

# COMPRESSOR CONTROL SYSTEM

HVAC System (Heater, Ventilator and A/C)

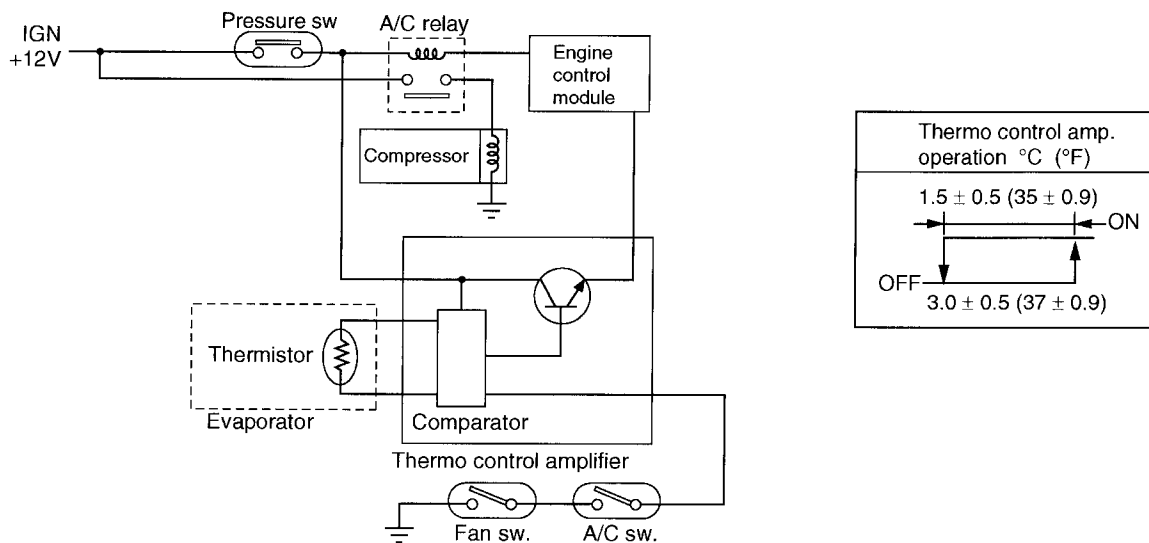
## 16. Compressor Control System

### A: GENERAL

- 1) When the A/C switch and fan switch are turned ON, the A/C relay is activated. The compressor starts operating, and then the main and sub fans also operate.
- 2) The thermo control amplifier, when activated, disengages the compressor clutch and the main and sub fans.
- 3) When the pressure switch turns on, the compressor clutch is disengaged and the main and sub fans also stop.

### B: THERMO CONTROL AMPLIFIER

The thermo control amplifier disconnects the magnet clutch circuit to prevent the evaporator from becoming frosted when the temperature of the evaporator fin drops close to 3°C (37°F). When the limit temperature is reached, the thermistor (located on the evaporator fin) interrupts the base current of the amplifier. This deactivates the A/C relay, which in turn disconnects the magnet clutch circuit.



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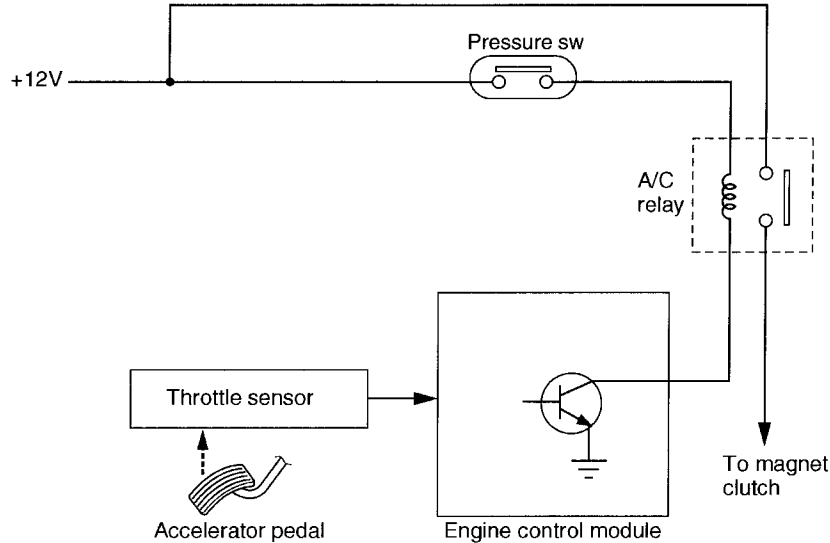
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## C: ACCELERATION CUT SYSTEM

The A/C switch turns the air conditioning system ON and OFF. The on-off signals from the switch are transmitted to the engine control module (ECM).

When the ECM receives a full-throttle signal from the throttle sensor during compressor operation, it deactivates the A/C relay to interrupt electric current to the compressor magnet clutch. This prevents the degradation of acceleration performance. The A/C relay is in the main fuse box located on the left side of the engine compartment.

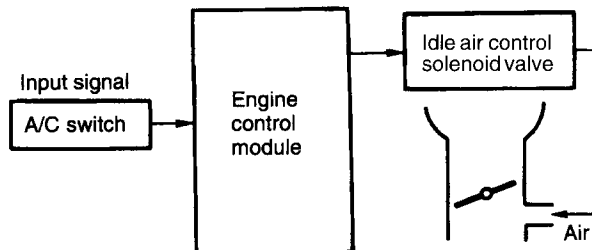


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## D: IDLE SPEED CONTROL

The idle air control solenoid valve increases the engine idling speed when the compressor is in operation.

The engine control module activates the idle air control solenoid valve when it receives an A/C switch ON signal so that necessary by-pass air is introduced into the throttle body to ensure proper idling speed for an increased engine load.



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## E: FAN CONTROL

The main fan and sub fan are switched ON and OFF according to the operating modes as shown in the following table.

| Vehicle speed                              | A/C compressor | Engine coolant temperature |     |  |     |                              |     |
|--|----------------|----------------------------|-----|--|-----|------------------------------|-----|
|  |                | Lower than 95°C<br>(203°F) |     | Between 95 and 99°C<br>(203 and 210°F) |     | Higher than 100°C<br>(212°F) |     |
|  |                | Operation of radiator fan  |     | Operation of radiator fan              |     | Operation of radiator fan    |     |
|  |                | Main                       | Sub | Main                                   | Sub | Main                         | Sub |
| Lower than 19 km/h<br>(12 MPH)             | OFF            | OFF                        | OFF | ON                                     | OFF | ON                           | ON  |
|  | ON             | ON                         | ON  | ON                                     | ON  | ON                           | ON  |
| Between 20 and 69 km/h<br>(12 and 43 MPH)  | OFF            | OFF                        | OFF | ON                                     | OFF | ON                           | ON  |
|  | ON             | ON                         | ON  | ON                                     | ON  | ON                           | ON  |
| Between 70 and 105 km/h<br>(43 and 65 MPH) | OFF            | OFF                        | OFF | OFF                                    | OFF | ON                           | ON  |
|  | ON             | ON                         | OFF | ON                                     | ON  | ON                           | ON  |
| Higher than 106 km/h<br>(66 MPH)           | OFF            | OFF                        | OFF | OFF                                    | OFF | ON                           | ON  |
|  | ON             | OFF                        | OFF | ON                                     | OFF | ON                           | ON  |