

DTC	Description	Action <i>New: hover over Pinpoint Test links to show title</i>
C1B14:11	Sensor Supply Voltage A: Circuit Short To Ground	GO to Pinpoint Test O
C1B14:12	Sensor Supply Voltage A: Circuit Short To Battery	GO to Pinpoint Test O
All Other FCIM Diagnostic Trouble Codes (DTCs) not listed in this chart	â€”	Refer to the appropriate section in Group 415 for the procedure.

Symptom Chart(s)

Symptom Chart: Climate Control - Electronic Manual Temperature Control (EMTC)

NOTE: Some PCM Diagnostic Trouble Codes (DTCs) may inhibit A/C operation. If any PCM Diagnostic Trouble Codes (DTCs) are retrieved, diagnose those first. Refer to the PCM DTC Chart.

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
A module does not communicate with the diagnostic scan tool	- Fuse(s) - Wiring, terminals or connectors - FCIM	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).
Unable To Duplicate The Customer Concern And No Diagnostic Trouble Codes (DTCs) Present	Refer to Pinpoint Test	GO to Pinpoint Test C
Externally Controlled Variable Displacement Compressor (EVDC) poor performance/does not operate correctly	Refer to Pinpoint Test	GO to Pinpoint Test Q
Reduced outlet airflow	Plugged cabin air filter	INSPECT the cabin air filter. REFER to: Cabin Air Filter (412-00 Climate Control System - General Information, Removal and Installation). If OK, DIAGNOSE for low refrigerant charge, A/C always commanded on or blower motor not operating correctly.
	Improper refrigerant level	PERFORM the refrigerant system tests. REFER to the appropriate general procedure in Group 412-00. If refrigerant charge is OK, GO to Pinpoint Test H
	Blower motor	GO to Pinpoint Test K
The air inlet door is inoperative	Refer to Pinpoint Test	GO to Pinpoint Test D
Incorrect/erratic direction of airflow from outlets	Refer to Pinpoint Test	GO to Pinpoint Test E
Insufficient, erratic or no heat	Refer to Pinpoint Test	GO to Pinpoint Test F
Insufficient heat in Auto Start-Stop mode only	Refer to Pinpoint Test	GO to Pinpoint Test P
The A/C is inoperative	Refer to Pinpoint Test	GO to Pinpoint Test G
Insufficient A/C cooling	Improper refrigerant level	PERFORM the refrigerant system tests. REFER to the appropriate general procedure in Group 412-00. If OK, DIAGNOSE for a temperature door actuator not operating correctly.
	Temperature door actuator	GO to Pinpoint Test I
The A/C is always on â€” A/C mode always commanded ON	Refer to Pinpoint Test	GO to Pinpoint Test H
Temperature control is inoperative/does not operate correctly	Refer to Pinpoint Test	GO to Pinpoint Test I

Condition	Possible Sources	Actions
The blower motor is inoperative	Refer to Pinpoint Test	GO to Pinpoint Test J
The blower motor does not operate correctly	Refer to Pinpoint Test	GO to Pinpoint Test K
The A/C pressure relief valve is discharging	- High system pressure - A/C pressure relief valve	- Using the appropriate manifold gauge set, CHECK the A/C system pressure. If the system pressure is above the A/C pressure relief valve open pressure, 3,447-4,137 kPa (500-600 psi), REPAIR the system for a restriction. - CHECK the high side system pressure. If the pressure is below the A/C pressure relief valve open pressure, 3,447-4,137 kPa (500-600 psi), INSTALL a new A/C compressor. REFER to the appropriate procedure in Group 412-00.
Climate control does not operate only when remote start is used	- IPC information display settings - Non-Ford approved remote start system installed	- VERIFY Remote Start - Message Center Set To Auto, or Remote Start - Message Center Set To Last User Settings. REFER to the Description and Operations in Group 412-00. - VERIFY module communications network operation. DIAGNOSE Diagnostic Trouble Codes (DTCs) if present.

Symptom Chart: Noise, Vibration, and Harshness (NVH)

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
Excessive hissing from the plenum when the A/C is on	Low refrigerant charge	INSPECT the A/C system for a leak. REFER to the appropriate general procedures in Group 412-00.
The A/C compressor is noisy	A/C compressor clutch air gap out of specification	- CHECK and ADJUST the A/C compressor clutch gap if necessary. REFER to the appropriate general procedure in Group 412-00. - If the A/C compressor clutch air gap is OK, INSTALL a new A/C compressor clutch and field coil. REFER to the appropriate general procedure in Group 412-00.
	A/C compressor pulley bearing worn	- INSPECT the A/C compressor pulley bearing for roughness. - If pulley bearing roughness is found, INSTALL a new A/C compressor pulley. REFER to the appropriate procedure in Group 412-00.
	A/C compressor bearing worn	INSPECT the A/C compressor bearing for roughness. If bearing roughness is found, INSTALL a new A/C compressor. REFER to the appropriate procedure in group 412-00.

Pinpoint Tests

[PINPOINT TEST A : P0532, P0533](#)

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

A/C Pressure Transducer, REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) - System Operation and Component Description (412-00 Climate Control System - General Information, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0532:00	A/C Refrigerant Pressure Sensor "A" Circuit Low: No Sub Type Information	The A/C pressure transducer inputs a feedback voltage to the PCM. This DTC sets if the feedback voltage is lower than expected.
PCM P0533:00	A/C Refrigerant Pressure Sensor "A" Circuit High: No Sub Type Information	The A/C pressure transducer inputs a feedback voltage to the PCM. This DTC sets if the feedback voltage is greater than expected.

Possible Sources

- Wiring, terminals or connectors
- A/C pressure transducer
- PCM

Visual Inspection and Pre-checks

- Inspect for loose or corroded PCM and A/C pressure transducer connections.

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

A1 COMPARE THE PCM (POWERTRAIN CONTROL MODULE) (A/C) PRESSURE SENSOR (ACP_PRESS) PID (PARAMETER IDENTIFICATION) WITH THE MANIFOLD GAUGE SET READINGS

- Allow the A/C system to stabilize to the outside ambient temperature.
- Ignition ON.
- Using a diagnostic scan tool, view PCM Parameter Identifications (PIDs).
- With the manifold gauge set connected, compare the pressure readings of the manifold gauge set and the PCM PID ACP_PRESS.

Are the pressure values of the manifold gauge set and the ACP_PRESS PCM PID within $\hat{\pm}$ 15 psi (103 kPa)?

Yes	IGNORE the Diagnostic Trouble Codes (DTCs). REFER to the Symptom Chart in this section.
No	GO to A2

A2 CHECK THE A/C (AIR CONDITIONING) PRESSURE SENSOR CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect PCM 2.0L [C1381B](#), 2.7L [C1551B](#) or 2.0L diesel [C175B](#) .
- Disconnect generator current sensor [C1645](#).
- Disconnect A/C pressure transducer [C1260](#).
- Ignition ON.
- Measure:

AIR CONDITIONING (A/C) PRESSURE TRANSDUCER	
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Positive Lead	Measurement / Action	Negative Lead
C1260-1		Ground
C1260-2		Ground
C1260-3		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to A3

A3 CHECK THE A/C (AIR CONDITIONING) PRESSURE SENSOR CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

AIR CONDITIONING (A/C) PRESSURE TRANSDUCER



Positive Lead	Measurement / Action	Negative Lead
C1260-1	Ω	Ground
C1260-2	Ω	Ground
C1260-3	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to A4
No	REPAIR the circuit.

A4 CHECK THE A/C (AIR CONDITIONING) PRESSURE SENSOR CIRCUITS FOR AN OPEN

- Measure:

AIR CONDITIONING (A/C) PRESSURE TRANSDUCER

POWERTRAIN CONTROL MODULE (PCM)

2.0L

Positive Lead	Measurement / Action	Negative Lead
C1260-1	Ω	C1381B-4
C1260-2	Ω	C1381B-30
C1260-3	Ω	C1381B-13

AIR CONDITIONING (A/C) PRESSURE TRANSDUCER

POWERTRAIN CONTROL MODULE (PCM)

2.7L

Positive Lead	Measurement / Action	Negative Lead
C1260-1	Ω	C1551B-26
C1260-2	Ω	C1551B-69
C1260-3	Ω	C1551B-81

AIR CONDITIONING (A/C) PRESSURE TRANSDUCER

2.0L diesel

Positive Lead	Measurement / Action	Negative Lead
C1260-1	Ω	C175B-28
C1260-2	Ω	C175B-70
C1260-3	Ω	C175B-9

A5 CHECK THE A/C (AIR CONDITIONING) PRESSURE SENSOR CIRCUITS FOR A SHORT TOGETHER**Are the resistances less than 3 ohms?**

Yes	GO to A5
No	REPAIR the circuit.

- Measure:

AIR CONDITIONING (A/C) PRESSURE TRANSDUCER

Positive Lead	Measurement / Action	Negative Lead
C1260-1	Ω	C1260-2
C1260-1	Ω	C1260-3
C1260-2	Ω	C1260-3

Are the resistances greater than 10,000 ohms?

Yes	INSTALL a new A/C pressure transducer. REFER to: Air Conditioning (A/C) Pressure Transducer (412-00 Climate Control System - General Information, Removal and Installation). TEST the system for normal operation. If the concern is still present, GO to A6
No	REPAIR the circuits.

A6 CHECK FOR CORRECT PCM (POWERTRAIN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all PCM 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
- Connect all PCM 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 PCM. REFER to the appropriate procedure in Group 303-14.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST B : P0645

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

Voltage is provided to the A/C clutch relay coil. When A/C is requested and A/C line pressures allow, a ground is provided to the A/C clutch relay coil from the PCM, energizing the A/C clutch relay. A/C Request, REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) - System Operation and Component Description (412-00 Climate Control System - General Information, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P0645:00	A/C Clutch Relay Control Circuit: No Sub Type Information	This DTC sets when the PCM grounds the relay circuit and more current than expected is detected on the relay circuit. The DTC also sets when the relay circuit is off and voltage is detected on the relay circuit.

Possible Sources

- Fuse
- Wiring, terminals or connectors
- A/C clutch relay
- PCM

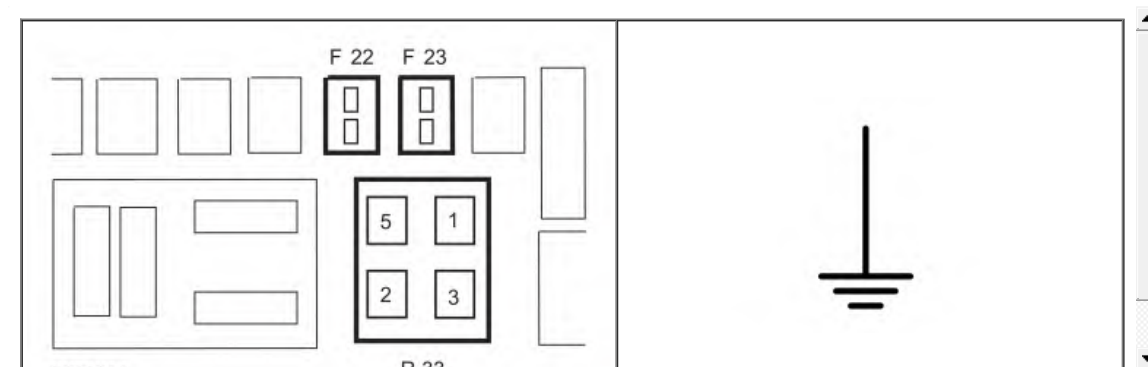
Visual Inspection and Pre-checks

- Verify BJB fuse 22 (10A) is OK.

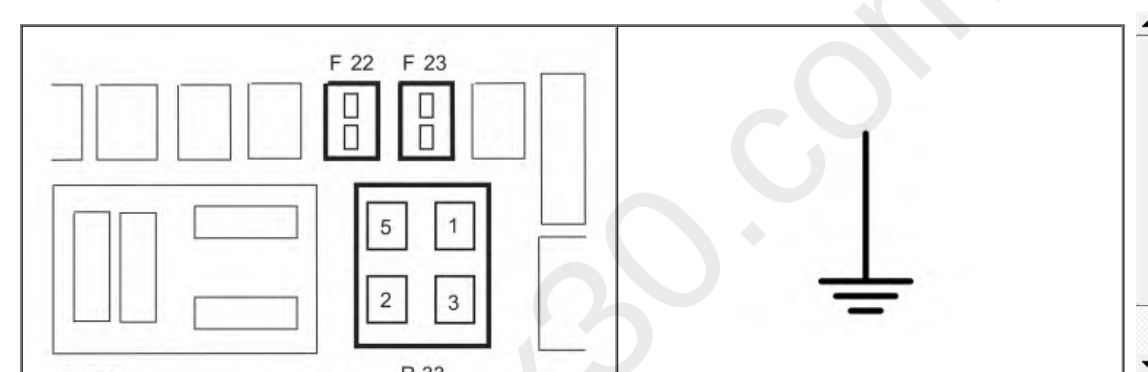
NOTICE: Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.

B1 CHECK THE VOLTAGE TO THE A/C (AIR CONDITIONING) CLUTCH RELAY VOLTAGE SUPPLY CIRCUITS

- Ignition OFF.
- Disconnect A/C clutch relay.
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
A/C clutch relay socket 1		Ground



Positive Lead	Measurement / Action	Negative Lead
A/C clutch relay socket 3		Ground

Are the voltages greater than 11 volts?

Yes	GO to B2
No	REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

B2 CHECK THE A/C (AIR CONDITIONING) CLUTCH RELAY

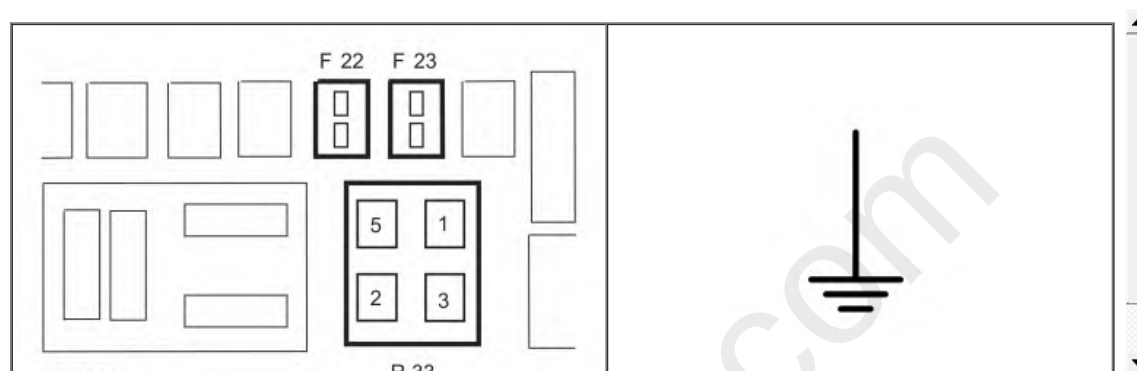
- Perform the component test on the A/C clutch relay.
Refer to Wiring Diagrams Cell [149](#) for schematic and connector information.

Does the relay pass the component test?

Yes	GO to B3
No	INSTALL a new A/C clutch relay.

B3 CHECK THE A/C (AIR CONDITIONING) CLUTCH RELAY CONTROL CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect PCM 2.0L [C1381B](#), 2.7L [C1551B](#) or 2.0L diesel [C175B](#).
- Ignition ON.
- Measure:



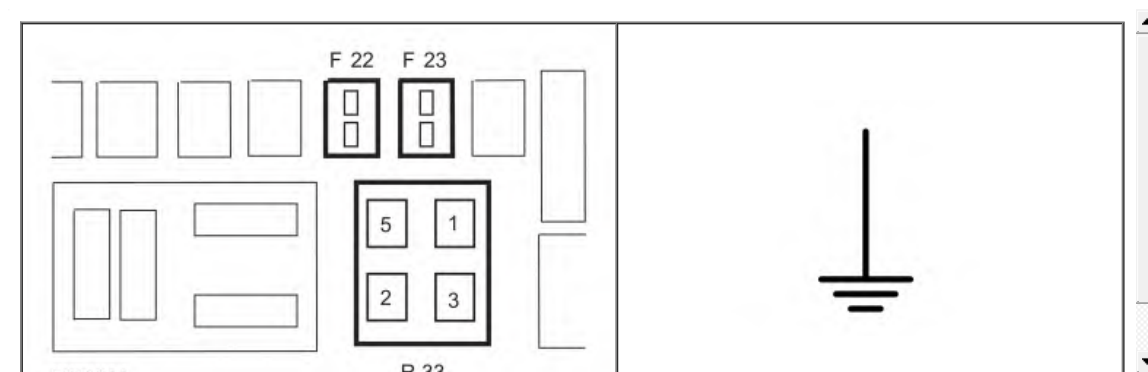
Positive Lead	Measurement / Action	Negative Lead
A/C clutch relay socket 2		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to B4

B4 CHECK THE A/C (AIR CONDITIONING) CLUTCH RELAY CONTROL CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:



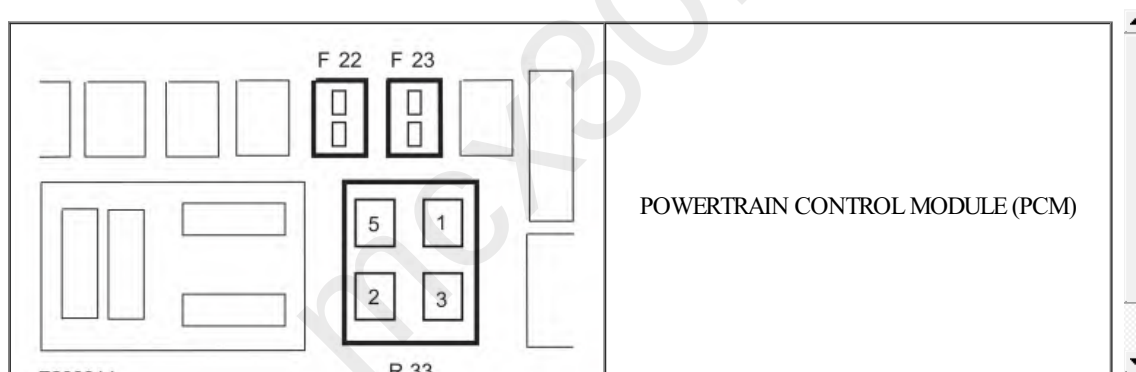
Positive Lead	Measurement / Action	Negative Lead
A/C clutch relay socket 2	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to B5
No	REPAIR the circuit.

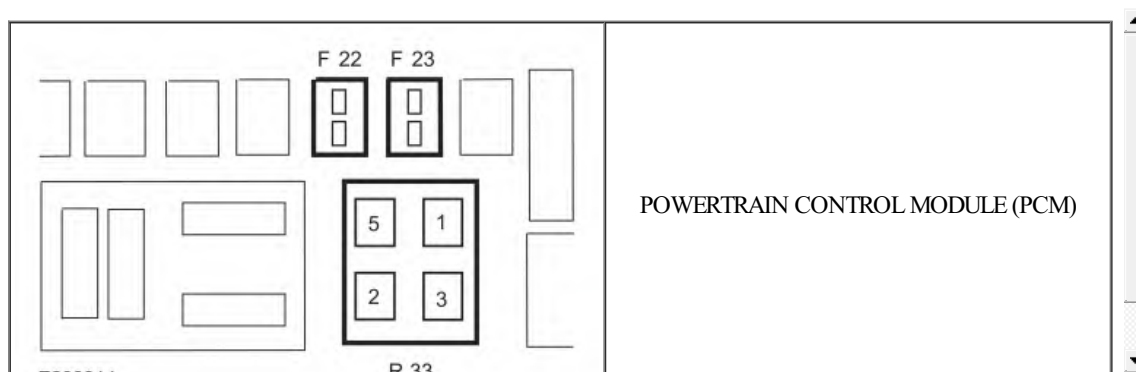
B5 CHECK THE A/C (AIR CONDITIONING) CLUTCH RELAY CONTROL CIRCUIT FOR AN OPEN

- Measure:



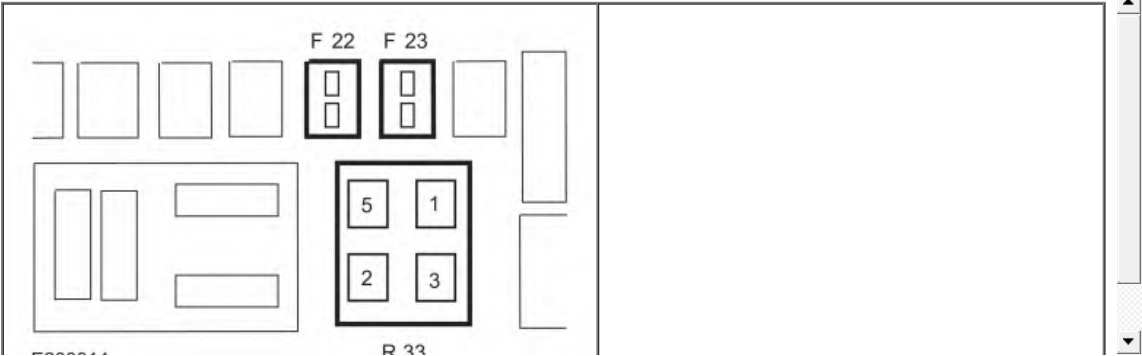
2.0L

Positive Lead	Measurement / Action	Negative Lead
A/C clutch relay socket 2	Ω	C1381B-62



2.7L

Positive Lead	Measurement / Action	Negative Lead
A/C clutch relay socket 2	Ω	C1551B-19



2.0L diesel

Positive Lead	Measurement / Action	Negative Lead
A/C clutch relay socket 2	Ω	C175B-78

Is the resistance less than 3 ohms?

Yes	GO to B6
No	REPAIR the circuit.

B6 CHECK FOR CORRECT PCM (POWERTRAIN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all PCM 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
- Connect all PCM 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 PCM. REFER to the appropriate procedure in Group 303-14.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST C : UNABLE TO DUPLICATE THE CUSTOMER CONCERN AND NO DIAGNOSTIC TROUBLE CODES (DTCs) PRESENT

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

The purpose of this pinpoint test is to test the functions of the HVAC system and identify the correct HVAC symptom pinpoint test.

System Operation, REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) - System Operation and Component Description (412-00 Climate Control System - General Information, Description and Operation).

Possible Sources

- HVAC system or related components

NOTE: Before carrying out the following test, diagnose all BCM, FCIM and PCM Diagnostic Trouble Codes (DTCs).

C1 CHECK THE PCM (POWERTRAIN CONTROL MODULE) FOR DIAGNOSTIC TROUBLE CODES (DTCs)

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

Are any climate control related Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the PCM DTC chart in this section.
No	GO to C2

C2 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) FOR DIAGNOSTIC TROUBLE CODES (DTCs)

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

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the FCIM DTC chart in this section.
No	GO to C3

C3 CHECK THE BLOWER MOTOR OPERATION

- Ignition ON.
- Select panel mode.
- Observe blower motor operation and select each blower motor speed.

Does the blower motor operate in all ranges?

Yes	GO to C4
No	If the blower motor does not operate in any setting, GO to Pinpoint Test J If the blower motor does not correctly change speeds or shut off, GO to Pinpoint Test K

C4 CHECK AIRFLOW OPERATION

- Select the highest blower motor setting.
- While observing the airflow, select each of the airflow positions (panel, panel/floor, floor, floor/defrost, defrost).

Is the airflow directed to the correct outlets?

Yes	GO to C5
No	GO to Pinpoint Test E

C5 VERIFY TEMPERATURE CONTROL OPERATION

- Start the vehicle and allow it to reach normal operating temperature.
- With the A/C off, select panel mode.
- Change the driver and passenger temperature settings from the coldest to the warmest and back to the coldest.

Does the temperature change between very warm to cool?

Yes	GO to C6
No	If the temperature does not get very warm, GO to Pinpoint Test F If the temperature does not change at all, GO to Pinpoint Test I

C6 VERIFY THE A/C (AIR CONDITIONING) COMPRESSOR DOES NOT ENGAGE WITH A/C (AIR CONDITIONING) OFF

- With the engine running and the A/C off, select panel mode.
- Select the coldest temperature setting.

Is the outlet temperature close to ambient air temperature?

Yes	GO to C7
No	If the outlet air temperature is warmer than ambient air temperature, GO to Pinpoint Test I If the outlet temperature is significantly colder than ambient air temperature and the A/C compressor clutch is engaged, GO to Pinpoint Test H

C7 VERIFY THE A/C (AIR CONDITIONING) COMPRESSOR IS OPERATIONAL IN THE A/C (AIR CONDITIONING) MODE

- Make sure the ambient air temperature is above approximately 0Â°C (32Â°F).
- With the engine running, select panel mode.
- Press the A/C button (indicator on).

Is the A/C compressor operational when the panel and A/C button (indicator on) is pressed?

Yes	GO to C8
No	GO to Pinpoint Test G

C8 CHECK THE RECIRCULATED AIR OPERATION

- With the engine running, press the recirculated air button (indicator off).
- Select panel mode.
- Select the highest blower motor setting.
- Observe airflow noise.
- Press the recirculated air button (indicator on).

Does the airflow noise increase when the recirculated air mode is selected (indicator on)?

Yes	GO to C9
No	GO to Pinpoint Test D

C9 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) LEFT DISCHARGE FLOOR TEMPERATURE (LDFTEMP) PID (PARAMETER IDENTIFICATION)

- Using a diagnostic scan tool, view the FCIM Parameter Identifications (PIDs).
- Monitor the LDFTEMP PID.

Is the temperature coming out of the driver footwell vent similar to the PID?

Yes	GO to C10
No	GO to Pinpoint Test L

C10 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) LEFT DISCHARGE PANEL VENT TEMPERATURE (LDPT) PID (PARAMETER IDENTIFICATION)

- Using a diagnostic scan tool view the FCIM Parameter Identifications (PIDs).
- Monitor the LDPT PID.

Is the temperature coming out of the driver side register similar to the PID?

Yes	GO to C11
No	GO to Pinpoint Test L

C11 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) INTERIOR TEMPERATURE SENSOR (INT_TEMP) PID (PARAMETER IDENTIFICATION)

- Using a diagnostic scan tool view the FCIM Parameter Identifications (PIDs).
- Monitor the INT_TEMP PID.

Is the air temperature at the cabin temperature sensor similar to the PID?

Yes	The system is operating correctly.
No	GO to Pinpoint Test M

PINPOINT TEST D : THE AIR INLET DOOR IS INOPERATIVE

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

Door Actuator “ Air Inlet Door, REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) - System Operation and Component Description (412-00 Climate Control System - General Information, Description and Operation).

During an actuator calibration cycle, the FCIM drives the air inlet mode door until the door reaches both internal stops in the HVAC case. If the air inlet mode door is temporarily obstructed or binding during a calibration cycle, the FCIM may interpret this as the actual end of travel for the door. When this condition occurs and the FCIM commands the actuator to its end of travel, the air intake may not be from the expected source.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
FCIM B1083:07	Recirculation Damper Motor: Mechanical Failures	Module senses the air inlet door actuator motor control is awake, no actuator drive, stall before achieving target position within 15 seconds.
FCIM B1083:11	Recirculation Damper Motor: Circuit Short To Ground	Module senses a short to ground on air inlet door actuator circuits when motor movement is commanded.
FCIM B1083:12	Recirculation Damper Motor: Circuit Short To Battery	Module senses a short to voltage on air inlet door actuator circuits when motor movement is commanded.
FCIM B1083:13	Recirculation Damper Motor: Circuit Open	Module senses an open on air inlet door actuator circuits when motor movement is commanded.
FCIM B11F0:11	Air Intake Damper Position Sensor: Circuit Short To Ground	Module senses a short to ground on air inlet door actuator circuits when motor movement is commanded.
FCIM B11F0:15	Air Intake Damper Position Sensor: Circuit Short To Battery Or Open	Module senses a short to voltage or an open on air inlet door actuator circuits when motor movement is commanded.

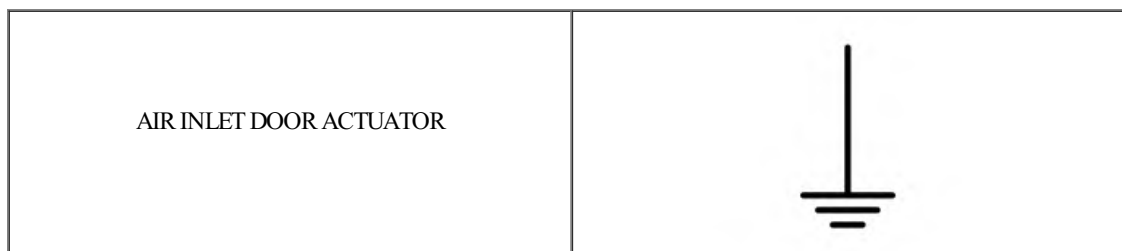
Possible Sources

- Wiring, terminals or connectors
- Actuator door binding, stuck or slipping
- Air inlet mode door actuator
- FCIM

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 AIR INLET DOOR ACTUATOR CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect FCIM [C2402A](#) .
- Disconnect Air inlet door actuator [C289](#) .
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C289-1		Ground
C289-2		Ground
C289-3		Ground
C289-4		Ground
C289-6		Ground

Is there any voltage present?

Yes	REPAIR the circuit.
No	GO to D2

D2 CHECK THE AIR INLET DOOR ACTUATOR CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

AIR INLET DOOR ACTUATOR	
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Positive Lead	Measurement / Action	Negative Lead
C289-1	Ω	Ground
C289-2	Ω	Ground
C289-3	Ω	Ground
C289-4	Ω	Ground
C289-6	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to D3
No	REPAIR the circuit.

D3 CHECK THE AIR INLET DOOR ACTUATOR CIRCUITS FOR AN OPEN

- Measure:

AIR INLET DOOR ACTUATOR	FRONT CONTROLS INTERFACE MODULE (FCIM)
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Positive Lead	Measurement / Action	Negative Lead
C289-1	Ω	C2402A-24
C289-2	Ω	C2402A-2
C289-3	Ω	C2402A-3
C289-4	Ω	C2402A-16
C289-6	Ω	C2402A-25

Are the resistances less than 3 ohms?

Yes	GO to D4
No	REPAIR the circuit.

D4 CHECK THE AIR INLET DOOR ACTUATOR CIRCUITS FOR A SHORT TOGETHER

- Disconnect Air distribution door actuator [C236](#) .
- Disconnect Evaporator temperature sensor [C296](#) .
- Disconnect In-vehicle temperature/humidity sensor [C233](#) .
- Disconnect Temperature door actuator [C2092](#) .
- Measure:

AIR INLET DOOR ACTUATOR

Positive Lead	Measurement / Action	Negative Lead
C289-1	Ω	C289-2
C289-1	Ω	C289-3
C289-1	Ω	C289-4
C289-1	Ω	C289-6
C289-2	Ω	C289-3
C289-2	Ω	C289-4
C289-2	Ω	C289-6
C289-3	Ω	C289-4
C289-3	Ω	C289-6
C289-4	Ω	C289-6

Are the resistances greater than 10,000 ohms?

Yes	GO to D5
No	REPAIR the circuit.

D5 CHECK FOR CORRECT ACTUATOR OPERATION

- Ignition OFF.
- Disconnect and inspect the air inlet door actuator connector (if not previously disconnected).
- 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 disconnected connectors. CONNECT the actuator electrical connector before the FCIM. This allows the actuator to be calibrated when the FCIM is connected. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	INSTALL a new air inlet door actuator. REFER to the appropriate procedure in Group 412. CONNECT the actuator electrical connector before the FCIM. This allows the actuator to be calibrated when the FCIM is connected. TEST the system for normal operation. If the concern is still present, GO to D6
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

D6 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all FCIM 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
- Connect all FCIM 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, Click here to access Guided Routine (FCIM) .
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

[PINPOINT TEST E : INCORRECT OR ERRATIC DIRECTION OF AIRFLOW FROM OUTLETS](#)

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

Air Handling, REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) - System Operation and Component Description (412-00 Climate Control System - General Information, Description and Operation).

During an actuator calibration cycle, the FCIM drives the air distribution door until the doors reach both internal stops in the HVAC case. If the air distribution door is temporarily obstructed or binding during a calibration cycle, the FCIM may interpret this as the actual end of travel for the door. When this condition occurs and the FCIM commands the actuator to its end of travel, the airflow may not be from the expected outlets.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
FCIM B1086:07	Air Distribution Damper Motor: Mechanical Failures	Module senses the air distribution door actuator motor control is awake, no actuator drive, stall before achieving target position within 15 seconds.
FCIM B1086:11	Air Distribution Damper Motor: Circuit Short To Ground	Module senses a short to ground on air distribution door actuator circuits when motor movement is commanded.
FCIM B1086:12	Air Distribution Damper Motor: Circuit Short To Battery	Module senses a short to voltage on air distribution door actuator circuits when motor movement is commanded.
FCIM B1086:13	Air Distribution Damper Motor: Circuit Open	Module senses an open on air distribution door actuator circuits when motor movement is commanded.
FCIM B11E7:11	Air Distribution Damper Position Sensor: Circuit Short To Ground	Module senses a short to ground on air distribution door actuator circuits when motor movement is commanded.
FCIM B11E7:15	Air Distribution Damper Position Sensor: Circuit Short To Battery Or Open	Module senses a short to voltage or an open on air distribution door actuator circuits when motor movement is commanded.

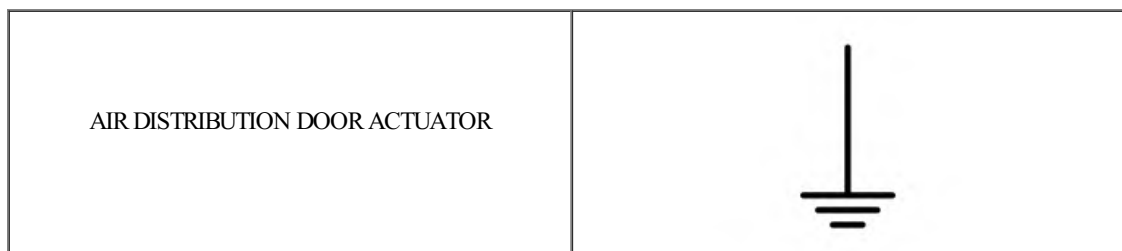
Possible Sources

- Wiring, terminals or connectors
- Actuator doors binding, stuck or slipping
- Air distribution door actuator
- FCIM

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

E1 CHECK THE AIR DISTRIBUTION DOOR ACTUATOR CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect FCIM [C2402A](#) .
- Disconnect Air distribution door actuator [C236](#) .
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C236-1	  	Ground
C236-2	  	Ground
C236-3	  	Ground
C236-4	  	Ground
C236-6	  	Ground

Is there any voltage present?

Yes	REPAIR the circuit.
No	GO to E2

E2 CHECK THE AIR DISTRIBUTION DOOR ACTUATOR CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

AIR DISTRIBUTION DOOR ACTUATOR	
--------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C236-1	Ω	Ground
C236-2	Ω	Ground
C236-3	Ω	Ground
C236-4	Ω	Ground
C236-6	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to E3
No	REPAIR the circuit.

E3 CHECK THE AIR DISTRIBUTION DOOR ACTUATOR CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure:

AIR DISTRIBUTION DOOR ACTUATOR	FRONT CONTROLS INTERFACE MODULE (FCIM)
--------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C236-1	Ω	C2402A-20
C236-2	Ω	C2402A-2
C236-3	Ω	C2402A-3
C236-4	Ω	C2402A-22
C236-6	Ω	C2402A-21

Are the resistances less than 3 ohms?

Yes	GO to E4
No	REPAIR the circuit.

E4 CHECK THE AIR DISTRIBUTION DOOR ACTUATOR CIRCUITS FOR A SHORT TOGETHER

- Disconnect Air inlet door actuator [C289](#) .
- Disconnect Evaporator temperature sensor [C296](#) .
- Disconnect In-vehicle temperature/humidity sensor [C233](#) .
- Disconnect Temperature door actuator [C2092](#) .
- Measure:

AIR DISTRIBUTION DOOR ACTUATOR

Positive Lead	Measurement / Action	Negative Lead
C236-1	Ω	C236-2
C236-1	Ω	C236-3
C236-1	Ω	C236-4
C236-1	Ω	C236-6
C236-2	Ω	C236-3
C236-2	Ω	C236-4
C236-2	Ω	C236-6
C236-3	Ω	C236-4
C236-3	Ω	C236-6
C236-4	Ω	C236-6

Are the resistances greater than 10,000 ohms?

Yes	GO to E5
No	REPAIR the circuit.

E5 CHECK FOR CORRECT ACTUATOR OPERATION

- Ignition OFF.
- Disconnect and inspect the air distribution door actuator connector (if not previously disconnected).
- 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 disconnected connectors. CONNECT the actuator electrical connector before the FCIM. This allows the actuator to be calibrated when the FCIM is connected. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	INSTALL a new air distribution door actuator. REFER to the appropriate procedure in Group 412. CONNECT the actuator electrical connector before the FCIM. This allows the actuator to be calibrated when the FCIM is connected. TEST the system for normal operation. If the concern is still present, GO to E6
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

E6 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all FCIM 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
- Connect all FCIM 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, Click here to access Guided Routine (FCIM) .
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST F : INSUFFICIENT, ERRATIC OR NO HEAT

Normal Operation and Fault Conditions

When the engine is at operating temperature hot coolant flows from the engine through the heater core and back to the engine. Correct coolant temperatures are critical for good heater performance.

Possible Sources

- Low engine coolant level
- Plugged or partially plugged heater core
- Temperature door binding or stuck
- Temperature door actuator

Visual Inspection and Pre-checks

- Inspect for low engine coolant level.

F1 CHECK FOR CORRECT ENGINE COOLANT LEVEL

- Ignition OFF.
- Check the engine coolant level.

Is the engine coolant at the correct level as indicated on the engine coolant recovery reservoir?

Yes	GO to F3
No	GO to F2

F2 CHECK THE ENGINE COOLING SYSTEM FOR LEAKS

- Pressure test the cooling system for leaks. Refer to the appropriate section in Group 303 for the procedure.

Does the engine cooling system leak?

Yes	REPAIR the engine coolant leak. TEST the system for normal operation.
No	FILL and BLEED the cooling system. Refer to the appropriate section in Group 303 for the procedure. After filling and bleeding the cooling system, GO to F3

F3 CHECK FOR COOLANT FLOW TO THE HEATER CORE

- Run the engine until it reaches normal operating temperature.
- On the HVAC controls, select the FLOOR position, then set the temperature control to full warm and the blower to the lowest setting.
- Using a suitable temperature measuring device, check the temperature of the heater core inlet hose.

Is the heater core inlet hose temperature above 65.5°C (150°F)?

Yes	GO to F4
No	DIAGNOSE the engine does not reach operating temperature. Refer to the appropriate section in Group 303 for the procedure.

F4 CHECK FOR A PLUGGED OR RESTRICTED HEATER CORE

- Using a suitable temperature measuring device, measure the heater core outlet hose temperature.

Is the heater core outlet hose temperature similar to the inlet hose temperature, within approximately 6-17°C (10-30°F)?

Yes	DIAGNOSE for a blend door actuator not operating correctly. GO to Pinpoint Test I
No	INSTALL a new heater core. REFER to the appropriate procedure in Group 412-00.

[PINPOINT TEST G : THE A/C \(AIR CONDITIONING\) IS INOPERATIVE](#)

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

A/C Request, REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) - System Operation and Component Description (412-00 Climate Control System - General Information, Description and Operation).

Possible Sources

- Wiring, terminals or connectors
- A/C system discharged or low refrigerant charge
- Network concerns
- A/C pressure transducer
- Evaporator temperature sensor
- Intake Air Temperature (IAT) / Mass Air Flow (MAF) sensor
- A/C compressor clutch air gap
- A/C compressor clutch field coil
- A/C clutch relay
- FCIM

Visual Inspection and Pre-checks

- Verify BJB fuse 22 (10A) is OK.

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

NOTE: Some PCM Diagnostic Trouble Codes (DTCs) may inhibit A/C operation. If any PCM Diagnostic Trouble Codes (DTCs) are retrieved, diagnose those first. Refer to the PCMDTC Chart.

G1 CHECK THE A/C (AIR CONDITIONING) SYSTEM PRESSURE

NOTE: Static refrigerant pressure, under perfect conditions, should approximately reflect ambient air temperature. Do not rely upon the static refrigerant pressure alone to determine if the system is properly charged. Refer to the current Ford Web Based Technical Training courses for basic HVAC system refrigerant operation.

- Ignition OFF.
- With a manifold gauge set connected, check for minimum A/C system pressure.

Is the A/C system pressure above 290 kPa (42 psi)?

Yes	GO to G2
No	CHECK the A/C system for leaks. REFER to the appropriate general procedures in Group 412-00. RECHARGE the A/C system REFER to the appropriate general procedure in Group 412-00.

G2 CHECK THE COMMUNICATION NETWORK

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

Do the FCIM and the PCM pass the network test?

Yes	GO to G3
No	DIAGNOSE the FCIM or PCM does not communicate with the diagnostic scan tool. REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

G3 CHECK THE PCM (POWERTRAIN CONTROL MODULE) (A/C) PRESSURE SENSOR (ACP_PRESS) PID (PARAMETER IDENTIFICATION)

- Ignition ON.
- Using a diagnostic scan tool, view PCM Parameter Identifications (PIDs).
- With a manifold gauge set connected, compare the pressure readings of the manifold gauge set and the PCM ACP_PRESS PID.

Are the pressure values of the manifold gauge set and the ACP_PRESS PCM PID within $\hat{\pm}$ 15 psi (103 kPa)?

Yes	GO to G4
No	DIAGNOSE the A/C pressure transducer. GO to Pinpoint Test A

G4 ELECTRIC COOLING FAN FUNCTIONAL CHECK

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

Does the electric cooling fan operate sometime during the KOEO self-test?

Yes	GO to G5
No	DIAGNOSE the electric cooling fan operation. REFER to Powertrain Control/Emissions Diagnosis (PC/ED) manual. Section 3 Symptom Charts.

G5 COMPARE THE PCM (POWERTRAIN CONTROL MODULE) INTAKE AIR TEMPERATURE (IAT) PID (PARAMETER IDENTIFICATION) AND THE OTHER TEMPERATURE SENSOR READINGS TO THE PCM (POWERTRAIN CONTROL MODULE) AMBIENT AIR TEMPERATURE (AAT) PID (PARAMETER IDENTIFICATION)

NOTE: Compare multiple engine sensor readings to the ambient temperature to determine sensors are reading correctly. A faulty sensor can cause the PCM to disable the A/C with or without a DTC.

- Allow the vehicle exterior and interior to stabilize to ambient temperature. This can take a soak period of at least 6 hours.
- Using a diagnostic scan tool, view PCM Parameter Identifications (PIDs).
- Monitor the AAT, CACT, CHT, ECT, IAT, IAT2, MAF, MAPT, TCB and TCIPIT Parameter Identifications (PIDs) (as applicable).

Are the temperature values similar (typically within 18°C (32.4°F))?

Yes	GO to G6
No	DIAGNOSE the suspect temperature sensor. REFER to Section 413-01 for Ambient Air Temperature (AAT) sensor or Outside Air Temperature Display concerns. For all other temperature sensor concerns, REFER to Powertrain Control/Emissions Diagnosis (PC/ED) manual.

G6 COMPARE THE FCIM (FRONT CONTROLS INTERFACE MODULE) EVAPORATOR TEMPERATURE (EVAP_TEMP) PID (PARAMETER IDENTIFICATION) TO THE PCM (POWERTRAIN CONTROL MODULE) AMBIENT AIR TEMPERATURE (AAT) PID (PARAMETER IDENTIFICATION)

- Ignition OFF.
- Allow the vehicle exterior and interior to stabilize to the outside ambient temperature.
- Ignition ON.
- Using a diagnostic scan tool, monitor and record the PCM AAT PID.
- Using a diagnostic scan tool, monitor and record the FCIM EVAP_TEMP PID.

Are the temperature values similar [typically within 18Â°C (32.4Â°F)]?

Yes	If equipped with the active grille shutter system, GO to G7 If not equipped with the active grille shutter system, GO to G8
No	DIAGNOSE the evaporator temperature sensor. GO to Pinpoint Test N

G7 VERIFY THE GRILLE SHUTTER OPERATION USING THE PCM (POWERTRAIN CONTROL MODULE) GRILL SHUTTER A POSITION - COMMANDED (GRILL_A_CMD) PID (PARAMETER IDENTIFICATION)

- Start the engine and allow it to idle for at least 30 seconds to allow for the grille shutter calibration to complete.
- Using a diagnostic scan tool, view PCM PID.
- Using a diagnostic scan tool, select the PCM PID GRILL_A_CMD and command the grille shutter from 100% (open) to 0% (closed) while observing the grille shutter operation from the front of the vehicle.

Does the grill shutter fully open and close when commanded by the scan tool?

Yes	GO to G8
No	DIAGNOSE the active grille shutter is inoperative or does not operate correctly. REFER to: Active Grille Shutter (501-02 Front End Body Panels, Diagnosis and Testing).

G8 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) A/C SWITCH (CC_SW_AC) PID (PARAMETER IDENTIFICATION) WITH THE A/C (AIR CONDITIONING) ON

- Using a diagnostic scan tool, view FCIM Parameter Identifications (PIDs).
- Monitor the CC_SW_AC PID.
- On the HVAC controls, select PANEL and then press the A/C button (indicator on).

Does the PID display Active or On with the A/C button pressed on?

Yes	GO to G9
No	GO to G17

G9 CHECK THE PCM (POWERTRAIN CONTROL MODULE) AIR CONDITIONING REQUEST SIGNAL (AC_REQ) PID (PARAMETER IDENTIFICATION) WITH THE A/C (AIR CONDITIONING) ON

- Start the engine.
- Using a diagnostic scan tool, monitor the PCM AC_REQ PID.
- On the HVAC controls, select PANEL and then press the A/C button (indicator on).

Does the PID display Yes when the button is pressed?

Yes	GO to G11
No	GO to G10

G10 RESET THE AMBIENT AIR TEMPERATURE (AAT) SENSOR

- On the HVAC controls, press the A/C and Recirc buttons simultaneously, then release both. Within 2 seconds press A/C button again.
- Start the engine.
- On the HVAC controls, set the temperature to full cold, select PANEL and select the A/C button (indicator on).

Does the A/C compressor turn on?

Yes	RETEST the A/C system for normal operation. CARRY OUT the refrigerant system tests. Refer to the appropriate Refrigerant System Tests procedure in Group 412.
No	GO to G11

G11 CHECK THE PCM (POWERTRAIN CONTROL MODULE) AIR CONDITIONING COMPRESSOR COMMANDED STATE (ACC_CMD) PID (PARAMETER IDENTIFICATION) WITH THE A/C (AIR CONDITIONING) COMMANDED ON

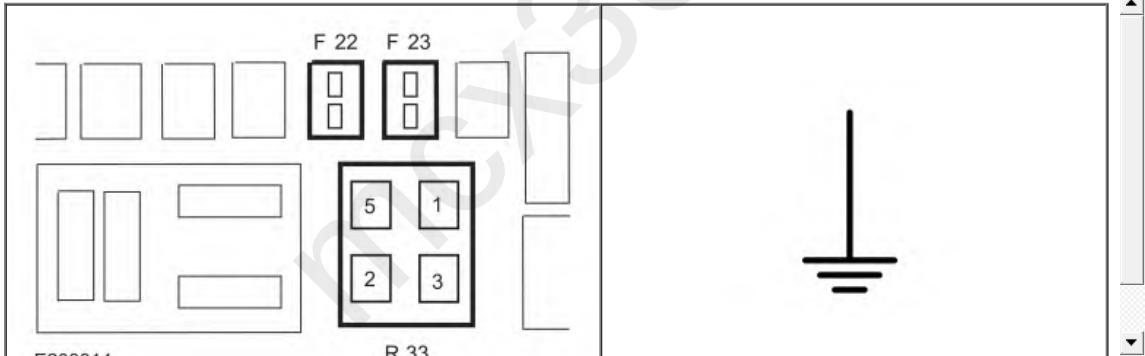
- Using a diagnostic scan tool, activate the PCM ACC_CMD PID.

Does the A/C compressor turn on?

Yes	GO to G18
No	GO to G12

G12 CHECK THE VOLTAGE TO THE A/C (AIR CONDITIONING) CLUTCH RELAY

- Ignition OFF.
- Disconnect the A/C clutch relay.
- Ignition ON.
- Measure:



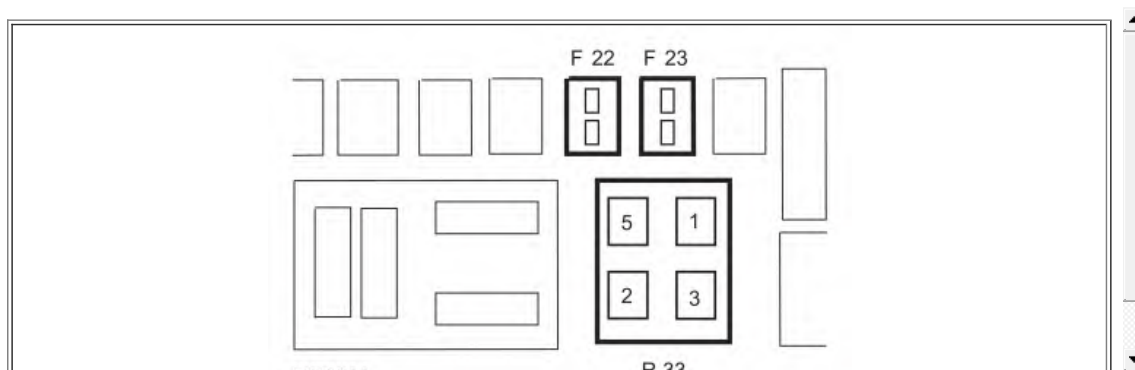
Positive Lead	Measurement / Action	Negative Lead
A/C clutch relay socket 1		Ground
A/C clutch relay socket 3		Ground

Are the voltages greater than 11 volts?

Yes	GO to G13
No	REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

G13 BYPASS THE A/C (AIR CONDITIONING) CLUTCH RELAY

- Ignition OFF.
- Connect a fused jumper wire:



Positive Lead	Measurement / Action	Negative Lead
A/C clutch relay socket 3		A/C clutch relay socket 5

- Ignition ON.

Does the A/C compressor clutch engage?

Yes	REMOVE the fused jumper wire. INSTALL a new A/C clutch relay.
No	LEAVE the fused jumper wire installed. GO to G14

G14 CHECK THE A/C (AIR CONDITIONING) COMPRESSOR CLUTCH FIELD COIL VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Disconnect A/C compressor clutch field coil [C100](#).
- Measure:

AIR CONDITIONING (A/C) CLUTCH AND AIR CONDITIONING (A/C) CLUTCH FIELD COIL	
---	--

Positive Lead	Measurement / Action	Negative Lead
C100-1		Ground

Is the voltage greater than 11 volts?

Yes	REMOVE the fused jumper wire. GO to G15
No	REMOVE the fused jumper wire. VERIFY BJB fuse 22 (10A) is OK. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short. If OK, REPAIR the circuit.

G15 CHECK THE A/C (AIR CONDITIONING) COMPRESSOR CLUTCH FIELD COIL GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

AIR CONDITIONING (A/C) CLUTCH AND AIR CONDITIONING (A/C) CLUTCH FIELD COIL	
---	--

Positive Lead	Measurement / Action	Negative Lead
C100-2	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to G16
No	REPAIR the circuit.

G16 CHECK THE A/C (AIR CONDITIONING) COMPRESSOR CLUTCH AIR GAP

- Measure the A/C compressor clutch air gap at 3 equally spaced locations between the clutch hub and the A/C compressor clutch pulley.
REFER to: Air Conditioning (A/C) Clutch Air Gap Adjustment (412-00 Climate Control System - General Information, General Procedures).

Is the A/C compressor clutch air gap greater than 0.6 mm (0.0236 in)?

Yes	ADJUST the A/C compressor clutch air gap. REFER to: Air Conditioning (A/C) Clutch Air Gap Adjustment (412-00 Climate Control System - General Information, General Procedures).
No	INSTALL a new A/C compressor clutch field coil. REFER to: Air Conditioning (A/C) Clutch and Air Conditioning (A/C) Clutch Field Coil (412-00 Climate Control System - General Information, General Procedures).

G17 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all FCIM 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
- Connect all FCIM 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, Click here to access Guided Routine (FCIM) .
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

G18 CHECK FOR AN INPUT DISABLING THE A/C (AIR CONDITIONING) CLUTCH RELAY

NOTE: The PCM strategy may disable the A/C compressor operation. If the A/C compressor clutch can be commanded on using a diagnostic scan tool PCM Parameter Identifications (PIDs) Active Commands, PCM replacement will not resolve the condition.

- Diagnose the PCM not energizing the A/C clutch relay using the suggestions in the table below.

A/C Clutch Engagement is inhibited because strategy has not yet detected hardware that indicates vehicle is equipped with A/C
A/C Clutch Engagement is inhibited because the strategy is operating in Ignition System Failure Mode
A/C Clutch Engagement is inhibited because the (ECU) received a Request to Command the A/C Off
A/C Clutch Engagement is inhibited because the engine has not yet reached a stable running mode after starting
A/C Clutch Engagement is inhibited because the A/C Discharge (Head) Pressure is Too High
A/C Clutch Engagement is inhibited because the Engine Coolant Temperature is Too High
A/C Clutch Engagement is inhibited to Prevent Frost and Ice Build Up on the Evaporator
A/C Clutch Engagement is inhibited to Prevent an Engine Stall during a Low Engine Speed condition
A/C Clutch Engagement is inhibited to Protect the Compressor from a Compressor Over-speed condition
A/C Clutch Engagement is inhibited to temporarily make more power available when Accelerator Pedal is Fully Depressed
A/C Clutch Engagement is inhibited because Low A/C Refrigerant Charge has been detected
A/C Clutch Engagement is inhibited to Protect the Compressor from Operating at Too Low of an Ambient Temperature
A/C Clutch Engagement is inhibited due to Missing Climate Control Message
A/C Clutch Engagement is inhibited because the strategy is operating in Failsafe Cooling Mode
A/C Clutch Engagement is inhibited to Protect the Clutch from Damage because the Compressor Load and Speed are Too High
A/C Clutch Engagement is inhibited by the off portion of the A/C Cycling Strategy invoked to manage High Engine Temperature
A/C Clutch Engagement is inhibited due to Low Battery State of Charge
A/C Clutch Engagement is inhibited to Protect the Variable Displacement Compressor from Operating at Too Low of a Temperature
A/C Clutch Engagement is inhibited to improve Brake Booster Vacuum
A/C Clutch Engagement is inhibited because Evaporator Temperature is sufficiently low and compressor was at minimum displacement
A/C Clutch Engagement is inhibited (Disabled) because the Evaporator Temperature is sufficiently below the target temperature
A/C Clutch Engagement is inhibited to satisfy A/C Clutch minimum off time
A/C Clutch Engagement is inhibited Due to Request from Torque Control Strategy (to Temporarily Make More Power Available)
A/C Clutch Engagement is inhibited to Prevent Engine Stalling
A/C Clutch Engagement is inhibited Due to Request to Disable A/C from Stop-Start Strategy
A/C Clutch Engagement is inhibited (Delayed) to make Power Available for Power Steering
A/C Clutch Engagement Is Inhibited Due To State Of Auxiliary A/C Disable (Typically A Pressure Or Temperature) Switch 1 input
A/C Clutch Engagement is inhibited due to state of auxiliary A/C Disable (Typically a Pressure or Temperature) Switch 2 input

Are any of the conditions described above not within normal parameters?

Yes	DIAGNOSE the condition found to be disabling the A/C clutch relay. REFER to the appropriate Workshop Manual (WSM) section or the Powertrain Control/Emissions Diagnosis (PC/ED) manual.
No	The A/C compressor clutch can be commanded on using the diagnostic scan tool PCM active command PID. The A/C inoperative concern may be caused by an intermittent condition due to a component or module connection, wiring or pin issue. ADDRESS the root cause of any connector or pin issues. CHECK the vehicle service history for recent service actions that have replaced modules. This condition may be due to incomplete or incorrect PMI procedures.

☐ **PINPOINT TEST H : THE A/C (AIR CONDITIONING) IS ALWAYS ON - A/C (AIR CONDITIONING) MODE ALWAYS COMMANDED ON**

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

A/C Request, REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) - System Operation and Component Description (412-00 Climate Control System - General Information, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P1464:00	A/C Demand Out Of Self Test Range: No Sub Type Information	PCM senses an A/C request during a self-test.

Possible Sources

- Wiring, terminals or connectors
- A/C pressure transducer
- Evaporator temperature sensor
- FCIM
- PCM

Visual Inspection and Pre-checks

- Inspect for loose or corroded PCM or FCIM connections.

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

H1 RECHECK THE PCM (POWERTRAIN CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Make sure the HVAC controls are powered off.
- Using a diagnostic scan tool, clear the PCM Diagnostic Trouble Codes (DTCs).
- Using a diagnostic scan tool, perform the PCM KOEO self-test.

Does DTC P1464 return?

Yes	GO to H2
No	IGNORE the DTC and CONTINUE diagnosing other Diagnostic Trouble Codes (DTCs) or symptoms. GO to the PCM DTC Chart or Symptom Chart “Climate Control in this section.

H2 CHECK THE A/C (AIR CONDITIONING) CLUTCH RELAY

- Carry out the component test on the A/C clutch relay.
Refer to Wiring Diagrams Cell [149](#) for schematic and connector information.

Did the relay pass the component test?

Yes	GO to H3
No	INSTALL a new A/C clutch relay.

H3 CHECK THE A/C (AIR CONDITIONING) COMPRESSOR CLUTCH FIELD COIL VOLTAGE SUPPLY CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect A/C compressor clutch field coil [C100](#).
- Disconnect the A/C clutch relay.
- Ignition ON.
- Measure:

AIR CONDITIONING (A/C) CLUTCH AND AIR CONDITIONING (A/C) CLUTCH FIELD COIL	
---	--

Positive Lead	Measurement / Action	Negative Lead
C100-1		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to H4

H4 COMPARE THE FCIM (FRONT CONTROLS INTERFACE MODULE) EVAPORATOR TEMPERATURE (EVAP_TEMP) PID (PARAMETER IDENTIFICATION) TO THE PCM (POWERTRAIN CONTROL MODULE) AMBIENT AIR TEMPERATURE (AAT) PID (PARAMETER IDENTIFICATION)

- Ignition OFF.
- Allow the vehicle exterior and interior to stabilize to the outside ambient temperature.
- Ignition ON.
- Using a diagnostic scan tool, view the PCM Parameter Identification (PIDs).
- Monitor and record the PCM PID AAT.
- Using a diagnostic scan tool, view the FCIM Parameter Identification (PIDs).
- Monitor and record the FCIM PID EVAP_TEMP.

Are the temperature values similar (typically within 18Â°C (32.4Â°F))?

Yes	GO to H5
No	DIAGNOSE the evaporator temperature sensor. GO to Pinpoint Test N

H5 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) A/C (AIR CONDITIONING) SWITCH STATUS (CC_SW_AC) PID (PARAMETER IDENTIFICATION)

- Ignition ON.
- Using a diagnostic scan tool, view FCIM Parameter Identifications (PIDs).
- Monitor the CC_SW_AC PID.
- Select panel mode, press and release the A/C button (indicator off) on the FCIM controls.

Does the PID display Active when pressed and Inactive when released?

Yes	GO to H6
No	GO to H9

H6 CHECK THE PCM (POWERTRAIN CONTROL MODULE) (A/C) PRESSURE SENSOR (ACP_PRESS) PID (PARAMETER IDENTIFICATION)

- Using a diagnostic scan tool, view the PCM Parameter Identification (PIDs).
- With a manifold gauge set connected, compare the pressure readings of the manifold gauge set and the PCM Parameter Identification (PID) ACP_PRESS.

Are the pressure values of the manifold gauge set and the ACP_PRESS PCM PID within $\hat{\pm}$ 15 psi (103 kPa)?

Yes	GO to H7
No	DIAGNOSE the A/C pressure transducer. GO to Pinpoint Test A

H7 CHECK THE PCM (POWERTRAIN CONTROL MODULE) A/C (AIR CONDITIONING) REQUEST SIGNAL (AC_REQ) PID (PARAMETER IDENTIFICATION) WITH THE A/C (AIR CONDITIONING) OFF

- Using a diagnostic scan tool, view PCM Parameter Identifications (PIDs).
- Monitor the AC_REQ PID.
- While in panel mode, release the A/C button (indicator off) on the FCIM controls.

Does the PID display off?

Yes	GO to H10
No	GO to H8

H8 CHECK THE PCM (POWERTRAIN CONTROL MODULE) A/C (AIR CONDITIONING) REQUEST SIGNAL (AC_REQ) PID (PARAMETER IDENTIFICATION) WITH FCIM (FRONT CONTROLS INTERFACE MODULE) DISCONNECTED

- Ignition OFF.
- Disconnect FCIM [C2402A](#).
- Ignition ON.
- Using a diagnostic scan tool, view PCM Parameter Identifications (PIDs).
- Monitor the AC_REQ PID.

Does the PID display Off?

Yes	GO to H10
No	GO to H9

H9 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all FCIM 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
- Connect all FCIM 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, Click here to access Guided Routine (FCIM) .
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

H10 CHECK FOR CORRECT PCM (POWERTRAIN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all PCM 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
- Connect all PCM 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 PCM. REFER to the appropriate procedure in Group 303-14.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST I : THE TEMPERATURE CONTROL IS INOPERATIVE OR DOES NOT OPERATE CORRECTLY

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

Temperature Door Actuator,

During an actuator calibration cycle, the FCIM drives the temperature door until the door reaches both internal stops in the HVAC case. If the temperature blend door is temporarily obstructed or binding during a calibration cycle, the FCIM can interpret this as the actual end of travel for the door. When this condition occurs and the FCIM commands the actuator to its end of travel, the airflow may not be the expected temperature.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
FCIM B1082:07	Right Temperature Damper Motor: Mechanical Failures	Module senses the temperature door actuator motor control is awake, no actuator drive, stall before achieving target position within 15 seconds.
FCIM B1082:11	Right Temperature Damper Motor: Circuit Short To Ground	Module senses a short to ground on temperature door actuator circuits when motor movement is commanded.
FCIM B1082:12	Right Temperature Damper Motor: Circuit Short To Battery	Module senses a short to voltage on temperature door actuator circuits when motor movement is commanded.
FCIM B1082:13	Right Temperature Damper Motor: Circuit Open	Module senses an open on temperature door actuator circuits when motor movement is commanded.
FCIM B11E6:11	Right HVAC Damper Position Sensor: Circuit Short To Ground	Module senses a short to ground on temperature door actuator circuits when motor movement is commanded.
FCIM B11E6:15	Right HVAC Damper Position Sensor: Circuit Short To Battery Or Open	Module senses a short to voltage or an open on temperature door actuator circuits when motor movement is commanded.

Possible Sources

- Wiring, terminals or connectors
- Temperature blend door actuator
- Temperature blend door is binding, stuck or slipping
- FCIM

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

I1 CHECK THE TEMPERATURE DOOR ACTUATOR CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect FCIM [C2402A](#) .
- Disconnect Temperature door actuator [C2092](#) .
- Ignition ON.
- Measure:

TEMPERATURE DOOR ACTUATOR RH	
------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C2092-1		Ground
C2092-2		Ground
C2092-3		Ground
C2092-4		Ground
C2092-6		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to I2

I2 CHECK THE TEMPERATURE DOOR ACTUATOR CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

TEMPERATURE DOOR ACTUATOR RH	
------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C2092-1	Ω	Ground
C2092-2	Ω	Ground
C2092-3	Ω	Ground
C2092-4	Ω	Ground
C2092-6	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to I3
No	REPAIR the circuit.

I3 CHECK THE TEMPERATURE DOOR ACTUATOR CIRCUITS FOR AN OPEN

- Measure:

TEMPERATURE DOOR ACTUATOR RH	FRONT CONTROLS INTERFACE MODULE (FCIM)
------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C2092-1	Ω	C2402A-8
C2092-2	Ω	C2402A-2
C2092-3	Ω	C2402A-3
C2092-4	Ω	C2402A-10
C2092-6	Ω	C2402A-9

Are the resistances less than 3 ohms?

Yes	GO to I4
No	REPAIR the circuit.

I4 CHECK THE TEMPERATURE DOOR ACTUATOR CIRCUITS FOR A SHORT TOGETHER

- Disconnect Air distribution door actuator [C236](#) .
- Disconnect Air inlet door actuator [C289](#) .
- Disconnect In-vehicle temperature/humidity sensor [C233](#) .
- Measure:

TEMPERATURE DOOR ACTUATOR RH

Positive Lead	Measurement / Action	Negative Lead
C2092-1	Ω	C2092-2
C2092-1	Ω	C2092-3
C2092-1	Ω	C2092-4
C2092-1	Ω	C2092-6
C2092-2	Ω	C2092-3
C2092-2	Ω	C2092-4
C2092-2	Ω	C2092-6
C2092-3	Ω	C2092-4
C2092-3	Ω	C2092-6
C2092-4	Ω	C2092-6

Are the resistances greater than 10,000 ohms?

Yes	GO to I5
No	REPAIR the circuit.

I5 CHECK FOR CORRECT ACTUATOR OPERATION

- Ignition OFF.
- Disconnect and inspect the temperature door actuator connector (if not previously disconnected).
- 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 disconnected connectors. CONNECT the actuator electrical connector before the FCIM. This allows the actuator to be calibrated when the FCIM is connected. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	INSTALL a new temperature door actuator . REFER to the appropriate procedure in Group 412. CONNECT the actuator electrical connector before the FCIM. This allows the actuator to be calibrated when the FCIM is connected. TEST the system for normal operation. If the concern is still present, GO to I6
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

I6 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all FCIM 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
- Connect all FCIM 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, Click here to access Guided Routine (FCIM) .
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

[PINPOINT TEST J : THE BLOWER MOTOR IS INOPERATIVE](#)

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

Air Handling, REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) - System Operation and Component Description (412-00 Climate Control System - General Information, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
FCIM B10AF:11	Blower Fan Relay: Circuit Short To Ground	Module senses low voltage on the relay coil voltage circuit when the module is energizing the circuit. Blower relay is permanently inactive.
FCIM B10AF:15	Blower Fan Relay: Circuit Short To Battery Or Open	Module senses greater than expected voltage on the blower relay coil voltage circuit, indicating an open circuit or a short to voltage. The blower motor relay is inactive when circuit is open; the blower motor relay is on all the time when shorted to battery.
FCIM B10B9:12	Blower Control: Circuit Short To Battery	Module senses high voltage on the blower motor control PWM circuit, indicating a short directly to battery. The blower motor is inoperative.
FCIM B10B9:14	Blower Control: Circuit Short To Ground Or Open	Module senses no voltage on the blower motor control PWM circuit, indicating a short directly to ground or an open circuit. The blower motor will be at full speed if the circuit is shorted to ground. The blower motor will be inoperative with an open circuit.

Possible Sources

- Fuse
- Wiring, terminals or connectors
- Blower motor relay (non-serviceable, part of the BJB)
- Blower motor
- Blower motor control module
- FCIM

Visual Inspection and Pre-checks

- Make sure BJB fuse 79 (40A) is OK.

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

J1 CHECK THE BLOWER MOTOR RELAY

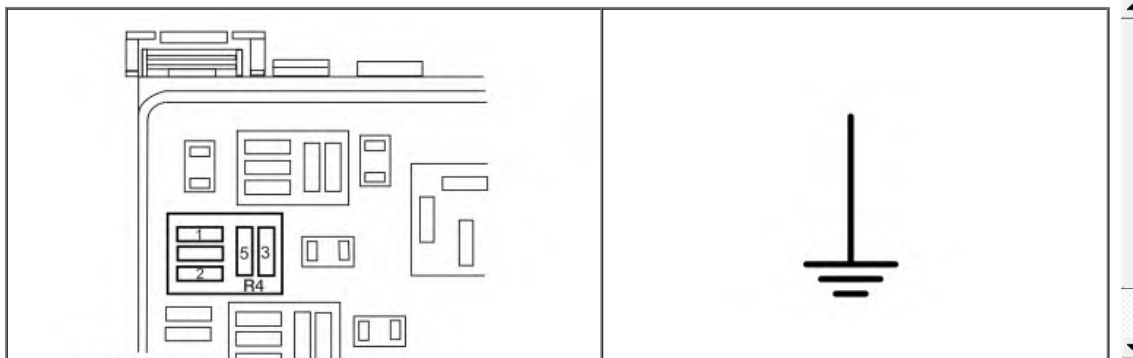
- Ignition OFF.
- Disconnect Blower motor relay.
- Check the blower motor relay.
Refer to Wiring Diagrams Cell [149](#) for schematic and connector information.

Does the relay pass the component test?

Yes	GO to J2
No	INSTALL a new blower motor relay.

J2 CHECK THE BLOWER MOTOR RELAY SWITCH CONTACT SUPPLY VOLTAGE

- Measure:



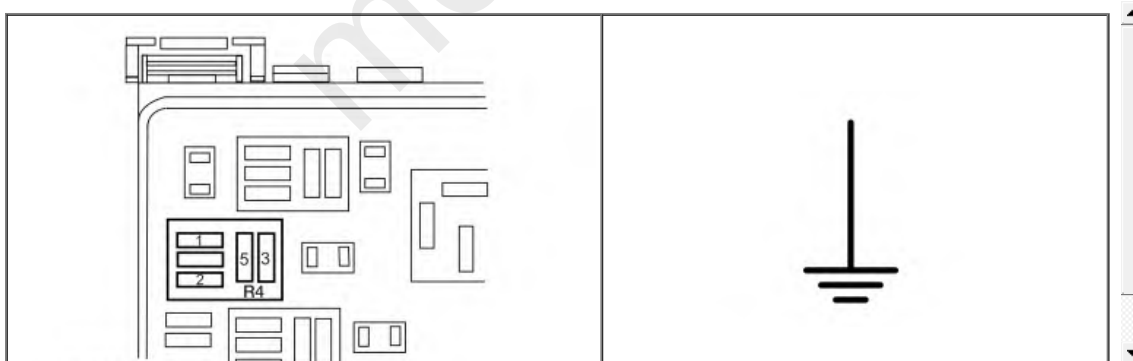
Positive Lead	Measurement / Action	Negative Lead
Blower motor relay socket 3		Ground

Is the voltage greater than 11 volts?

Yes	GO to J3
No	VERIFY BJB fuse 79 (40A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

J3 CHECK THE BLOWER MOTOR RELAY COIL GROUND CIRCUIT FOR AN OPEN

- Measure:



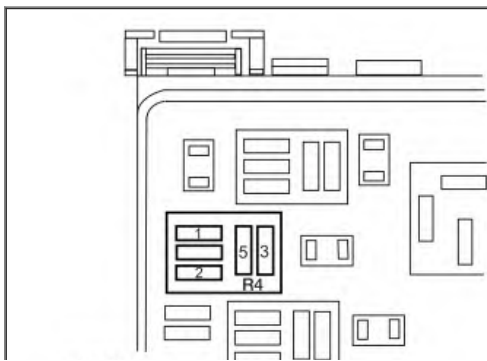
Positive Lead	Measurement / Action	Negative Lead
Blower motor relay socket 1	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to J4
No	REPAIR the circuit.

J4 CHECK THE BLOWER MOTOR RELAY COIL CONTROL CIRCUIT FOR A SHORT TO GROUND

- Disconnect FCIM [C2402A](#) .
- Measure:



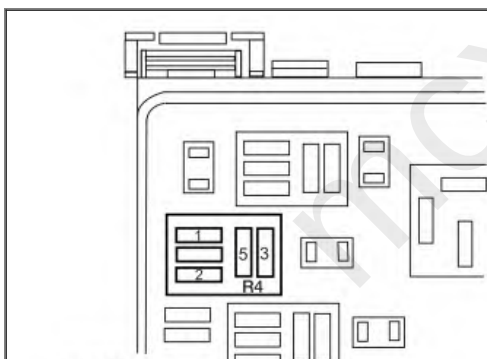
Positive Lead	Measurement / Action	Negative Lead
Blower motor relay socket 2	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to J5
No	REPAIR the circuit.

J5 CHECK THE BLOWER MOTOR RELAY COIL CONTROL CIRCUIT FOR AN OPEN

- Measure:



FRONT CONTROLS INTERFACE MODULE
(FCIM)

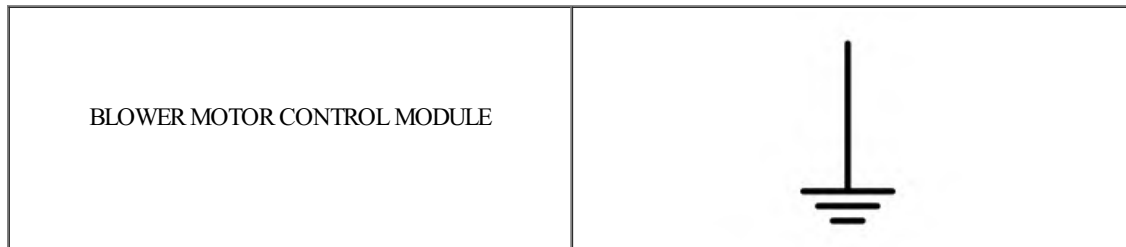
Positive Lead	Measurement / Action	Negative Lead
Blower motor relay socket 2	Ω	C2402A-11

Is the resistance less than 3 ohms?

Yes	GO to J6
No	REPAIR the circuit.

J6 CHECK THE BLOWER MOTOR SPEED CONTROL VOLTAGE CIRCUIT

- Disconnect Blower motor speed control [C297A](#) .
- Connect Blower motor relay.
- Connect FCIM [C2402A](#) .
- Ignition ON.
- Select PANEL on the HVAC controls.
- Select the highest blower motor setting.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C297A-6		Ground

Is the voltage greater than 11 volts?

Yes	GO to J7
No	REPAIR the circuit.

J7 CHECK THE BLOWER MOTOR SPEED CONTROL GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

BLOWER MOTOR CONTROL MODULE	
-----------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C297A-5	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to J8
No	REPAIR the circuit.

J8 CHECK THE BLOWER MOTOR CONTROL PWM (PULSE WIDTH MODULATION) CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect FCIM [C2402A](#).
- Ignition ON.
- Measure:

FRONT CONTROLS INTERFACE MODULE (FCIM)	
--	--

Positive Lead	Measurement / Action	Negative Lead
C2402A-23		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to J9

J9 CHECK THE BLOWER MOTOR CONTROL PWM (PULSE WIDTH MODULATION) CIRCUIT FOR AN OPEN

- Measure:

FRONT CONTROLS INTERFACE MODULE (FCIM)	BLOWER MOTOR CONTROL MODULE
--	-----------------------------

Positive Lead	Measurement / Action	Negative Lead
C2402A-23	Ω	C297A-3

Is the resistance less than 3 ohms?

Yes	GO to J10
No	REPAIR the circuit.

J10 CHECK THE OUTPUTS TO THE BLOWER MOTOR

- Disconnect Blower motor [C2004](#) .
- Connect Blower motor speed control [C297A](#) .
- Connect FCIM [C2402A](#) .
- Ignition ON.
- Select PANEL on the HVAC controls.
- Select the highest blower motor setting.
- Measure:

BLOWER MOTOR

Positive Lead	Measurement / Action	Negative Lead
C2004-1		C2004-2

Is the voltage greater than 11 volts?

Yes	INSTALL a new blower motor. REFER to: Blower Motor (412-00 Climate Control System - General Information, Removal and Installation).
No	GO to J11

J11 CHECK THE CIRCUITS TO THE BLOWER MOTOR FOR AN OPEN

- Ignition OFF.
- Disconnect Blower motor speed control [C297B](#).
- Measure:

BLOWER MOTOR CONTROL MODULE	BLOWER MOTOR
-----------------------------	--------------

Positive Lead	Measurement / Action	Negative Lead
C297B-2	Ω	C2004-1
C297B-1	Ω	C2004-2

Are the resistances less than 3 ohms?

Yes	GO to J12
No	REPAIR the circuit in question.

J12 CHECK THE BLOWER MOTOR CIRCUITS FOR A SHORT TOGETHER

- Measure:

BLOWER MOTOR CONTROL MODULE

Positive Lead	Measurement / Action	Negative Lead
C297B-1	Ω	C297B-2

Is the resistance greater than 10,000 ohms?

Yes	INSTALL a new blower motor speed control. REFER to: Blower Motor Speed Control (412-00 Climate Control System - General Information, Removal and Installation). TEST the system for normal operation. If the concern is still present, GO to J13
No	REPAIR the circuits.

J13 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all FCIM 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
- Connect all FCIM 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, Click here to access Guided Routine (FCIM) .
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST K : THE BLOWER MOTOR DOES NOT OPERATE CORRECTLY

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

Air Handling, REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) - System Operation and Component Description (412-00 Climate Control System - General Information, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
FCIM B10AF:15	Blower Fan Relay: Circuit Short To Battery Or Open	Module senses greater than expected voltage on the blower relay coil voltage circuit, indicating an open circuit or a short to voltage. The blower motor relay is inactive when circuit is open; the blower motor relay is on all the time when shorted to battery.
FCIM B10B9:14	Blower Control: Circuit Short To Ground Or Open	Module senses no voltage on the blower motor control PWM circuit, indicating a short directly to ground or an open circuit. The blower motor will be at full speed if the circuit is shorted to ground. The blower motor will be inoperative with an open circuit.

Possible Sources

- Fuse
- Wiring, terminals or connectors
- Blower motor relay
- Blower motor
- Blower motor speed control
- FCIM

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

K1 VERIFY THE BLOWER MOTOR OPERATION

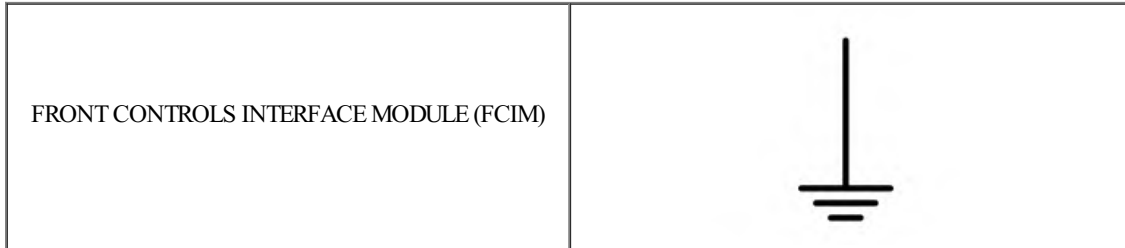
- Ignition ON.
- Select panel on the FCIM controls. Adjust the blower motor setting to the minimum and maximum settings.

Does the blower motor operate at any setting?

Yes	GO to K2
No	GO to Pinpoint Test J

K2 CHECK THE BLOWER MOTOR CONTROL PWM (PULSE WIDTH MODULATION) CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect Blower motor speed control [C297A](#).
- Disconnect FCIM [C2402A](#).
- Ignition ON.
- Measure:



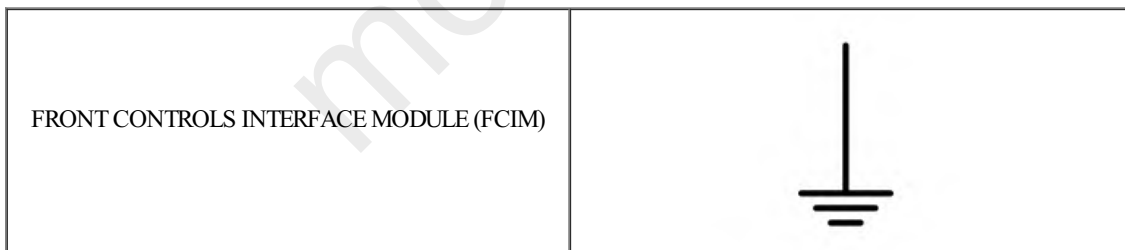
Positive Lead	Measurement / Action	Negative Lead
C2402A-23		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to K3

K3 CHECK THE BLOWER MOTOR CONTROL PWM (PULSE WIDTH MODULATION) CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:



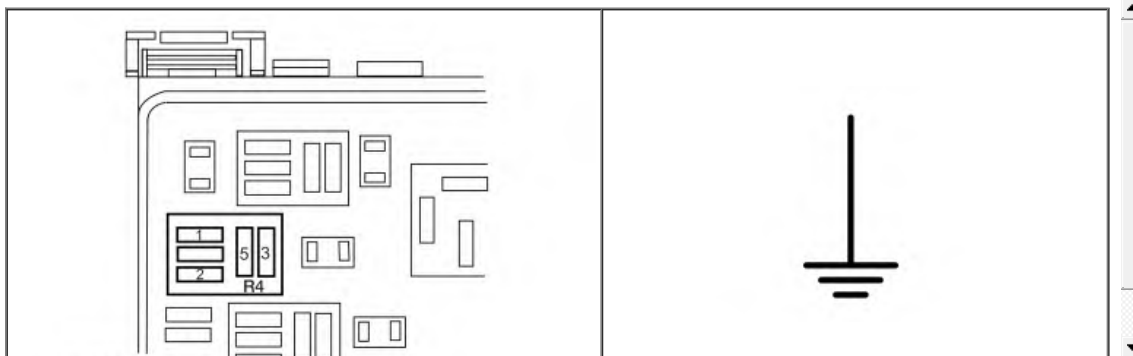
Positive Lead	Measurement / Action	Negative Lead
C2402A-23	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to K4
No	REPAIR the circuit.

K4 CHECK THE BLOWER MOTOR RELAY COIL CONTROL CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect Blower motor relay.
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
Blower motor relay socket 2		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to K5

K5 CHECK THE BLOWER MOTOR OPERATION WITH THE BLOWER MOTOR RELAY DISCONNECTED

- Ignition OFF.
- Connect Blower motor speed control [C297A](#) .
- Connect FCIM [C2402A](#) .
- Ignition ON.
- Operate the system and determine if the concern is still present.

Does the fan still operate all the time?

Yes	REPAIR the blower motor speed control voltage circuit CH402 (YE/GN) for a short to voltage.
No	GO to K6

K6 CHECK FOR CORRECT BLOWER MOTOR SPEED CONTROL OPERATION

- Ignition OFF.
- Disconnect and inspect all the blower motor speed control 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
- Connect the blower motor speed control 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	INSTALL a new blower motor speed control. REFER to: Blower Motor Speed Control (412-00 Climate Control System - General Information, Removal and Installation). TEST the system for normal operation. If the concern is still present, GO to K7
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

K7 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all FCIM 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
- Connect all FCIM 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, Click here to access Guided Routine (FCIM) .
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

[PINPOINT TEST L : B10B5:11, B10B5:15, B10B6:11, B10B6:15](#)

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

The air discharge sensors supply a varying voltage to the FCIM based on the temperature of the air being discharged from the vent. The module adjusts the system based on the voltage from each sensor.

Each air discharge sensor is supplied voltage from the module and all sensors share a common sensor ground. An open, a short to ground, a short to voltage on one or more of these circuits or a failed air discharge sensor causes the FCIM to set one or more Diagnostic Trouble Codes (DTCs).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
FCIM B10B5:11	Left Panel Air Discharge Temperature: Circuit Short To Ground	Module senses erratic voltages from the left panel air discharge temperature sensor.
FCIM B10B5:15	Left Panel Air Discharge Temperature: Circuit Short To Battery Or Open	Module senses erratic voltages from the left panel air discharge temperature sensor.
FCIM B10B6:11	Left Floor Air Discharge Temperature: Circuit Short To Ground	Module senses erratic voltages from the left floor air discharge temperature sensor.
FCIM B10B6:15	Left Floor Air Discharge Temperature: Circuit Short To Battery Or Open	Module senses erratic voltages from the left floor air discharge temperature sensor.

Possible Sources

- Wiring, terminals or connectors
- Air discharge temperature sensor
- FCIM

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

L1 CHECK THE AIR DISCHARGE TEMPERATURE SENSORS CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect FCIM [C2402A](#).
- Disconnect FCIM [C2402B](#).
- Disconnect Driver side register air discharge temperature sensor [C2438](#).
- Disconnect Driver side footwell air discharge temperature sensor [C2436](#).
- Ignition ON.
- Measure:

REGISTER AIR DISCHARGE TEMPERATURE SENSOR
LH



Driver side register air discharge temperature sensor

Positive Lead	Measurement / Action	Negative Lead
C2438-1	A red circle with a plus sign, followed by a circle containing a 'V', and a black circle with a minus sign.	Ground
C2438-3	A red circle with a plus sign, followed by a circle containing a 'V', and a black circle with a minus sign.	Ground

FOOTWELL AIR DISCHARGE TEMPERATURE
SENSOR LH



Driver side footwell air discharge temperature sensor

Positive Lead	Measurement / Action	Negative Lead
C2436-1	A red square with a white plus sign, followed by a 'V' with a double arrow, and a black square with a white minus sign.	Ground
C2436-3	A red square with a white plus sign, followed by a 'V' with a double arrow, and a black square with a white minus sign.	Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to L2

L2 CHECK THE AIR DISCHARGE TEMPERATURE SENSORS CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

REGISTER AIR DISCHARGE TEMPERATURE SENSOR LH	
---	--

Driver side register air discharge temperature sensor

Positive Lead	Measurement / Action	Negative Lead
C2438-1	Ω	Ground
C2438-3	Ω	Ground

FOOTWELL AIR DISCHARGE TEMPERATURE SENSOR LH	
---	---

Driver side footwell air discharge temperature sensor

Positive Lead	Measurement / Action	Negative Lead
C2436-1	Ω	Ground
C2436-3	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to L3
No	REPAIR the circuit.

L3 CHECK THE AIR DISCHARGE TEMPERATURE SENSORS CIRCUITS FOR AN OPEN

- Measure:

REGISTER AIR DISCHARGE TEMPERATURE SENSOR LH	FRONT CONTROLS INTERFACE MODULE (FCIM)
---	--

Driver side register air discharge temperature sensor

Positive Lead	Measurement / Action	Negative Lead
C2438-1	Ω	C2402B-4

REGISTER AIR DISCHARGE TEMPERATURE SENSOR LH	FRONT CONTROLS INTERFACE MODULE (FCIM)
---	--

Positive Lead	Measurement / Action	Negative Lead
C2438-3	Ω	C2402A-2

FOOTWELL AIR DISCHARGE TEMPERATURE SENSOR LH	FRONT CONTROLS INTERFACE MODULE (FCIM)
---	--

Driver side footwell air discharge temperature sensor

Positive Lead	Measurement / Action	Negative Lead
C2436-1	Ω	C2402B-5

FOOTWELL AIR DISCHARGE TEMPERATURE SENSOR LH	FRONT CONTROLS INTERFACE MODULE (FCIM)
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Positive Lead	Measurement / Action	Negative Lead
C2436-3	Ω	C2402A-2

L4 CHECK AIR DISCHARGE TEMPERATURE SENSORS CIRCUITS FOR A SHORT TO TOGETHER

Are the resistances less than 3 ohms?

Yes	GO to L4
No	REPAIR the circuit.

- Measure:

REGISTER AIR DISCHARGE TEMPERATURE SENSOR LH

Driver side register air discharge temperature sensor

Positive Lead	Measurement / Action	Negative Lead
C2438-1	Ω	C2438-3

FOOTWELL AIR DISCHARGE TEMPERATURE SENSOR LH

Driver side footwell air discharge temperature sensor

Positive Lead	Measurement / Action	Negative Lead
C2436-1	Ω	C2436-3

Are the resistances greater than 10,000 ohms?

Yes	INSTALL a new driver side register air discharge temperature sensor or a new driver side footwell temperature sensor. REFER to the appropriate procedure in Group 412-00. CLEAR the Diagnostic Trouble Codes (DTCs). REPEAT the self-test. If DTC returns, GO to L5
No	REPAIR the circuit.

L5 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all FCIM 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
- Connect all FCIM 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, Click here to access Guided Routine (FCIM) .
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

[PINPOINT TEST M : B105A:12, B105A:14, B1A61:11, B1A61:15, B1A69:11, B1A69:15](#)

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

In-Vehicle Temperature and Humidity Sensor, REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) - System Operation and Component Description (412-00 Climate Control System - General Information, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
FCIM B105A:12	Cabin Temperature Sensor Fan: Circuit Short To Battery	Module senses greater than expected voltage on the in-vehicle temperature and humidity sensor fan motor circuit.
FCIM B105A:14	Cabin Temperature Sensor Fan: Circuit Short To Ground Or Open	Module senses less than expected voltage on the circuit for the cabin temperature and humidity sensor fan motor circuit.
FCIM B1A61:11	Cabin Temperature Sensor: Circuit Short To Ground	Module senses lower than expected voltage on the sensor feedback circuit, indicating a short to ground.
FCIM B1A61:15	Cabin Temperature Sensor: Circuit Short To Battery Or Open	Module senses unexpected voltage on the circuit for the cabin temperature sensor.
FCIM B1A69:11	Humidity Sensor: Circuit Short To Ground	Module senses less than expected voltage on the circuit for the humidity sensor.
FCIM B1A69:15	Humidity Sensor: Circuit Short To Battery Or Open	Module senses unexpected voltage for the humidity sensor.

Possible Sources

- Wiring, terminals or connectors
- In-vehicle temperature and humidity sensor
- FCIM

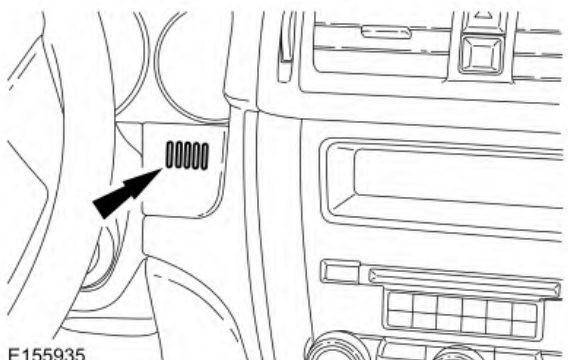
Visual Inspection and Pre-checks

- Make sure the in-vehicle temperature and humidity sensor harness is not chaffed.
- Make sure BCM fuse 21 (5A) is OK.

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

M1 CHECK THE IN-VEHICLE TEMPERATURE AND HUMIDITY SENSOR FAN OPERATION

- Ignition ON.
- Make sure the ambient air temperature is above 0°C (32°F).
- Select PANEL mode.
- Press the A/C button (indicator ON).
- Place a piece of tissue within 25 mm (1 in) of the in-vehicle temperature and humidity sensor opening.

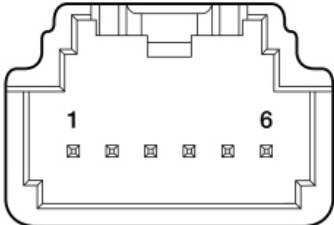
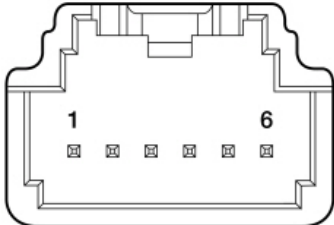


Is the tissue drawn to the sensor opening?

Yes	GO to M2
No	GO to M3

M2 CHECK THE IN-VEHICLE TEMPERATURE AND HUMIDITY SENSOR RESISTANCE

- Ignition OFF.
- Disconnect In-vehicle temperature and humidity sensor [C233](#) .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
 E155982 C233-2 (component side)	Ω	 E155982 C233-5 (component side)

- Compare the resistance values to the table below:

Ambient Temperature	Approximate Resistance
-40Â°C (-40Â°F)	901,490 ohms
-15Â°C (5Â°F)	208,450 ohms
0Â°C (32Â°F)	95,560 ohms
15Â°C (59Â°F)	46,750 ohms
25Â°C (77Â°F)	30,000 ohms
35Â°C (95Â°F)	19,720 ohms
60Â°C (140Â°F)	7,592 ohms
85Â°C (185Â°F)	3,286 ohms

Did the in-vehicle temperature and humidity sensor test OK?

Yes	GO to M3
No	INSTALL a new in-vehicle temperature and humidity sensor. REFER to: In-Vehicle Temperature and Humidity Sensor (412-00 Climate Control System - General Information, Removal and Installation).

M3 CHECK THE IN-VEHICLE TEMPERATURE AND HUMIDITY SENSOR FAN MOTOR CIRCUITS

- Ignition ON.
- Select PANEL mode.
- Press the A/C button (indicator ON).
- Measure:

IN-VEHICLE TEMPERATURE AND HUMIDITY SENSOR

Positive Lead	Measurement / Action	Negative Lead
C233-6		C233-1

Is the voltage greater than 11 volts?

Yes	INSTALL a new in-vehicle temperature and humidity sensor. REFER to: In-Vehicle Temperature and Humidity Sensor (412-00 Climate Control System - General Information, Removal and Installation). CLEAR the DTCs. REPEAT the self-test. If the DTC returns, GO to M9
No	VERIFY the BCM fuse 21 (5A) is OK. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short. If OK, GO to M4

M4 CHECK THE IN-VEHICLE TEMPERATURE AND HUMIDITY SENSOR CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect FCIM [C2402A](#) .
- Disconnect FCIM [C2402B](#) .
- Disconnect In-vehicle temperature and humidity sensor [C233](#) .
- Disconnect BCM fuse 21 (5A) .
- Ignition ON.
- Measure:

IN-VEHICLE TEMPERATURE AND HUMIDITY SENSOR	
--	---

Positive Lead	Measurement / Action	Negative Lead
C233-1		Ground
C233-2		Ground
C233-3		Ground
C233-4		Ground
C233-5		Ground
C233-6		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to M5

M5 CHECK THE IN-VEHICLE TEMPERATURE AND HUMIDITY SENSOR CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

IN-VEHICLE TEMPERATURE AND HUMIDITY SENSOR



Positive Lead	Measurement / Action	Negative Lead
C233-1	Ω	Ground
C233-2	Ω	Ground
C233-3	Ω	Ground
C233-4	Ω	Ground
C233-5	Ω	Ground
C233-6	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to M6
No	REPAIR the circuit.

M6 CHECK THE IN-VEHICLE TEMPERATURE AND HUMIDITY SENSOR CIRCUITS FOR AN OPEN

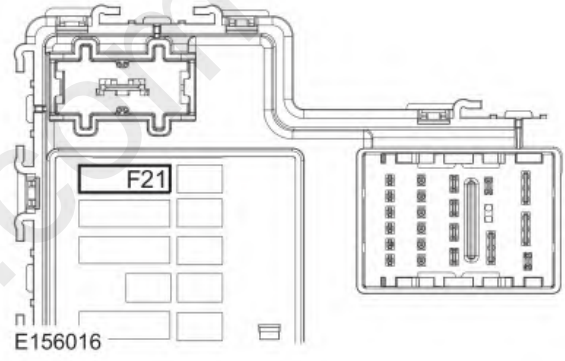
- Measure:

IN-VEHICLE TEMPERATURE AND HUMIDITY SENSOR

FRONT CONTROLS INTERFACE MODULE (FCIM)

Positive Lead	Measurement / Action	Negative Lead
C233-3	Ω	C2402A-3
C233-5	Ω	C2402A-2

Positive Lead	Measurement / Action	Negative Lead
C233-1	Ω	C2402B-27
C233-2	Ω	C2402B-29
C233-4	Ω	C2402B-19

Positive Lead	Measurement / Action	Negative Lead
C233-6	Ω	fuse 21 cavity, (component side)  BCM E156016

M7 CHECK THE IN-VEHICLE TEMPERATURE AND HUMIDITY SENSOR CIRCUITS FOR A SHORT TOGETHER

Are the resistances less than 3 ohms?

Yes	GO to M7
No	REPAIR the circuit.

- Measure:

IN-VEHICLE TEMPERATURE AND HUMIDITY SENSOR

Positive Lead	Measurement / Action	Negative Lead
C233-1	Ω	C233-2
C233-1	Ω	C233-3
C233-1	Ω	C233-4
C233-1	Ω	C233-5
C233-1	Ω	C233-6
C233-2	Ω	C233-3
C233-2	Ω	C233-4
C233-2	Ω	C233-5
C233-2	Ω	C233-6
C233-3	Ω	C233-4
C233-3	Ω	C233-5
C233-3	Ω	C233-6
C233-4	Ω	C233-5
C233-4	Ω	C233-6
C233-5	Ω	C233-6

Are the resistances greater than 10,000 ohms?

Yes	GO to M8
No	REPAIR the circuit.

M8 CHECK FOR CORRECT IN-VEHICLE TEMPERATURE AND HUMIDITY SENSOR OPERATION

- Ignition OFF.
- Inspect the disconnected 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
- Connect all disconnected 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	INSTALL a new in-vehicle temperature and humidity sensor. REFER to: In-Vehicle Temperature and Humidity Sensor (412-00 Climate Control System - General Information, Removal and Installation). TEST the system for normal operation. If the concern is still present, GO to M9
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

M9 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all FCIM 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
- Connect all FCIM 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, Click here to access Guided Routine (FCIM) .
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

[PINPOINT TEST N : B1B71:11, B1B71:15](#)

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

Evaporator Temperature Sensor, REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) - System Operation and Component Description (412-00 Climate Control System - General Information, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
FCIM B1B71:11	Evaporator Temperature Sensor: Circuit Short To Ground	Module senses lower than expected voltage on the sensor feedback circuit, indicating a short to ground.
FCIM B1B71:15	Evaporator Temperature Sensor: Circuit Short To Battery Or Open	Module senses greater than expected voltage on the sensor feedback circuit, indicating a short to voltage or an open circuit or sensor.

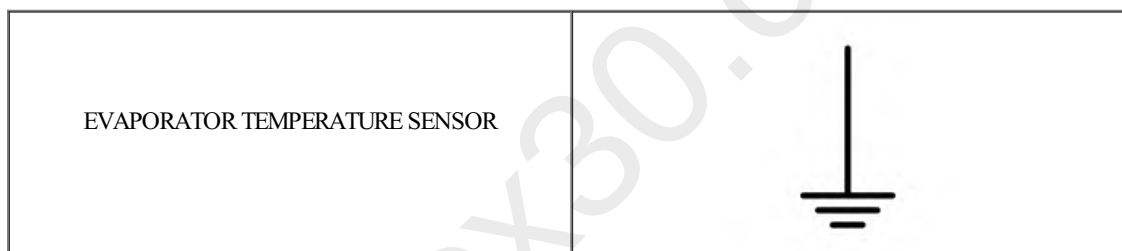
Possible Sources

- Wiring, terminals or connectors
- Evaporator temperature sensor
- FCIM

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

N1 CHECK THE EVAPORATOR TEMPERATURE SENSOR CIRCUITS FOR A SHORT TO VOLTAGE

- Disconnect FCIM [C2402A](#) .
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C296-1		Ground
C296-2		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to N2

N2 CHECK THE EVAPORATOR TEMPERATURE SENSOR CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

EVAPORATOR TEMPERATURE SENSOR	
-------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C296-1	Ω	Ground
C296-2	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to N3
No	REPAIR the circuit.

N3 CHECK THE EVAPORATOR TEMPERATURE SENSOR CIRCUITS FOR AN OPEN

- Measure:

EVAPORATOR TEMPERATURE SENSOR	FRONT CONTROLS INTERFACE MODULE (FCIM)
-------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C296-1	Ω	C2402A-19
C296-2	Ω	C2402A-2

Are the resistances less than 3 ohms?

Yes	GO to N4
No	REPAIR the circuit.

N4 CHECK THE EVAPORATOR TEMPERATURE SENSOR CIRCUITS FOR A SHORT TOGETHER

- Measure:

EVAPORATOR TEMPERATURE SENSOR

Positive Lead	Measurement / Action	Negative Lead
C296-1	Ω	C296-2

Is the resistance greater than 10,000 ohms?

Yes	INSTALL a new evaporator temperature sensor. REFER to: Evaporator Temperature Sensor (412-00 Climate Control System - General Information, Removal and Installation). TEST the system for normal operation. If the concern is still present, GO to N5
No	REPAIR the circuit.

N5 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all FCIM 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
- Connect all FCIM 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, Click here to access Guided Routine (FCIM) .
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST O : C1B14:11, C1B14:12

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

Voltage is supplied to the climate control actuators from the FCIM on one common power circuit. See air handling, REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) - System Operation and Component Description (412-00 Climate Control System - General Information, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
FCIM C1B14:11	Sensor Supply Voltage A: Circuit Short To Ground	This DTC sets when the module senses less than 5 volts on the actuator voltage supply circuit, indicating a short to ground.
FCIM C1B14:12	Sensor Supply Voltage A: Circuit Short To Battery	This DTC sets when the module senses greater than 5 volts on the actuator voltage supply circuit, indicating a short to voltage.

Possible Sources

- Wiring, terminals or connectors
- HVAC control module

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

O1 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

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

Is DTC C1B14:11 or C1B14:12 present?

Yes	GO to O2
No	VERIFY a customer concern. REFER to the symptom chart in this section.

O2 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) REFERENCE VOLTAGE AND SIGNAL RETURN CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect FCIM [C2402A](#).
- Ignition ON.
- Measure:

FRONT CONTROLS INTERFACE MODULE (FCIM)	
--	--

Positive Lead	Measurement / Action	Negative Lead
C2402A-2		Ground
C2402A-3		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to Q3

O3 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) REFERENCE VOLTAGE AND SIGNAL RETURN CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

FRONT CONTROLS INTERFACE MODULE (FCIM)	
--	--

Positive Lead	Measurement / Action	Negative Lead
C2402A-2	Ω	Ground
C2402A-3	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to Q4
No	REPAIR the circuit.

O4 CHECK THE REFERENCE VOLTAGE CIRCUIT AND THE SIGNAL RETURN CIRCUIT FOR A SHORT TOGETHER

- Measure:

FRONT CONTROLS INTERFACE MODULE (FCIM)

Positive Lead	Measurement / Action	Negative Lead
C2402A-3	Ω	C2402A-2

Is the resistance greater than 200 ohms?

Yes	GO to O6
No	GO to O5

O5 CHECK THE A/C (AIR CONDITIONING) COMPONENTS

- Measure:

FRONT CONTROLS INTERFACE MODULE (FCIM)

Positive Lead	Measurement / Action	Negative Lead
C2402A-3	Ω	C2402A-2

- While measuring the resistance, disconnect the following components one at a time, in order. Stop disconnecting components if the measured resistance rises above 200 ohms.
 - In-vehicle temperature and humidity sensor [C233](#)
 - Driver side register air discharge temperature sensor [C2438](#)
 - Driver side footwell air discharge temperature sensor [C2436](#)
 - Air distribution door actuator [C236](#)
 - Air inlet door actuator [C289](#)
 - Temperature door actuator [C2092](#)

Did the resistance rise above 200 ohms?

Yes	INSTALL a new sensor or actuator (the last one to be disconnected). Refer to the appropriate section in Group 412 for the procedure. When installing an actuator, CONNECT the actuator electrical connector before the FCIM. This allows the actuator to be calibrated when the FCIM is connected.
No	REPAIR the circuits.

O6 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the FCIM 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
- Connect the FCIM 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, Click here to access Guided Routine (FCIM) .
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST P : INSUFFICIENT HEAT IN AUTO START-STOP MODE ONLY

Refer to Wiring Diagrams Cell [40](#) for schematic and connector information.

Normal Operation and Fault Conditions

Cabin Heater Coolant Pump - vehicles equipped with Auto Start-Stop, REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) - System Operation and Component Description (412-00 Climate Control System - General Information, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P2600:00	Coolant Pump "A" Control Circuit/Open: No Sub Type Information	This DTC sets when the PCM senses an open on the cabin heater coolant pump circuits.
PCM P2601:00	Coolant Pump "A" Control Circuit Performance/Stuck Off: No Sub Type Information	• This DTC sets when the PCM senses any of the following conditions: • Dry-Run leads to cabin heater coolant pump running without resistance • Over Temperature • Over/Under Voltage • Impeller Stall • Impeller Speed below minimum speed • Internal Error
PCM P2602:00	Coolant Pump "A" Control Circuit Low: No Sub Type Information	This DTC sets when the PCM senses low voltage on the PWM circuit when commanding it high, indicating a short to ground to the cabin heater coolant pump.
PCM P2603:00	Coolant Pump "A" Control Circuit High: No Sub Type Information	This DTC sets when the PCM senses low voltage on the PWM circuit when commanding it high, indicating an open circuit to the cabin heater coolant pump.

Possible Sources

- Wiring, terminals or connectors
- Low coolant or air in the coolant system
- Cabin heater coolant pump
- PCM

Visual Inspection and Pre-checks

- Inspect for loose or corroded PCM and A/C compressor connections.
- Make sure BJB fuse 12 (15A) is OK.

P1 CHECK THE CABIN HEATER COOLANT PUMP

NOTE: The engine must be auto-stopped to request the cabin heater coolant pump on. Further information can be found in the Owner's Literature for full Auto Start-Stop enabling and disabling.

- Start the vehicle and allow engine to reach normal operating temperatures.
- Using the HVAC controls, select panel mode, set temperature to full hot and set blower speed to low.
- Drive the vehicle above 3 mph (4 km/h).
- Stop the vehicle on a level surface.
- Make sure that the steering wheel is set to the straight ahead position.
- Keep the transmission selector lever in position D, brake pedal pressed and doors closed.
- Using a diagnostic scan tool, view PCM Parameter Identifications (PIDs).
- Monitor the PCM coolant pump status (COOLPMP_A_STAT) PID for at least 1 minute.

Does the cabin heater coolant pump turn on?

Yes	GO to P6
No	GO to P2

P2 CHECK THE CABIN HEATER COOLANT PUMP CIRCUITS FOR A SHORT TO VOLTAGE

- Disconnect BJB fuse 12 (15A).
- Disconnect PCM 2.0L [C1381B](#) .
- Disconnect PCM 2.7L [C1551E](#) .
- Disconnect 2.0L Cabin heater coolant pump [C163](#) .
- Disconnect 2.7L Cabin heater coolant pump [C1805](#) .
- Ignition ON.
- Measure:

CABIN HEATER COOLANT PUMP	
---------------------------	--

2.0L

Positive Lead	Measurement / Action	Negative Lead
C163-2		Ground
C163-3		Ground

CABIN HEATER COOLANT PUMP	
---------------------------	--

2.7L

Positive Lead	Measurement / Action	Negative Lead
C1805-2		Ground
C1805-3		Ground

Is there any voltage present?

Yes	REPAIR the circuit.
No	GO to P3

P3 CHECK THE CABIN HEATER COOLANT PUMP CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

CABIN HEATER COOLANT PUMP	
---------------------------	--

2.0L

Positive Lead	Measurement / Action	Negative Lead
C163-2	Ω	Ground
C163-3	Ω	Ground

CABIN HEATER COOLANT PUMP	
---------------------------	---

2.7L

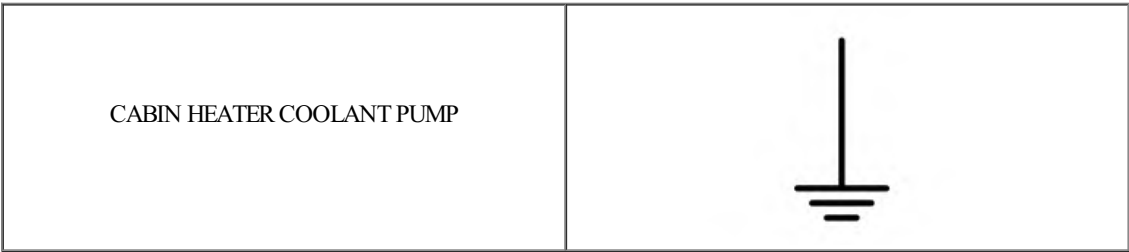
Positive Lead	Measurement / Action	Negative Lead
C1805-2	Ω	Ground
C1805-3	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to P4
No	REPAIR the circuit.

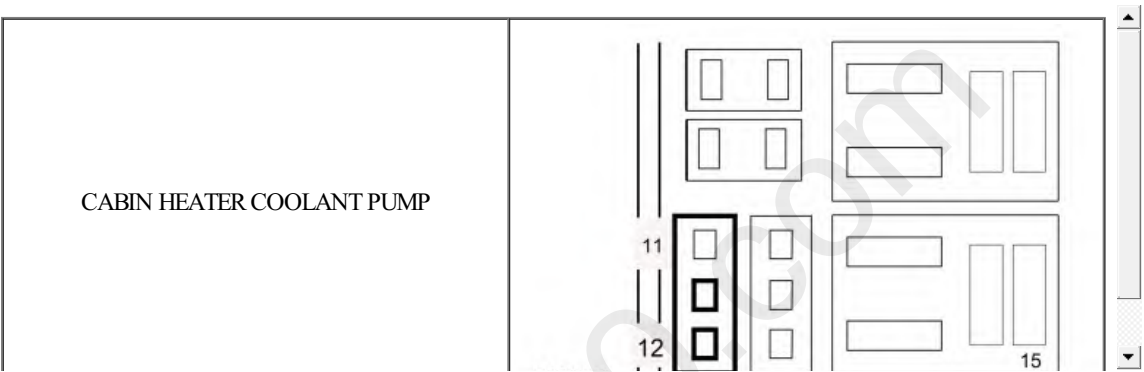
P4 CHECK THE CABIN HEATER COOLANT PUMP CIRCUITS FOR AN OPEN

- Measure:



2.0L

Positive Lead	Measurement / Action	Negative Lead
C163-1	Ω	Ground



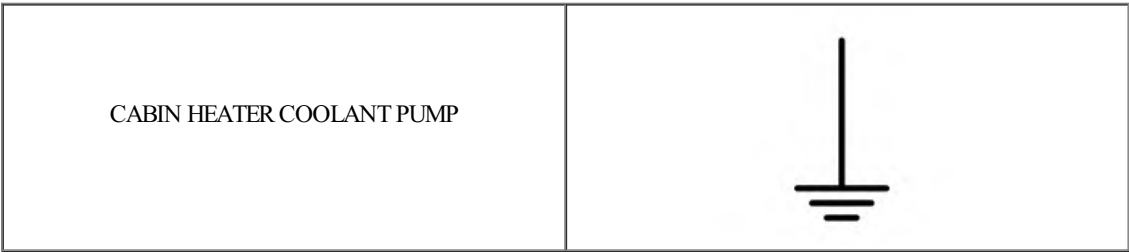
2.0L

Positive Lead	Measurement / Action	Negative Lead
C163-2	Ω	BJB fuse 12 cavity, component side



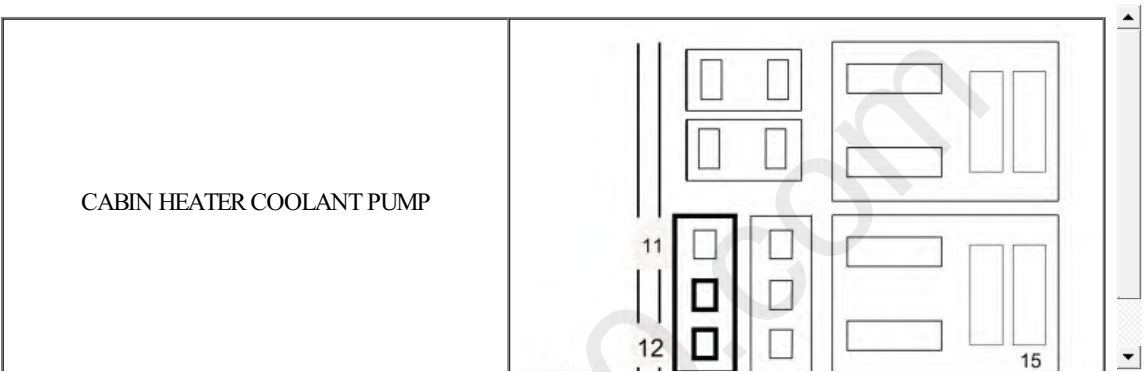
2.0L

Positive Lead	Measurement / Action	Negative Lead
C163-3	Ω	C1381B-20



2.7L

Positive Lead	Measurement / Action	Negative Lead
C1805-1	Ω	Ground



2.7L

Positive Lead	Measurement / Action	Negative Lead
C1805-2	Ω	BJB fuse 12 cavity, component side



2.7L

Positive Lead	Measurement / Action	Negative Lead
C1805-3	Ω	C1551E-60

Are the resistances less than 3 ohms?

Yes	GO to P5
No	REPAIR the circuit.

P5 CHECK THE CABIN HEATER COOLANT PUMP CIRCUITS FOR A SHORT TOGETHER

- Measure:

CABIN HEATER COOLANT PUMP

2.0L

Positive Lead	Measurement / Action	Negative Lead
C163-1	Ω	C163-2
C163-1	Ω	C163-3
C163-2	Ω	C163-3

CABIN HEATER COOLANT PUMP

2.7L

Positive Lead	Measurement / Action	Negative Lead
C1805-1	Ω	C1805-2
C1805-1	Ω	C1805-3
C1805-2	Ω	C1805-3

Is the resistance greater than 10,000 ohms?

Yes	GO to P6
No	REPAIR the circuit.

P6 CHECK THE ENGINE COOLANT LEVEL

NOTE: Allow the engine to cool before checking the engine coolant level.

- Visually inspect the engine coolant level at the degas bottle.

Is the engine coolant level within specifications?

Yes	GO to P7
No	Pressure test the cooling system for leaks. Refer to the appropriate section in Group 303 for the procedure.

P7 CLEAR ALL PCM (POWERTRAIN CONTROL MODULE) DIAGNOSTIC TROUBLE CODES

- Connect all disconnected connectors. Make sure they seat and latch correctly.
- Ignition ON.
- Using a diagnostic scan tool, CLEAR all PCM Diagnostic Trouble Codes (DTCs).
- **NOTE:** The engine must be auto-stopped to request the cabin heater coolant pump on. Further information can be found in the Owner's Literature for full Auto Start-Stop enabling/disabling.

Start the vehicle and allow engine to reach normal operating temperatures.

- Using the HVAC controls, select panel mode, set temperature to full hot and set blower speed to low.
- Drive the vehicle above 3 mph (4 km/h).
- Stop the vehicle on a level surface.
- Make sure that the steering wheel is set to the straight ahead position.
- Keep the transmission selector lever in position D, brake pedal pressed and doors closed.
- Using a diagnostic scan tool, view PCM Parameter Identifications (PIDs).
- Monitor the PCM Coolant Pump 'A' Control Diagnostic Status (COOLPMP_A_STAT) PID for at least 1 minute.

Does the cabin coolant pump turn on?

Yes	If the cabin coolant pump runs for 10 seconds on and 10 seconds off, PURGE the air from the coolant system. Refer to the appropriate section in Group 303 for the procedure. If the cabin coolant pump runs normally, the system is operating correctly at this time. The concern may have been caused by pump connections. ADDRESS the root cause of any connector or pin issues.
No	INSTALL a new cabin heater coolant pump. REFER to the appropriate procedure in Group 412-00. If the concern is still present, GO to P8

P8 CHECK FOR CORRECT PCM (POWERTRAIN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all PCM 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
- Connect all PCM 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 PCM. REFER to the appropriate procedure in Group 303-14.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST Q : P06A0

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

The externally controlled variable displacement compressor is electronically controlled by the PCM. The PCM pulse width modulates the ground to the externally controlled variable displacement compressor to change the displacement of the A/C compressor. REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) - System Operation and Component Description (412-00 Climate Control System - General Information, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P06A0:00	Variable A/C Compressor Control Circuit: No Sub Type Information	This DTC sets when the PCM senses greater than expected voltage on the sensor feedback circuit, indicating a short to voltage or an open circuit or an open sensor.

Possible Sources

- Fuse
- Wiring, terminals or connectors
- Low refrigerant charge
- A/C compressor
- PCM

Visual Inspection and Pre-checks

- Inspect for loose or corroded PCM and A/C compressor connections.
- Make sure BJB fuse 12 (15A) is OK.

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

Q1 EXTERNALLY CONTROLLED VARIABLE DISPLACEMENT COMPRESSOR (EVDC) PERFORMANCE CHECK WITH THE AC COMPRESSOR ELECTRONIC CONTROL VALVE TESTER

NOTE: The following pinpoint test step uses the EVDC100 Electronic Variable Displacement A/C Compressor Control Valve Tester, available on the Ford Rotunda website. If you do not have the EVDC100 Electronic Variable Displacement A/C Compressor Control Valve Tester, go to step 2 of this pinpoint test.

NOTE: Proper Air Conditioning (A/C) system diagnosis on a vehicle's compressor is dependent on correct refrigerant system charge and tested in ambient temperatures above 21.1Å°C (70Å°F).

- Test the EVDC compressor displacement, following the instructions in the user manual supplied with the Model EVDC100 A/C Compressor Electronic Control Valve Tester.

Did the suction low side pressure decrease or the high side pressure increase?

Yes	The Externally Controlled Variable Displacement Compressor (EVDC) is able to change the displacement. Do not replace the compressor. If DTC P06A0 is present, GO to Q3 If DTC P06A0 is not present, CHECK refrigerant charge amount. REFER to the appropriate general procedure in Group 412-00.
No	INSTALL a new A/C compressor. REFER to the appropriate procedure in Group 412-00. CLEAR all Diagnostic Trouble Codes (DTCs). TEST the system for normal operation. If DTC P06A0 is present, GO to Q3

Q2 EXTERNALLY CONTROLLED VARIABLE DISPLACEMENT COMPRESSOR (EVDC) PERFORMANCE CHECK WITHOUT THE AC COMPRESSOR ELECTRONIC CONTROL VALVE TESTER

NOTE: Proper Air Conditioning (A/C) system diagnosis on a vehicle's compressor is dependent on correct refrigerant system charge and tested in ambient temperatures above 21.1Å°C (70Å°F).

NOTE: The performance check test is used to determine if the Externally Controlled Variable Displacement Compressor (EVDC) is able to change the displacement by monitoring PCM Parameter Identifications (PIDS) soon after the air conditioning clutch is engaged.

- Start the engine.
- Using a diagnostic scan tool, view PCM Parameter Identifications (PIDS).
- Using a diagnostic scan tool, monitor EVACC PID.
- Select the floor position on the HVAC controls. Set the temperature control to full warm and the blower to the lowest setting. Set the A/C to off. Close all windows and doors. Run for 5 minutes to heat up the climate control housing.
- Select the PANEL position on the HVAC controls. Set the temperature control to full cold and the blower to the highest setting. Set the recirc mode to on. Set the A/C to on.

Did the PID initially increase and then decrease?

Yes	The Externally Controlled Variable Displacement Compressor (EVDC) is able to change the displacement. Do not replace the compressor. CHECK refrigerant charge amount. REFER to the appropriate general procedure in Group 412-00.
No	GO to Q3

Q3 CHECK FOR VOLTAGE TO THE A/C (AIR CONDITIONING) COMPRESSOR CONTROL SOLENOID

- Ignition OFF.
- Disconnect A/C Compressor Control Solenoid [C1110](#) .
- Ignition ON.
- Measure:

AIR CONDITIONING (A/C) CONTROL SOLENOID	
---	--

Positive Lead	Measurement / Action	Negative Lead
C1110-2		Ground

Is the voltage greater than 11 volts?

Yes	GO to Q4
No	VERIFY the BJB fuse 12 (15A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

Q4 CHECK THE A/C (AIR CONDITIONING) COMPRESSOR DISPLACEMENT CONTROL SOLENOID PWM (PULSE WIDTH MODULATION) CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect PCM 2.0L [C1381B](#), 2.7L [C1551B](#) or 2.0L diesel [C175B](#).
- Measure:

AIR CONDITIONING (A/C) CONTROL SOLENOID	
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Positive Lead	Measurement / Action	Negative Lead
C1110-1	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to Q5
No	REPAIR the circuit.

Q5 CHECK THE A/C (AIR CONDITIONING) COMPRESSOR DISPLACEMENT CONTROL SOLENOID PWM (PULSE WIDTH MODULATION) CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition ON.
- Measure:

AIR CONDITIONING (A/C) CONTROL SOLENOID	
---	--

Positive Lead	Measurement / Action	Negative Lead
C1110-1		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to Q6

Q6 CHECK THE A/C (AIR CONDITIONING) COMPRESSOR DISPLACEMENT CONTROL SOLENOID PWM (PULSE WIDTH MODULATION) CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

AIR CONDITIONING (A/C) CONTROL SOLENOID	POWERTRAIN CONTROL MODULE (PCM)
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2.0L

Positive Lead	Measurement / Action	Negative Lead
C1110-1	Ω	C1381B-59

AIR CONDITIONING (A/C) CONTROL SOLENOID	POWERTRAIN CONTROL MODULE (PCM)
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2.7L

Positive Lead	Measurement / Action	Negative Lead
C1110-1	Ω	C1551B-79

AIR CONDITIONING (A/C) CONTROL SOLENOID	
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2.0L diesel

Positive Lead	Measurement / Action	Negative Lead
C1110-1	Ω	C175B-19

Is the resistance less than 3 ohms?

Yes	INSTALL a new A/C compressor. REFER to the appropriate procedure in Group 412-00. CLEAR the DTC and REPEAT the self-test. If the DTC returns, GO to Q7
No	REPAIR the circuit.

Q7 CHECK FOR CORRECT PCM (POWERTRAIN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all PCM 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
- Connect all PCM 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 PCM. REFER to the appropriate procedure in Group 303-14.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST R : P193E

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Normal Operation and Fault Conditions

Control system logic, REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) - System Operation and Component Description (412-00 Climate Control System - General Information, Description and Operation).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
PCM P193E:00	A/C Clutch Request Signal: No Sub Type Information	This DTC sets when the PCM does not receive the A/C request message from the BCM.

Possible Sources

- Network concerns
- BCM
- FCIM
- PCM

R1 VERIFY THE CUSTOMER CONCERN

- Ignition ON.
- Verify that there is an observable symptom present.

Is an observable symptom present?

Yes	GO to R2
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

R2 CHECK THE COMMUNICATION NETWORK

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

Do the BCM, FCIM and PCM pass the network test?

Yes	GO to R3
No	DIAGNOSE the BCM, FCIM or PCM does not communicate with the diagnostic scan tool. REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

R3 CHECK THE PCM (POWERTRAIN CONTROL MODULE) AIR CONDITIONING REQUEST SIGNAL (AC_REQ) PID (PARAMETER IDENTIFICATION)

- Start the engine.
- Using a diagnostic scan tool, monitor the PCM AC_REQ PID.
- On the HVAC controls, select PANEL mode, then press the A/C button (indicator ON).

Does the AC_REQ PID display YES when the A/C button indicator is illuminated?

Yes	GO to R7
No	GO to R4

R4 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) A/C SWITCH (CC_SW_AC) PID (PARAMETER IDENTIFICATION)

- Using a diagnostic scan tool, monitor the FCIM CC_SW_AC PID while pressing and releasing the A/C button.

Does the PID display Active when the A/C button indicator is illuminated?

Yes	GO to R6
No	GO to R5

R5 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all FCIM 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
- Connect all FCIM 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, Click here to access Guided Routine (FCIM) .
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

R6 VERIFY CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all BCM electrical connectors.
- Repair:
 - corrosion (install new connector or terminals & clean module pins)
 - damaged or bent pins & install new terminals or pins
 - pushed-out pins & install new pins as necessary
- Reconnect all BCM electrical 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, 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.

R7 CHECK FOR CORRECT PCM (POWERTRAIN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all PCM 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
- Connect all PCM 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 PCM. REFER to the appropriate procedure in Group 303-14.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

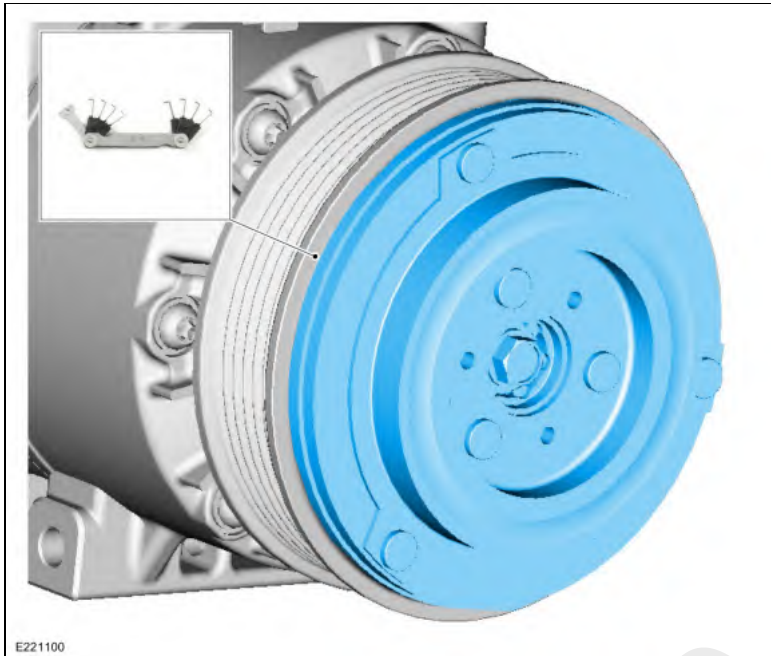
General Procedures

Air Conditioning (A/C) Clutch Air Gap Adjustment

Activation

1. **NOTE:** Compressor with a spring rubber clutch shown others similar.

Check the A/C clutch air gap at 3 equally spaced places between the clutch plate and the A/C clutch pulley. Refer to Specifications in Group 412.



2. Remove the A/C clutch. Refer to Air Conditioning A/C Clutch and Air Conditioning A/C Clutch Field Coil procedure in Group 412.

3. **NOTE:** For some vehicles a shim kit may only be available with the A/C clutch assembly.

Add or remove spacers between the clutch plate hub and the compressor shaft until the clearance is within specification. Refer to Specifications in Group 412.

4.
 - For fixed compressor
Torque: 177 lb.in (20 Nm)
 - For EVDC compressor
Torque: 128 lb.in (14.5 Nm)

