or System Operation Obstructed or Blocked	GO to Pinpoint Test B
B109F:9A	Intrusion Sensor Module: Component or System Operating Conditions	GO to Pinpoint Test B
B1305:01	Hood Switch: General Electrical Failure	GO to Pinpoint Test D
B1305:11	Hood Switch: Circuit Short To Ground	GO to Pinpoint Test D
B1305:15	Hood Switch: Circuit Short To Battery or Open	GO to Pinpoint Test D
All other Diagnostic Trouble Codes (DTCs)	-	REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Diagnosis and Testing).

Symptom Chart

Symptom Chart: Anti-Theft - Perimeter

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

Condition	Possible Sources	Actions
The alarm system does not activate from an unauthorized entry at the hood	Refer to the Pinpoint Test	GO to Pinpoint Test A
The alarm system does not activate from an unauthorized entry at a door	Door ajar input	DIAGNOSE the courtesy lamps not illuminating when a door is open. REFER to: Interior Lighting (417-02 Interior Lighting, Diagnosis and Testing).

Condition	Possible Sources	Actions
The alarm system does not activate from the intrusion sensor	Refer to the Pinpoint Test	GO to Pinpoint Test B
The alarm system does not arm or no turn signals flash confirmation	Refer to the Pinpoint Test	GO to Pinpoint Test C
No traffic horn output during alarm activation	Horn output concern	REFER to: Horn (413-06 Horn, Diagnosis and Testing).
The alarm system falsely activates	Refer to the Pinpoint Test	GO to Pinpoint Test G

Pinpoint Tests

☐ [PINPOINT TEST A : THE ALARM SYSTEM DOES NOT ACTIVATE FROM AN UNAUTHORIZED ENTRY AT THE HOOD](#)

Refer to Wiring Diagrams Cell [117](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Perimeter Anti-Theft Alarm - System Operation and Component Description (419-01A Perimeter Anti-Theft Alarm, Description and Operation).

Possible Sources

- Wiring, terminals or connectors
- Hood latch
- BCM

Visual Inspection and Pre-checks

- Inspect the hood latch for damage.

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

A1 MONITOR THE BCM (BODY CONTROL MODULE) HOOD AJAR SWITCH (HOOD_SW) PID (PARAMETER IDENTIFICATION)

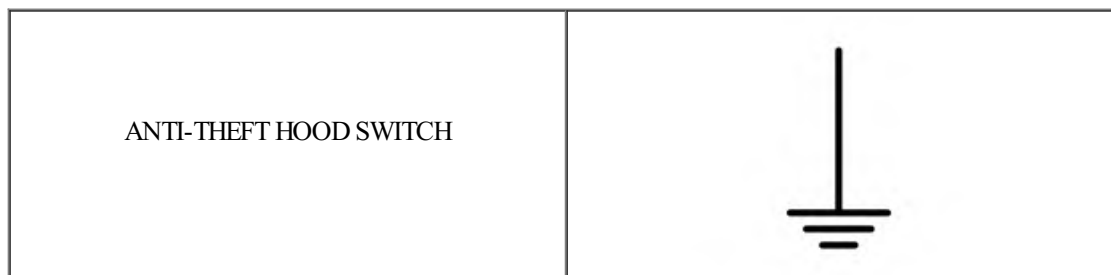
- Ignition ON.
- Using a diagnostic scan tool,
Access the BCM and control the HOOD_SW PID
- Disconnect Hood Ajar Switch [C127](#).

Does the PID read AJAR when the switch is disconnected?

Yes	INSTALL a new hood latch. REFER to: Hood Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
No	GO to A2

A2 CHECK THE HOOD AJAR SWITCH INPUT CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect BCM [C2280F](#) .
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C127-2	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to A3
No	REPAIR the circuit.

A3 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all BCM connectors.
- Repair:
 - corrosion (install new connector or terminals “clean module pins)
 - damaged or bent pins “install new terminals/pins
 - pushed-out pins “install new pins as necessary
- Reconnect all BCM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM, or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new BCM. REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

Refer to Wiring Diagrams Cell [117](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Perimeter Anti-Theft Alarm - System Operation and Component Description (419-01A Perimeter Anti-Theft Alarm, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
BCM B109F:01	Intrusion Sensor Module: General Electrical Failure	Sets when the BCM detects a short to ground from the intrusion sensor LIN circuit.
BCM B109F:02	Intrusion Sensor Module: General Signal Failure	Sets when the BCM detects a communication fault with the intrusion sensor.
BCM B109F:08	Intrusion Sensor Module: Bus Signal/Message Failures	Sets when the BCM detects a communication fault with the intrusion sensor.
BCM B109F:97	Intrusion Sensor Module: Component Or System Operation Obstructed Or Blocked	Sets when the intrusion sensor communicates to the BCM that it detects the motion sensor is blocked.
BCM B109F:9A	Intrusion Sensor Module: Component or System Operating Conditions	Sets when the BCM detects a communication fault with the intrusion sensor.

Possible Sources

- Fuse
- Wiring, terminals or connectors
- Intrusion sensor
- BCM

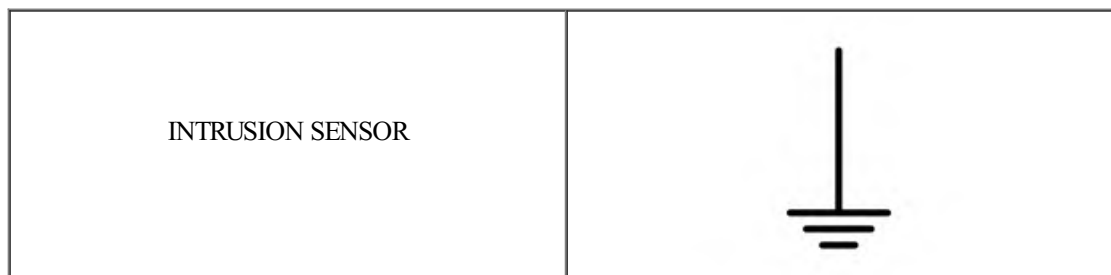
Visual Inspection and Pre-checks

- Inspect the BCM fuse 9 (5A)

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

B1 CHECK FOR VOLTAGE TO THE INTRUSION SENSOR

- Ignition OFF.
- Disconnect Intrusion Sensor [C9800](#) .
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C9800-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to B3
No	VERIFY the BCM fuse 9 (5A) is OK. If OK, GO to B2 If not OK, REFER to the Wiring Diagrams manual to identify the possible cause of the circuit short.

B2 CHECK THE INTRUSION SENSOR VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Disconnect BCM [C2280C](#) .
- Measure:

INTRUSION SENSOR	BODY CONTROL MODULE (BCM)
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Positive Lead	Measurement / Action	Negative Lead
C9800-1	Ω	C2280C-15

Is the resistance less than 3 ohms?

Yes	GO to B7
No	REPAIR the circuit.

B3 CHECK THE INTRUSION SENSOR GROUND CIRCUIT FOR AN OPEN

- Measure:

INTRUSION SENSOR

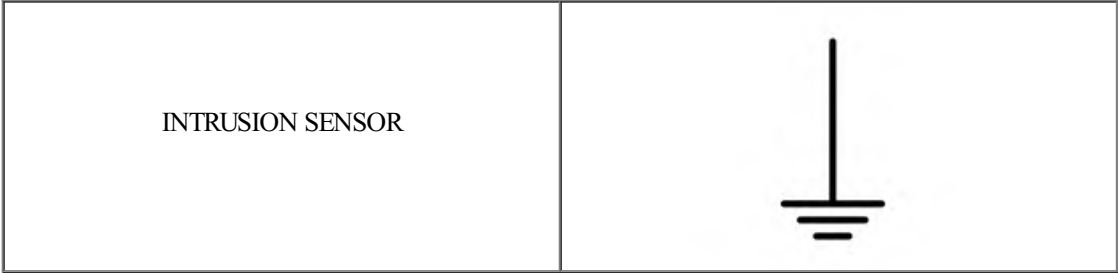
Positive Lead	Measurement / Action	Negative Lead
C9800-1		C9800-3

Is the voltage greater than 11 volts?

Yes	GO to B4
No	REPAIR the circuit.

B4 CHECK THE INTRUSION SENSOR LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR A SHORT TO VOLTAGE

- Disconnect BCM [C2280E](#) .
- Ignition ON.
- Measure:



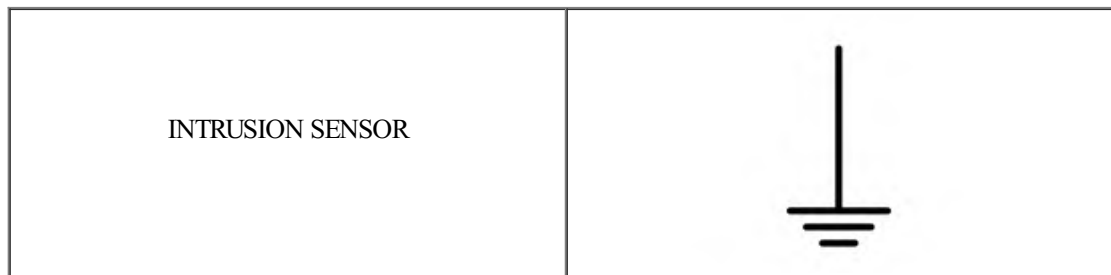
Positive Lead	Measurement / Action	Negative Lead
C9800-2		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to B5

B5 CHECK THE INTRUSION SENSOR LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C9800-2	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to B6
No	REPAIR the circuit.

B6 CHECK THE INTRUSION SENSOR LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR AN OPEN

- Measure:



Positive Lead	Measurement / Action	Negative Lead
C9800-2	Ω	C2280E-36

Is the resistance less than 3 ohms?

Yes	INSTALL a new intrusion sensor. REFER to: Intrusion Sensor (419-01A Perimeter Anti-Theft Alarm, Removal and Installation). TEST the system for normal operation. If the concern is still present, GO to B7
No	REPAIR the circuit.

B7 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connector or terminals & clean module pins)
 - damaged or bent pins & install new terminals/pins
 - pushed-out pins & install new pins as necessary
- Reconnect the BCM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM, or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new BCM. REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

☐ PINPOINT TEST C : THE ALARM SYSTEM DOES NOT ARM OR NO TURN SIGNALS FLASH CONFIRMATION

Refer to Wiring Diagrams Cell [95](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Perimeter Anti-Theft Alarm - System Operation and Component Description (419-01A Perimeter Anti-Theft Alarm, Description and Operation).

Possible Sources

- Door ajar switch input
- Hood ajar switch input
- Turn signal output
- Keyless entry keypad concern
- RKE transmitter concern
- BCM

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

C1 CHECK FOR BCM (BODY CONTROL MODULE) DTC (DIAGNOSTIC TROUBLE CODE) B1305:01, B1305:11, B1305:15

NOTE: DTC sets if the hood is open. Make sure the hood is closed prior to running the self-test.

- Ignition ON.
- Using a diagnostic scan tool, carry out the BCM self-test.

Is DTC B1305:01, B1305:11, B1305:15 present?

Yes	GO to Pinpoint Test D
No	GO to C2

C2 CHECK THE DOOR AJAR SWITCH INPUT

- Close all the doors.
- Observe the IPC.

Does the IPC indicate a door is ajar?

Yes	DIAGNOSE the courtesy lamps staying on continuously. REFER to: Interior Lighting (417-02 Interior Lighting, Diagnosis and Testing).
No	GO to C3

C3 VERIFY THE HAZARD FLASHER LAMP OPERATION

- Ignition OFF.
- Activate the hazard flasher lamp function and observe the turn signals.

Do all the turn signals flash on and off?

Yes	GO to C4
No	DIAGNOSE the inoperative turn signals. REFER to: Turn Signal and Hazard Lamps (417-01 Exterior Lighting, Diagnosis and Testing).

C4 CHECK THE RKE (REMOTE KEYLESS ENTRY) TRANSMITTER FUNCTION

- Using the RKE transmitter, lock and unlock the doors.

Do the doors lock and unlock?

Yes	GO to C5
No	DIAGNOSE the inoperative RKE transmitter. REFER to: Locks, Latches and Entry Systems (501-14 Handles, Locks, Latches and Entry Systems, Diagnosis and Testing).

C5 CHECK THE KEYLESS ENTRY KEYPAD FUNCTION

- Using the keyless entry keypad, lock the doors (press 7/8 and 9/0 simultaneously).

Do the doors lock?

Yes	GO to C6
No	DIAGNOSE the keyless entry keypad. REFER to: Locks, Latches and Entry Systems (501-14 Handles, Locks, Latches and Entry Systems, Diagnosis and Testing).

C6 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connector or terminals â€“ clean module pins)
 - damaged or bent pins â€“ install new terminals/pins
 - pushed-out pins â€“ install new pins as necessary
- Reconnect the BCM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM, or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new BCM. REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST D : B1305:01, B1305:11, B1305:15

Refer to Wiring Diagrams Cell [117](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Perimeter Anti-Theft Alarm - System Operation and Component Description (419-01A Perimeter Anti-Theft Alarm, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
BCM B1305:01	Hood Switch: General Electrical Failure	Sets when the BCM detects an open from the hood ajar switch input during a self-test. This DTC also sets if the self-test is carried out with the hood open.
BCM B1305:11	Hood Switch: Circuit Short To Ground	Sets when the BCM detects a short to ground from the hood ajar switch input during a self-test. This DTC also sets if the self-test is carried out with the hood open.
BCM B1305:15	Hood Switch: Circuit Short To Battery Or Open	Sets when the BCM detects an open or short to battery from the hood ajar switch input during a self-test. This DTC also sets if the self-test is carried out with the hood open.

Possible Sources

- Wiring, terminals or connectors
- Hood latch
- BCM

Visual Inspection and Pre-checks

- Inspect the hood latch for damage.

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

D1 CHECK THE HOOD AJAR SWITCH

- Disconnect Hood Ajar Switch [C127](#) .
- Ignition ON.
- Connect:

ANTI-THEFT HOOD SWITCH

Positive Lead	Measurement / Action	Negative Lead
C127-2		C127-1

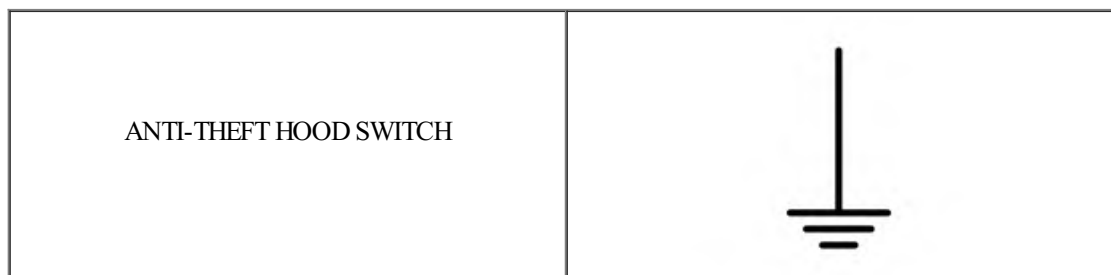
- Using a diagnostic scan tool, carry out the BCM self-test.

Is DTC B1305:01, B1305:11, B1305:15 still present?

Yes	REMOVE the fused jumper wire. GO to D2
No	REMOVE the fused jumper wire. INSTALL a new hood latch. REFER to: Hood Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

D2 CHECK THE HOOD AJAR SWITCH FOR A SHORT TO VOLTAGE

- Disconnect BCM [C2280F](#) .
- Measure:



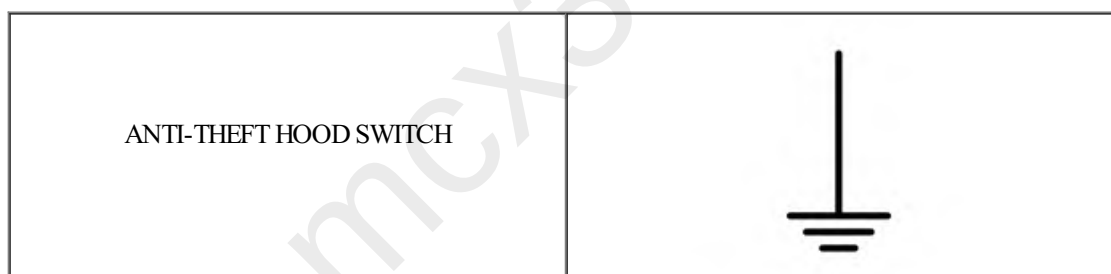
Positive Lead	Measurement / Action	Negative Lead
C127-2		Ground

Is any voltage present?

Yes	REPAIR the circuit in question.
No	GO to D3

D3 CHECK THE HOOD AJAR SWITCH GROUND CIRCUIT FOR AN OPEN

- Connect a fused jumper wire:



Positive Lead	Measurement / Action	Negative Lead
C127-2		Ground

- Using a diagnostic scan tool, carry out the BCM self-test.

Is DTC B1305:01, B1305:11, B1305:15 still present?

Yes	REMOVE the fused jumper wire. GO to D4
No	REMOVE the fused jumper wire. REPAIR the circuit.

D4 CHECK THE HOOD AJAR SWITCH INPUT CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect BCM [C2280F](#) .
- Measure:

ANTI-THEFT HOOD SWITCH	BODY CONTROL MODULE (BCM)
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Positive Lead	Measurement / Action	Negative Lead
C127-2	Ω	C2280F-14

Is the resistance less than 3 ohms?

Yes	GO to D5
No	REPAIR the circuit.

D5 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connector or terminals “clean module pins)
 - damaged or bent pins “install new terminals/pins
 - pushed-out pins “install new pins as necessary
- Reconnect the BCM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM, or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new BCM. REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

[PINPOINT TEST E : DTC \(DIAGNOSTIC TROUBLE CODE\) B109F:49](#)

Normal Operation and Fault Conditions

REFER to: Perimeter Anti-Theft Alarm - System Operation and Component Description (419-01A Perimeter Anti-Theft Alarm, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
BCM B109F:49	Intrusion Sensor Module: Internal Electronic Failure	Sets when the Intrusion Sensor Module detects a fault when there is an internal problem

Possible Sources

- Incorrect response from Intrusion Sensor Module

E1 CHECK BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, carry out the BCM self-test.

Are there any other Diagnostic Trouble Codes (DTCs) Present ?

Yes	DIAGNOSE all other Diagnostic Trouble codes (DTCs) first. Refer to DTC Chart in this section.
No	INSTALL new Intrusion Sensor Module. REFER to: Intrusion Sensor (419-01A Perimeter Anti-Theft Alarm, Removal and Installation).

☐ PINPOINT TEST F : DTC (DIAGNOSTIC TROUBLE CODE) B109F:55

Normal Operation and Fault Conditions

REFER to: Perimeter Anti-Theft Alarm - System Operation and Component Description (419-01A Perimeter Anti-Theft Alarm, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
BCM B109F:55	Intrusion Sensor Module: Not Configured	Sets when the Intrusion Sensor Module detects a fault when there is no ID stored in the BCM.

Possible Sources

- Incorrect response from Intrusion Sensor Module
- There is no Intrusion Sensor Module ID stored in the BCM memory

F1 CHECK BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, carry out the BCM self-test.

Are there any other Diagnostic Trouble Codes (DTCs) Present ?

Yes	DIAGNOSE all other Diagnostic Trouble codes (DTCs) first. REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Diagnosis and Testing).
No	Using a diagnostic scan tool, CARRY OUT the LIN New Module Initialization procedure (Toolbox>BCM>LIN New Module Initialization).

☐ PINPOINT TEST G : FALSE ALARM ACTIVATION

Normal Operation and Fault Conditions

REFER to: Perimeter Anti-Theft Alarm - System Operation and Component Description (419-01A Perimeter Anti-Theft Alarm, Description and Operation).

Possible Sources

- Door ajar input
- Hood switch input
- Panic button pressed on a RKE transmitter
- A valid PATS key read was NOT received when the ignition transitioned to RUN

G1 MONITOR THE BCM (BODY CONTROL MODULE) ALARM EVENT PID (PARAMETER IDENTIFICATION) 'S

- Identify and isolate the cause of the last alarm activation.
 - Access the BCM and monitor the ALARM_EVT_1 PID
 - Access the BCM and monitor the ALARM_EVT_2 PID
 - Access the BCM and monitor the ALARM_EVT_3 PID
 - Access the BCM and monitor the ALARM_EVT_4 PID

Are there any BCM PID's present?

Yes	For a PID value of "Panic" causing the false alarm event, the system is operating correctly at this time. INSTRUCT the customer in the correct operation of the panic alarm feature. REFER to "Panic Alarm" in the Owner's Literature. For a PID value of "Door Ajar" causing the false alarm event, DIAGNOSE the ajar switches. REFER to: Interior Lighting (417-02 Interior Lighting, Diagnosis and Testing). For a PID value "Hood Ajar" causing the false alarm event, diagnose the hood ajar switch. GO to Pinpoint Test D
No	The system is operating correctly at this time.