Instrument Cluster and Panel Illumination

Overview

Dimmable Illumination

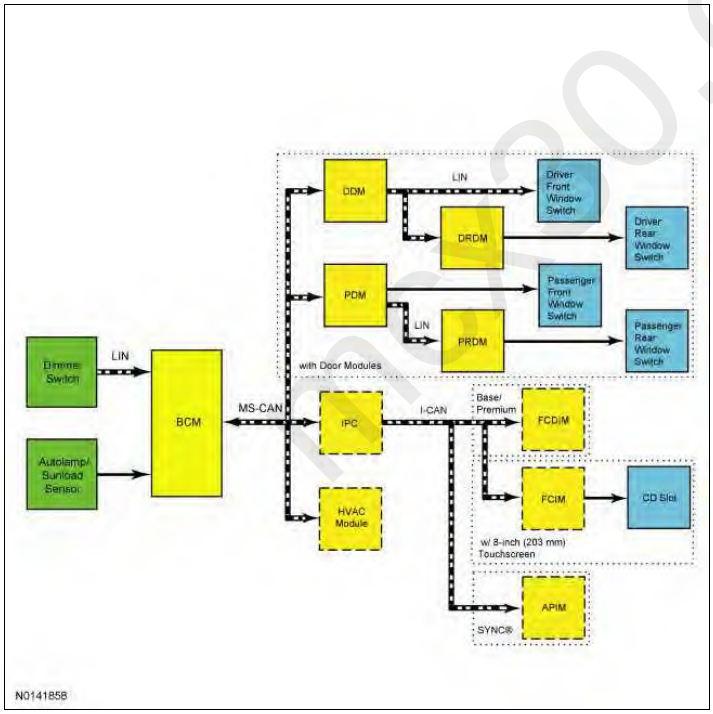
The dimmable illumination provides variable illumination to switches and control components when the parking lamps are on. The illumination intensity can be adjusted by the driver during nighttime conditions using the dimmer switch.

Non-Dimmable Illumination

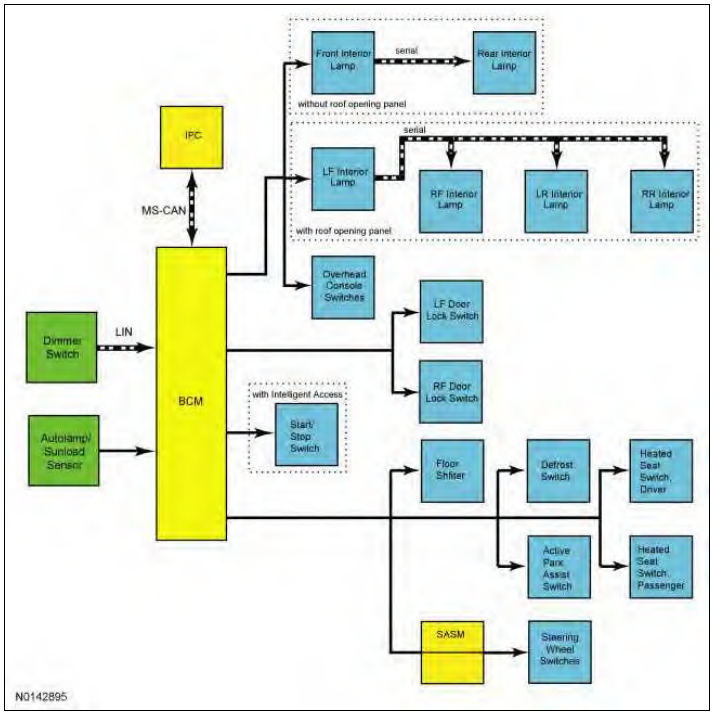
The non-dimmable illumination provides fixed illumination to the window control switches (vehicles without window one-touch up) any time the ignition relay is energized.

System Operation

System Diagram - Networked Illumination



System Diagram - Hardwired Illumination



Network Message Chart

Module Network Input Messages - IPC

Broadcast Message	Originating Module	Message Purpose
Dimmer switch position	BCM	Used to communicate the desired illumination level based on input from the dimmer switch
Ambient light level	BCM	Used to communicate the ambient lighting conditions (day or night)

Module Network Input Messages - APIM , FCIM and FCDIM

Broadcast Message	Originating Module	Message Purpose
Illumination dimming level	IPC	Used to command illumination level for I-CAN modules

Module Network Input Messages - BCM

Broadcast Message	Originating Module	Message Purpose
Illumination dimming level	IPC	Used to command the illumination level for backlighting sources that are hardwired to the BCM .

Module Network Input Messages - HVAC Module

Broadcast Message	Originating Module	Message Purpose
Illumination dimming level	IPC	Used to command the illumination level for the HVAC Module.

Module Network Input Messages - DDM , PDM

Broadcast Message	Originating Module	Message Purpose
Illumination dimming level	BCM	Used to command the illumination level for the window switches.

Dimmable Illumination Operation

Networked Dimmable Illumination

The dimming level of networked modules is determined by the IPC . Based on the ambient light level and dimmer switch position messages from the BCM , the IPC calculates the correct dimming level and sends the illumination dimming level message to the BCM and the HVAC module on the MS-CAN and the APIM , FCIM and FCDIM on the I-CAN . The BCM also forwards the illumination dimming message from the IPC to the DDM and PDM .

The receiving modules use the illumination dimming level message to determine the backlighting intensity of internal or external hardwired illumination sources. If a module does not receive the illumination dimming level message or the data received is deemed invalid, the module sets a DTC in continuous memory and defaults to full night time intensity.

Hardwired Dimmable Illumination

Based on the illumination dimming level message received from the IPC , the BCM sends pulse-width modulated voltage to the hardwired dimmable components.

FET Protection

FET protection is used to protect the BCM in the event that an excessive current draw is detected on an output. Each illumination circuit connected to the BCM is separately protected. Refer to the System Diagram - Hardwired Illumination in this section to view the different groups of BCM hardwired illumination outputs. For a full description of FET protection, refer to Section 419-10 .

Component Description

Dimmer Switch

The dimmer switch is a momentary contact switch that is integral to the FLM . When the dimmer switch is pressed up or down, the requested illumination level is sent to the BCM over a LIN circuit.

Instrument Cluster and Panel Illumination

Special Tool(s)

	Terminal Release Kit 418-D631

DTC Charts

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices. Refer to Diagnostic Methods in Section 100-00 for more information about these practices.

Related Module DTC Chart â BCM

DTC	Description	Action
B1249:12	Start Button Illumination: Circuit Short to Battery	GO to Pinpoint Test d .
B1249:14	Start Button Illumination: Circuit Short to Ground or Open	GO to Pinpoint Test d .
U1000:00	Solid State Driver Protection Active: No Sub Type Information	The BCM has temporarily disabled an output because an excessive current draw exists (such as a short to ground). When the is DTC is stored in the BCM , the illumination output driver is disabled until the cause of the excessive current draw has been corrected and a successful self-test has been performed. ADDRESS all other BCM first. After the cause of the excessive current draw has been corrected, CLEAR the DTCs and PERFORM the self-test.
U2010:11	Switch Illumination: Circuit Short to Ground	GO to Pinpoint Test A .
U2010:15	Switch Illumination: Circuit Short to Battery or Open	If one or more hardwired illumination source is inoperative, GO to Pinpoint Test A . If one or more hardwired illumination source is always on, GO to Pinpoint Test G .
U3000:49	Control Module: Internal Electronic Failure	The BCM has permanently disabled an output because an excessive current draw exists (such as a short to ground) that has exceeded the limits of what the BCM can withstand. ADDRESS all other BCM DTCs first. After the cause of the excessive current draw has been corrected, INSTALL a new

		BCM . REFER to Section 419-10 .
All other DTCs	â	REFER to Section 419-10 .

Related Module DTC Chart â DDM

DTC	Description	Action
B12FF:11	Rear Door Switch Illumination: Circuit Short to Ground	GO to Pinpoint Test c .
B12FF:15	Rear Door Switch Illumination: Circuit Short to Battery or Open	GO to Pinpoint Test c .
U2010:11	Switch Illumination: Circuit Short to Ground	GO to Pinpoint Test c .
U2010:15	Switch Illumination: Circuit Short to Battery or Open	GO to Pinpoint Test c .
All other DTCs	â	REFER to Section 501-14B .

Related Module DTC Chart â FCIM

DTC	Description	Action
B13DC:11	Compact Disc Slot Illumination: Circuit Short to Ground	GO to Pinpoint Test e .
B13DC:12	Compact Disc Slot Illumination: Circuit Short to Battery	GO to Pinpoint Test e .
B13DC:13	Compact Disc Slot Illumination: Circuit Open	GO to Pinpoint Test e .
All other DTCs	â	REFER to Section 415-00C or Section 415-00D .

Related Module DTC Chart â PDM

DTC	Description	Action
B12FF:11	Rear Door Switch Illumination: Circuit Short to Ground	GO to Pinpoint Test c .
B12FF:15	Rear Door Switch Illumination: Circuit Short to Battery or Open	GO to Pinpoint Test c .
U2010:11	Switch Illumination: Circuit Short to Ground	GO to Pinpoint Test c .
U2010:15	Switch Illumination: Circuit Short to Battery or Open	GO to Pinpoint Test c .
All other DTCs	â	REFER to Section 501-14B .

Symptom Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices. Refer to Diagnostic Methods in Section 100-00 for more information about these practices.

Symptom Chart

Pinpoint Tests

Pinpoint Test A: One Or More Non-Networked Illumination Sources Are Inoperative Or Always On

Diagnostic Overview

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices. Refer to Diagnostic Methods in Section 100-00 for more information about these practices.

Refer to Wiring Diagrams Cell 71 , Cluster and Panel Illumination for schematic and connector information.

Normal Operation and Fault Conditions

The BCM supplies voltage to all non-networked illumination sources through 1 of 3 circuits. Each circuit has separate FET protection that is used to disable the output driver for the circuit, if a short to ground is detected.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U2010:11	Switch Illumination: Circuit Short To Ground	Sets in continuous memory and on-demand when the BCM detects an excessive current draw from a switch illumination circuit.
U2010:15	Switch Illumination: Circuit Short To Battery or Open	Sets in continuous memory when the BCM detects a lower than expected current draw from a switch illumination circuit.
U1000:00	Solid State Driver Protection Active - Driver Disabled: No Sub Type Information	Sets in continuous memory when the BCM has temporarily disabled an output driver because an excessive current draw exists (such as a short to ground). The BCM cannot enable the output until the cause of the excessive current draw is corrected, the BCM DTCs have been cleared and a successful BCM self-test is run.
U3000:49	Control Module: Internal Electronic Failure	Sets in continuous memory when the BCM has permanently disabled an output driver because an excessive current draw (such as a short to ground) has occurred more times than the BCM output driver can withstand. ADDRESS all other BCM DTCs. The cause of the excessive current draw must be corrected before a new BCM is installed.

Possible Sources

- Wiring, terminals or connectors
- BCM
- Illuminated component

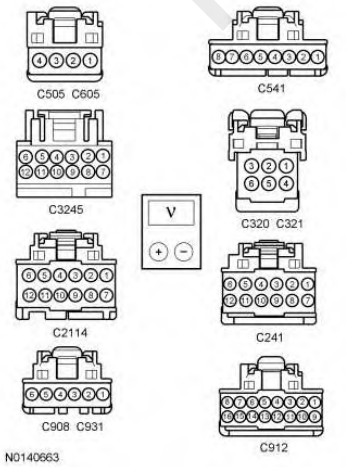
PINPOINT TEST A: ONE OR MORE NON-NETWORKED ILLUMINATION SOURCES ARE INOPERATIVE

<table>
<tr><th>Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>A1 INSPECT THE ILLUMINATION</td><td></td></tr>
<tr><td>
• Ignition ON.
• Turn the parking lamps on.
• While pressing the dimmer switch up to the full brightness position, monitor the non-networked illumination sources:
♦ LH and RH heated seat switches
♦ Steering wheel switches
♦ PAD indicator and defrost switch
♦ Active park assist switch
♦ Floor Shifter
♦ LH (with and without memory set switch) and RH door lock control switches
♦ Interior lamp switches
♦ Overhead console switches
• Is a single illumination source inoperative?
</td><td>
Yes
GO to A2 .

No
If the LH and RH front seat heater switches, steering wheel switches, PAD indicator and defrost switch, the active park assist switch and selector lever illumination are all inoperative, GO to A4 . If the LH and RH door lock control switch illumination is inoperative, GO to A6 . If the front (without roof opening panel) or LH front (with roof opening panel) interior lamp switches and the overhead console switch illumination is inoperative, GO to A8 . If the rear (without roof opening panel) or RH front, LH rear or RH rear (with roof opening panel) interior lamp switch illumination is inoperative, GO to A10 . If the start/stop switch illumination is inoperative or always on, GO to Pinpoint Test B . All other combinations of inoperative sources, GO to A2 .
</td></tr>
<tr><td>A2 CHECK FOR VOLTAGE TO THE INOPERATIVE ILLUMINATION SOURCE</td><td></td></tr>
<tr><td>
• Ignition OFF.
• Disconnect: Inoperative Illumination Source.
• Ignition ON.
• Turn the parking lamps on.
• Press the dimmer switch up until the illumination reaches full brightness.
• Measure the voltage between
<table>
<tr><th colspan="2">Positive Lead</th><th colspan="2">Negative Lead</th></tr>
<tr><th>Pin</th><th>Circuit</th><th>Pin</th><th>Circuit</th></tr>
<tr><td colspan="4">LH Door Lock Control Switch (without memory set switch)</td></tr>
<tr><td>C505-4</td><td>VLN04 (VT/GY)</td><td>â</td><td>Ground</td></tr>
<tr><td colspan="4">LH Door Lock Control Switch (with memory set switch)</td></tr>
<tr><td>C541-2</td><td>VLN04 (VT/GY)</td><td>â</td><td>Ground</td></tr>
</table>
</td><td>
Yes
GO to A3 .

No
REPAIR the affected circuit.
</td></tr>
</table>

RH Door Lock Control Switch			
C605-1	VLN04 (VT/GY)	â	Ground
Floor Shifter			
C3245-7	VLN04 (VT/GY)	â	Ground
LH Heated Seat Control Switch			
C320-1	VLN04 (VT/GY)	â	Ground
RH Heated Seat Control Switch			
C321-1	VLN04 (VT/GY)	â	Ground
Active Park Assist Switch			
C2114-6	VLN04 (VT/GY)	â	Ground
PAD Indicator and Defrost Switch			
C241-6	VLN04 (VT/GY)	â	Ground
Overhead Console Switch Assembly			
C912-7	VLN30 (BU/WH)	â	Ground
LF Interior Lamp (with roof opening panel)			
C908-3	VLN04 (VT/GY)	â	Ground
Front Interior Lamp (without roof opening panel)			
C931-3	VLN04 (VT/GY)	â	Ground



- **Is the voltage greater than 11 volts?**

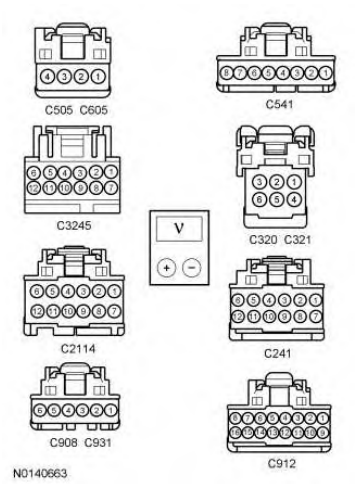
A3 CHECK FOR GROUND AT THE INOPERATIVE ILLUMINATION SOURCE	

- Measure the **voltage** between

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
LH Door Lock Control Switch (without memory set switch)			
C505-4	VLN04 (VT/GY)	C505-2	GD134 (BK/VT)
LH Door Lock Control Switch (with memory set switch)			
C541-2	VLN04 (VT/GY)	C541-6	GD134 (BK/VT)
RH Door Lock Control Switch			
C605-1	VLN04 (VT/GY)	C605-3	GD140 (BK/GN)
Floor Shifter			
C3245-7	VLN04 (VT/GY)	C3245-8	GD133 (BK)
LH Heated Seat Control Switch			
C320-1	VLN04 (VT/GY)	C320-2	GD133 (BK)
RH Heated Seat Control Switch			
C321-1	VLN04 (VT/GY)	C321-2	GD133 (BK)
Active Park Assist Switch			
C2114-6	VLN04 (VT/GY)	C2114-12	GD133 (BK)
PAD Indicator and Defrost Switch			
C241-6	VLN04 (VT/GY)	C241-12	GD133 (BK)
Overhead Console Switch Assembly			
C912-7	VLN30 (BU/WH)	C912-5	GD138 (BK)
LF Interior Lamp (with roof opening panel)			
C908-3	VLN04 (VT/GY)	C908-5	GD908 (BK/WH)
Front Interior Lamp (without roof opening panel)			
C931-3	VLN04 (VT/GY)	C931-5	GD138 (BK/WH)

Yes
INSTALL a new illuminated component. For the LH (with or without memory set switch) or RH door lock control switch, REFER to Section 501-14A or Section 501-14B . For the floor shifter, INSTALL a new floor shifter bezel. REFER to Section 501-12 . For the LH or RH heated seat switch, REFER to Section 501-10A . For the active park assist switch, REFER to Section 413-13C . For the PAD indicator and defrost switch, REFER to Section 501-20B . For the overhead console switch assembly, REFER to Section 501-12 . For the front (without roof opening panel) or LH front (with roof opening panel) interior lamp, REFER to Section 417-02 .

No
REPAIR the affected circuit.

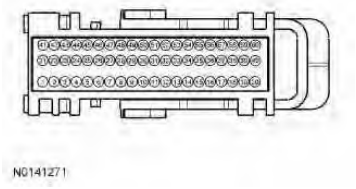


- **Is the voltage greater than 11 volts?**

A4 BYPASS THE BCM

- Ignition OFF.
- Disconnect: BCM C2280C.
- **NOTE:** If the jumper wire fuse fails during this test, refer to the Wiring Diagrams manual to identify the possible causes of the circuit short.
- Connect a **fused jumper wire** between:

Lead 1		Lead 2	
Pin	Circuit	Pin	Circuit
C2280C-14	VLN04 (VT/GY)	â	Battery positive



- **Do the LH and RH heated seat switches, steering wheel switches, PAD indicator and defrost switch, active park assist switch and selector lever illuminate?**

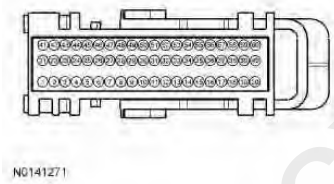
Yes
REMOVE the jumper wire. GO to A5 .

No
REMOVE the jumper wire. REPAIR the circuit for an open. **After the repair:** If DTC U1000:00 is present in the BCM , CLEAR the DTCs and REPEAT the self-test (required to enable the illumination output driver when DTC U1000:00 is stored in the BCM). If DTC U3000:49 is present in the BCM , INSTALL a new BCM after all other DTCs have been addressed. REFER to Section 419-10 .

A5 CHECK THE BCM DTCs

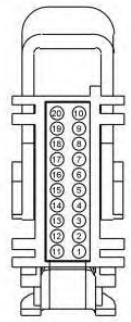
- Connect: BCM C2280C.
- Ignition ON.

Yes
CHECK circuit VLN04 for an intermittent short to ground. If DTC U1000:00 is stored in the BCM , a successful BCM self-test must be performed before the

• Using a scan tool, check the BCM DTCs. • **Did DTC U1000:00 or U2010:11 set or did DTC U1000:00 set previously?**	illumination output is enabled. **No** GO to A11 .
A6 BYPASS THE BCM	
• Ignition OFF. • Disconnect: BCM C2280B. • **NOTE:** If the jumper wire fuse fails during this test, refer to the Wiring Diagrams manual to identify the possible causes of the circuit short. • Connect a **fused jumper wire** between: Lead 1 / Lead 2 Pin / Circuit / Pin / Circuit C2280B-18 / VLN04 (VT/GY) / â / Battery Positive  N0141271 • **Do the door lock control switches illuminate?**	**Yes** REMOVE the jumper wire. GO to A7 . **No** REMOVE the jumper wire. REPAIR the circuit for an open. **After the repair:** If DTC U1000:00 is present in the BCM , CLEAR the DTCs and REPEAT the self-test (required to enable the illumination output driver when DTC U1000:00 is stored in the BCM). If DTC U3000:49 is present in the BCM , INSTALL a new BCM after all other DTCs have been addressed. REFER to Section 419-10 .
A7 CHECK THE BCM DTCs	
• Connect: BCM C2280B. • Ignition ON. • Using a scan tool, check the BCM DTCs. • **Did DTC U1000:00 or U2010:11 set or did DTC U1000:00 set previously?**	**Yes** CHECK circuit VLN04 for an intermittent short to ground. If DTC U1000:00 is stored in the BCM , a successful BCM self-test must be performed before the illumination output is enabled. **No** GO to A11 .
A8 BYPASS THE BCM	
• Ignition OFF. • Disconnect: BCM C2280H. • **NOTE:** If the jumper wire fuse fails during this test, refer to the Wiring Diagrams manual to identify the possible causes of the circuit short. • Connect a **fused jumper wire** between:	**Yes** REMOVE the jumper wire. GO to A9 . **No** REMOVE the jumper wire. REPAIR the circuit for an open. **After the repair:** If DTC U1000:00 is present in the BCM , CLEAR the DTCs and REPEAT the self-test (required to enable the illumination output driver when DTC U1000:00 is stored in the BCM). If DTC

	U3000:49 is present in the BCM , INSTALL a new BCM after all other DTCs have been addressed. REFER to Section 419-10 .

Lead 1		Lead 2	
Pin	Circuit	Pin	Circuit
C2280H-20	VLN04 (VT/GY)	â	Battery positive



- **Do the front (with steel roof) or LH front (with roof opening panel) interior lamp switches and the overhead console switches illuminate?**

A9 CHECK THE BCM DTCs	
• Connect: BCM C2280H. • Ignition ON. • Using a scan tool, check the BCM DTCs. • **Did DTC U1000:00 or U2010:11 set or did DTC U1000:00 set previously?**	**Yes** CHECK circuit VLN04 for an intermittent short to ground. If DTC U1000:00 is stored in the BCM , a successful BCM self-test must be performed before the illumination output is enabled. **No** GO to A11 .
A10 VERIFY THE INTERIOR LAMP OPERATION	
• Operate the interior lamps from the front (without roof opening panel) or LH front (with roof opening panel) interior lamp **and** the interior lamp with inoperative switch illumination. • **Can the interior lamp with inoperative switch illumination be turned on and off from its own switch and the front (without roof opening panel) or LH front (with roof opening panel)?**	**Yes** INSTALL a new interior lamp. REFER to Section 417-02 . **No** REFER to Section 417-02 .
A11 CHECK FOR CORRECT BCM OPERATION	
• Ignition OFF.	**Yes** CHECK OASIS for any applicable TSBs . If a TSB

• Disconnect and inspect all BCM connectors. • Repair: ♦ Corrosion (install new connectors or terminals - clean module pins) ♦ Damaged or bent pins - install new terminals/pins ♦ Pushed-out pins - install new pins as necessary • Reconnect the BCM connectors and all previously disconnected illuminated components. Make sure all connectors seat and latch correctly. • Operate the system to determine if the concern is still present. • **Is the concern still present?**	exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no TSB addresses this concern, INSTALL a new BCM . REFER to Section 419-10 . **No** The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

Pinpoint Test B: The Steering Wheel Switch Illumination Is Inoperative

Diagnostic Overview

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices. Refer to Diagnostic Methods in Section 100-00 for more information about these practices.

Refer to Wiring Diagrams Cell 71 , Cluster and Panel Illumination for schematic and connector information.

Normal Operation and Fault Conditions

Refer to Instrument Cluster and Panel Illumination .

Possible Sources

- Wiring, terminals or connectors
- Steering wheel switch(es)
- Steering wheel harness
- Clockspring
- SASM

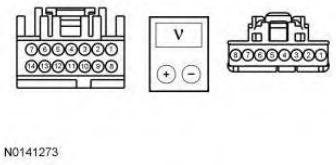
PINPOINT TEST B: THE STEERING WHEEL SWITCH ILLUMINATION IS INOPERATIVE

Test Step	Result / Action to Take
B1 INSPECT THE STEERING WHEEL SWITCH ILLUMINATION	
• Ignition ON. • Turn the parking lamps on. • Press the dimmer switch up until the illumination reaches full brightness. • **Is all of the steering wheel switch illumination inoperative?**	**Yes** GO to B2 . **No** For the LH lower switch, GO to B6 . For the RH lower switch, GO to B7 . For the LH and RH upper switch, GO to B8 .

B2 CHECK FOR VOLTAGE AND GROUND AT THE SASM AND CLOCKSPRING

- Turn the parking lamps off.
- Ignition OFF.
- Disconnect: SASM C226A.
- Disconnect: Clockspring C218A.
- Ignition ON.
- Turn the parking lamps on.
- Press the dimmer switch up until the illumination reaches full brightness.
- Measure the **voltage** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
C226A-12	VLN04 (VT/GY)	C218A-4	GD133 (BK)



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- **Is the voltage greater than 11 volts?**

Yes
GO to B4 .

No
GO to B3 .

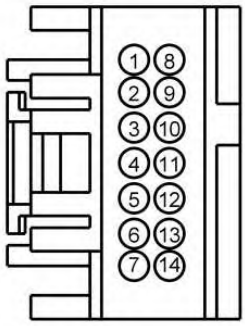
B3 CHECK FOR VOLTAGE TO THE SASM

- Measure the **voltage** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
C226A-12	VLN04 (VT/GY)	â	Ground

Yes
REPAIR circuit GD133.

No
REPAIR circuit B_VLN04.

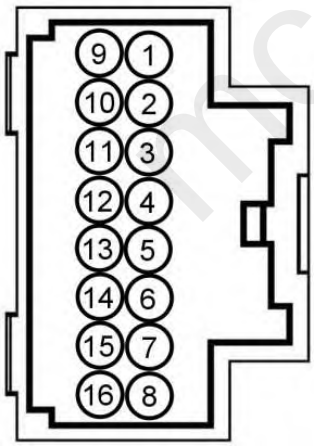


- **Is the voltage greater than 11 volts?**

B4 CHECK FOR VOLTAGE TO THE STEERING WHEEL HARNESS AT THE CLOCKSPRING

- Connect: SASM C226A.
- Connect: Clockspring C218A.
- Remove the driver air bag module. Refer to Section 501-20B .
- Disconnect: Clockspring C218B.
- Measure the **component side voltage** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
C218B-7	â	C218B-10	â



- **Is the voltage greater than 11 volts?**

Yes
CONNECT clockspring C218B. For LH lower switch only, GO to B6 . For multiple steering wheel switches, INSTALL a new steering wheel. REFER to Section 211-04 .

No
GO to B5 .

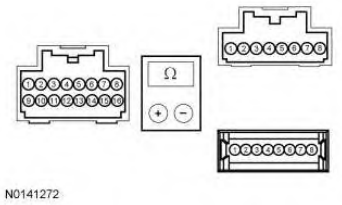
B5 CHECK THE CLOCKSPRING FOR AN OPEN

- Ignition OFF.
- Remove the clockspring. Refer to Section 501-20B .
- Measure the **component side resistance** between:

Yes
INSTALL a new SASM . REFER to Section 206-09 .

No
INSTALL a new clockspring. REFER to Section 501-20B .

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
C218B-7	â	C218C-7	â
C218B-10	â	C218A-4	â

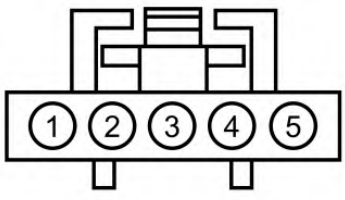


- **Are the resistances less than 3 ohms?**

B6 CHECK FOR VOLTAGE AT THE LH LOWER STEERING WHEEL SWITCH

- Turn the parking lamps off.
- Ignition OFF.
- Remove the driver air bag module. Refer to Section 501-20B .
- Disconnect: LH Lower Steering Wheel Switch.
- Ignition ON.
- Turn the parking lamps on.
- Press the dimmer switch up until the illumination reaches full brightness.
- Measure the **voltage** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
C2366-1	â	C2366-5	â



- **Is the voltage greater than 11 volts?**

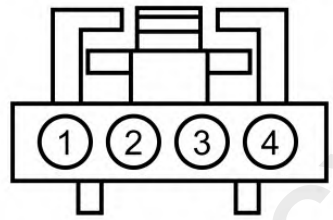
Yes
INSTALL a new steering wheel switch. REFER to Section 211-05 .

No
INSTALL a new steering wheel. REFER to Section 211-04 .

B7 CHECK FOR VOLTAGE AT THE RH LOWER STEERING WHEEL SWITCH

- Turn the parking lamps off.
- Ignition OFF.
- Remove the driver air bag module. Refer to Section 501-20B .
- Disconnect: RH Lower Steering Wheel Switch.
- Ignition ON.
- Turn the parking lamps on.
- Press the dimmer switch up until the illumination reaches full brightness.
- Measure the **voltage** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
Without SonyÂ® Sound			
C2367-1	â	C2367-4	â
With SonyÂ® Sound			
C2367-2	â	C2367-3	â



- **Is the voltage greater than 11 volts?**

Yes
INSTALL a new steering wheel switch. REFER to Section 211-05 .

No
INSTALL a new steering wheel. REFER to Section 211-04 .

B8 CHECK FOR VOLTAGE TO THE UPPER (AIR BAG) HARNESS

- Turn the parking lamps off.
- Ignition OFF.
- Depower the SRS and remove the driver air bag module. Refer to Section 501-20B .
- Ignition ON.
- Disconnect: Inline C260.
- Turn the parking lamps on.
- Press the dimmer switch up until the illumination reaches full brightness.
- Measure the **voltage** (steering wheel side) between:

Positive Lead	Negative Lead

Yes
For the LH upper switch, GO to B9 . For the RH upper switch, GO to B10 .

No
INSTALL a new steering wheel. REFER to Section 211-04 .

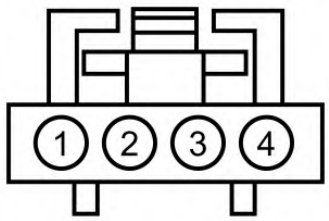
Pin	Circuit	Pin	Circuit
C260-3	â	C260-2	â

- **Is the voltage greater than 11 volts?**

B9 CHECK FOR VOLTAGE AT THE LH UPPER STEERING WHEEL SWITCH

- Turn the parking lamps off.
- Ignition OFF.
- Connect: Inline C260.
- Disconnect: LH Upper Steering Wheel Switch.
- Ignition ON.
- Turn the parking lamps on.
- Press the dimmer switch up until the illumination reaches full brightness.
- Measure the **voltage** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
C2998-1	â	C2998-4	â



- **Is the voltage greater than 11 volts?**

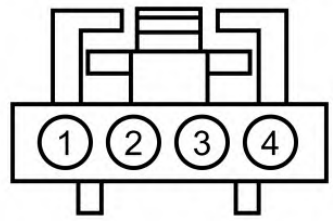
Yes
INSTALL a new steering wheel switch. REFER to Section 211-04 .

No
INSTALL a new driver air bag module. REFER to Section 501-20B .

B10 CHECK FOR VOLTAGE AT THE RH UPPER STEERING WHEEL SWITCH

<table>
<tr>
<td>
• Turn the parking lamps off.
• Ignition OFF.
• Connect: Inline C260.
• Disconnect: RH Upper Steering Wheel Switch.
• Ignition ON.
• Turn the parking lamps on.
• Press the dimmer switch up until the illumination reaches full brightness.
• Measure the voltage between:

<table>
<tr><td colspan="2">Positive Lead</td><td colspan="2">Negative Lead</td></tr>
<tr><td>Pin</td><td>Circuit</td><td>Pin</td><td>Circuit</td></tr>
<tr><td>C2999-2</td><td>â</td><td>C2999-3</td><td>â</td></tr>
</table>



• Is the voltage greater than 11 volts?
</td>
<td>
Yes
INSTALL a new steering wheel switch.
REFER to Section 211-05 .

No
INSTALL a new driver air bag module.
REFER to Section 501-20B .
</td>
</tr>
</table>

Pinpoint Test C: The Window Control Switch Illumination In Inoperative Or Always On (with Window One-Touch Up)

Diagnostic Overview

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices. Refer to Diagnostic Methods in Section 100-00 for more information about these practices.

Refer to Wiring Diagrams Cell 100 , Power Windows for schematic and connector information.

Normal Operation and Fault Conditions

When the parking lamps are on, the PDM , DRDM and PRDM supply a pulse-width modulated voltage to illuminate the RH front, LH rear and RH rear window switches.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions

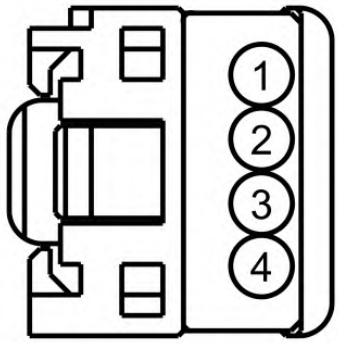
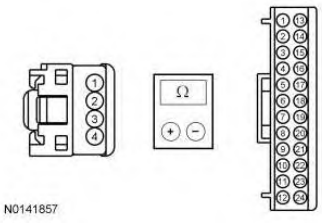
B12FF:11	Rear Door Switch Illumination: Circuit Short to Ground	Sets in continuous memory and on-demand in the DDM or PDM when the DRDM or PRDM detects an excessive current draw on the window control switch illumination circuit. The illumination output is disabled when this DTC is stored in the DDM or PDM .
B12FF:15	Rear Door Switch Illumination: Circuit Short to Battery or Open	Sets in continuous memory and on-demand in the DDM or PDM when the DRDM or PRDM detects a lower than expected current draw on the window control switch illumination circuit.
U2010:11	Switch Illumination: Circuit Short To Ground	Sets in continuous memory and on-demand when the PDM detects an excessive current draw from the RH front window control switch illumination circuit.
U2010:15	Switch Illumination: Circuit Short To Battery or Open	Sets in continuous memory when the PDM detects a lower than expected current draw from the RH front window control switch illumination circuit.

Possible Sources

- Wiring, terminals or connectors
- Window control switch
- PDM
- DRDM
- PRDM

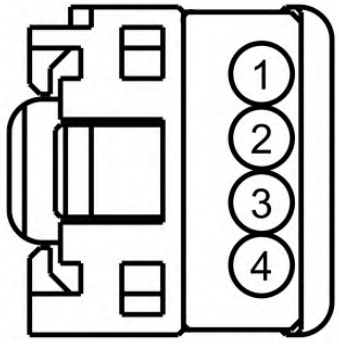
PINPOINT TEST C: THE WINDOW CONTROL SWITCH ILLUMINATION IS INOPERATIVE OR ALWAYS ON (WITH WINDOW ONE-TOUCH UP)

Test Step	Result / Action to Take
C1 VERIFY POWER WINDOW FUNCTIONALITY	
• Ignition ON. • Operate the power window from the suspect window control switch and the LH front master window control switch. • **Does the power window function correctly from the suspect switch AND the LH front master window control switch?**	**Yes** If the RH front window control switch illumination is inoperative, GO to C2 . If the RH rear window control switch illumination is always on, GO to C9 . For the LH rear window control switch, GO to C16 . **No** REFER to Section 501-11B to diagnose the power windows.
C2 CHECK THE PDM DTCs	
• Using a scan tool, clear the PDM DTCs • Perform the PDM self-test. • **Is DTC U2010:11 present?**	**Yes** GO to C6 . **No** GO to C3 .
C3 CHECK THE ILLUMINATION CIRCUIT FOR A SHORT TO VOLTAGE AT THE RH FRONT WINDOW CONTROL SWITCH	

• Ignition OFF. • Disconnect: PDM C652B. • Disconnect: RH Front Window Control Switch. • Ignition ON. • Measure the **voltage** between: 	Positive Lead		Negative Lead	
---	---	---	---
Pin	Circuit	Pin	Circuit
C624-1	CPW04 (YE)	â	Ground |  • **Is any voltage present?**	**Yes** REPAIR the circuit. **No** GO to C4 .
C4 CHECK THE ILLUMINATION CIRCUIT FOR AN OPEN BETWEEN THE PDM AND THE WINDOW CONTROL SWITCH	
• Ignition OFF. • Measure the **resistance** between: 	Positive Lead		Negative Lead	
---	---	---	---
Pin	Circuit	Pin	Circuit
C624-1	CPW04 (YE)	C652B-4	CPW04 (YE) |  • **Is the resistance less than 3 ohms?**	**Yes** GO to C5 . **No** REPAIR the circuit.
C5 CHECK THE PDM ILLUMINATION OUTPUT VOLTAGE AT THE WINDOW CONTROL SWITCH	

<table>
<tr><td>
• Connect: PDM C652B.
• Ignition ON.
• Turn the parking lamps on.
• Press the dimmer switch up until the illumination reaches full brightness.
• Measure the voltage between:

<table>
<tr><td colspan="2">Positive Lead</td><td colspan="2">Negative Lead</td></tr>
<tr><td>Pin</td><td>Circuit</td><td>Pin</td><td>Circuit</td></tr>
<tr><td>C624-1</td><td>CPW04 (YE)</td><td>â</td><td>Ground</td></tr>
</table>

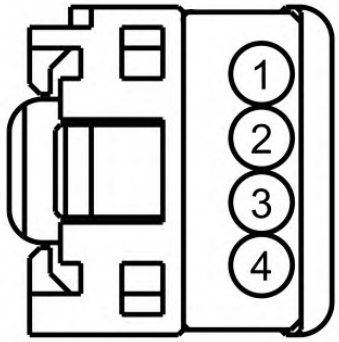
• Is the voltage greater than 11 volts?
</td><td>
Yes
INSTALL a new window control switch. REFER to Section 501-11B .

No
GO to C8 .
</td></tr>
<tr><td>C6 RECHECK THE PDM DTCs WITH THE WINDOW CONTROL SWITCH DISCONNECTED</td><td></td></tr>
<tr><td>
• Ignition OFF.
• Disconnect: RH Front Window Control Switch.
• Ignition ON.
• Using a scan tool, clear the PDM DTCs
• Perform the PDM self-test.
• Is DTC U2010:11 present?
</td><td>
Yes
GO to C7 .

No
INSTALL a new window control switch. REFER to Section 501-11B .
</td></tr>
<tr><td>C7 CHECK THE ILLUMINATION CIRCUIT FOR A SHORT TO GROUND AT THE WINDOW CONTROL SWITCH</td><td></td></tr>
<tr><td>
• Ignition OFF.
• Disconnect: PDM C652B.
• Measure the resistance between:

<table>
<tr><td colspan="2">Positive Lead</td><td colspan="2">Negative Lead</td></tr>
<tr><td>Pin</td><td>Circuit</td><td>Pin</td><td>Circuit</td></tr>
<tr><td>C624-1</td><td>CPW04 (YE)</td><td>â</td><td>Ground</td></tr>
</table>
</td><td>
Yes
GO to C8 .

No
REPAIR the circuit. After the repair: CLEAR the PDM DTCs and REPEAT the self-test to enable the illumination output driver.
</td></tr>
</table>

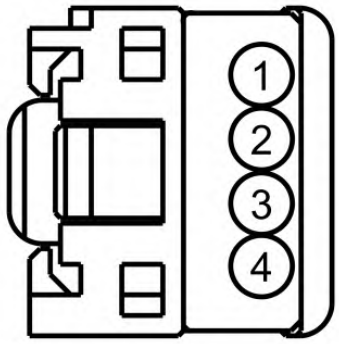


- **Is the resistance greater than 10,000 ohms?**

C8 CHECK FOR CORRECT PDM OPERATION	
• Disconnect and inspect all PDM connectors. • Repair: ♦ Corrosion (install new connectors or terminals - clean module pins) ♦ Damaged or bent pins - install new terminals/pins ♦ Pushed-out pins - install new pins as necessary • Reconnect the PDM connectors and all previously disconnected power window system connectors. Make sure all connectors seat and latch correctly. • Operate the system to determine if the concern is still present. • **Is the concern still present?**	**Yes** CHECK OASIS for any applicable TSBs . If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no TSB addresses this concern, INSTALL a new PDM . REFER to Section 501-14B . **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.
C9 CHECK THE PDM DTCs	
• Using a scan tool, clear the PDM DTCs • Perform the PDM self-test. • **Is DTC B12FF:11 present?**	**Yes** GO to C13 . **No** GO to C10 .
C10 CHECK THE ILLUMINATION CIRCUIT FOR A SHORT TO VOLTAGE AT THE RH REAR WINDOW CONTROL SWITCH	
• Ignition OFF. • Disconnect: PRDM . • Disconnect: RH Rear Window Control Switch. • Ignition ON. • Measure the **voltage** between:	**Yes** REPAIR the circuit. **No** GO to C11 .

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit

C801-1	CPW08 (GN/BU)	â	Ground

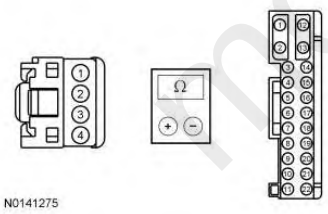


- **Is any voltage present?**

C11 CHECK THE ILLUMINATION CIRCUIT FOR AN OPEN BETWEEN THE WINDOW CONTROL SWITCH AND THE PRDM

- Ignition OFF.
- Measure the **resistance** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
C801-1	CPW08 (GN/BU)	C832-7	CPW08 (GN/BU)



- **Is the resistance less than 3 ohms?**

Yes
GO to C12 .

No
REPAIR the circuit.

C12 CHECK THE PRDM ILLUMINATION OUTPUT VOLTAGE AT THE WINDOW CONTROL SWITCH

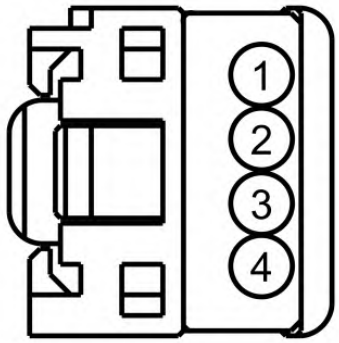
- Connect: PRDM .
- Ignition ON.
- Turn the parking lamps on.
- Press the dimmer switch up until the illumination reaches full brightness.
- Measure the **voltage** between:

Positive Lead	

Yes
INSTALL a new window control switch. REFER to Section 501-11B .

No
GO to C15 .

		Negative Lead	
Pin	Circuit	Pin	Circuit
C801-1	CPW08 (GN/BU)	â	Ground



- **Is the voltage greater than 11 volts?**

C13 RECHECK THE PDM DTCs WITH THE WINDOW CONTROL SWITCH DISCONNECTED

- Ignition OFF.
- Disconnect: RH Rear Window Control Switch.
- Ignition ON.
- Using a scan tool, clear the PDM DTCs
- Perform the PDM self-test.
- **Is DTC B12FF:11 present?**

Yes
GO to C14 .

No
INSTALL a new window control switch. REFER to Section 501-11B .

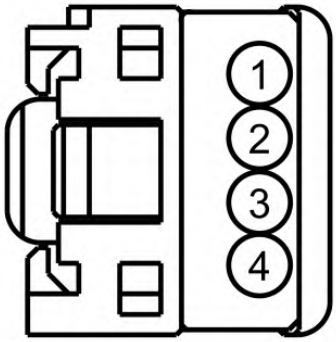
C14 CHECK THE ILLUMINATION CIRCUIT FOR A SHORT TO GROUND AT THE WINDOW CONTROL SWITCH

- Ignition OFF.
- Disconnect: PRDM .
- Measure the **resistance** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
C801-1	CPM08 (GN/BU)	â	Ground

Yes
GO to C15 .

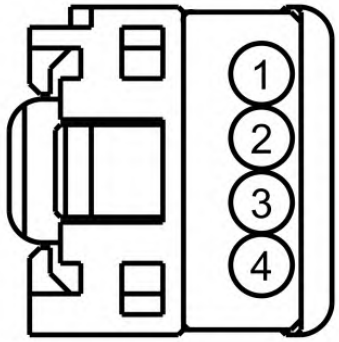
No
REPAIR the circuit. **After the repair:** CLEAR the PDM DTCs and REPEAT the self-test to enable the illumination output driver.



- **Is the resistance greater than 10,000 ohms?**

C15 CHECK FOR CORRECT PRDM OPERATION	
• Disconnect and inspect all PRDM connectors. • Repair: ♦ Corrosion (install new connectors or terminals - clean module pins) ♦ Damaged or bent pins - install new terminals/pins ♦ Pushed-out pins - install new pins as necessary • Reconnect the PRDM connectors and all previously disconnected power window system connectors. Make sure all connectors seat and latch correctly. • Operate the system to determine if the concern is still present. • **Is the concern still present?**	**Yes** CHECK OASIS for any applicable TSBs . If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no TSB addresses this concern, INSTALL a new PRDM . REFER to Section 501-14B . **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.
C16 CHECK THE DDM DTCs	
• Using a scan tool, clear the DDM DTCs. • Perform the DDM self-test. • **Is DTC B12FF:11 present?**	**Yes** GO to C20 . **No** GO to C17 .
C17 CHECK THE ILLUMINATION CIRCUIT FOR A SHORT TO VOLTAGE AT THE LH REAR WINDOW CONTROL SWITCH	
• Ignition OFF. • Disconnect: DRDM . • Disconnect: LH Rear Window Control Switch. • Ignition ON. • Measure the **voltage** between:	**Yes** REPAIR the circuit. **No** GO to C18 .

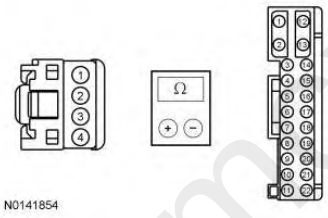
Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
C701-1	CPW06 (WH/BU)	â	Ground



- **Is any voltage present?**

C18 CHECK THE ILLUMINATION CIRCUIT FOR AN OPEN BETWEEN THE DRDM AND THE WINDOW CONTROL SWITCH	
• Ignition OFF. • Measure the **resistance** between: • **Is the resistance less than 3 ohms?**	**Yes** GO to C19 . **No** REPAIR the circuit.

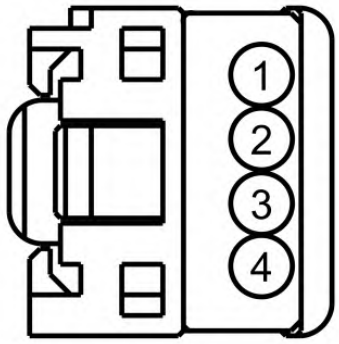
Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
C701-1	CPW06 (WH/BU)	C728-7	CPW06 (WH/BU)



C19 CHECK THE DRDM ILLUMINATION OUTPUT VOLTAGE AT THE WINDOW CONTROL SWITCH	
• Connect: DRDM . • Ignition ON. • Turn the parking lamps on. • Press the dimmer switch up until the illumination reaches full brightness. • Measure the **voltage** between:	**Yes** INSTALL a new window control switch. REFER to Section 501-11B . **No** GO to C22 .

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit

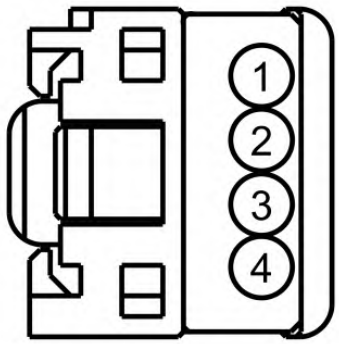
C701-1	CPW06 (WH/BU)	â	Ground



- **Is the voltage greater than 11 volts?**

C20 RECHECK THE DDM DTCs WITH THE WINDOW CONTROL SWITCH DISCONNECTED	
• Ignition OFF. • Disconnect: LH Rear Window Control Switch. • Ignition ON. • Using a scan tool, clear the DDM DTCs. • Perform the DDM self-test. • **Is DTC B12FF:11 present?**	**Yes** GO to C21 . **No** INSTALL a new window control switch. REFER to Section 501-11B .
C21 CHECK THE ILLUMINATION CIRCUIT FOR A SHORT TO GROUND AT THE WINDOW CONTROL SWITCH	
• Ignition OFF. • Disconnect: DRDM . • Measure the **resistance** between:	**Yes** GO to C22 . **No** REPAIR the circuit. **After the repair:** CLEAR the PDM DTCs and REPEAT the self-test to enable the illumination output driver.

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
C701-1	CPM06 (WH/BU)	â	Ground



• **Is the resistance greater than 10,000 ohms?**	
C22 CHECK FOR CORRECT DRDM OPERATION	
• Disconnect and inspect all DRDM connectors. • Repair: ♦ Corrosion (install new connectors or terminals - clean module pins) ♦ Damaged or bent pins - install new terminals/pins ♦ Pushed-out pins - install new pins as necessary • Reconnect the DRDM connectors and all previously disconnected power window system connectors. Make sure all connectors seat and latch correctly. • Operate the system to determine if the concern is still present. • **Is the concern still present?**	**Yes** CHECK OASIS for any applicable TSBs . If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no TSB addresses this concern, INSTALL a new DRDM . REFER to Section 501-14B . **No** The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

Pinpoint Test D: The Start/Stop Switch Illumination Is Inoperative Or Always On

Diagnostic Overview

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices. Refer to Diagnostic Methods in Section 100-00 for more information about these practices.

Refer to Wiring Diagrams Cell 20 , Starting System for schematic and connector information.

Normal Operation and Fault Conditions

The start/stop switch illumination is ground side controlled by the BCM .

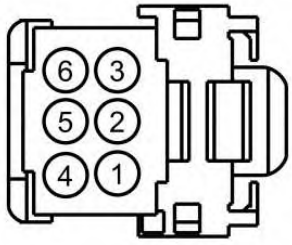
DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1249:12	Start Button Illumination: Circuit Short to Battery	Sets in continuous memory and on-demand when the BCM detects battery voltage on the start button illumination ground circuit.
B1249:14	Start Button Illumination: Circuit Short to Ground or Open	Sets in continuous memory when the BCM detects a short to ground or open on the start button illumination ground circuit.
U1000:00	Solid State Driver Protection Active - Driver Disabled: No Sub Type Information	Sets in continuous memory when the BCM has temporarily disabled an output driver because an excessive current draw exists. The BCM cannot enable the output until the cause of the excessive current draw is corrected, the BCM DTCs have been cleared and a successful BCM self-test is run.
U3000:49	Control Module: Internal Electronic Failure	Sets in continuous memory when the BCM has permanently disabled an output driver because an excessive current draw has occurred more times than the BCM output driver can withstand. ADDRESS all other BCM DTCs. The cause of the excessive current draw must be corrected before a new BCM is installed.

Possible Sources

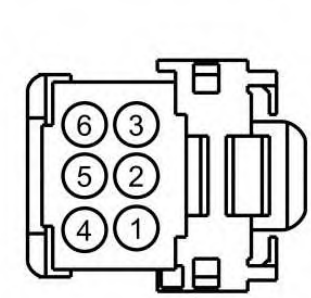
- Wiring, terminals or connectors
- BCM
- Start/stop switch

PINPOINT TEST D: THE START/STOP SWITCH ILLUMINATION IS INOPERATIVE OR ALWAYS ON

Test Step	Result / Action to Take
D1 VERIFY THE HARDWIRED ILLUMINATION	
• Ignition ON. • Turn the parking lamps on. • While pressing the instrument panel dimmer switch up and down, monitor the start/stop switch illumination and the steering wheel switch illumination. • Turn the parking lamps off. • Ignition OFF. • **Is the steering wheel switch AND the start/stop switch illumination inoperative or always on?**	**Yes** GO to Pinpoint Test A . **No** If the start/stop switch illumination is inoperative, GO to D2 . If the start/stop switch illumination is always on, GO to D6 .
D2 CHECK THE FOR GROUND AT THE START/STOP SWITCH	
• Ignition OFF. • Disconnect: Start/Stop Switch. • Using the Terminal Release Kit, release and temporarily remove the start/stop switch connector pin 1, circuit CPL36 (VT/BN).  • Connect: Start/Stop Switch. • Ignition ON. • Turn the parking lamps on. • Press the dimmer switch up until the instrument panel illumination reaches full brightness.	**Yes** INSTALL pin 1 into the start/stop switch connector. INSTALL a new start/stop switch. REFER to Section 211-05 . **No** GO to D3 .

- Measure the **voltage** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
â	Battery positive	C2195-1	CPL36 (VT/BN)



- **Is the voltage greater than 11 volts?**

D3 CHECK THE BCM DTCs

- Using a scan tool, clear the BCM DTCs.
- Perform the BCM self-test.
- **Is DTC B1249:12 present?**

Yes
GO to D4 .

No
GO to D5 .

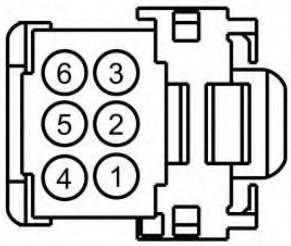
D4 CHECK THE START/STOP SWITCH ILLUMINATION CIRCUIT FOR A SHORT TO VOLTAGE AT THE START/STOP SWITCH

- Measure the **voltage** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
C2195-1	CPL36 (VT/BN)	â	Ground

Yes
INSTALL pin 1 into the start/stop switch connector. REPAIR the circuit. **After the repair:** If DTC U1000:00 is present in the BCM , CLEAR the DTCs and REPEAT the self-test (required to enable the illumination output driver when DTC U1000:00 is stored in the BCM). If DTC U3000:49 is present in the BCM , INSTALL a new BCM after all other DTCs have been addressed. REFER to Section 419-10 .

No
GO to D7 .

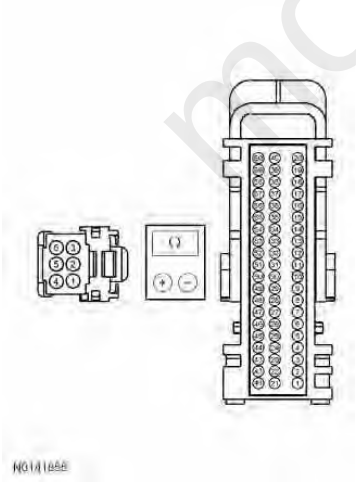


- **Is any voltage present?**

D5 CHECK THE START/STOP SWITCH ILLUMINATION CIRCUIT FOR AN OPEN BETWEEN THE START/STOP SWITCH AND THE BCM

- Ignition OFF.
- Disconnect: Start/Stop Switch.
- Disconnect: BCM C2280C.
- Measure the **resistance** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
C2195-1	CPL36 (VT/BN)	C2280C-12	CPL36 (VT/BN)



- **Is the resistance less than 3 ohms?**

Yes
INSTALL pin 1 into the start/stop switch connector. GO to D7 .

No
INSTALL pin 1 into the start/stop switch connector. REPAIR the circuit.

D6 CHECK THE START/STOP SWITCH ILLUMINATION CIRCUIT FOR A SHORT TO GROUND AT THE START/STOP SWITCH

- Ignition OFF.
- Disconnect: BCM C2280C.
- Disconnect: Start/Stop Switch.

Yes
GO to D7 .

No

<table>
<tr><td>
• Measure the resistance between:

<table>
<tr><td colspan="2">Positive Lead</td><td colspan="2">Negative Lead</td></tr>
<tr><td>Pin</td><td>Circuit</td><td>Pin</td><td>Circuit</td></tr>
<tr><td>C2195-1</td><td>CPL36 (VT/BN)</td><td>â</td><td>Ground</td></tr>
</table>

• Is the resistance greater than 10,000 ohms?
</td><td>REPAIR the circuit.</td></tr>
<tr><td>D7 CHECK FOR CORRECT BCM OPERATION</td><td></td></tr>
<tr><td>• Disconnect and inspect all BCM connectors.
• Repair:
♦ Corrosion (install new connectors or terminals - clean module pins)
♦ Damaged or bent pins - install new terminals/pins
♦ Pushed-out pins - install new pins as necessary
• Reconnect the BCM connectors and the start/stop switch connector. Make sure all connectors seat and latch correctly.
• Operate the system to determine if the concern is still present.
• Is the concern still present?</td><td>Yes
CHECK OASIS for any applicable TSBs . If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no TSB addresses this concern, INSTALL a new BCM . REFER to Section 419-10 .

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.</td></tr>
</table>

Pinpoint Test E: The CD Slot Illumination Is Inoperative Or Always On

Diagnostic Overview

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices. Refer to Diagnostic Methods in Section 100-00 for more information about these practices.

Refer to Wiring Diagrams Cell 130 , Audio System/Navigation for schematic and connector information.

Normal Operation and Fault Conditions

The FCIM supplies a pulse-width modulated voltage to the CD slot illumination. The CD slot illumination is inactive when a CD is in the CD player.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B13DC:11	Compact Disc Slot Illumination: Circuit Short to Ground	Sets in continuous memory when the FCIM detects a short to ground on the CD slot illumination output circuit.

B13DC:12	Compact Disc Slot Illumination: Circuit Short to Battery	Sets in continuous memory when the FCIM detects a short to battery on the CD slot illumination output circuit.
B13DC:13	Compact Disc Slot Illumination: Circuit Open	Sets in continuous memory when the FCIM detects an open on the CD slot illumination output circuit.

Possible Sources

- Wiring, terminals or connectors
- Upper center instrument panel finish panel
- FCIM

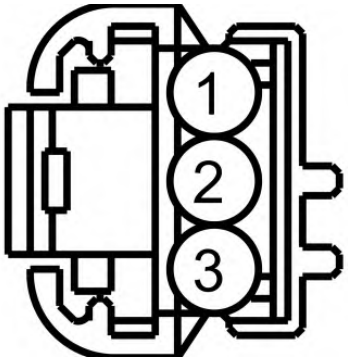
PINPOINT TEST E: THE CD SLOT ILLUMINATION IS INOPERATIVE OR ALWAYS ON

<table>
<tr><th>Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>E1 VERIFY THAT THE CD PLAYER IS EMPTY</td><td></td></tr>
<tr><td>• Ignition ON.
• Press the CD eject button.
• Confirm through the touchscreen display that the CD player is empty.
• Is the CD slot empty?</td><td>Yes
If the CD slot illumination is inoperative, GO to E2 . If the CD slot illumination is always on, GO to E6 .

No
If the CD will not eject, REFER to Section 415-00C or Section 415-00D .</td></tr>
<tr><td>E2 CHECK FOR VOLTAGE AND GROUND TO THE CD SLOT ILLUMINATION CONNECTOR</td><td></td></tr>
<tr><td>• Ignition OFF.
• Disconnect: CD Slot Illumination.
• Ignition ON.
• Press the dimmer switch up until the instrument panel illumination reaches full brightness.
• Press the CD eject button.
• Measure the voltage between:

<table><tr><th colspan="2">Positive Lead</th><th colspan="2">Negative Lead</th></tr><tr><th>Pin</th><th>Circuit</th><th>Pin</th><th>Circuit</th></tr><tr><td>C2450-1 (harness side)</td><td>CCD15 (WH/OG)</td><td>C2450-3 (harness side)</td><td>GD133 (BK)</td></tr></table></td><td>Yes
INSTALL a new upper center instrument panel finish panel. REFER to Section 501-12

No
GO to E3 .</td></tr>
</table>

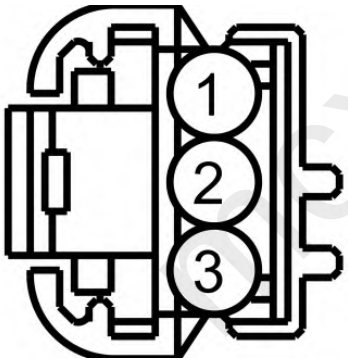


- **Is the voltage greater than 11 volts?**

E3 CHECK FOR VOLTAGE TO THE CD SLOT ILLUMINATION CONNECTOR

- Press the CD eject button.
- Measure the **voltage** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
C2450-1 (harness side)	CCD15 (WH/OG)	â	Ground



- **Is the voltage greater than 11 volts?**

Yes
REPAIR the ground circuit.

No
GO to E4 .

E4 CHECK THE CD SLOT ILLUMINATION OUTPUT CIRCUIT FOR A SHORT TO GROUND AT THE CD SLOT ILLUMINATION CONNECTOR

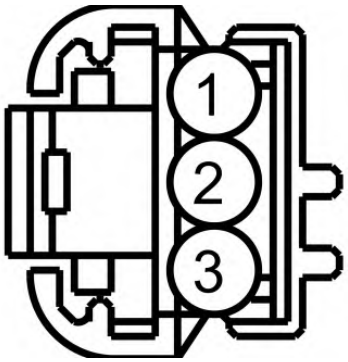
- Ignition OFF.
- Disconnect: FCIM .
- Measure the **resistance** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit

Yes
GO to E5 .

No
REPAIR the circuit.

C2450-1 (harness side)	CCD15 (WH/OG)	â	Ground

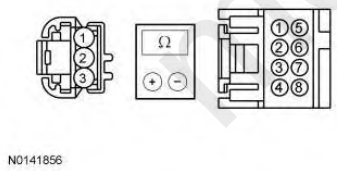


- **Is the resistance greater than 10,000 ohms?**

E5 CHECK THE CD SLOT ILLUMINATION OUTPUT CIRCUIT FOR AN OPEN BETWEEN THE CD SLOT ILLUMINATION CONNECTOR AND THE FCIM

- Measure the **resistance** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
C2450-1 (harness side)	CCD15 (WH/OG)	C2402-3	CCD15 (WH/OG)



- **Is the resistance less than 3 ohms?**

Yes
INSTALL a new FCIM . REFER to Section 415-00C or Section 415-00D .

No
REPAIR the circuit.

E6 CHECK THE CD SLOT ILLUMINATION OUTPUT CIRCUIT FOR A SHORT TO VOLTAGE AT THE CD SLOT ILLUMINATION CONNECTOR

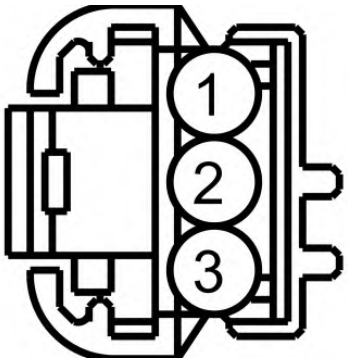
- Ignition OFF.
- Disconnect: CD Slot Illumination.
- Disconnect: FCIM .
- Ignition ON.
- Measure the **voltage** between:

Positive Lead	

Yes
REPAIR the circuit.

No
INSTALL a new FCIM . REFER to Section 415-00C or Section 415-00D .

		Negative Lead	
Pin	Circuit	Pin	Circuit
C2450-1 (harness side)	CCD15 (WH/OG)	â	Ground



- **Is any voltage present?**

Pinpoint Test F: The Window Control Switch Illumination Is Inoperative (Without Window One-Touch Up)

Diagnostic Overview

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices. Refer to Diagnostic Methods in Section 100-00 for more information about these practices.

Refer to Wiring Diagrams Cell 100 , Power Windows for schematic and connector information.

Normal Operation and Fault Conditions

The RH front, RH rear and LH rear window control switch illumination receive voltage when the ignition relay is energized. Each switch has a separate ground for the illumination.

Possible Sources

- Wiring, terminals or connectors
- Window control switch

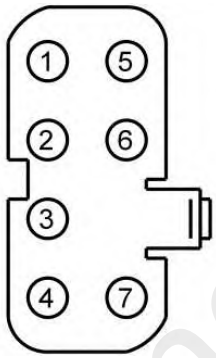
PINPOINT TEST F: THE WINDOW CONTROL SWITCH ILLUMINATION IS INOPERATIVE OR ALWAYS ON (WITHOUT WINDOW ONE-TOUCH UP)

Test Step	Result / Action to Take
F1 VERIFY THE POWER WINDOW OPERATION	
• Ignition ON. • Operate the power window from the suspect switch. • **Does the power window operate normally from the suspect switch?**	**Yes** If the window control switch illumination is inoperative, GO to F2 . If the window control switch illumination is always on, GO to F3 . **No** REFER to Section 501-11A .

F2 CHECK THE ILLUMINATION GROUND CIRCUIT AT THE WINDOW CONTROL SWITCH

- Ignition OFF.
- Disconnect: Suspect Window Control Switch.
- Measure the **resistance** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
RH Front Window Control Switch			
C643-4	GD140 (BK/GN)	â	Ground
RH Rear Window Control Switch			
C819-4	GD145 (BK/GN)	â	Ground
LH Rear Window Control Switch			
C717-4	GD143 (BK/VT)	â	Ground



- **Is the resistance less than 3 ohms?**

Yes
INSTALL a new window control switch.
REFER to Section 501-11A .

No
REPAIR the circuit.

F3 CHECK THE VOLTAGE SUPPLY CIRCUIT FOR A SHORT TO VOLTAGE AT THE WINDOW CONTROL SWITCH

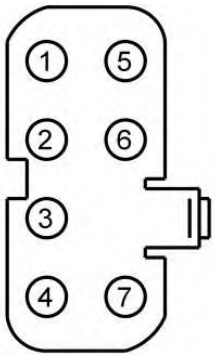
- Ignition OFF.
- Open and close the driver door to make sure that the delayed accessory power is off.
- Disconnect: Suspect Window Control Switch.
- Measure the **voltage** between:

Positive Lead		Negative Lead	
Pin	Circuit	Pin	Circuit
RH Front Window Control Switch			
C643-2	CBB16 (BU/GN)	â	Ground

Yes
REPAIR the circuit.

No
The system tests within specification.
VERIFY the concern.

RH Rear Window Control Switch			
C819-2	CPW14 (BN/WH)	â	Ground
LH Rear Window Control Switch			
C717-2	CPW14 (VT/WH)	â	Ground



- **Is any voltage present?**

Pinpoint Test G: One Or More Non-Networked Illumination Sources are always on

Diagnostic Overview

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices. Refer to Diagnostic Methods in Section 100-00 for more information about these practices.

Refer to Wiring Diagrams Cell 71 , Cluster and Panel Illumination for schematic and connector information.

Normal Operation

Instrument Cluster and Panel Illumination

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U2010:15	Switch Illumination: Circuit Short To Battery or Open	Sets in continuous memory when the BCM detects a lower than expected current draw from a switch illumination circuit.

Possible Sources

- Wiring, terminals or connectors
- Illuminated component

PINPOINT TEST G: ONE OR MORE NON-NETWORKED ILLUMINATION SOURCES ARE ALWAYS ON

Test Step	Result / Action to Take
G1 INSPECT THE ILLUMINATION	

• Ignition ON. • Turn the parking lamps on. • While pressing the dimmer switch up and down, monitor the non-networked illumination sources: ♦ LH and RH heated seat switches ♦ Steering wheel switches ♦ PAD indicator and defrost switch ♦ Active park assist switch ♦ Floor Shifter ♦ LH (with and without memory set switch) and RH door lock control switches ♦ Interior lamp switches ♦ Overhead console switches • **Is a single illumination source always on?**	**Yes** INSTALL a new illuminated component. For the LH (with or without memory set switch) or RH door lock control switch, REFER to Section 501-14A or Section 501-14B . For the floor shifter, INSTALL a new floor shifter bezel. REFER to Section 501-12 . For the LH or RH heated seat switch, REFER to Section 501-10A . For the active park assist switch, REFER to Section 413-13C . For the PAD indicator and defrost switch, REFER to Section 501-20B . For the overhead console switch assembly, REFER to Section 501-12 For the LH front (with roof opening panel) or front (without roof opening panel) interior lamp, REFER to Section 417-02 . **No** If the LH and RH heated seat switches, steering wheel switches, PAD indicator and defrost switch, active park assist switch **and** the floor shifter illumination is always on, GO to G2 . If the LH (with or without memory set switch) **and** RH door lock control switch illumination is always on, GO to G3 . If the front (without roof opening panel) or LH front (with roof opening panel) interior lamp switches **and** the overhead console switch illumination is always on, GO to G4 . If the rear (without roof opening panel) or RH front, LH rear or RH rear (with roof opening panel) interior lamp switch illumination is always on, GO to G5 .
G2 CHECK THE ILLUMINATION OUTPUT CIRCUIT FOR A SHORT TO VOLTAGE	
• Ignition OFF. • Disconnect: BCM C2280C. • Ignition ON. • **Do the LH and RH heated seat switches, steering wheel switches, PAD indicator and defrost switch, active park assist switch and the floor shifter continue to illuminate?**	**Yes** REPAIR the circuit. **No** GO to G6 .
G3 CHECK THE ILLUMINATION OUTPUT CIRCUIT FOR A SHORT TO VOLTAGE	
• Ignition OFF. • Disconnect: BCM C2280B. • Ignition ON. • **Do the door lock control switches continue to illuminate?**	**Yes** REPAIR the circuit. **No** GO to G6 .
G4 CHECK THE ILLUMINATION OUTPUT CIRCUIT FOR A SHORT TO VOLTAGE	

• Ignition OFF. • Disconnect: BCM C2280H. • Ignition ON. • **Do the front (without roof opening panel) or LH front (with roof opening panel) interior lamp switches and the overhead console switches continue to illuminate?**	**Yes** REPAIR the circuit. **No** GO to G6 .
G5 VERIFY THE INTERIOR LAMP OPERATION	
• Operate the interior lamps from the front (with steel roof) or LH front (with roof opening panel) interior lamp **and** the interior lamp with inoperative switch illumination. • **Can the interior lamp with the inoperative switch illumination be turned on and off from both its own switch and the front (without roof opening panel) or LH front (with roof opening panel) interior lamp switch?**	**Yes** INSTALL a new interior lamp. REFER to Section 417-02 . **No** REFER to Section 417-02 to diagnose the interior lamps.
G6 CHECK FOR CORRECT BCM OPERATION	
• Ignition OFF. • Disconnect and inspect all BCM connectors. • Repair: ♦ Corrosion (install new connectors or terminals - clean module pins) ♦ Damaged or bent pins - install new terminals/pins ♦ Pushed-out pins - install new pins as necessary • Reconnect the BCM connectors and all previously disconnected illuminated components. Make sure all connectors seat and latch correctly. • Operate the system to determine if the concern is still present. • **Is the concern still present?**	**Yes** CHECK OASIS for any applicable TSBs . If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no TSBs address this concern, INSTALL a new BCM . REFER to Section 419-10 . **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.