

## ELECTRICAL TROUBLESHOOTING GUIDE FOR EVANS TEMPCON DUAL ZONE HEATER – A/C SYSTEMS

PROBLEM	POSSIBLE CAUSES	REMEDY
<p>1. A/C clutch does not operate; blower operates as it should.</p>	<ul style="list-style-type: none"> <li>• Faulty rotary mode selector switch.</li> <li>• Clutch circuit wires have fallen off of clutch terminals, thermostat, or pressure switch.</li> <li>• Faulty A/C thermostat.</li> <li>• Faulty A/C pressure switch (make certain adequate refrigerant is contained in system)</li> <li>• Faulty A/C clutch.</li> <li>• Faulty chassis circuitry (GM and Ford)</li> </ul>	<ul style="list-style-type: none"> <li>• Check for switch continuity; replace if necessary.</li> <li>• Re-install clutch circuit wires as required.</li> <li>• Jump across thermostat terminals. If clutch engages, replace thermostat.</li> <li>• Ensure switch is tight on fitting.</li> <li>• Jump across switch terminals (A/C thermostat and “comp” terminals for trinary switch). If clutch engages, replace switch</li> <li>• With engine OFF, apply 12V+ supply directly to clutch terminals and listen for clutch engagement. Replace clutch if there is no engagement.</li> <li>• Referring to Chassis A/C schematic, if voltage is read at point “A” when A/C switch is depressed and clutch engages when 12V+ power is applied directly to clutch terminal, problem is originating in chassis wiring. Refer to Chassis Manufacturer’s service manual.</li> </ul>
<p>2. HVAC accessory fuse blows when rotary mode selector switch is in any position except OFF, VENT, and FLOOR.</p>	<ul style="list-style-type: none"> <li>• Short circuit in clutch circuit wiring</li> <li>• Short circuit in clutch.</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect all associated wiring (see system schematic) from control panel to clutch.</li> <li>• With engine OFF apply an 8 amp fused 12V+ power supply directly to clutch terminals. If fuse blows, replace clutch.</li> </ul>
<p>3. Blower does not operate at any speed.</p>	<ul style="list-style-type: none"> <li>• Mode Selector switch is in OFF position.</li> <li>• Main harness leads (power or ground) disconnected at vehicle power supply or ground source.</li> </ul>	<ul style="list-style-type: none"> <li>• Designed response.</li> <li>• Check connections from HVAC fuse panel to vehicle power and ground sources.</li> </ul>

NOTE: FOLLOW DIAGNOSIS PROCEDURE IN “REMEDY” COLUMN IN THE ORDER LISTED.

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<p>3. Blowers do not operate at any speed. (Continued)</p>	<ul style="list-style-type: none"> <li>• Connector disconnected from mode selector switch at main control panel or blower motor.</li> <li>• Open circuit in wire harness between power source and blower motor.</li> <li>• Faulty mode selector switch.</li>   <li>• Faulty Resistor</li>   <li>• Faulty blower motor.</li> </ul>	<ul style="list-style-type: none"> <li>• Install connector.</li> <li>• Inspect wiring from resistor to power supply. Repair or replace as required.</li> <li>• With vehicle ignition switch in the ON position, rotate mode selector switch to any position except OFF and rotate blower switch to HIGH speed setting. Using a voltmeter on the orange wire at the resistor. If no voltage is read, replace selector switch.</li> <li>• With vehicle ignition switch in the ON position, rotate the blower switch to HIGH speed. Using a voltmeter, check for voltage at the resistor pin which feeds the red motor wire. If no voltage is read, replace resistor.</li> <li>• With vehicle ignition switch in the ON position, rotate the blower switch to HIGH speed. Using a voltmeter, check for voltage at the red motor connector wire. If voltage is read, replace blower motor.</li> </ul>
<p>4. Blower does not operate at all speeds.</p>	<ul style="list-style-type: none"> <li>• Improperly installed wire connectors.</li>   <li>• Faulty blower switch.</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect connectors at each end of the wire harness. Ensure that all terminals are fully seated and locked into the connector. Ensure mating connectors are locked together.</li>   <li>• With the vehicle ignition switch in the ON position, rotate blower switch to a speed that isn't working. Refer to the electrical schematic to locate the corresponding terminal on the back of the blower switch for the fan speed selected. Measure the voltage at this terminal. If no voltage is read, replace blower switch.</li> </ul>

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<p>4. Blower does not operate at all speeds. (Continued)</p>	<ul style="list-style-type: none"> <li>• Open circuit in wire harness.</li>   <li>• Open circuit in resistor.</li> </ul>	<ul style="list-style-type: none"> <li>• Remove the 4 wire connector from the resistor. Re-install wire harness connections at the control panel. With the vehicle ignition switch in ON position, rotate the blower switch to a speed that isn't working. Refer to the electrical schematic to locate the corresponding terminal on the resistor connector for the fan speed selected. Measure the voltage at this terminal. If no voltage is read, inspect circuit for damage. Repair or replace as required.</li>   <li>• Re-install the 4 wire connector onto the resistor. With the vehicle switch in ON position, rotate the blower switch to a speed that isn't working. Measure the voltage at the pin on the connector of the wire harness that plugs into the motor connector. If no voltage is read, replace resistor.</li> </ul>
<p>5. HVAC circuit fuse blows when blower is turned on to any speed.</p>	<ul style="list-style-type: none"> <li>• Damaged wiring between resistor and motor, or between resistor and control panel. Possible damaged red power lead between control panel and vehicle power supply.</li>   <li>• Short circuit at resistor</li>   <li>• Blower Wheel rubbing on the blower housing.</li>   <li>• Faulty blower motor.</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect all associated wiring for insulation chafing or other damage that would result in shorting the circuit. Repair as required.</li>   <li>• Remove resistor from air box and inspect the resistor windings for evidence of electrical arcing. Re-install resistor, ensuring that none of the windings or metal contacts are touching any portion of the air box itself.</li>   <li>• Inspect blower wheel to housing clearance.</li>   <li>• With engine OFF, apply 25 amp fused 12V+ directly to motor terminals. If fuse blows, replace the motor.</li> </ul>

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6. HVAC circuit fuse blows when the blower is switched to a particular speed.	<ul style="list-style-type: none"><li>• Damaged wiring between control panel and resistor.</li></ul>	<ul style="list-style-type: none"><li>• Make note at what speed the fuse blows. Refer to the electrical schematic to determine the circuit color for the defective fan speed. Inspect this wire for any chafing or other damage that would result in shorting the circuit. Repair as required.</li></ul>

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