

AIR CONDITIONER: COMPRESSOR CONTROL

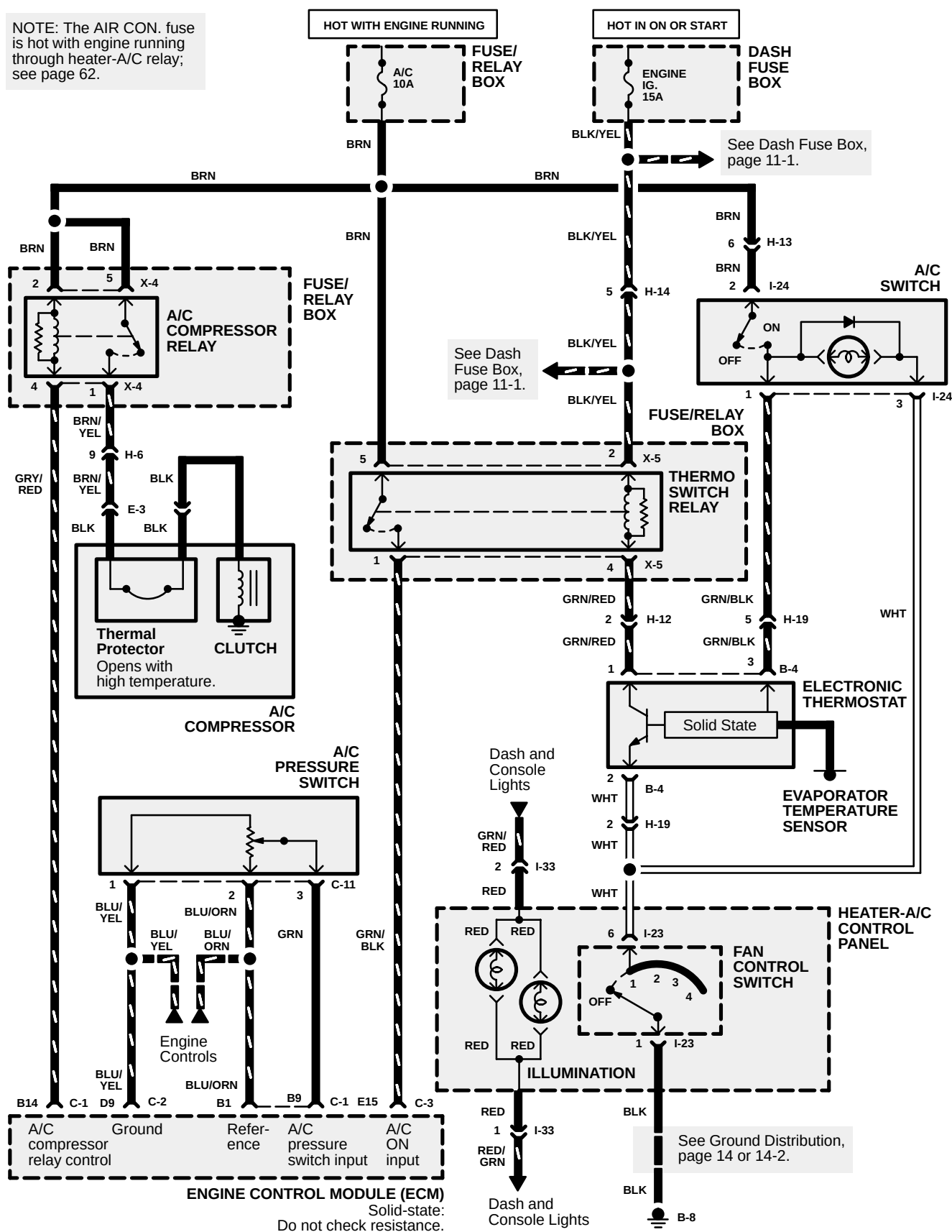
Component Index

- A/C Compressor
- A/C Compressor Relay
- A/C Dual Pressure Switch
- A/C Pressure Switch
- A/C Triple Pressure Switch
- Condenser Fan
- Condenser Fan Hi Relay
- Condenser Fan Lo Relay
- Condenser Fan Relay
- Dash Fuse Box
- Electronic Thermostat
- Engine or Powertrain Control Module (ECM or PCM)
- Fuse/Relay Box
- Option Box 1
- Thermo Switch Relay

AIR CONDITIONER: COMPRESSOR CONTROL: 2.2L

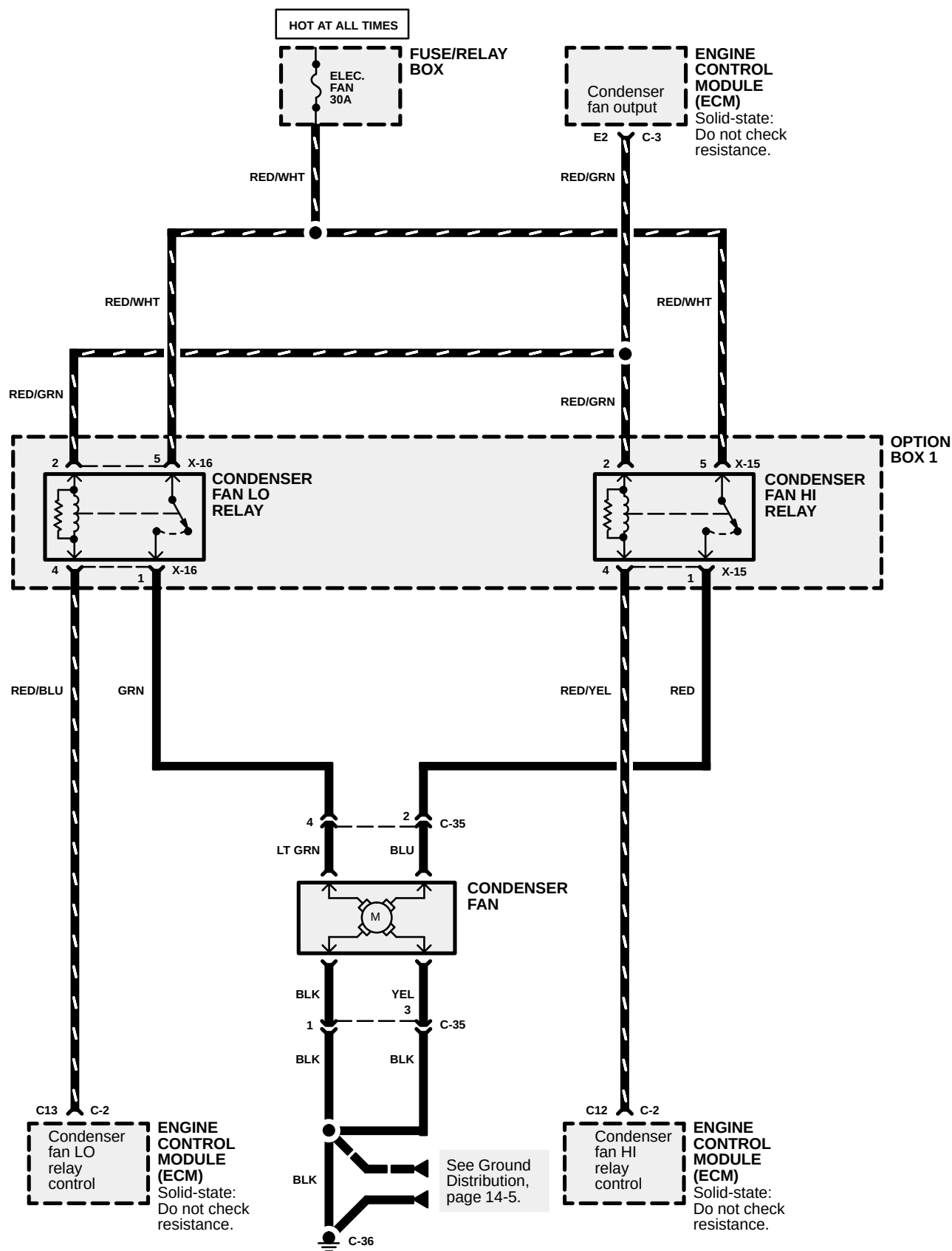
Circuit Schematic

NOTE: The AIR CON. fuse is hot with engine running through heater-A/C relay; see page 62.



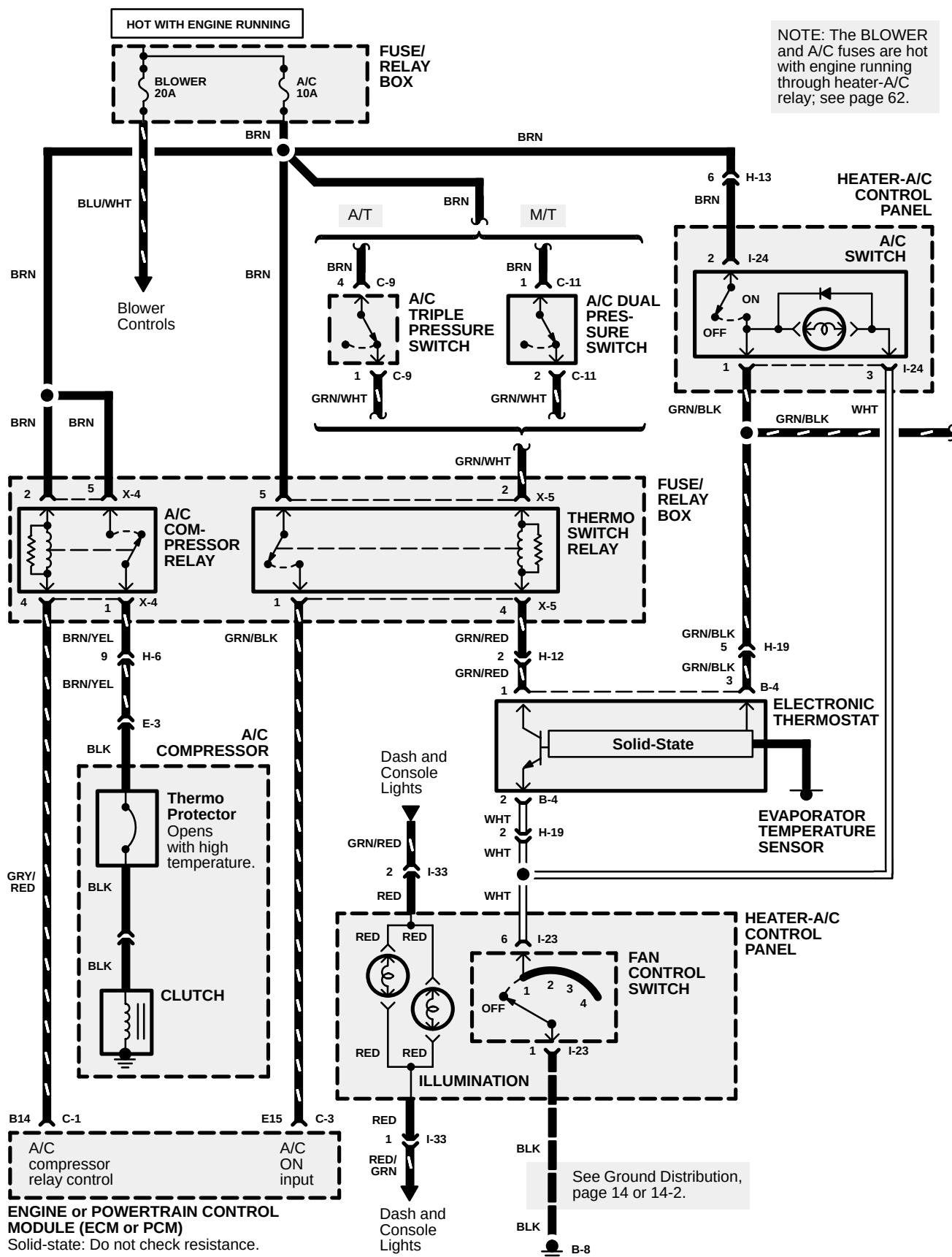
AIR CONDITIONER: COMPRESSOR CONTROL: 2.2L

Circuit Schematic



AIR CONDITIONER: COMPRESSOR CONTROL: 3.2L

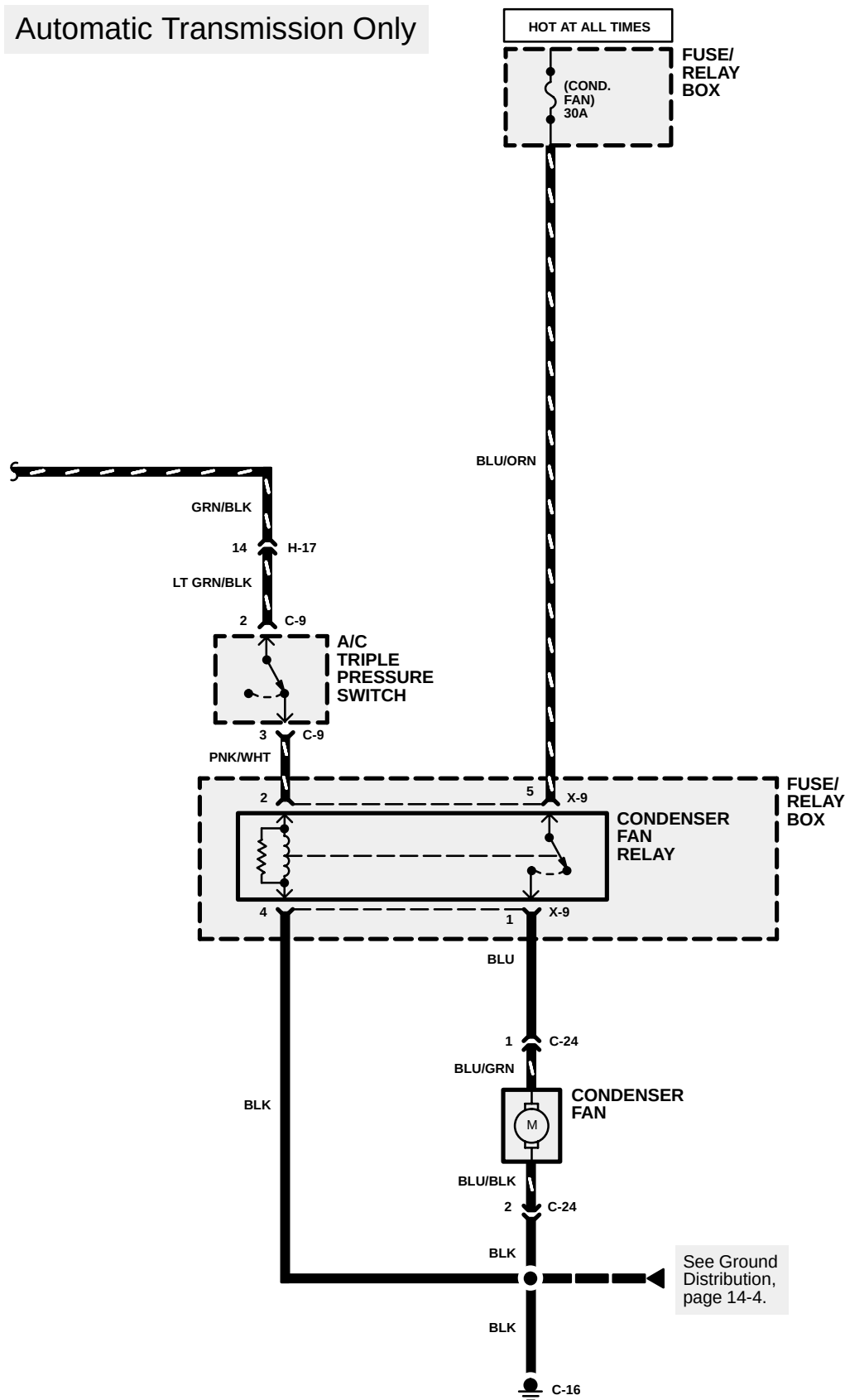
Circuit Schematic



AIR CONDITIONER: COMPRESSOR CONTROL: 3.2L

Circuit Schematic

Automatic Transmission Only



AIR CONDITIONER: COMPRESSOR CONTROL

Component Location Index

(Refer to Section 201 for photographs.)

Component	Photo No.
A/C Compressor	Lower left front corner of engine 8
A/C Compressor Relay	Right side of engine compartment, in fuse/relay box 21
A/C Dual Pressure Switch	Behind left side of radiator grille 4
A/C Pressure Switch	Behind left side of radiator grille 4
A/C Triple Pressure Switch	Behind left side of radiator grille 4
Condenser Fan	Behind center of radiator grille 28
Condenser Fan Hi Relay	Right side of engine compartment, in option box 1 128
Condenser Fan Lo Relay	Right side of engine compartment, in option box 1 128
Condenser Fan Relay	Right side of engine compartment, in fuse/relay box 22
Dash Fuse Box	Left side of I/P, behind panel 58
ECM/PCM Main Relay	Right side of engine compartment, in fuse/relay box 21
Electronic Thermostat	Right side of I/P, behind glove box 76
Engine or Powertrain Control	
Module (ECM or PCM)	Below center of I/P 73
Fuse/Relay Box	Right side of engine compartment, on inner fender panel 20
Option Box 1	Right side of engine compartment, on inner fender panel 127
Thermo Switch Relay	Right side of engine compartment, in fuse/relay box 22
Connector	
C-24 (2-GRY)	Left front of engine compartment, behind grille 28
C-35 (4-GRY)	Left front of engine compartment, on fan shroud 5
E-3 (1-BLK)	Left side of engine compartment 8
H-6 (16-BLU)	Left side of engine compartment, below brake fluid reservoir 11
H-12 (20-BLU)	Below right side of I/P, behind kick panel 75
H-13 (19-WHT)	Below right side of I/P, behind kick panel 75
H-14 (19-BLK)	Below right side of I/P, behind kick panel 75
H-17 (20-BLK) (A/T)	Behind left kick panel 62
H-19 (22-WHT)	Below right side of I/P, behind kick panel 75
I-33 (2-GRN)	Behind center of I/P, behind heater and A/C control assembly 72
Ground	
B-8	Below center console 81
C-16	Left rear corner of engine compartment, on inner fender panel 14
C-36	Right rear corner of engine compartment 16

AIR CONDITIONER: COMPRESSOR CONTROL

Circuit Operation

A/C Compressor Clutch (2.2L)

With the engine starter switch in ON, the A/C compressor clutch relay is energized by the engine control module (ECM). The ECM determines when to activate the compressor clutch based on the information received from the A/C pressure switch.

Electronic Thermostat

The electronic thermostat senses the temperature of cool air from the evaporator by means of the evaporator temperature sensor. This information determines whether the thermostat will provide ground to the thermo switch relay. When the temperature becomes too low, ground is not provided.

OFF: Below $3.5 \pm 0.5^{\circ}\text{C}$ ($38.3 \pm 0.9^{\circ}\text{F}$)
ON: Above $5.0 \pm 0.5^{\circ}\text{C}$ ($41.0 \pm 0.9^{\circ}\text{F}$)

A/C Compressor Clutch (3.2L)

With the engine running, battery voltage is applied to the A/C switch, the A/C triple pressure switch (A/T) or A/C dual pressure switch (M/T), and the coil of the A/C compressor relay. When you press the A/C switch, battery voltage is applied to the electronic thermostat. The solid-state switch in the electronic thermostat closes, providing a path to ground for the thermo switch relay, with the fan control switch in any position except OFF. Voltage is also applied through the A/C triple pressure switch (A/T) or the A/C dual pressure switch (M/T) to the coil of the thermo switch relay. This closes the thermo switch relay contacts, applying battery voltage to the A/C ON input of the engine or powertrain control module (ECM or PCM). The ECM or PCM then provides ground for the A/C compressor relay. The A/C compressor relay contacts close, applying battery voltage to the compressor clutch through the closed contacts of the A/C thermo-switch. If either the A/C thermo-switch or A/C triple pressure switch (A/T)/dual pressure switch (M/T) opens, the compressor clutch disengages.

A/C Dual Pressure Switch (M/T)

To prevent compressor damage, the dual pressure switch will open if system pressure is too low or too high: below $176.5 \pm 24.5 \text{ kPa}$ ($25.6 \pm 3.6 \text{ psi}$) or above $2942 \pm 96.1 \text{ kPa}$ ($426.6 \pm 28.4 \text{ psi}$).

A/C Triple Pressure Switch (A/T)

Low and high switch operation is the same as the dual pressure switch. The medium pressure switch will close when system pressure exceeds $1471 \pm 98.1 \text{ kPa}$ ($213.3 \pm 14.2 \text{ psi}$), turning on the condenser fan.

Condenser Fan (3.2L)

With the engine running, battery voltage is applied to the A/C switch. When the A/C switch is pressed, battery voltage is then applied through the A/C triple pressure switch (A/T only) to the coil side of the condenser fan relay, which is continually grounded. Once the relay is energized, the contacts close, allowing battery voltage from the COND. FAN fuse to be applied to the condenser fan. The motor, being grounded continually, is energized, and the fan is activated.

Condenser Fan (2.2L)

The engine control module (ECM) receives refrigerant information from the A/C pressure switch, and then controls the condenser fan LO and HI relays in order to energize the condenser fan and control its speed.