



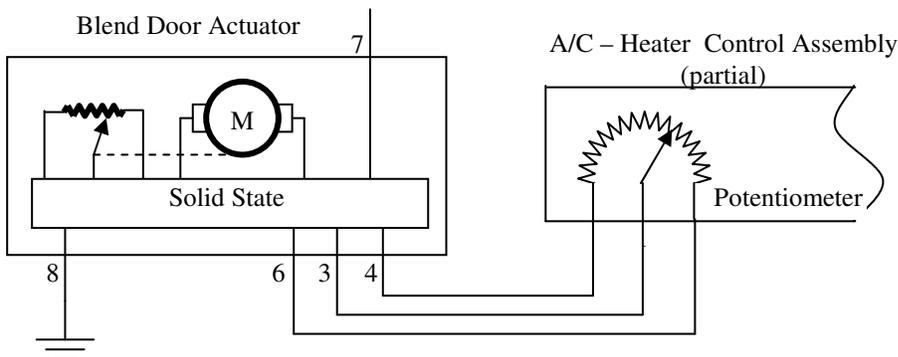
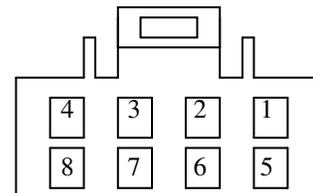
Tech Tip

Diagnosing Ford's Electronic Blend Door Actuator For Manual Air Conditioning/Heating

Many of Ford's manual air conditioning systems use an electronic blend door actuator (motor) to control the temperature of the air entering the passenger compartment. The temperature knob on the A/C-Heater control panel is a variable resistor (potentiometer) which varies a voltage signal to the motor. This signal determines blend door movement. Complaints of temperature always hot, cold or not changing as the temperature knob is rotated will be caused by one of four problems: 1) bad actuator; 2) bad potentiometer; 3) open or shorted wire(s); 4) broken door.

A digital volt/ohm meter (DVOM) is required for testing. The motor has an eight pin connector with five wires. With the connector unplugged and the ignition switch in the run position, check:

1. Battery voltage on pin #7
2. Proper ground on pin #8
3. Continuity between pin #4 and pin #6
4. Varying continuity between pin #3 and #4 or between #3 and #6 as the potentiometer is rotated from warm to cool to warm.



Note: Use a vehicle specific wiring diagram for correct wire colors and terminals

Turn ignition switch off, plug in connector, and turn ignition switch back to run position. While back probing actuator connector pins, check:

5. Battery voltage between pin #7 and #8
6. Near battery voltage on pin #4
7. Varying voltage on pin #3 as potentiometer is rotated between warm and cool.

Diagnosis:

- If all voltages are not present: check wires and circuits for opens or shorts.
- If continuity does not exist on one or more wires to potentiometer: check wires and replace potentiometer.
- If all circuits check good: remove actuator and check blend door for binding or if door has broken loose from the shaft.
- If door movement is good: replace actuator.