

SECTION 417-01: Exterior Lighting  
DIAGNOSIS AND TESTING

2014 F-150 Workshop Manual  
Procedure revision date: 10/25/2013

## Fog Lamps

### Special Tool(s)

|                                                                                                |                                                                                                                                                   |
|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <br>ST3093-A  | Fluke 77-1V Digital Multimeter<br>FLU77-4 or equivalent                                                                                           |
| <br>ST2834-A  | Vehicle Communication Module<br>(VCM) and Integrated Diagnostic<br>System (IDS) software with<br>appropriate hardware, or<br>equivalent scan tool |
| <br>ST2574-A | Flex Probe Kit<br>NUD105-R025D or equivalent                                                                                                      |

### Principles of Operation

The Steering Column Control Module (SCCM) monitors the fog lamp switch (integrated into the headlamp switch) and sends a message to the Body Control Module (BCM) over the High Speed Controller Area Network (HS-CAN), indicating the fog lamp switch position.

The fog lamps can be turned on when the following conditions are met:

- The ignition is in RUN or START
- The low beam headlamps or the parking lamps are on
- The high beams are off

When the BCM receives an input from the headlamp switch indicating a request for the fog lamps, the BCM provides ground to the fog lamp relay (integrated into the BCM). When the fog lamp relay is energized, voltage is routed to the fog lamps.

### Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of electrical damage.

**Visual Inspection Chart**

| Electrical                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Body Control Module (BCM) fuse 47 (15A) (fog lamps)</li> <li>• Bulb</li> <li>• Wiring, terminals or connectors</li> <li>• Headlamp switch</li> </ul> |

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.

4. **NOTE:** Make sure to use the latest scan tool software release.

If the cause is not visually evident, connect the scan tool to the Data Link Connector (DLC).

5. **NOTE:** The Vehicle Communication Module (VCM) LED prove-out confirms power and ground from the DLC are provided to the VCM.

If the scan tool does not communicate with the VCM :

- check the VCM connection to the vehicle.
- check the scan tool connection to the VCM .
- refer to [Section 418-00](#) , No Power To The Scan Tool, to diagnose no power to the scan tool.

6. If the scan tool does not communicate with the vehicle:
  - verify the ignition is on.
    - The air bag warning indicator prove-out confirms ignition on (other indicators may not prove ignition on). If the ignition does not turn on, refer to [Section 211-05](#) to diagnose no power in run.
  - verify the scan tool operation with a known good vehicle.
  - refer to [Section 418-00](#) , The PCM Does Not Respond To The Scan Tool, to diagnose no response from the PCM.
7. Carry out the network test.
  - If the scan tool responds with no communication for one or more modules, refer to [Section 418-00](#) .
  - If the network test passes, retrieve and record the continuous memory DTCs.
8. Clear the continuous DTCs and carry out the self-test diagnostics for the BCM and the SCCM .
9. If the DTCs retrieved are related to the concern, refer to [Diagnostic Trouble Code \(DTC\) Chart](#) in this section. For all other DTCs, refer to the Diagnostic Trouble Code (DTC) Chart in [Section 419-10](#) .
10. If no DTCs related to the concern are retrieved, GO to [Symptom Chart](#) .

**Symptom Chart****Symptom Chart**

| Condition | Possible Sources | Action |
|-----------|------------------|--------|
|-----------|------------------|--------|

|                                                                                             |                                                                                                                                                                                                            |                                                                                                                          |
|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Both fog lamps are inoperative</li> </ul>            | <ul style="list-style-type: none"> <li>Fuse</li> <li>Wiring, terminals or connectors</li> <li>Headlamp switch</li> <li>Steering Column Control Module (SCCM)</li> <li>Body Control Module (BCM)</li> </ul> | <ul style="list-style-type: none"> <li>VERIFY the bulbs are OK. If OK, <a href="#">GO to Pinpoint Test Q</a>.</li> </ul> |
| <ul style="list-style-type: none"> <li>An individual fog lamp is inoperative</li> </ul>     | <ul style="list-style-type: none"> <li>Wiring, terminals or connectors</li> </ul>                                                                                                                          | <ul style="list-style-type: none"> <li>VERIFY the bulb is OK. If OK, <a href="#">GO to Pinpoint Test R</a>.</li> </ul>   |
| <ul style="list-style-type: none"> <li>The fog lamps are on continuously</li> </ul>         | <ul style="list-style-type: none"> <li>Wiring, terminals or connectors</li> <li>Headlamp switch</li> <li><u>SCCM</u></li> <li><u>BCM</u></li> </ul>                                                        | <ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test S</a>.</li> </ul>                                 |
| <ul style="list-style-type: none"> <li>The fog lamps on indicator is inoperative</li> </ul> | <ul style="list-style-type: none"> <li>Wiring, terminals or connectors</li> <li>Headlamp switch</li> <li><u>BCM</u></li> </ul>                                                                             | <ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test T</a>.</li> </ul>                                 |

## Pinpoint Tests

### Pinpoint Test Q: Both Fog Lamps Are Inoperative

Refer to Wiring Diagrams Cell [86](#), Fog Lamps for schematic and connector information.

### Normal Operation

The Steering Column Control Module (SCCM) monitors the fog lamp switch position by sending a voltage signal to the headlamp switch. When the fog lamp switch is engaged, the voltage signal is routed to ground indicating a request for the fog lamps.

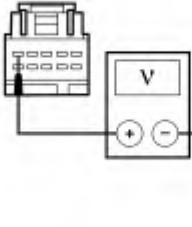
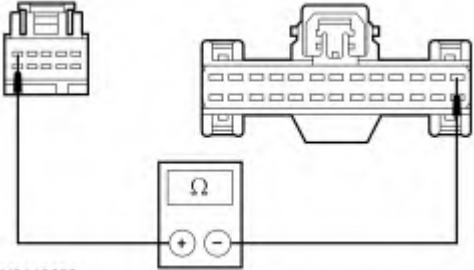
The SCCM sends a message to the Body Control Module (BCM) over the High Speed Controller Area Network (HS-CAN), indicating the fog lamp switch position. When the BCM receives input from the SCCM indicating a request for the fog lamps, the BCM provides ground to the fog lamp relay (integrated into the BCM). When the fog lamp relay is energized, voltage is routed to the fog lamps.

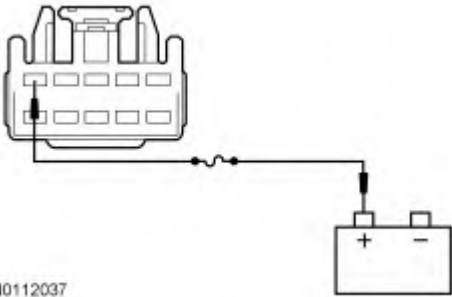
**This pinpoint test is intended to diagnose the following:**

- Fuse
- Wiring, terminals or connectors
- Headlamp switch
- SCCM
- BCM

### PINPOINT TEST Q: BOTH FOG LAMPS ARE INOPERATIVE

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

| Test Step                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Result / Action to Take                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Q1 CHECK THE FOG LAMP SWITCH PID</b> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>Enter the following diagnostic mode on the scan tool: <u>SCCM</u> DataLogger.</li> <li>Monitor the <u>SCCM</u> fog lamp switch PID (FOG_F_SW) while engaging the fog lamp switch.</li> <li><b>Does the PID indicate the fog lamp switch is on?</b></li> </ul>                                                                                                                                                           | <p><b>Yes</b><br/>VERIFY the <u>BCM</u> fuse 47 (15A) is OK. If OK, GO to <a href="#">Q4</a>. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.</p> <p><b>No</b><br/>GO to <a href="#">Q2</a>.</p> |
| <b>Q2 CHECK FOR A VOLTAGE SIGNAL TO THE HEADLAMP SWITCH</b> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Headlamp Switch C205.</li> <li>Measure the voltage between the headlamp switch C205-5, circuit CLF21 (GY/VT), harness side and ground.</li> </ul>  <p>N0099713</p> <ul style="list-style-type: none"> <li><b>Is the voltage greater than 5 volts?</b></li> </ul>                                     | <p><b>Yes</b><br/>INSTALL a new headlamp switch. REFER to <a href="#">Headlamp Switch</a> in this section. TEST the system for normal operation.</p> <p><b>No</b><br/>GO to <a href="#">Q3</a>.</p>                                                   |
| <b>Q3 CHECK THE FOG LAMP REQUEST INPUT CIRCUIT FOR AN OPEN</b> <ul style="list-style-type: none"> <li>Disconnect: <u>SCCM</u> C2414A.</li> <li>Measure the resistance between the headlamp switch C205-5, circuit CLF21 (GY/VT), harness side and the <u>SCCM</u> C2414A-1, circuit CLF21 (GY/VT), harness side.</li> </ul>  <p>N0112036</p> <ul style="list-style-type: none"> <li><b>Is the resistance less than 5 ohms?</b></li> </ul> | <p><b>Yes</b><br/>GO to <a href="#">Q5</a>.</p> <p><b>No</b><br/>REPAIR circuit CLF21 (GY/VT) for an open. TEST the system for normal operation.</p>                                                                                                  |
| <b>Q4 BYPASS THE <u>BCM</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                       |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>NOTE:</b> If the fuse in the jumper wire fails, refer to the Wiring Diagrams manual to identify the possible causes of the circuit short.</p> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: <u>BCM C2280E</u>.</li> <li>• Connect a fused jumper wire between the <u>BCM C2280E-5</u>, circuit CLF12 (BN/YE), harness side and battery positive.</li> </ul>  <p>N0112037</p> <ul style="list-style-type: none"> <li>• Do the fog lamps illuminate?</li> </ul> | <p><b>Yes</b><br/>REMOVE the jumper wire. GO to <a href="#">Q6</a>.</p> <p><b>No</b><br/>REMOVE the jumper wire. REPAIR circuit CLF12 (BN/YE) for an open. TEST the system for normal operation.</p>                                                                    |
| <p><b>Q5 CHECK FOR CORRECT <u>SCCM</u> OPERATION</b></p> <ul style="list-style-type: none"> <li>• Disconnect all the <u>SCCM</u> connectors.</li> <li>• Check for: <ul style="list-style-type: none"> <li>■ corrosion</li> <li>■ damaged pins</li> <li>■ pushed-out pins</li> </ul> </li> <li>• Connect all the <u>SCCM</u> connectors and make sure they seat correctly.</li> <li>• Operate the system and verify the concern is still present.</li> <li>• <b>Is the concern still present?</b></li> </ul>                                                                          | <p><b>Yes</b><br/>INSTALL a new <u>SCCM</u>. REFER to <a href="#">Section 211-05</a>. TEST the system for normal operation.</p> <p><b>No</b><br/>The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</p> |
| <p><b>Q6 CHECK FOR CORRECT <u>BCM</u> OPERATION</b></p> <ul style="list-style-type: none"> <li>• Disconnect all the <u>BCM</u> connectors.</li> <li>• Check for: <ul style="list-style-type: none"> <li>■ corrosion</li> <li>■ damaged pins</li> <li>■ pushed-out pins</li> </ul> </li> <li>• Connect all the <u>BCM</u> connectors and make sure they seat correctly.</li> <li>• Operate the system and verify the concern is still present.</li> <li>• <b>Is the concern still present?</b></li> </ul>                                                                             | <p><b>Yes</b><br/>INSTALL a new <u>BCM</u>. REFER to <a href="#">Section 419-10</a>. TEST the system for normal operation.</p> <p><b>No</b><br/>The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</p>  |

### Pinpoint Test R: An Individual Fog Lamp Is Inoperative

Refer to Wiring Diagrams Cell [86](#), Fog Lamps for schematic and connector information.

### Normal Operation

The Steering Column Control Module (SCCM) monitors the fog lamp switch position by sending a voltage signal to the headlamp switch. When the fog lamp switch is engaged, the voltage signal is routed to ground indicating a request for the fog lamps.

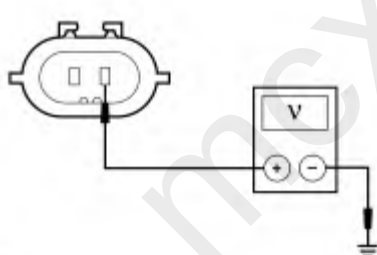
The SCCM sends a message to the Body Control Module (BCM) over the High Speed Controller Area Network (HS-CAN), indicating the fog lamp switch position. When the BCM receives input from the SCCM indicating a request for the fog lamps, the BCM provides ground to the fog lamp relay (integrated into the BCM ). When the fog lamp relay is energized, voltage is routed to the fog lamps. The fog lamps share a common ground circuit.

**This pinpoint test is intended to diagnose the following:**

- Wiring, terminals or connectors

#### PINPOINT TEST R: AN INDIVIDUAL FOG LAMP IS INOPERATIVE

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

| Test Step                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Result / Action to Take                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>R1 CHECK FOR VOLTAGE TO THE FOG LAMP</b> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: Inoperative Fog Lamp.</li> <li>• Ignition ON.</li> <li>• Place the headlamp switch in the PARKING LAMPS ON position and engage the fog lamp switch.</li> <li>• Measure the voltage between the LH fog lamp C152-B, circuit CLF12 (BN/YE), harness side and ground; or between the RH fog lamp C162-B, circuit CLF12 (BN/YE), harness side and ground.</li> </ul>  <p>N0117368</p> <ul style="list-style-type: none"> <li>• Is the voltage greater than 10 volts?</li> </ul> | <p><b>Yes</b><br/>REPAIR circuit GD120 (BK/GN ) (LH fog lamp) or circuit GD123 (BK/GY) (RH fog lamp) for an open. TEST the system for normal operation.</p> <p><b>No</b><br/>REPAIR circuit CLF12 (BN/YE) for an open. TEST the system for normal operation.</p> |

#### Pinpoint Test S: The Fog Lamps Are On Continuously

Refer to Wiring Diagrams Cell [86](#), Fog Lamps for schematic and connector information.

#### Normal Operation

The Steering Column Control Module (SCCM) monitors the fog lamp switch position by sending a voltage signal to the headlamp switch. When the fog lamp switch is engaged, the voltage signal is routed to ground indicating a request for the fog lamps.

The SCCM sends a message to the Body Control Module (BCM) over the High Speed Controller Area Network (HS-CAN), indicating the fog lamp switch position. When the BCM receives input from the SCCM

indicating a request for the fog lamps, the BCM provides ground to the fog lamp relay (integrated into the BCM). When the fog lamp relay is energized, voltage is routed to the fog lamps.

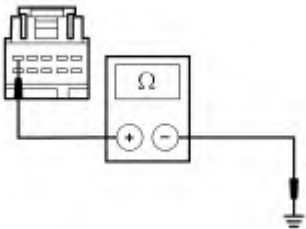
**This pinpoint test is intended to diagnose the following:**

- Wiring, terminals or connectors
- Headlamp switch
- SCCM
- BCM

#### PINPOINT TEST S: THE FOG LAMPS ARE ON CONTINUOUSLY

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

| Test Step                                                                                                                                                                                                                                                                                                                                                             | Result / Action to Take                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>S1 CHECK THE FOG LAMP SWITCH PID</b>                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                     |
| <ul style="list-style-type: none"> <li>• Ignition ON.</li> <li>• Enter the following diagnostic mode on the scan tool: <u>SCCM</u> DataLogger.</li> <li>• Monitor the <u>SCCM</u> fog lamp switch PID (FOG_F_SW) while turning the fog lamp switch on and off.</li> <li>• <b>Does the PID indicate the fog lamp switch is operating correctly?</b></li> </ul>         | <p><b>Yes</b><br/>GO to <a href="#">S4</a>.</p> <p><b>No</b><br/>GO to <a href="#">S2</a>.</p>                                                                                                      |
| <b>S2 CHECK THE HEADLAMP SWITCH</b>                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                     |
| <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: Headlamp Switch C205.</li> <li>• Ignition ON.</li> <li>• Enter the following diagnostic mode on the scan tool: <u>SCCM</u> DataLogger.</li> <li>• Monitor the <u>SCCM</u> fog lamp switch PID (FOG_F_SW).</li> <li>• <b>Does the PID indicate the fog lamp switch is on?</b></li> </ul> | <p><b>Yes</b><br/>GO to <a href="#">S3</a>.</p> <p><b>No</b><br/>INSTALL a new headlamp switch. REFER to <a href="#">Headlamp Switch</a> in this section. TEST the system for normal operation.</p> |
| <b>S3 CHECK THE FOG LAMP REQUEST INPUT CIRCUIT FOR A SHORT TO GROUND</b>                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                     |
| <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: <u>SCCM</u> C2414A.</li> <li>• Measure the resistance between the headlamp switch C205-5, circuit CLF21 (GY/VT), harness side and ground.</li> </ul>                                                                                                                                    | <p><b>Yes</b><br/>GO to <a href="#">S6</a>.</p> <p><b>No</b><br/>REPAIR circuit CLF21 (GY/VT) for a short to ground. TEST the system for normal operation.</p>                                      |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>N0083977</p> <ul style="list-style-type: none"> <li>• Is the resistance greater than 10,000 ohms?</li> </ul>                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                         |
| <p><b>S4 CHECK THE <u>BCM</u> FOG LAMP INDICATOR OUTPUT CIRCUIT FOR A SHORT TO VOLTAGE</b></p> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: <u>BCM</u> C2280A.</li> <li>• Ignition ON.</li> <li>• Do the fog lamps continue to illuminate?</li> </ul>                                                                                                                                                                                                               | <p><b>Yes</b><br/>GO to <a href="#">S5</a>.</p> <p><b>No</b><br/>REPAIR circuit CLF12 (BN/YE) (between the <u>BCM</u> and the headlamp switch) for a short to voltage. TEST the system for normal operation.</p>                                                        |
| <p><b>S5 CHECK THE <u>BCM</u> FOG LAMP OUTPUT CIRCUIT FOR A SHORT TO VOLTAGE</b></p> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: <u>BCM</u> C2280E.</li> <li>• Ignition ON.</li> <li>• Do the fog lamps continue to illuminate?</li> </ul>                                                                                                                                                                                                                         | <p><b>Yes</b><br/>REPAIR circuit CLF12 (BN/YE) (between the <u>BCM</u> and the fog lamps) for a short to voltage. TEST the system for normal operation.</p> <p><b>No</b><br/>GO to <a href="#">S7</a>.</p>                                                              |
| <p><b>S6 CHECK FOR CORRECT <u>SCCM</u> OPERATION</b></p> <ul style="list-style-type: none"> <li>• Disconnect all the <u>SCCM</u> connectors.</li> <li>• Check for: <ul style="list-style-type: none"> <li>■ corrosion</li> <li>■ damaged pins</li> <li>■ pushed-out pins</li> </ul> </li> <li>• Connect all the <u>SCCM</u> connectors and make sure they seat correctly.</li> <li>• Operate the system and verify the concern is still present.</li> <li>• Is the concern still present?</li> </ul> | <p><b>Yes</b><br/>INSTALL a new <u>SCCM</u>. REFER to <a href="#">Section 211-05</a>. TEST the system for normal operation.</p> <p><b>No</b><br/>The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</p> |
| <p><b>S7 CHECK FOR CORRECT <u>BCM</u> OPERATION</b></p> <ul style="list-style-type: none"> <li>• Disconnect all the <u>BCM</u> connectors.</li> <li>• Check for: <ul style="list-style-type: none"> <li>■ corrosion</li> <li>■ damaged pins</li> <li>■ pushed-out pins</li> </ul> </li> <li>• Connect all the <u>BCM</u> connectors and make sure they seat correctly.</li> <li>• Operate the system and verify the concern is still present.</li> <li>• Is the concern still present?</li> </ul>    | <p><b>Yes</b><br/>INSTALL a new <u>BCM</u>. REFER to <a href="#">Section 419-10</a>. TEST the system for normal operation.</p> <p><b>No</b><br/>The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</p>  |

**Pinpoint Test T: The Fog Lamps On Indicator Is Inoperative**

Refer to Wiring Diagrams Cell [86](#), Fog Lamps for schematic and connector information.

**Normal Operation**

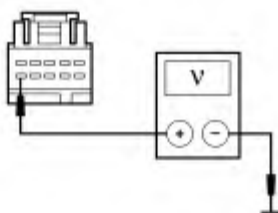
The Steering Column Control Module (SCCM) sends a message to the Body Control Module (BCM) over the High Speed Controller Area Network (HS-CAN), indicating the fog lamp switch position. When the BCM receives input from the SCCM indicating a request for the fog lamps, the BCM provides ground to the fog lamp relay (integrated into the BCM). When the fog lamp relay is energized, voltage is routed to the fog lamps and on a separate circuit, to the headlamp switch for the fog lamps on indicator.

**This pinpoint test is intended to diagnose the following:**

- Wiring, terminals or connectors
- Headlamp switch
- BCM

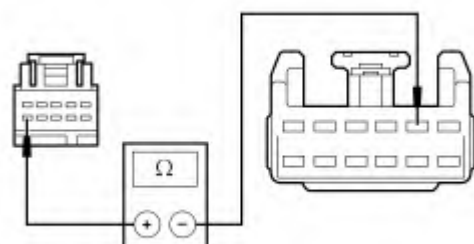
**PINPOINT TEST T: THE FOG LAMPS ON INDICATOR IS INOPERATIVE**

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

| Test Step                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Result / Action to Take                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>T1 CHECK THE HEADLAMP SWITCH</b> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: Headlamp Switch C205.</li> <li>• Ignition ON.</li> <li>• Enter the following diagnostic mode on the scan tool: <u>BCM</u> DataLogger.</li> <li>• Select the <u>BCM</u> fog lamps active command PID (FOG_LAMPS). Command the fog lamps on.</li> <li>• <b>NOTE:</b> Make sure the fog lamps are illuminated when taking a reading.</li> <li>• Measure the voltage between the headlamp switch C205-10, circuit CLF12 (BN/YE), harness side and ground.</li> </ul>  <p>N0083978</p> <ul style="list-style-type: none"> <li>• Is the voltage greater than 10 volts?</li> </ul> | <p><b>Yes</b><br/>INSTALL a new headlamp switch. REFER to <a href="#">Headlamp Switch</a> in this section. TEST the system for normal operation.</p> <p><b>No</b><br/>GO to <a href="#">T2</a>.</p> |
| <b>T2 CHECK THE <u>BCM</u> FOG LAMP INDICATOR OUTPUT CIRCUIT</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                     |

**FOR AN OPEN**

- Ignition OFF.
- Disconnect: BCM C2280A.
- Measure the resistance between the headlamp switch C205-10, circuit CLF12 (BN/YE), harness side and the BCM C2280A-2, circuit CLF12 (BN/YE), harness side.



N0112038

- **Is the resistance less than 5 ohms?**

**Yes**GO to [T3](#).**No**

REPAIR circuit CLF12 (BN/YE) for an open. TEST the system for normal operation.

**T3 CHECK FOR CORRECT BCM OPERATION**

- Disconnect all the BCM connectors.
- Check for:
  - corrosion
  - damaged pins
  - pushed-out pins
- Connect all the BCM connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.
- **Is the concern still present?**

**Yes**

INSTALL a new BCM. REFER to [Section 419-10](#). TEST the system for normal operation.

**No**

The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.