

# A/C Compressor Controls (cont'd)

## – How the Circuit Works

### Manual A/C

The A/C ON input at cavity (A3) of the fan control unit is grounded through the A/C triple pressure switch, and the heater control panel at G303. The fan control unit supplies two input signals to the powertrain or engine control module (PCM with A/T, ECM with M/T) indicating that the A/C system has been turned on, and that the engine idle speed must be increased.

The fan control unit and PCM (A/T) or ECM (M/T) are grounded at their (PDSW) terminals, through the middle pressure switch in the A/C triple pressure switch at G153.

When the ignition switch is in ON (II), the PCM (A/T) or ECM (M/T) provides a ground for the A/C compressor clutch relay energizing it. The A/C compressor clutch is energized by fuse 11 (Fuse 3 '93), and the closed contacts of the A/C compressor clutch relay.

The fan control unit uses the radiator fan control sensor to measure the engine's coolant temperature:

- When the radiator's coolant temperature is above 84°C (183°F), both the condenser and radiator fans will run at low speed.
- When the radiator's coolant temperature is above 90°C (194°F), the fan control unit will cause both fans to run at full speed.
- When the radiator's temperature exceeds 109°C (268°F), the fan control unit through the powertrain or engine control module (PCM) A/T or (ECM) M/T, deenergizes the A/C compressor clutch relay and the A/C compressor clutch.

When refrigerant pressure becomes too high (due to blockage), or too low (due to leakage), the A/C triple pressure switch will open. This prevents the A/C compressor clutch relay and A/C compressor clutch from energizing.

The radiator fan control sensor will disengage the air conditioning system if radiator coolant temperature exceeds 110°C (230°F).

Refer to the Service Manual Section 21 (Heater and Air Conditioning) for testing and troubleshooting procedures.

### Climate Control

With the ignition switch in ON (II), the climate control unit receives battery voltage through the BLK/YEL wire at cavity 29. The climate control unit is grounded by a BLK wire at G303.

When you push the A/C ON/OFF button with the ignition switch in ON (II), the climate control unit will ground the A/C ON input at cavity 4 of the fan control unit through the A/C triple pressure switch.

The fan control unit supplies an input to the powertrain or engine control module (PCM with A/T, ECM with M/T); the ACS signal through the BLU/BLK wire. The signal indicates that the A/C compressor has been turned ON and the idle speed must be increased to compensate for the additional load on the engine.

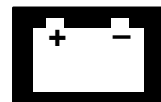
The fan control unit and PCM (A/T) or ECM (M/T) are grounded at the (PDSW) terminals, through the middle pressure switch in the A/C triple pressure switch. The fan control unit is also grounded at the (A4) terminal through a BLK wire at G303.

The PCM (A/T) or ECM (M/T) grounds the A/C compressor clutch relay when the ignition switch is in ON (II). The clutch relay then energizes the compressor clutch, which engages and begins turning the compressor.

The climate control unit monitors the operation of the air conditioning system in the car through the in-car temperature sensor, outside the car with the outside air temperature sensor, and in the evaporator outlet with the evaporator temperature sensor.

The climate control unit monitors the amount of direct sunlight in the car with the sunlight sensor, and monitors the coolant temperature with the coolant temperature sensor in the heater/evaporator unit.

When refrigerant pressure becomes too high (due to blockage), or too low (due to leakage), the A/C triple pressure switch will open, disengaging the A/C compressor clutch.



The fan control unit uses the radiator fan control sensor to measure engine coolant temperature.

- When coolant temperature exceeds 84°C (183°F); both the condenser and the radiator fan motors will run at low speed.
- When coolant temperature exceeds 90°C (194°F), the condenser and radiator fan motors will run at high speed.
- When coolant temperature exceeds 110°C (230°F), the fan control unit, through the PCM (A/T) or ECM (M/T) deenergizes the clutch relay and the compressor clutch.

Refer to Service Manual Section 22 (Automatic Climate Control) for testing and troubleshooting procedures.