

Rear Door Ajar Switch - SuperCab

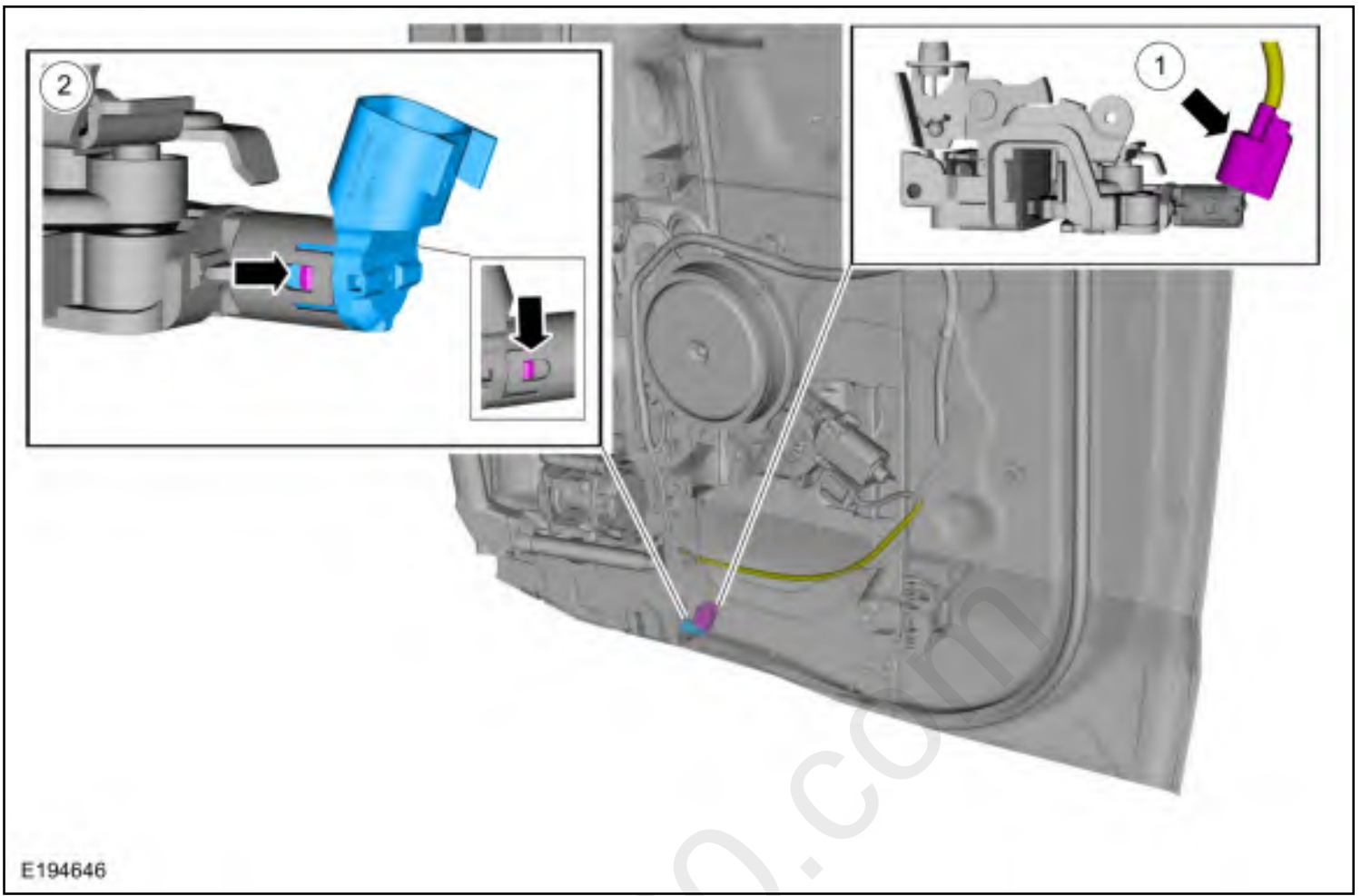
Removal

1. Remove the rear door trim panel.
Refer to: [Rear Door Trim Panel - SuperCab](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).
2. Remove the water shield.



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1. Disconnect the electrical connector.
2. Release the tabs and remove the rear door ajar switch.



Installation

1. To install, reverse the removal procedure.

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419-01A to review the procedures for achieving the various ignition states (ignition OFF, ignition in ACCESSORY, ignition ON and ignition START) on vehicles with this feature.

In the event of a moderate to severe collision, the vehicle is equipped with a Fuel Pump and Sender Shut-off Feature that is initiated by the event notification signal.

The event notification feature provides other vehicle subsystems with information pertaining to restraint system deployment or fuel cutoff status. When an impact occurs which exceeds a predetermined threshold, the RCM sends a signal on a dedicated circuit to the BCM. The BCM then sends a signal on a second hard-wired circuit to the PCM, which initiates fuel cut-off and disables the fuel system.

Should the vehicle shut off after a collision due to this feature, the vehicle may be restarted by first turning the ignition to the OFF position and then turn the ignition to the ON position. In some instances the vehicle may not start the first time and may take one additional ignition cycle.

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Perimeter Anti-Theft Alarm - Overview

Overview

The perimeter alarm system deters unauthorized entry into the vehicle by sounding the traffic horn and flashing all the turn signals and interior courtesy lamps. When an unauthorized entry occurs, the horn and lamps activate for 30 seconds. After 30 seconds, the horn stops sounding, but the lamps continue to flash for up to 5 minutes.

The panic alarm operates similar to the perimeter alarm, but only activates using the panic button on the RKE transmitter.

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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
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	INSTALL a new intrusion sensor. REFER to: Intrusion Sensor (419-01A Perimeter Anti-Theft Alarm, Removal and Installation).
B109F:55	Intrusion Sensor Module: Not Configured	Using a diagnostic scan tool, CARRY OUT the LIN New Module Initialization procedure (Toolbox>Electrical>Service Functions>LIN New Module Initialization).

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
All other Diagnostic Trouble Codes (DTCs)	-	REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Diagnosis and Testing).

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).

DDM DTC Chart

DTC	Description	Action
B11DA:23	Driver Door Key Cylinder Switch: Signal Stuck Low	DISREGARD this DTC. This vehicle is not equipped to support the arm/disarm inputs.
All other Diagnostic Trouble Codes (DTCs)	-	REFER to: Locks, Latches and Entry Systems (501-14 Handles, Locks, Latches and Entry Systems, 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).

Symptom Chart

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).
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	• A valid PATS key read was NOT received when the ignition transitioned to RUN • Panic button pressed on a RKE transmitter • Door ajar input • Intrusion/inclination sensor input • Hood ajar input	• An intermittent fault exists. Using a diagnostic scan tool, view the following BCM Parameter Identifications (PIDs) to identify and isolate the cause of the last alarm activation. ◦ Most Recent Alarm Trigger Event (ALARM_EVT_1) ◦ 2nd Most Recent Alarm Trigger Event (ALARM_EVT_2) ◦ 3rd Most Recent Alarm Trigger Event (ALARM_EVT_3) ◦ 4th Most Recent Alarm Trigger Event (ALARM_EVT_4) • 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 of "Interior Motion Detected" or "Tilt Detected" causing the false alarm event, diagnose the intrusion/tilt sensor. GO to Pinpoint Test B • For a PID value of "Hood Ajar" causing the false alarm event, diagnose the hood ajar switch. GO to Pinpoint Test D
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Pinpoint Tests

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 Operations 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 Diagnostic Pre-checks

- Inspect the hood latch for damage.

PINPOINT TEST A : THE ALARM SYSTEM DOES NOT ACTIVATE FROM AN UNAUTHORIZED ENTRY AT THE HOOD

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, view the BCM Parameter Identifications (PIDs). • Using a diagnostic scan tool, monitor the BCM 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.

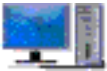
Is the resistance greater than 10,000 ohms?

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 TSB. If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no TSB addresses this concern,   Click here to access Guided Routine (BCM).
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.

The Alarm System Does Not Activate From The Intrusion Sensor

Refer to Wiring Diagrams Cell 117 for schematic and connector information.

Normal Operations and Fault Conditions

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

BCM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B109F:01	Intrusion Sensor Module: General Electrical Failure	Sets when the BCM detects a short to ground from the intrusion sensor LIN circuit.
B109F:02	Intrusion Sensor Module: General Signal Failure	Sets when the BCM detects a communication fault with the intrusion sensor.
B109F:08	Intrusion Sensor Module: Bus Signal / Message Failure	Sets when the BCM detects a communication fault with the intrusion sensor.
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.
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 Diagnostic Pre-checks

- Inspect the BCM fuse 11 (5A)

PINPOINT TEST B : THE ALARM SYSTEM DOES NOT ACTIVATE FROM THE INTRUSION SENSOR

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.

Is the voltage greater than 11 volts?

Yes	GO to B3
No	VERIFY the BCM fuse 11 (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.

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

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.

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.

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

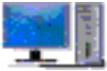
Is the resistance less than 3 ohms?

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 TSB. If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no TSB addresses this concern,   Click here to access Guided Routine (BCM).
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.

The Alarm System Does Not Arm or No Turn Signals Flash Confirmation

Refer to Wiring Diagrams Cell 95 for schematic and connector information.

Normal Operations 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

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

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

NOTE: DTC B1305:01 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 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).

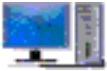
Do the doors lock?

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 – 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 TSB. If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no TSB addresses this concern,   Click here to access Guided Routine (BCM).
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.

B1305:01

Refer to Wiring Diagrams Cell 117 for schematic and connector information.

Normal Operations and Fault Conditions

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

BCM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
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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.
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Possible Sources

- Wiring, terminals or connectors
- Hood latch
- BCM

Visual Inspection and Diagnostic Pre-checks

- Inspect the hood latch for damage.

PINPOINT TEST D : B1305:13

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. • Using a diagnostic scan tool, carry out the BCM self-test.	
Is DTC B1305:01 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 GROUND CIRCUIT FOR AN OPEN	

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

Is DTC B1305:01 still present?

Yes	REMOVE the fused jumper wire. GO to D3
No	REMOVE the fused jumper wire. REPAIR the circuit.

D3 CHECK THE HOOD AJAR SWITCH INPUT CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect BCM C2280F.

Is the resistance less than 3 ohms?

Yes	GO to D4
No	REPAIR the circuit.

D4 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.

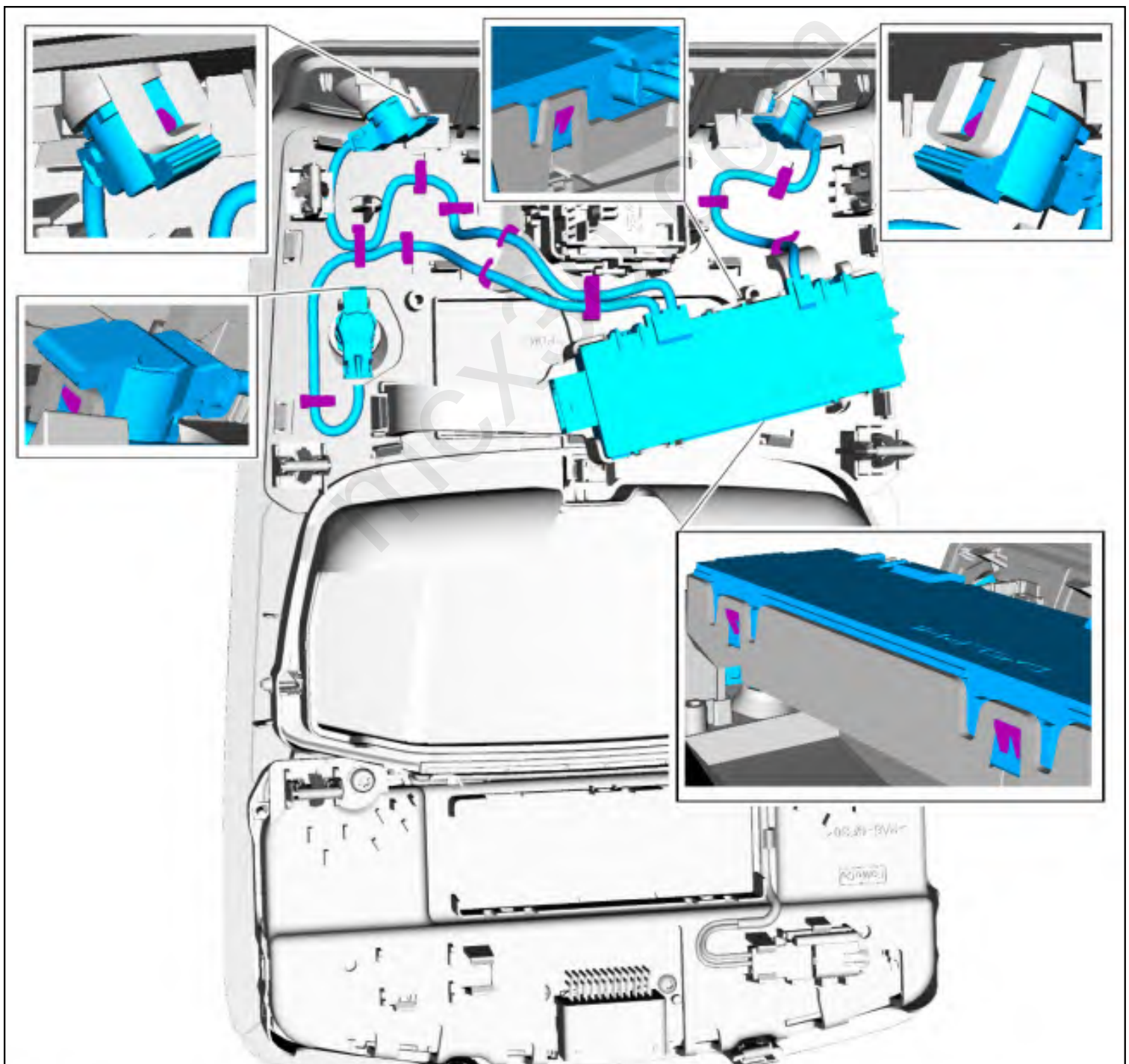
Is the concern still present?

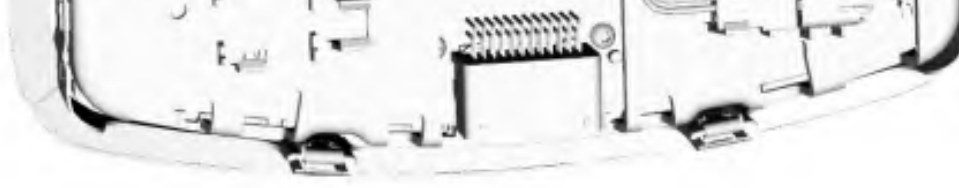
Yes	CHECK OASIS for any applicable TSB. If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no TSB addresses this concern,   Click here to access Guided Routine (BCM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

Intrusion Sensor

Removal

1. Remove the overhead console.
Refer to: [Overhead Console](#) (501-12 Instrument Panel and Console, Removal and Installation).
2. Detach the wire harnesses from the retainers, disconnect the retainers and remove the intrusion sensor assembly.





Installation

1. To install, reverse the removal procedure.
2. **NOTE:** *This step is only necessary when installing a new component.*

Using a diagnostic scan tool, carry out the LIN New Module Initialization procedure (Toolbox>Electrical>Service Functions>LIN New Module Initialization).

3. **NOTE:** *This step is only necessary when installing a new component.*

Carry out the BCM self-test. Clear the Diagnostic Trouble Codes (DTCs) and then retrieve the Diagnostic Trouble Codes (DTCs) from the BCM to confirm all Diagnostic Trouble Codes (DTCs) have been cleared.