A/C COMPRESSOR CONTROL [FULL-AUTO AIR CONDITIONER]

id0740a1108000

Purpose

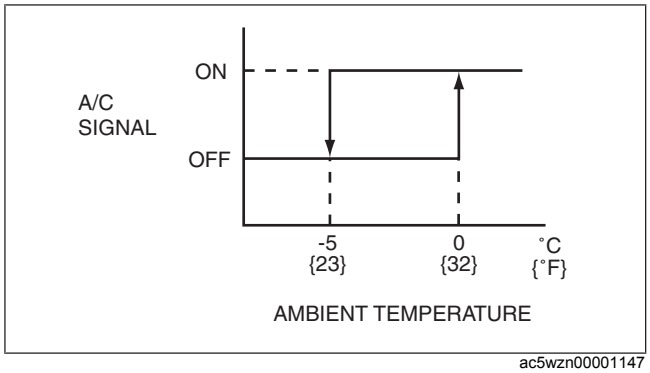
- The A/C compressor control switches the A/C compressor on/off according to the vehicle environment.

Function

- The A/C compressor control turns the A/C compressor on/off based on the climate control unit operation and signals from each sensor.
- The A/C compressor control has automatic and manual controls.
- The A/C compressor automatic control performs the following correction:
  — Defroster correction

A/C compressor automatic control

- The climate control unit determines the A/C ON/OFF mode based on the ambient temperature.
- The climate control unit determines the A/C signal on/off according to the air conditioner operation such as A/C ON mode (A/C switch ON) or AUTO mode (AUTO switch ON).



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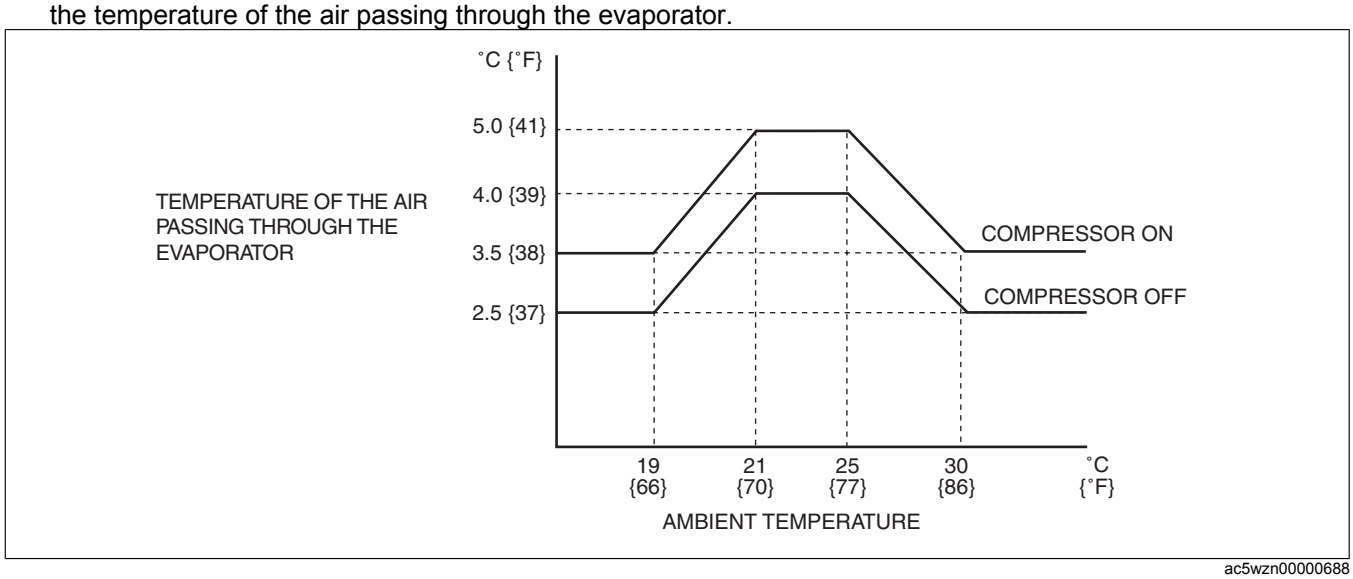
- In A/C ON mode, the A/C signal (magnetic clutch) on/off is determined based on the ambient temperature and the temperature of the air passing through the evaporator.



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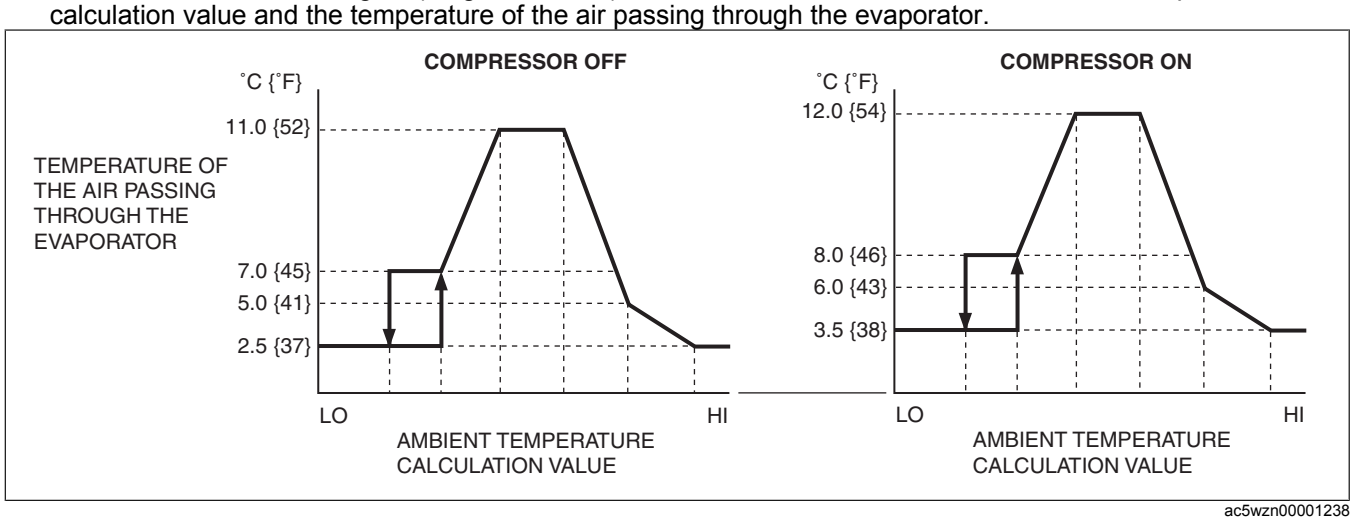
- In AUTO mode, the A/C signal (magnetic clutch) on/off is determined based on the ambient temperature calculation value and the temperature of the air passing through the evaporator.



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- The ambient temperature calculation value is calculated based on the ambient temperature, set temperature, cabin temperature, and sunlight intensity.
- When the ambient temperature is low, the A/C signal (magnetic clutch) OFF temperature is set lower to prevent window fogging.

A/C compressor manual control

- The climate control unit switches the A/C ON/OFF mode and ECO mode according to the A/C switch operation.

A/C mode		Operation condition
A/C ON mode (A/C display)	A/C mode (A/C display)	Fixed in A/C mode.
A/C OFF mode (No display)		Fixed in A/C OFF mode.
A/C ON mode (ECO display)	ECO mode (ECO display)	Fixed in ECO mode.

Correction

Defroster correction

- When the defroster switch is turned on, the system is switched to A/C ON mode to improve defogging.

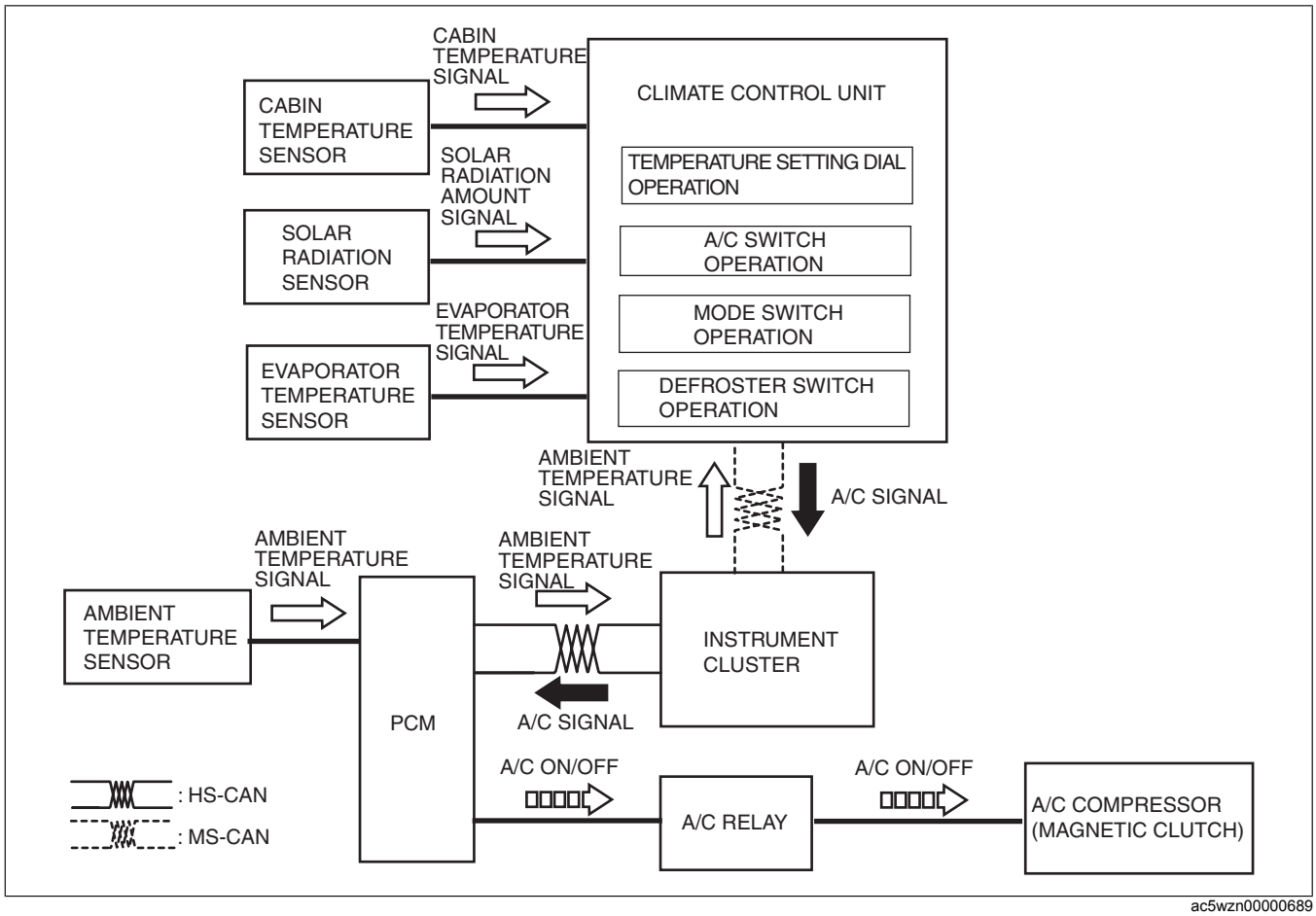
Construction

- The A/C compressor control consists of the parts indicated in the following table:

Input device	Control part	Output device
• A/C switch (climate control unit) • Mode switch (climate control unit) • Temperature setting dial (climate control unit) • Refrigerant pressure sensor • Solar radiation sensor • Cabin temperature sensor • Ambient temperature sensor • Evaporator temperature sensor	• Climate control unit • PCM • Instrument cluster	• A/C relay • Magnetic clutch (A/C compressor)

Operation

1. The climate control determines the A/C ON/OFF based on the operations of each switch/dial and signals from each sensor which changes according to the vehicle environment.
2. The climate control unit sends the A/C signal to the PCM according to the result of the A/C ON/OFF determination and corrections.
3. When the PCM turns the A/C relay on based on the A/C signal, the magnetic clutch of the A/C compressor turns on.



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