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2012 FORD Taurus SHO OEM Service and Repair Workshop Manual

[Go to manual page](#)

NOTICE

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

AL1 CHECK THE AUTO START-STOP DEACTIVATION SWITCH INDICATOR AND LED (LIGHT EMITTING DIODE) CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect HVAC (heating, ventilation and air conditioning) control module C228A and C228B .
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C228A-13	\overline{V}	Ground
C228A-5	\overline{V}	Ground

Is any voltage present?

Yes REPAIR the affected circuits.

No GO to [AL2](#)

AL2 CHECK THE AUTO START-STOP DEACTIVATION SWITCH INDICATOR AND LED (LIGHT EMITTING DIODE) CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
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Yes	INSTALL a new instrument panel center stack left switch. CLEAR all Diagnostic trouble Codes (DTCs). TEST the system for normal operation. If the concern is still present, GO to AL4
No	REPAIR the affected circuits.

AL4 CHECK FOR CORRECT HVAC (HEATING, VENTILATION AND AIR CONDITIONING) CONTROL MODULE OPERATION

- Ignition OFF.
- Disconnect and inspect all HVAC (heating, ventilation and air conditioning) control module electrical connectors (if not previously disconnected).
- Repair:
 - corrosion (install new connector or terminal - clean module pins)
 - damaged or bent pins - install new terminals or pins
 - pushed-out pins - install new pins as necessary
- Connect all HVAC (heating, ventilation and air conditioning) control module electrical connectors. Make sure they seat and latch correctly. WAIT 20 seconds for the range calibration to be executed after reconnecting of the module before any further assessment or measurement is made. If the actuator range calibration does not start, or has been interrupted, PERFORM the HVAC (heating, ventilation and air conditioning) Calibration Routine, using a diagnostic scan tool.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	<p>CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . 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 HVAC (heating, ventilation and air conditioning) control module.</p> <p>REFER to: Heating, Ventilation and Air Conditioning (HVAC) Control Module (412-00 Climate Control System - General Information, Removal and Installation).</p>
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.

- Disconnect HVAC (heating, ventilation and air conditioning) control module C271A .
- Disconnect Instrument panel console switch assembly a C2134 .
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C271A-15	\bar{V}	Ground
C271A-14	\bar{V}	Ground

Is any voltage present?

Yes	REPAIR the affected circuits.
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No	GO to AM2
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AM2 CHECK THE AUTO START-STOP DEACTIVATION SWITCH INDICATOR AND LED (LIGHT EMITTING DIODE) CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C271A-15	Ω	Ground
C271A-14	Ω	Ground

Are the resistances greater than 10,000 ohms?

- pushed-out pins - install new pins as necessary
- Connect all HVAC (heating, ventilation and air conditioning) control module electrical connectors. Make sure they seat and latch correctly. WAIT 20 seconds for the range calibration to be executed after reconnecting of the module before any further assessment or measurement is made. If the actuator range calibration does not start, or has been interrupted, PERFORM the HVAC (heating, ventilation and air conditioning) Calibration Routine, using a diagnostic scan tool.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	<p>CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . 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 HVAC (heating, ventilation and air conditioning) control module.</p> <p>REFER to: Heating, Ventilation and Air Conditioning (HVAC) Control Module (412-00 Climate Control System - General Information, Removal and Installation).</p>
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No	<p>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.</p>
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PINPOINT TEST AN : B164C:11, B164C:15, B164D:07, B164D:11, B164D:12, B164D:13

Refer to Wiring Diagrams Cell 55 for schematic and connector information.

Normal Operation and Fault Conditions Footwell Vent Door Actuator, (also known as passenger floor airflow shutoff) REFER to: [Climate Control System - Electric, Vehicles With: Dual Automatic Temperature Control \(DATC\) - System Operation and Component Description](#) (412-00 Climate Control System - General Information, Description and Operation).

During an actuator calibration cycle, the HVAC (heating, ventilation and air conditioning) control module drives the footwell vent door until the door reaches both internal stops in the HVAC (heating, ventilation and air conditioning) case. If the door is temporarily obstructed or binding during a calibration cycle, the HVAC (heating, ventilation and air conditioning) control module may interpret this as the actual end of travel for the door. When this condition occurs and the HVAC (heating, ventilation and air conditioning) control module commands the actuator to its end of travel, the air flow to the passenger floor may not open or close as expected. **DTC Fault Trigger Conditions**

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
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- Ignition OFF.
- Disconnect HVAC (heating, ventilation and air conditioning) control module C271A and C271B or C228A and C228B .
- Ignition ON.
- Measure:

15-INCH DISPLAY

Positive Lead	Measurement / Action	Negative Lead
C271A-2	\bar{V}	Ground
C271A-29	\bar{V}	Ground
C271A-3	\bar{V}	Ground
C271A-30	\bar{V}	Ground
C271A-31	\bar{V}	Ground

Positive Lead	Measurement / Action	Negative Lead
C228A-2	\bar{V}	Ground
C228A-8	\bar{V}	Ground

C271A-30	Ω	Ground
C271A-31	Ω	Ground

Positive Lead	Measurement / Action	Negative Lead
C228A-2	Ω	Ground
C228A-8	Ω	Ground
C228A-3	Ω	Ground
C228A-7	Ω	Ground
C228A-6	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to AN3
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No	REPAIR the circuit.
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AN3 CHECK THE FOOTWELL VENT DOOR ACTUATOR CIRCUITS FOR AN OPEN

- Disconnect Footwell vent door actuator C2093 .
- Measure:

C228A-6	Ω	C2093-6
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Are the resistances less than 3 ohms?

Yes	GO to AN4
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No	REPAIR the circuit.
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AN4 CHECK FOR CORRECT ACTUATOR OPERATION

- Ignition OFF.
- Disconnect and inspect the footwell vent door actuator connector.
- 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 HVAC (heating, ventilation and air conditioning) control module. This allows the actuator to be calibrated when the HVAC (heating, ventilation and air conditioning) control module 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 footwell vent door actuator. REFER to: Footwell Vent Door Actuator - Electric (412-00 Climate Control System - General Information, Removal and Installation). CONNECT the actuator electrical connector before the HVAC (heating, ventilation and air conditioning) control module. This allows the actuator to be calibrated when the HVAC (heating, ventilation and air conditioning) control module is connected. TEST the system for normal operation. If the concern is still present, GO to AN5
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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.
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SOBDMC (secondary on-board diagnostic control module C) P2D3F:00	Hybrid/EV Battery Cooling System 'B' Performance: No Sub Type Information	When the refrigerant system exceeds a certain pressure, the SOBDMC (secondary on-board diagnostic control module C) temporarily disables the compressor. If this occurs repeatedly within a specified time window, this DTC (diagnostic trouble code) sets.
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Possible Sources

- Restricted airflow through the radiator or A/C (air conditioning) condenser
- Active grille shutter
- Cooling fans
- Refrigerant system restriction
- Overcharged refrigerant system

AO1 CHECK THE REFRIGERANT SYSTEM PRESSURE

- Ignition OFF.
- Connect a manifold gauge set.
- With a manifold gauge set connected, check for minimum refrigerant system pressure.

Is the refrigerant system pressure above 290 kPa (42 psi)?

Yes	GO to AO2
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No	CHECK the refrigerant system for leaks. GO to Pinpoint Test A1 After leak is repaired, RECHARGE the refrigerant system. REFER to: Air Conditioning (A/C) System Recovery, Evacuation and Charging - Electric (412-00 Climate Control System - General Information, General Procedures) .
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AO2 CHECK FOR AN AIRFLOW OBSTRUCTION AND MISSING AIR DEFLECTORS

NOTE

Verify no vehicle front end damage is present.

- Check the radiator or A/C (air conditioning) condenser for an external obstruction such as leaves or cardboard and verify all air deflectors are present.

Is an airflow obstruction present or air deflectors missing?

No	<p>DIAGNOSE the electric cooling fan operation.</p> <p>REFER to:</p> <p>Electrified Drivetrain Control (302-14 Electrified Drivetrain Control, Diagnosis and Testing).</p>
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AO5 CHECK THE HIGH VOLTAGE BATTERY COOLING SYSTEM PERFORMANCE

- If necessary, place the vehicle at a location with a minimum ambient temperature of 18°C (65°F) for 3 hours.
- Ignition ON.
- Access the SOBDMC (secondary on-board diagnostic control module C) and monitor the AC_OP_MODES (Electric Air Conditioning Compressor Operating Mode) PID (parameter identification)
- Access the SOBDMC (secondary on-board diagnostic control module C) and monitor the HYTRACB_THRM_OP (Hybrid/EV Traction Battery Thermal System Operational Levels) PID (parameter identification) and active command the parameter to Battery Cooling - Request Coolant Flow Through Chiller (Maximum Coolant flow).
- Wait for 5 minutes.

Did the Compressor mode toggle to EAC Disabled - A/C Refrigerant Pressure Reading Is Too High For Operating Compressor?

Yes	GO to AO6
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No	The system is operating correctly at this time.
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AO6 CHECK THE REFRIGERANT LEVEL

- Recover the refrigerant.
REFER to: [Air Conditioning \(A/C\) System Recovery, Evacuation and Charging - Electric](#)(412-00 Climate Control System - General Information, General Procedures).

Was the captured refrigerant greater than specification?

Yes	<p>Evacuate and charge the refrigerant system to the appropriate specification.</p> <p>REFER to: Air Conditioning (A/C) System Recovery, Evacuation and Charging - Electric (412-00 Climate Control System - General Information, General Procedures).</p>
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