



**Countries:** AUSTRALIA, CANADA, UNITED STATES, MEXICO, NEW ZEALAND  
**Availability:** ISIS  
**Major System:** ACCESSORIES  
**Current Language:** English  
**Other Languages:** NONE  
**Viewed:** 198

**Document ID:** IK1900238  
**Revision:** 3  
**Created:** 10/24/2014  
**Last Modified:** 3/16/2015  
**Author:** Kevin Kochanek

[Less Info](#)

Hide Details

Coding Information

<b>Copy Link</b> 	<b>Copy Relative Link</b> 	<b>Bookmark</b>  <a href="#">View My Bookmarks</a>	<b>Add to Favorites</b> 	<b>Print</b> 	<b>Provide Feedback</b> 	<b>Helpful</b>  0	<b>Not Helpful</b>  0
----------------------	-------------------------------	--	-----------------------------	------------------	-----------------------------	-------------------------	-----------------------------

**Title:** Symptom 4: No-Idle HVAC Digital Display Inoperative

**Applies To:** ProStar® and LoneStar®

## CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

<ul style="list-style-type: none"> <li>11/21/2014 - Initial Internal Article Release</li> <li>02/03/2015 - Revision 1</li> <li>03/09/2015 - Added Warranty and SRT Information</li> </ul>
---

## DESCRIPTION

This document will guide the user through the diagnostic steps for No-Idle HVAC control panel inoperative.

## SYMPTOM(s)

**Diagnostic Trouble Code(s) & Dashboard Indicator Light(s):**  
 Not Applicable

DTC/Light	Description
Not Applicable	

**Customer Observations or Concerns:**

- Loose connections
- Broken wire or defective wire harness
- Defective digital display switch
- Failed digital display
- Failed system controller
- Failed Linear Power Module (LPM)

## SPECIAL TOOL(s) / SOFTWARE

Not Applicable

Tool Description	Tool Number	Comments	Instructions
Not Applicable			

## SERVICE PARTS INFORMATION

Not Applicable

Kit Description	Part Number	Quantity Required	Notes
Not Applicable			

**DIAGNOSTIC STEP(s)**

**WARNING:**

To prevent property damage, personal injury, and / or death, park vehicle on a hard, flat surface, turn engine off, set parking brake, and install wheel chocks to prevent vehicle from moving in either direction.

**WARNING:**

To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

**CAUTION:**

To prevent damage to components, do not attempt to connect battery voltage to evaporator blower motor, condenser fan motor, or A/C compressor. Electronic components within the motors are sensitive to arcing and reverse polarity.

**NOTE:**

Perform all of the following steps with Key-OFF and Park Brake set unless otherwise directed.

**NOTE:**

When disconnecting harness connectors, check for pushed-back and damaged terminals.

**NOTE:**

After any step where a problem is detected, repair as needed and retest for original concern.

**NOTE:**

If operator uses No-Idle A/C with ignition switch in ACCESSORY position, verify park brake input logic to system controller is correct.

**NOTE:**

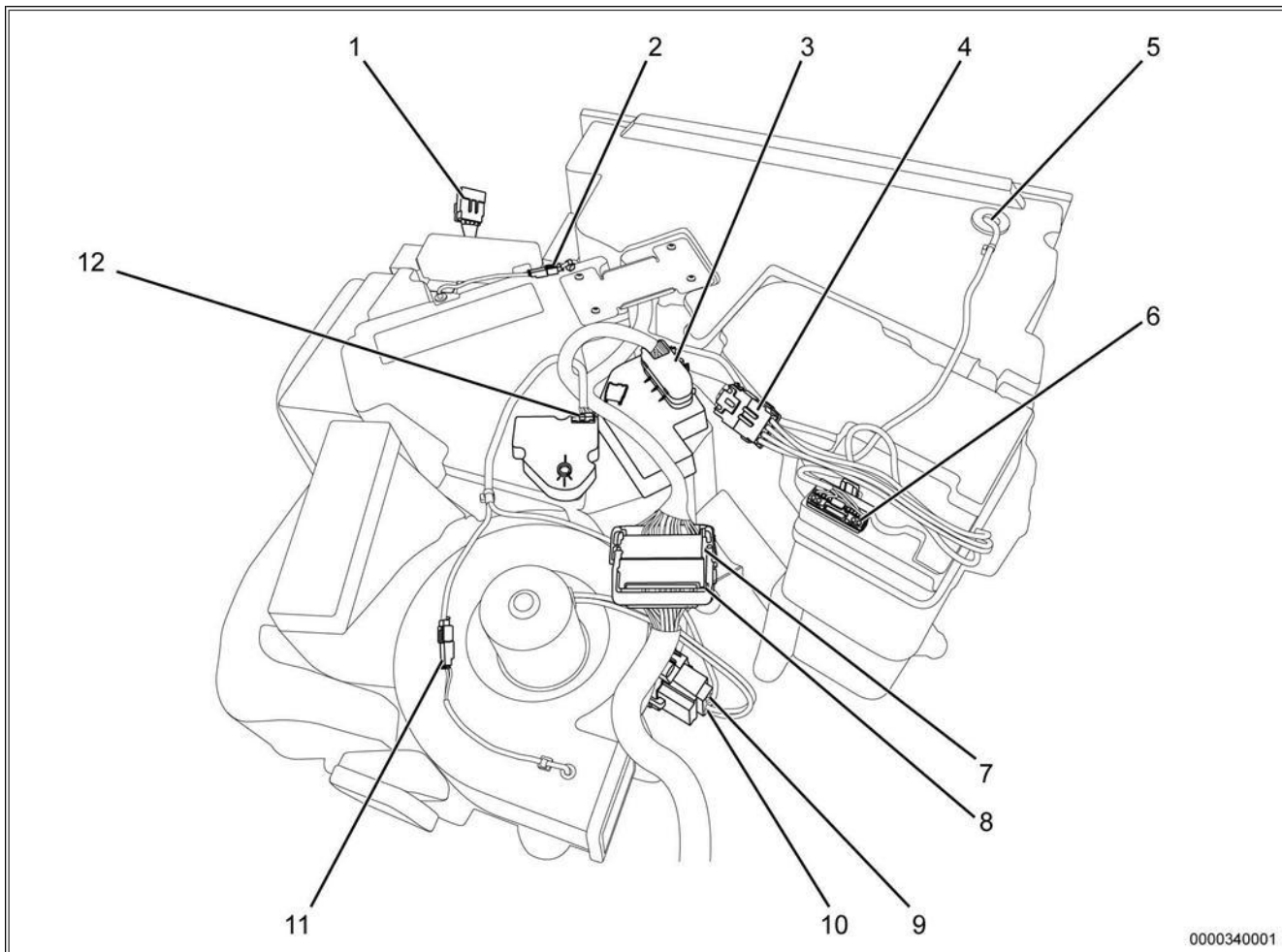
Vehicles built with or updated to 150A compressor relays do not use fuse (F2); Circuit protection is provided by cube fuse located in battery box.

**NOTE:**

When 12V No-Idle system controller senses battery voltage drop below 11.8V for 10 seconds, system will shut down.

**NOTE:**

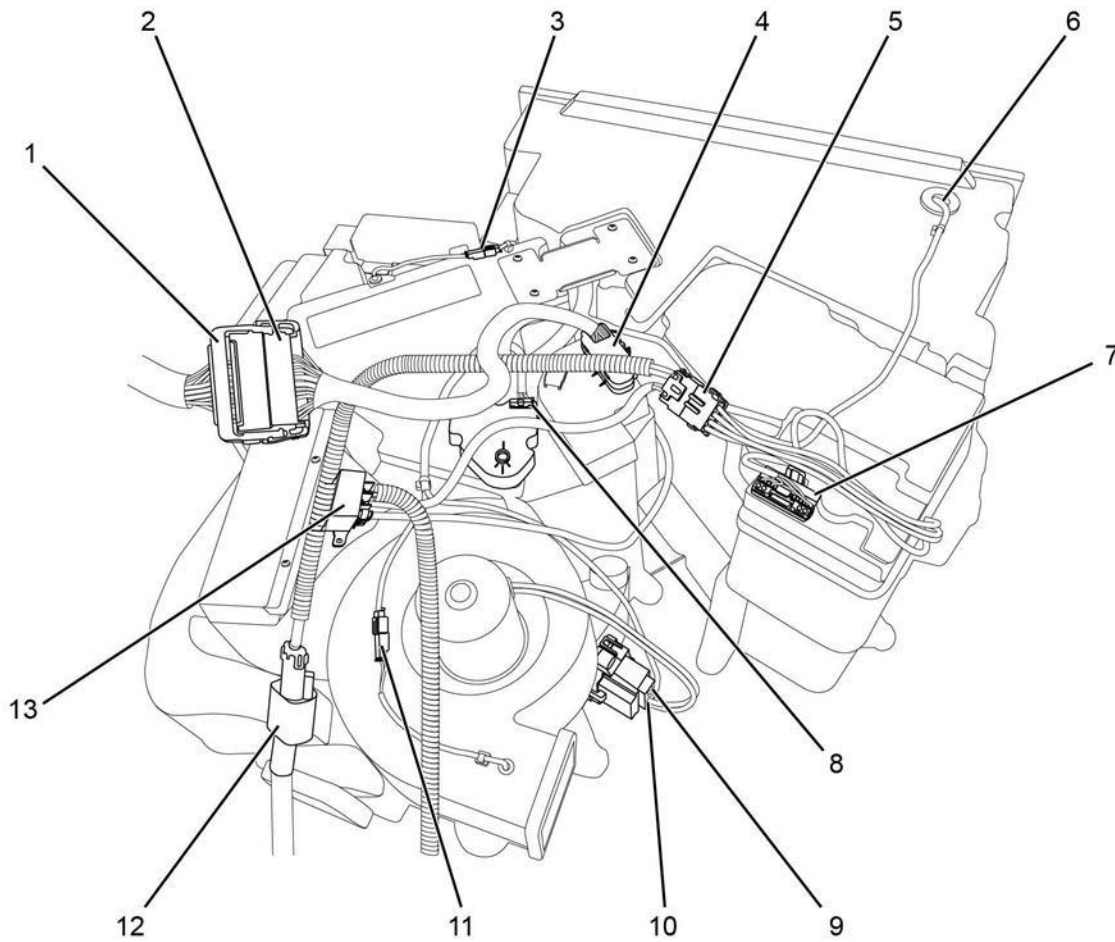
No-Idle A/C faults are transferred to Body Controller (BC) at Key-ON handshake between BC and No-Idle system controller. Inactive faults are not stored in the system controller. Only those faults that are active at handshake are transferred.



0000340001

**Figure 1. 60A Relay Connector Locations.**

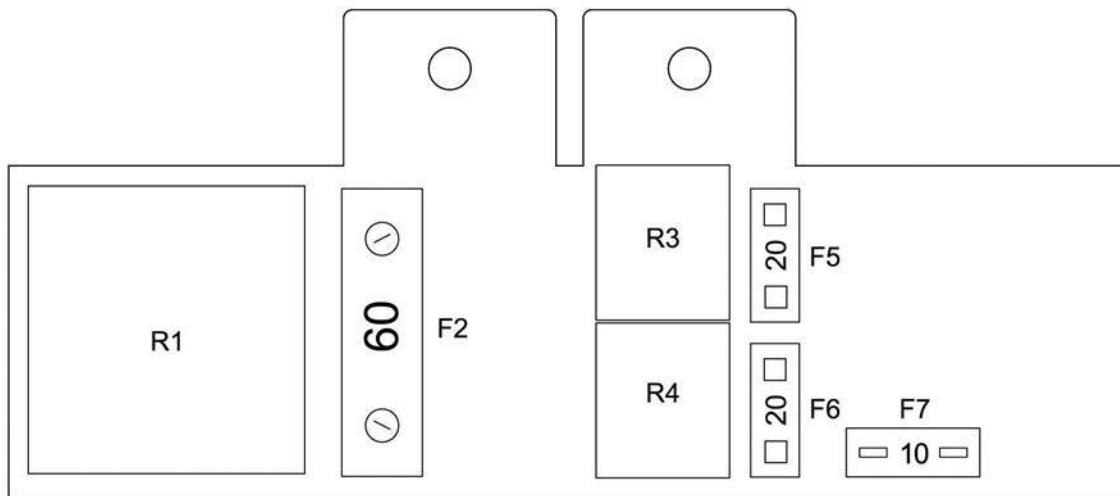
- Item 1: No-Idle harness power / ground 4-way connector
- Item 2: Inlet temperature sensor 2-way connector
- Item 3: System controller 32-way connector
- Item 4: Compressor power / ground 4-way connector
- Item 5: No-Idle harness to condenser fan 3-way connector
- Item 6: Compressor controller 32-way connector
- Item 7: No-Idle 30-way connector
- Item 8: Chassis 30-way connector
- Item 9: Linear Power Module (LPM) 6-way connector
- Item 10: LPM 2-way connector
- Item 11: Discharge temperature sensor 2-way connector
- Item 12: Blend door actuator 6-way connector



0000340021

**Figure 2. 150A Relay Connector Locations.**

- Item 1: Chassis 30-way connector
- Item 2: No-Idle 30-way connector
- Item 3: Inlet temperature sensor 2-way connector
- Item 4: System controller 32-way connector
- Item 5: Compressor power / ground 4-way connector
- Item 6: No-Idle harness to condenser fan 3-way connector
- Item 7: Compressor controller 32-way connector
- Item 8: Blend door actuator 6-way connector
- Item 9: LPM 6-way connector
- Item 10: LPM 2-way connector
- Item 11: Discharge temperature sensor 2-way connector
- Item 12: Compressor controller 1-way ground connector
- Item 13: 150A relay

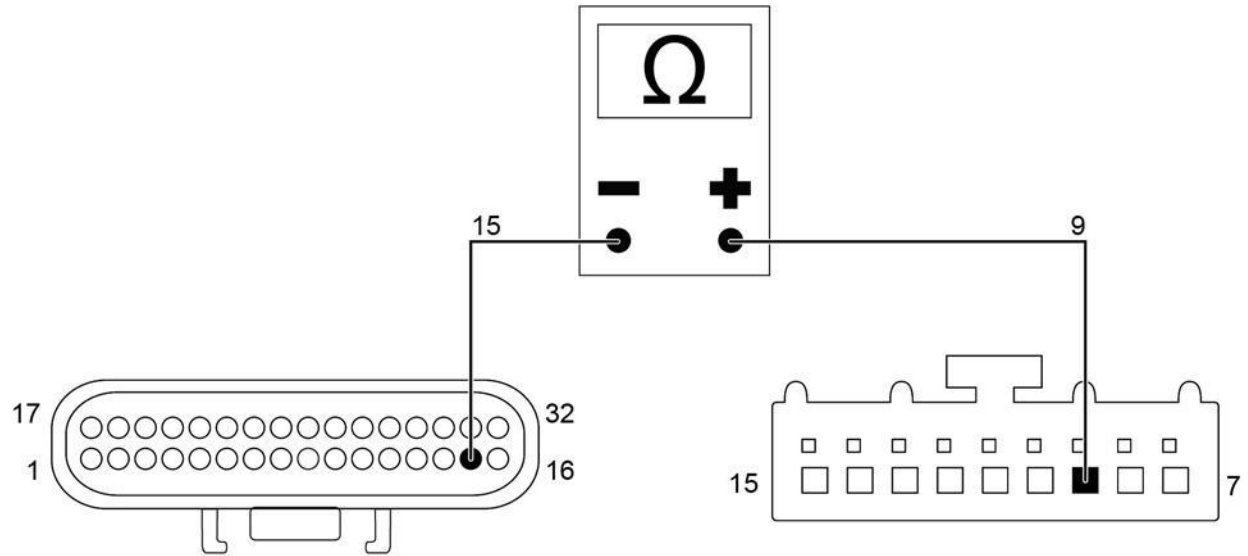


0000331281

Figure 3. Fuse / Relay Locations.

Step	Action	Decision
1	OPERATIONAL CHECK: a. Verify all operational checks have been performed.	Yes. Go to Step 2.
	Have all operational checks been performed?	No. Go to <a href="#">Operational Checks in IK1900235</a> .

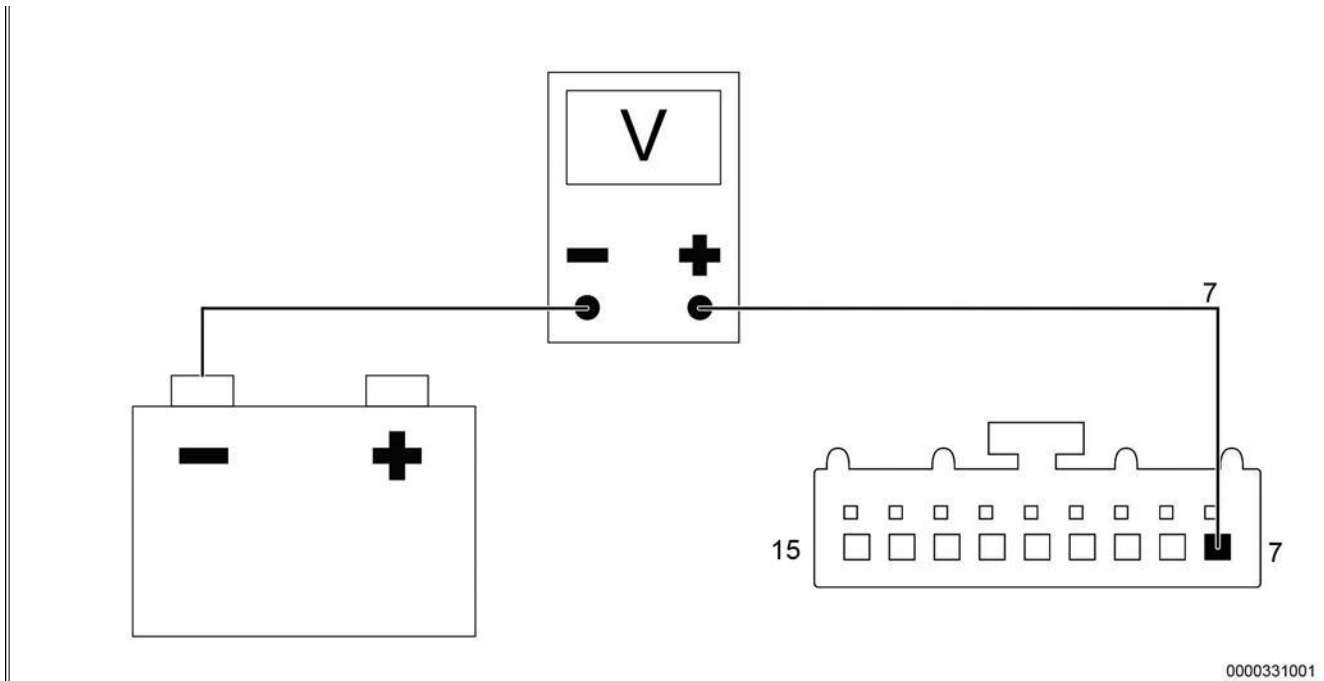
Step	Action	Decision
2	DIGITAL DISPLAY OPERATIONAL CHECK: A. Turn ignition Key-Off and depress the COOL-Switch to start the No-Idle system. B. Depress each of the following digital display switches and observe both digital display and No-Idle system response for the appropriate changes:	Evaporator blower or compressor never starts: Perform <a href="#">Symptom 3: No-Idle Inoperative</a> .
	<ul style="list-style-type: none"> <li>• Blower speed switch to increase blower speed</li> <li>• Blower speed switch to reduce blower speed</li> <li>• Temp switch to decrease cab temperature</li> <li>• Temp switch to increase cab temperature</li> </ul>	No-Idle system starts in default setting, produces cool air, and responds to each switch action, but digital display does not change: Go to Step 3.
	C. Identify switches that do not cause the proper response from the No-Idle system or the LCD display. D. Depress the COOL-Switch to stop the No-Idle system.	No-Idle system starts in default setting and produces cool air but does not respond to any switch actions: Stop No-Idle system and go to Step 4.
	Which decision matches both the No-Idle system's response and the digital display response to the blower and temperature switches?	No-Idle system starts in default setting, produces cool air, and responds to at least one but not all switch commands: Leave No-Idle system running and go to Step 7.



0000339962

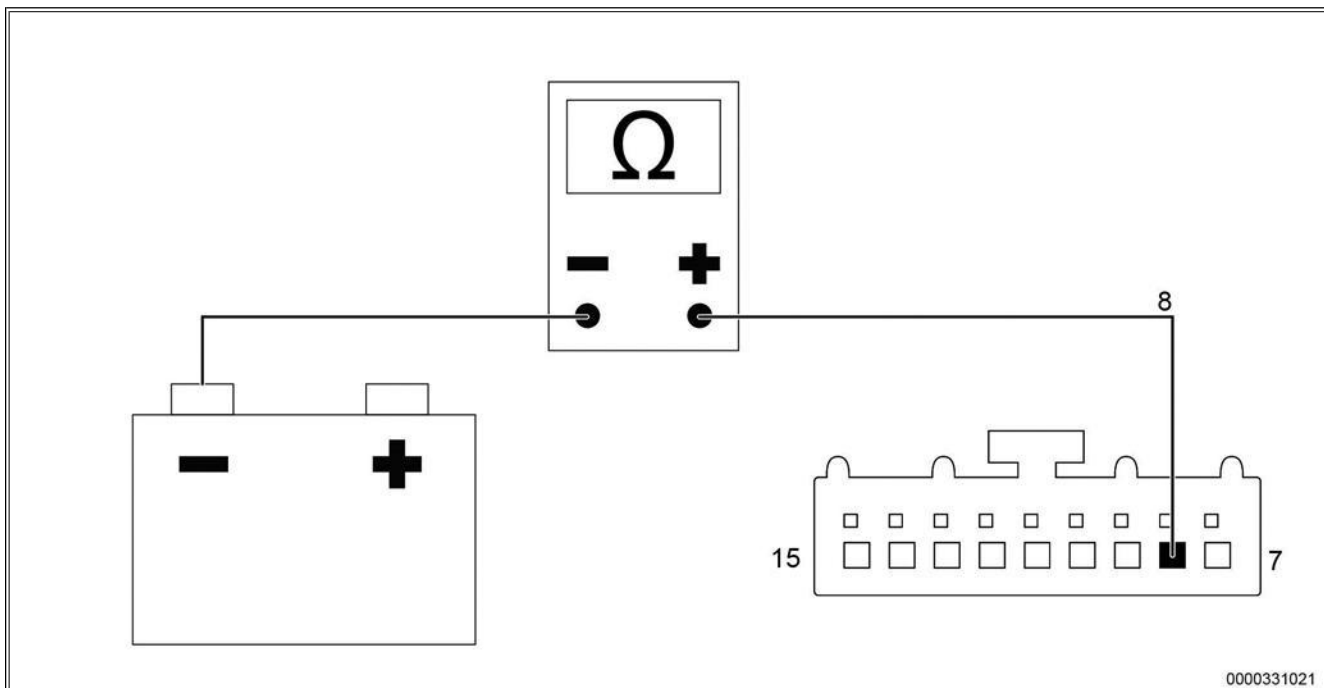
Figure 4. 9-Way Digital Display Connector Face View and 32-Way System Controller Connector Face View.

Step	Action	Decision
3	<b>DIGITAL DISPLAY DATA CHECK:</b>	<b>Yes.</b> Connect system controller and leave the digital display connector disconnected and go to step 4. .
	A. Remove trim panel surrounding the HVAC control Panel. B. Remove HVAC control panel from the wall of the sleeper. C. Unplug the 9-way digital display connector. D. Unplug the 32-way System Controller. E. Use a DMM to measure resistance between system controller pin-15 and digital display Pin-9. F. Use a DMM to measure resistance between system controller pin-15 and a known good ground.	<b>No.</b> Resistance in Step 3.e. is greater than 5 Ohms: Leave connectors disconnected and go to Step 10.
	Is resistance in step 3.e less than 5 ohms? And Is resistance in step 3.f greater than 1000 ohms?	<b>No.</b> Resistance in step 3.f is less than 1000 ohms: Locate short to ground between system controller pin-15 and digital display Pin-9. Assemble unit to run and retest for operator concern.



0000331001

Figure 5. 9-Way Digital Display Connector Face View.



0000331021

Figure 6. 9-Way Digital Display Connector Face View.

Step	Action	Decision
4	<p><b>DIGITAL DISPLAY PWR / GND CHECK:</b></p> <p>a. Use a DMM to measure voltage between 9-way digital display connector pin -7 and a known good ground (Figure 5).</p> <p>b. Use a DMM to check continuity between 9-way digital display connector pin -8 and a known good ground (Figure 6).</p> <p>Does 9-way digital display connector pin-7 have B+ and is continuity present between pin-8 and a known good ground?</p>	<p>Yes. Connect 9-way digital display connector and go to Step 7.</p> <p>No. 9-way digital display connector pin -7 does not have B+: Leave 9-way digital display connector disconnected and go to Step 5.</p> <p>No. 9-way digital display connector pin -8 does not have continuity to GND: Leave 9-way digital display connector disconnected and go to Step 6.</p>

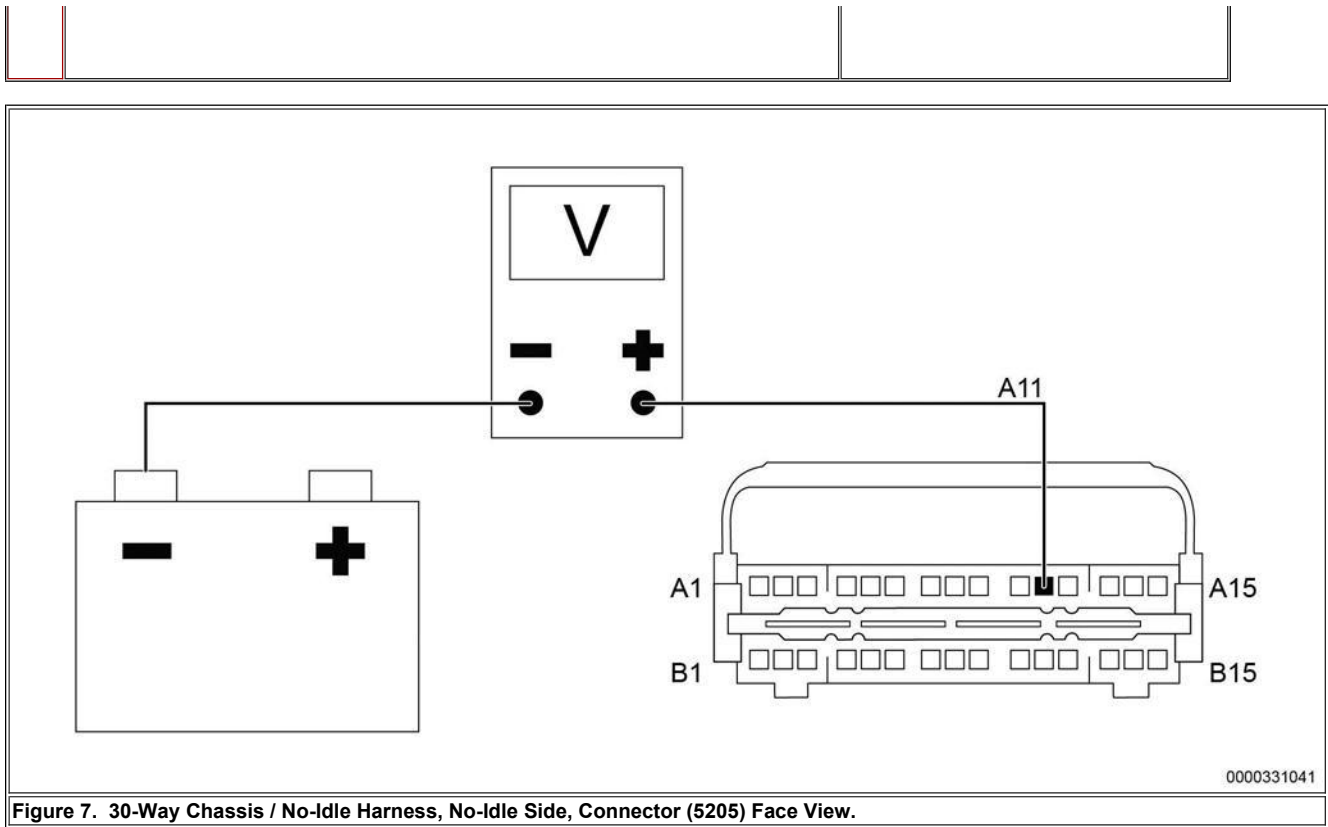
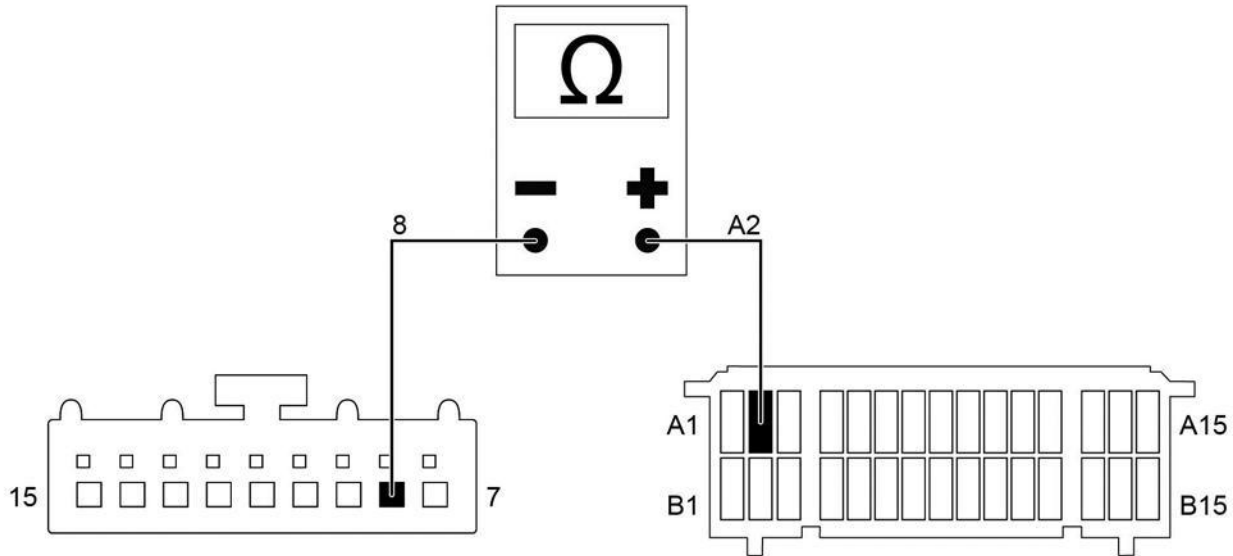


Figure 7. 30-Way Chassis / No-Idle Harness, No-Idle Side, Connector (5205) Face View.

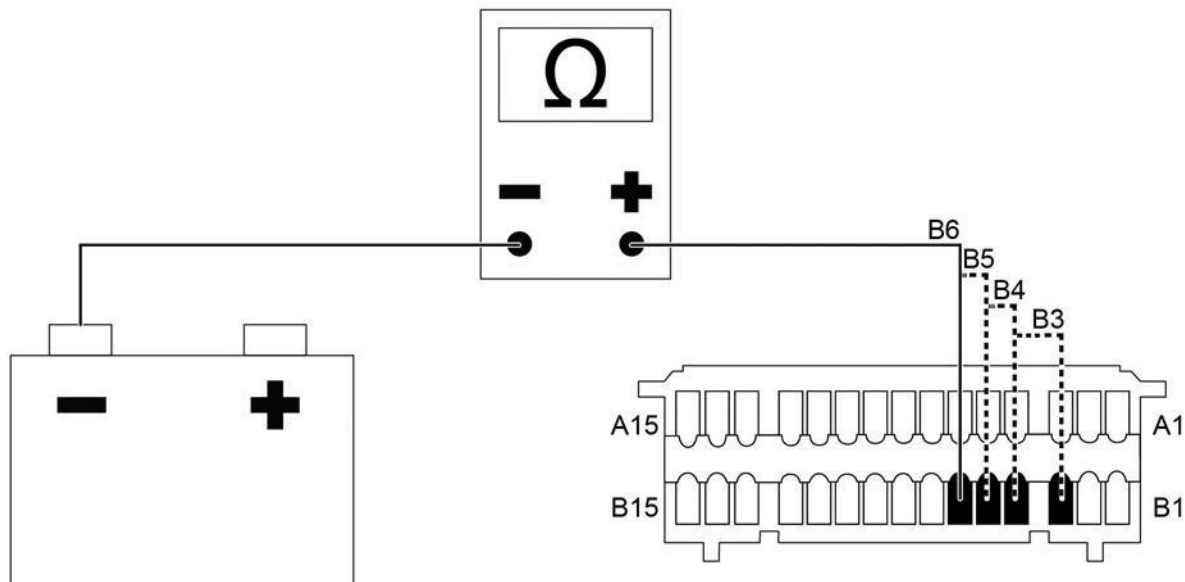
Step	Action	Decision
5	<b>DIGITAL DISPLAY PWR CIRCUIT CHECK:</b> a. Disconnect 30-way chassis / No-Idle harness connector (5205). b. Use a DMM to measure voltage between No-Idle side of 30-way chassis / No-Idle harness connector (5205) pin-A11 and a known good ground (Figure 7).  Does Pin-A11 have B+?	Yes. Repair open between Chassis side of connector 5205 Pin-11 to digital display Pin 9. Assemble unit to run and retest for operator concern.
		No. If blower fuse (F5) is good, replace No-Idle harness. Assemble unit to run and retest for operator concern.



0000331061

Figure 8. 30-Way Chassis / No-Idle Harness, Chassis Side, Connector (5205) Face View and 9-Way Digital Display Connector Face View.

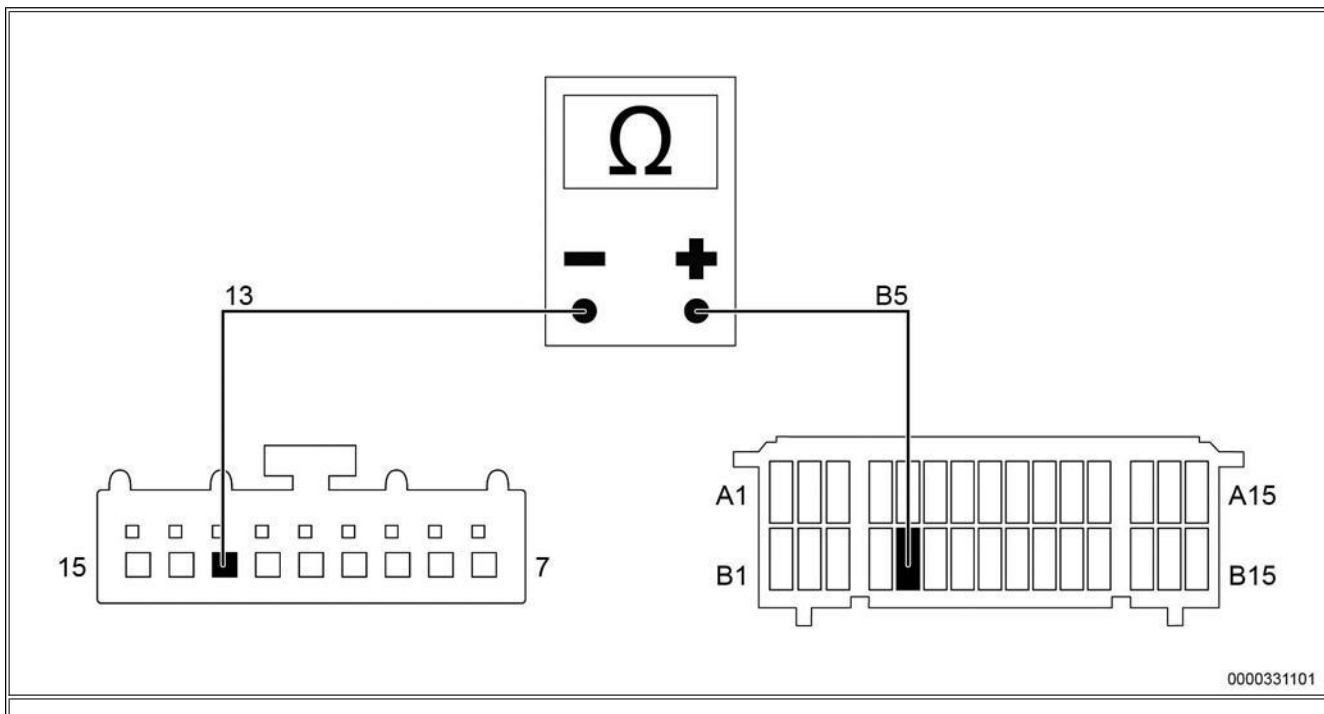
Step	Action	Decision
6	<p><b>DIGITAL DISPLAY GND CIRCUIT CHECK:</b></p> <p>A. Separate the 30-way chassis/No-Idle connector (5205)</p> <p>B. Use a DMM to measure continuity between digital display connector Pin-8 and the chassis side of connector 5205 Pin-A2.</p> <p>Is there continuity between Pin-8 and Pin-A2?</p>	<p><b>Yes.</b> Locate open between chassis side of connector 5205 Pin-B8 and battery ground. Repair or replace chassis harness as needed.</p>
	<p><b>No.</b> Replace No-Idle harness. Assemble unit to run and retest for operator concern.</p>	



0000331081

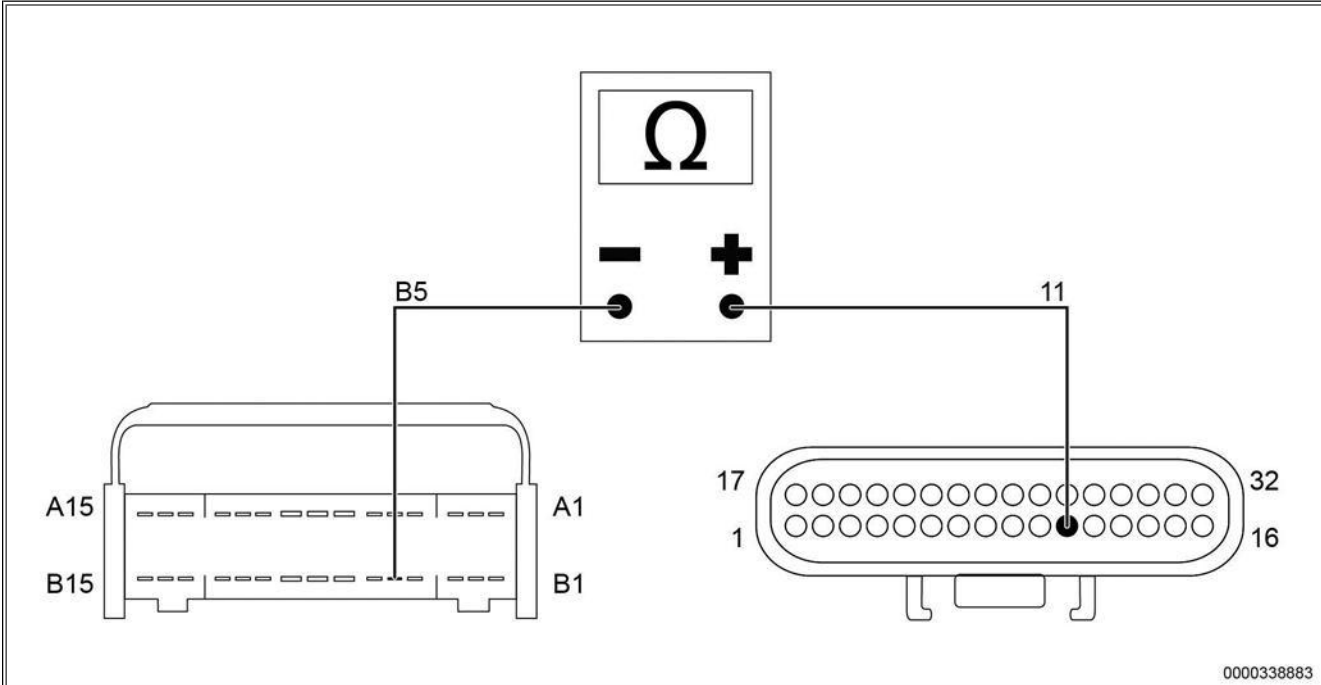
Figure 9. 30-Way Chassis / No-Idle Harness, Chassis Side, Connector (5205) Back View.

Step	Action	Decision										
7	<p><b>DIGITAL DISPLAY SIGNAL CHECK:</b></p> <p><b>A.</b> With the No-Idle system running use a DMM to back probe the chassis side of the 30-way chassis/No-Idle connector (5205); monitor voltage between appropriate 5205 connector pin and a known good ground as the appropriate switch is depressed. See the Digital Display Switch Table for the switch to depress and the 5205 pin to monitor. Each pin should have 0.5V when the switch is depressed and 4.5V- 5.5V when the switch is released.</p> <p><b>B.</b> Monitor the system response as each switch is depressed. Depressing the blower speed switches should cause an instant change in blower speed. Depending upon operation condition, depressing the temperature up and temperature down switches may take several minutes before the compressor and condenser fan respond.</p>	<p>Yes. System is operating correctly. Repeat Step 2 to verify symptom.</p>										
	<p>Are measured voltages and No-Idle system responses correct as each switch is depressed and released?</p> <p>Digital Display Switch Table</p> <table border="1"> <thead> <tr> <th>Switch</th> <th>Connector (5205) Pin</th> </tr> </thead> <tbody> <tr> <td>Blower Speed Up</td> <td>B5</td> </tr> <tr> <td>Blower Speed Down</td> <td>B6</td> </tr> <tr> <td>Temp Up</td> <td>B3</td> </tr> <tr> <td>Temp Down</td> <td>B4</td> </tr> </tbody> </table>	Switch	Connector (5205) Pin	Blower Speed Up	B5	Blower Speed Down	B6	Temp Up	B3	Temp Down	B4	<p>Yes. Blower switch up and down voltage is correct, but system response is not correct: Go to Step 11.</p>
	Switch	Connector (5205) Pin										
Blower Speed Up	B5											
Blower Speed Down	B6											
Temp Up	B3											
Temp Down	B4											
<p>No. 5V is not present at one or more pins: Depress the COOL-Switch to stop the No-Idle system and then go to step 8</p>												



0000331101

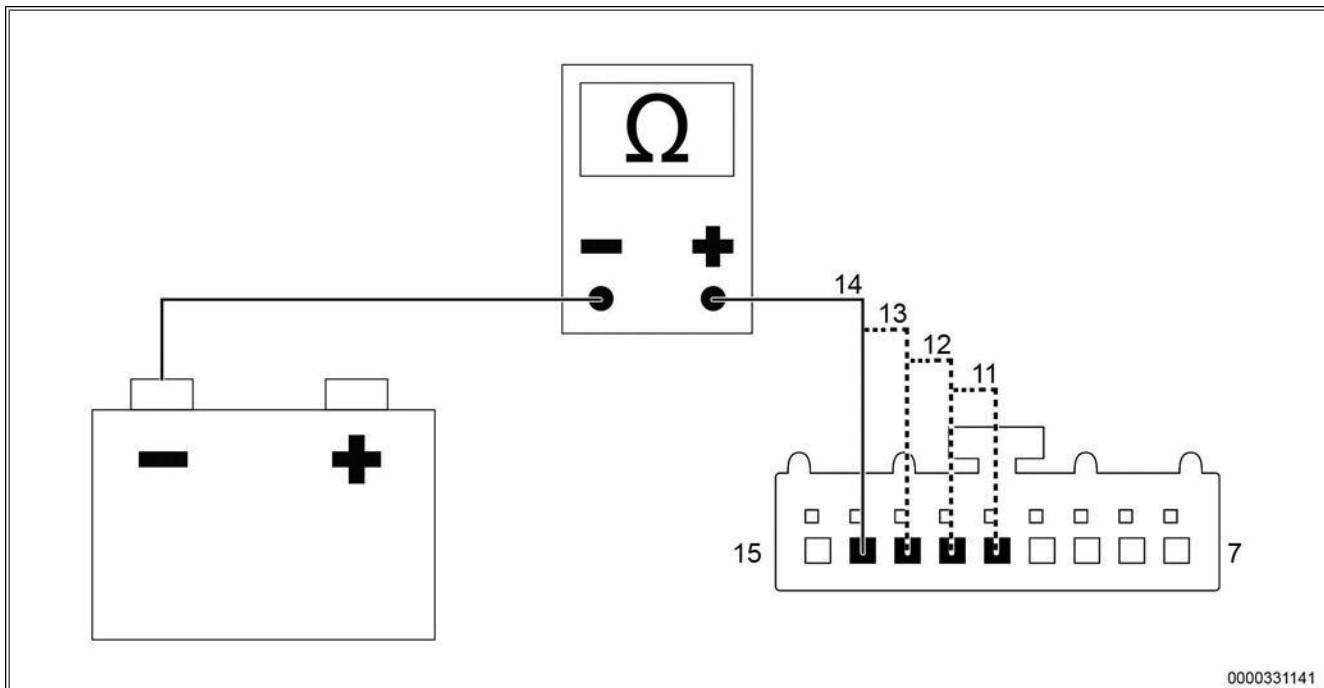
Figure 10. 30-Way Chassis / No-Idle Harness, No-Idle Side, Connector (5205) Face View and 32-Way System Controller Connector Face View.



0000338883

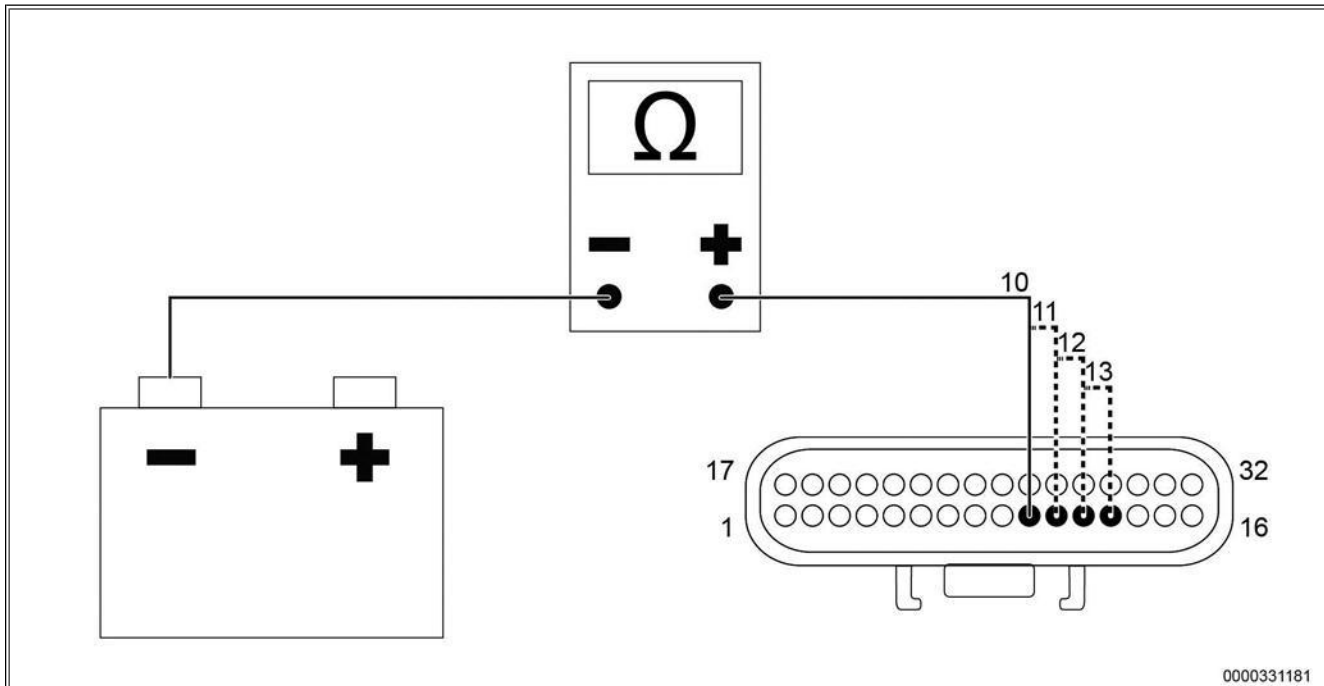
Figure 11. 9-Way Digital Display Connector Face View and 30-Way Chassis / No-Idle Harness, No-Idle Side, Connector (5205) Face View.

Step	Action	Decision																				
8	<p><b>DIGITAL DISPLAY SWITCH CIRCUIT CONTINUITY CHECK:</b></p> <ol style="list-style-type: none"> <li>Disconnect 9-way digital display connector.</li> <li>Disconnect 32-way system controller connector.</li> <li>Disconnect 30-way chassis / No-Idle harness connector (5205).</li> <li>Use a DMM to check for continuity between appropriate pins on 9-way digital display connector and No-Idle side of 30-way chassis / No-Idle harness connector (5205) (see Switch / Pin table) (Figure 11).</li> <li>Use a DMM to check for continuity between appropriate pins on No-Idle side of 30-way chassis / No-Idle harness connector (5205) and 32-way system controller connector (see Switch / Pin table) (Figure 10).</li> </ol> <p>Is continuity present in circuits?</p> <p>Switch / Pin Table</p> <table border="1"> <thead> <tr> <th>Switch</th> <th>9-Way Digital Display Connector Pin</th> <th>30-Way Chassis / No-Idle Harness Connector Pin</th> <th>32-Way System Controller Connector Pin</th> </tr> </thead> <tbody> <tr> <td>Blower Speed Up</td> <td>13</td> <td>B5</td> <td>11</td> </tr> <tr> <td>Blower Speed Down</td> <td>14</td> <td>B6</td> <td>10</td> </tr> <tr> <td>Temp Up</td> <td>11</td> <td>B3</td> <td>13</td> </tr> <tr> <td>Temp Down</td> <td>12</td> <td>B4</td> <td>12</td> </tr> </tbody> </table>	Switch	9-Way Digital Display Connector Pin	30-Way Chassis / No-Idle Harness Connector Pin	32-Way System Controller Connector Pin	Blower Speed Up	13	B5	11	Blower Speed Down	14	B6	10	Temp Up	11	B3	13	Temp Down	12	B4	12	<p>Yes. Go to Step 9.</p> <p>No. Replace the appropriate harness as needed.</p>
	Switch	9-Way Digital Display Connector Pin	30-Way Chassis / No-Idle Harness Connector Pin	32-Way System Controller Connector Pin																		
Blower Speed Up	13	B5	11																			
Blower Speed Down	14	B6	10																			
Temp Up	11	B3	13																			
Temp Down	12	B4	12																			



0000331141

Figure 12. 9-Way Digital Display Connector Face View.



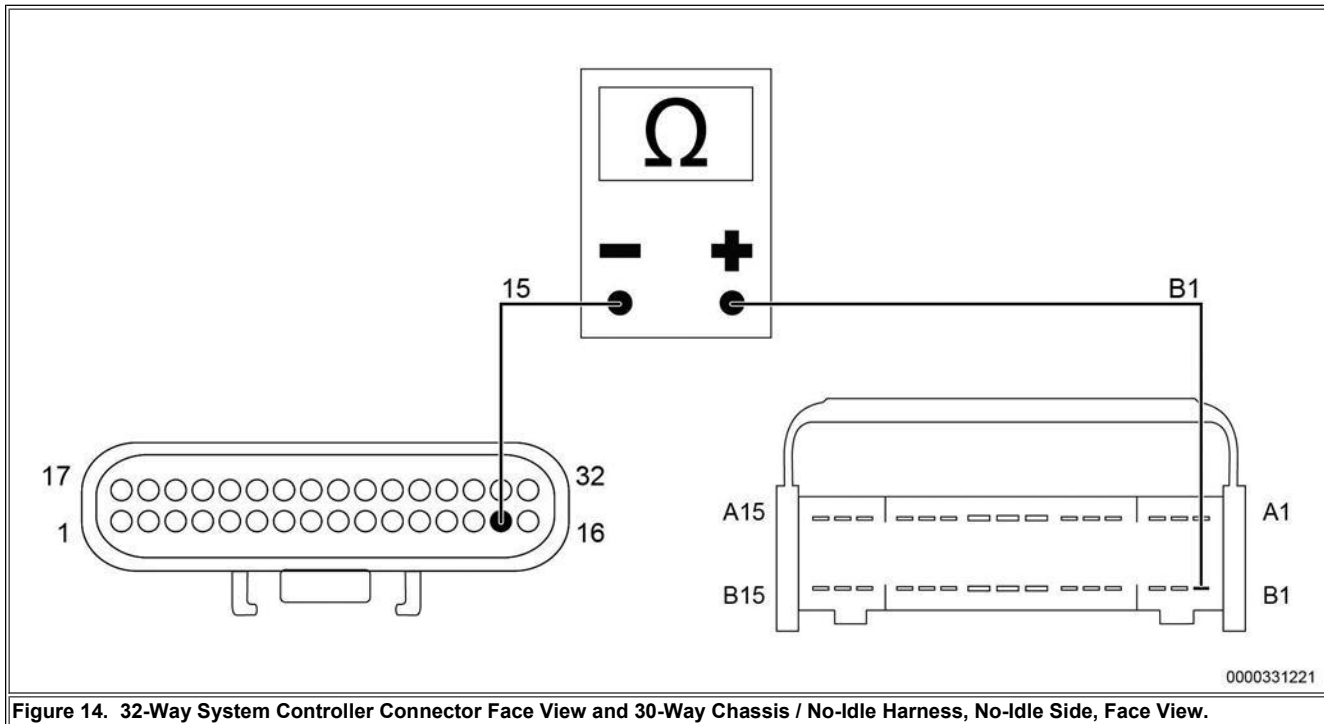
0000331181

Figure 13. 32-Way System Controller Connector Face View.

Step	Action	Decision
9	<p><b>DIGITAL DISPLAY SWITCH CIRCUIT SHORT TO GND CHECK:</b></p> <p>A. Stop the No-Idle Unit.                      B. Unplug the 9-way digital display panel connector.                      C. Unplug the 32-way system controller connector.                      D. Unplug the 30-way Chassis/No-Idle connector (5205).                      E. Use a DMM to check the continuity between the appropriate digital display pin and a known good ground (see Switch/Pin Table).(Figure 12).                      F. Use a DMM to check continuity between appropriate system controller pin and known good ground (see Switch/Pin Table). (Figure 13).</p> <p>Do any of the circuits have continuity to ground?</p>	<p><b>Yes.</b> Repair or replace appropriate harness as needed. Assemble unit to run and retest for operator concern.</p> <p><b>No.</b> System Controller has failed. Replace system controller. Assemble unit to run and retest for operator concern.</p>

Switch / Pin Table

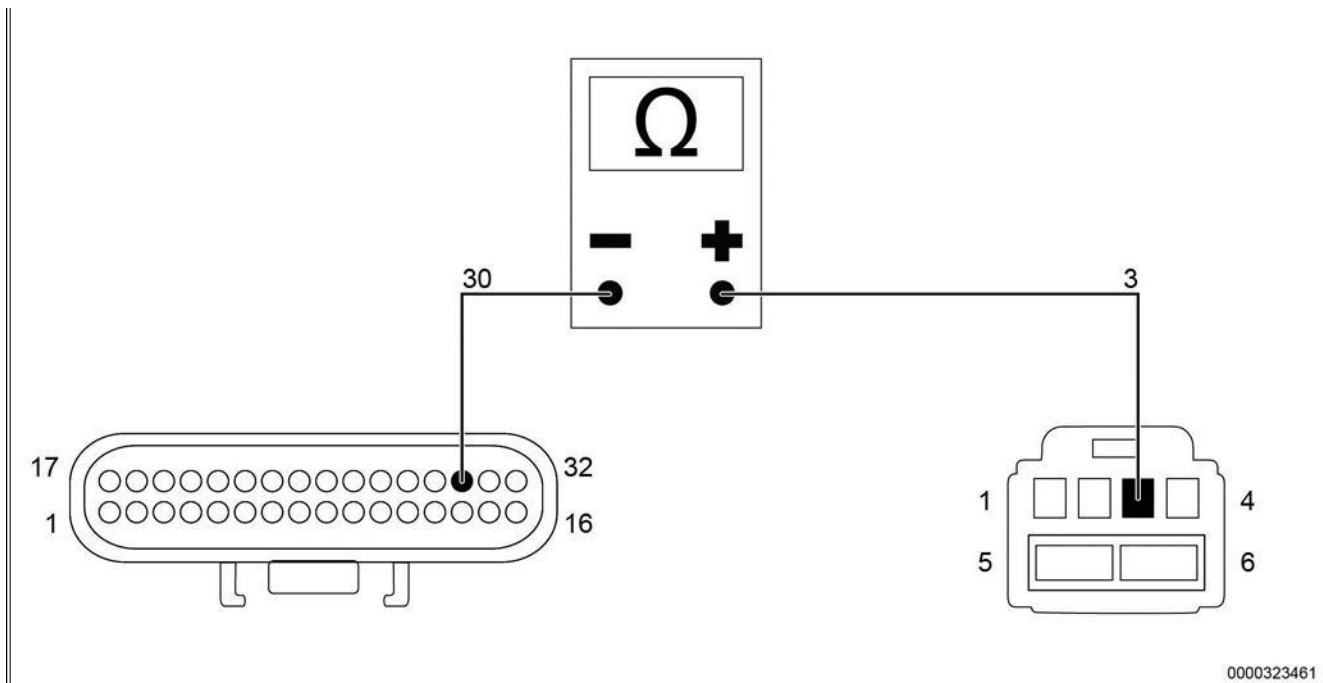
Switch	9-Way Digital Display Connector Pin	32-Way System Controller Connector Pin
Blower Speed Up	13	11
Blower Speed Down	14	10
Temp Up	11	13
Temp Down	12	12



0000331221

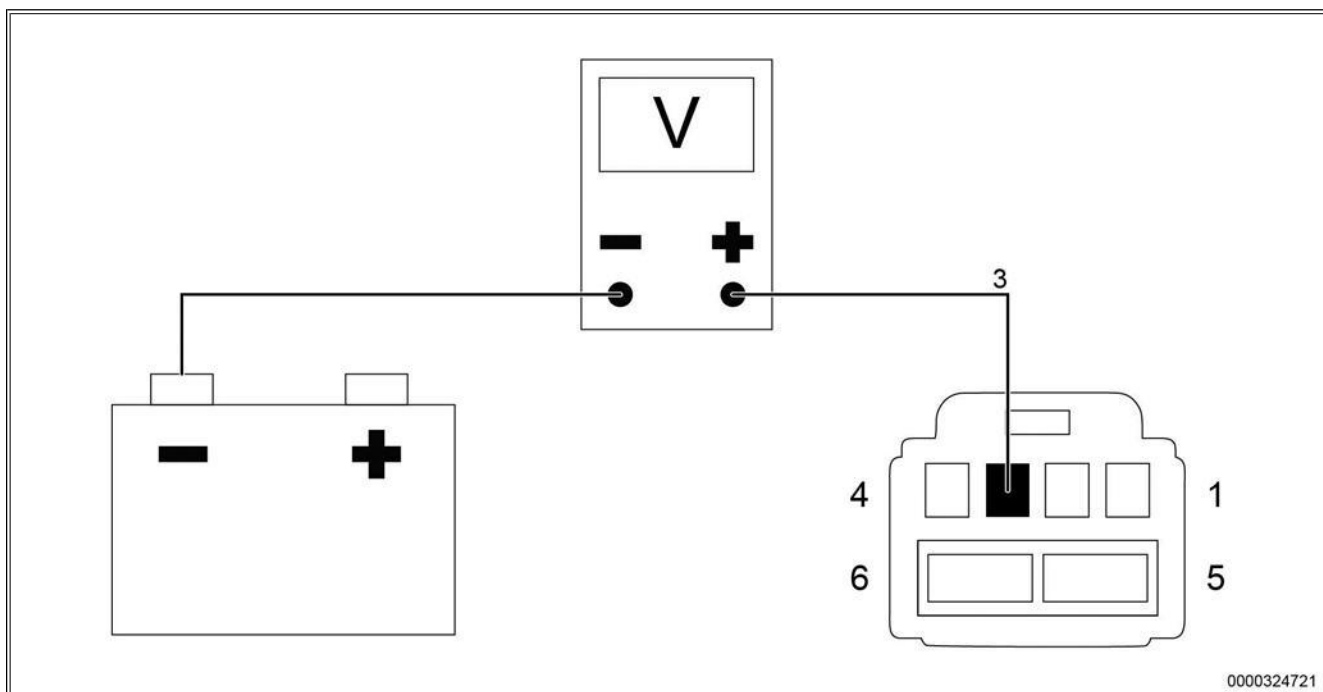
Figure 14. 32-Way System Controller Connector Face View and 30-Way Chassis / No-Idle Harness, No-Idle Side, Face View.

Step	Action	Decision
10	<p><b>DIGITAL DISPLAY DATA CHECK:</b></p> <p>a. Disconnect 30-way chassis / No-Idle harness connector (5205).</p> <p>b. Use a DMM to check for continuity between 32-way system controller connector pin-15 and No-Idle side of 30-way chassis / No-Idle harness connector (5205) pin-B1 (Figure 14).</p> <p>Is continuity present between 32-way system controller connector pin-15 and No-Idle side of 30-way chassis / No-Idle harness connector (5205) pin-B1?</p>	<p><b>Yes.</b> Check for open in chassis harness from connector 5205 pin-B1 to 9-way digital display connector pin-9. Assemble unit to run and retest for operator concern.</p>
		<p><b>No.</b> Replace No-Idle harness. Assemble unit to run and retest for operator concern.</p>



0000323461

Figure 15. 6-Way LPM Connector Face View and 32-Way System Controller Connector.



0000324721

Figure 16. 6-Way LPM Connector Back View.

Step	Action	Decision
11	<p><b>EVAPORATOR BLOWER SPEED SIGNAL CIRCUIT CHECK:</b></p> <p>A. Turn ignition Key-Off and depress the COOL-Switch to start the No-Idle system.</p> <p>B. Verify 6-Way LPM connector is plugged in.</p> <p>C. Use a DMM to back probe the 6-way LPM connector and measure voltage between Pin-3 and a known good ground. Depress the speed up and speed down switches while monitoring evaporator blower speed changes.</p> <p>Is the voltage on Pin-3 between 2.5V (high) and 4.5V (low)?</p>	<p>Yes. Replace the LPM. Assemble unit to run and retest for operator concern.</p> <p>No. Check blower speed circuit (32-Way system controller Pin-30 to 6-way LPM connector Pin-3) for open, short to ground, or short to battery voltage. If circuit is good, replace system controller</p>

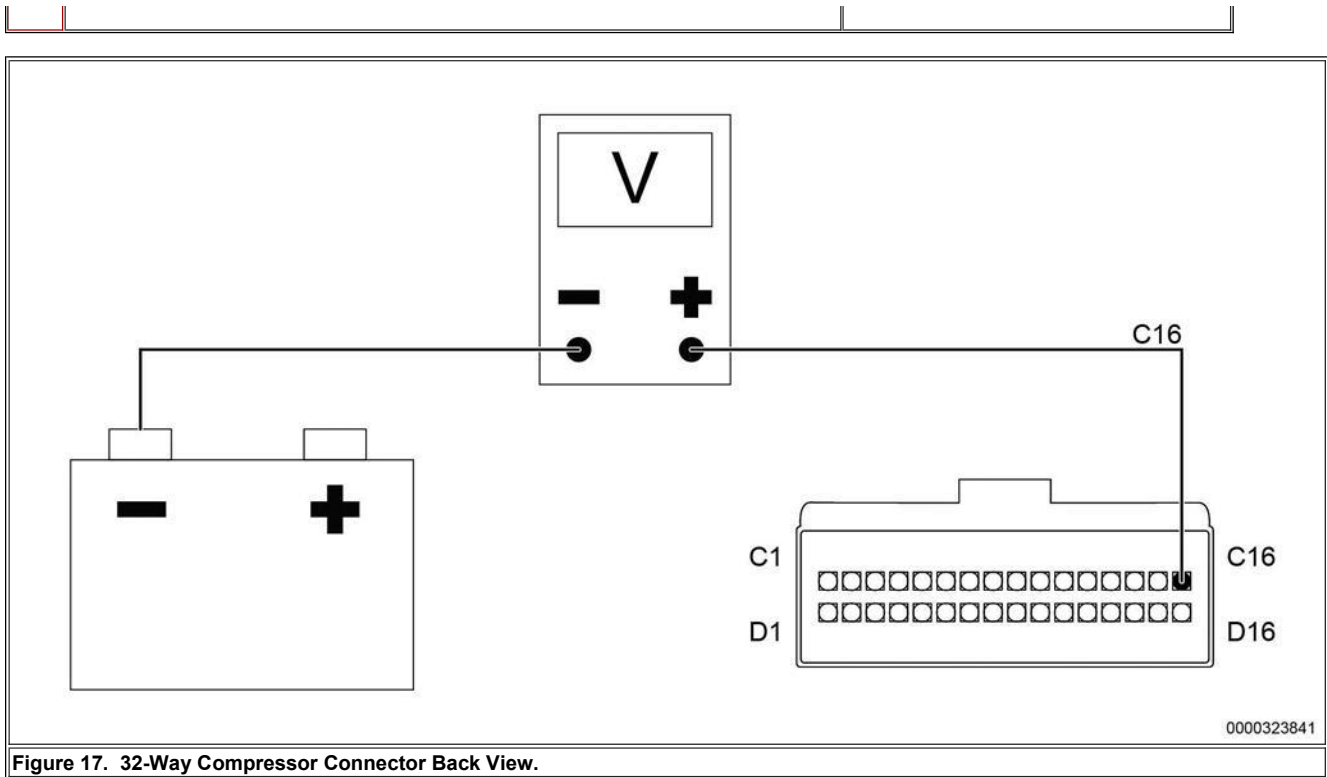


Figure 17. 32-Way Compressor Connector Back View.

**REPAIR STEP(S)**

Not Applicable

**REMOVAL PROCEDURE:**

Not Applicable

**INSTALLATION PROCEDURE:**

Not Applicable

**WARRANTY INFORMATION**

**NOTE:** Do not delete any headers, sections, or tables. If you do not need to use it, please type 'Not Applicable'. This shows the Dealer that the section was not forgotten about and if information needs to be added later, the header/section is still there for use.

**Warranty Claim Coding:**

<b>Group:</b>	19030 - Auxiliary No-Idle HVAC
<b>Noun:</b>	638 - Electric HVAC Module

- Link to the Coding Manual: [Click Here](#)

**Standard Repair Time(s) - ProStar:**

Step	Description	Chassis	Engine	SRT	Hours
1 - 2, 4 - 6	Digital Display Pwr/Gnd Check	ProStar	N/A	R20-1009A	0.2 Hr
1 - 2, 7 - 9, 11 - 12	Digital Display Signal Check	ProStar	N/A	R20-1009A-20	0.2 Hr
1 - 3, 10	Digital Display Data Check	ProStar	N/A	R20-1009A-21	0.2 Hr

**Standard Repair Time(s) - LoneStar:**

Step	Description	Chassis	Engine	SRT	Hours
1 - 2, 4 - 6	Digital Display Pwr/Gnd Check	ProStar	N/A	S20-1009A	0.2 Hr
1 - 2, 7 - 9, 11 - 12	Digital Display Signal Check	ProStar	N/A	S20-1009A-20	0.2 Hr
1 - 3, 10	Digital Display Data Check	ProStar	N/A	S20-1009A-21	0.2 Hr

- Link to the Standard Repair Time Manual: [Click Here](#)

**Claim SRT Example:**

Not Applicable

**Claim Comment Suggestion:**

Not Applicable


**Special Requirement(s):**

Not Applicable

**OTHER RESOURCES**

Circuit Diagrams By Unit Build Date		
<a href="#">MaxxPower No-Idle System Circuit Diagram (PDF)</a>	Units Prior to November 11, 2013	<a href="#">Click Here</a>
<a href="#">MaxxPower No-Idle System Circuit Diagram (PDF)</a>	Units from November 11, 2013 to June 23, 2014	<a href="#">Click Here</a>
<a href="#">MaxxPower No-Idle System Circuit Diagram (PDF)</a>	Units from June 24, 2014 through Current	<a href="#">Click Here</a>

[Master Service Information Site](#)

 Hide Details
Feedback Information

Viewed: 197  
Helpful: 0  
Not Helpful: 0

No Feedback Found